Tutorial For JDK Installing (Mac Version)

> Based on the tutorial of "2020S-Java-A" designed by teaching group in SUSTech
>
> Modified (mainly change to markdown file) by ZHU Yueming in 2021. Jan. 11th
>
> Modified (added Mac Version tutorial) by ZHAO Yifan in 2022. Sept. 2nd

Objectives

1. Install JDK 17 and configure environment variable.
2. Learn compilation and execution of your first Java program in command line.

Software Installation

1. JDK Introduce

JDK: The Java Development Kit (JDK) is a software development environment for developing Java applications and applets. It includes a Java Runtime Environment (JRE), an interpreter/loader (java), a compiler (javac), an archiver (jar), a documentation generator (javadoc) and other tools needed in Java development.

2. Download and Install JDK

2.1 Download JDK without brew

URL of download JDK：

https://www.oracle.com/java/technologies/downloads/#java17

Linux **macOS** **Windows**

Product/file description	File size	Download
Arm 64 Compressed Archive	167.47 MB	https://download.oracle.com/java/17/latest/jdk-17_macos-aarch64_bin.tar.gz (sha256)
Arm 64 DMG Installer	166.86 MB	https://download.oracle.com/java/17/latest/jdk-17_macos-aarch64_bin.dmg (sha256)
x64 Compressed Archive	170.01 MB	https://download.oracle.com/java/17/latest/jdk-17_macos-x64_bin.tar.gz (sha256)
x64 DMG Installer	169.39 MB	https://download.oracle.com/java/17/latest/jdk-17_macos-x64_bin.dmg (sha256)

Note: If you have MacBook with M1 or newer chips, choose `Arm 64 DMG Installer` for download, otherwise download `x64 DMG Installer` version. You may confirm this information in the system options.

Installation:

Once downloaded, run the .dmg file. Follow the prompts to install the JDK. You'll need administrator access.

Double click the JDK Software, and install it.

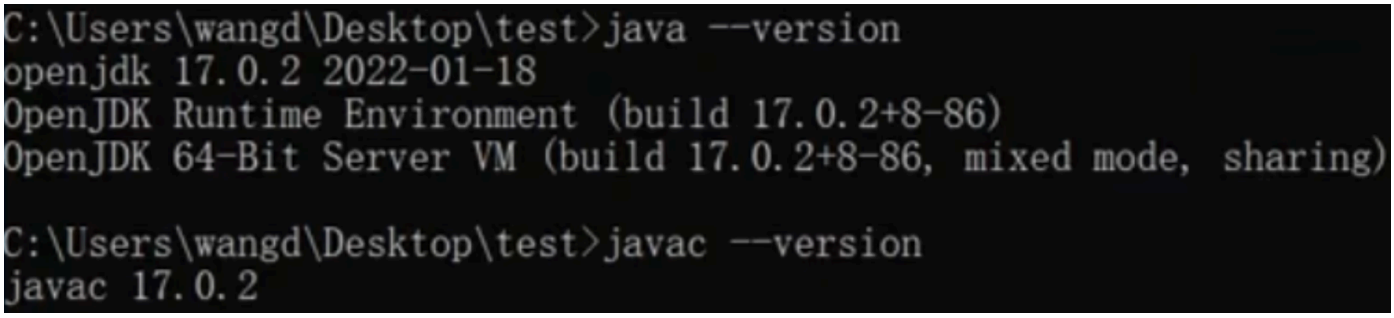
Today's exercise is designed to make sure that the Java programming environment is correctly installed on your machine.

Open a terminal window or command prompt. In Windows 7 or newer, Start Menu | All Programs | Accessories | Command Prompt, or type `terminal` at the search box. Type the following command:

```
java -version
```

Then if it returns as following or something similar, you have installed it successfully.

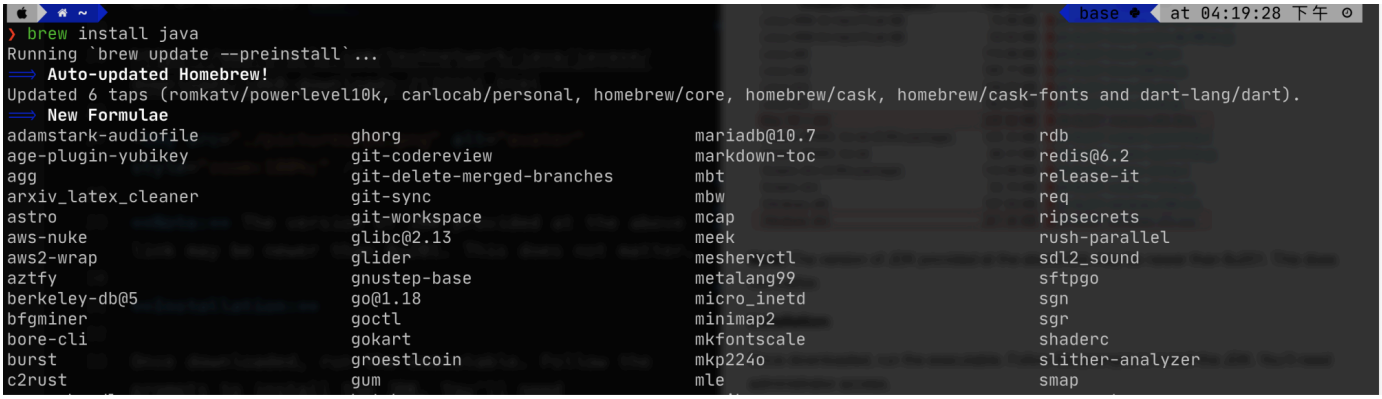
```
java version "17.0.4.1" 2022-08-18 LTS
Java(TM) SE Runtime Environment (build 17.0.4.1+1-LTS-2)
Java HotSpot(TM) 64-Bit Server VM (build 17.0.4.1+1-LTS-2, mixed mode, sharing)
```

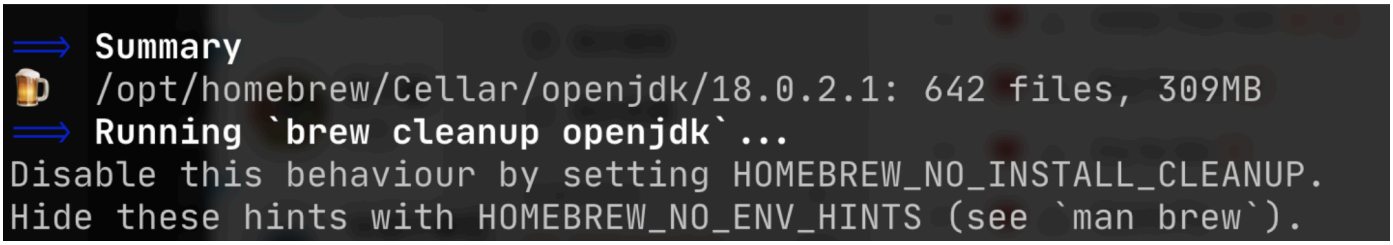


2.2 Download JDK with brew

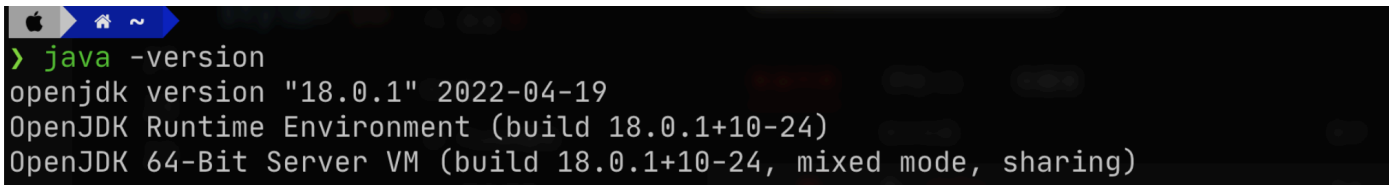
Press `command + space` to open search bar, input `terminal` and open the first result in the search bar:

Input `brew install java` to install.





Input `java -version` to check whether the installation is successful:



4. Editor

A simple editor **Visual Studio Code** is recommended for beginners.

Download Visual Studio Code: https://code.visualstudio.com/

Or, you can simply use any text editor (the source code of Java programs is just a sequence of characters), for example **notepad** on windows and **TextEdit** on Mac.

Exercise

Compile a Java Program in Command line

- Open text file or create a new text file and type the following code.

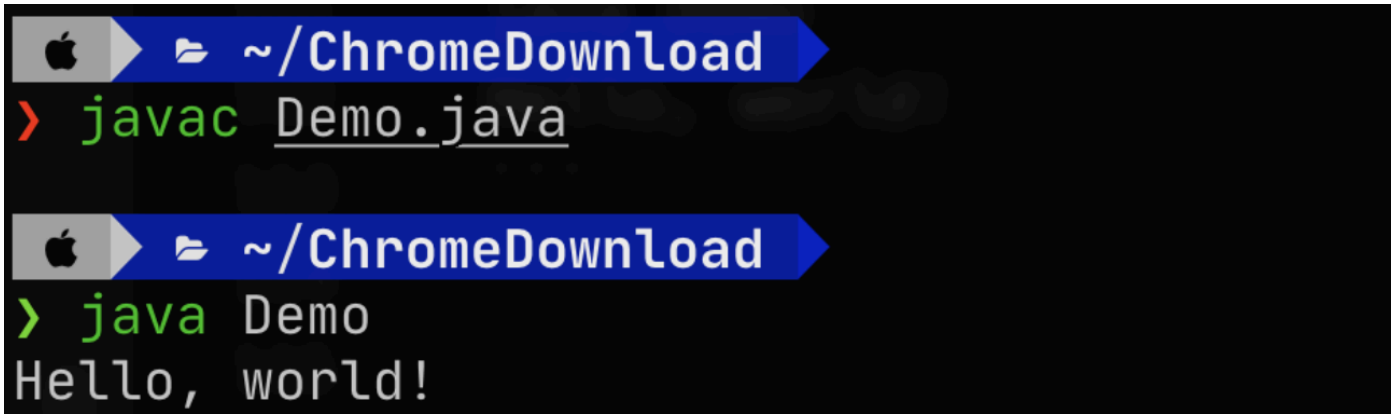
```
public class Demo {
    public static void main(String[] args) {
        System.out.println("Hello, world!");
    }
}
```

- Using the “save as” command in the “File” menu to save the file with the name `Demo.java`. Note that the .java file name has to be **the same as** the main Class name in your program.

- Open the `cmd` program; in the `cmd` window, use `cd` command to go to the directory where you save your `Demo.java`; use `javac` command to compile your “.java” file; use `java` command to execute the .class file (which must have a main function). The procedure is as follows

```
javac Demo.java

java Demo
Hello, world!
```



Other Basic CMD:

- go into sub folder `xxx`:

```
cd xxx
```

- go into root folder:

```
cd /
```

- go into parent folder:

```
cd ..
```

- find all files in current folder:

```
ls
```

In this lab, you are using an editor and the compiler separately. There are software products (e.g. Eclipse, NetBeans, IDEA) that could link them up and facilitate your work. In this semester, you are recommended to use IDEA. You can download the community version at the following link:

https://www.jetbrains.com/idea/download/

More detailed introductions of how to use IDEA will be introduced in future labs