JWPce

Japanese Word Processor
for Windows
95/98/ME/NT/2000/XP/CE/PocketPC

User's Manual

Version 1.50

Word 95 requires a blank page here!

1. Introduction

1.1 Notation Used

Before we get started with the actual manual, here are some terms used throughout this manual:

Windows – Refers to all versions of Windows after 95 (this currently includes 95, 98, ME, NT, 2000, XP, CE, CE Pro, and PocketPC).
Windows XP – Refers to Windows 95 or higher (currently 95, 98, ME, NT, 2000, and XP), not CE.
Windows CE – Refers to all variants of the Windows CE operating system (Windows CE, CE Pro, and PocketPC).

1.2 What is JWPce and what can it do for me?

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JWPce is a basic Japanese word processor that is designed primarily for the English speaker who is reading and/or writing in Japanese. Considerable effort has been put into the online dictionary, kanji information, and radical lookup features of JWPce. These allow JWPce to function as an electronic Japanese-English, English-Japanese, and kanji dictionary. Additionally, JWPce has a number of features that were designed to assist students studying Japanese.

Although JWPce was inspired by the program JWP (created by Stephen Chung), JWPce is a complete rewrite of the code, starting from scratch. During the creation of JWPce, I added a number of features designed to assist me in learning Japanese. You may find these same features to be useful. Additionally, JWPce contains a number of features to make it easier to read native Japanese text (in electronic or print media).

1.3 Who Should/Should not Consider Using JWPce

To use JWPce effectively you must be able to read the phonetic Japanese alphabets (at least hiragana, and probably both hiragana and katakana). JWPce does not operate in romaji mode (romanized representation of Japanese). Aside from using romaji for input, and a few labels here and there that are in romaji, JWPce uses Japanese characters.

I certainly do not presume to tell people what they should and should not use JWPce for. However, given the limitations of the program, it is not suited to all applications. JWPce was designed to provide three basic sets of features, targeted primarily toward English speakers:[1]

1. Basic Japanese word processing.
2. Online Japanese↔English dictionary and kanji dictionary.
3. Aids for students learning Japanese.

I believe JWPce does a good job at providing these features.

JWPce's major limitations are in the word processing area. The program was designed to provide only basic editing features, and designed only for editing moderately sized files.[2] Further, the current restrictions on formatting and font changes would make JWPce unstable for some larger tasks.

As this all boils down to the fact that you might want to consider another word processor if you have to manage a large text file, such as writing a novel in Japanese. If you are a student, or someone who writes and reads some Japanese, and you want access to the online dictionaries, JWPce may be all you ever need.

1.4 Historical Development

Computer programs are developed over time. A program such as JWPce, which is written in ones spare time, can take a long time to develop. As with most long projects, decisions made at the beginning of a project can seriously affect its final shape. To put the JWPce project in perspective, here is a very short historical view of the project.

I wanted to be able to read Japanese text when traveling. However, for me to read a native Japanese text requires that I have access to both a Japanese dictionary and a kanji dictionary. Carrying these around is a nuisance and tends to prohibit casual reading. By using JWP's online dictionary and kanji lookup facilities, I could read a

[1] If you are interested in translating JWPce to another language, contact me for assistance (section 14).
[2] The definition of moderate depends mainly on the speed of your processor. I regularly edit files in excess of 200 KB (100 pages) on an old 90MHz Pentium portable (without cache). The system performance when editing such files is just fine and dandy. On the same system I can edit EDICT (2.6 MB), and the system is a bit sluggish, but not bad.

Japanese text much easier than by using a paper dictionary, but I still would have to carry a portable computer (and on top of that my portable only lasts for about one hour on battery power).

In 1997 I became aware of Windows CE machines. These are small computers (usually under a pound in weight) that run the Windows CE operating system (which is mostly like Windows XP). I thought that if JWP could be ported (a computer term for moving a program to another system) to such a machine, I would be able to read Japanese text using the small machine (imagine a Japanese↔English dictionary and kanji dictionary under a pound), and have my e-mail connection at the same time. Unfortunately, however, early Windows CE machines did not have sufficient memory to run JWP and thus the project stalled. In early 1998 Windows CE 2.0 machines were scheduled to be released. Two of these new models were available with 24MB and 32MB memory, which is more than sufficient to run JWP, and the project was on again.

I had first intended simply to port JWP to Windows CE. However, examination of the code revealed that this was not a practical proposition. Instead, I decided to rewrite the code, and this is the result of that effort. It is important to keep in mind that JWPce was originally intended to run on Windows CE machines, which have limited screen and memory resources. As a result, several features of the original JWP were adapted to use less memory and work on smaller displays.

1.4.1 How Things Actually Turned Out

As things turned out, the scope of the JWPce project has increased. When I wrote JWPce I left out many features in JWP that I did not use, in order to reduce the code size. In addition, many features that I would have liked to have in JWP but that were not there were added to JWPce. The end result is that JWPce is a different program from JWP and has a different feature set. The answer to which one you should use is whichever you like better, or use them both. Personally I use JWPce, but then, since I wrote it, it works the way I want it to. (Actually, at this point I would suggest that anyone still using JWP switch to using JWPce. This is primarily because JWPce supports many more features that JWP and is much more stable on 32-bit operating systems.)

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If you encounter any bugs, have suggestions, or want to make a comment, you should e-mail the information to me and I will attempt to respond (section 14).

1.7 Acknowledgments

The creation of JWPce is directly or indirectly the result of contributions from several people. I would like to take the time to thank them for their efforts, because without them, JWPce would never have been created!

The development team that led to JWP and the databases used in JWPce includes:

- **Stephen Chung**, who performed a wonderful job in creating JWP, and whom I have shamelessly borrowed from, including the basic layout of this manual.
- **Jim Breen** (jwb@csse.monash.edu.au) of Australia supplied the Japanese-English dictionary used in JWPce. He also completed the 'Kanji Info' database by putting together the works of several people, including his own. This forms the basis of JWPce's character Information feature.
- **Mike Erickson** (mikee@gr.hp.com) of HP supplied the original 'Kanji Info' database.
- **Ken Lunde** (lunde@adobe.com) of Adobe supplied the routines to read and write Japanese text files in EUC, JIS, and shift-JIS formats.
- **Michael Raine and Derc Yamasaki** (michael-raine@uiowa.edu) provided the original radical lookup tables that JWPce uses.
- **Wnn consortium: Kyoto University Research Institute for Mathematical Sciences, OMRON Corp. and ASTEC, Inc.** provided the kana-to-kanji conversion database.

- **Izumi Ozawa** (izumi@violet.berkeley.edu) of Berkeley donated the font lookup and index translation routines.
- **Kevin Ortman** (ortman@unomaha.edu) programmed the Input Line Editor (not available in JWPce).
- **William Heintzelman and Harvey Turnbull,** Who helped with proofreading the manual.
- **Matthew J. Francis,** who did most of the work to make JWPce run under Wine on UNIX/LINUX systems.
- **Gregg Tavares,** who helped with the Microsoft Global IME support.

The professors and staff at UCLA whom I learned Japanese from:

- Professors Masako Ogawa-Douglas, Shoichi Iwasaki, Seiji Lippit, and Michele Marra.
- Teaching Assistants: B. Baird, Michael Dankert, J. Essertier, Tetsuo Harada, Kyoko Ito, Masako Tamanaha, Hidemi Sugi, and Rinko Shibuya.
- Special thanks to Dr. Masako Ogawa-Douglas, who encouraged me to release JWPce in its early stages.

皆さん、本当にどうもありがとうございます。

1.8 Frequently Asked Questions

Here are the answers to some of the most common questions people ask.

- **Will JWPce work on a PocketPC? Yes.** The PocketPC operating system is really just Windows CE version 3.0. JWPce will run fine under this system.

- **What version of JWPce should I use with an XScale processor? ARM/StrongARM.** The XScale (Intel) processor uses the ARM instruction set.

- **Will JWPce work on under Japanese versions of Windows? Yes.** I personally use a Japanese Windows CE machine (although I also have a western one for testing). JWPce has been tested using both western and Japanese versions of Windows and works correctly under either.

- **Will JWPce work on a Mac? Not really.** There is not a Mac version of JWPce. You should be able to run JWPce under SoftPC or WINE on the Mac, but I have not tried to do so.

- **When will JWPce be ported to the Mac? Unknown.** There are no plans for a Mac port at the moment. I don't have a Mac system so I could not do such a port. If someone wants to port JWPce to the Mac, I will offer all the help I can.

- **Will JWPce work on my Palm? No!** The Palms use a different operating system and JWPce does not work under Palm OS. Currently there are no plans to port JWPce to the Palm OS. Much as with the Mac, I don't have a Palm system so I cannot port JWPce to the Palm. If someone wants to undertake this project, I will provide all the support I can.

- **Will JWPce work on my Handspring? No!** The Handspring is just a Palm clone. JWPce does not work under the Palm OS.

- **Is there going to be a romaji only version of JWPce? Probably not!** I personally hate romaji and find it difficult to read. I currently have no intention of generating a romaji version of JWPce.

- **I get an error like "Unable to Initialize Fonts," what should I do?** This error is generated during startup when JWPce cannot find the startup font (usually k16x16.f00). Generally this is caused by an incomplete installation. For Windows 95 users, this usually means you have installed the update when you cannot. For Windows CE users, this usually means you have only installed the files specific to your processor and not the common files.

- **Does JWPce work with the Microsoft IME? Yes!** If you have versions of Windows older then Windows XP, just enable the IME and it will work just fine with JWPce. If you have Windows XP, changes were made in the way the IME works. If you simply activate the IME, it will only send a string of question marks to JWPce. To instruct the IME to send actual Japanese characters to JWPce you need change some parameters in the Control Panel:
    1. Open Control Panel
    2. Open the "Regional and Language Options"
    3. Select the "Advanced Tap"
    4. Change the "Language for non-Unicode Programs" to Japanese

1.9 JWPce Features

JWPce has many special features. The main ones are:

- **Online Dictionary:** JWPce uses Jim Breen's Japanese-English dictionary. This dictionary allows the user to translate both to and from Japanese, using either kanji or kana. JWPce's dictionary features are highly expanded, the program allows searching of Jim Breen's EDICT (general word dictionary), and ENAMDIC (a name dictionary containing over 168k Japanese names), as well as a number of other Japanese↔English dictionaries. Additionally, a user dictionary is supported for words that you cannot find in the online dictionaries.
- **Radical Lookup:** JWPce has the ability to lookup kanji by stroke number, and by identifying any number of radicals contained within the kanji. Thus if you can

identify two or more radicals within the kanji, you can search for all kanji containing all of those radicals.

- **Many Different Kanji Lookup Systems:** JWPce contains no less than nine kanji lookup systems.
- **Kanji Information:** JWPce has the ability to provide a large amount of information on any kanji character, including meanings, on-yomi, kun-yomi, etc.
- **Auto-detect Clipboard:** When importing from the clipboard JWPce can automatically detect the clipboard format. This makes reading Japanese web pages much easier.
- **Unicode Support:** JWPce supports Unicode both in files and on the clipboard. As Unicode applications become more dominant, this feature will become even more useful. (Current Unicode applications include Internet Explorer 4.x/5.x, Word, Netscape 4.x, and all native Windows CE applications.)
- **Color Kanji:** JWPce can display kanji in a list you generate in a different color. This allows you to color either the kanji that you don't know or the kanji that you do know.
- **Advanced Search:** JWPce has expanded search capabilities that allow searching over multiple files.
- **Kanji Counting:** JWPce can identify the most common kanji in a file. This list is useful for students who want to identity common kanji to learn.
- **Regular Actions:** JWPce has a very regular approach to user interactions. This allows you to call up the kanji information box from any location, or call up the radical lookup dialog box from any edit box.
- **Multiple Selections:** JWPce allows multiple selection to be used in almost every location. This include the *Open File...* dialog box, the dictionary dialog box, the *Character Information* dialog box, etc. Selection of multiple items is supported wherever it makes sense.
- **Highly Configurable:** Although JWPce is not configurable in all the ways JWP was, in many ways it is more configurable. Look through the *Utilities/Options...* dialog box for the major options. (Note that dictionary search options cannot be set there, use the *Utilities/Dictionary...* dialog box to set these).
- **User Conveniences:** JWPce has many user conveniences built into the interface, including remembering where your window is located, reloading files you were previously working on, etc.
- **Network Configuration:** JWPce can be installed on a network where each user is assigned a location to store his or her personal configuration.

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WNN Kana-to-Kanji Dictionary

File Names: WNN.DCT, WNN.IDX

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Japanese-English Dictionary

File Names: EDICT, EDICT.JDX, KANJIDIC (used to generate kanjinfo.dat)

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Christian WITTERN: The PinYin information in the KANJIDIC file.

Urs APP: The Four Corner codes and the Morohashi information in the KANJIDIC package.

Radical Lookup

File Names: RADKANJI.DAT, RADKANJI.IDX (used to create RADICAL.DAT).

Special thanks to Michael Raine for telling me about the idea and donating the kanji files necessary to implement the new lookup method. He requests that the data files not be re-distributed for use in any commercial product without his express written permission.[3]

Japanese Format Conversion Routines

File Name: JIS.C (in source code package)

Date: August 12, 1992
Author: Ken R. Lunde, Adobe Systems Incorporated
EMAIL: lunde@mv.us.adobe.com
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2. Installation

This chapter covers installation of JWPce under a variety of situations. Also covered are issues related to compatibility between various versions of JWPce and between JWPce and JWP.

2.1 Windows 95

2.1.1 Requirements

JWPce requires a PC computer system running Windows 95, 98, NT, ME, 2000 or XP. Windows 3.x is not supported (I suggest that you consider upgrading). The amount of memory required by the program depends primarily on the fonts and dictionaries installed. With minimum font and dictionary installation, JWPce requires less than 8MB of disk space. A full install using all of the standard bitmapped fonts, dictionaries, and the manuals, requires approximately 19MB of disk space. If you install TrueType fonts, the space requirements depend on the fonts you install (TrueType fonts are not distributed with JWPce, unless someone wants to donate a public-domain Japanese TrueType font). Similarly, if you install a number of supplemental dictionaries, the space requirements will depend on exactly which dictionaries you install (section 7.5).

2.1.2 Installation Instructions

JWPce does not have a standard installation program that you run to perform the installation, but don't worry, the installation procedure is very simple, and contains only four steps.

1. **Obtain the distribution .zip files:** One way or another obtain the distribution .zip files. Depending on where you obtained your distribution copy you may have different numbers of zip files.
2. **Generate a directory:** Make a directory that will be your installation directory. If you are installing over a previous version of JWPce or JWP you can simply use your existing directory.
3. **Decompress the .zip files:** Decompress the .zip files into your installation directory. If you are installing over an older version of JWPce or over JWP you can safely overwrite any files. At this point you can delete the .zip files, as they are no longer necessary. NOTE: Currently it is a requirement that essentially all the JWPce support files are located in the same directory as the executable (jwpce.exe).
4. **Run the Program:** Run the executable program "jwpce.exe". This will automatically complete the installation, and prompt you for any information needed (section 2.8). Since Explorer does not normally show the file extensions,

you should look for a file named “jwpce”, with the kanji KAN from KANJI as an icon.

2.2 What if I already have JWP?

If you already have JWP, you can install JWPce in the same directory. For the most part they use the same files, so you will not have to duplicate files. Where they don't use the same files, the files have different names, so they will not interfere with each other.

> **Tip:** My recommendation would be to upgrade completely to JWPce. At this point JWPce has many more features than JWP had, is smaller, faster, and more stable on 32-bit operating systems.

The only real problem is in whether or not to allow JWPce to take over the associations for the file extensions. These associations determine what program will be started when you double click on a file of the type (.jwp, .jis, .euc, etc.). Unfortunately, both programs use the same file extensions, so you will have to decide which one should handle the associations.

2.2.1 Dictionaries

JWPce uses newer versions of EDICT and ENAMDICT (which was part of EDICT in JWP 1.31). The newer files can be used by JWP; and JWPce can use the older dictionary files, but doing so will disable some of its features. In particular, if you use the wrong dictionary version with one of the programs, that program will not be able to block name entries. The best choice is to use the newer dictionaries, then you can either add or not add ENAMDICT to JWP's dictionary list to get the best searching options.

2.2.2 Major differences

If you have been using JWP, a few things will not be converted to JWPce. These include the following:

- **Options:** JWPce options are somewhat different than those of JWP, and the method of storing the option settings is completely different. Thus, JWPce will not even attempt to read your JWP settings.
- **User Conversion Cache:** When you convert kana to kanji, JWP and JWPce attempt to remember the choices you made for the kanji conversions. Although both programs store the choices in a conversion cache, they store the cache in very different ways. JWP uses a straightforward storage method, while JWPce uses a selective storage algorithm that allows it to effectively store a larger number of conversions in a smaller file. Since it is relatively painless to reselect

your favorite kana-to-kanji conversions, JWPce does not attempt to read the JWP conversion file.

- **User kana-to-kanji conversions:** JWP and JWPce allow you to specify custom kana-to-kanji conversions (since the Wnn dictionary cannot possibly contain all the conversions you might want). JWPce stores conversions in exactly the same format as the Wnn dictionary does, which allows me to use the same search engine for both the Wnn dictionary and the user conversion dictionary. JWP uses a slightly different format for its conversion file. This difference will require one to re-enter custom kana-to-kanji conversions. If this presents too much of a problem contact me and I will attempt to provide a utility program that will perform the conversion for you.
- **Glossary:** JWPce does not implement the glossary feature of JWP. I did not use this feature because a number of bugs in it tended to crash the program. A similar feature can be generated by defining a custom kana-to-kanji conversion based on your mnemonic (section 4.8). You can then treat your string as a kana-to-kanji conversion.

2.3 Updating JWPce

If you are installing an updated version of JWPce, you can either get an updated package or install a complete version of JWPce over your existing version.

Update packages are smaller and faster to download and install. If you get an update package, please check the instructions, since the update versions now require that you have at lease a certain version of JWPce to update from. `This was done to keep the size of the update versions small.

Reinstalling JWPce over your existing version has some advantages too. In particular you will get the newest copy of the main dictionaries. These are not included in the update packages, because this would defeat the purpose of the updates.

Because there have been internal changes in the versions of JWPce I am now distributing a small program called UPDATE.EXE with each version of JWPce. This program will check your version of JWPce and update any necessary files to the current version. You run this program by simply double clicking on it. After you have run UPDATE.EXE you can simply delete the program, as it will no longer be necessary. You can run UPDATE.EXE as often as you like, it will not hurt any of the files.

2.3.1 Windows CE Updates

I have not generated a version of UPDATE.EXE for each of the Windows CE versions. I believe that most people who are using the CE versions also have a version on their desktop. You can simply copy the updated files from your desktop to your CE machine. Also the next section contains a list of things that have changed from version to version so you can see what UPDATE.EXE would be doing.

2.3.2 Update History

This section contains a history of major file changes in the various versions of JWPce. If you are updating from an older version of JWPce you can see what files have been modified.

2.3.2.1 Version 1.33:

Due to changes in the kana->kanji conversion system, the files WNN.DCT and WNN.IDX have been replaced with the files WNN.DAT and WNN.DIX. Additionally, the format of the user kana->knaji conversion file (USER.CNV) has changed to match the format used by WNN.DAT. UPDATE.EXE will update the format USER.CNV, as well as offer to delete the obsolete files.

2.3.2.2 Version 1.42:

Due to changes in the configuration file project files saved from earlier versions are not compatible with version 1.42.

2.4 Network Installation & Multiple Configurations

WARNING! This section deals with technical issues related to setting up JWPce to be run over a shared network, or for a single user to run multiple configurations. If this does not fit your configuration or you are uncomfortable with such issues, simply skip this section.

JWPce was originally designed as a single user program. The program originally stored all information about the user configuration in the same directory as the executable. This is efficient, but makes the program difficult to use in a network configuration, where many different users may be using the program at the same time. In such a case multiple users would end up saving their configurations on top of each other and no one would be happy. Since JWPce is being used in academic situations over networks (something I never envisioned when I started the project), support for network configurations has become more important.

WARNING! Network configurations are not supported on Windows CE versions.

JWPce allows a command line argument to specify the directory for user configuration files. Normally JWPce will attempt to read all files from the user's directory, but if a configuration file is missing, it will read the file from the default directory (where the program is located). This allows the default configuration to be used to initialize all configurations. When writing, JWPce will always attempt to write user configuration information into the user directory, and will never write back into the default directory.

The command line argument to specify the user directory location is:

```
(+|-)user_directory
```

If the plus (+) option is used all error checking will remain active. This should be the normal configuration. If the minus (-) option is used errors will not be reported when writing user configuration files. Note: Using the minus option does not have any effect on user data files, where all error reporting remains active!

Generally the minus option should not be used, but it has some advantages in special situations. For example, if you do not want users to save their configuration files then you could use this option and provide an invalid directory for the user_directory. This will prevent the user form saving configurations and prevent generation of error messages. Another special situation might be if the users save their configurations on a floppy disk, but you want the program to run quietly when no disk is in the machine. In such a case you could use the configuration option:

```
-a:\
```

All JWPce features will work even when the user cannot save configuration information; however, any changes the user makes to the configuration will not be preserved from session to session.

Files Affected

Following is a list of the files that JWPce considers to be user configuration files. These are simply files that may change as the user works with JWPce but that are not actual data files:

colkanji.lst	–	Kanji list used by the color-kanji feature (section 6.12).
jwpce.cfg	–	JWPce configuration file, this will be generated when you run JWPce.
jwpce.dic	–	JWPce dictionary configuration file. This file contains information about supplemental dictionaries you have installed (section 7.5.2).
jwpce_lang.dll	–	Language interface (localization) file (section 2.6).
user.cnv	–	User kana→kanji conversions (section 4.8).
user.dct	–	User dictionary (section 7.2).
user.sel	–	Holds user selections for kana→kanji conversions.

2.4.1 Setup Procedure

The following section describes the things you need to think about and steps you need to take when installing JWPce on a network.

1. **Install JWPce:** Install JWPce as normal on the server system (section 2.1.2).

2. **Set Default Configuration:** Set up a default JWPce configuration on the server. At a minimum simply run JWPce, which will generate a jwpce.cfg file that will become the base configuration for the users. If this is not done, every new user (or users who forgot their disk) will get the message about being unable to load the configuration file, using default values.
3. **Install Supplemental Dictionaries:** If you are going to install any of the supplemental dictionaries (section 7.5.2), you should do this now. This will set up a base dictionary search that the users can use.
4. **Do not generate a user dictionary:** Generally you may NOT want to provide a common user dictionary. This is because if the user adds something to this dictionary, the entire dictionary will get copied into the user configuration directory. Additionally, once the user generates his or her own user dictionary, they will not be able to use any changes to the central dictionary that you may make (assuming this is an educational situation).
5. **If you want to provide a central dictionary:** If you want to provide a central dictionary that all users can access, and that dictionary was generated as a user dictionary, you can simply rename the user.dct file to any other name and add it to the supplemental dictionaries list using the *Searched Dictionaries* dialog box (section 7.5.2).[4]
6. **Setup User Executable:** You will then need to modify the user executable command line to run JWPce with the correct command line arguments for your network. You may actually need to set up a script file of some kind to fetch the location of the user's directory and pass that information to JWPce. For a very simple setup, where the user is expected to store the configuration files on a floppy disk, you can modify the typical executable line from

   ```
   JWPce.exe
   ```

   to

   ```
   JWPce.exe +a:\
   ```

2.5 Windows CE (PocketPC)

WARNING! This section deals with running the Windows CE version of JWPce. If this does not fit your situation or you just don't care about Windows CE simply skip this section.

JWPce can run on Windows CE platforms (including PocketPC). This section deals with specific issues related to running JWPce in such an environment.

[4] Remember that the user dictionary is not indexed.

2.5.1 Implementation Decisions

Generally Windows CE versions of JWPce are almost identical to the Windows 95/98/NT/2000 version; however, a number of decisions were made when implementing JWPce on Windows CE platforms:

- The BITMAP clipboard format is not supported (section 5.5.3).
- Clipboard formats TEXT and OEMTEXT are not supported (just UNICODETEXT). These formats are not supported by most other Windows CE programs.
- Multi-file selects are not supported. Windows CE does not support this feature.
- Printing is not supported in Windows CE. This may be added at some later date.
- Some items were removed from the Edit menu, because the menu was too long for the Windows CE display. The removed items are *Insert page break*, and the mode settings.
- Network startup options are not supported in Windows CE. The user cannot edit the command line arguments that are passed to a program.
- Some visual changes were made because of the types of buttons or controls supported by Windows CE.
- Due to the difficulties in determining what tasks are running on PPCs and in switching between tasks, only one copy of JWPce can be run at a time on a PPC. If you attempt to start another version, the currently running version will be brought to the foreground.

2.5.2 Requirements

Windows CE versions of JWPce are designed to operate on HPCs (Handheld Personal Computers) and PPCs (Palm Personal Computers or PocketPCs) running the Windows CE operating system. The program has been developed and tested under Window CE version 2.0 and 3.0. I have not specifically excluded Windows CE versions earlier than 2.0, but I have not tested the program under any of these versions, and would expect that it will NOT work correctly. JWPce runs on the following Windows CE processors: MIPS, SH3, PowerPC, and ARM/StrongARM (including XScale).

Every attempt has been made to keep dialog boxes small enough so that 480x240 displays will be acceptable. There are a few dialog boxes that will have to be shifted for people using the smaller display (most notably the *Radical Lookup* dialog box, which is clearly 640x240, section 6.2).

The complete installation of JWPce with dictionaries and lookup tables but no help files takes about 8.5 MB of storage (not counting the storage compression used by Windows CE). Various files can be deleted to save space, if that is necessary (see below). JWPce will run on a machine with 8 MB of RAM (less if some of the files are removed).

The following configurations are recommended for Windows CE systems:

Memory	Configurtion
8MB	Install program in main memory and all dictionaries on flash card. Install only the required basic F16X16.F00 font.
16MB	Install JWPce in memory. If your main application is JWPce you can install EDICT in main memory. Otherwise, install EDICT on a flash card. By moving EDICT to flash card you can save enough space to install additional fonts.
32MB	Install JWPce, fonts, and EDICT in main memory. Install ENAMDICT and other dictionaries on flash card.
64MB+	You can easily install all of JWPce, fonts, and dictionary in main memory. If you later need the memory back, you can move some of the dictionary files to a flash card.

2.5.3 Installation Instructions for HPCs (handleld machines)

Currently there is no installer for JWPce under Windows CE. I will eventually generate one, but this is a low priority. Until then, the following steps can be used to install JWPce on a Windows CE machine:

1. **Obtain the distribution .zip files:** One way or another obtain the distribution .zip files – the number of files will depend on where you obtain them.
2. **Make a temporary directory:** Create a temporary directory on your desktop machine (such as c:\temp-wince).
3. **Decompress the .zip's:** Decompress the .zip files into your temporary directory. Generally it is better first to decompress any general files and then to decompress files that are specific to your processor. At this point you can delete the .zip files as they are no longer necessary.
4. **Make an installation directory:** Create a program directory on your Windows CE machine, e.g. \Program Files\JWPce.
5. **Copy the files:** Copy the desired files from the temporary directory on your desktop machine to the installation directory on your Windows CE machine. You can now delete the temporary directory (and its contents) on your desktop machine, as it is no longer necessary.
6. **Run the Program:** Run the executable program "jwpce.exe". This program will automatically complete the installation, and prompt you for any information needed, just like the Windows 95/98/NT version (Section 2.8).

2.5.4 Installation Instructions, PPC's (Pocket PC machines)

Currently there is no installer for JWPce under Windows CE. I will eventually generate one, but this is a low priority. Until then, the following steps can be used to install JWPce on a Windows CE PPC machine. Due to the absence of any type of file manager on the PPC versions of Windows CE, you will have to attach JWPce to the Start Menu by hand to run the program. Do not worry, the steps are very straightforward.

1. **Obtain the distribution .zip files:** One way or another obtain the distribution .zip files – the number of files will depend on where you obtain them.
2. **Make a temporary directory:** Create a temporary directory on your desktop machine (such as c:\temp-wince).
3. **Decompress the .zip files:** Decompress the .zip files into your temporary directory. Generally it is better first to decompress any general files and then to decompress files that are specific to your processor. At this point you can delete the .zip files, as they are no longer necessary.
4. **Make an installation directory:** Create a program directory on your Windows CE machine, e.g. \Program Files\JWPce.
5. **Copy the files:** Copy the desired files from the temporary directory on your desktop machine to the installation directory on your Windows CE machine. You can now delete the temporary directory (and its contents) on your desktop machine, as it is no longer necessary.

The next steps depend on which version of the Windows CE you have!

If you have Windows CE 3.0 or a PocketPC system:

6. **Run the Program:** On your PPC machine there should now be a link to JWPce in the programs menu. Activate this link. The program will automatically complete the installation, and prompt you for any necessary information, just like the Windows 95/98/NT/2000 version (Section 2.8).
7. **Done!** You are done.

If you have an older Windows CE device (from before the PocketPC), you probably don't have a file explorer, so you will need to link JWPce into the Start Menu before you can run the program.

6. **Select the Program:** Now you will need to generate a link in the start menu so you can execute the program. Find the file JWPce.exe on the PPC device (since you just copied the files, I am assuming that you are exploring your PPC), and click on it once.
7. **Copy the Program:** Select *Copy* from the *Edit* menu on Explorer.
8. **Change Directories:** Change the Explorer directory to /Windows/Start Menu/Programs.
9. **Make the Shortcut:** Choose *Paste Shortcut* from the *Edit* menu on Explorer. If you would like a shorter name in your start menu, you can edit the name from "shortcut to JWPce.exe" to "JWPce", or whatever you like
10. **Run the Program:** On your PPC machine there should now be a link to JWPce in the programs menu. Activate this link. The program will automatically complete the installation, and prompt you for any necessary information, just like the Windows 95/98/NT/2000 version (Section 2.8).
11. **Done!** You are done.

2.5.5 Installing Help

Normal Windows CE help is implemented using the Pocket Help program, and help information is stored in a reduced form of HTML format. Unfortunately, using Pocket Help requires that most of the help files reside in the Windows\System directory. One of the problems with HTML formatted files is that all Japanese text must be stored as small images in separate files[5] (in total, there are around 130 files in the help system).

I do not like the idea of dumping 130 or so files into the Windows\System directory, so JWPce implements its help using Pocket Internet Explorer. This has a number of advantages: first, this allows the full range of HTML to be used in the help system[6]; second, this allows me to place the help files in any location. There are also a few disadvantages, such as that Pocket Internet Explorer opens files slower than Pocket Help. Overall, I believe this is the best solution.

The following steps can be used to install help on a Windows CE system:

1. **Obtain the distribution zip files:** One way or another obtain the distribution .zip files – the number of files will depend on where you obtain them.
2. **Make a temporary directory.** Create a temporary directory on your desktop machine (such as c:\temp-help).
3. **Decompress the .zip files:** Decompress the .zip file(s) into your temporary directory. At this point you can delete the .zip files as they are no longer necessary.
4. **Make an installation directory:** Create a help directory on your Windows CE machine. The directory must be named help, and must be a sub-directory of wherever you installed JWPce. For example, if you installed JWPce in \Program Files\JWPce you must install help in the directory \Program Files\JWPce\help.
5. **Copy the files:** Copy the desired files from the temporary directory on your desktop machine to the help directory on your Windows CE machine. You can now delete the temporary directory (and its contents) on your desktop machine as it is no longer necessary.

2.5.6 Compatibility Issues

This section deals with compatibility issues between the Windows CE versions of JWPce and the Windows 95/98/NT/2000 versions.

Generally all files used by JWPce are directly compatible between Windows CE and Windows 95/98/NT/2000 versions. The following files, however, cannot be directly moved from one system to the other:

- **jwpce.exe:** Executable files cannot be moved from one system to another.

[5] Because help must work on all systems, I cannot assume a Japanese display system is present.
[6] Excluding the HTML tags that are not correctly implemented in Pocket Internet Explorer.

- **jwpce.hlp:** This is a Windows 95/98/NT help file and it will not function on Windows CE machines.
- **jwpce.cfg:** JWPce configuration files in Windows CE are slightly different from those in Windows 95/98/NT/2000. Using a configuration file on the wrong system will cause JWPce to reinitialize the configuration to the default values.
- **jwpce.dic:** Dictionary configuration files cannot be moved. The one on Windows CE is in UNICODE format, and the one on Windows 95/98/NT/2000 is in ASCII format.

All other files can be freely moved between the systems without any translation.

2.6 International Support

The appearance of JWPce's interface can be changed by the use of a language or localization file (JWPCE_LANG.DLL). These files can replace virtually all the text strings used by the program, as well as menus and dialog boxes. This system was designed to allow creation of alternative interface modules in different languages.

If a language support file is available for a language you are interested in, you can simply copy the support file to the same location as JWPCE.EXE. During startup JWPce will detect the language file and switch interfaces. There is an internal check to make sure the language support file matches the version of JWPce you are using.

Currently JWPce supports only one interface language at a time. Further the language is set when JWPce starts. At a later date, support for switching interface languages on the fly may be implemented.

If you are interested in translating JWPce's interface to another language please contact me or obtain the translation kit (jwpcetra.zip). This kit contains instructions, notes and tools used to generate a translation file. (Please don't underestimate the amount of effort that this will take, JWPce contains around 300 message strings, 50 dialog boxes, and two menus containing nearly 100 items. Most of these will require translation. This is not even considering the manual, help, or adjustments necessary for Windows CE PPCs and HPCs.)

2.7 What Should be in the Distribution?

2.7.1 Windows 95/98/NT

Exactly what files you get with JWPce depends on who packaged the files. I distribute the program in a specific way, but since it is freeware, the copy you get may not be packaged by me. The following section describes what files should be there, what files

may be there, and what they are used for. Any other files, you can probably delete if you want to.

> If you distribute JWPce please try to make sure that users have access to all files included in the full distribution, source code, and utilities. These do not have to be distributed together (most users will not want the source code or utilities), however, the user should have access to all parts of the distribution if they want it.

JWPce minimum installation includes the following files:

jwpce.exe	–	JWPce executable (this is the program).
changes.txt	–	Changes for this version.
_cpright.txt	–	Copyright notice.
edict	–	Jim Breen's Japanese-English dictionary
edict.jdx	–	Index file for EDICT
gnugpl.txt	–	GNU public license.
k16x16.f00	–	16x16 bitmapped kanji font.
kanjinfo.dat	–	Kanji information database.
radical.dat	–	Radical lookup data file.
_readme.txt	–	Updated information and important changes.
stroke.dat	–	Radical lookup stroke data file.
update.exe	–	Update utility from previous versions of JWPce.
wince.txt	–	Windows CE additional information file. If you are installing a Windows CE version of JWPce please read this file.
wnn.dat	–	Kana-to-kanji conversion dictionary
wnn.dix	–	Index to wnn.dat.

JWPce full installation files (Technically, these are all optional files):

classical	–	Classical Japanese dictionary.
classical.euc	–	Documentation for CLASSICAL.
enamdic	–	Japanese name dictionary.
enamdic.jdx	–	Index file for Japanese name dictionary.
jwpce.doc	–	Documentation (in Word 97 format).
jwpce.hlp	–	JWPce help file (Windows 95/98/NT only).
jwpce.cnt	–	JWPce help contents (Windows 95/98/NT only).
k24x24.f00	–	24x24 bitmapped kanji font (if you have a good printer you can delete this one).
K48x48.f00	–	48x48 bitmapped kanji font.

The Windows CE help system contains around 130 files, all of which are HTML or gif files. The help distribution zip contains a full list of the files that should be there.

Files that may be in your installation (These are files generated by JWPce, and thus may be included with the files you receive.):

colkanji.lst	–	Kanji list used by the color-kanji feature.
jwpce.cfg	–	JWPce configuration file, generated when you run JWPce.
jwpce.dic	–	JWPce dictionary configuration file. This file contains information about supplemental dictionaries you have installed.
jwpce.gid	–	Generated by Windows help to hold bookmarks, etc.
jwpce_lang.dll	–	Localization (language support) file, causes JWPce to change the system interface to another language.
user.cnv	–	User kana->kanji conversions.
user.dct	–	User dictionary file.
user.sel	–	Holds user selections for kana->kanji conversions.

Obsolete files. These are files that were used in previous versions of JWPce.

wnn.dct	–	Replaced with wnn.dat in version 1.33.
wnn.idx	–	Replaced with wnn.dix in version 1.33.

2.7.2 Windows CE

Because of the space limitations on Window CE machines, you may not want to install all of the JWPce files. The following section describes all the files used by JWPce, which files are optional, and the implications if a file is not installed.

A minimum installation of JWPce includes the following files:

File	type	Description
jwpce.exe	REQ	JWPce executable (this is the program)
Changes.txt	OPT	Changes for this version.
_cpright.txt	OPT	Copyright notices.
_readme.txt	OPT	General program information.
Edict	OPT	Japanese↔English dictionary. If not installed, you will not have access to the dictionary.
edict.jdx	OPT	Index file for EDICT, required if you include EDICT.
gnugpl.txt	OPT	GNU public license.
k16x16.f00	REQ	16x16 bitmapped kanji font.
kanjinfo.dat	OPT	Kanji information database. If not installed the Character Information dialog box will not function, and some features in the Radical Lookup dialog will be disabled.[7]
radical.dat	OPT	Radical Lookup data file. If not installed, the Radical Lookup dialog box will not be able to look up kanji by radical.
stroke.dat	OPT	Radical Lookup stroke data file. If not installed, the Radical Lookup dialog box will not be able to look up kanji by stroke count only.
wince.txt	OPT	Additional Windows CE information.
wnn.dat	REQ	Kana-to-kanji conversion dictionary.
wnn.dix	REQ	Index to wnn.dct.

All other files (fonts, dictionaries, etc.) are optional.

Obsolete files. These are files that were used in previous versions of JWPce.

wnn.dct – Replaced with wnn.dat in version 1.33.
wnn.idx – Replaced with wnn.dix in version 1.33.

2.8 More About Installation

WARNING! This section contains technical details about the installation process. If you are not interested, simply skip this section.

JWPce's installation program is built into the main program. Every time JWPce starts, JWPce checks if the current installation is valid. This system allows JWPce to respond if the program is moved, or some other program interferes with JWPce's configuration. If there is a problem with the installation JWPce will display the following dialog box:

[7] JWPce for Windows CE is distributed with a smaller version of kanjinfo.dat that does not contain the nanori, or pin yin data. You can obtain the full version kanjiifo.dat from the web site (section 14) if you wish to have the additional data.

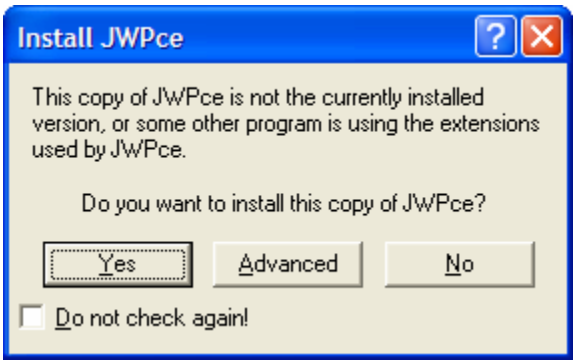


Figure 2.1: Install dialog box

If you simply click *Yes*, JWPce will perform a default installation. If you click *No*, JWPce will not do an install. If you click *Advanced*, you will get the *Advanced Install* dialog box (below).

2.8.1 Advanced Install Options

From the *Advanced Install* dialog box you can determine which extensions will be associated with JWPce. If a checkbox is grayed (as is the .jce checkbox below), this indicates that the extension is already associated with JWPce. Checkboxes that are not grayed (such as the .sjs checkbox below) are extensions that are not associated with JWPce.

The association for JFC (.jfc) is different from all the other associations. When shift-JIS files are associated with JWPce, double clicking on these files will open them in using JWPce. In the case of JFC files, JWPce does not make this association (double clicking on the file will still open the file using JFC). Right clicking on a JFC file, however, and selecting *Edit*, will open the file in JWPce.

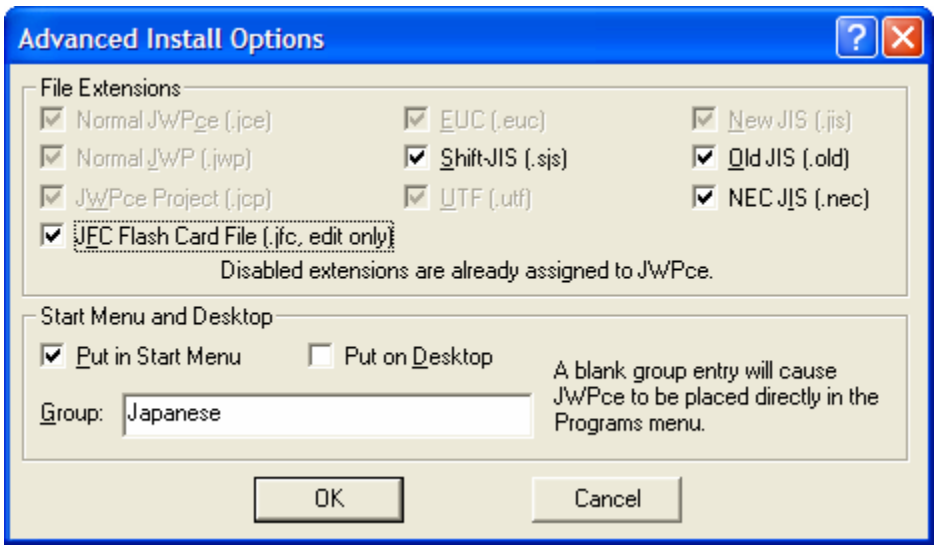


Figure 2.2: Advanced install dialog box

Additionally, from this dialog, you can have JWPce place an icon on the desktop or a command in the *Start/Programs* menu. By default, JWPce does not place an icon on the desktop, unless you ask it to. JWPce does place the command *JWPce* in the program group *Japanese* in the *Start* menu (or simply in the *Programs* menu on PPC devices).

2.8.2 How to Disable or Enable the Auto-Install Check

If you have a system configuration where you do not want JWPce to take over the extensions (.jce, .jwp, .euc, .sjs, .jis, .old, .nec, and .utf), and you do not want to see the *Install* dialog box every time you start JWPce, you can simply click the *Do not check again* box on the *Install* Dialog (Figure 2.1).

If you have disabled the install check and want to enable it you can do so as follows. First, select the menu item *Utilities/Install*, which will manually start the install process. You can then clear the *Do not check again* box.

> **Tip:** You can run the install any time you wish by selecting the menu item *Utilities/Install….*

2.9 Removing JWPce

Currently, there is no uninstall program for JWPce. One will probably be provided at a future date. If you wish to uninstall JWPce, follow the following steps:

1. **Remove JWPce files.** Delete all files in the directory where JWPce is installed. You should also be able to delete the directory.
2. **Remove Desktop Icon.** If you had JWPce create a desktop icon, this can be deleted by selecting the icon and then pressing the Del key.
3. **Remove Start Menu Entry.** The following procedure can be used to remove programs form the *Start* menu:

Windows 95/98/NT:

A. From the *Start* menu choose *Settings* then *Taskbar….*
B. Choose the *Start Menu Programs* tab.
C. Click the *Advanced* button. This will allow you to edit the *Start* menu.
D. Select *Programs* to see a list of program groups.
E. Find the group containing JWPce and delete either the program or the entire group.

Windows CE:

A. From the desktop double-tap *My Handheld PC.*
B. Double-tap *Windows*.
C. Double-tap *Programs*.
D. Find the group containing JWPce and delete either the program or the entire group.

4. **Remove Registry Entries:** See next section.

2.9.1 Registry Entries

WARNING! The next section deals with making changes to the system registry. Incorrectly changing the registry can have VERY bad effects on your system. If you are unfamiliar with the registry, just skip this!

This section indicates the registry entries used by JWPce. If you fully want to remove JWPce you will need to remove the registry entries. Be warned, however, that fooling with the registry is not for the timid! Further, JWPce uses less than 200 bytes of registry information, so if you want you can simply ignore the registry entries.

All registry keys used by JWPce are located in the root key HKEY_CLASSES_ROOT. The first group of keys associate the file extensions used by JWPce with the actual program. These keys are summaries in the table below. All of these keys will have the value "JWPce" if they are being used by JWPce:

Key	file type
.euc	EUC files
.jce	JWPce native file
.jcp	JWPce project file
.jfc	JFC flash card file
.jis	New JIS
.jwp	JWP native file
.nec	NEC JIS
.old	Old JIS
.sjs	Shift-JIS
.utf	UTF-8

The final key is JWPce. This key and subkeys contain icon information and the program location. The entire tree can be deleted if you are uninstalling JWPce.

3. JWPce Interface

This chapter describes JWPce's basic interface. Some of the later information here is advanced, and you may want to come back and review it again later.

3.1 Main Display

Figure 3.1 shows a sample JWPce display from Windows XP. (There are slight differences in display for some of the versions; however, they are all basically similar.)

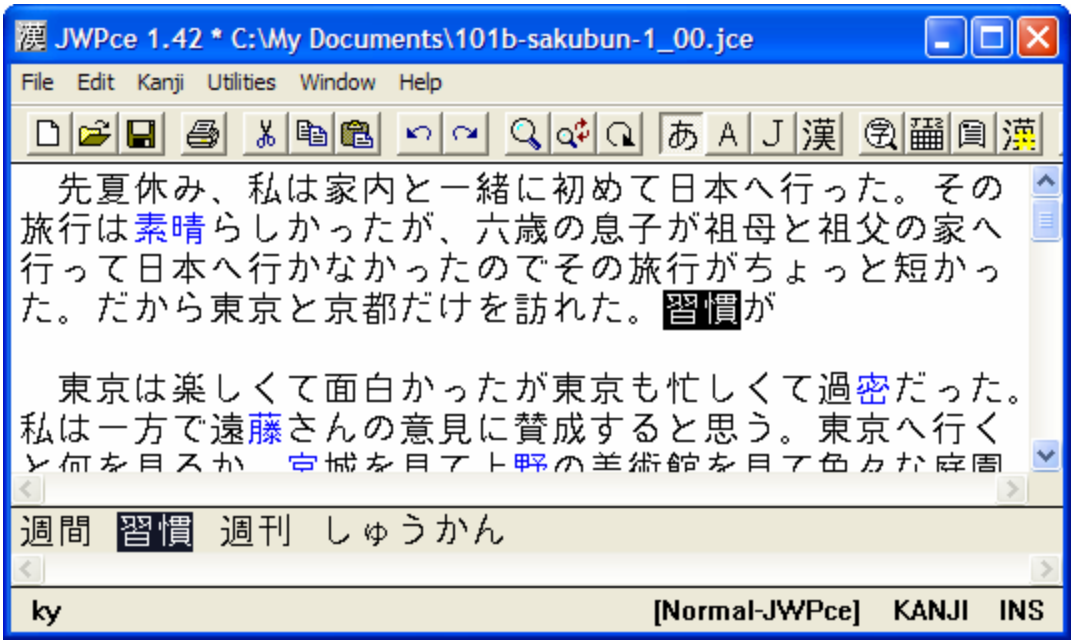


Figure 3.1: JWPce display

The main elements of the display are:

title bar: Contains the program name, version, and the current file. If the separator between the program name and the file is a "*", the file has been changed. If the separator is a "-", than the file has not been changed since the file was saved.
menu bar: Contains the menu system.
toolbar: Contains buttons that activate some of the common features.
edit window: Working space, where you can edit the file. This shows the contents of the current file.
kanji-bar: Displays the possible kanji conversions for the kana you have entered (section 4.7)

status-bar Displays romaji for kana you are entering (**ky** in the figure), the current file type (**[Shift-JIS]**), the input mode (**KANJI** - this is a button; click it to change to **ASCII**, then **JASCI**), and the edit mode (this is also a button, toggling between Insert (**INS**) and Overtype (**OVR**) modes).

Note that many of the display elements can be controlled via the *Options* dialog box (section 10.1).

3.2 Single-Window Multi-Document

Most Windows programs are single document (they have a single document open in a single window at a time – an example is Notepad), or Multi-Document Interface (where each open file gets a separate child (inner) window – an example is Word). JWPce, uses a different approach; it opens a single window in which all open files are to be viewed. This is actually very similar to a MDI program where you always maximize the child window. One can imagine all open files as a stack of papers. The one you are working on is the file on top of the stack; it covers all of the lower papers, thus rendering other open files invisible.

The Single-Window Multi-Document (SWMD) approach was chosen for a number of reasons. First, MDI is not supported in the same way under Windows CE, and I wanted to make all versions of the program as similar as possible. Second, the SWMD interface is easier to program, responds faster, and requires less memory. Third, I always maximize the child windows anyway.

The only drawback to the SWMD interface is that the close control has to perform a double function. This control is used either to close the application (program) or simply to close the top file. By default JWPce closes the top file when you click the close control. You can change this in the *General* page of the *Options* dialog box (*Utilities/Options…* or Ctrl+O). Selecting Ctrl+close will always close the current file, and selecting Alt+close will always close the entire application.

> **Tip:** You can always close the current file using the *File/Close* command, and close the program using the *File/Exit* command.

3.3 Pointers and Alt+tap

JWPce operates under both Windows and Windows CE. Windows CE machines generally do not have a mouse, but rather use a pen as a pointing device. The term *pointer* refers to the pointing device on your system. The term *click* (or *left click*) also refers to tapping with the pen.

Pen machines do not have two mouse buttons. Thus in order to make a right click on a pen machine use the action Alt+tap. (Windows machines can also use the Alt+left click to generate a right click.) Windows CE PPCs do not have a keyboard; pressing the *Action* button will have the same effect as a right click (generally to bring up a context dependent menu).

Context menus can also be brought up by holding down the left mouse button (or holding the pen on the display) for a short period of time. This is an interface convention from the PocketPC, but it has been included in all versions of JWPce.

3.4 Dialog Boxes

Most of the dialog boxes used in JWPce are non-modal (including *Bushu Lookup*, *Character Information*, *Dictionary*, *Four-Corner Lookup*, *Index Lookup*, *JIS Table*, *Kanji Count*, *Radical Lookup*, *Reading Lookup*, *SKIP Lookup*, *User Conversion*, and *User Dictionary*). A non-modal dialog box allows you to go back to the main window or another dialog box and continue working, and then come back to the dialog box again.

JWPce also contains a number of modal dialog boxes, that block the progress of the program until you respond to the dialog box (such as the *Options*, *Search*, *Search and Replaced*, *Page Layout*, etc.).

 In Windows the non-modal dialog boxes have a minimize controls (the minimize control is not present in Windows CE versions). Clicking this control will minimize the dialog box and all child dialog boxes (such as a copy of the *Character Information* opened from within the *Radical Lookup* dialog). The minimized dialog box will drop to the bottom of the screen. Windows does not show any representation of the child dialog boxes on the screen. However, restoring the dialog box will also restore all the child dialog boxes.

Closing a non-modal dialog box will close all child dialog boxes.

The operation of the *Insert to File* (section 3.6.1) feature present in many dialog boxes is slightly complicated with the non-modal dialog boxes. This feature is intended to copy information form a list to the current file. Generally, the current file is the last file or Japanese edit control[8] that was active. The exception to this is that the current file will never be located in the same dialog box. An example of this is that the *Insert to File* feature will never insert text form the dictionary (section 7) results into the *Word to Lookup* edit control.

[8] Remember JWPce considers any Japanese edit control (section 3.6) to simply be a single line file. This means that you can do almost anything from an edit control that you can do from the main editor window.

3.4.1 Dynamic Dialog Boxes

JWPce has a number of dynamic dialog boxes (including *Character Information*, *Dictionary*, *History*, *Kanji Count*, *User Conversion*, and *User Dictionary*). In Windows, these dialog boxes have a thicker frame around them, as well as both maximize and minimize controls. In Windows CE these dialog boxes have a maximize control. The size of these dialog boxes can be adjusted by dragging the edges of the dialog box. When the size of the dialog box is increased, additional controls or information may be reveled (*Character Information*, and *Dictionary*). If you change the size of a dynamic dialog, JWPce will automatically remember the size and location of the dialog box and use the same values next time you open the dialog.

For Windows CE systems, you cannot drag the edges of the dialog boxes (this operation is not supported by Windows CE). You can, however toggle the dialog box between full screen mode and normal mode. For HPC systems, additional information will be shown when the dialog box is in full screen mode. PocketPC systems do support dynamic dialog boxes, but the gain is rather minimal since the normal dialog boxes use most of the screen space.

3.5 Help

JWPce has extensive online help. Virtually the entire contents of the manual can be accessed through the help system.

3.5.1 Accessing Help

There are a number of different methods that can be used to access help. Selecting the command *Help/Main Index…*, will bring you the main help index. Pressing the F1 key from almost any location will also bring you to the help system. Further, if you are working within a dialog box, JWPce will automatically jump to help for the dialog box that you are in.

 Clicking on the question icon (located in the upper right of the window) will also bring you to the help system. Like the F1 key, if you are working within a dialog box, JWPce will automatically jump to help for the dialog box that you are in.

WARNING! When you click on the question icon in the Windows 95/98/NT/2000 systems the cursor changes to a question mark pointer. You can then click on an object you want help on. JWPce's help system, however, brings up help on the dialog box (or window), not on the actual control within a window.

3.5.2 Navigating the Help

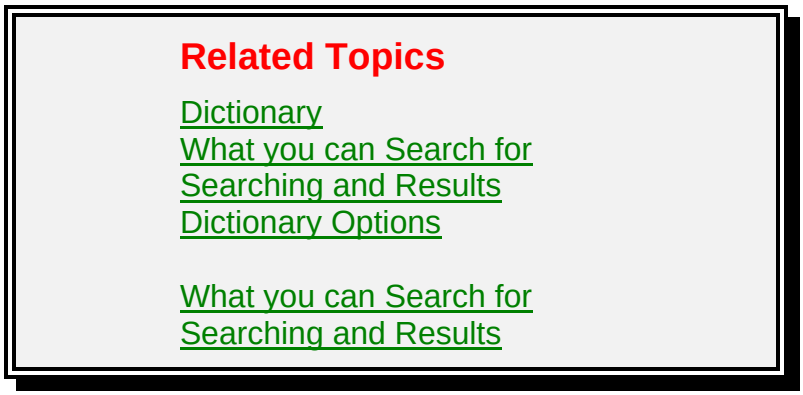
JWPce's help system is designed to be used in a number of different ways:

Contents: Using the *Contents* button you can return to the contents and look for a topic as you would in a book, using the concept of chapters and sections. You will also notice that the help content is almost the same as the manual contents.

Index: Using the *Index* tab on the help contents, you can look for a topic as you would in the index of a book.

Related Topics: Once you find a topic, you can use the *Related Topics* section (located at the end of every help topic) to find related information. The *Related Topics* sections will always contain at least two entries, and can contain more. The first group of entries is actually related topics. The second group of entries is actually forward and backward jumps that can be used to read the help file as a book (these may be duplicates).

Below is a sample *Related Topics* section. This section contains four related topics, then the jumps backward and forward through the help file.



3.5.3 Windows CE and Help

JWPce implements help using Pocket Internet Explorer. Due to errors in how Pocket Internet Explorer works, some help features are not implemented the same way on Windows CE systems. First, because Pocket Internet Explorer does not support a full URL specification[9], help cannot always place you at the actual topic in question, but can only place you at the beginning of the chapter. Second, because of some format failings[10] in the Pocket Internet Explorer, some information is not formatted as well as it should be. I assume these errors will be fixed in later versions.

[9] Pocket Internet Explorer does not process the part of the URL indicating an actual part of the file (#…) when passed on the command line.
[10] Pocket Internet Explorer interprets the <BLOCKQUOTE> tag differently than all other browsers.

3.6 Japanese Edit Controls

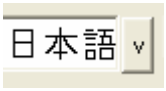
A Japanese edit control is similar to a conventional Windows edit control, which allows you to enter a line of text, numbers, or other such input. The major difference between the two types of edit controls is that a Japanese edit control allows you to enter Japanese text into the control, and a conventional Windows control will only accept English text.

Figure 3.2: Sample Japanese edit control

Japanese edit controls can be spotted easily on most systems, because they are the height of the Japanese font, which is typically larger than your Windows system font.

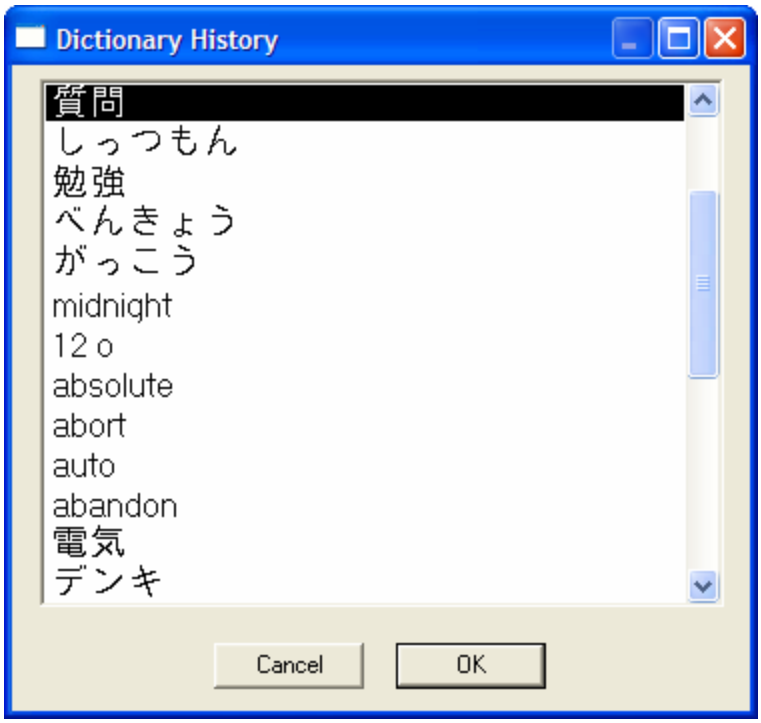
Japanese edit controls are actually small files (just a single line) that you can edit. JWPce allows you to perform just about any action that can be done in the edit window within a Japanese edit control. For example, you can invoke the dictionary utility by pressing Ctrl+D, or by using the popup menu, just as in the main edit window.

3.6.1 History



Several Japanese edit controls have a history function (including *Dictionary*, *Search*, and *Replace*). This function keeps track of the last 30 or so things you have entered so you don't have to enter them again. History information is stored in the user configuration file, and thus is preserved each time you start JWPce. (The number of past entries that are saved can be adjusted on the *Advanced* page of *Options* dialog (section 10.6).

The history can be accessed in a number of different ways. Within the Japanese edit control, you can press the up and down arrows to move through the history. The up arrow takes you further and further back into the history. The down arrow takes you to more recent entries. Pressing the down arrow enough will take you to a blank line. Pressing down again will open the history dialog, which can also be open by clicking the small button next to the edit control.



Double clicking an entry in the history dialog will insert that entry into the edit control. You can also select and entry and press the OK button to insert text into the edit control.

JWPce automatically maximizes the number of entries in the history buffer. Partially, this is done by removing duplicate entries. For example, if you enter the same string in the dictionary twice, JWPce will only keep the most recent copy of the string. The space used by the older copy will be used to hold additional history information.

3.7 Japanese List Controls

A Japanese list control is similar to a conventional Windows list control, which displays a list of information, and allows you to select items in the list. The major difference between the two types of edit controls is that a Japanese list control allows display of text containing Japanese, and allows a number of enhancements that conventional Windows list controls do not allow.

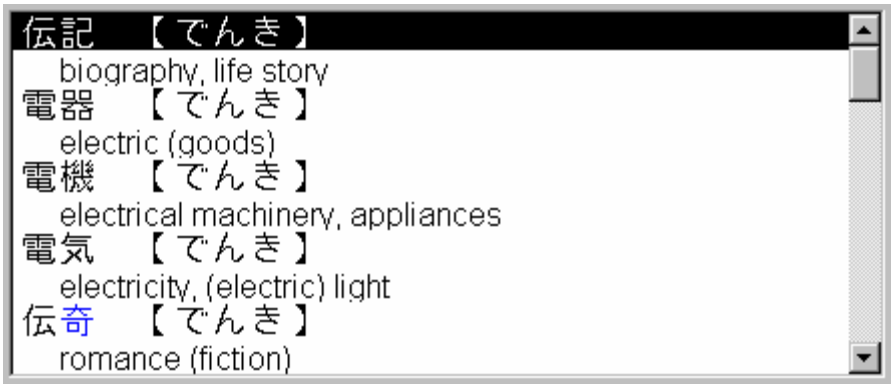


Figure 3.3: Sample Japanese list control from dictionary

3.7.1 Enhancements

The following facilities, not available in Windows list controls, are supported in JWPce Japanese list controls:

Clipboard: Selected data in the list control can be copied to the clipboard using the commands Ctrl+Ins, Ctrl+C, or the popup menu (see below).

Selecting: Items in the list control can be selected by dragging the mouse over them with the left button held down. If the Ctrl key is held down, the selected items will be added to any already selected items. If the shift key is held down, all items between the current item and the pointer will be selected. The entire contents of the list can be selected by pressing Ctrl+Shift+A or selecting *Select All* from the context menu.

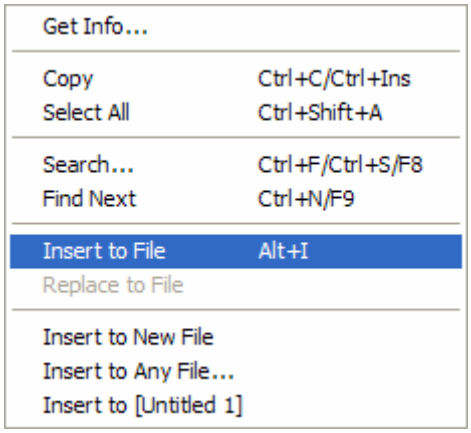
Within line select: Normally entire items (lines) are selected at one time; however, a part of an item can be selected by dragging the pointer horizontally within a single list item.

Character information: By performing a Shift+right click or pressing Ctrl+I (or an Alt+Shift+left click) you can get *Character Information* (section 6.1) for the character under the pointer.

Search within list: By pressing Ctrl+F, Ctrl+S, F8, or selecting *Search…* from the context menu, you can search for text within the list (section 5.7). You can also use Ctrl+N, F9, or select *Find Next* from the context menu to continue the search.

Context Menu: Right clicking (Alt+left click), holding the left button down, or pressing the context menu button will generate a popup menu with a number of options. These options are discussed below.

3.7.2 Context Menu



The popup menu contained in a list control contains a number of very powerful features. In particular, these commands allow you to copy information from the list control to a number of different locations.

Generally the popup menu takes on one of two forms. The first form contains six menu items, and the second form contains seven items.

The commands in the menu have the following functions:

Get Info…	Gets *Character Information* for the character under the pointer.
Copy	Copies the currently selected data to the clipboard.
Select All	Select the entire contents of the list.
Search…	Search for text within the list (section 5.7).
Find Next	Find next matching item in the list (section 5.7)
Insert to File	Inserts the currently selected data back into the file you were editing when you launched this dialog box. Remember, however, that a Japanese edit control is simply a very small file, so you can also insert back into a Japanese edit control using this command.
Replace to File	This is just like the *Insert to File* (above), except that it replaces the selected text in the file, instead of simply adding new text.
Insert to New File	Inserts the text to a new file. This can be used to start generating a vocabulary list for a file you are reading (also see the *Insert to ???* command, below). When this option is selected, a new file is generated and the selected text is inserted to that file. The current file you are editing will not change, so to see the new file you must change the current file (section 8.3).
Insert to Any File…	Generates a dialog box with the names of all open files, and allows you to chose a file in which to insert the selected text (also see the *Insert to ???* command, below).
Insert to ???	If you have used the *Insert to New File* or *Insert to Any File…* commands a new menu command will be added, allowing you to insert directly to the last file you inserted to.

Tip: When you are working with the dictionary, the *Insert to New File* can be used to start a vocabulary list in a new file, and the *Insert to ???* command can be used to add to that vocabulary list.

3.7.3 Insert Options

When you insert from a list control into a file, the results depend on what is selected. If a single item is selected, the item is inserted into the file, pushing any other text in the file to the right.

When you select multiple items, JWPce can either insert each of them by pushing the text to the right each time, or each item can be inserted on a new line. This option is controlled by the *Insert on new Lines* check box on the *Misc* page of the *Options* dialog (*Utilities/Options…* or Ctrl+O).

Unfortunately, some items in a list can be too long to display in the list box, so JWPce has to break the item into more than one line (dictionary entries are, by default, always broken into two or more lines, section 7.4). When inserting multiple selected lines, JWPce will always connect selected lines that have been broken to fit in the list control.[11]

When using the commands *Insert to New File*, *Insert to Any File…*, and *Insert to ???*, JWPce processes the *Insert on new Lines* slightly differently. Normally, JWPce starts a new line after each item except the last one. (This allows JWPce to correctly insert a single item without inserting a new line.) With the above commands, however, JWPce always starts a new line after inserting the text to allow these commands to be used for building a vocabulary list.

3.8 Edit-List Controls

An edit-list control is actually a collection of controls that are used both to display a list and to allow you to edit and/or rearrange the elements in the list. JWPce contains a number of these controls for things such as user kana→kanji conversions (section 4.8), and user dictionary entries (section 7.2).

[11] If you really work at it, you can confuse JWPce's line reassemble algorithm.

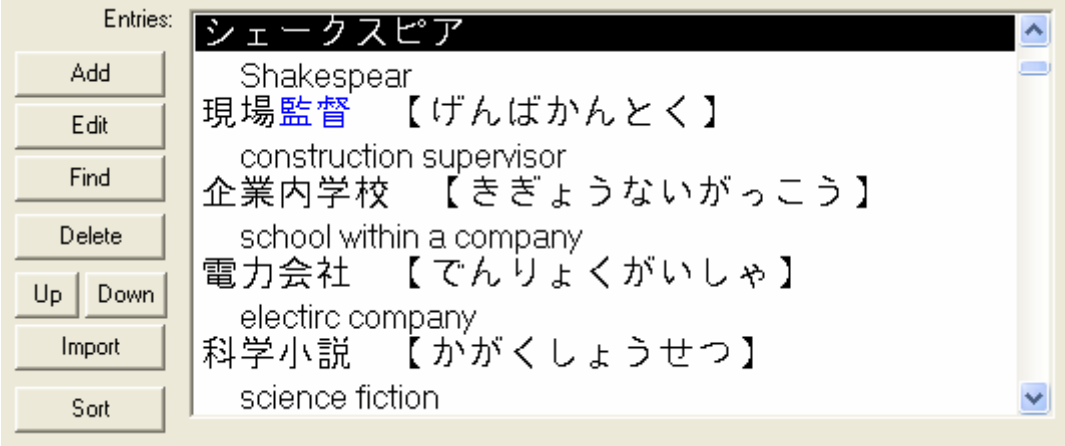


Figure 3.4: Sample edit-list controls, from the user dictionary

An edit-list contains all the features of a Japanese list control (see above) together with a number of extra buttons to manipulate the items in the list (see below).

Important concepts in working with edit-lists are an *item* and the *current item*. An *item* consists of one entry in the list. The actual item may extend over more than one line in the list box. In such a case, the second, third, fourth, etc. lines will be indented. The *current item* contains the currently selected line, which can be anywhere in the item. The currently selected line has a box around it when the list-box is active. Generally, this is the last location the pointer was clicked in or dragged to. Most edit-list operations only affect the current item, and not the items that are selected.

The following commands are available in most edit-lists:

Add – Add a new item below the current item (*Ins* or *double click* after the end of the list).
Edit – Edit the current item (*Space* or *double click* the item to edit).
Find – Find an entry within the list.
Delete – Delete the current item (*Del*).
Up – Move the current item up one item (*Ctrl+Up*).
Down – Move the current item down one item (*Ctrl+Down*).
Import – Import an entire file into the list. This can be used, for example, to merge your friend's user dictionary with your own user dictionary. In most cases you can import a file by dragging the file onto the dialog box.
Sort – Sort the list in kana order.
Insert to File – Insert selected text into a file, see section 3.6.1 above.

3.9 Choose Color Dialog Box (Windows CE)

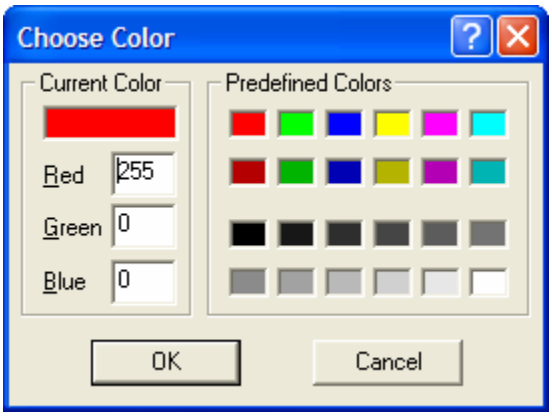


Figure 3.5: *Choose Color* dialog box.

Windows CE does not contain a standard color selection dialog box, thus JWPce includes a custom color selection box. This dialog box can be used to set the color used for *Color Kanji* (sections **Error! Reference source not found.** and 10.5), or the highlight color (section 10.2).

The dialog box contains 36 *Predefined Colors*, as well as *Red*, *Green*, and *Blue* controls for specifying custom colors. When you select a predefined color, the *Red*, *Green*, and *Blue* edit boxes will be set to the values for that color, so you can use the *Predefined Colors* as a basis for custom colors. (the range on the color selection boxes is 0 to 255.)

4. Entering Text

JWPce text input is relatively simple. There are two edit modes and three input modes. Text input is based on romaji, which JWPce translates to kana and then to kanji.

4.1 Edit Modes

JWPce has two edit modes, insert and overwrite. The default edit mode is insert. In this mode characters are inserted into the text, pushing other characters to the right.

In overwrite mode the characters you enter replace the previous characters as the cursor moves over them. When in overwrite mode the cursor becomes a fatter vertical bar to indicate the mode change.

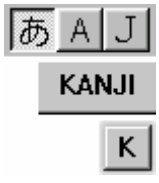
You can toggle between the two modes by pressing the *Ins(ert)* key, or by clicking on the mode indicator in the status bar.

WARNING! When in overwrite mode characters are replaced on a character-per-character basis. Thus entering kyo (きょ) will replace two characters.

4.2 Input Modes

JWPce has three input modes. These are Kanji, ASCII, and JASCII.

4.2.1 Switching Modes



There are a number of ways to switch the input modes. You can click on one of the mode buttons on the toolbar to select a specific mode. You can click on the mode indicator on the status bar. This will cycle through the possible input modes. In addition, all dialog boxes containing a Japanese edit control have a button that will also cycle through the input modes.

The input mode can also be changed using the mode commands located in the popup menu (*Kanji*, *Ascii*, or *Jascii*), or the mode commands located in the *Edit/Mode* sub-menu[12]. In both of these menus, a checkmark is located next to one of the modes to indicate the current input mode.

[12] The *Edit/Mode* sub-menu does not exist in Windows CE versions to keep the menu length less than the screen size. The mode selection commands, however, are still in the popup menu.

Finally, there are a number of keyboard commands that determine the input mode:

key	Action
Ctrl+A	select ASCII input mode
Ctrl+J	select JASCII input mode
Ctrl+K	select Kanji input mode
Ctrl+^/F4	toggles between Kanji and ASCII modes

WARNING! The keyboard commands to change the input mode will only function if the main edit window or a Japanese edit control is active.

4.2.2 ASCII Mode

In ASCII mode JWPce simply enters text as a normal English word processor, such as Notepad, or Word.

This is ASCII mode text

4.2.3 JASCII Mode

JASCII mode text is very similar to ASCII mode, except the characters used to display the English text are based on Japanese font spacing. This means that each character occupies the same space as a Japanese character. Additionally, when printing vertically (section 9.5.1) JASCII characters rotate along with the Japanese characters. ASCII characters, however, do not rotate and thus will be sideways when printed vertically.

Ｔｈｉｓ　ｉｓ　ＪＡＳＣＩＩ　ｍｏｄｅ　ｔｅｘｔ

4.2.4 Kanji Mode

Kanji mode is the default input mode for JWPce. In this mode you enter romaji and your input is translated into Japanese characters. The next sections describe how to work in Kanji mode in detail.

これは漢字モードです。

4.3 Entering Hiragana

When entering hiragana, you type the romaji for what you want to enter and JWPce converts it to hiragana. For example to enter the Japanese equivalent of “I am studying Japanese” you would enter

watashihanihongowobenkyoushiteimasu.

When you are done, JWPce would display:

わたしはにほんごをべんきょうしています。

As you type the characters, you will notice the characters you type appearing on the left side of the status bar. When you have entered enough characters to unambiguously specify a hiragana character that character appears in the text and the status bar is cleared. For example when entering the character み, you press `m`, and a m appears on the status bar, when you press the `i`, the み is entered into the text and the status bar is cleared. Similarly when entering きょ, first k then ky are shown on the status bar, when then o is entered the きょ is placed in the text and the status bar is cleared.

If you wish to change what you are entering you can press Del or BackSpace and the status bar will be cleared. Further, if you type an invalid romaji combination, JWPce will abort the conversion and start over. For example if you type `mki`, JWPce will actually generate the character き. When you press the `k`, the combination `mk` is not a valid romaji combination and JWPce starts the conversion over with the `k`.

JWPce has full support for the Hepburn, Kunrei, and Nippon romanization systems[13], as well as most variations of these systems. As many of the odd combinations (multi-character sequences) that are used in writing katakana words, as are reasonable and possible have also been included. Katakana combinations have been excluded when they conflict with normal kana patterns in one or more of the standard romanization systems, or when they would make typing normal text difficult. In all cases, you can generate such combinations by using the + character to enter small kana (section 4.3.2).

4.3.1 The n (ん)

JWPce converts the characters you type to hiragana as long as the conversion is not ambiguous. The main ambiguity is from the n character. When you enter n, JWPce has to wait for the next character to determine how to convert it to kana. Until you type the next character JWPce cannot determine if you want to enter just ん or something like に. If the next character is `aiueo`, JWPce will generate the hiragana なにねぬの. If the next character is anything else, JWPce will generate a ん and start a new conversion.

An additional problem arises when you enter combinations like `na` (or `ni`, `nu`, `ne`, `no`). In these cases, JWPce cannot tell for example if you want んあ or な. JWPce will always generate the latter (e.g. な). Thus if you want んあ, you need to tell JWPce by entering `n'a`. (This notation is used in most romaji dictionaries to deal with the same ambiguity.)

[13] *NTC's New Japanese-English Character Dictionary*, edited by Jack Halpern, NTC Publishing Group, 1997, appendix 4, page 1747.

JWPce also allows you to use the combination n″ to generate a ん. This particular combination can be very useful when using the CapsLock to enter long katakana passages (section 4.4).

Combinations such as mb and mp will also generate a ん. This type of combination is common in words such as shimbun (しんぶん).

4.3.2 Small kana and the small-tsu (っ)

Small kana can be generated for many of the kana by preceding the romaji by a + character. See the kana table (section 4.5) for a full list of characters.

The small-tsu (っ) can be generated in one of two ways. You can either explicitly generate a small tsu by entering +tsu, or whenever you enter the same consonant twice, JWPce will generate a small tsu, except for the case of nn, which will never generate a small tsu. For example the input kaette generates the hiragana かえって. JWPce will also generate a っ when a t is followed by a c as in the case of matcha (まっちゃ).

4.3.3 Particles and Other difficult kana

The particles は, へ, and を have to be treated with some care. Even though the first two are pronounced wa and e you must enter ha and he to generate the characters. Enter wo to generate を.

There are two other kana that tend to cause trouble. The characters ず and づ have the same romaji (zu). If you enter zu, JWPce will produce a ず. To generate the づ character enter du.

Similarly the characters じ and ぢ have the same romaji (ji). If you enter ji, you will get じ. Enter di to get ぢ.

Some special characters can be entered using ^ codes. These characters are

keyboard input	character
^^	^
^.	・
^-	…
^+	＋

4.4 Entering Katakana

Entering katakana is identical to entering hiragana except that you enter the romaji in upper case. Thus if you entered `hitobito` you would get ひとびと, but if you entered `HITOBITO` you would get ヒトビト.

> **Tip:** The Caps Lock is really useful when you need to type a lot of katakana.

4.5 Using the JIS Table

The JIS table can be used to enter kana (or other characters for which you cannot remember the romaji). The JIS Table is covered more fully in section 6.11. The JIS table can be accessed from the *Kanji/JIS Table* menu command, or the *JIS Table* on the popup-menu, or Ctrl+T.

By default the JIS table opens to the hiragana page, showing all possible hiragana. The page below the hiragana page (page-down) contains all the katakana. Pages above the hiragana page contain punctuation, symbols, and other similar characters.

You can simply select a character from the JIS table and double click on the character to have it inserted into the text, or select the *Insert to File button*.

4.6 Kana Table

This section contains a table showing the basic romaji→kana conversions supported by JWPce. You can also use the *Character Information* dialog (section 6.1) box to determine the romaji required to obtain a particular kana.

Romaji	hiragana (no caps)	Katakana (caps)
a,i,u,e,o	あいうえお	アイウエオ
+a,+i,+u,+e,+o	ぁぃぅぇぉ	ァィゥェォ
va,vi,vu,ve,vo	ゔぁゔぃゔゔぇゔぉ	ヴァヴィヴヴェヴォ
ka,ki,ku,ke,ko	かきくけこ	カキクケコ
+ka,+ke	ゕゖ	ヵヶ
Kya,kyu,kyo	きゃきゅきょ	キャキュキョ
kwa,kwi,kwe,kwo	くぁくぃくぇくぉ	クァクィクェクォ
ga,gi,gu,ge,go	がぎぐげご	ガギグゲゴ
gya,gyu,gyo	ぎゃぎゅぎょ	ギャギュギョ
gwa,gwi,gwe,gwo	ぐぁぐぃぐぇぐぉ	グァグィグェグォ
sa,si,su,se,so	さしすせそ	サシスセソ
sha,shi,shu,she,sho	しゃししゅしぇしょ	シャシシュシェショ

sya,syu,sho	しゃ しゅ しょ	シャ シュ ショ
ja,ji,ju,je,jo	じゃ じ じゅ じぇ じょ	ジャ ジ ジュ ジェ ジョ
za,zi,zu,ze,zo	ざ じ ず ぜ ぞ	ザ ジ ズ ゼ ゾ
zya,zyu,zyo	じゃ じゅ じょ	ジャ ジュ ジョ
jya,jyu,jyo	じゃ じゅ じょ	ジャ ジュ ジョ
ta,ti,tsu,te,to	た ち つ て と	タ チ ツ テ ト
tya,tyu,tyo	ちゃ ちゅ ちょ	チャ チュ チョ
cha,chi,chu,che,cho	ちゃ ち ちゅ ちぇ ちょ	チャ チ チュ チェ チョ
ci,tsu,tzu	ち つ つ	チ ツ ツ
+tsu,+tzu,+tu	っ っ っ	ッ ッ ッ
tha,thi,thu,the,tho	てぁ てぃ てぅ てぇ てぉ	テァ ティ テゥ テェ テォ
da,di,du,de,do	だ ぢ づ で ど	ダ ヂ ヅ デ ド
dzu,dsu	づ づ	ヅ ヅ
dya,dyu,dyo	ぢゃ ぢゅ ぢょ	ヂャ ヂュ ヂョ
dha,dhi,dhu,dhe,dho	でぁ でぃ でぅ でぇ でぉ	デァ ディ デゥ デェ デォ
na,ni,nu,ne,no	な に ぬ ね の	ナ ニ ヌ ネ ノ
nya,nyu,nyo	にゃ にゅ にょ	ニャ ニュ ニョ
ha,hi,hu,he,ho	は ひ ふ へ ほ	ハ ヒ フ ヘ ホ
hya,hyu,hyo	ひゃ ひゅ ひょ	ヒャ ヒュ ヒョ
fa,fi,fu,fe,fo	ふぁ ふぃ ふ ふぇ ふぉ	ファ フィ フ フェ フォ
ba,bi,bu,be,bo	ば び ぶ べ ぼ	バ ビ ブ ベ ボ
bya,byu,byo	びゃ びゅ びょ	ビャ ビュ ビョ
pa,pi,pu,pe,po	ぱ ぴ ぷ ぺ ぽ	パ ピ プ ペ ポ
pay,pyu,pyo	ぴゃ ぴゅ ぴょ	ピャ ピュ ピョ
ma,mi,mu,me,mo	ま み む め も	マ ミ ム メ モ
mya,my,myo	みゃ みゅ みょ	ミャ ミュ ミョ
ya,yu,yo	や ゆ よ	ヤ ユ ヨ
Ye	い ぇ	イ ェ
+ya,+yu,+yo	ゃ ゅ ょ	ャ ュ ョ
ra,ri,ru,re,ro	ら り る れ ろ	ラ リ ル レ ロ
rya,ryu,ryo	りゃ りゅ りょ	リャ リュ リョ
la,li,lu,le,lo	ら り る れ ろ	ラ リ ル レ ロ
lya,lyu,lyo	りゃ りゅ りょ	リャ リュ リョ
wa,wi,we,wo	わ ゐ ゑ を	ワ ヰ ヱ ヲ
+wa	わ	ワ
n,n',n"	ん ん ん	ン ン ン
q,x	q ×	Q X
y= f-	¥ £	
^^,^.,^-,^+	^ ・ … ＋	
1,2,3,4,5,6,7,8,9,0	１ ２ ３ ４ ５ ６ ７ ８ ９ ０	
!,@,#,$,%,&,*,(,)	！ ＠ ＃ ＄ ％ ＆ ＊ （ ）	
-,_,=,{,[,],},|,\,~,`	ー ＿ ＝ ｛ ［ ］ ｝ ｜ ＼ ～ 「	
:,;,",',<,,,>,.,?,/	： ； ¨ 」 〈 、 〉 。 ？ ／	

4.7 Entering Kanji

In reality, the version of “I am studying Japanese” we have been working with

わたしはにほんごをべんきょうしています。

really looks funny (and is very hard to read). We will now look at how to make this sentence look like

私は日本語を勉強しています。

The major difference here is that the second form has kanji.

4.7.1 Explicit Kanji Conversion

You can explicitly convert kana to kanji by highlighting the text and executing a kanji conversion. The selected text should be all hiragana.

An explicit kanji conversion can be initiated via the *Kanji/Convert* menu command, choosing the kanji convert button on the toolbar, by selecting *Convert* from the popup menu (right click[14]), or via any of the following key commands; F2, F3, Ctrl+>, Ctrl+<, Ctrl+Up, or Ctrl+Down. (On Windows CE PPC machines, the rocker-switch may be used to generate a kanji conversion, and/or select kanji from the kanji list.)

When you start a kanji conversion two things can happen. If JWPce cannot find a kanji string that corresponds to the selected text you will hear a beep. In this case you should try selecting part of the text and attempting another conversion.

In the other case JWPce could find any number of kanji that are valid representations of the text you have selected. In this case the kanji bar (Figure 4.1) will display all possible kanji representations of the kana. The kanji displayed on the kanji bar are presented in the order of frequency of usage, so the most common kanji used to represent a particular kana are presented first. The last entry in the kanji bar will be the hiragana text that you selected. One of the kanji representations will be selected by JWPce and inserted into your text.

You may now use the mouse or keyboard to select the specific kanji that you want inserted into your document. A particular kanji representation can be selected directly with the mouse, or you can use the following keys to move through the possible kanji conversions:

[14] Make sure to right click in the selected area, otherwise the selection will be cleared before you can convert it to kanji.

Key	Action
F2, Ctrl+>, Ctrl+Up, (rocker-up)	Next selection to the right
F3, Ctrl+<, Ctrl+Down (rocker-down)	Previous selection to the left

If you move the selected conversion off the right or left end of the list of possible conversions, it will wrap back to the other end.

As an example of conversions, if you enter the text しゅうかん, JWPce will suggest the following possible kanji conversions:

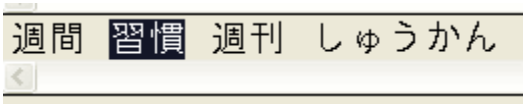


Figure 4.1: Part of the kanji bar

The first three entries mean “weekly”, “customs”, and “published weekly”; last is the hiragana entered. Generally, conversions are presented such that the most common conversions are presented first (on the left).

> **Tip:** If you want to check the meaning of the kanji on the kanji bar, right clicking (Alt+left click) on a character will get *Character Information* for the selected character (section 6.1). This can be used to determine the correct kana→kanji conversion when you are not sure.

Initially JWPce simply proposes the first selection in the list as the suggested conversion (the most common one). When you select a particular kana→kanji conversion, however, JWPce remembers your choice and next time you enter the same kana, JWPce will suggest the conversion you previously selected.[15]

> **Tip:** If you regularly use a kana→kanji conversion that is not contained in JWPce you can add a user conversion to the list of possible conversions (section 4.8).

4.7.2 Inline Kanji Conversion

The above method (first typing the hiragana, then selecting the text, and finally converting it to kanji), works well, but is not very convenient. It would be tedious to type a reasonably sized document using just this method. To make typing and kanji conversion easier, JWPce can convert kana to kanji as you type, or inline.

[15] The *Conv Choices* control on the *Advanced* page of the *Options* dialog box (Ctrl+O or *Utilities/Options*) determines the number of kana→kanji conversions that JWPce remembers (section 10.6).

You start an inline kanji conversion by capitalizing the first character of the word. For example, if you wanted to type to study you could enter `Benkyou`, and JWPce would display 勉強.

As you enter text in an inline kanji conversion, the text is highlighted, and each new hiragana you enter extends the highlighted region. When you type enough characters for the correct kanji to be determined, that kanji is automatically inserted into the text. At the same time, the kanji bar displays any other possible conversions, and the raw hiragana. As long as the kanji bar displays the kana, you can still use the mouse or keyboard shortcuts (see above) to change the kanji translations.[16]

When you are performing an inline kanji conversion and you want to delete the last character typed you can simply press the BackSpace key, which will delete one hiragana. If you delete the first hiragana the kanji conversion will be aborted. If you explicitly move the cursor (cursor keys or mouse), the kanji conversion will also be aborted.

The inline conversion will not actually convert the kana to kanji until it determines that you can no longer add additional characters to the hiragana and make a valid kanji compound. This can occur in two different ways. First, as in the example above, it can occur when JWPce determines that it would not be possible to add any more hiragana to this compound. Second, when you type a character that cannot be inserted into the kanji compound; for example, if you enter `Nihongo`, the kanji is not converted, but if you enter `Nihongowo`, JWPce displays 日本語を. This is because the particle を cannot possible be included in the kanji compound.

> **Tip:** Remember that you can still change the kanji conversion as long as the kanji bar displays alternative conversions, even if you have typed other characters and the cursor is beyond the kanji.

Sometimes you want only a short bit of a kanji compound (for example the kanji 勉). You cannot get just this kanji by allowing JWPce to determine the end of the conversion, because the program cannot tell that you don't want 勉強. In these cases you can force JWPce to perform the kana to kanji conversion in one of two ways. First, you can explicitly force the kanji conversion via the *Kanji/Convert* menu command, by selecting *Convert* from the popup menu (right click), or via any of the following key commands; F2, F3, Ctrl+>, Ctrl+<, Ctrl+Up, Ctrl+Down, rocker-up or rocker-down. In the above example, entering `Ben`[17], and pressing F2 will result in the following possible conversions:

[16] The above example of `Benkyou` leads to only one possible kanji conversion, but other examples (such as `Denki`) lead to more than one possible kanji conversion.

[17] If you actually do this example, you will notice that the ん character does not show up in the edit window until you press F2; this is because JWPce needs to see if you want to type `ni`, or `nya`, etc.

采 便 勉 娩 弁 鞭 べん[18]

> **Tip:** If you want to check the meaning of the kanji on the kanji bar, right clicking (Alt+left click) on a character will get *Character Information* for the selected character (section 6.1). This can be used to determine the correct kana→kanji conversion when you are not sure.

The other way to end a kanji conversion is simply to start another one. If you capitalize the first letter of a hiragana JWPce takes everything you have typed so far and converts it to kanji. There is a slight risk here, in that when you do this you do not get a chance to choose which kanji you get, you simply get the default kanji. But after you have been using JWPce for a while, and JWPce has remembered a number of your last kana to kanji conversions, this can be a very fast way to input many kanji.

One of the few problems with this system relates to the characters A, I, U, E, and O. JWPce must determine if you want katakana characters (アイエウオ), of if you want to initiate a kana to kanji conversion. The rule JWPce uses to determine this is when an upper case character is followed by a lower case character, a kana to kanji conversion is started. If an upper case character is followed by another upper case character katakana characters are generated.

Using this system, in order to generate kanji such as 亜, one must enter A and then start a kana to kanji conversion explicitly (*Kanji/Convert* menu command, *Convert* from the popup menu (right click), F2, F3, Ctrl+>, Ctrl+<, Ctrl+Up, Ctrl+Down, or rocker up/down). Further, to enter a katakana ア one must enter something like AA, and BackSpace, or A and press a cursor key.[19]

> **Tip:** When entering some kanji with very common kana it is sometimes easier to enter a kanji compound containing the kanji and delete the unwanted part of the compound. For example if you just wanted the kanji 強, and entered the text Kyou and pressed F2 you would get a list of 44 possibilities. Thus entering Benkyou and then deleting the 勉 kanji can be faster.

4.8 User Kana to Kanji Conversions

The kana to kanji conversion dictionary used by JWPce contains most common conversions. However, it is not possible for the dictionary to contain all possible

[18] See section 6.12 for why some of the kanji are colored.
[19] There are a number of ways to force JWPce to output the katakana character; these are simply some examples of common ways.

conversions (particularly with verb endings - there are simply too many possibilities). To remedy this problem JWPce allows you to define your own kana to kanji conversions.

You access the user conversions via the *Utilities/User Conversion…* menu command or selecting *User Convert* from the toolbar. This will open a dialog box containing an edit-list control (section 3.8).

If there are entries in the conversions list, they may look something like:

しごと → 仕事

This line can be read as “the kana しごと can be replaced by the kanji 仕事”. Since this is a noun, this is a very simple conversion.

The conversion line for a ichidan doushi (ru) verb might look something like:

しらべ → 調べ

This line can be read as “the kana しらべ can be replaced by a kanji 調べ” (this is actually from the verb 調べる, to investigate). There are some things to notice about this entry. First, the verb ending る is not included. This is to allow matching of different possible endings for the verb (調べます, 調べない, etc.). If the ending were included, it would only match the dictionary form of the verb.

Second, the kana べ is included in the definition. This is because if it were not included, the kana しら would match the kanji 調. In this case, whenever you tried to convert the kana しら, JWPce would suggest the kanji 調, but if しら is not followed by べ, this would not be a valid conversion.

You can also tell JWPce that a particular kanji conversion is specifically an ichidan doushi (ru) verb, then the conversion line would look like this:

しらべ(る) → 調べ

The (る) indicates that his is an ichidan doushi (note the use of parentheses instead of the brackets use on godan doushi).

There are a number of advantages to this type of entry for ichidan doushi than the type used above. The major advantage is that JWPce can use the specific knowledge that this is an ichidan doushi to make more intelligent decisions in suggesting kanji conversions.

When dealing with a godan doushi (u) verb, the entry might look something like this:

はたら[く] → 働く

Here, the line indicates that the kana はたらく can be represented by the kanji 働く (to work). Further, the part of the line that contains [く] indicates what the verb ending is. This would cause JWPce to automatically generate the following conversions:

はたらか → 働か
はたらき → 働き
はたらく → 働く
はたらけ → 働け
はたらこ → 働こ
はたらい → 働い

These are of course all of the possible godan-doushi translations.

The conversion system also supports special conversions for い- adjective. Such entries appear in the conversion list as:

あたらし{い} → 新し

This entry could have being been generated without indicating that it was an adjective, however, by indicating that this is an adjective, JWPce can make more intelligent decisions in suggesting kanji conversions.

4.8.1 Editing and/or Adding User Conversions

You can use the edit-list controls to manipulate the list of user conversions (moving things up, down, delete, add, etc.).

You can also edit an existing entry or add a new entry. Either of these choices brings you to the *User Conversion* dialog box. This dialog box allows you to enter a kana string, a kanji string, and indicate if this is a godan doushi, ichidan doushi, or i-keiyoushi. JWPce requires that the kana string contain only hiragana. The kanji string can contain anything you like.

If you check the ichidan doushi box, the kana string must end in a る. If the kana and kanji strings both end in る, JWPce will automatically remove the る the kanji string.

If you check the godan doushi box, the kana string must end in a valid kana for a verb (くすつ, etc.). If the kana and kanji strings end in the same kana, JWPce will automatically remove that kana from the kanji string.

If you select the i-keiyoushi box, the kana string must end in an い. If the kana and and kanji strings both end in い, JWPce will automatically remove the い from the kanji string.

If you make an entry that is not a verb or adjective, you can include multiple kanji representations of the same kana string by separating them with a slash (/).

> **Tip:** You can use the user defined kana to kanji conversions to save typing. Since you can put anything in the kanji part of the conversion, you could even put an entire paragraph, and when you enter the kana, that paragraph would be inserted into the text.

4.8.2 Importing User Conversions

You can use the *Import* button (or simply drag a file onto the dialog box) to import a user conversion list. This can be used to import your friends' user conversion lists without having to reenter it, or without having to disturb your own list.

4.9 Working with Microsoft's Global IME

If you have Microsoft's Global IME, you can use this as an input system for JWPce. In order to use the IME with JWPce you must have the full Global IME. The full Global IME is distributed with Japanese versions of Windows, Windows 2000, Windows XP, and some versions of Windows NT. This is not the limited IME that can be used with Internet Explorer and some Office applications.

If you set the Global IME into Japanese mode, JWPce will automatically use the Global IME as an input system. If you set the Global IME into English mode, JWPce will automatically use its internal input system. You can freely switch back and forth using whichever system you find more convenient at the time.

Currently JWPce functions only as a partially IME-aware application. This implies that input will be through a composition window. This will be improved in later versions when I have a system that can be used for testing and evaluation.

For instructions on using the Global IME please consult your Microsoft documentation.

WARNING! Although the IME is supported on Windows CE systems, the support is not as extensive as on Windows. IME support is standard only on Windows CE version 2.1, but JWPce is to run on Windows CE 2.0 or above. When full IME support is included, this problem will be resolved.

4.9.1 IME Support on Windows XP and forward

Starting with Windows XP Microsoft has changed the operation of the global IME. Before Windows XP, the IME would transmit Japanese text to any program that indicated that the IME was supported. Starting with Windows XP, the IME will transmit Japanese characters to any program, but only if Japanese is the selected non-Unicode program language. If the non-Unicode program language is set to any other language the IME will only send a string of question marks (???) to the application.

The long term solution would be to convert JWPce to a UNICODE application; however, this will prevent the program from working on Windows 95 and Windows 98 systems.

In the sort term, you can change the language used for non-Unicode applications to Japanese as follows:

1. Open Control Panel.
2. Open *Regional and Language Options*.
3. Select the *Advanced* tab
4. Change the *Language for non-Unicode Programs* to Japanese.

This will allow the IME to send Japanese characters directly to JWPce and other non-Unicode programs. Note that changing this parameter can make slight changes in the display used for various non-Unicode programs. In general these don't cause any problems, but you can also change it back at any time.

5. Basic Editing and Formatting

This chapter covers basic issues in word processing, such as moving around the document, formatting the document, and locating text within the document.

5.1 Moving Around the Document

On opening JPWce, you will see two cursors; there is a flashing vertical bar at the beginning of the blank page, and an arrow cursor somewhere in the page. The bar cursor indicates the text entry point, while the arrow cursor allows you to reposition the entry point when there is text on the page. When you move to a new location and click, the bar appears to the left of the selected character.

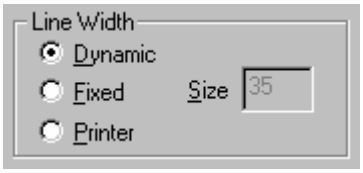
You can also use the following keyboard commands to move around the document:

key	Action
Home	beginning of line
Ctrl+Home	beginning of document
End	end of line
Ctrl+End	end of document
Left	move one character left
Ctrl+Left	move one word to the left*
Right	move one character right
Ctrl+Right	move one word right*
Up	move up one line**
Down	move down one line**
PageUp	move up one screen worth of lines
PageDown	move down one screen worth of lines
Delete	Delete character to the cursor right
BackSpace	Delete character to the cursor left (When entering kana, this will delete the current kana.)

*JWPce defines a word in Japanese text (including JASCII) as a string of characters of the same type (hiragana, katakana, JASCII, kanji, punctuation. etc.).
** It is possible on PPC systems to have the up and down keys move a page at a time instead of a line at a time. This can be more convenient in cases when you are using JWPce as a referenced or as a file viewer. This option can be set on the *General* page of the *Options* dialog (section 10.1).

The scroll bars can be used to view the correct part of the document before using the mouse or keyboard to position the cursor.

5.2 Text Display and Line Width



Before the issue of formatting text (next section) can be discussed, the way text is displayed needs to be examined. JWPce has three basic ways to control the line width of text displayed on the screen. These can be changed from the *General* page of the *Options* dialog box (*Utilities/Options…* or Ctrl+O).

Dynamic: This is the default display mode. In this mode the width of displayed lines is determined basically by the width of the window. When you resize the window, JWPce reformats the display to adjust the width of the paragraphs so they fit your window. This mode is very useful for general work, and allows you to read text without scrolling the screen horizontally. The disadvantage of this mode is that it does not accurately reflect the way the text will be printed.[20]

Fixed: In this mode the width of a line of text is a fixed number of kanji character widths (JWPce almost always measures horizontal formatting distances in the width of a kanji character.) This mode is primarily designed for use when you want to format a document for a printer that is not installed on your machine, or to format a document from a Windows CE machine, since these machines do not support printing.

Printer: This mode formats the document as it would be printed on the currently selected printer. This provides a very accurate preview of the printed document; in this mode, you may have to resize the JWPce window or use the scroll bars to see all of your text.[21]

When formatting Japanese text, each character normally occupies a space that is exactly the same width. When the end of the line is reached, you simply start a new line. This makes formatting text easy, but can lead to some odd results. For example, you can get a line that begins with punctuation. JWPce can achieve more appealing results when the formatting is relaxed. The following options allow JWPce to extend a line into the right margin for some punctuation and for small kana. These options can be controlled from the *Font/Format* page of the *Options* dialog box (Ctrl+O or *Utilities/Options…*), and are on by default (section 10.3).

Punctuation This option allows JWPce to adjust paragraph formatting by placing some punctuation (most of the punctuation rendered on the left side of the character box) in the margins. This will generally prevent having to begin a line with punctuation. (On by default.)

[20] If you are using a dynamic display and print the text (section 9), JWPce automatically reformats the text for the printer, prints the document, and then reformats the text back to dynamic mode.
[21] On Windows CE machines, this option formats the document as if it were printing on an 8.5”x11” sheet of paper.

Small kana This allows JWPce to adjust paragraph formatting by placing small kana in the right margin. This will generally prevent having to begin a line with a small kana. (On by default.)

5.3 Formatting Text

Formatting text consists of two parts: formatting the entire paragraph, and character placement. Another aspect of formatting is the issue of page layout, which refers to how the text is printed. Page layout is covered in section 9.5.

5.3.1 Character Placement and the Tab Key

In Japanese text every character occupies the same space, and the paragraph is broken into lines whenever the line is full, even in the middle of a word. In English, characters are proportionally spaced, and the text is broken into lines so that words are generally not broken. When you edit text that contains both Japanese and ASCII (English) text, adjustment of character spacing in the transitions (Japanese↔English) becomes an issue.

As an example, consider the following text:

英語のIは日本語の中にある。
私は日本語が好きだ。

The “I” character in the first sentence interferes with the spacing of the Japanese characters that follow it, and the upper line does not align with the lower line. To correct situations like this, the Tab character can be used to realign the text with Japanese character spacing:

英語のI　は日本語の中にある。
私は日本語が好きだ。

In this example, pressing Tab after the “I” causes the upper line of Japanese text to align correctly with the lower line.

Printing Concerns

In order to keep the display rate fast, JWPce does not adjust the spacing of English characters on the screen, thus the second example above looks odd (with the “I” character way over to the left). By default, when printing, however, characters such as the “I” above are centered in the space, resulting in printer output that would look something like:

英語の　I　は日本語の中にある。
私は日本語が好きだ。

By default, when printing, English text that is followed by a Tab character is justified during printing if the *Justify ASCII Text* options is selected on the *Advanced* page of the *Page Layout* dialog box (*Utilities/Page Layout…* or Alt+L).

5.3.2 Formatting Paragraphs

Each paragraph of text has its own characteristics, such as margins, and line spacing. These parameters are set by the *Format Paragraph* dialog box.

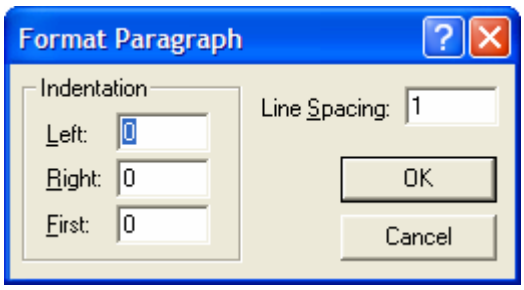


Figure 5.1: Paragraph Format dialog box

Depending on how you start this dialog box, you can format a single paragraph, a range of paragraphs, or the entire file:

Format a paragraph: If the cursor is in a paragraph and text is not selected, you can format the paragraph (*Utilities/Format Paragraph…*, *Format Paragraph* from the toolbar, or Alt+Shift+F).

Format range of paragraphs: Select all the paragraphs you want to format, then open the *Paragraph Formatting* dialog box (*Utilities/Format Paragraph…*, *Format Paragraph* from the toolbar, or Alt+Shift+F). The format of all the selected paragraphs will be changed.

Format entire file: You could use *Edit/Select All* before invoking the *Paragraph Formatting* dialog box (see above), but it is easier to use the *Utilities/Format File…* command or the *Format File* toolbar button (Ctrl+Shift+F).

The formatting parameters are in two sections, *Indentation* and *Line Spacing*. *Indentation* parameters are measured in units of kanji character width (the amount of horizontal space a single kanji character takes up). The *Left* parameter is the amount of space between the left margin and the selected paragraph(s). The *Right* parameter is the amount of space between the right margin and the selected paragraph(s). The *First* parameter is the extra amount of space added to the first line of the paragraph. Using this parameter, you can create a normal indented paragraph (enter a positive value), or a hanging paragraph (enter a negative value).[22]

[22] The Indentation parameters have limits to their size. *Left* and *Right*, must be in the range 0 to 255, and *First* must be in the range -127 to 127.

The *Line Spacing* parameter determines the spacing of lines in the paragraph. A value of 1 is normal spacing, 2 is double spacing, and 1.5 is space-and-a-half.

5.3.3 New Paragraphs and Splitting Paragraphs

A new paragraph can be generated by pressing the Enter key when the cursor is at the end or beginning of a paragraph. If the cursor was at the beginning of the paragraph, the new paragraph will be generated before this one. If the cursor was at the end, the new paragraph will be generated after this one.

You can divide a paragraph into two by pressing the Enter key with the cursor located where you want to divide the paragraph. (In reality, starting a new paragraph above is just a special case of dividing a paragraph.)

When you generate a new paragraph, it inherits the *Paragraph Format* (section 5.3.2) from the paragraph the cursor was in when you pressed Enter. Thus if you divide a paragraph, both halves will have the same *Paragraph Format*.

This makes a slight difference in generating new paragraphs. If you place the cursor at the end of a paragraph and press Enter, a new paragraph is generated following the current one, and with the same format. If you do the same thing at the beginning of a paragraph, the format for the new paragraph comes from the following paragraph.

5.4 Selecting Text

Selected text is used for a number of things within JWPce. You can select text in one of five ways:

1. **Keyboard –** Press and hold the shift key while using any of the cursor control commands. This will select (highlight) text as you move the cursor.
2. **Mouse –** Press and hold the left mouse button and drag across the display (pen drag). This will highlight the text as the pointer is moved. If you drag to the upper or bottom edge of the display, or to the right or left edge of the display, JWPce will automatically scroll the display for you.
3. **Double Click** – If you double click the mouse on the text the word containing the mouse will be highlighted (see note on page 69).
4. **Menu** – Selecting the *Edit/Select All* (Ctrl+Shift+A) command from the menu will select all text in the file.
5. **Kana to kanji conversion** – By generating an inline kana-to-kanji-conversion (section 4.7.2).[23]

[23] The selected text generated by an inline kana-to-kanji conversion is slightly different than the normal selected text. This can be seen when you type another character - that character does not replace the selected text.

Once you have selected text, the next character you type will replace the selected text (see footnotes). If you wish to cancel the selection, this can be done simply by moving the cursor with any of the standard cursor controls or by clicking with the mouse.

> **Tip:** If you select text before entering a dialog box, that text will usually be inserted into the first edit control in the dialog box.

5.5 Using the Clipboard

The Windows clipboard allows you to pass data from one program to another, as well as within a given program. The following clipboard commands are supported:

Copy – Copies the currently selected text to the clipboard (*Edit/Copy*, *Copy* form the popup menu, Ctrl+C, or Ctrl+Ins).
Cut – Copies the currently selected text to the clipboard and then deletes the text (*Edit/Cut*, *Cut* from the popup menu, Ctrl+X, or Shift+Del).
Paste – Copies text from the clipboard into your file at the cursor location (*Edit/Paste*, *Paste* from the popup menu, Ctrl+V, or Shift+Ins).

A number of system clipboard formats are supported. These can be used to transfer data to different types of programs:

JWPce-Clip – JWPce's private clipboard format. This can be accessed by other versions of JWPce, and preserves all formatting and text characteristics. All other clipboard formats do not preserve the text formatting.
TEXT – Text format used by Windows 95/98/ME/NT/2000/XP. See section 5.5.4 for a discussion of the types of data encoding.
OEMTEXT – We can treat this as identical to the TEXT format (above).
UNICODETEXT – Unicode data format that is supported by Windows ME/NT/2000/XP and Windows CE. JWPce supports this format under Windows 95/98, but only a few other programs are able to use this format. This format is preferred by JWPce because it allows for full and accurate representation of Japanese characters.
BITMAP – This is actually a graphics format. JWPce exports a bitmap image of the selected text that can be included in a word processor. As a matter of fact, this was how the Japanese examples in this manual were produced.

5.5.1 TEXT Clipboard Format

The TEXT clipboard format normally stores text as ASCII information. This works well for English, but does not work well for Japanese text, since ASCII can hold only 256 distinct characters. To get around this, a number of Japanese encoding systems have been developed. All of these work by inserting the Japanese characters in some unusual way that tricks most programs into accepting them as normal text. If you ever see text that looks something like:

> @,»,Ì“ú,ª‹ß,Ã,-,É,Â,ê AŽ„,Í

you may be seeing Japanese text that has not been decoded properly.

This format is not supported under Windows CE. When working in TEXT format you will need to deal with encoding and decoding issues (section 5.5.4).

5.5.2 UNICODETEXT Clipboard Format

The UNICODETEXT clipboard format generally passes data in the form of UNICODE data. UNICODE is a computer system of storing characters that provides for all languages of the world. This simplifies the job of writing software that can be used in more than one language. This system appears to be winning out over other encoding systems.

If UNICODETEXT data is available, JWPce will use this format as the preferred clipboard format. This allows seamless communication between JWPce and other UNICODE capable programs (including Microsoft Word, Internet Explorer, and Outlook).

Only Windows ME/NT/2000/XP support both TEXT and UNICODETEXT data, which allows JWPce to easily detect UNICODE data. All other systems really only support one format; because of this, determination of the correct encoding format can be difficult.

On Windows, JWPce generally exports UNICODE data to the UNICODETEXT format regardless of the export format you have chosen (which will be exported to TEXT format, see below). Under Windows 95/98, however, very few programs support the UNICODETEXT format.

Windows CE supports the UNICODETEXT format only, so all data must be exported though this format. If one of the encoding systems (section 5.5.4) other than UNICODE is selected, the clipboard will actually contain UNICODE values for the ASCII characters in the encoded text.

Technical Tip: The UNICODETEXT format can be disabled on Windows machines by using the *No UNICODETEXT format* checkbox on the *File/Clipboard* (section 10.4) page of the *Options* dialog box. Generally, this is not necessary, but under some circumstances it may be useful. For example, when trying to insert shift-JIS formatted text into some NT programs, that don't have a Paste/Special… option, they may only ready the UNICODETEXT data and not the TEXT data. In such cases disabling the UNICODETEXT format may be necessary

5.5.3 BITMAP Clipboard Format

The BITMAP clipboard places a bitmap on the clipboard that contains the image of the selected text. The bitmap can then be imported into a word processor, allowing almost any word processor to contain Japanese text but not to edit it; this technique was use in this manual.

The font used to render the bitmap image can be set separately from the font used to render main text. You can even have JWPce render the clipboard bitmap using vertical writing by setting the font as vertical. These can be set on the *Fonts/Format* page of the *Options* dialog (section 10.3).

Tip: If you use this method you get the best quality of text by changing the clipboard font to a larger font (*Font/Format* page of the *Options* dialog, section 10.3), and then reducing the font size in the word processor. This allows the word processor to print the Japanese characters at a much higher resolution.[24]

If you are using the color-kanji feature (section 6.12) you can choose whether or not the bitmap exported to the clipboard should be in color. This is controlled by the *Clipboard BITMAP* checkbox on the *Misc* page of the *Options* dialog (*Utilities/Options…* or Ctrl+O). If you do not use color, JWPce generates a 1 bit-plane black and white bitmap. If you use color, the bitmap depth matches your screen resolution.

[24] The Japanese text used in this manual is in low resolution (16x16 font). This was done to reduce the size of the file.

Tip: If you are using Microsoft Word, there are better ways to display Japanese. In particular you can get Microsoft's Japanese support kit for Word (as of this writing this was free). You can then export UNICODE data from JWPce and import it directly into Word. You can manipulate the data in Word, and you can print the data in good quality.

Depending on the version of Word you are using and the document you are editing (in Word), you may have to select the text that you just pasted into the document and change the font to a Japanese font to view the text correctly. This problem can usually be clearly identified when the text you just inserted shows up only as a sequence of boxes.

Technical Tip: The BITMAP format can be disabled on Windows machines by using the *No BITMAP format* checkbox on the *File/Clipboard* (section 10.4) page of the *Options* dialog box. Generally, this is not necessary, but under some circumstances it may be useful. For example, some programs have been known to try to import the bitmap image instead of the text. In such cases disabling the BITMAP format may be necessary.

5.5.4 Clipboard Encoding

When exporting or importing from the clipboard in TEXT format (or UNICODETEXT on Windows CE) you have to deal with the Japanese encoding methods. (A more comprehensive discussion of encoding systems is presented in section 8.2.) JWPce supports the following encoding systems: EUC, Shift-JIS, New JIS, Old JIS, NEC JIS, UTF-7, UTF-8, and UNICODE. These are all methods for encoding Japanese characters into normal ASCII encoding space (except UNICODE, which is a completely new encoding system).

Export Encoding

When exporting data, you simply choose the format you want to export the data as (*File/Clipboard* page of the *Options* dialog box, *Utilities/Options…* or Ctrl+O). The default format is Shift-JIS. You need to choose a format that is compatible with the application you are going to import the data to.

Tip: Until recently Shift-JIS was the most common format, but you must use UNICODE format if you want to import into most Microsoft applications. If you need to send data through some old style e-mail systems, you should probably try New JIS format, since it does not use extended ASCII codes.

Import Encoding

Importing data is somewhat more difficult, because you may not know the format of the data. Generally, however, you can allow JWPce to attempt to determine the type of data on the clipboard. This is activated by setting the *Import* option to *Auto-Detect* on the *File/Clipboard* page of the *Options* dialog box (*Utilities/Options…*, Ctrl+O).

Most of the time you should leave the clipboard import set to *Auto-Detect*. It is not always possible to determine without doubt which of the Japanese encoding formats is being used. When JWPce cannot determine the format, it will default to Shift-JIS. In these cases, you may need to force the encoding system to EUC or UNICODE to correctly decode the data. This is more likely to be a problem on very short text sequences. (A more comprehensive discussion of encoding systems is presented in section 8.2.)

WARNING! Because UTF-7 format was designed to be indistinguishable from simple ASCII text, JWPce auto-detect cannot identify UTF-7 encoded files.

5.6 Undo and Redo

Because mistakes happen, you can undo the most recent changes you made to your document. Instead of saving every individual change to your document, changes are grouped together and thus can be undone in a block. For example, if you delete a number of characters all in a row, these deletions will be grouped together into one undo operation.


To undo actions, you can execute the *Edit/Undo* command (Ctrl+Z), or *Undo* from the popup menu. Each time you execute the undo command, one undo level is undone until you run out of stored changes.[25]


If you accidentally undo more than you wanted to you can redo your last changes (*Edit/Redo*, *Redo* from the popup menu, or Ctrl+Y). You can redo anything you have undone until you make an editing change to the file, at which time the redo actions are disposed of. You can, for example, use the cursor commands to move around the document without loosing your ability to redo changes.

By default JWPce keeps the last 50 changes per file. You can adjust the number of changes on the *Advanced* page of the *Options* dialog (*Utilities/Options…* or Ctrl+O, section 10.6).

[25] You can use the *File/Revert* (Alt+R) command to undo all changes to the file since you last saved it (section 8.6).

5.7 Search and Replace

JWPce has a number of search features that are designed to allow you to find text, and/or to replace text within your file(s). The search commands are the following:

Search – Start a search (*Edit/Search*, Ctrl+F, Ctrl+S, or F8).
Replace – Start a replace operation (*Edit/Replace*, Ctrl+R, or Shift+F8).
Find Next – Repeat last search or replace (*Edit/Find Next*, Ctrl+N, or F9). Selecting *Find Next* before actually initializing a search will cause the *Search* dialog to open.
Reverse Search – Change the search direction and search again (*Edit/Reverse Search*, Ctrl+B, or F7).

When you start a search or replace operation, JWPce displays the appropriate dialog box (the *Search for Text* dialog lacks the *Replace by:* box and the *No Confirmation* check box shown in the illustrated *Search and Replace* dialog):

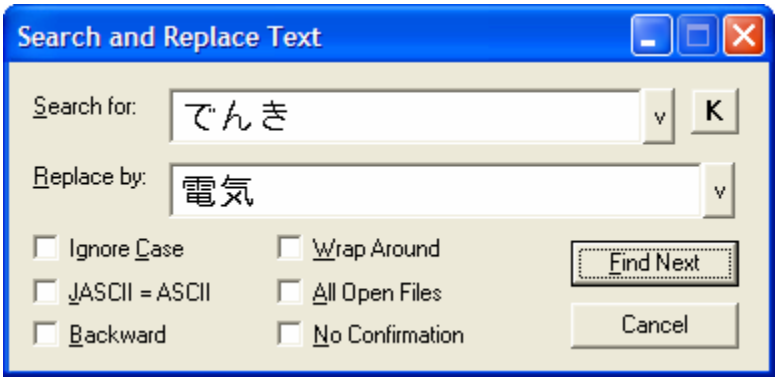


Figure 5.2: Replace dialog box

The main contents of the dialog box are: the *Search for* string, which is what we will search for; the *Replace by* string, which is what it is to be replaced with; an input mode selection button (K->A->J); and a number of check boxes for flags. Note that both the *Search for* and *Replace by* string have history buffer associated with them, thus you can recall previous entries. The check boxes have the following actions:

Ignore Case – Treats upper case and lower case ASCII and JASCII characters as the same.
JASCII = ASCII – Treats JASCII and ASCII characters as the same.
Backward – Searches backward through the file (this flag is always cleared when you enter the dialog).
Wrap Around – When the search is complete, this flag allows it to start over again at the beginning of the file.
All Open Files – Searches through all open files, going on to the next file after it is done with the current file.

No Confirmation – Performs replacements without asking for confirmation (this flag is always cleared on entering the *Search and Replace Text* dialog box.).

When you execute a search or replace, JWPce searches until it finds the string. The found string is shown highlighted when the search ends.

When you execute a replace command, you can either have the replace operations performed automatically, or JWPce will confirm each change with you. When confirming a change you can choose to replace the text, not replace the text, abort the search or replace all occurrences of the text (same as choosing the *No Confirmation* option above). After doing a search and replace with the *No Confirmation* option, a dialog box indicating the number of changes will be displayed.

The *Edit/Find Next* command (Ctrl+N or F9) can be used to continue the last search or replace operation. The direction of the search can be reversed using the *Edit/Reverse Search* command (Ctrl+B or F7). This can be used to backup if you have missed something you were lookup for.

Normally, JWPce keeps the Search or Replace dialog boxes open during the search so you can search again. You can disable this behavior by clearing the *Keep Search Dialogs Open* checkbox on the *Advanced* page of the *Options* dialog (section 10.6).

Tip: If you select text before executing the search or replace command, JWPce will automatically load the *Search for* string with the text you selected.

6. Working with Kanji

JWPce contains a number of features to make dealing with kanji characters easier. How to enter kanji characters into your document was covered in section 4.7. This chapter contains descriptions of a number of other kanji related features.

6.1 Character Information

You can get detailed information about any character by using the *Character Information* feature. This feature is designed primarily to provide information about kanji, but it can also display information about kana and ASCII characters.

The character information feature can be accessed in a number of different ways. You can select *Kanji/Get Info…* from the main menu; you can select *Get Info…* from the popup menu; select the *Get Info* button from the toolbar; or you can use the keyboard command Ctrl+I. Whichever method you use, you will get character information for the first character in the selected text, or the character to the right of the cursor if there is no selected text.

You can also get character information for a character using Shift+right click (Shift+Alt+tap) over the character. (Shift+left click also gets character information everywhere but in a Japanese list-box.) This is must faster than using the above methods.

Finally, many dialog boxes have *Get Info* buttons that will get character information for the currently selected kanji.

> **Tip:** Remember that you can get character information for characters in Japanese edit controls and list boxes by using the above methods.

So much information is contained in the *Character Information* dialog box that it requires more than one dialog box to display it all. Exactly how the Character Information data is displayed depends on the machine. For Windows, two dialog boxes are used; for HPCs, two dialog boxes are also used (different than Windows); and for PPCs, three dialog boxes are used. The examples here are taken from Windows, but the basic configuration is similar for Windows CE.

The *Character Information* dialog boxes are dynamic (section 3.4.1), which means you can change the size of the dialog. If the size of the dialog box is changed JWPce will display additional information. In Windows, it is possible to display all the information in one dialog box, with the exception of the *cross-reference entries*.

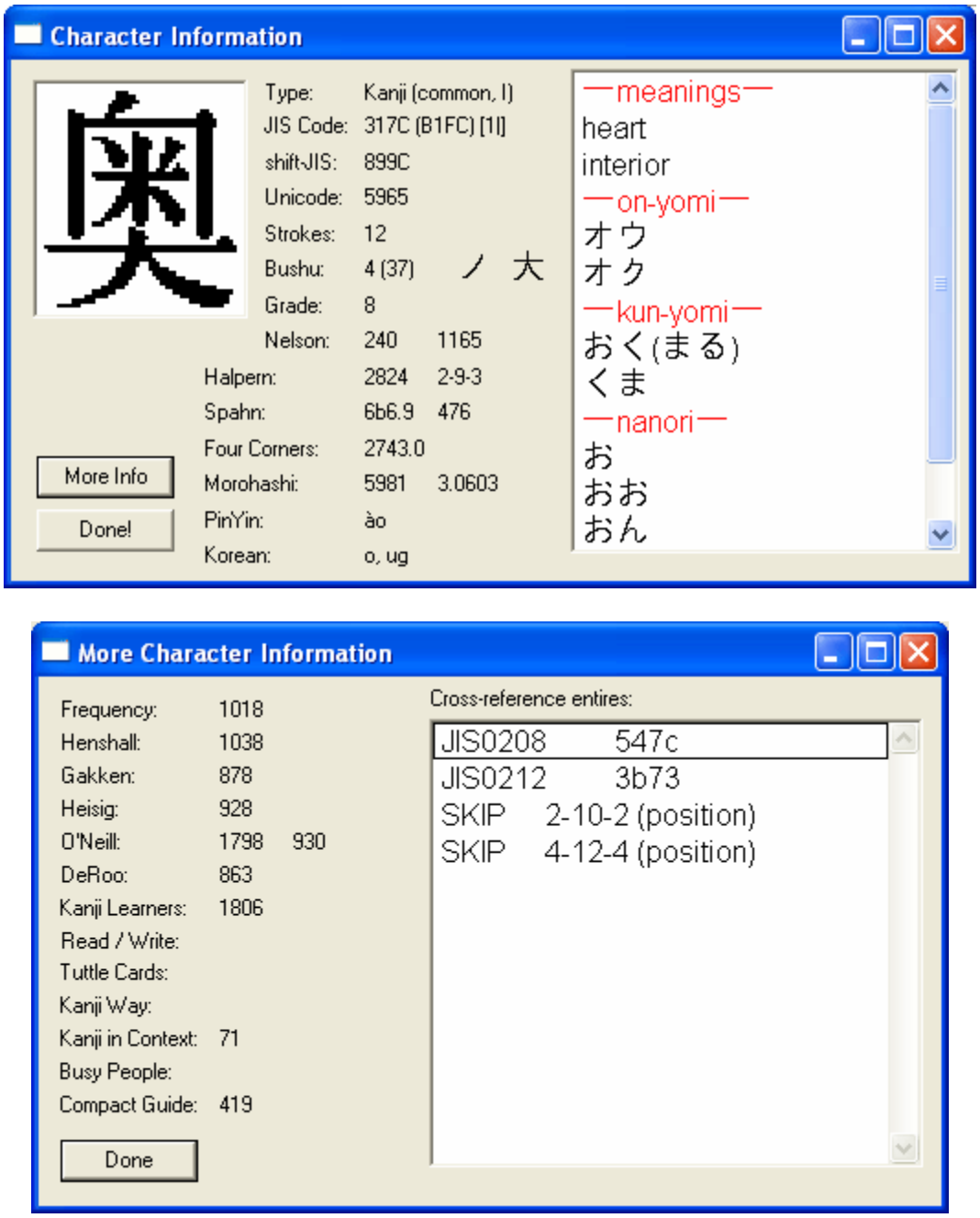


Figure 6.1: Sample of the *Character Information* dialog boxes.

These dialog boxes contain the following information:

Large Kanji – This is a large image of the character. If you have installed only the default 16x16 font the image quality will be poor, but if you install any of the higher resolution fonts (section**Error! Reference source not found.**), the image quality can be very good. (For Windows CE PPC machines, clicking on the

image of the kanji in the upper left corner of the dialog box will open a dialog box containing a bigger view of the kanji.)

Type – Indicates the basic character type.

JIS Code – The JIS (Japanese Industrial Standard) code for the character, followed by the EUC (Extended UNIX Code) value, and finally the ASCII characters that the JIS code would be displayed as.[26]

Shift-JIS – Shift-JIS code for the character.

Unicode – UNICODE code for the character.

Strokes – Number of strokes in the character.

Bushu – The character's bushu (radical) number and character as used in Nelson's "New Japanese-English Character Dictionary." If classical bushu is different than that used by Nelson, the classical bushu number will be shown in parentheses after the Nelson bushu (Figure 6.1). In such cases, the classical bushu character will also be shown to the right of the Nelson bushu (Figure 6.1).

Grade – School Grade in which Japanese children learn the character (just for fun).

Nelson – This entry contains two values. The first entry (if present) is the character index in "The Modern Reader's Japanese-English Character Dictionary", edited by Andrew Nelson. The second entry (if present), is the character index in "The New Nelson Japanese-English Character Dictionary", edited by John Haig.[27]

Halpern – This entry contains two values. The first entry is the character index number in "The New Japanese-English Character Dictionary", edited by Jack Halpern. The second entry is the SKIP code for the character, from the same dictionary. System of Kanji Indexing by Patterns (SKIP) is a scheme for the classification and rapid retrieval of kanji characters on the basis of geometrical patterns. Jack Halpern developed this system.[28]

Span – This entry contains two values. The first entry (if present) is the character index in "Japanese Character Dictionary", edited by Mark Spahn and Wolfgang Hadamitzky. The second entry (if present) is the character index number in "Kanji & Kana" by Mark Spahn and Wolfgang Hadamitzky.

[26] Can be used if you are reading JIS data files looking for a character using an ASCII editor (something programmers might have to do).

[27] At the time of writing, this is the most recent version of the Nelson dictionary, and contains the most comprehensive coverage of the JIS character set.

[28] SKIP is protected by copyright, copyleft and patent laws. The commercial utilization of SKIP in any form is strictly forbidden without the written permission of Jack Halpern, the copyright holder (jhalpern@cc.win.or.jp).

Four Corners – This is the character index in the Four Corners system of kanji organization invented by Wang Chen. (There may be two of these indexes due to ambiguities in classifying Japanese characters).

Morohashi – This entry contains two values. Both of these values are the index of the character in the Daikanwajiten by Morohashi. The first entry is the first entry (if present) is the character index in the full Daikanwajiten. The second entry (if present) is the character index in the forms of volume and index within the volume.

Pin Yin – Pinyin of each kanji, i.e., the (Mandarin or Beijing) Chinese romanization. (Depending on the version of kanjinfo.dat installed, you may not have access to PinYin, section 6.1.1).

Korean – The romanized Korean reading for the kanji. The readings are in the (Republic of Korea) Ministry of Education style of romanization. (Depending on the version of kanjinfo.dat installed, you may not have access to Korean, section 6.1.1).

meanings – (In list box) The common meanings associated with this kanji.

on-yomi – (In list box) Chinese readings for the character.

kun-yomi – (In list box) Japanese readings for the character.

nanori – (In list box) Name readings (Depending on the version of kanjinfo.dat installed, you may not have access to nanori, section 6.1.1).

Frequency – Frequency of use ranking compiled by Jack Halpern based of statistics published by The National Language Research Institute (Tokyo). The frequency is a number from 1 to 2,135 that expresses the relative frequency of occurrence of a character in modern Japanese.

Henshall – The character index in the "A Guide To Remembering Japanese Characters" by Kenneth G. Henshall.

Gakken – The character index in the Gakken Kanji Dictionary ("A New Dictionary of Kanji Usage"). Some of the numbers relate to the list at the back of the book, jouyou kanji not contained in the dictionary, and various historical tables at the end.

Heisig – The character index in the "Remembering the Kanji" by James Heisig.

O'Neill – This is a double entry. The first entry is the character index in the "Japanese Names", by P.G. O'Neill. The second entry is the character index from "Essential Kanji" by P.G. O'Neill.

DeRoo – Index in "2001 Kanji" published by Father Joseph De Roo.

Kanji Learners – Index into "Kanji Learners Dictionary" published by Kodansha in 1999 by Jack Halpern.

Read / Write – Index into "A Guide to Reading and Writing Japanese" edited by Florence Sakade.

Tuttle Cards – Tuttle kanji card number, compiled by Alexander Kask.

Kanji Way – Index into "The Kanji Way to Japanese Language Power" by Dale Crowley.

Kanji in Context – Index into "Kanji in Context" by Nishiguchi and Kono.

Busy People – Index into "Japanese For Busy People" vols I-III, published by the AJLT. This index contains the volume and chapter numbers.

Compact Guide – Index into Kodansha's Compact Kanji Guide.

Cross-Reff – These are cross-reference section includes various character references that don't fit in a standard category. The major cross-references take three forms. First is a reference to a specific character. These are indicates by JIS0208 or JIS0212, indicating references into one of the JIS character sets. (JFC can display JIS0208 characters, but not JIS0212 characters.) Second is a cross-reference to a SKIP code. These are generally common character mis-classifications. In this case JFC indicates the type of skip error. Third is a cross-reference to a dictionary entry. All of these entries are to either the "The New Japanese-English Character Dictionary" edited by Jack Halpern, or the "The New Nelson Japanese-English Character Dictionary", edited by John Haig.

In the on-yomi and kun-yomi readings fields some characters have special meanings. The "-" character is used to indicate that the kanji is used as a suffix or prefix. The characters "(" and ")" are used to indicate okurigana (part of the word written in kana).

The meanings, on-yomi, kun-yomi, and nanori are all displayed in a single list box. Normally, each section of the list box has a title (in the highlight color, section 10.2). Additionally, the readings are displayed one per line. If you wish to view more of the list at one time you can disable the titles (*Show Titles* check box on the *Misc* page of the *Options* dialog box, *Utilities/Options…*, or Ctrl+O). If you elect not to show the titles you can still identify most of the information, because the meanings are in English, the on-yomi are in katakana, but both the kun-yomi and nanori are in hiragana. Using the *Compressed* check box on the *Misc* page of the *Options* dialog box, you can also change the display format for the readings. In Compressed format commas separate individual readings and thus many more readings can be shown (see below).

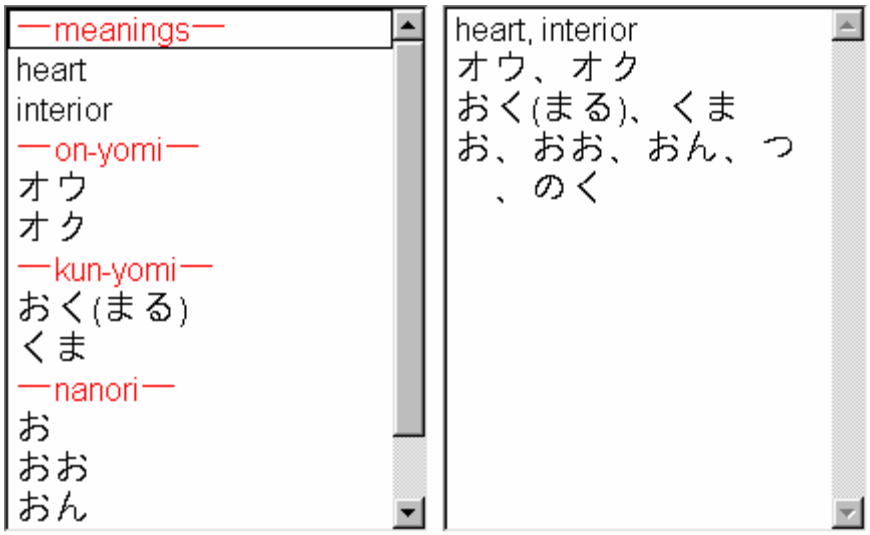
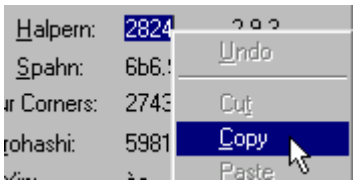


Figure 6.2: Left image is fully expanded and the right is fully compressed.

For kana characters (katakana or hiragana), the list control will display the possible romaji inputs that JWPce accepts for the character. Unlike the lists for kanji, this list cannot be compressed, but will only contain a few items for each character.

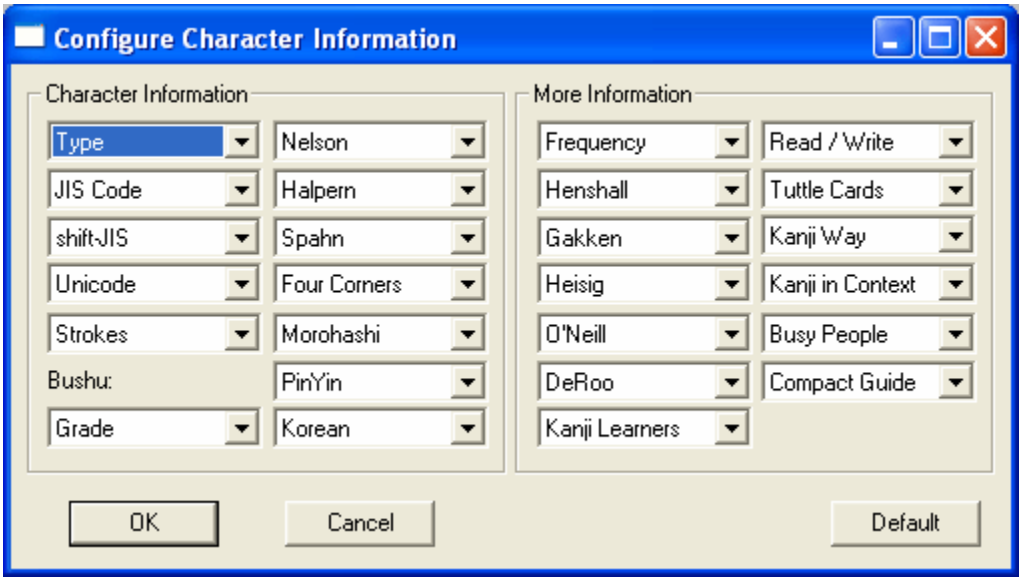
This dialog box also contains buttons that allow you to get information about the first character on the clipboard, or insert selected data from the list box into your file.



Data presented in the *Character Information* dialog is displayed in such a way that the data can be selected and copied onto the clipboard. This can be useful if you want to include say the Halpern index number for a kanji in some text. (This is not supported by Windows CE.)

6.1.1 Configuring the Character Information Dialog

The order of the information in the *Character Information* dialog can be changed using the *Configure Character Information* dialog (*Utilities/Setup Char Info…*).



Each entry corresponds to a line in the *Character Information* dialog. You can choose to display any information on any line, except for the bushu information, which is fixed. Although it is true that you can put any information element on any line, some combinations will not work very well. Due to the layout of the *Character Information* dialog box, some entries will not fit in some locations.

The configuration dialog will not allow you to select an actual entry more than once, but you can select blank for any entry you don't wish to see.

The Character Information dialog is dynamic. If you increase the size of the dialog, additional information will be displayed. The entries will be added in the order indicated in the configuration dialog.

6.1.2 Alternate kanjinfo.dat Files

The data file containing the information about kanji characters is called kanjinfo.dat. There are currently three different versions of this file. The information displayed by the *Character Information* dialog depends on the version of the data file you have installed. The smallest version of the kanjinfo.dat was designed primarily for Windows CE and contains primarily the base set of information and the normal (on and kun) readings. The medium version of the file adds all of the dictionary references and kanji lookup information. The largest version adds pinyin, Korean, and nanori readings.

You can change the version of kanjinfo.dat by simply replacing the file. JWPce will automatically adjust to the version of kanjinfo.dat you have installed. Note that several of the kanji lookup systems (section 6.2) use this file, thus changing the kanjinfo.dat file will change which lookup systems can be used.

Technical Tip: The kanjinfo.dat files are generated by processing Jim Breen's KANJIDIC file with the kinfo.exe utility. If you are competent with computer programming, you can download the JWPce utilities (jwpceutl.zip from my web site [section 14]), and generate a kanjinfo.dat file with just the information you want.

6.2 Finding Kanji

The number of different ways of organizing kanji probably exceeds the actual number of kanji. JWPce contains eight different kanji lookup systems (nine if you count the *JIS Table* [section 6.11]). These systems allow you to find kanji in much the way that a kanji dictionary would be used to find kanji.

All of the kanji lookup systems have a number of features in common. Before examining each of the kanji lookup systems, some of the common features will be examined.

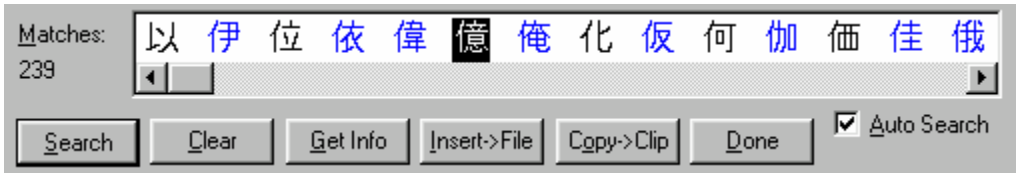


Figure 6.3: Fragment of kanji lookup dialog containing common controls.

Figure 6.3 shows the common controls that are found on most kanji lookup dialogs. The actual layout of the controls may vary from dialog to dialog, but the basic controls and function will be the same.

Matches	The matches window displays the results of the last search (see below).
Message	Displays status message and the number of matched kanji in the last search. (There is no text label for this control. In the above example this shows the value of 239.)
Search	Execute the actual search. Many of the dialog boxes have an *Auto Search* option that searches each time you make a change to the dialog box (Enter).
Clear	Clears all selected radicals, stroke count controls, and matches.
Get Info	Character information for the selected *Matches* kanji (Ctrl+I).
Insert->File	Inserts the selected *Matches* kanji into the file (or edit control).
Copy->Clip	Copies the selected *Matches* kanji to the clipboard (Ctrl+C). Holding the shift key down while selecting this item will copy all kanji from the *Matches* window to the clipboard.
Done	Closes the dialog box (Esc).

Auto Search This checkbox enables the auto-search feature. When this is selected, any change you make the dialog box will cause JWPce to search for matching kanji. Generally this is a good feature, but can make the response of the system too slow on slow machines.

6.2.1 Matches (Results)

The matches window displays the results of the last search. The list can hold up to 1500 kanji, so if a search yields more than 1500 matching kanji, the list will be truncated.

Once a search has been performed, the currently selected kanji can be changed by clicking on another kanji or by using the keyboard commands:[29]

Key	Plain action	action with Ctrl
Left, F3, >	Move left one kanji	move left five kanji
Right, F2, <	Move right one kanji	move right five kanji
Home	Move to beginning of list	
End	Move to end of list	
Space	Insert kanji into file	

If you double click on a kanji, it will be inserted into the file (or edit control) you are using. Shift+right click or Shift+left click or right click will display *Character Information* for the selected kanji (section 6.1).

When the *Maches* window is selected, the keyboard command Ctrl+C will copy the selected kanji to the clipboard. The keyboard command Ctrl+Shift+C will copy all the kanji in the *Matches* window to the clipboard.

6.2.2 Number Selection Controls

There are several special number selection controls used in the various kanji lookup dialog boxes. These controls consist of an edit box that can be used to enter a number directly, and two arrows that can be used to cycle through all possible values.

Whenever the control is blank, the kanji lookup system will accept any value. If the control contains a zero value, this is usually taken to match any value, and any other value in the control this will match only a specific value. The exception to this are the five corner boxes used in the *Four Corners* lookup system (section 6.8)[30]. Since zero is a valid value in these controls, they must be blank to mach any value.

[29] Keyboard command will only function if the *Matches* window is selected. A flashing bar (cursor) appearing below the currently selected kanji indicates this.
[30] Kind of funny that there are five corners in the four corners lookup.

As an example of using the number controls, if we consider the case of a control to select the number of strokes in the kanji. If the control was blank, or had the value of zero, kanji would be included in the results. If the control had the value of 7, then only kanji with seven strokes would be included in the results.

Total stroke count controls will automatically skip values that would be unreasonable. For example, if you have an 11 stroke radical selected, the total stroke count control will automatically skip the values 1-10, because these values will automatically result in no matches.

6.2.3 Working with kanjinfo.dat

All of the kanji lookup systems depend on the kanjinfo.dat file (section 6.1.1). Depending on the version of this file you have chosen to install you may not have access to all of the lookup systems and/or you may not have access to all of the features of the various lookup systems.

With the exception of the *Radical Lookup* (section 6.3), all of the kanji lookups make a great number of accesses to the kanjinfo.dat file.[31] The speed of these searches can be greatly increased by caching the kanjinfo.dat file in memory, at the expense of using up 500 kB of memory. The kanjinfo.dat file can be moved into memory by using the *Cache Kanji Information* checkbox on the *Advanced* page of the *Options* dialog box (section 10.6).

For people who have lots of memory, slow machines, and/or use the lookup features a lot, caching kanjinfo.dat is advised.

6.3 Radical Lookup

In the *Radical Lookup* system, you can find kanji by selecting as many radicals as possible from the kanji. This dialog allows you to lookup kanji by stroke count, and by more than one radical contained within the kanji.

[31] The *Radical Lookup* also access the file, but only to check the stroke count on the selected kanji.

Figure 6.4: Sample *Radical Lookup* dialog box.

The *Radical Lookup* dialog box can be started by selecting the *Kanji/Radical Lookup…* menu command, selecting *Radical Lookup…* from the popup menu, selecting the *Radical Lookup* button from the toolbar, the F5 key, or the Ctrl+L key.

> **Tip:** Remember you can use the *Radical Lookup* feature from any Japanese edit control, as well as from the main edit window.

In order to perform a kanji search using the *Radical Lookup* dialog you need to perform a number of steps; these are detailed in the following sections.

6.3.1 Selecting Radicals

You can select radicals you want to search for. If you can identify more than one radical within the kanji, you can greatly reduce the number of matches you get. (It is also possible to search for kanji based only on the stroke count, so you do not have to select any radicals.)

The *Radicals* window contains 248 radical buttons that can be selected. There are not actually 248 different radicals, because the *Radicals* window contains common variations of some of the radicals. If you select a radical that has variations, all variations will be selected at the same time. The radicals in the window are arranged in stroke count order. Selected radicals are shown with a yellow background. The white squares with red numbers indicate the stroke count of the radicals.

You can select radicals in the radical window simply by clicking on them. The selection-state of the radical (and its variations) willchange. Double clicking on a radical will select that radical and execute the search.

When the *Radicals* window is activated, the currently current radical will have a flashing border (or square for Windows CE). When the window is activated you can use the following keyboard commands:

Key	plain action	action with Ctrl
Left	move left one radical	move left five radicals
Right	move right one radical	move right five radicals
Up	move up one line	move up five lines
Down	move down one line	move down five lines
Page Up	page up*	page up*
Page Down	page down*	page down*
Home	beginning of this line	first radical
End	end of this line	last radical
Space	select the current radical	
digits/numbers	move to radical with stroke count	

*Windows CE displays are not large enough to display the entire radicals window, so this window has a scroll bar and paging are used.

When you enter a number, the cursor will automatically be moved to the first radical with that number of strokes. Because radicals have 1-17 strokes, there is some ambiguity as to where to move. The last two digits you entered determine the radical selected. For example; if you press 1, the cursor will jump to the first radical with 1 stroke. If you then press 5, the cursor will jump the first radical with 15 strokes. If you press 5 again, the cursor will jump to the first radical with 5 strokes (since there is no radical with 55 strokes).

6.3.2 Selecting Strokes

You can restrict the kanji search to a specific number or range of stroke counts. This can be useful if you cannot limit the search to a small enough number of kanji with just the radicals. You do not have to limit the stroke count to search.

There is a small collection of controls to the right of the dialog box that determine the stroke count limits for the search[32]. These are:

Strokes – The edit control combined with two arrows indicates the basic stroke count. This is combined with the following buttons to determine the actual stroke count used.

[32] On Windows CE machines, these controls are rendered using typical checkbox controls, instead of the button form of the checkbox used in the Windows XP. This is required because the button form of the checkbox does not work correctly on Windows CE.

Any – This button indicates that any stroke count will be accepted.
+/- 1 – Accept kanji with up to 1 more or less stroke.
+/- 2 – Accept kanji with up to 2 more or less strokes.

6.4 Bushu Lookup

The *Bushu Lookup* dialog searches for kanji based on a radical (bushu is the Japanese word for radical) and the number of strokes in the kanji. Unlike the *Radical Lookup* (section 6.3), this system does not allow you to select more than one radical, rather the kanji are listed only under a single key kanji.

Figure 6.5: Sample *Bushu Lookup* dialog.

The *Bushu Lookup* dialog box can be started by selecting the *Kanji/Bushu Lookup…* menu command, selecting *Bushu Lookup…* from the popup menu, selecting the *Bushu Lookup* button from the toolbar, or the Ctrl+Shift+L key.

> **Tip:** Remember you can use the *Bushu Lookup* feature from any Japanese edit control, as well as from the main edit window.

In order to perform a kanji search using the *Bushu Lookup* dialog you need to perform a number of steps; these are detailed in the following sections.

6.4.1 Selecting the Radical

The *Radicals* window contains 248 radical buttons that can be selected[33]. There are not actually 248 different radicals, because the *Radicals* window contains common variations of some of the radicals. If you select a radical that has variations, all variations will be selected at the same time. The radicals in the window are arranged in stroke count order. Selected radicals are shown with a yellow background. The white squares with red numbers indicate the stroke count of the radicals.

You can select a radical in the *Radicals* window simply by clicking on it. The selection-state of the radical (and its variations) will change. Double clicking on a radical will select that radical and execute the search.

When the *Radicals* window is activated, the currently current radical will have a flashing border (or square for Windows CE). When the window is activated you can use the following keyboard commands:

Key	plain action	action with Ctrl
Left	move left one radical	move left five radicals
Right	move right one radical	move right five radicals
Up	move up one line	move up five lines
Down	move down one line	move down five lines
Page Up	page up*	page up*
Page Down	page down*	page down*
Home	beginning of this line	first radical
End	end of this line	last radical
Space	select the current radical	
Digits/numbers	move to radical with stroke count	

*Windows CE displays are not large enough to display the entire radicals window, so this window has a scroll bar and paging are used.

When you enter a number, the cursor will automatically be moved to the first radical with that number of strokes. Because radicals have 1-17 strokes, there is some ambiguity as to where to move. The last two digits you entered determine the radical selected. For example; if you press 1, the cursor will jump to the first radical with 1 stroke. If you then press 5, the cursor will jump the first radical with 15 strokes. If you press 5 again, the cursor will jump to the first radical with 5 strokes (since there is no radical with 55 strokes).

[33] Classically there are 214 radicals. Two of the classical radicals are not in the list, and are automatically mapped to similar radicals. Radical 22 is not present and is mapped to radical 23, which is very similar. Radical 35 is also not present and is automatically mapped to radical 34. Further, the second four-stroke radical does not correspond to a *Classical* or *Nelson* radical.

6.4.2 Selecting All the Radicals Associated with a Kanji

A special feature can be used to select all of the radicals associated with a particular kanji. This can be useful if you are having trouble locating a kanji. If you can find a similar kanji, you can select all the radicals in the similar kanji and use that as a foundation for searching for the kanji you want. Another case where extracting the radicals from a kanji can be useful is if you could not find a kanji using the *Radical Lookup* and you want to know what the radicals actually are (for next time).

To select all the radicals associated with a kanji, copy the kanji to the clipboard, then paste the kanji into the *Radicals* window (select the radicals window and press Ctrl+V or Shift+Insert). JWPce will respond by clearing all selected radicals and selecting all radicals associated with the kanji you just pasted into the window.

6.4.3 Selecting Strokes

Generally, just choosing a radical does not restrict the number of possible kanji sufficiently to find the kanji you are interested in, you will also have to select the number of strokes in the kanji.

> **Tip:** If you cannot accurately determine the number of strokes in the kanji, make your best guess then use the up and down arrows on the stroke control so check different stroke counts.

6.4.4 Bushu Type

The two push buttons (check boxes on Windows CE) allow you to choose the type of bushu you want to use in the lookup. The *Classical* bushu is the classical radical under which the character is sorted. In theory, this is related to the meaning of the character in some way. The *Nelson* bushu is the radical under which the character is sorted in the Nelson dictionary (generally this is located in the upper left of the character).

Most of the time the *Classical* and *Nelson* bushus are the same, but not always. You can search for kanji using either or both sorting system.

6.5 Bushu/Stroke Lookup

The *Bushu/Stroke Lookup* dialog searches for kanji based on a radical (bushu is the Japanese word for radical) and the number of strokes in the kanji. Unlike the *Radical Lookup* (section 6.3), this system does not allow you to select more than one radical, rather the kanji are listed only under a single key kanji. The only difference between this lookup dialog and the *Bushu Lookup* is the way the controls work in the dialog. Both lookup systems are identical.

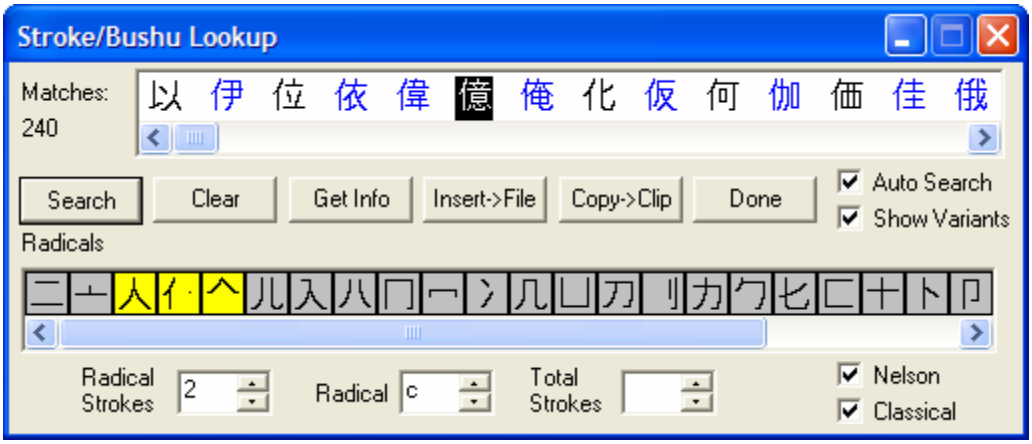


Figure 6.6: Sample *Bushu/Stroke Lookup* dialog.

The *Bushu/Stroke Lookup* dialog box can be started by selecting the *Kanji/Bushu/Stroke Lookup…* menu command, selecting *Bushu/Stroke Lookup…* from the popup menu, selecting the *Bushu/Stroke Lookup* button from the toolbar, or the Ctrl+Shift+B key.

> **Tip:** Remember you can use the *Bushu/Stroke Lookup* feature from any Japanese edit control, as well as from the main edit window.

In order to perform a kanji search using the *Bushu/Stroke Lookup* dialog you need to perform a number of steps; these are detailed in the following sections.

6.5.1 Selecting the Radical

The radical you want to search for is specified by the number of strokes in the radical and a radical identifier. There are two basic ways to select the radical you want to search for.

First, if the *Radical Strokes* box is blank (or set to zero), the *Radicals* window will show all possible radicals. When you select a radical from the *Radicals* window, the display will change to show radicals with the same number of strokes.

Second, if the *Radical Strokes* box contains a number, all radicals with that number of strokes will be shown in the *Radicals* window. You can then pick the desired radical from the *Radicals* window.

The *Radicals* window can contain up to 248 radicals that can be selected[34]. There are not actually 248 different radicals, but the *Radicals* window contains common variations

[34] Classically there are 214 radicals. Two of the classical radicals are not in the list, and are automatically mapped to similar radicals. Radical 22 is not present and is mapped to radical 23, which is very similar. Radical 35 is also not present and is automatically mapped to radical 34. Further, the second four-stroke radical does not correspond to a *Classical* or *Nelson* radical.

of the radicals. If you select a radical that has variations, all variations will be selected at the same time. The radicals in the window are arranged in the order of stroke count. Selected radicals are shown with a yellow background color.

If you don't want to see the variations, you can deselect the *Show Variants* check box. This will adjust the *Radicals* window so that only the actual radicals are shown and not the variations.

You can select a radical in the *Radicals* window simply by clicking on it. The selection-state of the radical (and all variations) will automatically change. Double clicking on a radical will select that radical and execute the search.

When the *Radicals* window is activated, the currently current radical will contain a flashing border (or square for Windows CE). When the window is activated you can use the following keyboard commands:

Key	plain action	action with Ctrl
Left	move left one radical	move left five radicals
Right	move right one radical	move right five radicals
Home	First radical	
End	Last radical	
Space	select the current radical	

6.5.2 Selecting Strokes

Generally, just choosing a radical does not restrict the number of possible kanji sufficiently to find the kanji you are interested in, you will also have to select the number of strokes in the kanji.

> **Tip:** If you cannot accurately determine the number of strokes in the kanji, make your best guess then use the up and down arrows on the stroke control so check different stroke counts.

6.5.3 Bushu Type

The two push buttons (check boxes on Windows CE) allow you to choose the type of bushu you want to use in the lookup. The *Classical* bushu is the classical radical under which the character is sorted. In theory, this is related to the meaning of the character in some way. The *Nelson* bushu is the radical under which the character is sorted in the Nelson dictionary (generally this is located in the upper left of the character).

Most of the time the *Classical* and *Nelson* bushus are the same, but not always. You can search for kanji using either or both sorting system.

6.6 SKIP Lookup

The *SKIP Lookup* dialog searches for kanji based on the character's SKIP code. System of Kanji Indexing by Patterns (SKIP) is a scheme for the classification and rapid retrieval of kanji characters on the basis of geometrical patterns. Jack Halpern developed this system.[35]

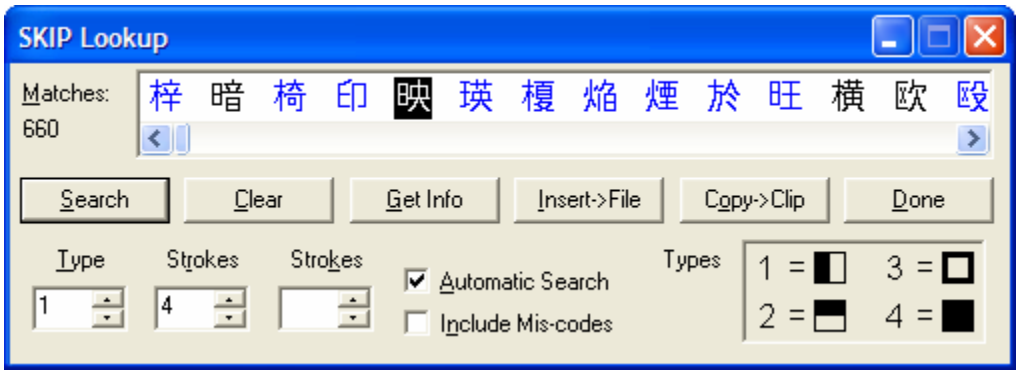


Figure 6.7: Sample *SKIP Lookup* dialog

The *SKIP Lookup* dialog box can be started by selecting the *Kanji/SKIP Lookup…* menu command, selecting *SKIP Lookup…* from the popup menu, selecting the *SKIP Lookup* button from the toolbar, or the Ctrl+Shift+S key.

> **Tip:** Remember you can use the *SKIP Lookup* feature from any Japanese edit control, as well as from the main edit window.

In order to perform a kanji search using the *SKIP Lookup* dialog you need to perform a number of steps; these are detailed in the following sections.

6.6.1 Selecting SKIP Codes

A SKIP code consists of three numbers. The first number indicates the type of division used in the character. The other two numbers indicate the number of strokes in each part of the character. For a full description of the SKIP system please see the "New Japanese-English Character Dictionary," edited by Jack Halpern, National Textbook Company, ISBN 0-780844-284347.

The type of division can be selected by entering a number in the *Type* control or selecting one of the graphic indicators of the *Types* on the right side of the dialog box.

[35] SKIP is protected by copyright, copyleft and patent laws. The commercial utilization of SKIP in any form is strictly forbidden without the written permission of Jack Halpern, the copyright holder (jhalpern@cc.win.or.jp).

The number of strokes for both parts of the character can be entered in the appropriate controls. The right *Strokes* control corresponds to the black part of the character and the left one corresponds to the gray part of the character.

6.6.2 Other Options

Every kanji has a specific "correct" SKIP code, but there are certain types of mistakes that people make in picking SKIP codes. By enabling the *Include Mis-codes* checkbox JWPce will include many common mis-codings[36] when searching for characters. This has the advantage that the kanji you want is easier to find, but also has the disadvantage that the number of results of any search will be larger than otherwise.

6.7 Hadamitzky/Span Lookup

The *Hadamitzky/Span Lookup* dialog searches for kanji based on a radical and the number of strokes in the kanji. This system is very much like the *Bushu Lookup* (section 6.4) and the *Bushu/Stroke Lookup* (section 6.5), except the set of radicals is different.

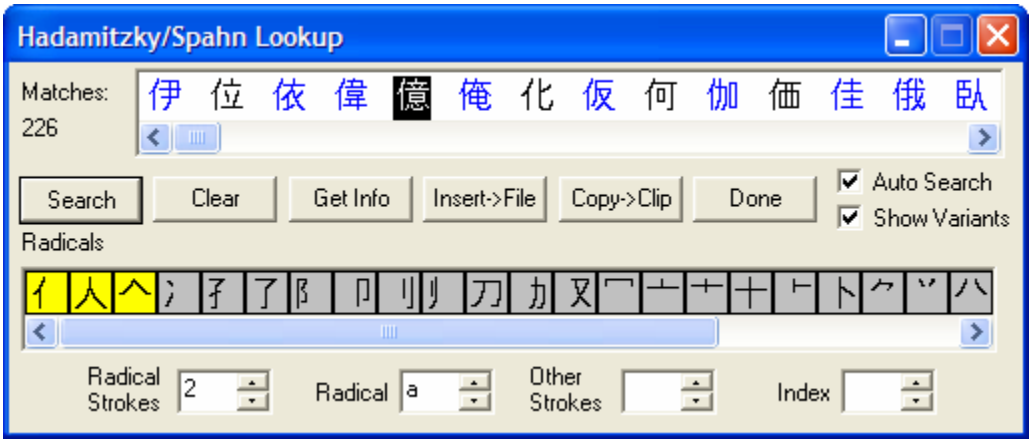


Figure 6.8: Sample *Hadamitzky/Span Lookup* dialog

HS The *Hadamitzky/Span Lookup* dialog box can be started by selecting the *Kanji/Hadamitzky/Span Lookup…* menu command, selecting *Hadamitzky/Span Lookup…* from the popup menu, selecting the *Hadamitzky/Span Lookup* button from the toolbar, or the Ctrl+H key.

> **Tip:** Remember you can use the *Hadamitzky/Span Lookup* feature from any Japanese edit control, as well as from the main edit window.

[36] Mis-codes are taken form KANJIDIC developed by Jim Breen (see section 1.10 for copyright information).

In order to perform a kanji search using the *Hadamitzky/Span Lookup* dialog you need to perform a number of steps; these are detailed in the following sections.

6.7.1 Selecting the Radical

The radical you want to search for is specified by the number of strokes in the radical and a radical identifier. There are two basic ways to select the radical you want to search for.

First, if the *Radical Strokes* box is blank (or set to zero), the *Radicals* window will show all possible radicals. When you select a radical from the *Radicals* window, the display will change to show radicals with the same number of strokes.

Second, if the *Radical Strokes* box contains a number, all radicals with that number of strokes will be shown in the *Radicals* window. You can then pick the desired radical from the *Radicals* window.

The *Radicals* window can contain up to 115 radicals with variations and 79 radicals without variations. If you select a radical that has variations, all variations will be selected at the same time. The radicals in the window are arranged in the order of stroke count. Selected radicals are shown with a yellow background color.

If you don't want to see the variations, you can deselect the *Show Variants* check box. This will adjust the *Radicals* window so that only the actual radicals are shown and not the variations.

You can select a radical in the *Radicals* window simply by clicking on it. The selection-state of the radical (and all variations) will automatically change. Double clicking on a radical will select that radical and execute the search.

When the *Radicals* window is activated, the currently current radical will contain a flashing border (or square for Windows CE). When the window is activated you can use the following keyboard commands:

Key	plain action	action with Ctrl
Left	move left one radical	move left five radicals
Right	move right one radical	move right five radicals
Home	First radical	
End	Last radical	
Space	select the current radical	

6.7.2 Selecting Strokes

Generally, just choosing a radical does not restrict the number of possible kanji sufficiently to find the kanji you are interested in, you will also have to select the number of strokes in the kanji.

> **Tip:** If you cannot accurately determine the number of strokes in the kanji, make your best guess then use the up and down arrows on the stroke control so check different stroke counts.

6.8 Four Corners Lookup

The *Four Corners Lookup* dialog searches for kanji based on the shape of the kanji at each of the four corners. This system has been used for many years in China and Japan for classifying kanji.

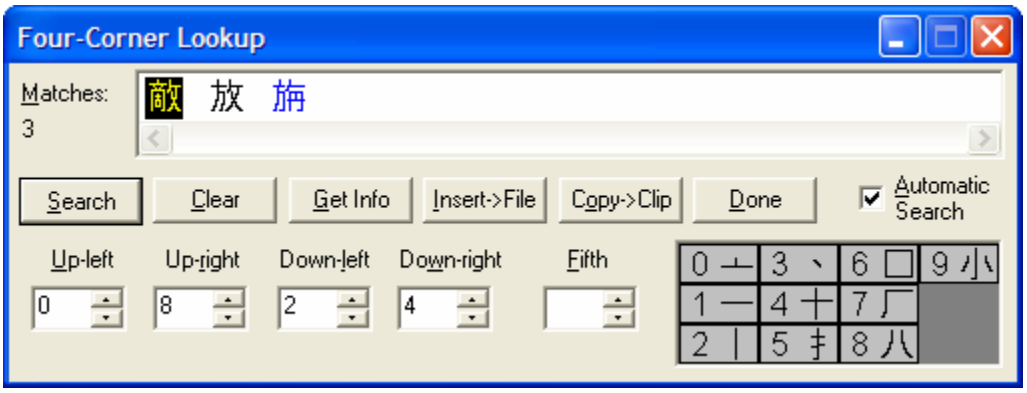


Figure 6.9: Sample *Four Corners Lookup* dailog

The *Four Corners Lookup* dialog box can be started by selecting the *Kanji/ Four Corners Lookup…* menu command, selecting *Four Corners Lookup…* from the popup menu, selecting the *Four Corners Lookup* button from the toolbar, or the Ctrl+4 key.

> **Tip:** Remember you can use the *Four Corners Lookup* feature from any Japanese edit control, as well as from the main edit window.

In order to perform a kanji search using the *Four Corners Lookup* dialog you need to perform a number of steps; these are detailed in the following sections.

6.8.1 Selecting the Shapes

There are two ways to select the shape for each corner. The first is to simply enter the corresponding number in the control for each corner. The second is to select the shape from the graphic selection control to the right of the dialog box.

When selecting the shapes using the graphic select control the shape for the last corner selected is modified (by default the first corner, upper-left, is selected). Further, when you use the graphic select control the corner is automatically advanced. For example if

you use the graphics select control to and select 2, 3, 4, and 5; the upper-left corner will get 2, the upper-right corner will get 3, the lower-left corner will get 4, and the lower-right corner will get 5. If you want to select a corner out of order, first click on the corner you want to modify, then select the value from the graphic selection control.

6.8.2 Using the Four Corners Lookup

The following are a number of rules for using the *Four Corners Lookup*[37]:

1. Stroke shapes are divided into ten classes:
2. The four corners are ordered in a Z-shape (example 原=7129)

   1 2
   3 4

3. A shape is only used once. If it fills several corners, it is counted as zero in subsequent corners (example 和=2690).
4. When the upper or lower half of a character consists of only one (single or composite) shape, it is, regardless of its position, counted as a left corner. The right corner is counted as zero (example 雪=1017).
5. When there is no additional element to the four sides of the characters 口, 門, 門 (and sometimes 行), whatever is inside these characters is taken for the lower two corners (example 問=7760).
6. The analysis is based on the block-style handwritten kaisho shape of characters (example 戸=3027, not 1027).
7. Shape rules:

   A. **Shape 0**: When the horizontal line below a DOT shape (number 3) is connected to another stroke at its right-hand end it is not counted as a LID (number 0) but as a DOT (example 安=3040).
   B. **Shape 6**: Characters where one of the strokes of the square extends beyond it, are not considered to be square (number 6) shapes, but corners (number 7) (example 且=7710).
   C. **Shape 7**: Only the cornered end of corner shapes (number 7) is counted as 7 (反=7124).
   D. **Shape 8**: Strokes that cross other strokes are not counted as shape number 8 (example 美=8043).
   E. **Shape 9**: Shapes resembling shape 9, but featuring two strokes in the middle or two strokes on one side are not considered as 9 shapes (example 慕=4433, and 業=3290).

[37] These notes were edited down from Jim Breen's KANJIDIC.TXT file. His description was condensed from the article "The Four Corner System: an introduction with exercises" by Dr Urs App, which appeared in the Electronic Bodhidharma No 2, February 1992, published by the International Research Institute for Zen Buddhism, Hanazono College.

8. Some points to note when choosing corners.

    A. When a corner is occupied by more than one independent or parallel strokes, the one that extend furthest to the left or right is taken as the corner, regardless of how high or low it is (example 倬=2124).
    B. If there is another shape above (or, at the bottom of the character, below) the leftmost or rightmost stroke of a character, that shape is given preference and is taken as the corner (example 察=3090).
    C. When two composite stroke shapes are interwoven and each could be regarded as a corner, the shape that is higher is taken as the upper corner, and the lower stroke as lower corner.
    D. When a stroke that slopes downwards to the left or right is supported by another stroke, the latter is taken as the corner (example 被=3424).
    E. A left slanting stroke on the upper left is taken for the left corner only; for the right corner one takes a stroke more to the right (example 島=2772).

9. The fifth corner: In order to differentiate between the several characters with the same code, an optional "fifth corner" is sometimes used. This is, loosely, a shape above the fourth corner, which has not been used in any other shape.

6.9 Reading Lookup

The *Reading Lookup* dialog searches for kanji based on the kanji readings and stroke count. This type of lookup is useful when you know the reading of the kanji you want to lookup but want more information about the kanji.

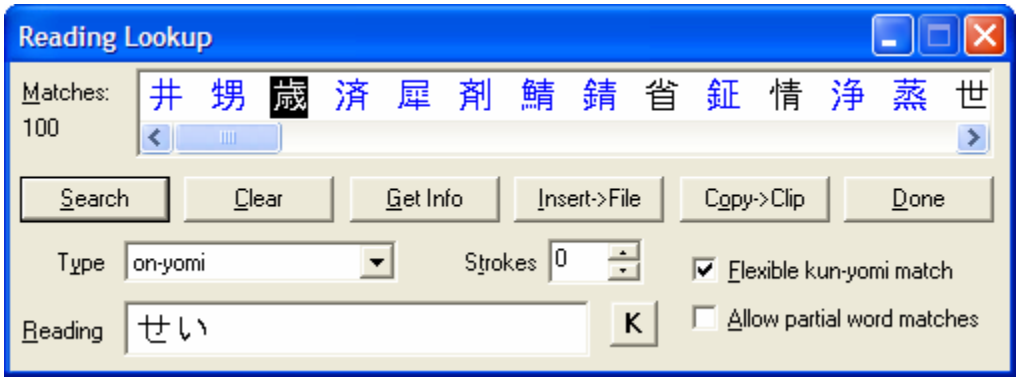


Figure 6.10: Sample *Reading Lookup* dialog

The *Reading Lookup* dialog box can be started by selecting the *Kanji/Reading Lookup…* menu command, selecting *Reading Lookup…* from the popup menu, selecting the *Reading Lookup* button from the toolbar, or the Ctrl+Shift+R key.

> **Tip:** Remember you can use the *Reading Lookup* feature from any Japanese edit control, as well as from the main edit window.

In order to perform a kanji search using the *Reading Lookup* dialog you need to perform a number of steps; these are detailed in the following sections.

6.9.1 Selecting the Reading Type

Using this lookup system you can find kanji using a number of different readings of the kanji. The type of reading you are sing to search is set by the *Type* control, and the actual reading is entered in the *Reading* control. The possible types are:

on-yomi: The Chinese reading of the character. The *Reading* must be a kana string.
kun-yomi: The Japanese reading of the character. The *Reading* must be in kana. (See section 6.9.2 for search options.)
on-yomi or kun-yomi: Search based on either the Chinese or the Japanese reading of the character. The *Reading* must be in kana. (See section 6.9.2 for search options.)
meaning: The English meaning of the character. The *Reading* must be in ASCII. (See section 6.9.2 for search options).
nanori: The name reading of the character. The *Reading* must be a kana string.
pinyin: The Pinyin of the kanji, i.e. the (Mandarin or Beijing) Chinese romanization. The *Reading* must be in ASCII.
Korean: The romanized Korean reading for the kanji. The Reading must be in ASCII.

Depending on the version of the kanjinfo.dat file installed you may not be able to access all of these different readings (section 6.1.1).

6.9.2 Readings and Options

You enter the reading that you want to search for in the *Readings* control. The type of reading you enter must match the *Type* you selected (section 6.9.1). There are some special rules for generating readings, as well as some options.

When matching kun-yomi (*kun-yomi* or *on-yomi or kun-yomi*), the *Flexible kun-yomi match* checkbox determines how the match is carried out. If this checkbox is not selected, kun-yomi readings must be exact. This means that to match the kun-yomi of the kanji 帰, you would have to search for かえ or かえ(る). If this checkbox is selected, you can match this kanji with かえ, かえ(る), or かえる.

When matching a meaning, the *Allow partial word matches* determines if the word has to be fully matched or partially matched. For example, if this checkbox is selected the string “text” would match “text” and “textbook”. If this checkbox were not selected, the string “text” would match “text”, but would NOT match “textbook”.

In order to enter pinyin correctly, it is necessary to enter to the tonal marks. This can be done by entering accented characters on you keyboard, or by entering accent numbers following vowels. The following table shows the numeric mapping of the tonal marks for the letter a, the other vowels are similar.

a0 → a
a1 → á
a2 → â
a3 → à

6.9.3 Selecting Strokes

Sometimes, just choosing a reading does not restrict the number of possible kanji sufficiently to find the kanji you are interested in, you will also have to select the number of strokes in the kanji.

> **Tip:** If you cannot accurately determine the number of strokes in the kanji, make your best guess then use the up and down arrows on the stroke control so check different stroke counts.

6.10 Index Lookup

The *Index Lookup* dialog searches for kanji based on the index into dictionaries, and other reference material. This is a highly specialized lookup system that can be used to find kanji from a reference number. Most reference numbers can be searched for in the *Index Lookup*. However, if you want to find a kanji via JIS code, UNICODE number, shift-JIS number, or EUC number, use the *JIS Table* (section 6.11).

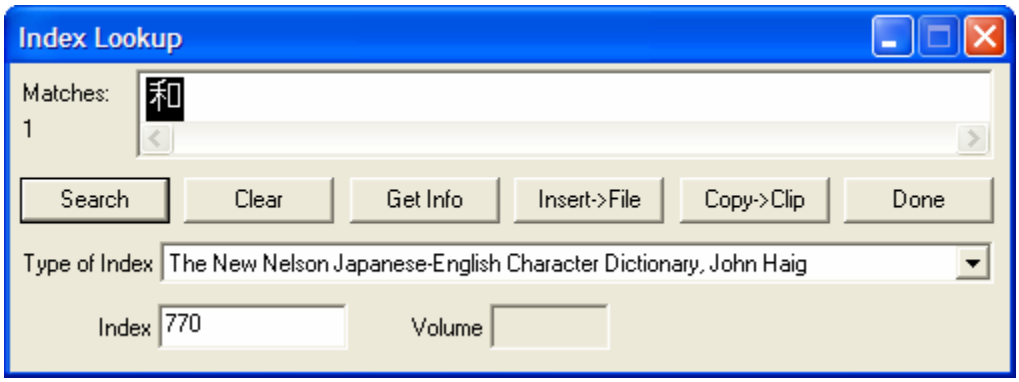


Figure 6.11: Sample *Index Lookup* dialog

The *Index Lookup* dialog box can be started by selecting the *Kanji/Index Lookup…* menu command, selecting *Index Lookup…* from the popup menu, selecting the

Index Lookup button from the toolbar, or the Ctrl+Shift+I key.

> **Tip:** Remember you can use the *Index Lookup* feature from any Japanese edit control, as well as from the main edit window.

In order to perform a kanji search using the *Index Lookup* dialog you need to perform a number of steps; these are detailed in the following sections.

6.10.1 Selecting Type and Index

All indexes consist of a single numeric entry, with the exception of *Morohashi Daikanwajiten (volume index)* require only a single numeric input value. This particular index requires both a kanji index and a volume number.

The general operation of the lookup system is to select the *Type of Index* that you want to search from the dropdown list, then enter the *Index* and press Enter or select the *Search* button.

The supported indexes are:

1. Modern Reader's Japanese-English Character Dictionary, Andrew Nelson
2. The New Nelson Japanese-English Character Dictionary, John Haig
3. The New Japanese-English Character Dictionary, Jack Halpern
4. Grade Level
5. Morohashi Daikanwajiten (full index)
6. Morohashi Daikanwajiten (volume index)
7. Kanji Learners Dictionary, Jack Halpern
8. Kanji & Kana, Spahn and Hadamitzky
9. A Guide To Remembering Japanese Characters, Kenneth G. Henshall
10. A New Dictionary of Kanji Usage, Gakken
11. Remembering The Kanji, James Heisig
12. Japanese Names, P. G. O'Neill
13. Essential Kanji, P. G. O'Neill
14. 2001 Kanji, Father Joseph De Roo
15. Frequency-of-use ranking, Jack Halpern

All of the indexes are dictionaries or kanji reference books except the *Grade Level* and *Frequency-of-use ranking, Jack Halpern*. The *Grade Level* indicates the grade at which Japanese school children learn this kanji.

The *Frequency-of-use ranking, Jack Halpern,* indicates the frequency of use ranking compiled by Jack Halpern based of statistics published by The National Language Research Institute (Tokyo). The frequency is a number from 1 to 2,135 that expresses the relative frequency of occurrence of a character in modern Japanese.

6.11 JIS Character Table and Selecting Characters

WARNING! The JIS table feature contains some technical information about Japanese encoding systems. If you don't care about this stuff, you may still find the JIS table useful for finding unusual characters, so you may want to simply skim this section or skip it.

JWPce allows you to input any character directly using any of the major encoding systems. This feature is combined with the ability to display all of the JIS character set (except the ASCII page) in one dialog box.

The JIS table feature can be accessed via the *Kanji/JIS Table…* menu command, *JIS Table* from the popup menu, 1or Ctrl+T keyboard command. The JIS table displays all of the JIS characters present in the current screen font.[38] In the JIS character set each character is assigned a 16 bit number. The characters are organized into pages, with each page containing 94 characters[39]. The high-order byte of the character code is referred to as the page of the character. The pages are as follows:

page (hex)	Contents
00	ASCII (English characters)
21-22	Japanese symbols and punctuation
23	JASCII (Fixed with English characters)
24	Hiragana
25	Katakana
26	Greek alphabet
27	Russian alphabet
28	Box drawing characters
30-4F	Level I kanji
50-73	Level II kanji

There are also pages reserved for future expansion and for Level III kanji. JWPce automatically skips blank pages in the display.

Tip: By default the JIS Table will start by showing you the hiragana page. This can be used to select kana that you cannot remember the romaji for. The page below the hiragana page is the katakana page.

[38] If your display font is a bitmapped font, then JWPce will attempt to use the k16x16.f00 font for the JIS table. If, however, you are using a TrueType font, JWPce will create a 16 pixel high version of your TrueType font for use in the JIS table.

[39] This is because there are 94 printable characters in the ASCII character set. JIS encoding was designed to trick most programs into thinking they were working with ASCII text, not Japanese text, so the 94 possible pages each contain 94 possible characters.

6.11.1 Navigating the Character Table

The *Character Table* dialog box appears as follows:

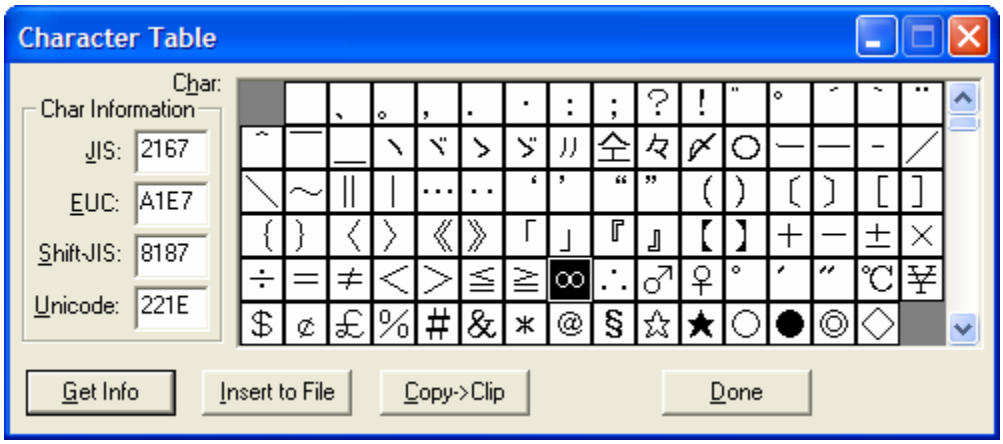


Figure 6.12: *Character Table* dialog box.

The currently selected kanji is indicated by the highlighted box. The edit boxes on the left side of the dialog display the codes of the currently selected kanji in all of the major encoding systems (all numbers are in hexadecimal). As you change the selected kanji, the values in these boxes will change to reflect the encoding values for the selected kanji. If you enter a valid encoding value into one of the boxes, the selected kanji, the other encoding values, and the displayed kanji page will change. If you enter an invalid code, the display will not change, but rather waits for more input.

You can move around the JIS code display using the mouse and scroll bar, or you can use the following keys:

key	plain action	action with Ctrl
Left	move left one character	move left five characters
Right	move right one character	move right five characters
Up	move up one line	move up five lines
Down	move down one line	move down five lines
Page Up	page up	page up
Page Down	page down	page down
Home	beginning of line	first JIS character
End	end of line	last JIS character
Space	insert character into file	
I	character information	
C	copy to clipboard	

Character Information for the selected character (section 6.1) can be obtained by selecting the *Get Info* button, or selecting the character with Shift+left click, right click, or Shift+right click.

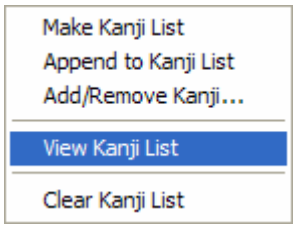
The selected character can be inserted into the current file (or edit control) by pressing Space, selecting *Insert to File*, or by double clicking the character. Alternatively, the character can be copied to the clipboard by pressing the *Copy to Clip* button or pressing the C key.

6.12 Color Kanji

The *Color Kanji* feature causes JWPce to change the color of some of the kanji displayed. This color change is in effect everywhere the affected kanji are displayed (kanji bar, *Character Information*, etc.). The color kanji feature was originally intended to be an aide to learning Japanese. The student would keep a list of kanji that he/she knows. Known kanji would be displayed in black, and unknown kanji would be displayed in blue (the default *Color Kanji* color), clearly indicating which kanji the student thinks he/she knows and which ones he/she does not know.

Others have found many other uses for the *Color Kanji* feature, including indicating kanji that are common between two or more lists, indicating which kanji students are responsible for, determining which kanji may be good to learn, etc.

6.12.1 Working with Color Kanji



To use the *Color Kanji* feature one must make a kanji list. A number of different menu commands are used to work with color kanji. All of these commands can be accessed from the *Color Kanji* submenu of the *Kanji* menu.

6.12.2 Creating and Clearing the Kanji List

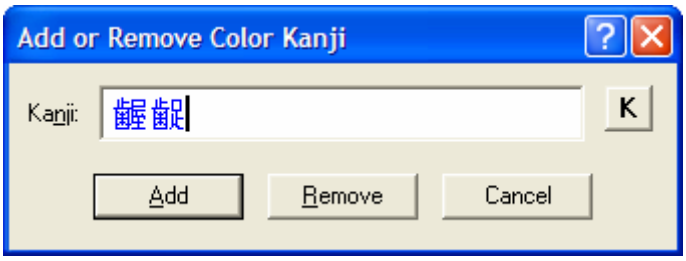
A kanji list may be created by choosing the *Make Kanji List* menu command, or selecting *Color Kanji* from the toolbar. All kanji in the current file will be extracted and made into a list. From this point forward, any kanji not on that list will be displayed in blue (assuming the default setup).[40]

Selecting the *Append to Kanji List* command will append all the kanji in the current file to the color kanji list (JWPce will automatically take care of duplicate).

You can clear the kanji list by selecting the *Clear Kanji List* menu command, or by executing the *Make Kanji List* menu command on a file that contains no kanji.

[40] To see the color change, simply edit another file that contains both kanji on the list and off the list.

6.12.3 Editing the Kanji List



You can add or remove small groups of kanji by using the *Add/Remove Kanji…* command. This will open a small dialog box. You can enter kanji that you want to add or remove from the kanji list. Selecting the Add button will add the kanji to the list. Selecting the Remove button will remove the kanji from the list. Selecting the Cancel button will exit the dialog.

> **Tip:** If you select text before opening the *Add or Remove Color Kanji dialog*, JWPce will automatically place that text in the *Kanji* edit box.

6.12.4 Viewing the kanji list

Selecting the *View Kanji List* command will cause JWPce to open a new file called "::Color Kanji List". This file will contain all the kanji in the current color kanji list. Note that this file cannot be saved without giving it a new name, since the given file name is an invalid name.

6.12.5 Color-Kanji Options

The *Misc* page of the *Options* dialog (*Utilities/Options…* or Ctrl+O) contains a number of options that relate to the *Color Kanji* feature:

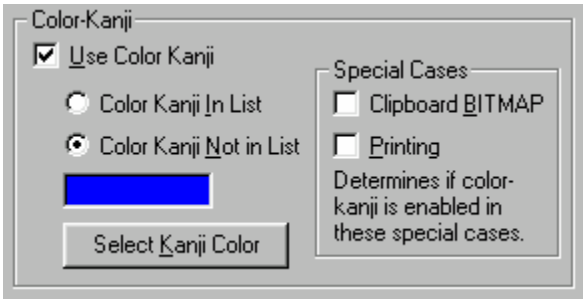


Figure 6.13: Color-Kanji options.

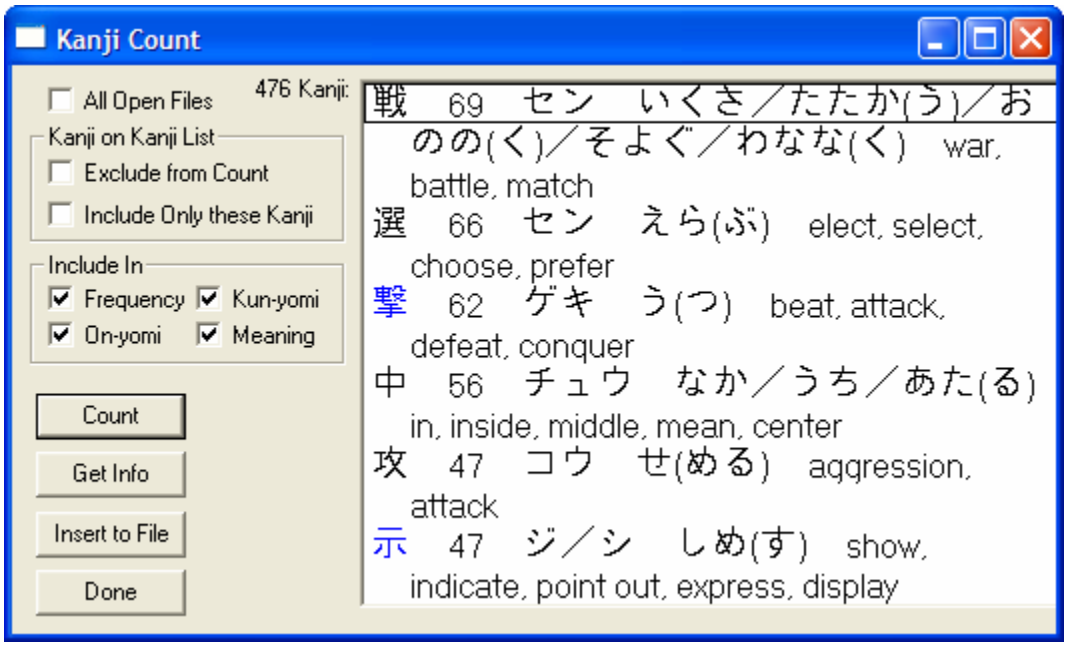
Use Color Kanji – Clearing this checkbox will completely disable the *Color Kanji* feature (enabled by default).[41]

[41] If you are using a very slow machine, disabling color kanji can increase the screen update speed a little.

Color Kanji in List – If this is selected the kanji in the list will be colored and the kanji not in the list will be black.
Color kanji Not in List – If this is selected the kanji in the list will be black and the kanji not in the list will be colored (default).
Select Kanji Color (or click in the color box) – Allows you to choose the color used by the *Color Kanji* feature (blue by default).
Clipboard BITMAP – If this is checked, JWPce will export color data to the clipboard BITMAP format; if cleared, JWPce will export only black & white data (section 5.5.3).
Printing – If this is checked, *Color Kanji* will be printed in color. If it is cleared, printing will be black & white.

6.13 Count Kanji

The *Count Kanji* feature is a utility to determine information about the kanji contained in one or more files. The feature can be used to determine the frequency of kanji use in the file(s), and/or to build a kanji based vocabulary list for the file(s).



The primary intended use of this features was to help in choosing new kanji for a student to learn. A student could load file(s) that he/she is working on (or vocabulary lists), and determine the most frequently used kanji in these files. Such kanji would be a good candidates for study, since it is much easier to learn a kanji that is used in more than one word.

The secondary use for this function was to be able to quickly get kanji information for all unknown kanji used within a file(s). This forms a somewhat crude vocabulary utility.

Both of the above features become much more powerful when combined with the *Color Kanji* feature (section 6.12). Using the *Color Kanji*'s kanji list, you can remove known kanji from the lists generated by the *Count Kanji* feature.

The *Count Kanji* dialog can be started by using the *Kanji/Count Kanji…* menu command or selecting the *Count Kanji* button from the toolbar. Once the dialog box is open there will be a number of check boxes that control how the kanji are counted:

Source Options:

All Open Files – If checked, the kanji from all open files will be counted. If cleared, only the kanji from the current file will be counted.

Kanji List Options:

Exclude from Count – If checked, this will exclude from the count all kanji in the *Color Kanji*'s kanji list. If the kanji list contains all the kanji you know, this will restrict the count to kanji you don't know.

Include Only these Kanji – Includes only kanji from the kanji list in the count.

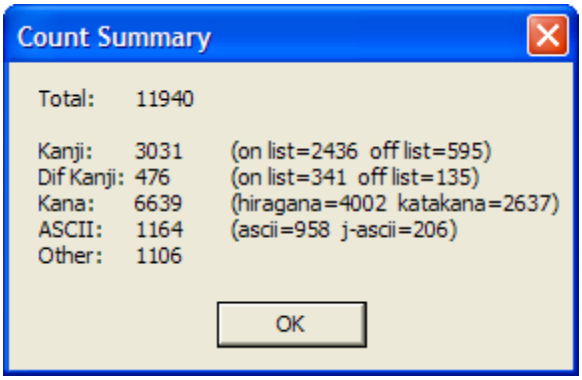
Information Displayed in the List Options:

Frequency – Number of times a kanji occurred.
On-yomi – Chinese readings for the kanji.
Kun-Yomi – Japanese readings for the kanji.
Meaning – Meanings of the kanji

The *Count Kanji* dialog also contains the following buttons:

Count – Start the count process (or press Enter).
Get Info – Gets information for the kanji displayed on the selected line in the *Kanji* (results) list box (see below).
Insert to File – Inserts selected data into the current file.
Done – Closes the *Count Kanji* dialog.

After counting JWPce will display a summary of the count and the results. The summary contains various statistics about the characters counted.



This information includes the following:

Total Total number of characters counted.

Kanji Number of kanji counted. This is further broken down into the number of kanji on or off your color kanji list (section 6.12).

Dif Kanji Number of different kanji counted. This indicates the number of different kanji contained in the counted documents. This is further broken down into the number of kanji on or off your color kanji list (section 6.12).

Kana Number of kana contained in the document. This is further broken down into the number of hiragana and the number of katakana. JWPce counts the long vowel mark (ー) as a katakana character.

ASCII The number of ascii (western) characters used in the documents. This is broken down into the number of ascii [section 4.2.2] and the number of jascii [section 4.2.3] characters).

Other This is a count of all remaining characters that did not fit in any other category. This will include Japanese punctuation, fixed-width Greek, fixed-with Cyrillic, etc.

Tip: For students who are required to write a composition containing a specific number of characters, the count summary can be used to check your work.

The results of the search are displayed in the *Kanji* Japanese list box. If all possible information is requested (frequency, on-yomi, kun-yomi, and meaning), a lot of data can be contained in the list box. A potential display line is:

病 18 ビョウ／ヘイ や(む)／ーや(み) ／やまい ill, sick

The first symbol is the kanji in question (病), followed by the number of times it appears in the file(s), followed by the on-yomi (separated by the ／ character), followed by the kun-yomi (separated by the ／ character), and finally the meanings. If any part of this entry is selected, the *Get Info* button (above) will get *Character Information* for the 病 kanji.

Tip: Often the *Kanji* (results) list in the Count Kanji dialog can be difficult to read. In these cases, selecting the entire list and pasting it into another file allows JWPce to use more space in displaying the information, and thus can make reading the list much easier.

7. Dictionary

The dictionary is one of JWPce's most powerful features. This online dictionary will function as a Japanese→English, or English→Japanese dictionary. Further, the dictionary search engine allows you to add any number of supplemental dictionaries to the system. Finally, JWPce allows you to create your own dictionary for entries that are not in the dictionaries provided.

The main dictionaries used by JWPce (EDICT and ENAMDICT) were developed primarily by James William Breen who holds their copyrights (section 1.10). He has my thanks and appreciation for all his work and for making them available for use in JWPce.

7.1 Basic Dictionary Searches

A basic dictionary search is performed by executing the *Utilities/Dictionary…* menu command, the *Dictionary…* command from the popup menu, selecting the *Dictionary* button on the toolbar, or the Ctrl+D or F6 keyboard commands. Any of these commands will open the *Dictionary* dialog (below).

> **Tip:** If you select the text to search for before opening the Dictionary dialog, JWPce will automatically load the *Word to Lookup* edit box with the selected text. Further, if the *Auto-Search* option is selected (on by default, section 7.4), JWPce will automatically search for the selected text. This is really convenient!

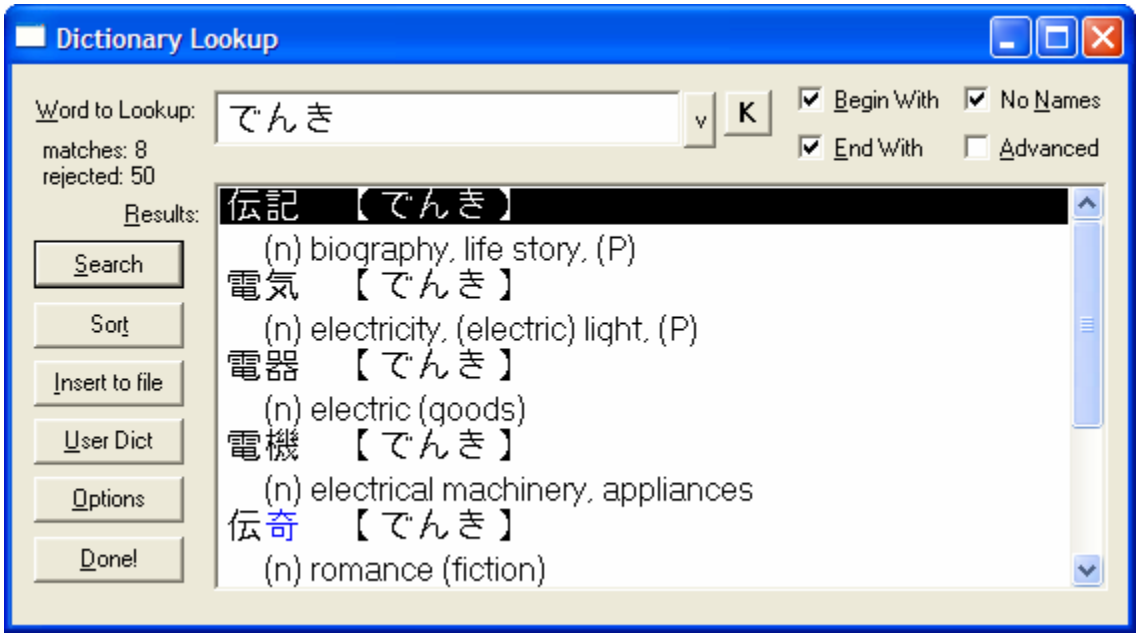


Figure 7.1: Dictionary dialog box.

Remember, the dictionary dialog is dynamic (section 3.4.1). If you increase the size of the dialog additional controls will be added. All of these controls are on the *Dictionary Options* dialog (section 7.4), and include *Classical, Full ASCII, JASCII = ASCII, Track Clipboard, Sort Priority*, and all of the advanced search options (section 7.4.1) (*Always Search, Show All, i-Adjective*, and *Mark*).

After executing a search the list control will automatically be activated. If you want to execute another search, you do not need to select the *Word to Lookup* edit box. You can simply start typing another word (or press the cursor controls), and JWPce will automatically transfer control to the edit control.

7.1.1 What you can Search for

The *Word to Lookup* edit box and input mode control (section 4.2) are used to specify what you want to search for. If the string you enter in the *Word to Lookup* edit box is in English, the dictionary will function as an English→Japanese dictionary. If the string is in Japanese the dictionary will function as a Japanese→English dictionary. If the string contains both English and Japanese characters an error will occur and the search will fail.

> **Tip:** Remember the dictionary keeps track of the last several searches you have executed. You can recall these using the history function (section 3.6.1).

In order to make searching the dictionaries efficient and keep the index files to a reasonable size, JWPce requires that you enter a certain number of characters before you can search the dictionary. The search requirements are as follows:

character type	number required
English (ASCII)	3
Kana	2
Kanji	1

In a dictionary search, no distinction is made between hiragana and katakana; consequently, the search on おきる or オキル will yield the same results.

WARNING! You must be careful when searching for a combination of kanji and kana. For example, you can search on either がっこう or 学校, and find that this is the word for school. If, however, you search on 学こう or がっ校 the search will fail. This is because these half kana and half kanji combinations are unusual spellings for this word. In comparison, searches for かえる and 帰る will indicate that this is the same word, meaning, "to return home".

7.1.2 Limiting the Search

There are three check boxes on the *Dictionary* dialog box that can be used to limit the search and make using the dictionary easier. For example, if you simply search for じゅう, you will get 606 matches!. If you select all three check boxes and search again, you will get only 4 entries!

The check boxes have the following effects:

Begin With – Requires that the search string be located at the beginning of the word.
End With – Requires that the search string be located at the end of the word.
No Names – Excludes personal and place names from the search.[42]

Continuing the example above, selecting *Begin With* would allow the search for じゅう to match じゅういん and じゅう, but not match こうつじゅうたい. Selecting *End With* would allow the same search to match たいじゅう and じゅう, but not match じゅうきょひ (see warning below). Combining both the *Begin With* and *End With* options would only match じゅう.

WARNING! Because of the way the dictionaries are currently indexed, searches on kana strings always behave as if the *Begin With* option is checked (not as in the example above). Searches on kanji or English text do behave as described above.

Selecting both the *No Names* option will cause the dictionary not to search any name dictionaries. This can significantly speed up dictionary searches on slower systems.

[42] Some very common places such as Tokyo are still included in the search.

There are additional dictionary search limits that can be enabled in the *Dictionary Options* dialog (section 7.4).
Searching for Verbs
Searching for Verbs

7.1.3 Searching for Verbs

When using the dictionary as an English→Japanese dictionary, you can search for verbs by prefixing the search word with “to “.

For example if you were to search for `swim`, you would get 62 matches. Searching for `to swim,` would result in the following matches:

泳ぐ [およぐ] (v5g) to swim, (P)
幸福に浸る [こうふくにひたる] (exp) to swim in bliss
時流に乗って泳ぐ [じりゅうにのっておよぐ] (exp) to swim with the current
泳げる様に為る [およげるようになる] (exp) to learn how to swim

7.1.4 Pattern Searches

You can search for words using patterns. Pattern searches must contain at least one kanji, but may contain any number of the following special characters (which may be entered in ASCII or JASCII), and any kana you want.

Character	Meaning
*	Any number of characters, including zero.
?	Any single characters.
[	Matches only the beginning of a word (same as setting the *Begin With* option).
]	Matches only the end of a word (same as setting the End With option).

Pattern searches can be very useful for locating a word when you cannot clearly read or do not know one kanji amongst some others.

As an example of pattern searches, searching for 電＊器 would result in:

電器 [でんき] (n) electric (goods)
電気器具 [でんききぐ] electrical appliance
電気機器 [でんききき] electronic goods
電磁調理器 [でんじちょうりき] (n) electromagnetic cooker
電熱器 [でんねつき] (n) electrothermic equipment
電波探知器 [でんぱたんちき] (n) radar

Where searching for 電？器 would result in:

電熱器 「でんねつき」 (n) electrothermic equipment

7.1.5 Special Searches

JWPce allows a special search for the combination of ？？？？ (must be in JASCII, but can be entered in kanji mode). This search will display the ID for many of the dictionaries installed on your system. This can be used to check the dictionary versions.

？？？？ CLASSICAL 01Sep00 V00-002, Classical Japanese-English Dictionary File, Copyright Glenn Rosenthal - 2000
？？？？ EDICT 25APR02 V02-001, Main Japanese-English Electronic Dictionary File, Copyright J.W. Breen - 2002
？？？？ ENAMDICT 11JUL02 V2002-02, Japanese Proper Name Dictionary File, Copyright Electronic Dictionary Research & Development Group, Monash University, 2002

7.1.6 Searching and Results

You can start a search by selecting the *Search* button or pressing *Enter*, and abort the search by pressing the ESC key.

As the search executes, you will see messages in the area located directly under the *Word to Lookup* text. The most common messages are a simple status messages - the message “No Matches!” (indicating that the search yielded no results), or a count.

The count displays the number of matches found, and the number of rejected entries. The rejected count indicates the number of matches that were rejected because they did not match the limits you set (sections 7.1.2 and 7.4).[43]

The results of the search will be displayed in the *Results* Japanese list box, where you can use all of the list box manipulations (section 3.6.1) to work with the results.

A number of special codes are contained in the dictionary entries. These codes indicate grammatical or other characteristics of the entry. The exact codes are particular to the dictionary. The dominant codes are defined by EDICT and ENAMDICT (most other dictionaries use the same or similar codes).

[43] The number of rejected entries may not be quite accurate. If you have selected *No Names*, or *No Personal Names* and *No Place Names*, name dictionaries (such as ENAMDICT) will not even be searched, and thus will not be counted in the rejected entries.

Filtered entries are not indicated in the count in order to make searches run faster. The dictionaries may contain more than one meaning for an entry, and it is possible that JWPce may exclude part of an entry because it conflicts with the search limits that you set. Such an entry is said to have been filtered.

Table 7.1: Dictionary entry codes for EDICT (main dictionary).

Code	Interpretation
abbr	abbreviation
adj	adjective (keiyoushi)
adv	adverb (fukushi)
adj-na	adjectival nouns or quasi-adjectives (keiyodoshi)
adj-no	nouns which may take the genitive case particle "no"
adj-pn	pre-noun adjectival (rentaishi)
adj-s	special adjective (e.g. ookii)
adj-t	"taru" adjective
arch	archaism
aux	auxiliary word or phrase
aux-v	auxiliary verb
conj	conjunction
col	colloquialism
exp	Expressions (phrases, clauses, etc.)
ek	exclusively kanji, rarely just in kana
fam	familiar language
fem	female term or language
gikun	gikun (meaning) reading
gram	grammatical term
hon	honorific or respectful (sonkeigo) language
hum	humble (kenjougo) language
id	idiomatic expression
int	interjection (kandoushi)
iK	word containing irregular kanji usage
ik	word containing irregular kana usage
io	irregular okurigana usage
MA	martial arts term
Male	male term or language
m-sl	manga slang
n	noun (common) (futsuumeishi)
n-adv	adverbial noun (fukushitekimeishi)
n-t	noun (temporal) (jisoumeishi)
n-suf	noun, used as a suffix
neg	negative (in a negative sentence, or with negative verb)
neg-v	negative verb (when used with)
obs	obsolete term
obsc	obscure term
oK	word containing out-dated kanji
ok	out-dated or obsolete kana usage
pol	polite (teineigo) language
pref	prefix
qv	quod vide (see another entry)
sl	slang
suf	suffix

uK	word usually written using kanji alone
uk	word usually written using kana alone
v1	Ichidan verb
v5	Godan verb (not completely classified)
v5u	Godan verb with `u' ending
v5k	Godan verb with `ku' ending
v5g	Godan verb with `gu' ending
v5s	Godan verb with `su' ending
v5t	Godan verb with `tsu' ending
v5n	Godan verb with `nu' ending
v5b	Godan verb with `bu' ending
v5m	Godan verb with `mu' ending
v5r	Godan verb with `ru' ending
v5k-s	Godan verb - Iku/Yuku special class
v5z	Godan verb - -zuru special class (alternative form of -jiru verbs)
v5aru	Godan verb - -aru special class
v5uru	Godan verb - Uru old class verb (old form of Eru)
vi	intransitive verb
vs	noun or participle which takes the aux. verb suru
vs-s	suru verb - special class
vk	Kuru verb - special class
vt	transitive verb
vulg	vulgar expression or word
X	rude or X-rated term (not displayed in educational software)

Table 7.2: Dictionary entry codes used by ENAMDICT (name dictionary).

code	Interpretation
f	female given name
g	given name, as yet not classified by sex
m	male given name
p	place-name
s	Surname
u	person name, as yet unclassified

7.2 Advanced Dictionary Searches

If the *Advanced* check box is selected JWPce will execute an advanced dictionary search. This type of search causes JWPce to automatically check for conjugation of verbs and additives and to find the best match to the search string you have provided.

It is actually easier to understand what the search is doing by following some examples. In the first case lets assume you are reading text and come across the following text

読んでいる (reading). If you didn't know this word and simply selected the entire text into the dictionary, no matches would be found. If you enabled the *Advanced* search, the following match would be found:

読む 【よむ】 to read

Here, the dictionary has realized that this is simply the te-form of a verb.

As a second example, consider the case where you encounter a long string of hiragana and you are unsure of where the words break. If you take the search pattern もっともいちばんすきなことは, a simple search will yield no matches, but an advanced search will yield the following results:

最も 【もっとも】 most, extremely
尤も 【もっとも】 quite right (an), plausible, natural, but then, although

(the first one is actually correct).

7.2.1 Advanced Search Results

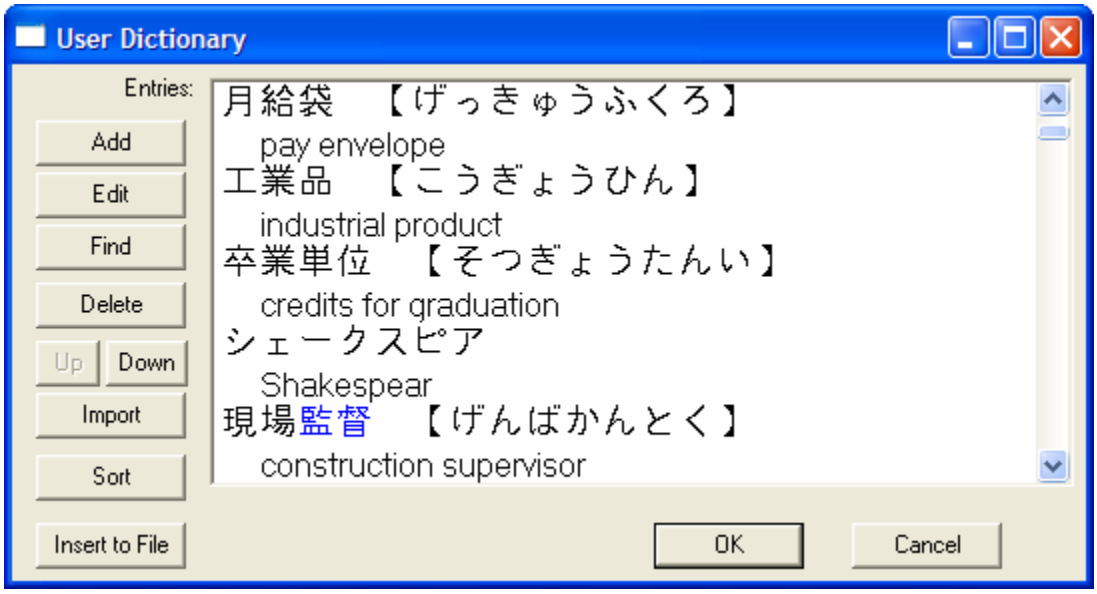
The advanced search can yield many false matches (particularly if *End With* is disabled). To make best use of the results it is important to know that generally the more probable matches will be placed earlier in the list. Also remember that normal search limit options work with the advanced search (sections 7.1.2 and 7.4).

Normally the advanced search algorithm processes the search pattern you provided in stages, looking for matches to successively shorter pieces of the search string. The search will normally stop at the longest search string that can be found. Various options that determine how the advanced search will be conducted are located in the dictionary options dialog (section 7.4).

7.3 User Dictionary

No matter how big or how good or how many dictionaries you have, you will encounter words that are not in them, and words that are not translated quite correctly. To assist in these cases, JWPce allows you to generate a user dictionary, containing entries that you define.

The *User Dictionary* dialog box can be entered from the *Dictionary* dialog box or from the *Dictionary Options* dialog box (see below).



This dialog box consists of a Japanese edit-list set of controls for manipulating the user dictionary. You can use these controls to arrange entries in the dictionary, delete entries, edit entries, add entries, sort entries in kana order, and import entries.[44]

When user dictionary entries are displayed as the result of a dictionary search, they are displayed in the highlight color to set them apart (section 10.2).

7.3.1 Adding or Editing Entries

If you edit or add a user entry to the dictionary, you will see a dialog box containing three edit boxes, and a control for setting the input mode.

The *Kana* edit box should contain the kana representation for the entry. This edit box must contain a kana string.

[44] You can import another user dictionary into your user dictionary by selecting the *Import* button or by dragging the dictionary file (user.dct) onto the *User Dictionary* dialog.

The *Kanji* edit box should contain the kanji representation of the entry. If the entry does not have a kanji representation, this box should be empty. Further, remember to include the okurigana (part of the word written in kana) in this box.

The *Meaning* edit box is an English-only edit box and should contain the meaning(s) for the entry. Multiple meanings should be separated by the "/" (slash) character. Further, you should attempt to use the codes indicated in section **Error! Reference source not found.** that are appropriate for the entry. (Codes should be entered in parentheses, and separated by commas.)

Tip: If you select text (either in the *Dictionary* dialog, in your file, or in an edit control), JWPce will automatically place this text in the *Kana* or *Kanji* control. This can make generating user entries much easier.

WARNING! JWPce will allow you to use extended ASCII in the meaning field for the user dictionary (this allows use of accented characters as defined by the code page used by your system). This ability deviates from the EDICT specifications as defined by Jim Breen. If you use this feature, your dictionary files may not be interpreted appropriately by other software!

7.3.2 Adding Entries to EDICT

EDICT is a cooperative effort, built upon the contributions of many different people. If you accumulate dictionary entries in your user dictionary, they can be sent to Jim Breen, who can add them to EDICT. They will eventually be included in the indexed dictionary, allowing faster searching. The combined contributions of many different users will work to enhance the quality of the dictionary for everyone.

Contributing to EDICT

You can send your JWPce user dictionary file to Jim Breen to have it included in EDICT. Before sending contributions, please make sure you have the newest version of EDICT (http://ftp.cc.monash.edu.au/pub/nihongo/00INDEX.html) so you do not suggest additions that have already been made.

Users intending to make submissions to EDICT should follow the following simple rules[45]:

- All verbs in plain form. The English must begin with "to ....". Add (vi) or (vt) to the first translation if the nature of the verb is not implicit in the translation(s).
- Add (an) or (a-no) or (vs) as appropriate to nouns. Do not enter the "na" or "no" particles in the Japanese, or the "suru" auxiliary verb. Entries that are

[45] These were simplified from Jim Breen's EDICT.doc file. I have removed rules that JWPce enforces.

(vs) should not be entered as verb infinitives (e.g. "to cook"); instead enter them as gerunds/participles/whatever (e.g. cooking (vs)).
- Indicate prefixes and suffixes by "(pref)" and "(suf)" in the first English entry, not by using "-" in the kanji or kana.
- Do not add definite or indefinite articles (e.g., "a", "an", "the", etc) to English nouns unless they are necessary to distinguish the word from another usage type or homonym.
- Do not guess the kanji. One of the most persistent problems in editing EDICT is finding and eliminating incorrect kanji.
- Do not use the "/", "[" or "]" characters.
- If you are using a reference in romaji form, make sure you have the correct kana for "too/tou" and "zu", where the Hepburn romaji is often ambiguous.
- Make sure your kana are correct. A persistent problem is the submission of words like "honyaku" as ho+nya+ku instead of the correct ho+n'+ya+ku.
- Do not include words formed by common Japanese suffixes, such as "-teki", unless they cannot be deduced from the root.
- Please do not contribute entries to EDICT which have come directly from copyrightable sources. It is hard to check these, and you may be jeopardizing EDICT's status.

Actually Contributing to EDICT

You can contributed to EDICT by sending your user dictionary (user.dic) to:

Jim Breen
(jwb@csse.monash.edu.au)
School of Computer Science & Software Engineering
Monash University
Clayton 3168
AUSTRALIA

Additional Information

If you would like to make additional suggestions concerning EDICT, please read the EDICT.doc file included with the distribution of EDICT for instructions.

7.4 Dictionary Options

The *Dictionary Options* dialog box allows you to control a number of options used in searching the dictionaries. The dialog box can be entered by choosing the *Options* button from the *Dictionary* dialog.

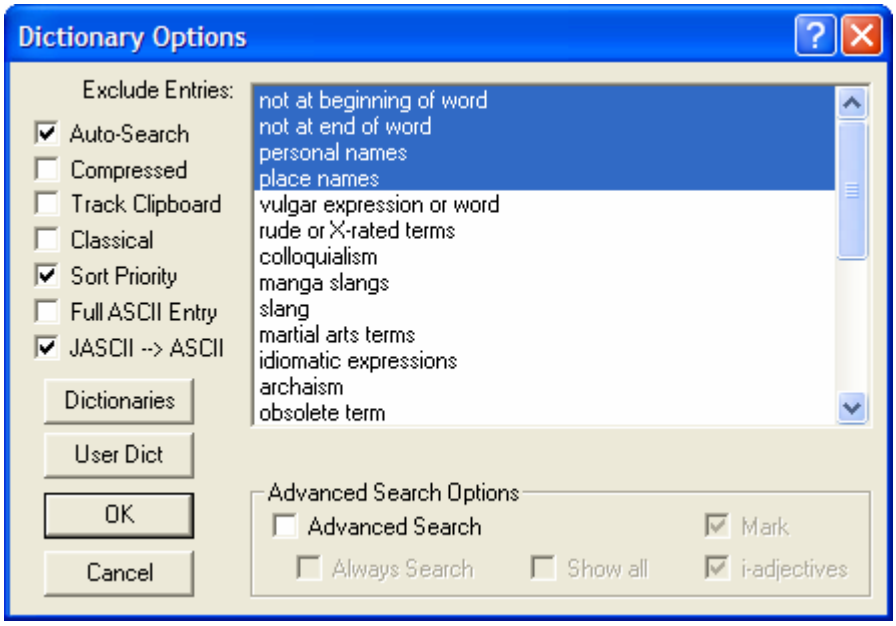


Figure 7.2: The *Dictionary Options* dialog box.

The Dictionary Options dialog box contains a number of controls:

Auto-Search If this control is checked, every time you enter the dictionary with selected text the dictionary will automatically search for the selected text (checked by default).

Compressed Normally JWPce displays dictionary entries using a two line (minimum) format that looks something like:

伝記　【でんき】
biography, life story
電機　【でんき】
electrical machinery, appliances

If this check box is selected, a compressed format is used that attempts to place the data for each entry on a single line:

電器　[でんき] electric (goods)
電機　[でんき] electrical machinery, appliances

This has the advantage of displaying more information at the expense of making the display somewhat more cluttered.

Track Clipboard: Selecting this option causes JWPce to lookup (in the dictionary) anything you copy to the clipboard from another application (not this version of JWPce). For example, when reading a web page, you could select some text in Japanese and copy to the clipboard. JWPce will

automatically search for this text in the dictionary. This removes the step of pasting the text into the dictionary. Several dictionary error messages will be disabled when responding to the track clipboard function, including mixed kana/ASCII, and too few characters for search.

Classical: This activates the classical Japanese search mode in the dictionary (section 7.6).

Sort Priority: The main dictionary contains approximately 100,000 entries. 20,000 of them are marked as priority word. These are the most common 20,000 words in the dictionary. Selecting this option automatically places priority entries at the top of the list.

Full ASCII Entry: Modifies the operation of the *Begin With* and *End With* search options for ASCII searches (English→Japanese dictionary search). With this flag selected, ASCII searches must match the entire entry, not just a word in the entry. With the normal *Begin With* and *End With* flags selected, searching for `car`, would match `car horn`, and `race car`. Selecting this flag would require a complete match to `car`. This can greatly reduce the number of matches.

For example, search for `car`, without the *Begin With* and *End With* flags results in over 1000 matches. Setting these flags reduces the number of matches to about 160. Selecting this flag reduces the matches to 7.

JASCII -> ASCII: This option converts Japanese fixed with ASCII characters to normal ASCII characters. This is on by default, but you may need to disable it if you are searching for entries that contain JASCII characters.

Exclude Entries: This list box contains a list of types of entries you can exclude from the search. The first four entries in this list correspond to three of the check boxes located in the *Dictionary* dialog box (section 7.1.2). The remainder of the entries correspond to various codes (Table 7.1) used in dictionary entries. Not all codes appear in the *Exclude Entries* list, because it does not make sense to exclude entries based on some of the dictionary codes.

Clicking on entries in this list highlights them and excludes them from the search.

7.4.1 Advanced Search Options

These options allow you to modify the operation of the advanced search (section 7.2). To understand these options it is important to understand how the advanced search operates and how it determines when to stop searching.

With the *Advanced Search* option selected, the search procedure attempts to match the current search string, then applies a number of grammatical rules to it and tries to match the results. If no matches are generated, the end character is removed from the search string and the whole process is tried again. Normally this repeats until either there are no more characters in the search string, or a number of possible matches have been found.

Advanced Search: This is identical to the *Advanced* check box on the Dictionary dialog, and simply enables or disables the advanced search.

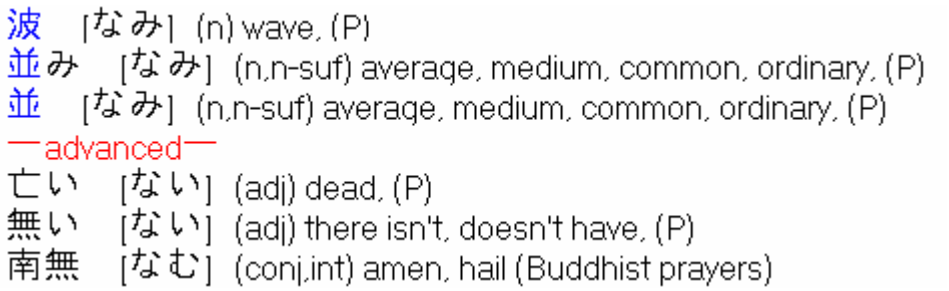
The following options affect the advanced search:

Always Search: If this check box is selected, an advanced search is always performed, even if the search string was matched directly. If this is cleared, and the actual search string is found, the advanced search is disabled.

Show all: If this box is checked all possible matches are shown. This will cause the advanced search to continue until no more characters remain in the search string. This can generate a lot of extra matches, but can sometimes find the result you are looking for.

i-adjectives: Following the grammatical rules for matching I-adjectives can lead to a large number of false matches in some cases. Clearing this check box will prevent i-adjective matching.

Mark: This option separates direct search matches from advanced search matches (as shown below). If the *Sort Priority* option is also selected, this option will sort direct match entries to the top of the first part of the list and advanced matched entries to the top of the advanced list.



7.5 Dictionaries

JWPce has the ability to search any number of dictionaries. Exactly which dictionaries JWPce knows about and searches is determined by the *Searched Dictionaries* dialog. You get to this dialog box by clicking on the *Dictionaries* button in the *Dictionary Options* dialog (section 7.4).

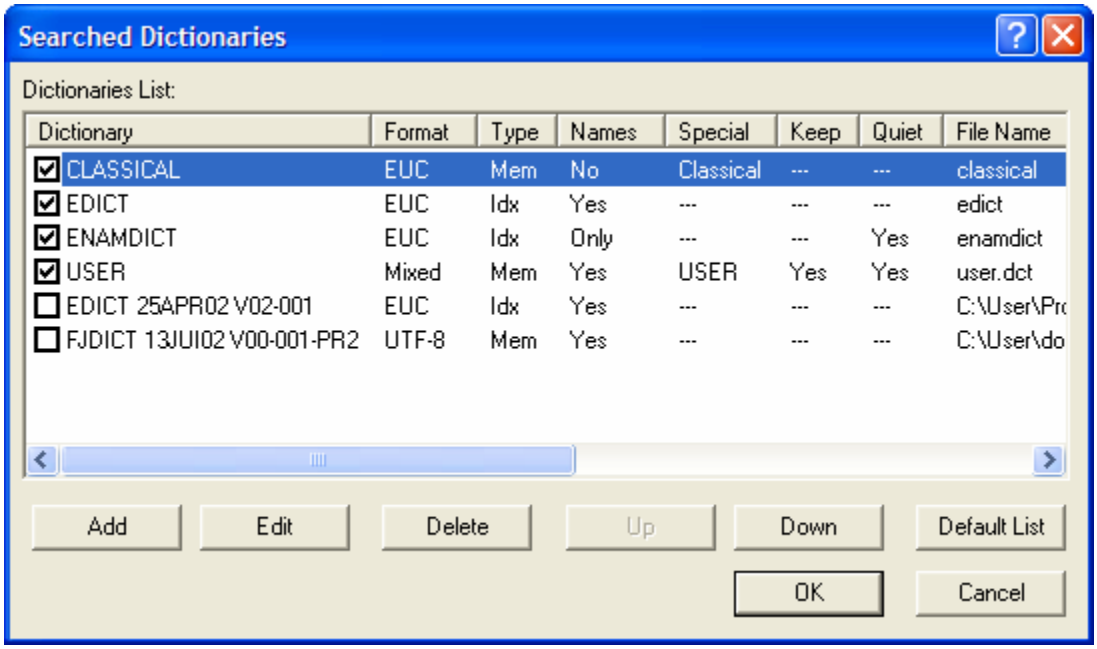


Figure 7.3: Sample *Searched Dictionaries* dialog box.

To understand how to work with dictionaries, it is helpful first to understand how JWPce deals with dictionaries[46]. Dictionaries come in two varieties, indexed and unindexed. An indexed dictionary comes with an index file (which has the extension .jdx). The index file allows JWPce to jump to specific points in the dictionary. This is important in allowing a large dictionary to be searched quickly.

An unindexed dictionary does not contain an index file. JWPce must search through the entire dictionary to find an entry. This type of search is slower, but it is easier to add and remove entries from the dictionary (since the index does not need to be updated).

By default JWPce has four dictionaries in the list:

Dictionary	Description
CLASSICAL	Classical Japanese dictionary (section 7.6). This dictionary is optional (unindexed).
EDICT	This is the main dictionary; it contains around 100,000 general usage words (indexed).
ENAMDICT	This is the main name dictionary; it contains around 180,000 Japanese place and personal names. This dictionary is optional (indexed).
user.dct	This is the user dictionary. It will be generated if you store an entry in the user dictionary (unindexed).

[46] Jim Breen specifies the format of the dictionary files in the EDICT.DOC file. This file can usually be obtained from the same place you got EDICT.

7.5.1 Searched Dictionaries List

The list in the *Searched Dictionaries* dialog box lists contains all the dictionaries that JWPce knows about. The order of the dictionaries in the list determines the order that dictionaries will be searched. The dialog box provides controls for moving dictionaries up or down in the list, removing, adding, modifying entries, or resetting the list back to the default values.

Only dictionaries that have a check in front of them can be searched. Thus you can disable a dictionary without removing it from the list by removing the checkmark. Just because a dictionary is checked does not mean it will be searched. For example, classical dictionaries are only searched if *Classical* is selected, and name dictionaries are not searched is you have selected *No Names*.

The dictionary list displays a lot of information about each dictionary. This includes:

Format: The dictionary encoding format.

- **EUC** Dictionary is encoding using EUC (Extended Unix Code). This is the traditional EDICT format. This is a fast searching format, but cannot represent all language systems. Generally it is suitable for English and western European languages.
- **Mixed** Special format used by JWPce. The Japanese part of the dictionary is encoded in EUC, but the meaning part is encoded using the current Windows codepage. This format is convenient, and is used by JWPce for the USER dictionary, but the format is dependent on the local machine codepage, so may not be best for distribution.
- **UTF-8** The entire dictionary is encoded in UTF-8. This supports all languages of the world. UTF-8 dictionaries are slightly bigger and search slightly slower, but this is a generally not a problem.

Type: Indicates how the dictionary is to be searched.

- **Idx** Dictionary is indexed and should be searched using the index. This is the fastest search system, but requires an index files and thus makes changing the dictionary complicated.
- **Buf** Buffered dictionaries are a variant on memory dictionaries. These dictionaries are searched without using an index, but instead of loading the entire dictionary into memory at one time part of the dictionary is loaded at a time. This saves on system resources at the cost of a slightly slower search.
- **Mem** Dictionary is searched in memory. This does not require an index, and thus provides the most flexibility. Further, searches in this type of dictionary are not limited by the indexing of the dictionary.

Names: Indicates if the dictionary contains names. JWPce can optimize some searches by knowing if the dictionary contains names.

Only Dictionary only contains names. This type of dictionary will not be searched if you select No Names.

No Dictionary does not contain name. Currently this is not used, but may be used in the future.

Yes Dictionary does contain names. Current;y this is not used, but may be used in the future.

Special: Indicates any special characteristics of the dictionary.

--- Indicates nothing special.

Classical Indicates a classical Japanese dictionary. This type of dictionary has a slightly different format, and will only be searched when *Classical* is selected.

USER This is the user dictionary. You cannot delete this dictionary, nor can you adjust some of the characteristics of this dictionary. You can, however, change the location.

Keep: Stands for Keep Open. This instructs JWPce to keep the dictionary open instead of opening and closing it for each search. This can save time, but can lock access to dictionary files.

--- Don't keep the dictionary open.

Yes Do keep the dictionary open.

Quiet: Stands for quiet handling of errors. Generally you should not turn this on. JWPce does for certain dictionaries to handle the way different people install JWPce. Setting this option will prevent JWPce from generating error messages if the dictionary is missing or cannot be accessed. Generally, this is not what you want to do.

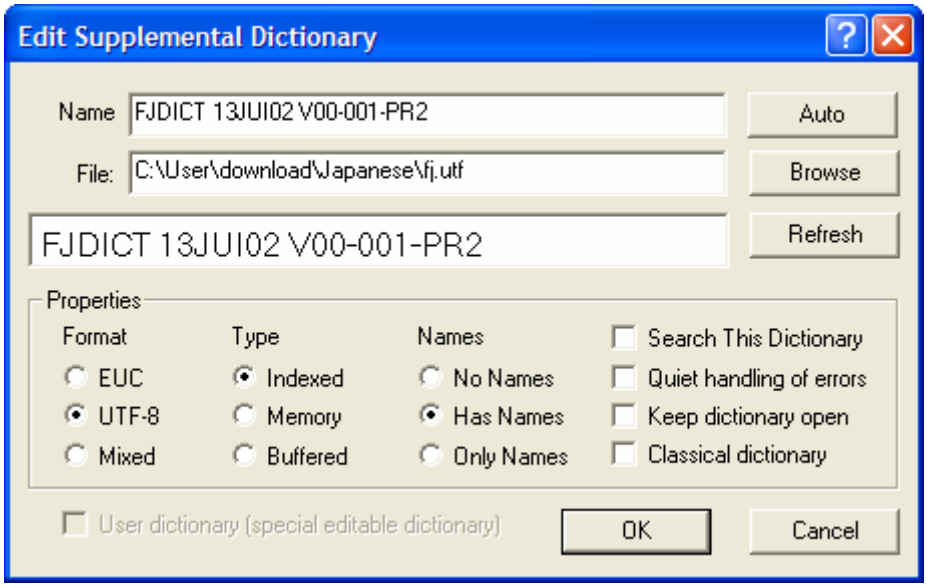
--- Handle errors normally.

Yes Suppress missing file and access errors.

File Name: Actual file name associate with the dictionary. Note the index file (if it exists), has the same name, but with the extension .jdx.

7.5.2 Adding or Modifying Dictionaries

You can add dictionaries to the dictionary list by selecting the *Add* button on the *Searched Dictionaries* dialog, or by dragging and dropping the dictionary files onto the dialog. You can modify a dictionary by selecting the *Edit* button. Unless you drag-and-drop, JWPce will open the Edit Supplemental Dictionary dialog. In the case of drag-and-drop the *Edit Supplemental Dictionary* dialog will only be open if JWPce detects a problem with the dictionary.



This dialog box allows you to control the parameters for the dictionary. The top set of controls provide basic characteristics of the dictionary.

Name Name used for the dictionary. This is for your reference and has nothing to do with anything else. In *Auto* mode JWPce will initialize this with the meaning field of the first entry in the dictionary.

Auto Selecting this button causes JWPce to automatically fill in as many fields as possible.

File Indicates the file location of the dictionary. Index files must be in the same location as the dictionary and have the extension .jdx.

Browse Opens an open file dialog and allows you to locate the dictionary file.

(no name) This Japanese edit control displays the meaning field of the first entry in the dictionary. For many dictionaries, this contains the version ID of the dictionary, for others, this is just the first entry.

Refresh Updates the Japanese edit control.

The next group of controls are a set of radio buttons, that determine the basic characteristics of the dictionary.

Format: The dictionary encoding format.

- **EUC** Dictionary is encoding using EUC (Extended Unix Code). This is the traditional EDICT format. This is a fast searching format, but cannot represent all language systems. Generally it is suitable for English and western European languages.
- **UTF-8** The entire dictionary is encoded in UTF-8. This supports all languages of the world. UTF-8 dictionaries are slightly bigger and search slightly slower, but this is a generally not a problem.
- **Mixed** Special format used by JWPce. The Japanese part of the dictionary is encoded in EUC, but the meaning part is encoded

using the current Windows codepage. This format is convenient, and is used by JWPce for the USER dictionary, but the format is dependent on the local machine codepage, so may not be best for distribution.

Type: Indicates how the dictionary is to be searched.

- **Indexed** Dictionary is indexed and should be searched using the index. This is the fastest search system, but requires an index files and thus makes changing the dictionary complicated.
- **Memory** Dictionary is searched in memory. This does not require an index, and thus provides the most flexibility. Further, searches in this type of dictionary are not limited by the indexing of the dictionary.
- **Buffered** Buffered dictionaries are a variant on memory dictionaries. These dictionaries are searched without using an index, but instead of loading the entire dictionary into memory at one time part of the dictionary is loaded at a time. This saves on system resources at the cost of a slightly slower search.

Names: Indicates if the dictionary contains names. JWPce can optimize some searches by knowing if the dictionary contains names.

- **No Names** Dictionary does not contain name. Currently this is not used, but may be used in the future.
- **Has Names** Dictionary does contain names. Current;y this is not used, but may be used in the future.
- **Names Only** Dictionary only contains names. This type of dictionary will not be searched if you select No Names.

Next are a series of checkboxes that control some options for each dictionary:

Search this Dictionary If checked, this dictionary can be search. Remember that this does not necessarily mean the dictionary will be searched. For example, classical dictionaries are only searched if *Classical* is set.

Quiet Handling of Errors Generally you should not turn this on. JWPce does for certain dictionaries to handle the way different people install JWPce. Setting this option will prevent JWPce from generating error messages if the dictionary is missing or cannot be accessed. Generally, this is not what you want to do.

Keep Dictionary Open This instructs JWPce to keep the dictionary open instead of opening and closing it for each search. This can save time, but can lock access to dictionary files.

Classical Dictionary Indicates a classical Japanese dictionary. This type of dictionary has a slightly different format, and will only be searched when *Classical* is selected.

User Dictionary This indicates the user dictionary. You can add entries to this dictionary while in JWPce. You cannot delete this dictionary, nor can you control most of the settings used by it. You cannot change the state of this control. It is provided only for information.

After you select OK, JWPce will check the dictionary for consistency, and report any errors.

7.6 The Classical Japanese Dictionary

CLASSICAL is an electronic dictionary for classical Japanese. The development of CLASSICAL is very much a work in progress.

WARNING! This section deals an electronic dictionary for classical Japanese. The discussion here assumes that your are familiar with classical Japanese, and makes no attempt to introduce the basic concepts of the field. If you are just learning modern Japanese, it is highly suggested that you skip this section!

This section contains only an introduction to the classical Japanese dictionary. For additional information please see the CLASSICAL.EUC file. This is an EUC encoded file (you can read it by loading it into JWPce) that describes CLASSICAL in detail, and includes many more examples that could be included here.

7.6.1 Enabling the Classical Dictionary

Selecting the *Classical* checkbox on the *Dictionary Options* dialog (section 7.4) enables the classical dictionary and the classical search options. When the classical dictionary is enabled two major changes occur. First, the order in which the dictionaries are searched changes. Second, some classical searching options are enabled to allow special searching modes for jodoushi (section 7.6.3).

When the classical dictionary is enabled it is always the first dictionary search. Further, to differentiate entries from the classical dictionary they are shown in the highlight color (section 10.2). Normally, this would be followed by a search of EDICT, ENAMDICT, any supplemental dictionaries, and finally the user dictionary (which is also shown in the highlight color).

Since words that are still in use are not included in CLASSICAL, it is important to include EDICT in the search. Further, since names are not generally included in CLASSICAL, including ENAMDICT is important when searching for names.

7.6.2 Understanding the results from CLASSICAL

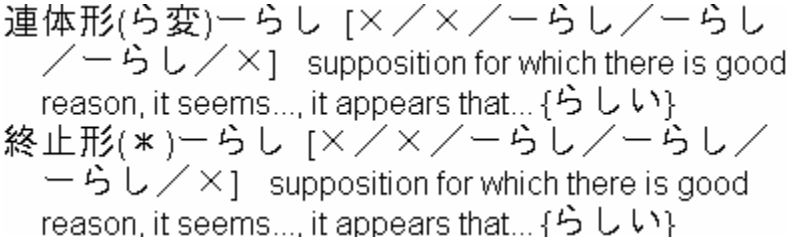
With the exception of searching for searching for jodoushi (and other parts of grammar), the results of a CLASSICAL search are basically identical to normal searches, except there are some additional dictionary entry codes (section **Error! Reference source not found.**):

code	Interpretation
adv-part	Adverbial particle
case-part	Case particle
comb-part	Combination particle
conj-part	Conjunctive particle
emo-part	Emotive particle
exc-part	Exclamative particle
fin-part	Final particle
kamiichi	Kami-ichi-dan verb
kamini	Kami-ni-dan verb
ku	Ku-adjective
makura	Makura kotoba (kind of set phrase used in poetry)
nahen	Irregular na-verb
pre	Prefix
post	Postfix
rahen	Irregular ra-verb
sahen	Irregular sa-verb
set phrase	A set phrase
shiku	Shiku-adjective
shimoichi	Shimo-ichi-dan verb
shimoni	Shimo-ni-dan verb
yo	Yo-dan verb

7.6.3 Searching for jodoushi, particles and other pieces of grammar

The classical Japanese dictionary contains an extensive collection of grammatical entries, as well as complete entries for particles and jodoushi, with conjugations, and usage rules.

Generally, to search for a part of grammar one only has to place a ー character in front of it. For example, to search for the jodoushi らし one would search for ーらし. The results of this search would be:



This is actually quite a complicated result that indicates many of the characteristics of the classical dictionary. First, we notice that there are two separate entries for the jodoushi らし. The first entry indicates how らし would be conjugated when following the rentaikei of a rahen verb. Similarly, the second entry shows how らし would be conjugated following the shuushikei of any other verb.

If we look at the individual entries above we will notice within the square brackets there are six entries separated by slashes. These correspond to the conjugations of らし under the six classical bases (mizenkei, renyoukei, shuushikei, rentaikei, izenkei, and meireikei).

The final thing we can see in the entries above is a modern Japanese equivalent contained in curly braces {}. These are included, because sometimes an actual Japanese equivalent can convey the meaning much better than a description in English.

Searching for particles, prefixes, postfixes, etc. is basically the same. Prefix what you want to search for with a ー character and search. For example, searching on ーば will yield the following results:

未然形ーば [ーば] unfulfilled or hypothetical conditon, if (conj-part)
已然形ーば [ーば] causal or temporal relationship, fulfilled conditon, since (conj-part)

These are both usages of the particle of the particle ば.

The real power of the system comes when you don't know the exact grammatical from you are looking for. For example, if you are reading along and come to a に at the end of a word and you don't know what it is, you could search for ーに. This will give the results:

連用形ーに [ーに] (1) shows relationship to other words (case-part) {に対した,ために,として...}, (2) functions as an adverb (case-part)
ーに [ーに] (1) simular to modern ni (case-part), (2) use in repeting verbs for empheses
名詞ーに [ーに] (1) indicates respect (case-part), (2) show resemblence to another thing {のように}
連体形ーに [ーに] (1) something is contrairty to what might be expected {のに} (conj-part), (2) indicates reason {ので}, (3) one action procedes another, but containues during the second, (4) supposition {としても}, (5) indicating at what point an action occures (conj-part)
連用形ーぬ [ーな／ーに／ーぬ／ーぬる／ーぬれ／ーね] (1) completion of an action {した,してしまった}, (2) emphasizes or affirms an action
連体形ーなり [ーなら／ーなり,ーに／ーなり／ーなる／ーなれ／(ーなれ)] (1) statement or assertion {である}, (2) existance {にある}

From examining this list we can see that に could be a case particle, a conjunctive particle, the renyoukei of the jodoushi nu, or the, the renyoukei of the jodoushi nari. It then becomes your job to try to determine which of the meanings is the correct one based on the context.

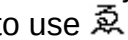
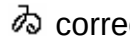
7.6.4 Adding Entries to CLASSICAL

CLASSICAL is a cooperative effort, built upon the contributions of many different people. If you accumulate dictionary entries in your user dictionary, these entries can be sent to me, and I will add them to CLASSICAL. This will eventually include them in the dictionary. The combined contributions of many different users will work to enhance the quality of the dictionary for everyone.

You can send your JWPce user dictionary file me for inclusion in CLASSICAL. Before sending contributions, please make sure you have the newest version of CLASSICAL (http://www.physics.ucla.edu/~grosenth/jwpce.html) so you do not suggest additions that have already been made.

Users intending to make submissions to CLASSICAL should follow the following simple rules (I borrowed most of these suggestions from Jim Breen's EDICT.doc file):

- All verbs in plain form. The English must begin with "to ....". Add verb type to all verbs.
- If you make grammatical entries make sure they are consistent with the rules used by CLASSICAL.

- Indicate prefixes and suffixes by "(pref)" and "(suf)" in the first English entry, not by using "-" in the kanji or kana.
- Do not add definite or indefinite articles (e.g. "a", "an", "the", etc) to English nouns unless they are necessary to distinguish the word from another usage type or homonym.
- Do not guess the kanji!
- Do not use the "/", "[" or "]" characters.
- If you are using a reference in romaji form, make sure you have the correct kana for "too/tou" and "zu", where the Hepburn romaji is often ambiguous.
- Make sure your kana is correct. Make sure to use  and  correctly.
- Do not include words formed by common Japanese suffixes, such as "-teki", unless they cannot be deduced from the root.
- Please do not contribute entries to CLASSICAL which have come directly from copyrightable sources. It is hard to check these, and you may be jeopardizing CLASSICAL's status.

You can contribute to CLASSICAL by sending your user dictionary (user.dic) to:

Glenn Rosenthal
(grosenthal@physics.ucla.edu)

8. Working with Files

The file is the basic unit of data that JWPce works with. Files contain text and formatting information, and can be stored, loaded, and manipulated in many ways.

JWPce has two different classes of files. First are native word processor files (extensions .jce and .jwp).[47] These files can only be read by JWPce (or JWP), and they retain any formatting that you included with the file (including *Page Layout* settings, section 9.5). Second are Japanese text format files that contain text with only basic formatting. They can be used by most programs that understand Japanese text formats.[48]

JWPce indicates the type of the current file on the status line. The following file types are supported:

file type	extension	Description
Normal-JWPce	.jce	JWPce native file format
Normal-JWP	.jwp	JWP native file format (versions 1.0-1.31)
JFC	.jfc	Japanese Flash Card format
untyped	---	File has not been saved so the type is not set
ascii	.txt	ASCII text file -- cannot contain any Japanese (import only)[49]
EUC	.euc	Extended UNIX Code file
Shift-JIS	.sjs	shift-JIS
New-JIS	.new	New JIS
Old-JIS	.old	Old JIS
NEC-JIS	.nec	NEC JIS
UNICODE	---	UNICODE
UTF-7	.utf (.txt)	UNICODE variant where non-ASCII characters are encoded as sequences of ASCII. This format does not use extended ASCII values.
UTF-8	.utf (.txt)	UNICODE variant where non-ASCII characters are encoded as sequences of ASCII characters using extended ASCII codes.

[47] For the current version of JWPce, the .jce and .jwp files are identical. Later, the .jce file type will include features not in the .jwp file type.

[48] Most, but not all Japanese text formats can be processed through programs that understand ASCII. In these cases the Japanese text will appear as garbled characters, but a Japanese program will display the Japanese correctly.

[49] The only reason for using the ASCII file type is that you have a large file that you want to open (this suppresses the file type checks), allowing the file to open faster. This, however, is only a real advantage if you are opening a very large (Douglas Adams type large) file. The other case where this format can be useful is if you are loading a file and want to suppress the conversion of extended ASCII or escape characters within the file.

8.1 What is saved with a JWPce File?

In native file formats (.jce or .jwp), additional information is stored along with the text. The file also contains paragraph formatting and information about the page layout.

Page layout information saved with a file includes the *Margins* (*This File Settings* only), *Headers/Footers*, and *Summary* pages from the *Page Layout* dialog box (*Utilities/Page Layout…* or Alt+L). Section 9.5 contains instructions for using the *Page Layout* dialog box.

8.2 Japanese Encoding Systems

WARNING! The next short segment contains technical information about how Japanese text is stored in computers. If you are not interested skip this section.

Computers almost always store English characters in a system called ASCII. Each character is assigned a code from 0 to 255, and the code is stored in a binary number referred to as a byte. Various ranges within this 256-character set have different interpretations:

range (hex)	interpretation
00	special null character (reserved)
01-1F	control characters (non-printing)
20-7E	printable characters
7F	del
80-FF	extended ASCII codes

This encoding system allows for 94 printable characters without using the extended ASCII range, and works well for English, where there are very few characters. In Japanese, however, there are many more characters (around 7000 kana and kanji are supported by JWPce), and such a storage system can not be used. Early computers did not support Japanese at all, and the first systems for Japanese were designed to be compatible with existing English-based systems. This compatibility allows e-mail routing computers, printer software, and a host of other applications to process files containing Japanese without having to know anything about Japanese.

The major encoding systems are JIS (Japanese Industrial Standard), EUC (Extended UNIX code), shift-JIS and UNICODE. (UTF-7 and UTF-8 are variations of the UNICODE system.) The following section discusses each encoding system:

JIS: In the JIS system (which has a number of varieties), escape sequences are used to change from ASCII mode to Japanese mode (double-byte mode). The computer treats text as ASCII until an escape sequence is reached that

changes the mode to Japanese mode. The computer then treats each two-byte combination as a JIS code for a character (katakana, hiragana, etc.), until another escape sequence is received to go back to ASCII mode, or the end of the current line of text is reached (cr/lf/crlf). The difference in the various JIS formats is primarily in what escape sequence is used and the number of characters supported by the format:

encoding	start Japanese	end Japanese
New-JIS	ESC $ B	ESC (J
Old-JIS	ESC $ @	ESC (J
NEC-JIS	ESC K	ESC H

JIS encoding has the advantage that the character coding does not use the extended ASCII character space (characters with the high-bit set). This allowed JIS encoded files to be passed though many older e-mail systems, and through most old style computer programs without disturbing the character encoding. For example, many older word processors used the high bit set to indicate a special formatting code. This causes problems with EUC and shift-JIS encoding, but not with JIS encoding.

EUC: In EUC encoding, there are no escape sequences to switch into Japanese mode; instead the high bit is set on at least one of the bytes (and usually both) of a double-byte character. Characters without the high bit set are treated as standard ASCII; characters with the high bit set are combined in pairs to make Japanese characters. Characters with extended ASCII codes are prefixed with a special code telling the computer that the next character is to be treated as extended ASCII code, not as a Japanese character.

EUC encoding has the advantage that you can lextract parts of a character sequence easily, because you do not have to deal with whether you are in double-byte mode or not, as you do in JIS. This is why EUC and shift-JIS (which is similar) are used heavily in computers, and especially on the Internet.

Shift-JIS: Although shift-JIS seems like it should be related to JIS, it is not really. It is more closely related to EUC. In particular, shift-JIS encoding uses the same setting of the high bit to indicate a double-byte character. The major difference is in how the characters are encoded. EUC uses a flat encoding for the double-byte characters (the same as JIS used). Shift-JIS, however, uses a mapped encoding different from that used by JIS and EUC.

UNICODE: Unlike the other encoding systems, in UNICODE there is almost no attempt to be compatible with older ASCII systems. Unicode is designed to make programming international applications easier. The characters for all languages are included, each represented by a 16 bit number (16 bits can accommodate around 65,000 characters). This radically different approach is

completely incompatible with ASCII systems, because in UNICODE all characters are two bytes.

UTF-7 and UTF-8: Because UNICODE is so different from ASCII systems, UNICODE data will not generally pass through many mail servers or other applications. The UTF-7 and UTF-8 formats are ways to further encode UNICODE data so that to most applications it appears to be ASCII, and thus can be passed through mail servers, data-bases, etc. that are incapable of processing UNICODE data. UTF-7 encodes all data into a 64-character space within the normal ASCII range. This format passes though mail servers and applications as ASCII data (although to a user it appears to be a string of random characters). The UTF-8 format uses the extended ASCII code space, and thus may not be compatible with all applications.

8.3 Changing the Current File

Your open files can be viewed as a stack of papers. You are working on the top paper and since it is on top of the stack, it covers all lower papers and is the only one you can see (section 3.2). There are a number of ways to change the file you are working on.

You can treat all the open files as a cyclical list. You can move from the current file to the next or previous file in the list, using the menu commands *Window/Next File* or *Window/Previous File*, or the keyboard commands:

Action	keyboard command
next file	Ctrl+Tab or Ctrl+PageUp
previous file	Shift+Tab or Ctrl+PageDown

The nine files closest to the top of the stack are shown in the bottom section of the *Window* menu[50]. You can select the file you want to change to directly from the menu. The top file in the list is always the current file.

If there are more than nine open files, and you want a file not shown in the *Window* menu, or you just like this method, you can choose the *Window/Files…* menu command (Alt+W), which opens a small dialog box listing all files currently open. The current file will be at the top of the dialog box. From this dialog box you can select the file you want to work with (double click, press *Ok*, or press Enter).

8.4 Creating a New File

[50] Only the file name (not the directory) is shown. If you need path information, you can use the *Window/Files…* command to get a list of the paths to all the files.


The menu command *File/New* (Alt+N) can be used to generate a new file. New files have the type *untyped*, and are given names such as “[Untitled 1]”. When a new file is first saved its name and file type is assigned.

8.5 Opening an Existing File


The menu command *File/Open…* (Alt+O) can be used to open a file. This brings up a standard Windows open file dialog. Multi-select is supported so you can open several files at once.[51]

By default, all Japanese files types are shown (extensions .jce, .jwp, .euc, .sjs, .jis, .old, .nec, and .utf)[52]. When you choose a file, JWPce examines the file to determine the encoding type based on the extension, and then decodes the file.

Generally, the auto-detect ability works well on files, but in some cases you may need to specify the decoding method to use for the file. In these cases you specify a file type in the *Files of type* drop down list, and force JWPce to interpret the file as that type.

If you want to load a file with an unusual extension, you can choose the file type *Auto-Detect*. This file type will show all files within the list box. When you choose a file(s) JWPce will examine the file(s) and attempt to determine the file type.

8.5.1 Drag and Drop

You can also load files by dragging them onto JWPce. This will load a file using the *Auto-Detect* feature.

8.5.2 Recent Files

You can also open files that you have used recently by choosing the menu command *File/Recent Files*. This leads to a sub-menu containing the nine most recently accessed files. Choose a file form this menu and JWPce will load it using the *Auto-Detect* feature.

8.5.3 Reload Previous Files

At startup, JWPce generally reloads all files that were loaded when you last exited the program. JWPce basically recreates your working environment when you start the program. This option can be controlled via the *Reload Previous Files* checkbox located on the *General* page of the *Options* dialog (*Utilities/Options…* or Ctrl+O, section 10.1).

[51] Multi-Select is not supported by Windows CE and therefore is not available on Windows CE versions.
[52] Windows CE for PPC machines does not support multiple file types in a dialog box, so .jce files are selected as the default.

8.5.4 Duplicate Files

Normally you should not open a file in duplicate (i.e., open a file that is already open), because it can lead to problems. For example, when you change one version of the file the changes are not tracked in the other version.

There are three options for what JWPce should do when you attempt to open a duplicate file. They are located in the *Duplicate Files* section of the *File/Clipboard* page of the *Options* dialog (*Utilities/Options…* or Ctrl+O). The choices are:

Open Another Copy – This option will open a duplicate copy of the file. You must use care in using this option, because JWPce does not track changes to both versions. If you change one open version of the file, the changes do not show up in the other version. If you save the files without changing the file name, the second one saved will overwrite the first.

Change to Open File – This option does not open a new copy of the file, but simply changes to the already open copy.

Ask User – (The default option.) Under this option a dialog box is displayed that allows you to choose the action to be taken from the following:

Edit Existing File – Does not load a new copy of the file, but simply changes to the already open copy.

Open New File – Opens another copy of the file. Use care in using this option (see above).

Replace With New – Closes the existing copy of the file and opens a new copy. If the current copy of the file has been changed you will be given the opportunity to save the changes.

Cancel – Cancel the file load and do nothing.

8.5.5 Common Difficulties Opening Files

Some common problems when opening files have to do with shift-JIS and EUC formats. It is often not possible to correctly determine if a file is encoded in shift-JIS or EUC (since both encoding systems use the same values with different meanings). When JWPce cannot determine which file format to use, it will choose shift-JIS (because it is more common). If the resulting file does not look right, reload the file as an EUC file.

Similar problems exist in dealing with UNICODE files. Depending on what is in the file, JWPce may not be able to distinguish the file from a shift-JIS or EUC file. JWPce always interprets files that begin with the UNICODE id (hex FFEF or EFFF) as UNICODE files. For files without an id, JWPce requires that all characters in the file be valid UNICODE characters. If JWPce cannot determine absolutely that the file is a UNICODE file, it will assume the type is shift-JIS or EUC.

WARNING! Because UTF-7 format was designed to be indistinguishable from simple ASCII text, JWPce auto-detect cannot identify UTF-7 encoded files.

8.6 Opening the Same File Again

The *File/Revert* command (Alt+R) will close the current file and then open it again. This can be used to undo all changes you have made to the file since you last saved it.

This command can also be used to reload a file that has been modified by some other program since you last loaded it into JWPce. For example, if you want to read several web pages with JWPce, you could save one in your browser and read it in JWPce. Then, go back to your browser and save another under the same file name, and then return to JWPce and use the *File/Revert* command to load the new file.

8.7 Closing Files

The *File/Close* (Alt+C) command will close the current file. You can also close the file by clicking the close button in the upper right corner of the window (section 3.2). The *File/Close All* command closes all open documents[53].

When you attempt to close files that have been changed, a warning dialog is generated that allows you to close without saving, save the file and then close it, or simply not close the file. (Information on saving files can be found in section 8.9.)

If you close the last open file, JWPce will normally ask if you want to exit the program. If you respond *Yes*, the program will terminate. If you respond *No*, a new blank file will be opened for you to work with (section 8.3). You can disable this question (that is, always exit JWPce) via the *Confirm Exit on Last File* check box in the *General* page of the *Options* dialog (*Utilities/Options…* or Ctrl+O, section 10.1).

8.8 The Exit Command

The *File/Exit* (Alt+X) command will close all open files and exit the program. You can also close the files and exit the program by clicking the close button in the upper right corner of the window (section 3.2).

When you attempt to close a file that has been changed, a warning dialog is generated that allows you to close without saving, save and then close, or simply not close the file. (Information on saving files can be found in section 8.9.)

8.9 Saving Files

[53] In this case all current documents are closed, and a new blank document is opened to prevent, JWPce from exiting (as it does when the last document is closed).

 You can save a single file using the *File/Save* (Alt+S) command, or the *File/Save As…* command. You can also save all loaded files using the *File/Save All* (Alt+V) command.

The *File/Save* (Alt+S) command saves a file under its current name (shown in the title bar) and file type (shown in the status bar). If a file does not have a name (that is, the name in the title bar is something like "[Untitled 2]"), the *File/Save* (Alt+S) command behaves like the *File/Save As…* (Alt+A) command described below.

The *File/Save As…* (Alt+A) command opens a standard Windows save dialog box, from which you can set the file type and name of the file. If you do not specify a file extension, JWPce will add a default extension that indicates the file type (except for UNICODE files, which have no default extension).

The *File/Save All* (Alt+V) command saves all files that have been changed, it is essentially the same as selecting *File/Save* (Alt+S) for every file that has been changed.

Tip: Remember that the character between the JWPce version and the file name in the title bar indicates if the file has changed or not. The "*" character indicates the file has changed, and the "-" character indicates it has not.

8.9.1 Backup Files

By default, when saving files JWPce keeps the old version as a backup. (It renames the old version of the file). This allows you to recover the immediately preceding version.

Backup files have the text "_BAK" appended to the end of the file name. For example, if you were editing the file "c:\Japanese\shukudai.jce", and saved the file again, JWPce would rename the older version to "c:\Japanese\shukudai.jce_BAK".

The backup feature can be disabled via the *Save Backup* check box on the *File/Clipboard* page of the *Options* dialog (*Utilities/Options…* or Ctrl+O, section 10.3).

8.9.2 Temporary Files and System Failures

WARNING! The next section contains technical information about how JWPce manipulates files. This is useful in the event of a system crash, but you may want to skip this section.

JWPce manipulates files very carefully, to improve recoverability from system crashes, disk full errors, and any number of other problems.

The best way to see how the file manipulations are carried out is to follow an example. Thus we will consider the case of saving the file “c:\text.jce”. The save procedure is as follows:

1. **Generate temporary file:** First the information is saved to a temporary file. The name of this file is generated by appending the string “_@@##$$_” to the end of the file name (“c:\text.jce_@@##$$_”).
2. **Delete old backup file:** If there is an old backup file it is deleted (“c:\text.jce_BAK”).
3. **Create new backup file:** The existing file is renamed to make a new backup file (“c:\text.jce” is renamed “c:\text.jce_BAK”).
4. **Temporary file is renamed:** The temporary file is renamed to become the new file (“c:\text.jce_@@##$$_” is renamed “c:\text.jce”).

For this system to work, you must have enough disk space to store two copies of the file you are working on, because the old copy of the file is never deleted until the new copy has been successfully written to disk.

In the unlikely event of a system crash during this procedure, you may be able to recover your work from the temporary file.

8.10 Deleting Files

The *File/Delete* menu command (Alt+D) deletes the disk copy of the current file. This command was added primarily for use on Windows CE PPC systems, where there is no file manager to delete files. Due to menu space limitations, this command is not in the menu on Windows CE HPC machines, but the keyboard shortcut functions correctly.

When you ask to delete the disk file, a dialog box will ask for confirmation before doing so. Additionally, the current file will be marked as changed, so that when you try to close the file you will be prompted to save the file. This provides double protection on deleting files.

8.11 JFC Files

JFC is a Japanese flash card program designed to work with JWPce (probably available from the same place you got JWPce). JFC files are stored in EUC or UTF-8 format. JWPce can read either format, but will normally only save in UTF-8 format. If you want to save in EUC format, you should save the file as EUC and change the file extension to .jfc.

You cannot load JFC files into JWPce by double clicking on them. Instead, you must open them using the *File/Open…* command, right-clicking on them then selecting edit, or by dragging the file onto JWPce. This is because the .jfc extension is normally associated with JFC, not with JWPce.

8.12 Working with Projects

You can save the entire state of JWPce as a “project”, and restore it at a later date. The information saved with the project includes all options and settings (section 10), page layout settings (section 9.5), the working directory, and open files.

A project may be saved by selecting the *File/Save As…* command and selecting the file type *JWPce Project (*.jcp)*. This does not save the current file itself, however.

A project file can be loaded by opening the project file in any of the normal ways (using the *File/Open…*, drag and drop, from the recent files list). When opening a project file, JWPce will give you the choice of closing currently open files before opening the project, or allow you to add the project files to the currently open files.

9. Printing

Printing documents in Japanese is somewhat different than printing in English. In Japanese each character occupies the same space (including punctuation), and lines are ended when they are full (even in the middle of a word). In English words are normally not split, each character occupies a different amount of space, and text is usually not written vertically. Combining Japanese and English text leads to a number of further complexities.

WARNING! Windows CE versions of JWPce cannot print even though several pages of the *Page Layout* dialog box can be accessed.

9.1 File Representations

One major issue in printing is how the text on the screen corresponds with what is printed. Depending on the settings, JWPce will either attempt to approximate on the screen how text will appear printed, or will ignore most of the printer settings and display the text in a manner that provides the best screen display.

In order to make JWPce responsive and make best use of limited screen resolution and size, JWPce makes a number of adjustments in the way text is displayed on the screen:

Line width: Normally JWPce uses the line width of the display window, not the line width of the printer, but this can be modified (section 5.2).
Justified ASCII text: In order to save time, ASCII text is not justified on the screen, but is justified when printed (section 5.3.1).
Line spacing: JWPce displays screen text with a slightly compressed line spacing. This allows more text to be displayed on the screen (section 5.3.2).
Vertical text: Vertical text is supported only in printing (not on the screen).
Page breaks: Soft page breaks are not indicated on the display, but hard page breaks are shown as gray lines across the screen (section 9.4).

JWPce, however, does visually represent much of the file formatting .

WARNING! Keep in mind that JWPce has no page layout display mode in which all parts of a page can be viewed at one time (margins, headers, footers, etc.)

9.2 Actually Printing Something

Before going into details, Let' discuss the process used to print a document in general. JWPce allows you to print all of a document, selected pages, or selected text from the document.

To, select the *File/Print…* command (Alt+P), or select the *Print* button from the toolbar. This causes the standard Windows *Print* dialog to be displayed. From this dialog you can choose the printer and a number of characteristics for that printer (paper size, layout, portrait or landscape[54], etc.). Additionally, you can set the number of copies to be printed (if the printer supports multiple copies).

Finally, from the *Print* dialog you can select the part of the document to be printed.

9.2.1 Printing the Entire Document

If you select the *All ??? pages*[55] button in the *Print* dialog, the entire document will be printed. This is the default if you do not select text before entering the *Print* dialog.

9.2.2 Printing Some Pages

If you select the *Pages* button, and enter values in the *from* and *to* edit boxes you can print specific pages from the document. If you have selected text before entering the *Print* dialog, this will be the default. In this case the *from* and *to* edit boxes will already have page entries that include the selected text

If you print part of a document using this method (instead of the *Selection* setting, below), entire pages are printed instead of parts of pages. This allows header and footer information as well as page numbers to be printed correctly.

9.2.3 Printing Selected Text

If you select text before entering the *Print* dialog you can choose the *Selection* button, and only the selected text will be printed. This method allows you to control exactly what is printed, but prevents JWPce from accurately generating page numbers. The first page printed will be numbered 1, and page numbers will increase from there.

9.3 Printing and Color Kanji

Characters are printed in black unless you have selected the option to print Color Kanji in color. (See the *Color Kanji* feature, section 6.12). This option is controlled from the *Misc* Page of the *Options* dialog box (*Utilities/Options…* or Ctrl+O, section 10.5).

[54] JWPce will automatically set portrait or landscape mode to match the document mode. If you change portrait/landscape in the *Print* dialog, the setting in the document will also change.
[55] "???" will be replaced with the number of pages in your document.

9.4 Page Breaks and Formatting

The document is reformatted for the printer during printing. After printing, if you are using the *Dynamic* or *Fixed* width modes (section 5.2), the document will return to its original form. But if you are using the *Printer* width mode, any changes you make to document formatting before you send the document to the printer will remain.

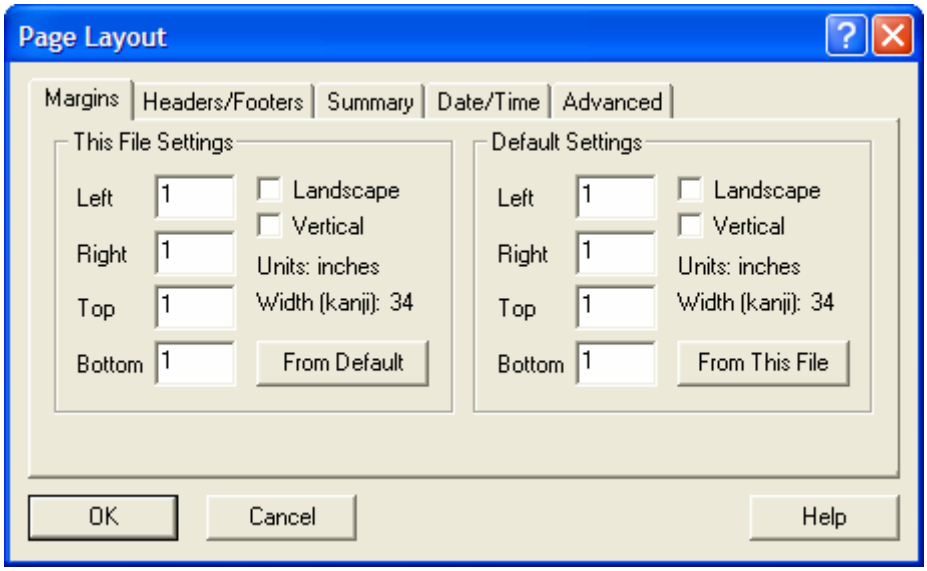
Normally a page break is inserted into the document whenever the page becomes full. You can, however, force a page break by using the *Edit/Insert Page Break* (Ctrl+Enter) command. JWPce does not display normal page breaks on the screen; however, inserted page breaks are shown as a dark gray stripe.

9.5 The Page Layout Dialog Box

WARNING! Not all pages of the *Page Layout* dialog box are available in Windows CE versions, since printing is not supported from Windows CE.

The *Page Layout* box is a multi-page dialog box that contains most of the controls and options used to control printing. Many of the settings in this dialog box are stored along with the document files box is a multi-page dialog box that contains most of the controls and options used to control printing. Many of the settings in this dialog box are stored along with the document files (*Margins* [*This File Settings* section], *Headers/Footers*, and *Summary*) ; some are global settings that are stored in JWPce's configuration file (*Margins* [*Default Settings* section], *Date/Time*, and *Advanced*).

9.5.1 Margins, Vertical Printing, and Paper Orientation



The margins, the paper orientation (portrait or landscape), and print direction (horizontal or vertical) are all set on the *Margins* page of the *Page Layout* dialog box.
JWPce maintains two sets of each of these parameters: *Default Settings* and *This File Settings*. When a new file is generated, the *Default Settings* are used to initialize the margins for the file. Changing the *Default Settings* has no effect on a file after it has been created.

Margins

The margins specify the distances between the edges of the paper and your text (not counting headers and footers). Margins are specified in units of inches or cm (this can be set on the *General* page of the *Options* dialog box [*Utilities/Options…* or Ctrl+O]). By default the margins are set to 1 inch on all sides.

When vertical printing is invoked (below), the margins do not rotate with the text, thus the *Top* margin is the margin at the top of the page in portrait mode. The margins DO rotate, however, when you print in *Landscape* mode.

Landscape

Text is normally printed in *Portrait* mode, where a standard sheet of paper is taller than wide when being read. In *Landscape* mode, the text is printed such that the page would be wider than tall. (Also see vertical printing below.)

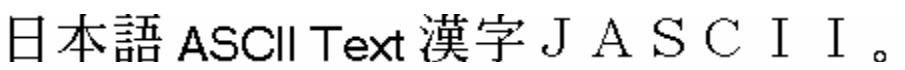
This setting can also be changed in the *Print* dialog box (section 9.2).

Vertical Printing

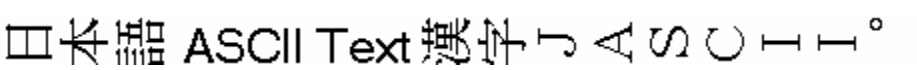
English is normally written horizontally, however, Japanese is written with either orientation. JWPce will print vertically, if the *Vertical* box is checked.

JWPce prints vertically by rotating the individual Japanese characters (kana, kanji, and JASCII)[56]. English text is not rotated when printed vertically.

For example, here is text printed horizontally:



and here is the same text printed vertically



[56] For people interested in the technical issues, a number of characters are not rotated, and some characters have to be both rotated and translated.

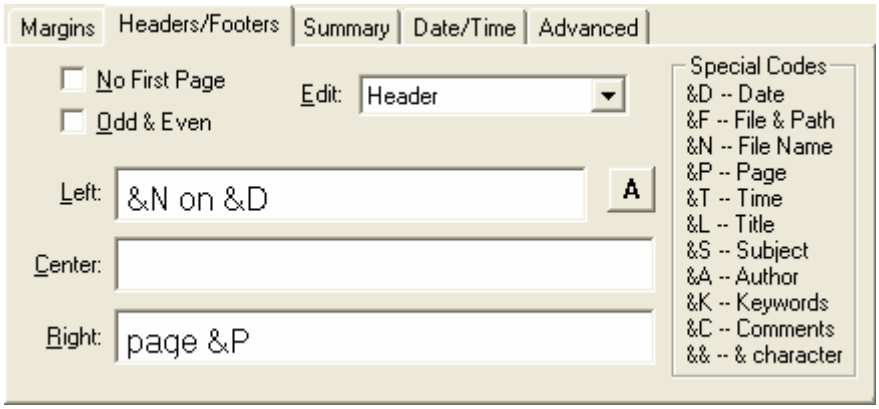
Other Information

Also shown on this page of the dialog box is the number of kanji characters that fit on a line (given the chosen margins). This value can be used if you want to use the *Fixed* line width mode (section 5.2) to emulate this printer configuration on some other system.

Further, there are two buttons that copy the margins settings as a group (margins, landscape, and vertical) to and from the default settings:

From Default – Copies the default margins settings to the current file.
From This File – Copies the margins settings from the current file to the default settings. All files generated subsequently will have these margin settings as the default.

9.5.2 Headers and Footers (Page Numbering)



A header is a line of text that is printed across the top of each page, and a footer is similarly a line of text printed across the bottom. The headers and footers for a document are defined in the *Headers/Footers* page of the *Page Layout* dialog box.

Normally, the same header and footer are printed on all pages, however the following controls can be used to modify this behavior:

No First Page – If selected, this suppresses printing of headers and footers on the first page of the document.
Odd & Even – If selected, even and odd pages have different headers and footers. If you intend to print your document double-sided, this can be useful.

Headers and footers consist of three strings that are located at different places across the top or bottom of the text. You may define any, all, or none of these strings. The *Left* string is aligned with the left edge of the text; the *Center* string is centered on the page; and the *Right* string is aligned with the right edge of the text.

The *Edit* control is used to select a header or footer for editing. Depending on the settings of the *Odd & Even* control, there will be different choices in this list box:

***Odd & Even* not selected**	***Odd & Even* selected**
Header	Header, Odd Pages
Footer	Header, Even Pages
	Footer, Odd Pages
	Footer, Even Pages

The Header and Footer Strings

Any text you wish can be entered in the *Left*, *Center*, and *Right* strings. However, there are a number of special codes you can insert to cause special information to be printed with the document. The text indicated by a special code is inserted when the document is printed, thus what is printed depends on the value at the time of printing.

Tip: You can use multiple special codes in the header/footer strings, and combine special codes and fixed text.

The special codes are:

code	Prints
&D	Current date (section 9.5.4)
&F	file name and path
&N	file name
&T	Current time (section 9.5.4)
&L	Document summary title (section 9.5.3)
&S	Document summary subject (section 9.5.3)
&A	Document summary author (section 9.5.3)
&K	Document summary keyword (section 9.5.3)
&C	Document summary comment (section 9.5.3)
&&	the & character

Tip: You don't have to memorize the special codes, there is a list of them in the dialog box.

Header and Footer Example

As an example, to generate headers and footers similar to those in this document, the settings would be:

header/footer	value	action
header, left	&L	title, so it can be changed by simply changing the document summary

header, right	---	no JWPce equivalent
footer, left	&D	print date
footer, right	&P	page number

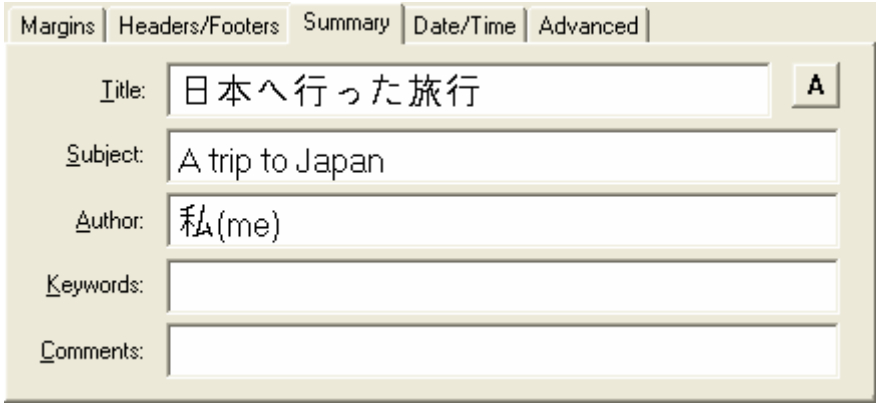
Page Numbers

Tip: Page numbers are generated in JWPce using the headers and footers feature, and the &P code.

Header and Footer Locations

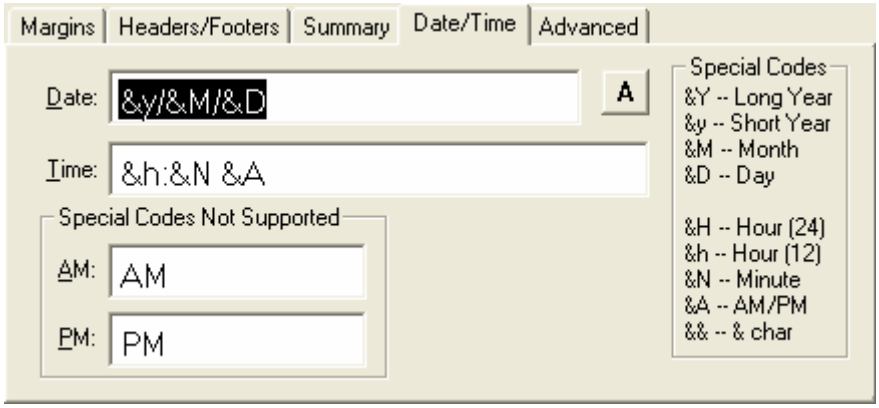
The locations of headers and footers are controlled by options in the *Advanced* page of the *Page Layout* dialog box (section 9.5.5). Generally you should not need to change these values.

9.5.3 Document Summary



The document summary can be edited on the *Summary* page of the *Page Layout* dialog box. The summary consists of five lines of Japanese text that you can use to store any information you want. The five lines are called *Title*, *Subject*, *Author*, *Keywords*, and *Comments*. The text in these lines can be used in printing headers and footers (section 9.5.2).

9.5.4 Date and Time



The format JWPce uses to print the *Date* and *Time* is set on the *Date/Time* page of the *Page Layout* dialog.

WARNING! The *Date* and *Time* settings affect all files, not just the current file. These settings are stored in the JWPce configuration.

This dialog box consists of a Japanese edit controls for the *Date* and the *Time*, and for *AM* and *PM* values.

Several special codes can be used in the *Date* and *Time* strings. These codes cause special information to be inserted when the file date or time is printed.

Code	prints
&Y	year in long format (1998)
&y	year in short format (98)
&M	month (as a number)
&D	day (as a number)
&H	hour (in 24 hour format)
&h	hour (in 12 hour format)
&N	minute
&A	AM string or PM string (see below)
&&	the & character

Tip: You don't have to memorize the special codes, there is a list of them in the dialog box.

AM and *PM*

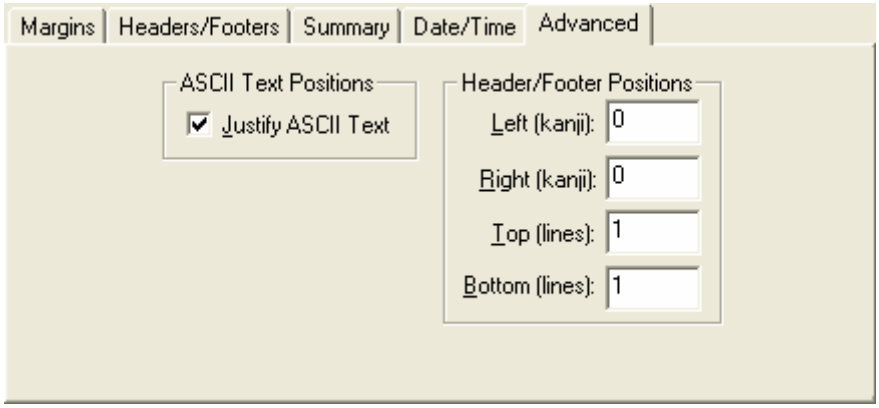
The *AM* and *PM* edit boxes determine the values that are inserted when you use the special code &A. Special codes cannot be used in the *AM* and *PM* strings.

Examples

Here are examples using the *Date* and *Time* controls, generated on March 11, 1992 at 11:57 PM.

String	American (default)		Japanese	
	code	sample	code	sample
Date	&y/&M/&D	92/03/11	&y年&M月&D日	92年03月11日
Time	&h:&N &A	11:57 PM	&h:&N &A	11:57午後
AM	AM		午前	
PM	PM		午後	

9.5.5 Advanced Layout Options



The *Advanced* page of the *Page Layout* dialog box contains options that control the locations of the headers and footers, and how English text embedded within Japanese text is formatted. The options set on this page are stored in the JWPce configuration and affect all documents.

Header and Footer Locations

When headers or footers are included in your document, they are printed in the margins space above or below the main part of the text. The *Top (lines)* and *Bottom (lines)* parameters determine the number of lines above or below the text that headers and footers are printed. By default, these parameters are 1, which will leave a single blank line between the text and the header and/or footer. Increasing this number will move the header/footer further away from the main text; decreasing it will move the header/footer closer to the text.

Similarly, the *Left (kanji)* and *Right (kanji)* determine the amount of space that the left and right headers and footers are moved into the left or right margins. If these values are 0, the headers/footers will align with the margins. If they are increased, the header

and footer will move out into the margins. Their values are in units of the width of a single kanji character, and default to 1.[57]

ASCII Text Positions

This parameter determines how ASCII text is printed when a Tab character follows it. If the *Justify ASCII Text* option is checked, the text is spaced uniformly within the available space. The effects of this parameter are only visible when the document is printed. This formatting is not displayed on the screen to improve the screen update speed. (See section 5.3.1 for more information on these options.)

9.6 Printing Options and Fonts

Most printer related settings are controlled from the *Page Layout* dialog box. The exception to this is font settings, which are controlled from the *Font/Format* page of the *Options* dialog (*Utilities/Options…* or Ctrl+O). This page allows you to specify the *print font*:

Points – This control determines the size of the printed text on the page. From this size, JWPce determines the ASCII (English) font, and the number of characters that will fit on a line. This is a very important parameter.

Automatic Selection – If this box is selected, JWPce automatically chooses the best font for your printer based on the current screen font, the available fonts, and the printer resolution.

Printer Font – This drop-down list contains all the possible fonts for printing. If you have disabled the *Auto* font selection, this list will be active and will contain all valid printing fonts.

In *Automatic Solection* font setting, JWPce will attempt to match the current screen font to the printer. If you are using one of the included bitmapped fonts, JWPce will automatically choose the best matching bitmapped font for the printer. If you are using a TrueType display font, JWPce will simply use the same TrueType font for the printer.

Generally you should leave the printer font set to *Automatic Selection*. There are some cases, however, when you might want to specify a printer font yourself. The most notable of these is if you have installed a bitmapped font[58] (section 11.1) and want to use it for printing. JWPce only knows how to adjust the default bitmapped fonts that are distributed with JWPce, so if you install other fonts, it cannot tell which is the best match for the screen font.

[57] I personally find that moving the headers and footers into the left and right margins more clearly distinguishes them from the main text.
[58] When working with TrueType fonts, the screen and printer will always use the same font.

You may also want to consider not using *Automatic Selection* font selection when you are using a bitmapped font for the display and want to use a TrueType font for printing. This may seem a strange thing to do, but remember that the bitmapped fronts have been optimized for display at their specific resolutions, and can sometimes look better than TrueType fonts.

WARNING! Vertical printing is only supported for TrueType fonts that contain a vertical glyph substitution table (this should be included in all fonts, but you never know). If you use a TrueType font without such a table, JWPce will default to using the bitmapped fonts for vertical printing.

10. Options and Settings

The *Options* dialog box contains most of the settings that control how JWPce works[59]. Many of these options have been discussed elsewhere in the manual, but all will be touched on in this section.[60]

Normally, the options settings (actually the settings for the entire configuration) are saved whenever you exit JWPce. This option can be disabled by clearing the *Save Settings on Exit* checkbox on the *General* page of the *Options* dialog box. If auto-save of the options has been disabled, or you want to save the options before exiting the program, you can save the current settings immediately with the *Utilities/Save Settings* command.

All settings for JWPce can be restored to the default configuration with the *Utilities/Default Settings* menu command. This command resets all options to their default values, including the dictionary options (section 7.4), the general *Page Layout* settings (section 9.5), and all the *Options* settings.

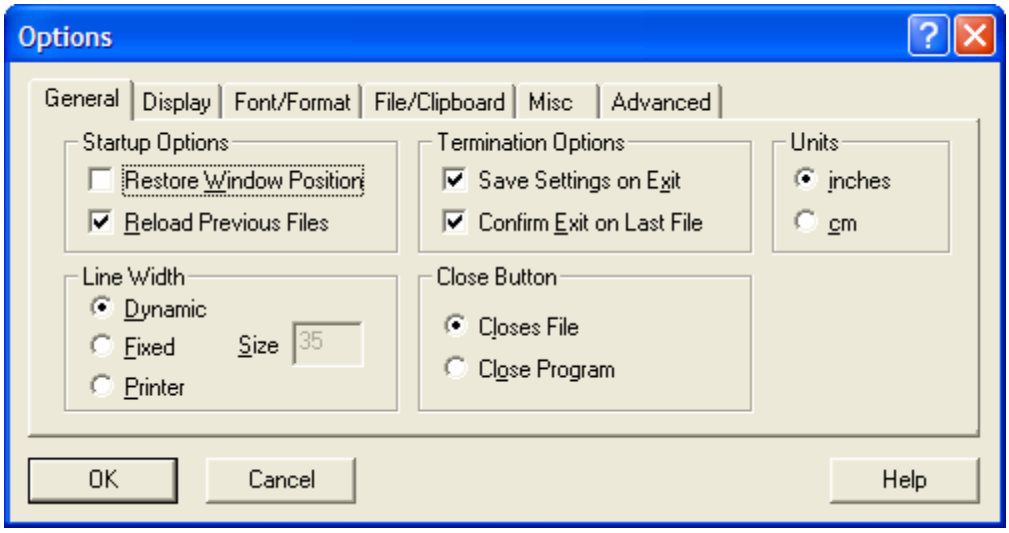
The *Options* dialog box can be accessed form the *Utilities/Options…* menu command (Ctrl+O), or by selecting the *Options* button from the toolbar. This chapter discusses each page of this multi-page dialog box.

10.1 General Options

The *General* page contains options that affect the entire program.

[59] Almost all settings related to the dictionary are located in the *Dictionary Options* dialog box (section 7.4). Further, most of the printer options, and options specific to each file, are located in the *Page Layout* dialog box (*Utilities/Page Layout* or Alt+L, section 9.5). There are also a few odd options that only affect the kanji lookup systems that are located in the lookup dialogs (section 6.2).

[60] Yes, there are lots of options. This means that I didn't force a single approach, but instead provided options to meet varying needs.



The *Startup Options* section allows you to control aspects of the startup process:

Restore Window Position – If this is selected, JWPce will open its window to the same size and position (and monitor) as it was last time you closed JWPce. This option only functions if the *Save Settings on Exit* options is selected. (Off by default.)

Reload Previous Files – If this is selected, when you start JWPce it reloads all the files that you were working with when you last closed JWPce. This allows you to recover your working environment quickly. (On by default.)

The *Termination Options* section controls actions JWPce takes when terminating:

Save Settings on Exit – When selected, JWPce will save all the option settings whenever you exit the program. This keeps your configuration settings current. The alternative is to use the *Utilities/Save Options* command to save the settings by hand. (On by default.)

Confirm Exit on Last File – Normally JWPce will terminate if you close the last file. If this option is selected, JWPce will request confirmation before terminating.

The *Line Width* options determine how JWPce determines the line width for the screen. It has no effect on the printer (section 5.2):

Dynamic – Determined by the width of the display window (default).
Fixed – Determined by a fixed value that you enter.
Printer – Determined by the currently selected printer.

The *Close Button* options determine the action taken when you click the close button (section 3.2):

Close File – Close the current file (default).

Close Program – Close the entire program.

Finally, the *Units* section determines the type of units used to measure distances:

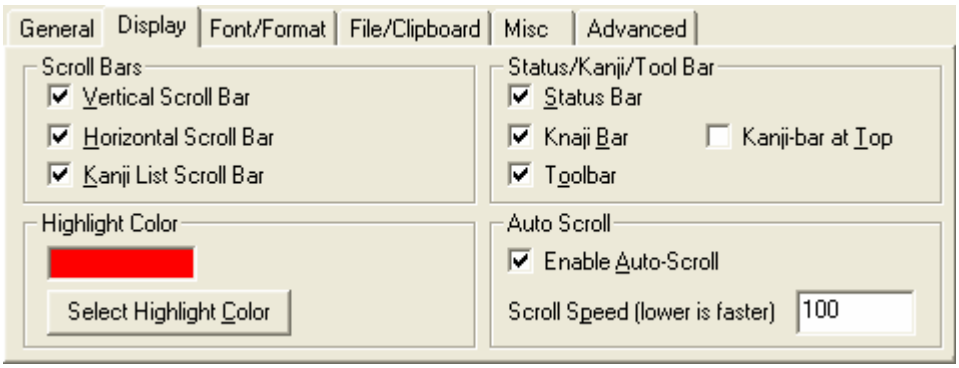
inches – Inches (default).
cm – centimeter

The following two options are only available on Windows CE PPC devices. These options change the way the up and down buttons work on a PPC. By default, these buttons move the cursor up or down a single line. By selecting these options you can move up and down a page at a time (a screen minus one line). For one-handed operation, the page modes may be more convenient.

Page Scroll, Files – Uses page mode for moving around in a file.
Page Scroll, Lists – Uses page mode for moving around in lists (including the dictionary).

10.2 Display Options

The display options allow you to control various aspects of the display:



Scroll Bars

Vertical Scroll Bar – Enables the vertical scroll bar in the main text area (default on).

Horizontal Scroll Bar – Enables the horizontal scroll bar in the main text area. Technically, this should not be necessary if you are using the *Dynamic* line width option (10.1) , since the line width then always matches the window size (default on).

Kanji List Scroll Bar – Enables the horizontal scroll bar in the kanji bar (default on).

Status/Kanji/Tool Bar

Status Bar – Enables the status bar (default on).

Kanji Bar – Enables the kanji bar (default on).

Kanji-bar at Top – Places the kanji bar at the top of the display, not at the bottom (default off).

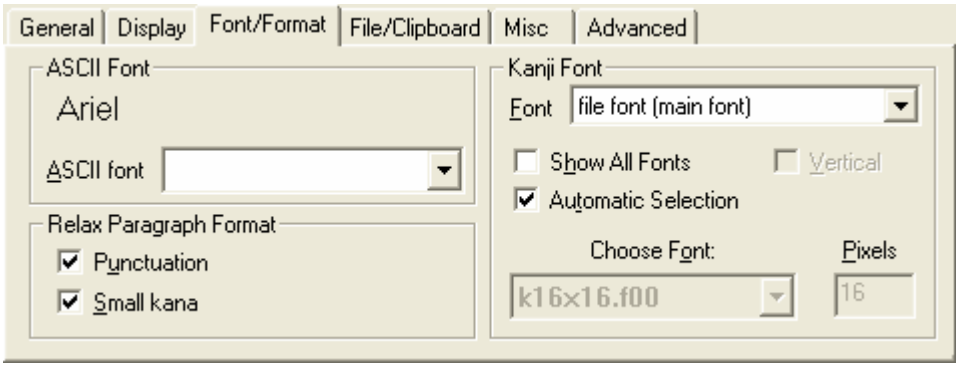
Toolbar – Enables the toolbar (default on). This option is not present on Windows CE machines. The configuration of the buttons on the toolbar can also be adjusted (section 10.7).

If *Auto-Scroll* is enabled, when the mouse (or pointer) is moved to the top or bottom of a file or list, JWPce will automatically scroll through the file or list. This makes it possible to select more text than is visible in the display. *Auto-Scroll* is enabled by default, but you can disable it. You can also adjust the speed of the scroll. 100 is the default speed, but lowering the value the display will scroll faster, and increasing the value will scroll the display faster.

The final option determines the *Highlight Color*, which is the color that JWPce uses to draw attention to text information in Japanese list boxes. This is used in the *Character Information* dialog box (section 6.1), in the *Dictionaries* dialog box (section 7.5), and when displaying user dictionary entries (section 7.2). (Red by default.)

10.3 Font/Format Options

This dialog contains font and some formatting information.



The *Relax Paragraph Format* section determines when JWPce may place characters in the right margin (section 5.2).

Punctuation – This option allows JWPce to modify the paragraph formatting by placing some punctuation (most of the punctuation characters rendered on the left side of the character box) in the margins, so JWPce can avoid having to begin a line with punctuation. (On by default.)

Small kana – This allows JWPce to modify the paragraph formatting by placing small kana in the right margin, to avoid having to begin a line with a small kana.

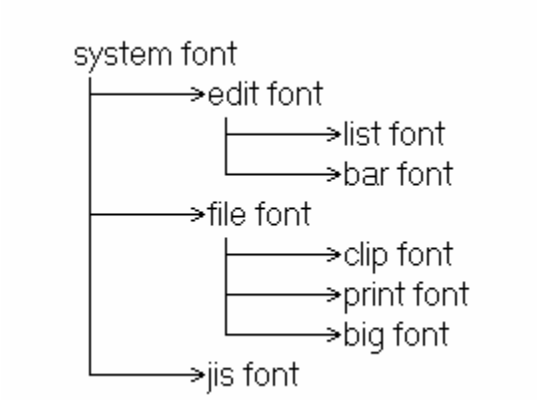
The fonts sections determine the type of fonts used. JWPce allows you to choose a Japanese display (screen) font, a Japanese printer font, as well as an ASCII (English) font.

10.3.1 ASCII Font

You do not choose the size of the ASCII font, instead JWPce matches it to the size of the Japanese font you are using. Further, since JWPce only allows TrueType ASCII fonts (except on Windows CE devices that do not support TrueType fonts), the same font is automatically used for both the display and printer. The *ASCII Font* drop-list allows you to choose the ASCII font face.

10.3.2 Kanji Font

This section controls the kanji fonts used by different parts of the programs. Each font has a specific use. JWPce arranges the fonts used by the system in a hierarchy. Each font has particular characteristics, but can be set to *Automatic Selection*. In automatic mode, the characteristics of a font are determined by the parent font. The following table shows the font relationships.



From this chart we can see that the *system font* is the root font, and all other fonts can be determined from it. The *edit*, *file*, and *jis* fonts are determined directly from the *system* font. The *list* and *bar* fonts are determined from the *edit* font, whereas the *clip*, *print* and *big* fonts are determined from the *file* font.

The following table indicates the usage for each of the fonts:

Font	Description
System	Root font. This is used to render system text in Japanese. This should remain a relatively small font, or you may have trouble with dialog boxes. Default is k16x16.f00.
Edit	Font used for Japanese edit controls. Derived from the system font.

	Making this font too big can cause rendering problems in dialog boxes. Default is auto k16x16.f00.
List	Font used for Japanese list controls. Derived from the edit font. This font can be safely made any size you desire (within reason). Default is auto k16x16.f00
Bar	Font used for rendering all kanji bars. This includes the kanji bar on the main display, as well as the kanji bars used in the kanji lookups. Making this font too big can cause display problems in some dialog boxes. Default is auto k16x16.f00
File	Base font used to render text in a file. This font is derived from the system font and can safely be made any size. Default is auto k16x16.f00.
Clip	Font used to render text on the clipboard. This font is derived from the file font and can be made any size. Using a larger font on the clipboard and reducing the image size can result in higher quality printing. Making this font vertical will cause the clipboard text to be rendered in vertical form instead of horizontal form. Default is auto k16x16.f00
Print	Used to render to a printer. This font is derived from the file font, and can be made any size. Unlike all other fonts, the size of this font is specified in points, which translate to a specific size on the printer. All other fonts are specified in pixel. Vertical printing is supported by JWPce, but is not selected by setting the print font to vertical. Vertical printing is set in the page layout for the file (section 9.5.1). Default is auto k48x48.f00.
Big	Font used to render the large kanji in the *Character Information* dialog (section 6.1). This font is derived from the file font. You cannot set the size of this font, JWPce will automatically adjust the size of the font to fill the space for the large kanji. It is particularly good to have a TrueType font for this one. Default is auto k48x48.f00.
JIS	Font used to render the JIS table. This font is derived from the system font. You cannot adjust the size of this font. JWPce requires that this font is 16 pixels high. Default is auto k16x16.f00.

To set a font, first select the font you want to adjust with the *Font* control. By default most fonts are set to *Automatic Selection*, which means JWPce chooses the font for you. If you disable the *Automatic Selection* control, you will be able to set the font:

Choose Font Provides a list of all fonts that specify they support Japanese text. Often UNICODE fonts support many languages and do not specify Japanese support. You can select *Show All Fonts* to see all of the fonts.

Pixels/Points Indicates the size of the font. Most fonts are specified in terms of pixels (dots on the screen). The print font is specified in terms of points. A point is 1/72[61] of an inch, and specifies the actual height of

[61] A point is really 1/72.27", but most computers treat it as 1/72".

characters on the page. You cannot set the size on the *big* or *JIS* font. The *JIS* font is always 16 pixels high. JWPce will automatically set the size of the *big* font to match the size of the display.

Vertical This option can only be selected for the clipboard font. Selecting this option will cause the clipboard bitmapped image to be rendered in vertical mode.

The *Show All Fonts* checkbox will show all possible TrueType fonts in the *Choose Font* list. This can be used to select a font that your know contains Japanese encoding, but do not show in the font list. In order to make it easier to select a Japanese font, JWPce tries to show only fonts that have Japanese support. Some UNICODE fonts support a wide range of languages and thus do not indicate support of Japanese characters. These fonts will not normally be included in the font list, so you may have to select the *Show All Fonts* option. If you select a font that actually does not contain Japanese glyphs, JWPce will have the system to provide the "closest" font with Japanese glyphs. If Windows is not able to find a font with Japanese glyphs (often a problem on Windows CE machines), JWPce will display boxes wherever a Japanese character is located.

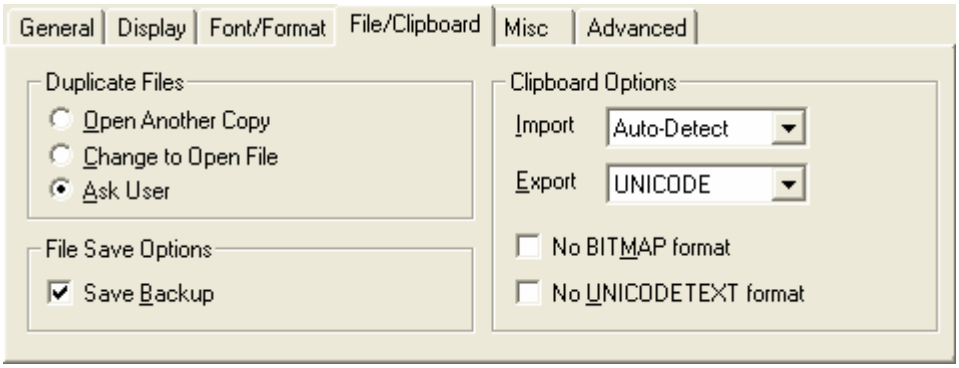
TrueType Japanese fonts are supported on Windows CE devices that support TrueType fonts (not all do). As of the time this manual was written, many Windows CE devices did not correctly recognize Japanese TrueType fonts, so to select such a font the *Show All Fonts* checkbox must be used.

Tip: You can sometimes get faster printing using a lower resolution font (how much faster depends on the specific printer and print-driver you are using). In such cases, you may want to print draft material at a lower resolution. Actually, the 16x16 base font prints quite well in JWPce.

WARNING! Vertical printing is only supported for TrueType fonts that contain a vertical glyph substitution table (this should be included in all fonts, but you never know). If you use a TrueType font without such a table, JWPce will default to using the bitmapped fonts for vertical printing.

10.4 File/Clipboard Options

The *File/Clipboard* options relate to working with files as well as setting the clipboard import and export formats.



The file options are:

Duplicate Files Determines what to do when you attempt to open a file that is already open (section 8.5.4)

Open Another Copy – Opens another copy of the file.
Change to Open File – Changes to the already open version of the file.
Ask User – Ask the user what to do (default).

File Save Options

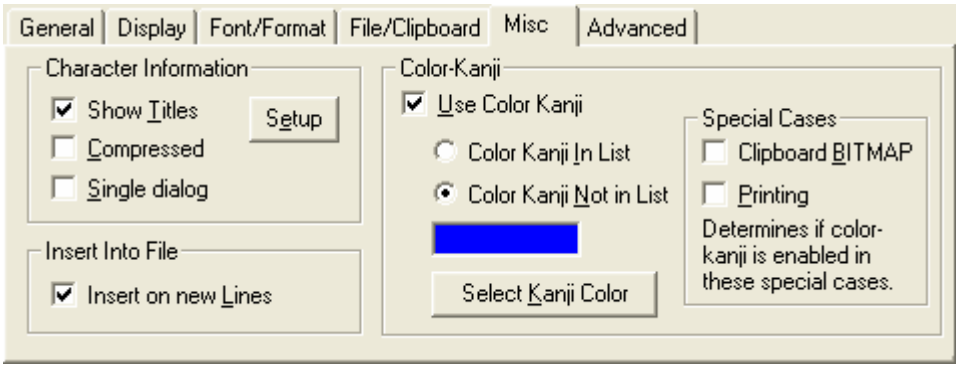
Save Backup – Generates a backup version of the file when it is saved (section 8.9.1)

The *Clipboard Options* section allows you to choose the clipboard import and export formats (section 5.5.4). The default *Import* format is *Auto-Detect*. The default *Export* format is *Shift-JIS*.

Normally JWPce exports data to the clipboard in several formats at the same time (JWPce, TEXT, OEMTEXT, BITMAP, and UNICODETEXT) (section 5.5). The *No BITMAP format* and *No UNICODETEXT format* checkboxes suppress two of these possible formats. Both are disabled by default.

10.5 Miscellaneous Options

The *Misc* options page contains a number of options that don't fit anywhere else.



These options are:

Character Information

Show Titles – If selected (the default) titles are shown in the list box of the *Character Information* dialog box (section 6.1).

Compressed – Selecting this options displays the reading fields (meaning, on-yomi, kun-yomi, and nanori) in a compressed format, where entries are separated by commas, instead of on separate lines. This allows much more information to be viewed, at the expense of readability (section 6.1).

Single Dialog – Causes JWPce to use only a single dialog for *Character Information* instead of opening a new dialog box for each character.

Setup – Launches the *Configure Character Information* dialog (section 6.1.1) and allows configuring the order of information presented in the *Character Information* dialog.

Insert Into File

Insert on new Lines – If selected (default), causes text inserted from a Japanese list box to be inserted into separate lines (actually paragraphs) for each entry inserted (section 3.7.3).

The following options pertain to the *Color Kanji* feature (section 6.12):

Use Color Kanji: Clearing this checkbox will completely disable the *Color Kanji* feature (enabled by default).[62]

Color Kanji in List: If this is selected the kanji in the list will be colored and the kanji not in the list will be black.

Color kanji Not in List: If this is selected the kanji in the list will be black and the kanji not in the list will be colored (default).

Select Kanji Color (or click in the color box): Allows you to choose the color used by the *Color Kanji* feature (blue by default).

Clipboard BITMAP: If this is checked, JWPce will export color data to the clipboard BITMAP format, if cleared JWPce will export only black & white data (section 5.5.3).

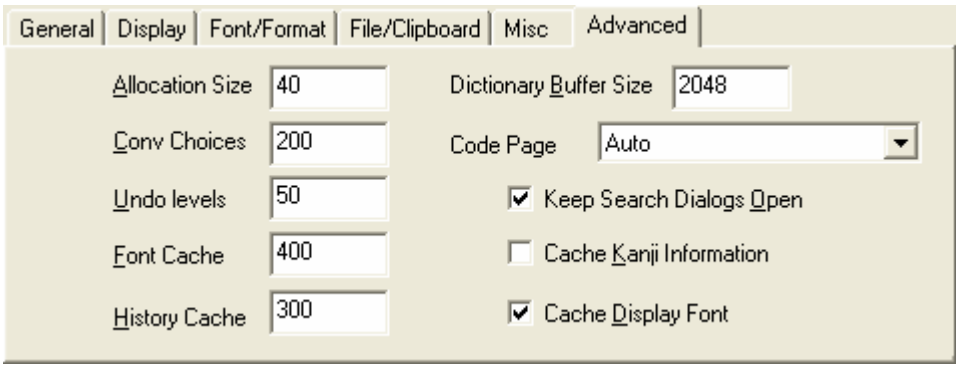
[62] If you are using a very slow machine, disabling color kanji can increase the screen update speed a little.

Printing: If this is checked, *Color Kanji* will be printed in color. If it is cleared, printing will be black & white.

10.6 Advanced Options

WARNING! Most of the settings on the *Advanced* options page are technical in nature. If you are unsure of what they do, you may not want to change them. Also remember that you can restore the default configuration by using the menu command Utilities/Default Options, but this will reset EVERYTHING!

The *Advanced* options page contains a number of technical options that can be adjusted to suit your individual tastes.



WARNING! Allocation Size is very technical!

Allocation Size – JWPce allocates space for storing your text on a paragraph basis. The *Allocation Size* is the storage increment that JWPce uses.(This number is the number of words per increment, a word being two bytes.). Making this number too large leads to lots of wasted memory, particularly if your text has many short paragraphs.[63] If this value is too small, JWPce has to make too allocation requests and could fragment the memory badly. The default value is 40.

Conv Choices – JWPce remembers the kanji you choose from the kana→kanji conversions (section 4.7) ,so it can present the same choice to you the next time you do the same conversion. *Conv Choices* is the number of kana→kanji conversions that are remembered.[64] Making this number larger

[63] Wasted space (assuming uniform distribution) is *Allocation Size**<number of paragraphs>.
[64] More conversions are actually remembered. To store as many conversions as possible JWPce only stores those where you do not take the default choice (first kanji on the list) or retain the kana. To further reduce the list and make it a fixed-size for fast scanning, JWPce only stores conversions of no more than six kana. Generally if the conversion has more than six kana, there is only one or two choices.

allows storing more conversion choices, at the expense of using more disk and memory space for the file (8 bytes per entry). If it is too big, manipulating the list will slow the conversion process. The default is 200.

Undo Levels – Determines the maximum number of undo steps retained per file. Increasing this number requires more memory. The default is 50 per file!

Font Cache – To reduce memory usage, JWPce does not load all the kanji fonts into memory at one time. The characters are loaded as they are used and saved in a cache, so that common characters do not need to be reloaded. This parameter determines the number of kanji in the cache. Making the cache too large both wastes memory and slows down general rendering, because the cache search takes longer. Making the cache too small slows things down and exercises your hard drive more than you may want. The default is 400. (Font caching does not affect TrueType fonts.)

History Cache – Buffer size allocated for the history cache (section 3.6.1). The actual size in bytes is twice this. The default is 300 (or 600 bytes). Basically a rule of thumb is this will hold 1/10 the size in terms of lines, or 30 entries for the default. One buffer this size is allocated for every history.

Dictionary Buffer Size – Indicates the size in bytes used for accessing buffered dictionaries. The minimum size for this buffer is 2048 bytes, but the maximum size is unlimited. Increasing the size makes buffered dictionary searches slightly faster at the expense of additional resources.

Keep Search Dialogs Open – Causes the *Search* and *Replace* dialogs to remain open on the screen (section 5.7). This is the default. Previous behavior was to close these dialog boxes.

Cache Display Font – Normally JWPce does not cache the display font, because it usually is the 16x16 bitmapped font, which can be stored in only 220KB. On the other hand, the 48x48 bitmapped printer font requires 2.3MB. If this checkbox is selected, JWPce will cache the display font. You may want to consider this option if you are using a large font for display. (Font caching does not affect TrueType fonts.)

Cache Kanji Information – With the exception of the *Radical Lookup* (section 6.3), all of the kanji lookups (sections 6.3 to 6.10) make a great number of accesses to the kanjinfo.dat file. The speed of these searches can be greatly increased by caching the kanjinfo.dat file in memory, at the expense of using up 500 kB of memory. The kanjinfo.dat file can be moved into memory by using this checkbox. For people who have lots of memory, slow machines, and/or use the lookup features a lot, caching kanjinfo.dat is advised.

10.6.1 Code page Options

The code page dtermines the code page used for translating between UNICODE and non-UNICODE encoding systems. Future versions of JWPce will probably use UNICODE encoding internally, and then convert to whatever encoding the user has requested. The current versions JWPce, however, use an extended form of JIS encoding internally. This requires correctly interpreting the code page used by the system. By default, this option is set to *Auto*, which causes JWPce to use the code page matching the local set on your computer. The problem is that there can be several reasons why one would want to change the code page used by the program to another code page. The most dominant is that you may want your computer's local set to Japan so the IME works correctly, or because you run other Japanese software. This can cause JWPce to interpret all extended ASCII characters as being on the Western Europe/USA code page (1252).

Note that JWPce currently only supports code pages that are essentially mapping of the extended ASCII character set (128-255). More complicated language supports such as Korean, or Chinese are not supported at this time.

Also remember that JWPce can display and process Japanese text regardless of what the code page option, non-UNICODE language, or computer local are set to.

The interactions of the code page settings can be very complicated and can be best illustrated by assuming you are want to use the Cyrillic code page as your native code page. Depending on the operating system you are using there are a number of different ways to do this:

10.6.1.1 Windows XP

The following methods will correctly support Cyrillic text in JWPce:

1) Leave the code page setting on *Auto*, and set the computer to use Cyrillic for non-Unicode programs. Requires a specific Cyrillic font (such as Arial Cry).
2) Leave the code page setting on *Auto*, and use an AppLocal utility to set the local for JWPce to a location that uses Cyrillic text. Requires a UNICODE font.
3) Set the code page to *1251 – Cyrillic* on the *Advanced Options* page. In this case it does not really mater what you set the non-UNICODE program language to. JWPce will interpret extended ASCII codes as Cyrillic. This requires a specific Cyrillic font.

10.6.1.2 Windows CE

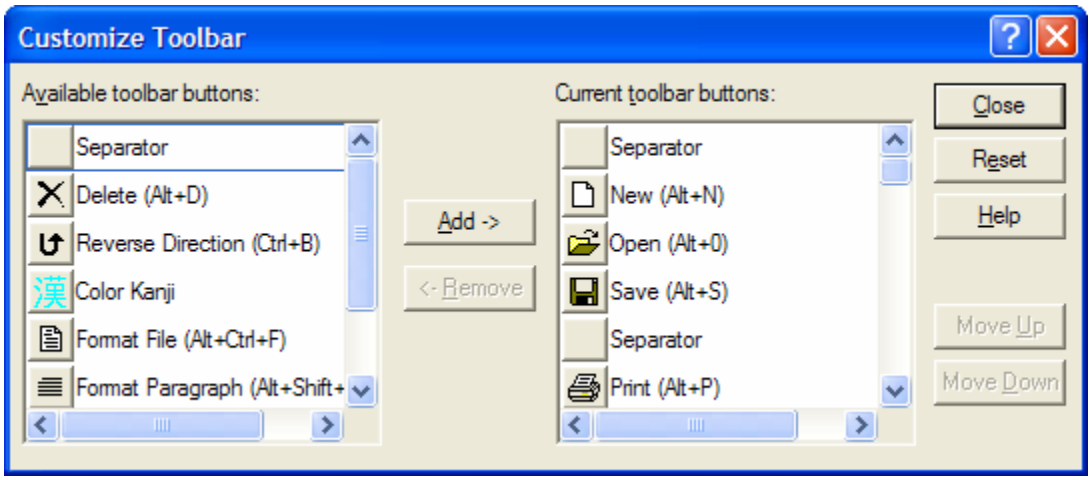
The following methods will correctly support Cyrillic text in Windows CE version of JWPce:

1) It does not really mater where you set the local on Windows CE. All Windows CE programs are UNICODE programs, and the text is not normally translated

using the code page. In this case you should set the JWPce Code Page option to 1251 – Cyrillic, and use any UNICODE font (most Windows CE fonts are full UNICODE fonts).

10.7 Toolbar Customization

Windows versions of JWPce have a configurable toolbar. The entire toolbar can be enabled or disabled by using the *Toolbar* checkbox located on the *Display* page of the *Options* dialog box (section 10.2). The buttons on the toolbar can be customized By double clicking on the toolbar or by selecting the *Utilities/Customize…* command.



From this dialog box buttons can be added, removed, or moved. Additionally the default toolbar configuration can be restored.

The button functions are as follows:

Add	Takes the selected *Available toolbar buttons* and inserts it into the toolbar.
Remove	Removes the selected button from the toolbar.
Close	Closes the dialog box and accepts the toolbar as it stands.
Reset	Resets the toolbar to the default configuration.
Move Up	Moves the current button up one.
Move Down	Moves the current button down one.

Windows CE versions of JWPce have a toolbar (in Windows CE language called a command bar), but it cannot be disabled or configured. The PPC versions JWPce have a horizontal scrolling command bar that toggles between showing the menu and the most common buttons.

11. Other Topics

This chapter contains information that didn't fit in any other chapter.

11.1 Fonts

Fonts are always an important issue for word processors. For a Japanese word processor, it becomes even more complicated. JWPce uses three distinct fonts:

ASCII font: Used for rendering ASCII (English) text. This font is required to be a TrueType font (except on Windows CE machines that do not support TrueType fonts), and is used both for screen display and for the printer.
Display font: Japanese font used on the screen.
Printer font: Japanese font used for printing.

JWPce supports bitmapped and TrueType fonts. The standard Japanese fonts distributed with JWPce are bitmapped. They have the advantage of requiring little storage space (compared to most Japanese TrueType fonts), and they can be rendered to the screen very quickly. A bitmapped font is stored as a series of pictures, one for each character. The JWPce distribution includes up to three bitmapped fonts:

Font name	file size	font description
K16x16.f00	220 KB	16x16 bitmapped kanji font
K24x24.f00	561 KB	24x24 bitmapped kanji font
K48x48.f00	2,247 KB	48x48 bitmapped kanji font

TrueType fonts are not stored as pictures, but rather as instructions for drawing the characters (lines, arcs, fills, etc.). This allows TrueType fonts to be scaled to any size, but makes the font files much bigger. On some systems, these fonts render more slowly, and take up more runtime memory.

11.1.1 Installing Additional Bitmapped Fonts

Bitmapped fonts from other sources can be used with JWPce. Generally, any font that can be used with JWP can be used with JWPce. (There are even font editors for making your own fonts.)

To install a new bitmapped font, copy the font file into the same directory in which JWPce is located. JWPce will automatically recognize the file as being a font file if it ends with the extension ".f00" (that is F+zero+zero).

11.1.2 Installing TrueType Fonts

TrueType fonts are installed just like any other Windows font (generally in the system fonts directory). Currently I do not have a TrueType Japanese font that can be distributed with JWPce, so if you intend to use such fonts, you must obtain them from some other source.

WARNING! At the time this manual was being written, most Windows CE machines that support TrueType fonts do not correctly indicate the font as supporting Japanese, so you may have to use the *Show all fonts* option (section **Error! Reference source not found.**).

11.1.3 How to get Japanese TrueType fonts

Due to copyright concerns, at this time I do not have a TrueType font that I can safely distribute with JWPce. (I tend to be very strict about these things.) I can, however, point out two good sources for TrueType Japanese fonts.

The first source for Japanese TrueType fonts is Microsoft. Microsoft has made two nice TrueType fonts available in the Japanese support kit for Microsoft Office, and in the Japanese support kit for Internet Explorer. (For Office-97, the Japanese support kit was included on the Office CD. For Office-95, it had to be downloaded from Microsoft's web site. I do not know about Office-2000. The Japanese support kit for Internet Explorer can be downloaded from the Internet Explorer Support Site [http://windowsupdate.microsoft.com after getting Internet Explorer from http://www.microsoft.com/windows/ie/download/all.htm.)

Other TrueType font(s) (as well as the Microsoft fonts) can be obtained from The Monash Nihongo ftp Archive [http://ftp.cc.monash.edu.au/pub/nihongo/00INDEX.html] (*many many thanks to Jim Breen*).

11.1.4 Choosing an ASCII Font

The ASCII font can be chosen on the *Font/Format* page of the *Options* dialog box (*Utilities/Options…* or Ctrl+O, section 10.3). The ASCII font control will only allow you to choose an English-based TrueType font. For the ASCII font, you choose only the font face. JWPce automatically matches this font to the size of the Japanese font used on the screen and for printing.

11.1.5 Choosing a Japanese Display Font

The Japanese display font can be chosen on the *Font/Format* page of the *Options* dialog box (*Utilities/Options…* or Ctrl+O, section 10.3). The display font should be chosen to provide good readability on your screen, not to match the printer font size. For example, a 10 point font on a typical screen comes out to be about 8x8 pixels, and is completely unreadable. In any case, JWPce can still display the text formatted as it will appear on the printer (section 5.2).

Most people will use the k16x16.f00 font for the display. If you have a very high-resolution display you may consider the k24x24.f00 font.

If you are using a TrueType font for the display, you will need to select the pixel height. Because TrueType fonts do not have a fixed height, you need to choose a display size. Normally we think of font sizes in terms of points or some other unit of length, however JWPce uses pixels as the unit of the display font. This was done to make sure you realize that the size of this font does not effect printing, and furthermore, screen resolutions are given in pixels.

Choosing Fonts for Special Cases

There are some cases when you may want to make unusual font choices, such as when you are using the BITMAP clipboard format (section 5.5.3). The resolution of the BITMAP copied to the clipboard depends on the resolution of the display font. If you want a high-resolution image, you should use a large display font and then reduce the size of the bitmap when used. This provides a higher resolution bitmap that will look much better when printed.

11.1.6 Choosing a Japanese Printer Font

The Japanese printer font can be chosen on the *Font/Format* page of the *Options* dialog box (*Utilities/Options…* or Ctrl+O, section 10.3).

First, enter a number for the *Actual Printed font size (points)*; whichever font you choose will be scaled to this size. From this number JWPce determines almost all the printing parameters (including the size of the ASCII font, various spacing parameters, etc.).

Second, choose the actual font that will be scaled to the size chosen above. Generally, the best approach is to allow JWPce to choose the font for you. This can be done by selecting the *Auto* option (section 10.3). In *Auto* mode, JWPce attempts to match the printer font to your display font. If you are using a TrueType font, the same font will be used for the printer. If you are using a bitmapped font, JWPce will choose a bitmapped font with higher resolution than the printer (or the best resolution available).

WARNING! Vertical printing is only supported for TrueType fonts that contain a vertical glyph substitution table (this should be included in all fonts, but you never know). If you use a TrueType font without such a table, JWPce will default to using the bitmapped fonts for vertical printing.

Choosing Fonts for Special Cases

There are special cases where you may want or need to set the printer font by hand. First, if you are using a non-standard bitmapped font (not one of the three distributed

with JWPce) and want to use that font for printing, you will need to select that font by hand, because JWPce does not know about other installed bitmapped fonts.

Another case is for printing drafts. When printing drafts you can sometimes speed up the printing by choosing a lower resolution font (if at all and by how much depends on the printer and printer drivers you are using). Surprisingly, even the k16x16.f00 font provides quite readable output.

Another case when one may want to consider not using *Auto* font selection is when you are using a bitmapped font for the display and want to use a TrueType font for printing. This may seem to be strange, but the bitmapped fronts have been optimized for display at their specific resolutions, and can sometimes look better on the screen than TrueType fonts.

12. Localization

JWPce supports localization of the interface. This allows the interface to be translated into another language. You can also use the localization ability to create larger dialog boxes or a dialog box with a different configuration without having to change the actual code.

JWPce localization is supported via the user of localization DLL, JWPce_lang.dll. This DLL is placed in the same location as JWPce and provides an alternative set of resources that JWPce will use.

12.1 Introduction

Starting with version 1.34 JWPce allows most of the visual and all of the text elements of the user interface to be changed. This serves two functions. First, it allows the localization (translation) of the program into different languages. Second, it allows custom versions of some of the dialog boxes to be developed. For example, you could generate a version of JWPce with a very large dictionary dialog box for use on a system with a high-resolution monitor.

12.2 Language localization in JWPce

Internally, JWPce is contains English language menus, dialog boxes and text. Localization refers to the process by which JWPce can replace these elements with a different language.

Localization in JWPce is implemented by generation of a JWPce_lang.dll (Dynamic Link Library). If JWPce finds this DLL during startup (the DLL must also have the correct ID signature) many of the program's resources (all of those containing text) will be loaded from the DLL not from the main program.

12.3 Translation Parts

In order to localize JWPce there are three things that must be localized:

1. **Menus:** The main menu and the popup menus used ad various locations.

2. **Dialog Boxes:** Static text that is used in the dialog boxes. Dynamic text used in the dialog boxes, as well as the text used in many of the message boxes is actually stored in the string table.
3. **String Table:** All the text used in the programs. These are used to generate message boxes and other messages in the program.

12.4 Methods of generating a Localization

There are two ways to generate a localization of JWPce. Both ways are supported in this translation kit. The method you use is up to you and your abilities. The first way is only useable by people with some programming ability. The second way is usable by anybody.

12.4.1 Programmers Translation Kit

If you have access to a programming system that can work with Windows resource files, you can use the programmers translation kit. This kit contains all the files necessary to actually create the translation DLL. This has a number of advantages:

1. You can make small adjustments to the dialog boxes to better adapt them to your language.
2. You can test the translation on your own system.
3. It takes less of my time, so the translation can be released much faster.
4. There is no iteration process necessary since you can make all the adjustments necessary yourself.

12.4.2 Non-programmer Translation Kit

Don’t worry if you don’t know anything about programming. You can use the non-programmer translation kit. To use this kit you just need to be able to read a standard text file and translate each line of text into your language. You return the text file to me and I will generate the translation DLL.

The major problem with this system is it takes more time. I will generate the best translation DLL I can from the data you give me. I will send this DLL and any questions I have back to you. You may then have to provide some more input and around we go until all the details are worked out.

12.5 Support

I will try to release updated translation kits as soon as new versions of JWPce come out. I will also try to make the source for the old translations available for new translators.

12.6 Double Translations

Double translations are a problem. If more than one person does a translation to the same language, I have no way to telling which is the better translation. This is a problem, and I don't want to get involved in arguments about languages that I don't know.

If you are intending to do a translation (for public distribution), please send me an email. Include the language you will be translating to and I will put your name on the web. This should reduce the number of double translations.

I should be reachable at:

grosenthal@physics.ucla.edu.

Currently I maintain a web site to support JWPce:

http://www.physics.ucla.edu/~grosenth/jwpce.html

Unfortunately e-mail and web addresses do change. If you are having trouble reaching me, you might try checking the Monash Nihongo ftp Archive (http://ftp.cc.monash.edu.au/pub/nihongo/00INDEX.html).

Good Luck and enjoy!

-glenn

12.7 Non-programmer Translation Kit

The non-programmer translation kit consists of the single translation file. You will have to edit this file to make the changes that are necessary. This file is a text file, but you can edit it in any text-editor or word processor you want. You may want to use a word processor (such as Word) since the fonts will be proportional which better match the Windows system fonts..

There are actually three files. These correspond to the different versions of JWPce (not you do not have to translate all of them if you don't want to):

language.txt -- Windows 95/98/ME/NT/2000/XP
language-hpc.txt -- Windows CE – HPC version
language-ppc.txt -- Windows CE – PPC version

After you have changed the file you will need to return it to me. You can send it back as a text file or as a Word document. Please include a note with the language you are translating to.

12.7.1 Working with the language file

The format of the translation file is as follows:

1. Lines beginning with # are description lines. These provide a description of what lines or groups of lines do in JWPce. You do not need to edit these lines. You should scan them for important information and instructions on the lines to be translated.
2. The lines that need to be changed contain either text in quotes, or a marker followed by text in quotes. **You should replace the text in quotes with the translated test. Please leave the quotes these are important to assembling the translated file.**
3. You should not change any of the markers or the order of the texts. I use these markers to reassemble the programming information.

   For example, in the line:

   ```
   IDS_CE_CLOSE   "Closing User Conversions!"
   ```

   Leave the marker (IDS_CE_CLOSE), and replace the original text with your translation.

12.7.2 Hints and rules for making the translation

There are a number of rules that must be followed in generating your translation.

1. The following symbols are special and you should not change them. If such a symbol is in the line you are working on you must make sure it is there in your translation:

Symbol	Meaning
"."	This is a place marker entry. The string is not used in the version of Windows you are translating for. Do not change this string just ignore it.
&	Indicates keyboard shortcut (the next character).
\t	Inserts a tab character, these are used for spacing or markers in the text string.
\n	Generates a new line, allows more than one line of text to be stored in a given string.
%s	During execution JWPce will insert text at this location (typically a file name).
%d	During execution JWPce will insert a number at this location.
%x	During execution JWPce will insert a number at this location.

2. Try to keep string lengths in the dialog boxes the same as the English length. This prevents problems putting the new strings in where the old strings were. Since

Windows uses a proportional font to display dialog boxes, using a word processor can be helpful.
3. If there are spaces at the end of the string don't remove them, they are necessary.
4. Make sure to include your name as the translator in the IDS_ABOUT_TEXT string.
5. If you have any questions please ask me.

Please check the translate.doc file in the translation kit. It may contain more recent information.

12.8 Programmers Translation Kit

This section covers installing the programmers translation kit and generating the DLL. This translation kit is for people familiar with Windows programming and resources. If you are not, you probably should be using the non-programmer translation kit.

12.8.1 Requirements

The memory and disk requirements of the translation kit are small and should not provide a problem on any system. To use this system you have to have a compiler that can generate DLL files and a system for editing resource files. I personally use Microsoft Visual C++.

12.8.2 Installation

Installation is very simple:

1. Create a directory
2. Extract the contents of the correct archive into your directory.
3. That's it.

There are three different versions of the translation kits, based on the target system:

program.zip -- Windows 95/98/ME/NT/2000/XP
program-hpc.zip -- Windows CE – HPC version
program-ppc.zip -- Windows CE – PPC version

12.8.3 Using the translation kit

The localization DLL is empty. The DLL contains only the minimal amount of code necessary to generate a DLL, and a lot of resources.

This main code part is in JWPce_lang.cpp. You will not need (nor should you) change this code.

The resource part is stored in jwpce.rc. This is the file you will be changing.

The other major file is resource.h. This file must not be changed, or the JWPce will not be able to accurately access the resources you generate.

12.8.4 Hints and rules for making the translation

There are a number of rules that must be followed in generating your translation.

1. The following symbols are special and you should not change them. If such a symbol is in the line you are working on you must make sure it is there in your translation:

Symbol	Meaning
"."	This is a place marker entry. The string is not used in the version of Windows you are translating for. Do not change this string just ignore it.
&	Indicates keyboard shortcut (the next character).
\t	Inserts a tab character, these are used for spacing or markers in the text string.
\n	Generates a new line, allows more than one line of text to be stored in a given string.
%s	During execution JWPce will insert text at this location (typically a file name).
%d	During execution JWPce will insert a number at this location.
%x	During execution JWPce will insert a number at this location.

2. If you make adjustments to the size of the dialog boxes please make sure they will still work on 640x480 display systems. If your translation requires a larger display size please let me know so I can let others know this.
3. If there are spaces at the end of the string don't remove them, they are necessary.
4. There are hidden controls on some of the dialog boxes. These controls are necessary for the standardized dialog box routines to work. If these is a hidden control do not remove it (if you do Windows will crash). You can change the location, size, etc.
5. Make sure to include your name as the translator in the IDS_ABOUT_TEXT string.
6. If you have any questions please ask me.

12.8.5 Notes

If you send the DLL for distribution, please send the resource file also. Also remember to include the language you are translating to.

Please check the translate.doc file in the translation kit. It may contain more recent information.

13. Utilities

The Utilities are a number of small programs to handle specific tasks related to JWPce. Most people will never need to use these, but some people may be interested in them. All utilities are run from the command line. Currently there are 5 utilities:

Utility	Function
JINDEX	Generates index files for EUC and UTF-8 dictionaries.
KINFO	Generated KANJINFO.DAT from Jim Breen's KANJIDIC.
RINFO	Manipulates the radical lookup databases.
UINFO	Generates UNICODE conversion tables.
WINFO	Generates kana->kanji conversion database.

13.1 JINDEX – Dictionary Index Utility

The JINDEX utility generates index files for EUC and UTF-8 dictionaries (mixed mode dictionaries are not currently supported). The format used for the command arguments are:

```
JINDEX <dictionary_file> [ <flags> ]
```

The index is written to the same location as the `dictionary_file`, but will have the extension .JDX.

The `flags` parameter indicates any number of the following flags:

Flag	Function
ALLKANA	Includes every kana in the index.
ANYKANA	Includes every kana string of 2 or more characters in the index, regardless of the location of the string (i.e. not just at the beginning of the word).
SHORTKANA	Includes short kana words (1 kana). Note, these must be full words of a single character.
ALLASCII	Includes every ASCII character in the index.
ANYASCII	Includes every ASCII string of 3 or more characters in the index, regardless of the location of the string (i.e. not just at the beginning of the word).
SHORTASCII	Include short ASCII words (2 or 1 characters). Note, these must be full words or 2 or 1 ASCII characters.
ASCII2	Changes the normal ASCII acceptance string from 3 characters to 2 characters.

SKIPNOTES	Does not generate index entries for characters located in parenthese. This will exclude dictionary ID keys, and parenthetical nodes.
UTF	Changes the dictionary encoding from EUC to UTF-8.
TEST	Scan the actual file, but don't create the index. This can be used to determine the size of an index file without actually generating the index, which is much faster.
NOWARN	Suppresses warning messages.
1250	Changes the code page from (1252, American/Western European) to Eastern European.
1251	Changes the code page from (1252, American/Western European) to Cyrillic.
1253	Changes the code page from (1252, American/Western European) to Greek.
1254	Changes the code page from (1252, American/Western European) to Turkish.
1255	Changes the code page from (1252, American/Western European) to Hebrew.
1256	Changes the code page from (1252, American/Western European) to Arabic.
1257	Changes the code page from (1252, American/Western European) to Baltic.
1258	Changes the code page from (1252, American/Western European) to Vietnamese.

Dictionary files can be encoded in EUC or UTF-8. The index file for EUC dictionaries does not depend on the code page. The index for UTF-8 dictionaries does (at least at the current time). By default the code page is 1252 (American/Western European), but if you intend to use the index on some other system you must indicate the code page so the correct UNICODE conversion table can be used.

Indexing every character in the dictionary will generate an exceptionally large index file. In order to reduce the size of the index file some limitations are normally made on what sequences are normally indexed. The following table shows the default index conditions:

Kanji	Every kanji in the file will be indexed.
Symbols	Most every symbol in the file will be indexed. There are not that many of these, so this does not increase the size of the index file much.
Kana	Kana sequences of 2 or more kana occurring at the beginning of a word are indexed.
ASCII	ASCII sequences of 3 or more characters occurring at the beginning of a word are indexed.

Numbers A numerical sequences occurring at the beginning of a word are indexed. The number of these is small, so the size increase in the index is small.

Many of these indexing conditions can be changed using the flags. All of the indexing flags, except for `skipnotes`, will increase the size of the index file.

It is important to understand the ALL, ANY, and SMALL flags. The easiest way to see what these do is to consider how they index some kana words. Consider indexing the words でんきや and は, with various flags:

ALLKANA	で	ん	き	や	／	は
ANYKANA	で	ん	き			
SMALLKANA	で				／	は
ANYKANA & SMALLKANA	で	ん	き		／	は

WARNING! This utility must sort the index into order. For a large index, this can take some time.

13.2 KINFO – Character Information Utility

It is not convenient for JWPce to use Jim Breen's KANJIDIC file directly. This is a basic text file, and is relatively large, as well as difficult to search through without loading all the information directly into memory. Instead JWPce uses KANJINFO.DAT file, which contains the same information in a more compact format. Further, the ability to quickly search through the data has been added.

This utility converts Jim Breen's KANJIDIC into a binary format used by JWPce (KANJINFO.DAT). The format of this command is:

```
KINFO [EUC] [UTF8] [STATS] [IN=<filename>]
```

If the file name is not specified, KINFO will assume KANJIDIC. This utility normally assumes the dictionary is in EUC, but will also support UTF-8. The STATS flag will cause information about the ranges and number of kanji including different indexes. I use this information to make modifications to KANJINFO.DAT.

This utility will write a number of files:

KANJINFO.DAT	Large form of KANJINFO.DAT. This file contains all the information in KANJIDIC.

KANJINFO.MED	Medium form of KANJINFO.DAT. This file does not contain nanori, pinyin, or Korean entires.
KANJINFO.SML	Small form of KANJINFO.DAT. Reduced file that contains only the fixed size data (bushu, strokes, grade, skip, Halpern, nelson, and Haig), meanings, on-yomi, and kun-yomi
JWP_UNIC.DAT	Contains UNICODE information for the kanji. This file was never used. JWPce actually uses the UNICODE conversions tables from the UNICODE Consortium (see UINFO below).
KANJISRK.DAT	Contains stroke information for the kanji. This files Is used by the RINFO utility to generate radical lookup data.
KANJI_FREQ.EUC	Obsolete file no longer generated. Contains the kanji by frequency index using Jack Halpern's frequency data listed in KANJIDIC.

13.3 RINFO – Radical Lookup Database Utility

This utility processes files used for the radical lookup feature. The utility takes no parameters, but reads a number of files:

kanjisrk.dat	Kanji stroke data extracted from Jim Breen's KNAJIDIC.
radkanji.idx	Index file for radical data. This data was first compiled by Michael Raine and Derc Yamaski.
radkanji.dat	Radical data file compiled by Michael Raine and Derc Yamaski.

The files stroknji.idx and stroknji.dat can be read, but these stroke files compiled by Michael Raine and Derc Yamaski are no longer used.

The utility will write the following files:

stroke.euc	EUC file containing the kanji by stroke count.
radical.euc	EUC file containing the kanji by radical.
stroke.dat	Stroke count database used by JWPce for radical lookup.
radical.dat	Radical database used by JWPce for radical lookup.

13.4 UINFO – Unicode Conversion Utility

This utility generates the UNICODE conversion tables used by JWPce. These tables are stored as C code that is actually compiled into JWPce. This utility takes no parameters and reads the file JIS0208.TXT. This file is produced by the UNICODE Consortium. The utility writes the following files:

jwp_ukan.dat	Conversion table for JIS kanji.
jwp_umis.dat	Conversion table for symbols.
jwp_cp1250.dat	Conversion table for Eastern Europe extended ASCII.
jwp_cp1251.dat	Conversion table for Cyrillic extended ASCII.
jwp_cp1252.dat	Conversion table for USA, West Europe extended ASCII.
jwp_cp1253.dat	Conversion table for Greek extended ASCII.
jwp_cp1254.dat	Conversion table for Turkish extended ASCII.
jwp_cp1255.dat	Conversion table for Hebrew extended ASCII.
jwp_cp1256.dat	Conversion table for Arabic extended ASCII.
jwp_cp1257.dat	Conversion table for Baltic extended ASCII.
jwp_cp1258.dat	Conversion table for Vietnamese extended ASCII.

13.5 WINFO – Kana->Kanji Conversion Utility

This utility builds the kana->kanji conversion database used by JWPce. A number of different sources can go into the construction of this table. The syntax for calling the utility is:

```
WINFO <filename> [<alloc>]
```

The `alloc` parameter determines the maximum number of conversions allocated. This must be more than the number of conversions you expect, because ether are usually duplicates that have to be removed. By default this parameter is set at 500,000.

If you compile this utility make sure the stack space is set quite high. The utility uses a quicksort algorithm to order the list. This can use a substantial amount of stack space. MS VC++ allocates a 1 MB stack by default. This is not enough to run the standard configuration. I normally allocate 20 MB, just to be safe. If the utility runs out of stack space you will get a system crash!

The `filename` parameter must specify a configuration file to read. The standard configuration file is called STANDARD.EUC.

The utility will write the files WNN.DAT and WNN.DIX. These are kana->kanji conversion database and index file. It is also possible for the utility to write the older format conversion database that was used by JWP. This has been disabled since these files are no longer used. For debugging purposes a number of other files will be written:

test1.euc	Raw data read from all sources
test2.euc	Sorted data read from all sources
test3.euc	Filtered data read from all sources. Duplicates and unwanted entries are removed.
Test4.euc	Merged final data.

13.5.1 Configuration File

The configuration file is an EUC file containing a number of different commands. Each line should contain a single command. Blank lines are allowed, and any line beginning with a # is treated as a comment line. The following commands are supported:

DIC	Extract kana->kanji conversions from a dictionary in EDICT format. EUC, UTF-8, and Mixed dictionaries are supported.
END	This command end the file. This command must be in the file.
WNN	Extract data from a WNN file. These files are normally produced by the WNN consortium. Older versions of these files (as are distributed with JWPce) are freely distributed. Newer versions are not.
WLINE	Contains a single kana->kanji conversion in the WNN format, but entered on a single line. I used to use these to make additions to the conversion database, but I have moved all of them into ROSENTHAL.U.

13.5.1.1 DIC Entry

Entry specifies a dictionary in EDICT format. All or some valid kana->kanji conversions will be extracted from the file. Conversions with priority marking are assigned value 1. Conversions without priority markings are given value 0.

The format of the line is:

```
DIC  ( ALL | PRIORITY )  <filename>
```

The `ALL` options indicates extract all entries form the dictionary. The `PRIORITY` option indicates extract only priority entries. Such entries must end with a /(P)/.

Entries that do not contain kanji will automatically be skipped. As well as certain entries that mix character formats.

13.5.1.2 END Entry

Each configuration file must terminate in an END command. The format of the command is:

```
END
```

13.5.1.3 WNN Entry

Extracts the kana->kanji conversions from a WNN formatted file. The format of the command is

```
WNN  <filename>
```

Most of these data files were compiled by WNN consortium and are under copyright of Kyoto University Research Institute for Mathematical Sciences, although I have also created some.

The basic format of these files is as follows:

```
\total <number>
<blank>
<entries>
```

Each of the entries has the form:

```
<kana>  <kanji>  <part of speech>  <value>
```

You can examine the files or check in the WINFO code to determine the details. The basics of each field are:

kana Kana for the conversion. Verb and adjective endings are not included.

kanji Kanji for the conversion. Verb and adjective endings are not included.

part of speech Indicates the part of speech. This is used to determine verb endings. The important parts of speech are:

ワ行五段	う-godan verb
カ行五段	く-godan verb
ガ行五段	ぐ-godan verb
サ行五段	す-godan verb
ザ行五段	ず-godan verb
ツ行五段	つ-godan verb
ナ行五段	ぬ-godan verb
バ行五段	ぶ-godan verb
マ行五段	む-godan verb
ラ行五段	る-godan verb
一段	ichidan verb
形容詞	i-adiuective

value Indicates the priority of the conversion. Higher priorities are listed earlier in the list.

14. Support

JWPce was inspired by the program JWP, which was written by Stephen Chung with the support of several other people. JWPce draws heavily on the work in JWP and on the work of people who made fonts, dictionaries, database, and other information available. Beyond that there were a number of users who tested JWPce from the very first versions. Their comments, opinions and bug reports were invaluable.

If you find errors in the dictionary or in the kanji information database, please notify me as soon as possible. Please send any comments, suggestions, and bug reports to me. I would love to hear from you, if only to know that you are using the program and like it (or hate it). Send e-mail to:

grosenthal@physics.ucla.edu.

Currently I maintain a web site to support JWPce:

http://www.physics.ucla.edu/~grosenth/jwpce.html

Unfortunately e-mail and web addresses do change. If you are having trouble getting support for JWPce, you might try checking the Monash Nihongo ftp Archive (see below). You should be able to find the most recent version there, or someone who can point you in the correct direction.

14.1 Dictionary Support

The main dictionaries used by JWPce (**EDICT** and **ENAMDICT**), as well a number of the supplemental dictionaries, were assembled by Jim Breen. The latest versions of these dictionaries can be obtained from the JWPce support site given above or from the Monash Nihongo ftp Archive:

http://ftp.cc.monash.edu.au/pub/nihongo/00INDEX.html

This archive site has a number of interesting programs, text files, and other stuff related to the Japanese language and Japan. It is an interesting site to visit under any circumstances.

Tip: You can contribute to EDICT by sending your user dictionary to Jim Breen for inclusion in EDICT (section 7.3.2).

14.2 Future Releases

Depending on time, whims, and any number of other factors, things may change, but here are the general directions in which JWPce currently seems to be moving:

- Dictionary mode (or program), turns JWPce into a dictionary server.
- Advanced dictionary searches (matching verb endings, compound word searching, etc.).
- Font attributes (size, bold, underline, etc).
- Grammar dictionary.
- Furigana

Good Luck and enjoy!

-glenn