Java Application: HexView

Written by: Keith Fenske, http://kwfenske.github.io/
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Description

HexView is a Java 1.4 graphical (GUI) application to display the contents of a file in hexa-decimal and as plain text (7-bit ASCII). Files may be very large. A window is shown with a number of rows (lines) and columns (bytes per row). You may move this window with buttons on top to scroll through the file, go to locations (offsets) within the file, or copy text from the display. The mouse scroll wheel can be combined with the Shift key to move one page at a time. Keyboard shortcuts for navigation buttons combine the Alt key with another key:

|<	start of file	Alt+Home
<<	back one page	Alt+PageUp
<	back one line/row	Alt+Up (up arrow)
>	forward one line/row	Alt+Down (down arrow)
>>	forward one page	Alt+PageDown
>|	end of file	Alt+End

Editing and searching are not supported. Large files in gigabytes or terabytes often exceed the capacity of hex editors, because indexing is done with 32-bit integers. Do not use this program on sequential media (CD, DVD, tape, etc), only on regular disk drives that provide true random access. The hex display looks best with the "Lucida Console" font installed.

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Installation

You must have the Java run-time environment (JRE) installed on your computer. HexView 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. You can download the JRE from Oracle (formerly Sun Microsystems):

> JRE for end users: http://www.java.com/getjava/
> SDK for programmers: http://www.oracle.com/technetwork/java/
> IDE for programmers: http://www.netbeans.org/

Once Java is installed, you need to put the program files for HexView 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:

> ApacheLicense20.txt (12 KB, legal notice)
> GnuPublicLicense3.txt (35 KB, legal notice)
> HexView1.class (21 KB, executable program)
> HexView1.doc (31 KB, this documentation in Microsoft Word format)
> HexView1.gif (25 KB, sample program image)
> HexView1.ico (87 KB, icon for Windows)
> HexView1.jar (13 KB, archive file with same class files inside)
> HexView1.java (64 KB, source code)
> HexView1.manifest (1 KB, main class manifest for archive file)
> HexView1.pdf (71 KB, this documentation in Adobe Acrobat format)
> HexView1User.class (2 KB, helper class for main program)
> 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 XP/Vista/7. Change to the folder with the program files and run the program with a "java" command:

```
c:
cd \java
java  HexView1
```

The program name "HexView1" must appear exactly as shown; uppercase and lowercase letters are different in Java names. Some systems (Macintosh) will run a main "class" file by clicking on the class file name while viewing a directory in the file browser (Mac Finder). Many systems will run a "jar" file by clicking (or double clicking) on the jar file name (Windows Explorer). The command line is the only guaranteed way of running a Java program. Should you find this

program to be popular, you can create a Start menu item or desktop shortcut on Windows XP/Vista/7 with a target of "java.exe HexView1" 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: HexView1
```

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  .  HexView1
```

To permanently change the CLASSPATH, you must find where it is being set. This is in Control Panel, System, Advanced, Environment Variables on Windows XP/Vista/7.

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 hidden configuration or preference files, and no information is stored in the Windows system registry. You don't need an "uninstall" program.

Graphical Versus Console Application

The Java command line may contain options for the position and size of the application window, the size of the display font, and a file name to be opened. See the "-?" option for a help summary:

```
java  HexView1  -?
```

The command line has more options than are visible in the graphical interface. An option such as -u14 or -u16 is recommended because the default Java font is too small.

Restrictions and Limitations

Many things break in the Java language and run-time environment when objects have more than two billion separately indexable items (the largest signed 32-bit integer or 2,147,483,647). In this program, the critical factor is the total number of rows in the hexadecimal display. Hence, there are buttons for precise scrolling in addition to a vertical scroll bar. Beyond two billion rows, scroll bars alone would not have enough resolution to select individual rows (up one row, down one row, etc), and beyond about 100 billion rows, entire pages would be unavailable.