1 Getting started with Java

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Installing JDK on Windows / Mac

The JDK is a development environment for building applications, and components using the Java programming language. The JDK includes tools useful for developing & testing programs in Java. Oracle's OpenJDK (Java Development Kit) version 11 is available for free and can be downloaded from their website. (Java SE Development Kit 11 Downloads, 2019)

Both Mac and Windows require administrator privileges to install the JDK.

The JDK is installed in the directory C:\Program Files\Java\jdk-11.i.u on Windows or on Mac, where i and u denote interim and update (followed by a patch number, if any)

Setting Environment Variables

Environment variables are dynamic and global, they are accessible by all processes of an Operating System, and thus are used in Java store the directories of the executable files like java.exe and javac.exe to avoid repetition of long commands. The variables required are:

* JAVA\_HOME
* PATH
* CLASSPATH

On Windows

1. ⊞ Win+ R opens the Run Window
2. Type sysdm.cpl and Enter↵ or click OK
3. Go to System Properties > Advanced > Environment Variables
4. Click New and Enter the Variable Name as JAVA\_HOME and set Variable value to C:\Program Files\Java\jdk-11.i.u
5. Create new variables named PATH and CLASSPATH with values %JAVA\_HOME%\bin and %JAVA\_HOME%\lib respectively.

*If you are installing a new version of Java (e.g. Migrating from Java 8 to 11), make sure that you completely uninstall the previous jdk versions and delete the* folder ProgramData/Oracle/.. since this could cause the error The system cannot find the file C:\ProgramData\Oracle\Java\javapath\java.exe

On Mac

Temporary - Set for current session

1. Shift ⇧ + ⌘ Command + U opens the Terminal
2. Type export JAVA\_HOME=/Library/Java/Home in the Terminal to set JAVA\_HOME
3. Type echo $JAVA\_HOME to finalize set path

Permanent - Make path persist

1. Open Terminal (Applications > Utilities > Terminal)
2. Type emacs.profile and add the following at the end of the .profile file JAVA\_HOME=/Library/Java/Home export JAVA\_HOME;
3. Save & Exit emacs (Ctrl+X, Ctrl+S, Ctrl+X, Ctrl+C)

Confirming Installed version of Java

Run the Command Prompt (on Windows) or Open the Terminal (on Mac), and enter java -version and your output should look similar to the following:

java version "11.i.u" 20yy-mm-dd LTS

Java(TM) SE Runtime Environment 18.9 (build 11.i.u+12-LTS)

Java HotSpot(TM) 64-Bit Server VM 18.9 (build 11.i.u+12-LTS, mixed mode)

If the version shown is a version existing prior to 11, you will need to set the Environment Variables to the directory of the jdk-11 folder.

If the CMD or Terminal output is similar to the above, Congratulations on successfully installing JDK on your machine! For any further clarification regarding the installation read through this once more or refer to the official Oracle documentation. (Overview of JDK Installation, n.d.)

References

*Java SE Development Kit 11 Downloads*. (2019). Retrieved June 9, 2019, from Oracle: https://www.oracle.com/technetwork/java/javase/downloads/jdk11-downloads-5066655.html

*Overview of JDK Installation*. (n.d.). Retrieved June 7, 2019, from Oracle: https://docs.oracle.com/en/java/javase/11/install/overview-jdk-installation.html#GUID-8677A77F-231A-40F7-98B9-1FD0B48C346A