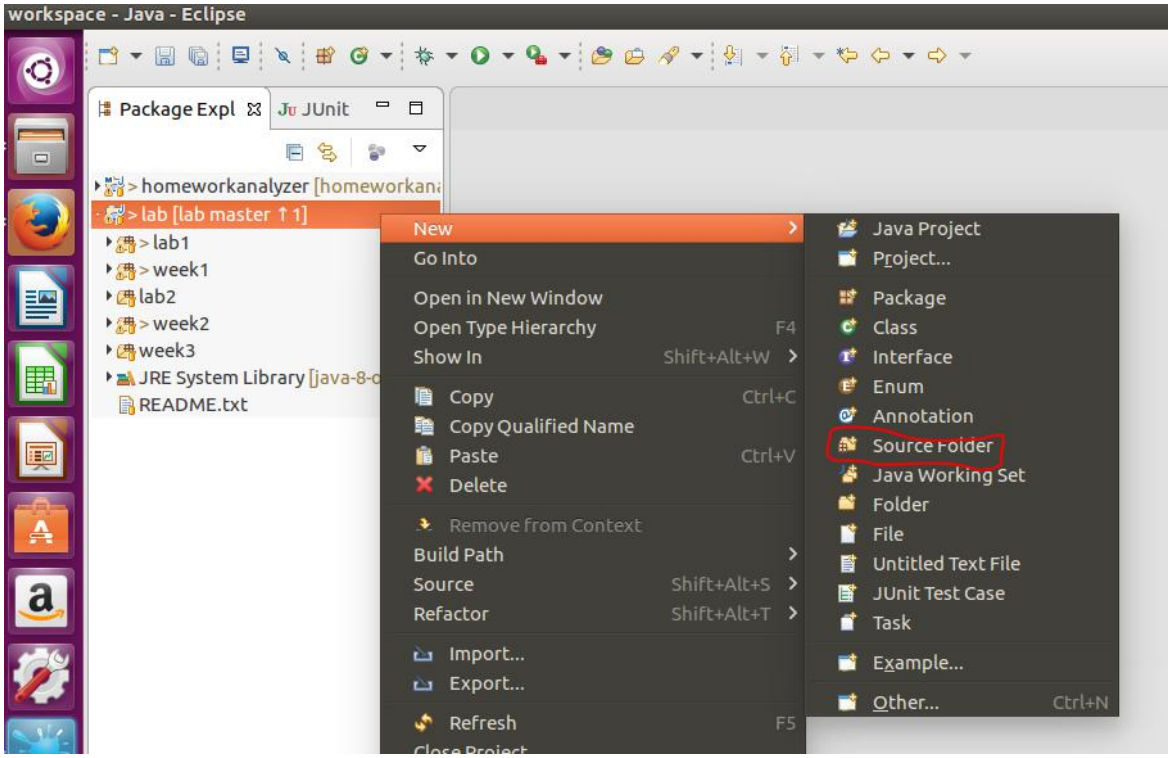
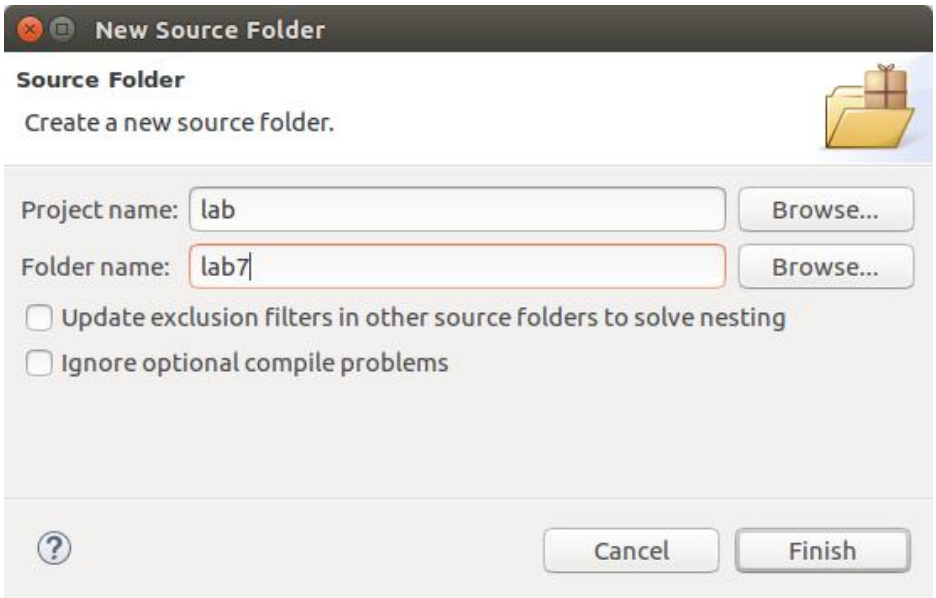
Lab 7: Inheritance

Setup: Create a source folder named lab7

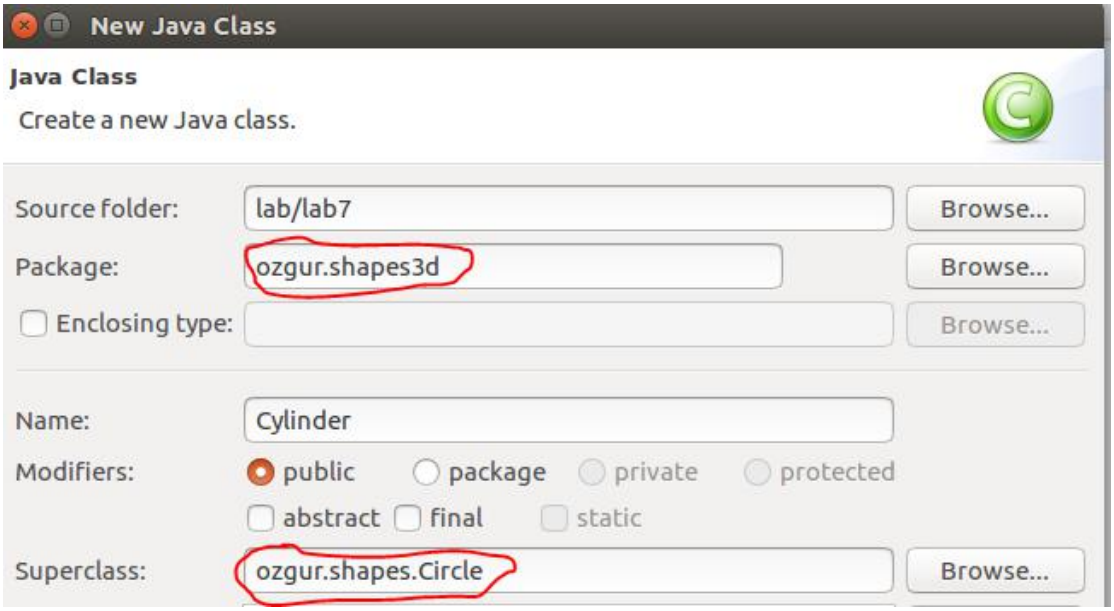
1. Create a source folder named “lab7”





Exercise 1 : Create a Cylinder Class in a package

1. Create a Cylinder class in a package named “yourname.shapes3d”
   a) If you are using Eclipse create your class as shown below. Replace “ozgur” with your name! Select the Circle class as super class that you implemented last week.



   b) If you are using text editor, create a directory and name the directory as your name in “lab7” directory. In this directory, create “shapes3d” directory. In this “shapes3d” directory, create a java file called Cylinder.java. The first line of this file should be:

```
package yourname.shapes3d;
```

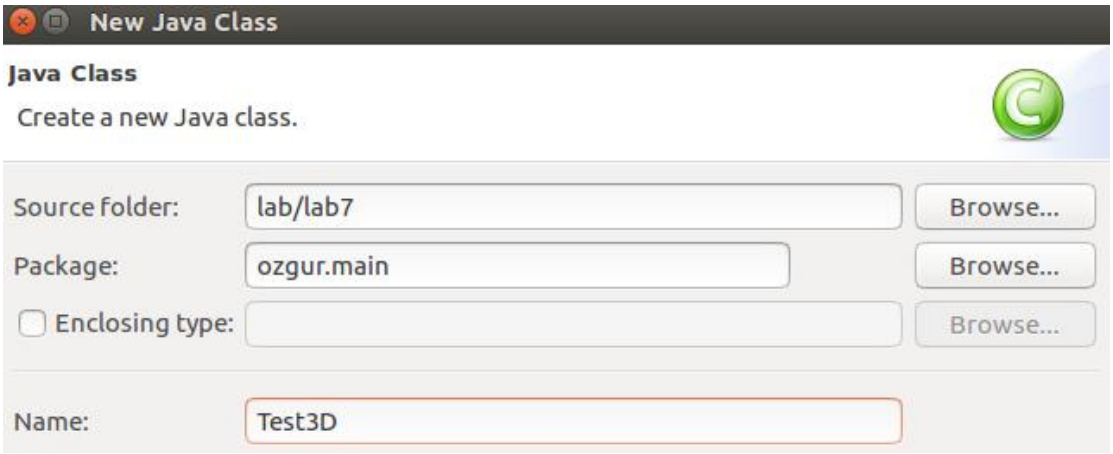
   where yourname is your name. And define Cylinder class after this line. Extend the Cylinder class from the Circle class.
2. In Cylinder class, declare height as instance variable. Define the Cylinder constructor to initialize the radius and height variables.
3. Include methods that calculate and return the area and volume of the cylinder.
4. Implement the toString method to return information about the radius and height of the cylinder.

Exercise 2: Create a Cube Class in a package

1. Create a Cube class by subclassing the Square class in the package named “yourname.shapes3d”
2. In Cube class, define the Cube constructor to initialize the side instance variable..
3. Include methods that calculate and return the area and volume of the Cube.
4. Implement the toString method to return information about the Cube.

Exercise 3: Test3D class

1. Create a Test3D class in package named “yourname.main”
   a) If you are using Eclipse create your class as shown below. Replace “ozgur” with your name!



   b) If you are using text editor, create “main” directory in “yourname” directory. In this “main” directory, create a java file called Test3D.java. The first line of this file should be:

```
package yourname.main;
```

   where yourname is your name. And define Main class after this line.
2. In this class, declare the “public static void main” method. In this method declare and create three instances of Cylinder and Box classes. Note that you should import these classes in Test3D class.

```
import yourname.shapes3d.*;
```

NOTE: Your lab will **not be graded** if

- Your account name does not have the format described in lab1.pdf
- Your repository name is not lab
- Your files have compilation errors
- You haven’t complete the steps described in exercises
- Your added/modified files are not submitted to Bitbucket.
  - You have to add commit and push files as described in lab1.pdf