Basis of Computer Programming (java A)
Tutorial 3

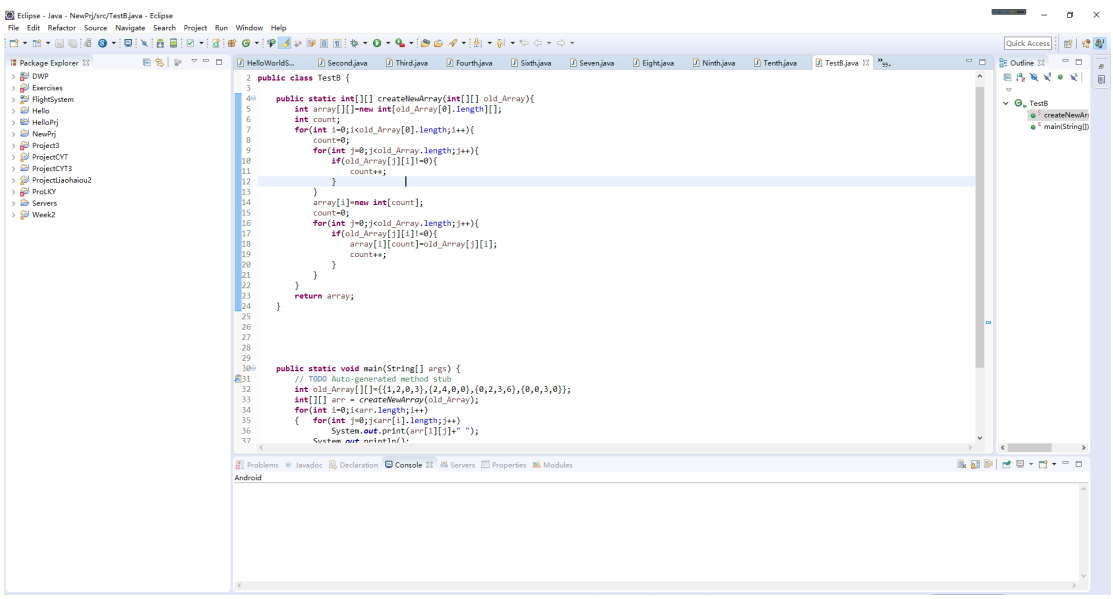
[Experimental Objective]

1. Learn how to install IDE and how to use it.
2. Continue to exercise basic data type, random number, doing arithmetic and input value from command line.

[Software Installation]

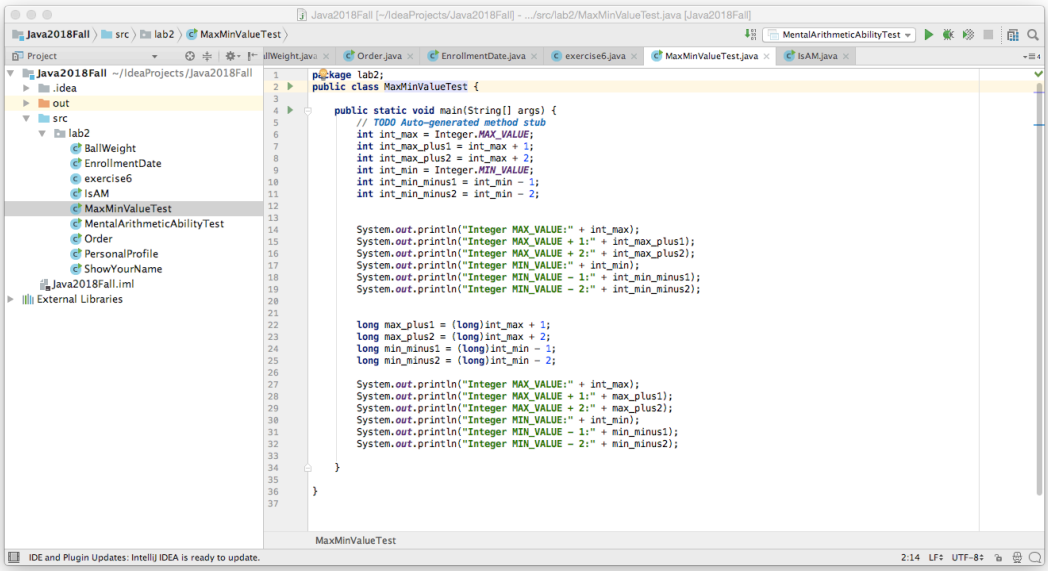
IDE: Integrated development environment (IDE) is a software application that provides comprehensive facilities to computer programmers for software development. An IDE normally consists of a source code editor, build automation tools and a debugger. Most modern IDEs have the function of intelligent code completion, such as Eclipse and intellij idea.

It is an edit page of **eclipse**.
Download url:
https://www.eclipse.org/downloads/packages/

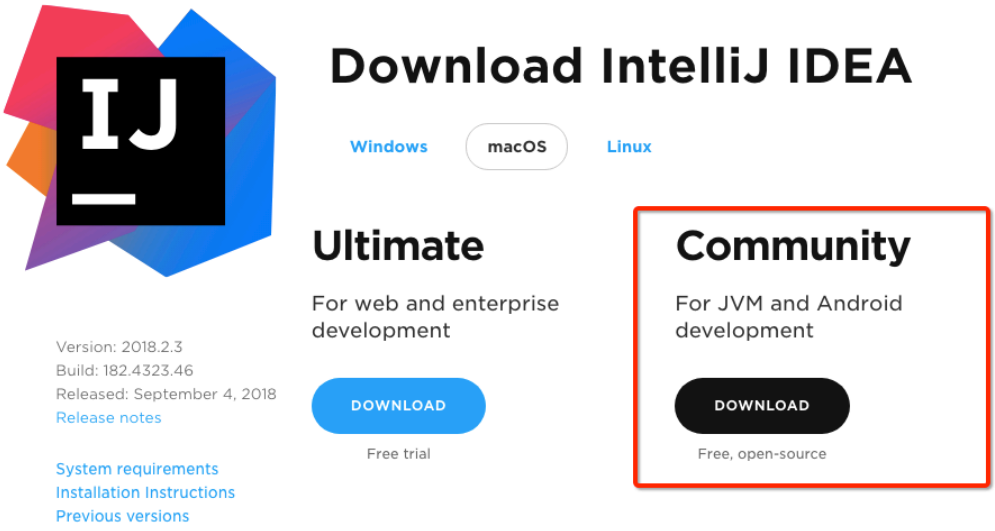


It is an edit page of **intellij idea**.
Download url:
https://www.jetbrains.com/idea/download/#section=mac

zhuym@sustc.edu.cn



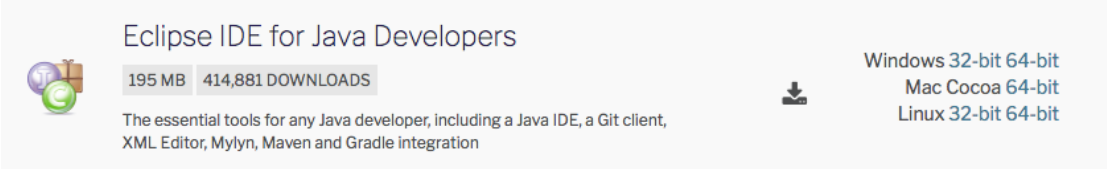
For intellij idea, I suggest you to choice this version (Community), because in this semester, it is enough for you to exercise.



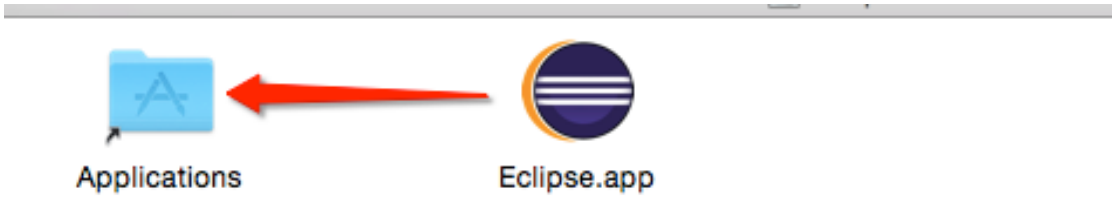
Eclipse

In this tutorial, we **only** introduce how to download **eclipse** and how to use it. Eclipse is an IDE used in computer programming, and is the most widely used Java IDE. It contains a base workspace and an extensible plug-in system for customizing the environment. Eclipse is written mostly in Java and its primary use is for developing Java applications, but it may also be used to develop applications written by other programming languages.

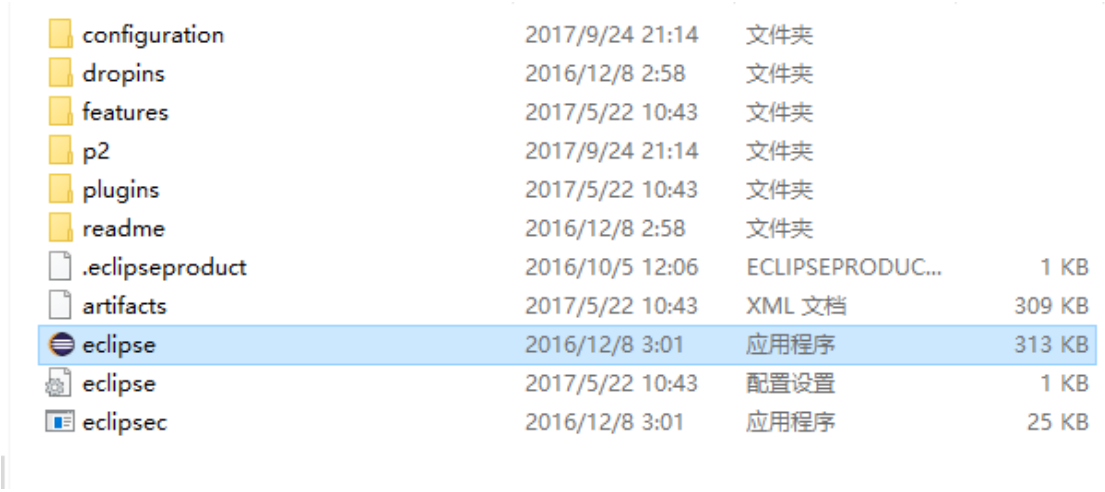
Step1: How to choice the version? This one is enough for you to exercise.



Step2: Installation.
For Mac OS user, double click ".dmg" file, and then drag it into Applications.

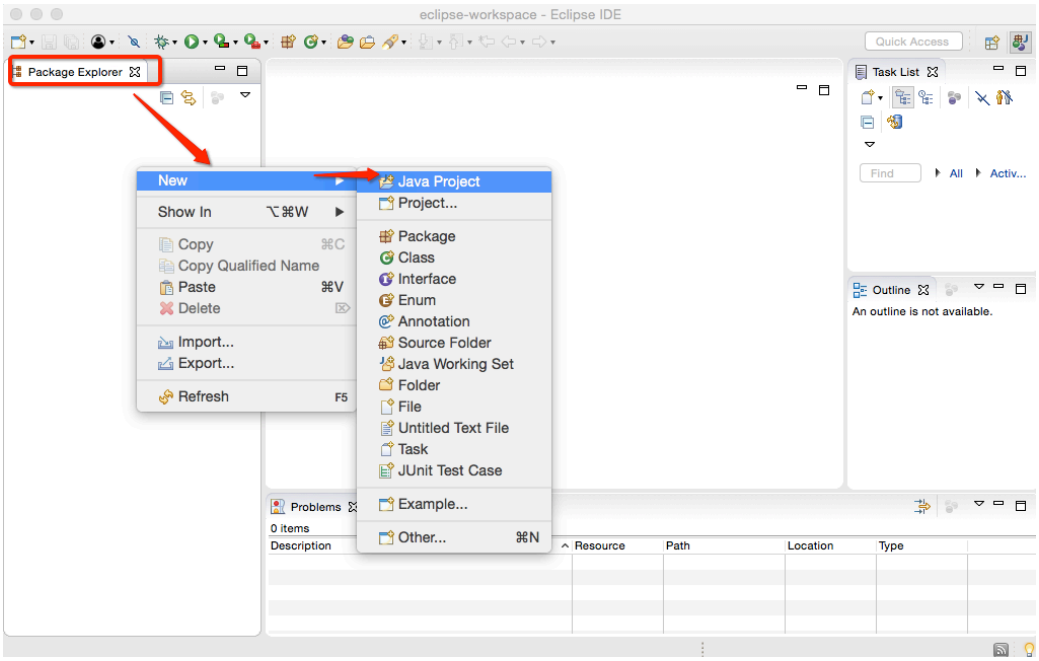


For windows user, we needn't install Eclipse. After uncompressing the download document, we double click eclipse.exe and then we can open it.

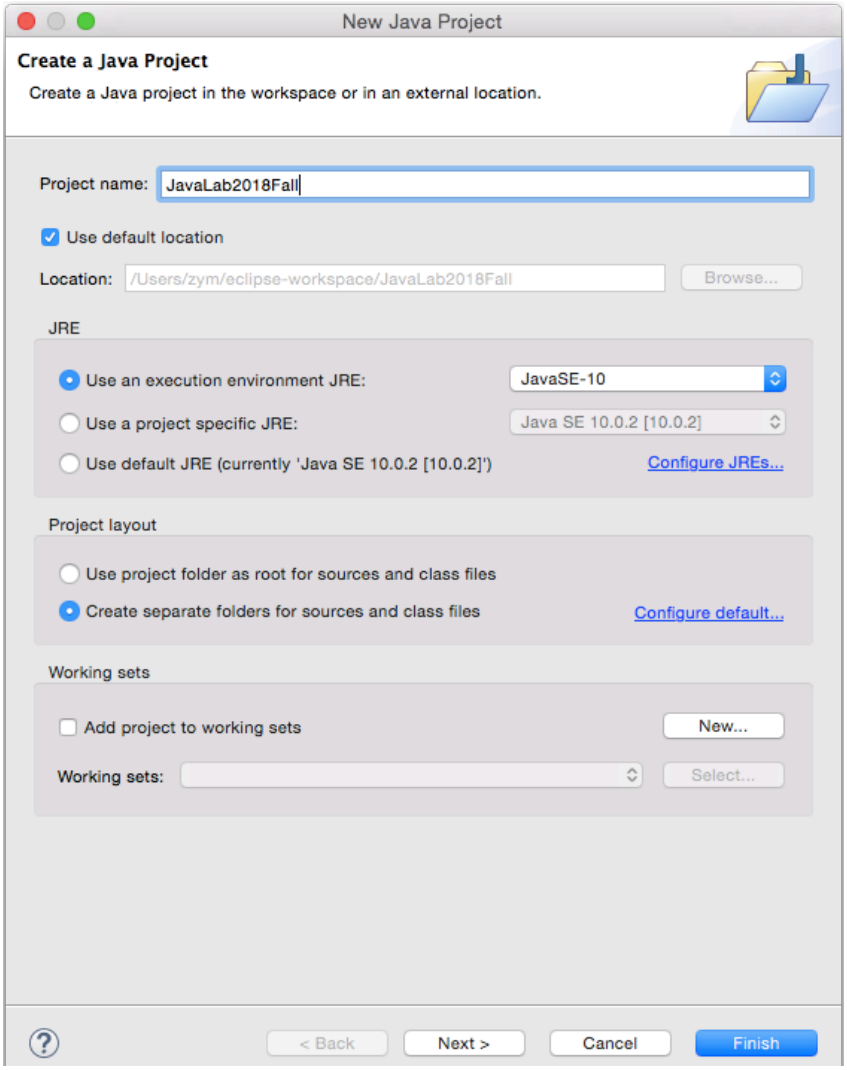


Tips: The versions of Eclipse must match the versions of JDK you installed. I suggest you to install the highest version, because the JDK you have installed is the highest.

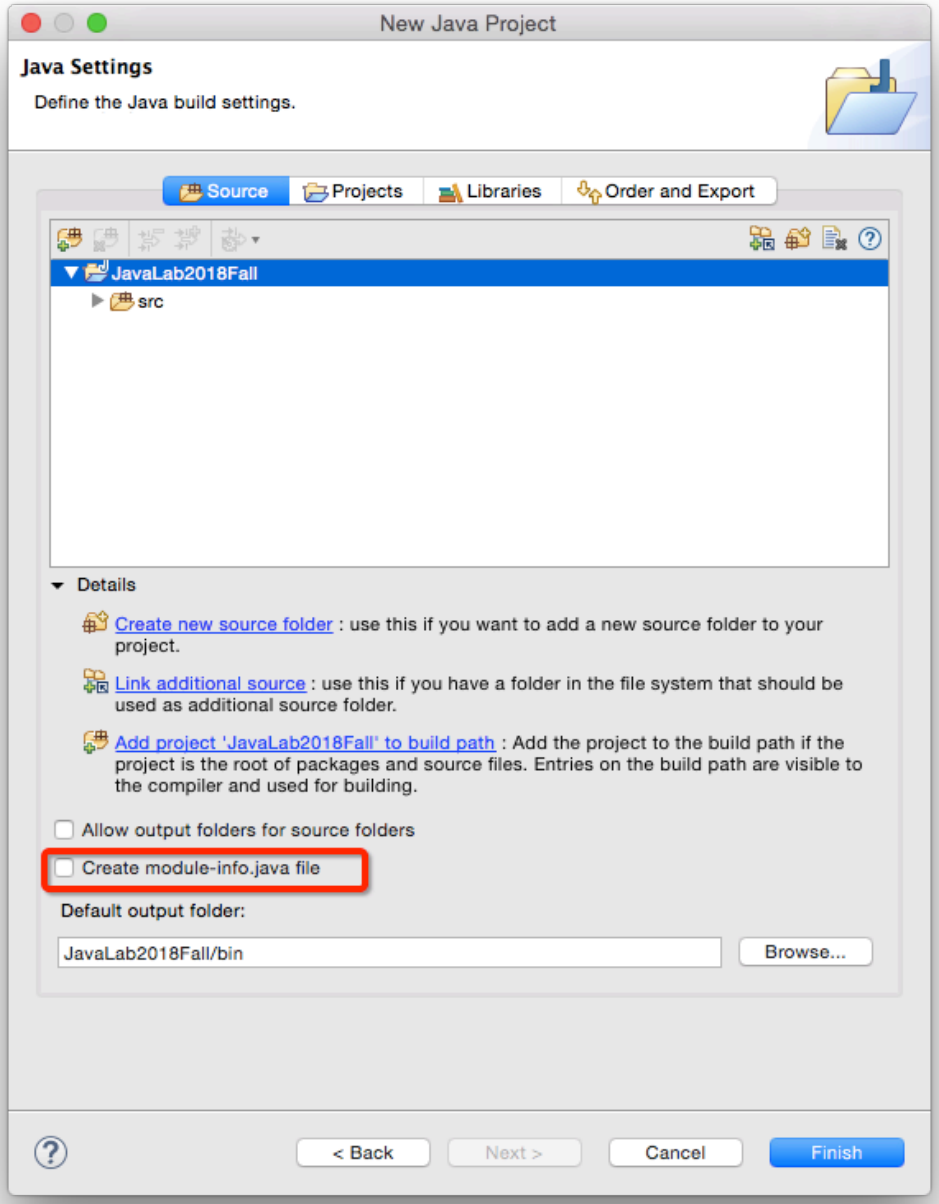
Step 3: Create a project
In package explore, **right click -> New -> Java Project**



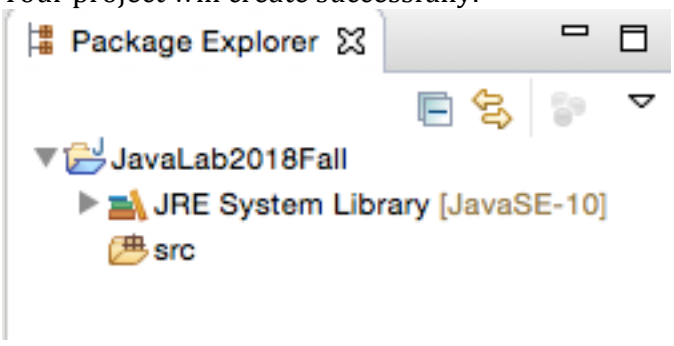
Given your project a name. And then click **Next**



Do not choice the option “Create module-info.java file”. After that, you can click finish.

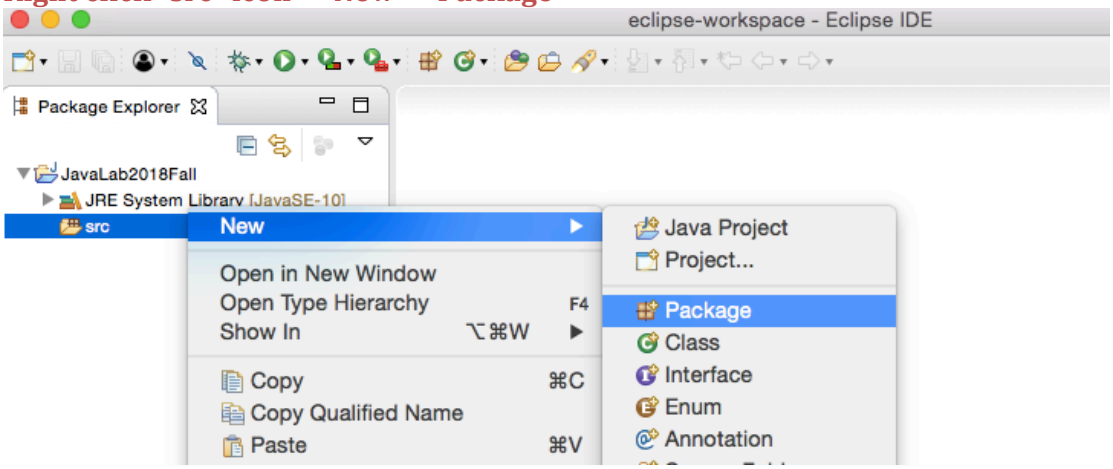


Your project will create successfully.

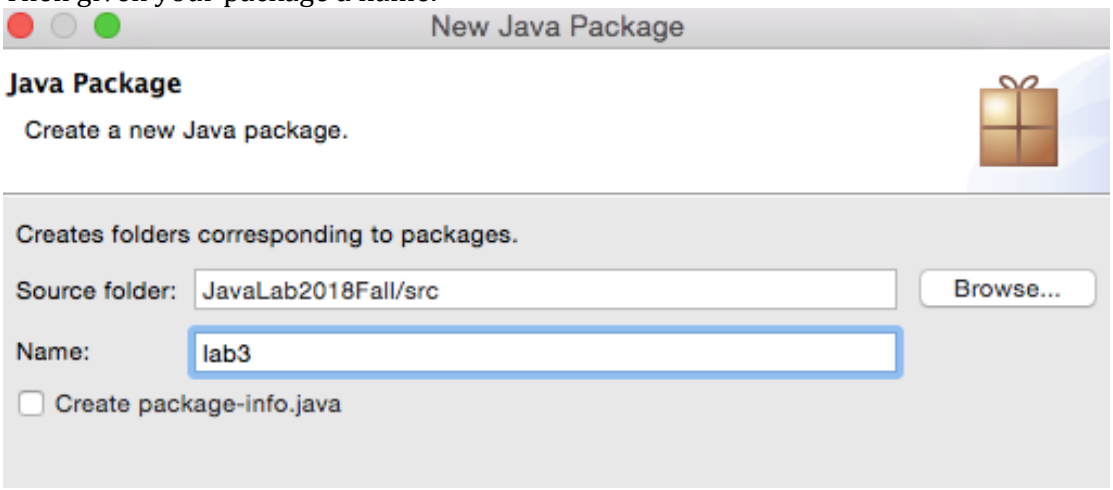


Step 4: Create a package in your project.

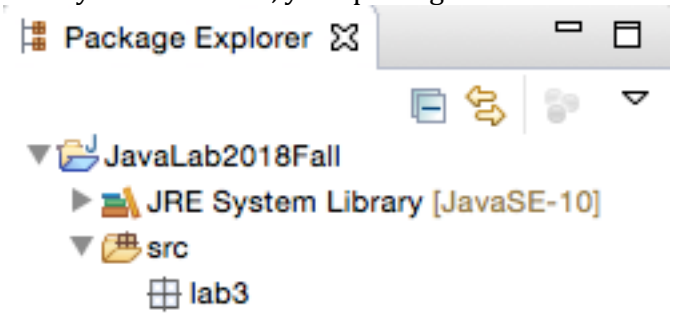
Right click "src" icon -> New -> Package



Then given your package a name.

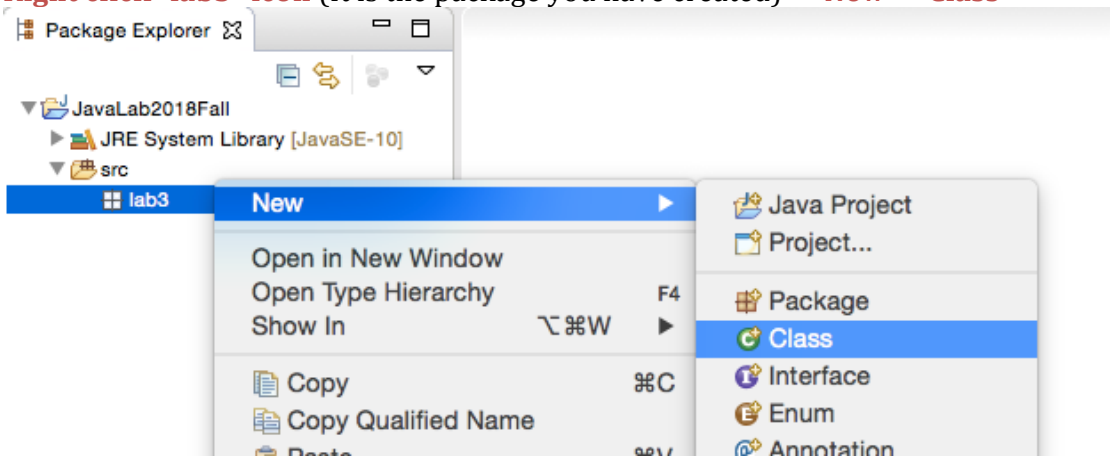


After you click finish, your package will create successfully.

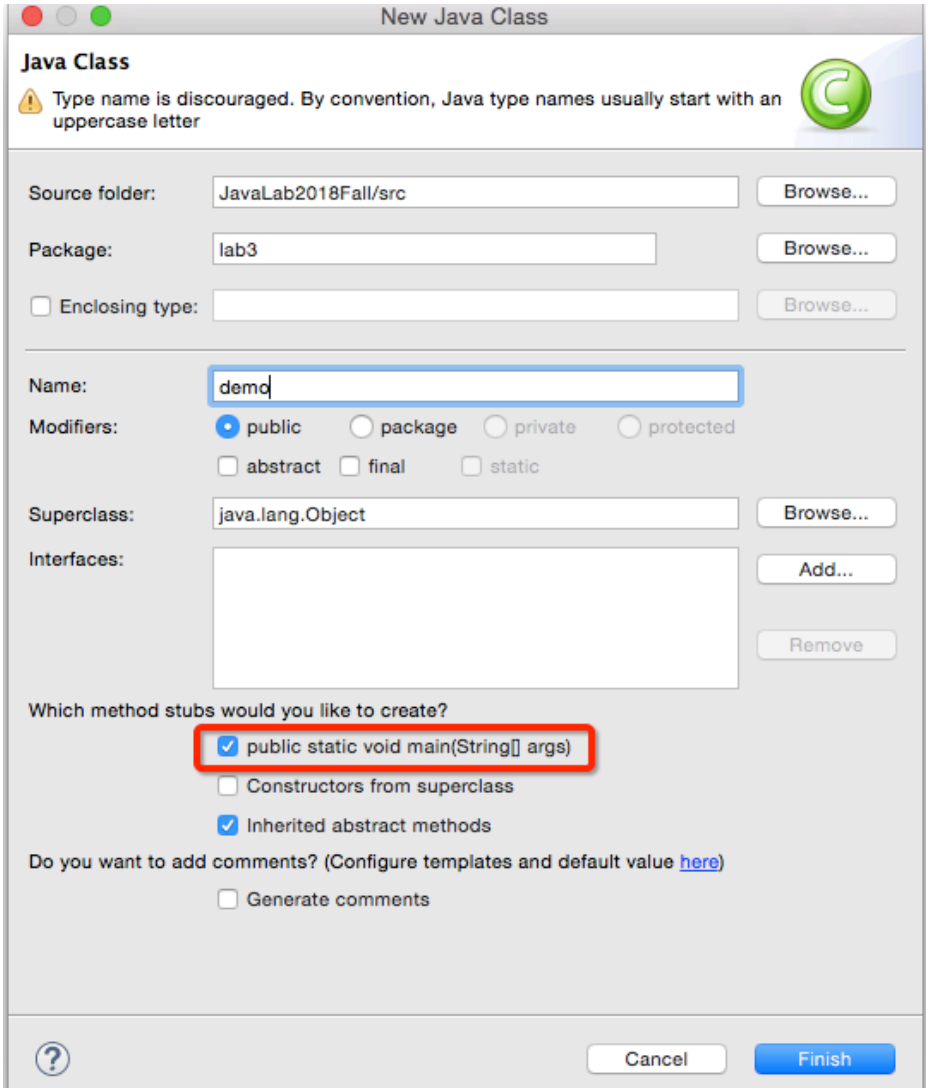


Step 5: Create a java file.

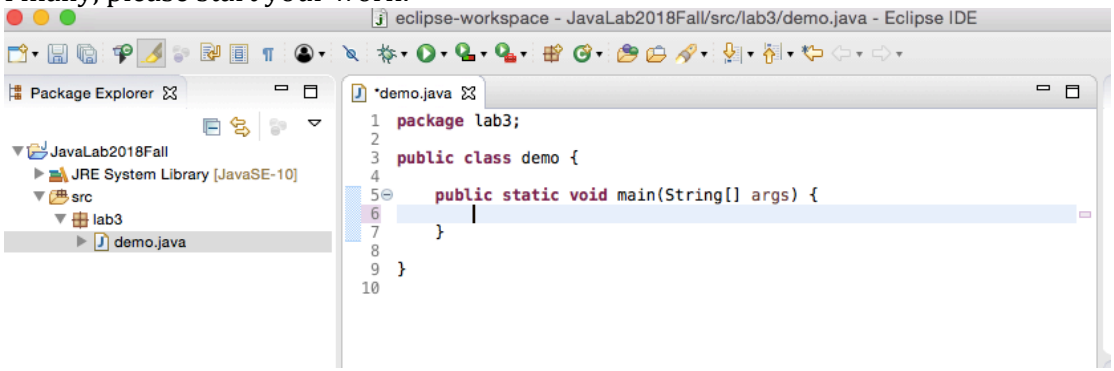
Right click "lab3" icon (It is the package you have created) **-> New -> Class**



Given your class a name (such as demo), in this step, I suggest you select the option "public static void main (……)", because when we check it, the main method will be generated automatically.



Finally, please start your work!



[Exercises]

1. According to the following statement, how to modify them can meet the sample output below? Please try to do it in your IDE.

Statement

```
System.out.println("C:\\Program Files\\Java\\jdk1.8.0_60");
```

Sample output

```
Teacher told me that my installation path of "JDK" is
C:\Program Files\Java\jdk1.8.0_60
```

2. Write a program that prompts the user to enter two points (x1, y1) and (x2, y2) and displays their distances. Actually, you need to enter four double numbers by command line.
The formula for computing the distance is

$$\sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$

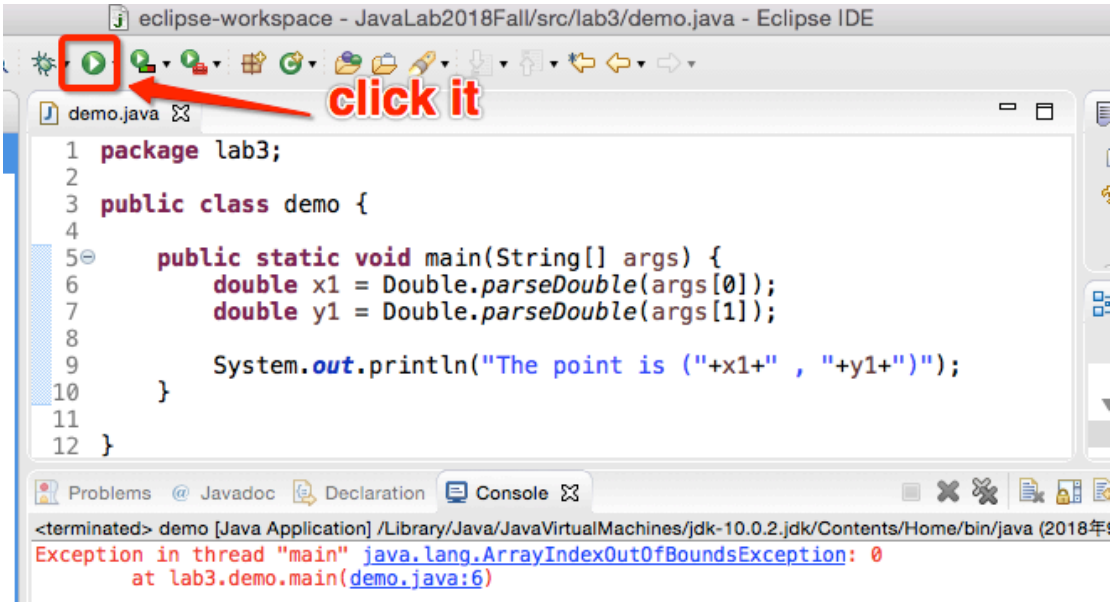
Note you can use the Math.pow(a, 0.5) to compute $\sqrt{a}$. Here is a sample run. Please try to do it in your IDE.
Here is a sample output

```
The first point is (1.0 , 1.0)
The second point is (4.0 , 5.0)
The distance of these two points is 5.0
```

Hints:
The following the steps can help you to input arguments in eclipse.
Step1: Try to type the code as follows

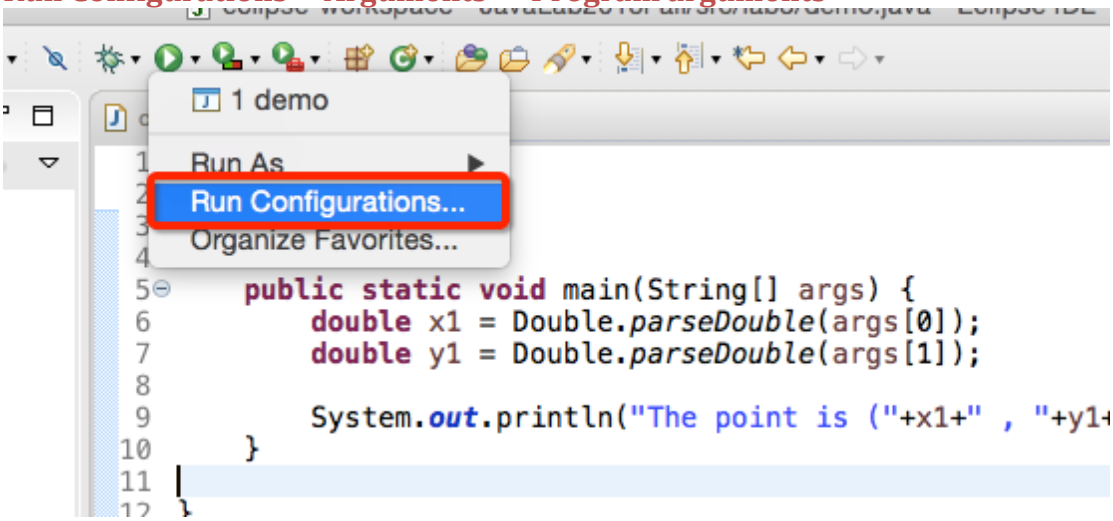
```
1  package lab3;
2
3  public class demo {
4
5      public static void main(String[] args) {
6          double x1 = Double.parseDouble(args[0]);
7          double y1 = Double.parseDouble(args[1]);
8
9          System.out.println("The point is ("+x1+" , "+y1+")");
10     }
11
12 }
13
```

Step2: Click the "run" button, and an exception will be appeared in console window. Don't worry, in this step, we have compiled the java file successfully.

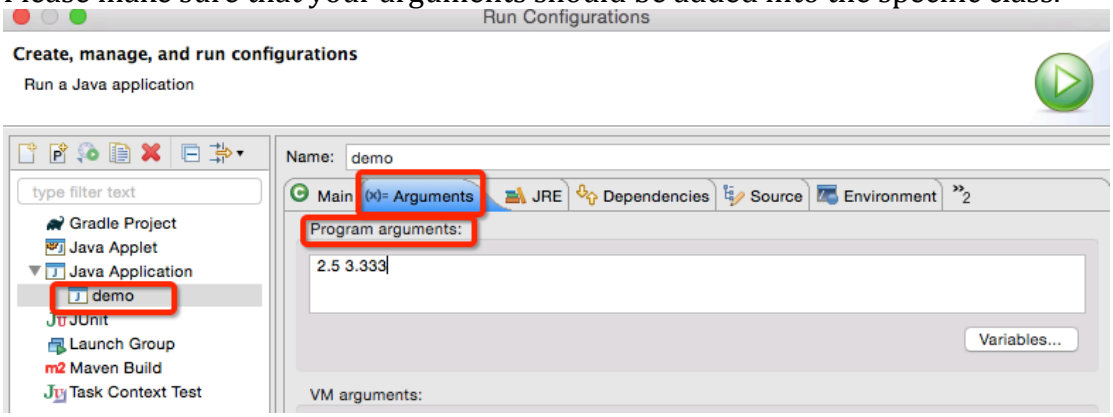


Step 3: Adding your arguments.

Run Configurations ->Arguments -> Program arguments



Please make sure that your arguments should be added into the specific class.



Step4: Run it, and we will get the output.

```
The point is (2.5 , 3.333)
```