

# “Kanji Renshu”: An Educational Tool for Learning Kanji Characters

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## Abstract

*This software was created to make Kanji study enjoyable for children and people. It takes the form of a game that helps develop the ability of recognizing graphics, which is a vital faculty required in learning Kanji. This could be a method for a novice to learn Kanji with ease. Furthermore, the software has an extended capability. New Kanji questions can be added with easy operation so that the software can be adjusted to be suitable for each user.*

## 1. Introduction

Because we are in the time of the information age, we cannot let the Kanji character fall as PC computers take over. Japanese people now are becoming computer experts but are declining in their Kanji knowledge.

One can learn Kanji characters via a game that makes studying Kanji enjoyable rather than tedious. Users will also like learning through use of a computer.

## 2. The software

### 2.1 The reference program

This software was made with reference to Yukio Katayama's (2003) book "Java Game Programming", in particular to the chapter about a panel game.

### 2.2 The contents

The usage of the software is relatively simple. The user will click the title “Kanji Renshu” on the homepage (Figure 1). After that, the link “Introduction” will appear and clicking that will go to an explanation screen. Since such a format is

commonly seen among websites, even children will have no problem using the software if they are acquainted with the Internet.



Figure 1. The title page

The explanation screen will tell how to solve a Kanji character puzzle and how the users can add a Kanji character puzzle by themselves.

Figure 2 shows a puzzle. The puzzle consists of sixteen panels. Each panel bears a different section of a Kanji character. Because the puzzle panels are randomly placed, one will not know what Kanji character all the panels are supposed to compose.

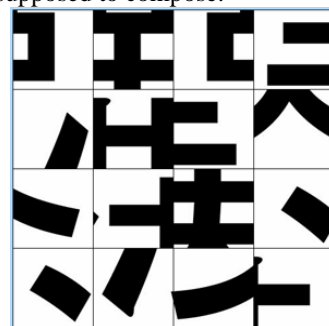


Figure 2. The puzzle

The Kanji character that the panels make up is displayed below the puzzle, as “漢” is displayed in Figure 3. The user will use the character as a guide to

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solve the puzzle by moving the puzzle panels around to form that Kanji character.

First, I want you to compare the puzzle picture in Figure 3 to that in Figure 4. You will see that the panel at the lower right corner was replaced by the panel at the upper left corner. The user can do this by clicking on the lower right panel with a mouse. The operation of the game is as follows: when the user clicks on a panel it will be replaced by the panel that is in the upper left corner of the puzzle. Therefore, the user will continue clicking on different panels until all the panels form the Kanji character in its true form (as shown below the puzzle).



Figure 3. Before an exchange of panels



Figure 4. After an exchange of panels



Figure 5. How to play (the Introduction page)

Figure 6 shows the screen that will appear upon completion of the puzzle. The outlines of each puzzle panel disappear and the whole Kanji character is displayed with the message “おめでとう!”



Figure 6. After a completed puzzle

Then, the user can move on to the next puzzle (like one in Figure 7) by clicking on the completed character.



Figure 7. Example of another puzzle

### 2.3 The quiz sets

I made several sets of Kanji quizzes about Kanji characters, which contain one of the "HEN" and "KANMURI" radicals.

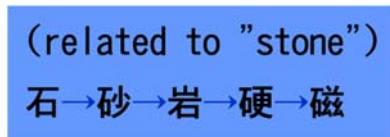
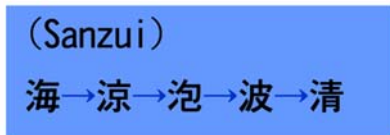


Figure 8. Three quiz sets

The top of Figure 8 is a quiz set containing the "Kusa-kanmuri" radical meaning grass, the middle the "Sanzui" radical meaning water, and the bottom the radical meaning stone. The quiz sets are organized according to each radical because it would be easier to recognize a Kanji when Kanji in a set have something in common. This manner would also help the user grasp the meaning of the Kanji because Kanji with the same radical are often semantically related.

### 3. Addition of a new puzzle

I explain how to edit the html file and how to add image files.

#### 3.1 How to edit the html file

The user can add a new Kanji puzzle by entering in the HTML file the name of the image file, for instance "imaga02.jpg" that you prepared. You also need to name and save the file to append a new puzzle.

```
AppletCODE="Puzzle.class"
WIDTH="480" HEIGHT="480">
<param name="cg" value="image02.jpg">
<param name="jump" value="sample3.html">
<param name="bonus" value="bonus.gif">
-----
</applet>
<font color="#ff6600" size= 10 >HINT</font>
```

Figure 9. Sauce of a HTML file (sample)

#### 3.2 How to add image files

The following explanatory note in Figure 10 is given in the Introduction page: You need to specify the file name of the image that you prepared. You also need to name and save the file to append a new puzzle.


```
<html>
<head>
<title>漢字パズル (仮名) </title>
</head>
<body BGCOLOR="#AA05FF">
<center>

コ!
</center>
<applet CODE=" Puzzle .class" WIDTH="480" HEIGHT="480">
<param name="cg" value="image02.jpg"><!--ここから問題の画像ファイル呼びます。-->
<param name="jump" value="sample3.html"><!--次に読みこむ問題のhtmlファイル名を指定します。-->
<param name="bonus" value="bonus.gif"><!--完成時に出るボーナス画像呼びます。-->
</applet>
<BR>
<font color="#ff6600" size= 10 >漢字の「漢」</font>
</center>
</body>
</html>
```

Figure 10. Instruction about the addition of image files given in the introduction page

You can also change the bonus image that appears when a puzzle is completed. To do this, you need to prepare a 480x480-pixel bonus image and specify the file name with a double underline in the sauce.

```
<html>
<head>
<title>漢字パズル (仮名) </title>
</head>
<body BGCOLOR="#A4D5FF">
<center>
<applet CODE="Puzzle.class" WIDTH="480" HEIGHT="480">
<param name="cs" value="image02.jpg"><ここから問題の画像ファイル呼びます。>
<param name="jump" value="sample3.html"><次に読みこむ問題のhtmlファイル名を指定します。>
<param name="bonus" value="bonus.gif"><完成時に出るボーナス画像を呼びます。>
</applet>
<BR>
<font color="#ff6600" size=10 >漢字の「漢」</font>
</center>
<p> </p>
</body>
</html>
```

**Figure 11.** Instruction about the bonus image in the introduction page

If you specify the file name at the break line in the sauce, you can change the next puzzle.

```
<html>
<head>
<title>漢字パズル (仮名) </title>
</head>
<body BGCOLOR="#A4D5FF">
<center>
<applet CODE="Puzzle.class" WIDTH="480" HEIGHT="480">
<param name="cs" value="image02.jpg"><ここから問題の画像ファイル呼びます。>
<param name="jump" value="sample3.html"><次に読みこむ問題のhtmlファイル名を指定します。>
<param name="bonus" value="bonus.gif"><完成時に出るボーナス画像を呼びます。>
</applet>
<BR>
<font color="#ff6600" size=10 >漢字の「漢」</font>
</center>
<p> </p>
</body>
</html>
```

**Figure 12.** Instruction about picture specification in the introduction page

You can also change the text in the "HINT" section. By such methods, the user can add many more puzzles.

## 4. Conclusion

The main reason I made this software is to provide a tool to learn Kanji characters simply, easily, and enjoyably. Such educational software is not common among the commercial software currently available. I placed the software on the web so that anyone who surfs the Internet can easily access it. Moreover, this software's design was very effective in that even the user can append new Kanji character puzzles.

In the future, I would like to improve the software by making it even more easy-to-use and by adding different kinds of puzzles. My ultimate goal is to extend the functional capabilities of this software.

## 5. References

- [1]Center of Educational Computing  
<http://www.cec.or.jp/books/>
- [2]David Flanagan, *JAVA Program quick reference*, O' REILLY Japan, Tokyo, September 2001
- [3]Edutainment square Kids City  
<http://www.kids-city.com/>
- [4]Fumitaka Osawa, *Class to Object de wakaru JAVA*, Kogakusya, Tokyo, August 2003
- [5]IE institute, *Eigo Basic*(CD-ROM), IE institute, Tokyo, October 2002
- [6]Lively Island(Some picture and Icon)  
<http://www.livly.com/>
- [7]Michelle Manning, *Jbuilder de manabu JAVA*, Piason Education, Tokyo, September 1998
- [8]Mojikyo Institute  
<http://www.mojikyo.org/>
- [9]Shinji Miyamoto, Shinichi Iida, and Yu Aoki, *Eclipse Donyu Guide*, SOFTBANK Publishing, Tokyo, June 2003
- [10]Syogo Nakajima, *Game dukuri de manabu JAVA Programing*, Kogaku Kenkyusya, Tokyo, Japan, April 2000