

Java Application: RandomPassword

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First version: Friday, 25 October 2024

Document revised: Monday, 28 October 2024

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Description

RandomPassword is a Java 1.4 application to generate random passwords given an alphabet (list of available characters), the length of each password (in characters), and the number of passwords required. The default alphabet uses letters and digits that most people can distinguish when written down on a piece of paper. This alphabet does not have to be unique, and may repeat characters so they are more likely to appear.

Our minds look for patterns in random data. What we see is not always there. Duplicates make us think data can not be random. In fact, the opposite is true. If you generate passwords of length 10 from an alphabet of 30 characters, then on average, one in four passwords will have an identical pair. Simply ignore passwords that you don't like.

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Installation

You must have the Java run-time environment (JRE) installed on your computer. RandomPassword 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/download/>

SDK for programmers: <http://www.oracle.com/java/> or the OpenJDK builds

IDE for programmers: <http://www.eclipse.org/> or <http://www.netbeans.org/>

Once Java is installed, you need to put the program files for RandomPassword 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)
- RandomPassword3.class (16 KB, executable program)
- RandomPassword3.doc (31 KB, this documentation in Microsoft Word format)
- RandomPassword3.ico (87 KB, icon for Windows)
- RandomPassword3.jar (10 KB, archive file with same class files inside)
- RandomPassword3.java (45 KB, source code)
- RandomPassword3.manifest (1 KB, main class manifest for archive file)
- RandomPassword3.pdf (68 KB, this documentation in Adobe Acrobat format)
- RandomPassword3.png (15 KB, sample program image)
- RandomPassword3User.class (1 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 RandomPassword3
```

The program name “RandomPassword3” 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 RandomPassword3” 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: RandomPassword3

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 . RandomPassword3
```

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 or a desired number of passwords. If the command line does not say how many passwords to generate, then this program runs as a graphical or "GUI" application with the usual dialog boxes and windows. See the "-?" option for a help summary:

```
java RandomPassword3 -?
```

The command line has more options than are visible in the graphical interface. An option such as -u16 or -u18 is recommended for the font size.

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