

Setting up your Computer

1 Introduction

On this lab, you will be getting your computer ready to develop and run Java programs. This lab will be covering the following topics:

- Installing Java JDK 1.8 or higher
- Installing NetBeans 8.2 or higher
- Checking Java JDK installation in a terminal window
- Checking NetBeans installation

The screenshots shown herein are for MS Windows, but for Mac computers it should be very similar. If you get stuck in any step, do not hesitate in contacting the lab TA and the instructor.

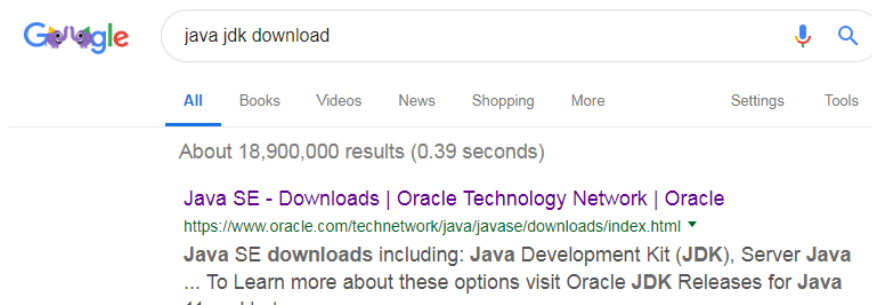
2 Installing Required Software

2.1 Installing Java JDK

To develop Java programs for this course, you will need to install the Java Development Kit, also known as Java JDK. The steps below will guide you to install it.

A – Installing the JDK in your computer

- a) Open up an internet browser and search for “java jdk download”



- b) Click on the link shown above (Java SE – Downloads). In the next web page click on the following button

Java SE Downloads



- c) In the new page, scroll down to the following portion and do two things here
 - i) Accept the license agreement
 - ii) Choose the right version of your computer operational system. The internet browser will start downloading the selected file shortly. I would recommend you to use the .exe installer file for MS Windows instead of zip file.

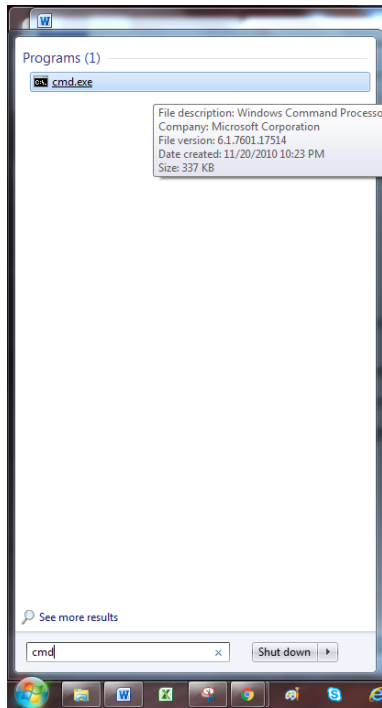
| Java SE Development Kit 11.0.1 | | |
|---|-----------|---|
| You must accept the Oracle Technology Network License Agreement for Oracle Java SE to download this software. | | |
| <input type="radio"/> Accept License Agreement <input checked="" type="radio"/> Decline License Agreement | | |
| Product / File Description | File Size | Download |
| Linux | 147.4 MB | jdk-11.0.1_linux-x64_bin.deb |
| Linux | 154.09 MB | jdk-11.0.1_linux-x64_bin.rpm |
| Linux | 171.43 MB | jdk-11.0.1_linux-x64_bin.tar.gz |
| macOS | 166.2 MB | jdk-11.0.1_osx-x64_bin.dmg |
| macOS | 166.55 MB | jdk-11.0.1_osx-x64_bin.tar.gz |
| Solaris SPARC | 186.8 MB | jdk-11.0.1_solaris-sparcv9_bin.tar.gz |
| Windows | 150.98 MB | jdk-11.0.1_windows-x64_bin.exe |
| Windows | 170.99 MB | jdk-11.0.1_windows-x64_bin.zip |

- d) After the download has finished, run that file and following the installation instructions. I recommend you to accept all the default options that the installer asks you, such as installation directory, etc.
- e) Upon successful installation, your Java JDK should be located in the c:/program files/java/. In my case, I have multiple versions of Java installed in my machine, and that is what I see in my c:/program files/java/ directory, but I am using Java JDK 1.8.0_92. Take note of the java JDK directory that you might need later on.

| Name | Date modified | Type |
|-------------|-------------------|-------------|
| jdk1.7.0_21 | 2/1/2017 8:42 AM | File folder |
| jdk1.8.0_92 | 4/29/2016 9:06 AM | File folder |
| jre1.8.0_92 | 4/29/2016 9:06 AM | File folder |
| jre6 | 4/19/2016 4:35 PM | File folder |

B – Setting up your computer’s environment variables

- a) Check if you need to modify the environment variables.
 - i) Open up a terminal window. In MS Windows click on the Start button and type CMD. Run the cmd.exe program.



- ii) In the terminal window, type `java -version`. You should get a description of the java program if your computer can find it. If it cannot find it you will need to modify the environment variable described below.

```
Microsoft Windows [Version 6.1.7601]
Copyright (c) 2009 Microsoft Corporation. All rights reserved.

C:\Users\ferreipb>java -version
java version "1.8.0_92"
Java(TM) SE Runtime Environment (build 1.8.0_92-b14)
Java HotSpot(TM) 64-Bit Server VM (build 25.92-b14, mixed mode)

C:\Users\ferreipb>_
```

- iii) Repeat the above procedure but typing `javac -version`. In my computer, `javac` is not recognized by the operational system (as shown below). I will need to update my environment variable for that.

```
Microsoft Windows [Version 6.1.7601]
Copyright (c) 2009 Microsoft Corporation. All rights reserved.

C:\Users\ferreipb>java -version
java version "1.8.0_92"
Java(TM) SE Runtime Environment (build 1.8.0_92-b14)
Java HotSpot(TM) 64-Bit Server VM (build 25.92-b14, mixed mode)

C:\Users\ferreipb>javac -version
'javac' is not recognized as an internal or external command,
operable program or batch file.

C:\Users\ferreipb>
```

PERFORM ITEMS (b) AND (c) BELOW ONLY IF YOUR SYSTEM DID NOT RECOGNIZE THE COMMANDS SHOWN IN ITEM (a). OTHERWISE, SKIP THESE STEPS.

b) Setting the JAVA_HOME variable in Windows

To set the JRE_HOME or JAVA_HOME variable:

i) Locate your Java installation directory

If you didn't change the path during installation, it'll be something like `C:\Program Files\Java\jdk1.8.0_65`

You can also type `where java` at the command prompt.

ii) Do one of the following:

Windows 7 – Right click **My Computer** and select **Properties > Advanced**

Windows 8 – Go to **Control Panel > System > Advanced System Settings**

Windows 10 – Search for **Environment Variables** then select **Edit the system environment variables**

iii) Click the Environment Variables button.

iv) Under System Variables, click New.

v) In the Variable Name field, enter either:

- `JAVA_HOME` if you installed the JDK (Java Development Kit) or
- `JRE_HOME` if you installed the JRE (Java Runtime Environment)

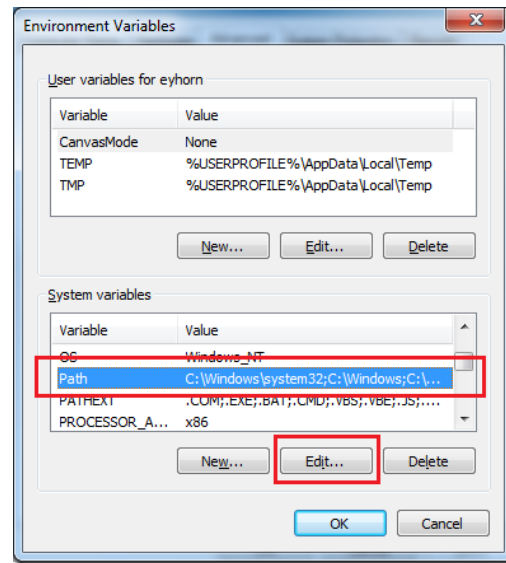
vi) In the Variable Value field, enter your JDK or JRE installation path .

If the path contains spaces, use the shortened path name. For example, `C:\Progra~1\Java\jdk1.8.0_65`

vii) Click OK and Apply Changes as prompted

You'll need to close and re-open any command windows that were open before you made these changes, as there's no way to reload environment variables from an active command prompt. If the changes don't take effect after reopening the command window, restart Windows.

- c) Adding `javac` to the PATH environment variable
- i) In the same dialog box that you have created the `JAVA_HOME` variable, find Path system variable and click on the Edit... button



- d) AT THE END OF THE current path, add a `;` and then the path to where `javac` is located in your computer. In my case it is in the bin directory of the java jdk directory:

Previous_existing_paths_here;`c:/program files/java/JDK 1.8.0_92/bin`

- e) Reboot your system and redo the test in the terminal window by typing both


```
java -version
javac -version
```

If not working properly yet, please contact Lab-TA or the instructor

2.2 Installing NetBeans IDE

- a) Open an internet browser
- b) Research for NetBeans Download

NetBeans
Oracle Corporation
<https://netbeans.org/downloads/>



[Go to download](#)

c) Go to the recommended link shown above (<https://netbeans.org/downloads>)

Apache NetBeans 10.0 Release

Apache NetBeans (incubating) 10.0 announced on the 27th of December, 2018.

Main features

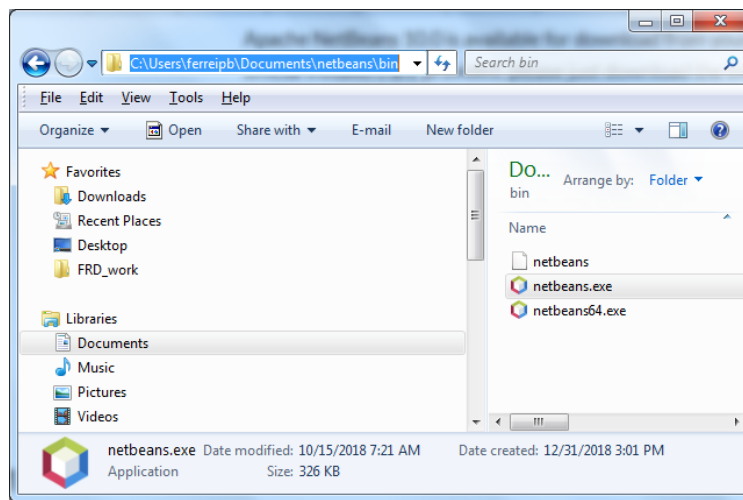
See [Apache NetBeans 10.0 Features](#) for a full list of features.

Downloading

Apache NetBeans 10.0 is available for download from your closest Apache mirror. For this release no official installers are provided, please just download the binaries and unzip them.

- Source: [incubating-netbeans-10.0-source.zip](#) (SHA-512, PGP ASC)
- Binaries: [incubating-netbeans-10.0-bin.zip](#) (SHA-512, PGP ASC)

- d) As directed above, just download the zip file and extract it somewhere in your laptop. I recommend you to install the Binaries version of it. By clicking in the link above, you will be taken to another webpage, select any site to start downloading the zip file.
- e) After the download process has been completed, unzip this file somewhere of your choice, such as *documents folder*. The NetBeans program (*netbeans.exe*) is under the bin directory of your unpacked folder. Mine is shown below just as a reference, yours probably will be different.



To start NetBeans you can double click on *netbeans.exe* or create a short cut in your desktop for faster access on the next time.

3 Testing your installations

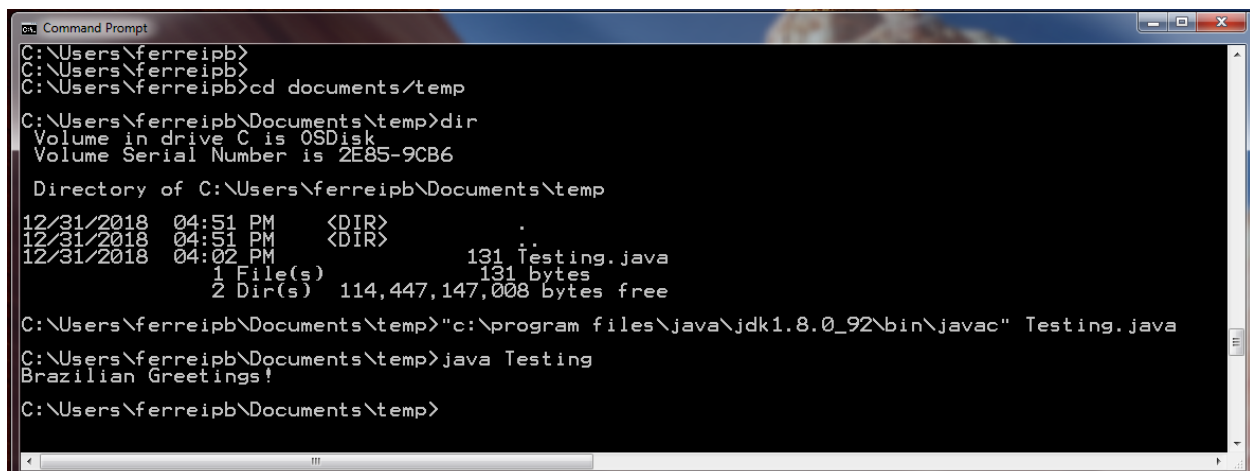
3.1 Testing your Java JDK from the terminal window

- a) Using any text editor available in your computer, create a new file and place the following statements inside (pay attention to Capitalization)

```
public class Testing {  
    public static void main(String[] args) {  
        System.out.println("Brazilian Greetings!");  
    }  
}
```

Save this file as Testing.java. You need to pay attention where you are saving this file, since we will need its path when running our javac and java commands in the terminal window.

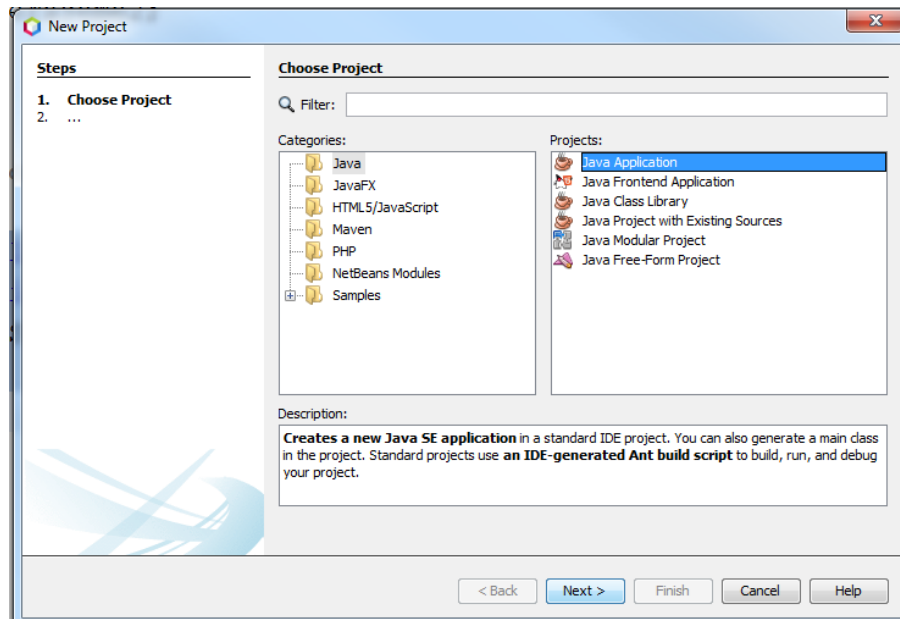
- b) Open up a terminal window and change the current directory to the directory that you have saved your Testing.java (use "cd" for changing directory, see example below).
- c) Run the javac command: `javac Testing.java`
In my case, I do not have admin permissions to change my Windows Environment Path, so I need to type the whole javac path in the terminal window (as shown below)
- d) After running javac, execute `java Testing`
If you get "Brazilian Greetings!" in your terminal window, then this test was a success! If not try again and if you get stuck as your TA or the instructor.



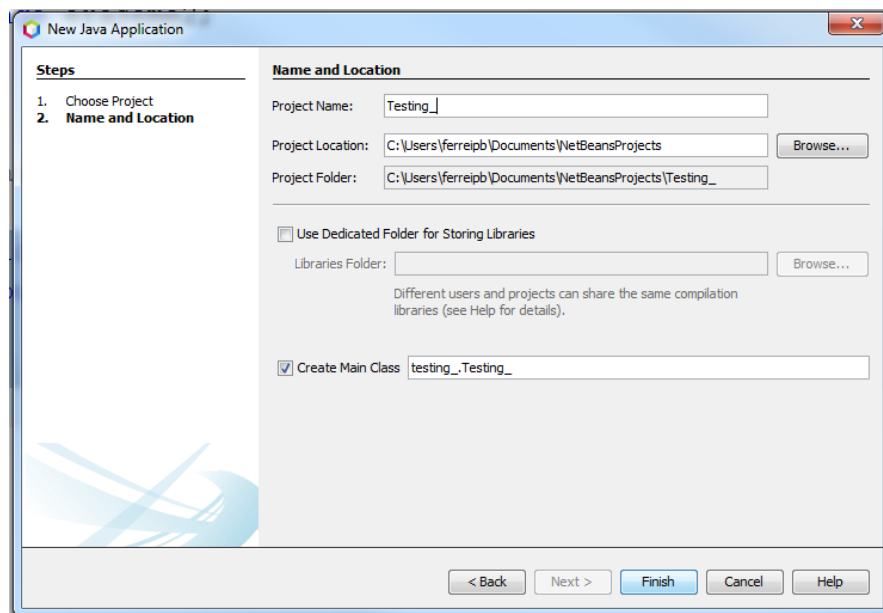
```
Command Prompt  
C:\Users\ferreipb>  
C:\Users\ferreipb>  
C:\Users\ferreipb>cd documents/temp  
C:\Users\ferreipb\Documents\temp>dir  
Volume in drive C is OSDisk  
Volume Serial Number is 2E85-9CB6  
  
Directory of C:\Users\ferreipb\Documents\temp  
12/31/2018  04:51 PM    <DIR>          .  
12/31/2018  04:51 PM    <DIR>          ..  
12/31/2018  04:02 PM                131 Testing.java  
               1 File(s)                131 bytes  
               2 Dir(s)  114,447,147,008 bytes free  
  
C:\Users\ferreipb\Documents\temp>"c:\program files\java\jdk1.8.0_92\bin\javac" Testing.java  
C:\Users\ferreipb\Documents\temp>java Testing  
Brazilian Greetings!  
C:\Users\ferreipb\Documents\temp>
```

3.2 Testing NetBeans IDE

- a) Run NetBeans
- b) When IDE is open, go to File >> New Project >> Categories: Java, Projects: Java Application and click Next button.



- c) Project Name: Testing and click finish



- d) Add the System.out.println("Brazilian Greetings!"); in the main method

```
package eraseme2;

public class Testing {
    public static void main(String[] args) {
        System.out.println("Brazilian Greetings!");
    }
}
```


- e) Right click anywhere inside the text area and select Run File. In the output window (normally at the bottom of the NetBeans IDE you should see “Brazilian Greetings” written down, demonstrating that NetBeans was able to successfully compile and run your code.

4 Show results to the Lab TA

In each lab you must show your end results to the Lab TA, so that he can grade your work.