Java Application: HexText

Written by: Keith Fenske, http://www.psc-consulting.ca/fenske/
First version: Thursday, 21 April 2005
Document revised: Friday, 7 March 2008
Copyright © 2005 by Keith Fenske. Released under the GNU General Public License (GPL).

Description

HexText is a graphical Java 1.4 Swing (GUI) applet or application to convert between text characters and decimal or hexadecimal digits representing those characters. You have several options for the converted digits: decimal (base 10) or hexadecimal (base 16), 8-bit "plain text" bytes, 16-bit combined words, 16-bit "big endian" bytes, 16-bit "little endian" bytes, etc. Input characters that are not valid digits are ignored during conversion and are treated as white space or separators. Leading zeros may be omitted unless the digits run together without separators. Type or paste the characters or digits to be converted into the upper window, and click either the "Convert Text to Digits" or the "Convert Digits to Text" button. The converted result will appear in the lower window. There is a serious purpose behind these conversions, but it's also fun just to see what some codes represent.

The term "big endian" means that a 16-bit number is represented by two 8-bit bytes with the high-order (most significant) byte appearing first. "Little endian" has the low-order (least significant) byte appearing first:

16-bit combined word:	1234 (hex)
16-bit "big endian" bytes:	12 34
16-bit "little endian" bytes:	34 12

When run as an applet inside a browser on a web page, the results vary depending upon (1) the browser, (2) the version of Java, and (3) the system character set. Keyboard copy (Ctrl-C) and paste (Ctrl-V) may only work inside the applet, and not with the system clipboard. As an application, keyboard copy and paste work normally and there are few restrictions on the Unicode characters that may be entered or converted. In other words, this applet is a good application but sometimes useless as an applet! You may run this program as an applet on the following web page:

> Hexadecimal Text - by: Keith Fenske
> http://www.psc-consulting.ca/fenske/hextex2a.htm

Text in Java is based on the Unicode standard, which has thousands of characters. Note that most "Windows ANSI" or "Western European" characters in the range from 128 to 159 decimal

(0x80 to 0x9F hexadecimal) have completely different positions in Unicode, so don’t paste arbitrary 8-bit text and expect the converted decimal/hexadecimal to be 8-bit. This program works best if you have the “Arial Unicode MS” font installed (currently with 50,377 glyphs). Extended Unicode characters are not supported where multiple 16-bit values are combined into additional character codes.

GNU General Public License (GPL)

HexText is free software: you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation, either version 3 of the License or (at your option) any later version. This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY, without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details. You should have received a copy of the GNU General Public License along with this program. If not, see the http://www.gnu.org/licenses/ web page.

Installation

You must have the Java run-time environment (JRE) installed on your computer. HexText was developed with Java 1.4 and should run on later versions. It may also run on earlier versions, but this has not been tested. For Macintosh computers, the version of Java is determined by your version of MacOS. For Windows, Linux, and Solaris, you can download the JRE from Sun Microsystems:

Sun Java
JRE for end users: http://www.java.com/getjava/
SDK for programmers: http://developers.sun.com/downloads/
IDE for programmers: http://www.netbeans.org/

Once Java is installed, you need to put the program files for HexText into a folder (directory) on your hard drive. The name of the folder and the location are your choice, except it is easier if the name does not include spaces. Assume that files will go into a C:\JAVA folder. Then create the folder and unpack the Java *.class files into this folder (if you received the program as a ZIP file). The files look something like this:

ffcccc.gif (1 KB, web page background, name must be lowercase)
GnuPublicLicense3.txt (35 KB, legal notice)
hextex2a.htm (4 KB, applet web page, external links don’t work)
hextex2b.jar (7 KB, applet archive file, name must be lowercase)
hextex2c.txt (42 KB, same source code as text for web page)
HexText2.class (11 KB, executable program)
HexText2.doc (32 KB, this documentation in Microsoft Word format)

HexText2.gif (17 KB, sample program image)
HexText2.java (41 KB, source code)
HexText2.manifest (1 KB, main class manifest for archive file)
HexText2.pdf (71 KB, this documentation in Adobe Acrobat format)
make-hextex2.bat (1 KB, compiles as Java 1.3 using Java 1.4 SDK)
RunJavaPrograms.pdf (60 KB, more notes about running Java)

To run the program on Windows, start a DOS command prompt, which is Start button, Programs, Accessories, Command Prompt on Windows 2000/XP. Change to the folder with the program files and run the program with a "java" command:

```
c:
cd  \java
java  HexText2
```

The program name "HexText2" must appear exactly as shown; uppercase and lowercase letters are different in Java names. Should you find this program to be popular, you can create a Start menu item or desktop shortcut on Windows 2000/XP with a target of "java HexText2" starting in the "c:\java" folder. One complication may arise when trying to run this program. Java looks for an environment variable called CLASSPATH. If it finds this variable, then that is a list of folders where it looks for *.class files. It won't look anywhere else, not even in the current directory, unless the path contains "." as one of the choices. The symptom is an error message that says:

```
Exception in thread "main" java.lang.NoClassDefFoundError: HexText2
```

To find out if your system has a CLASSPATH variable defined, type the following command in a DOS window:

```
set  CLASSPATH
```

To temporarily change the CLASSPATH variable to the current directory, use the following command line:

```
java  -cp  .  HexText2
```

To permanently change the CLASSPATH, you must find where it is being set. This may be in an old AUTOEXEC.* file in the root directory of your system disk (usually the C:\ folder), or it may be in Control Panel, System, Advanced, Environment Variables on Windows 2000/XP.

Removal or Uninstall

To remove this program from your computer, delete the installation files listed above. If the folder that contained the files is now empty, you may also delete the folder ... if you created the folder, of course, not the system. If you created desktop shortcuts or Start menu items, then delete those too. There are no configuration or preference files, and no information is stored in the Windows system registry. You don’t need an “uninstall” program.

Restrictions and Limitations

Web page applets are obsolete and may run as stand-alone applications with the help of a wrapper (included), although this becomes less likely after Java 9 (2017).

file: HexText2.doc 2019-03-30