

Tema laborator 1

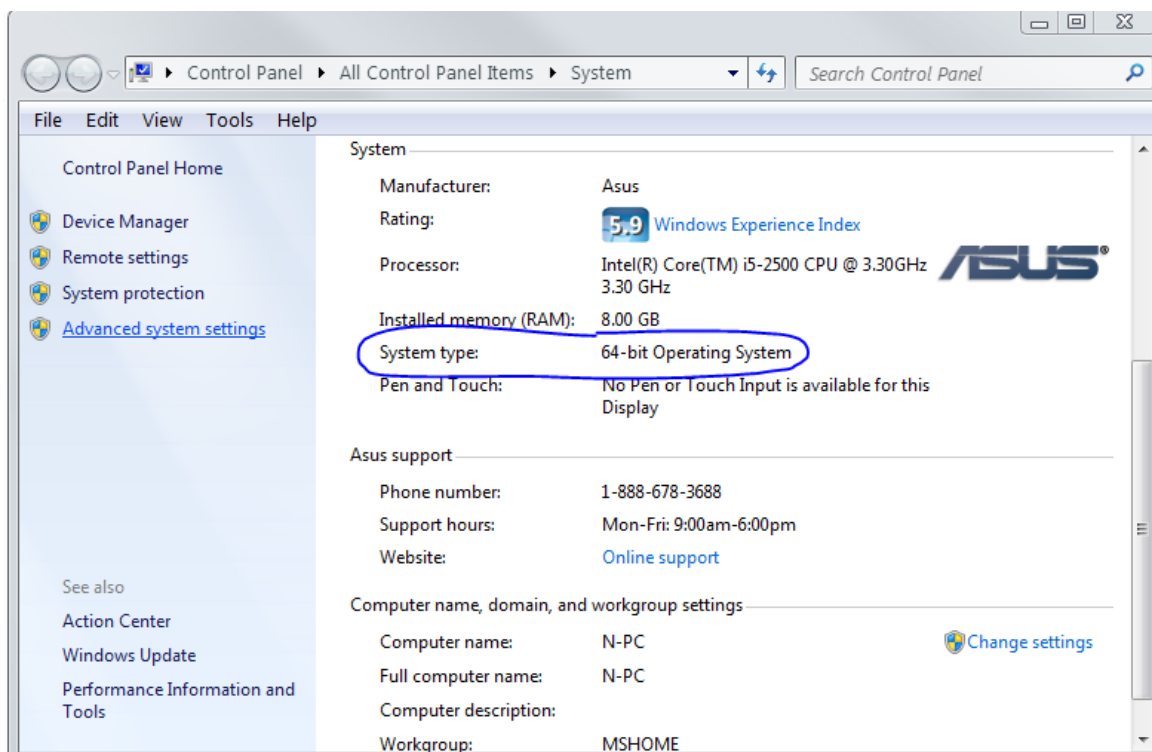
Pregatire si instalare instrumente software

1 Materiale aditionale ce trebuie lectuate

Nu sunt

2 Aflare detalii despre sistemul de operare.

Click dreapta pe Computer apoi selectati Properties:



Va arata versiunea de sistemului de opeare.

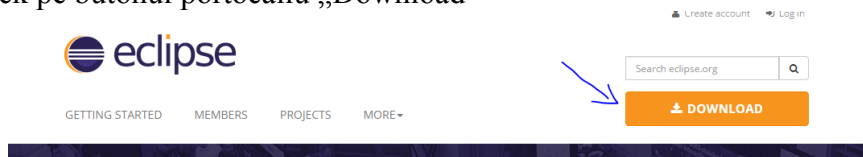
Daca aveti Linux, stiti ce versiune aveti.

3 Instalare Java 1.8 JDK

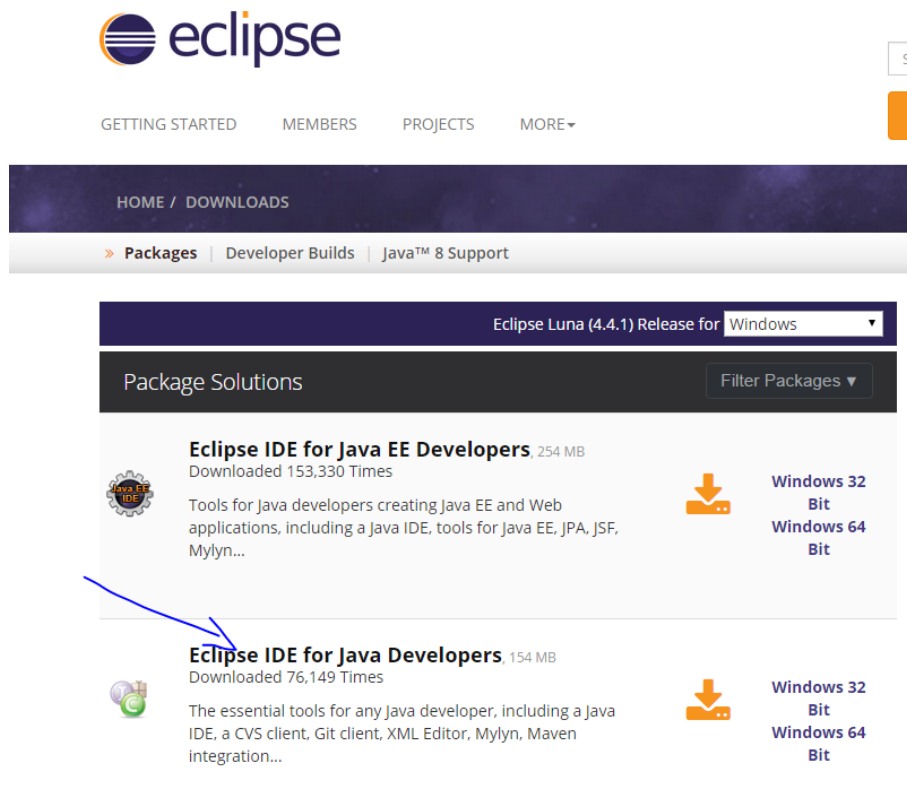
1. Mergeti la: <http://www.oracle.com/technetwork/java/javase/downloads/jdk8-downloads-2133151.html>
2. Acceptati „License agreement”-ul
3. Selectati versiunea de sistem de operare potrivita (in cazul de mai sus, Windows x64) Nu este gresit sa selectati o versiune pe 32 de biti daca aveti sistem de operare pe 64 biti. Invers inasa, nu va merge.
4. Lansati installer-ul si urmati pasii.

4 Instalare mediu Eclipse

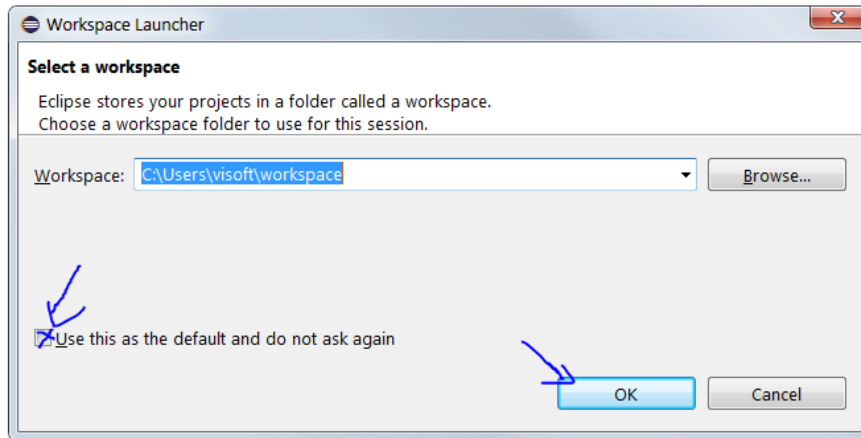
1. Mergeti la <http://www.eclipse.org/>
2. Click pe butonul portocaliu „Download”



3. Selectati al 2-lea produs:



4. Descarcati conform sistemului de operare.
5. Dupa ce se descarca, deschideti arhiva (vezi la sfarsitul indrumatorului).
6. Copiati directorul eclipse din arhiva undeva pe HDD-ul local (ex: in C:\eclipse sau D:\eclipse)
7. Intrati in noul director si faceti shortcut la eclipse.exe pe desktop: (Click dreapta pe fisier, Copy, Click dreapta pe desktop si Paste shortcut)
8. Deschideti Eclipse-ul
9. Confirmati locatia implicita pentru workspace (locul unde se vor salva toate proiectele)

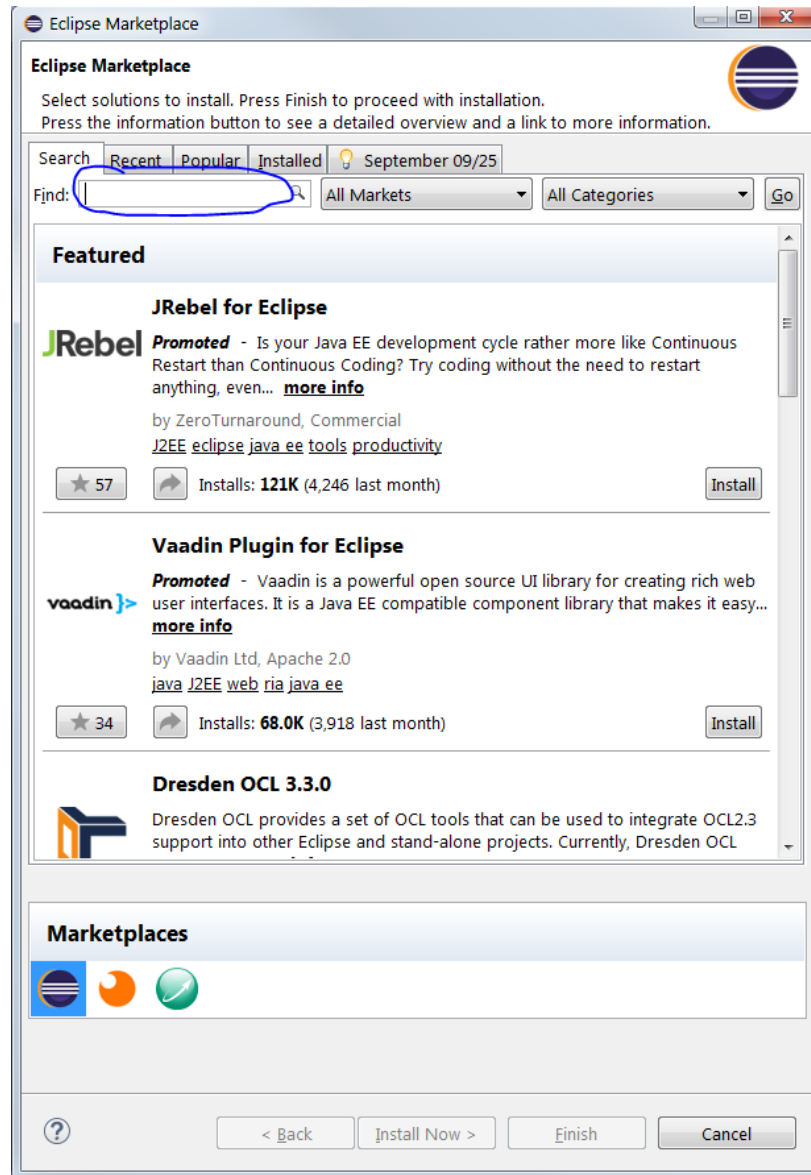


Se deschide mediul Eclipse:



5 Instalare TestNG

1. In eclipse, mergeti la Help->Eclipse Market Place



2. In casuta de Find scrieti *testng* si dati enter (sau click pe lupa)
3. Dati install pe TestNG for Eclipse
4. Dati Confirm, Accept si Finish. La Security Warning, dati OK, dupa care Yes la restart mediu Eclipse.

6 Instalare Mockito

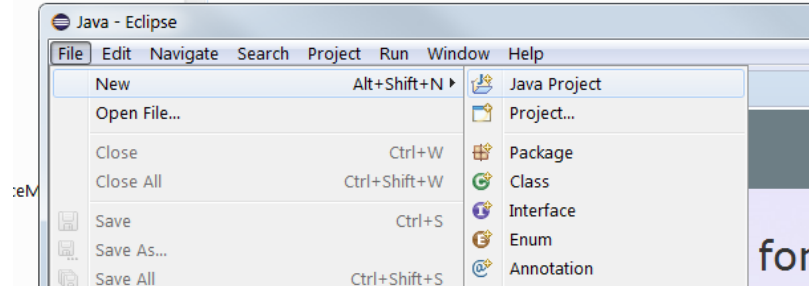
1. Mergeti la <https://code.google.com/p/mockito> si downloadati ultima versiune de mockito, arhiva .zip (ex. mockito-1.9.5.zip)
2. Despachetati continutul undeva pe hard disk-ul local. Va trebuie in mod special fisierul mockito-all-1.9.5.jar

7 Hello world

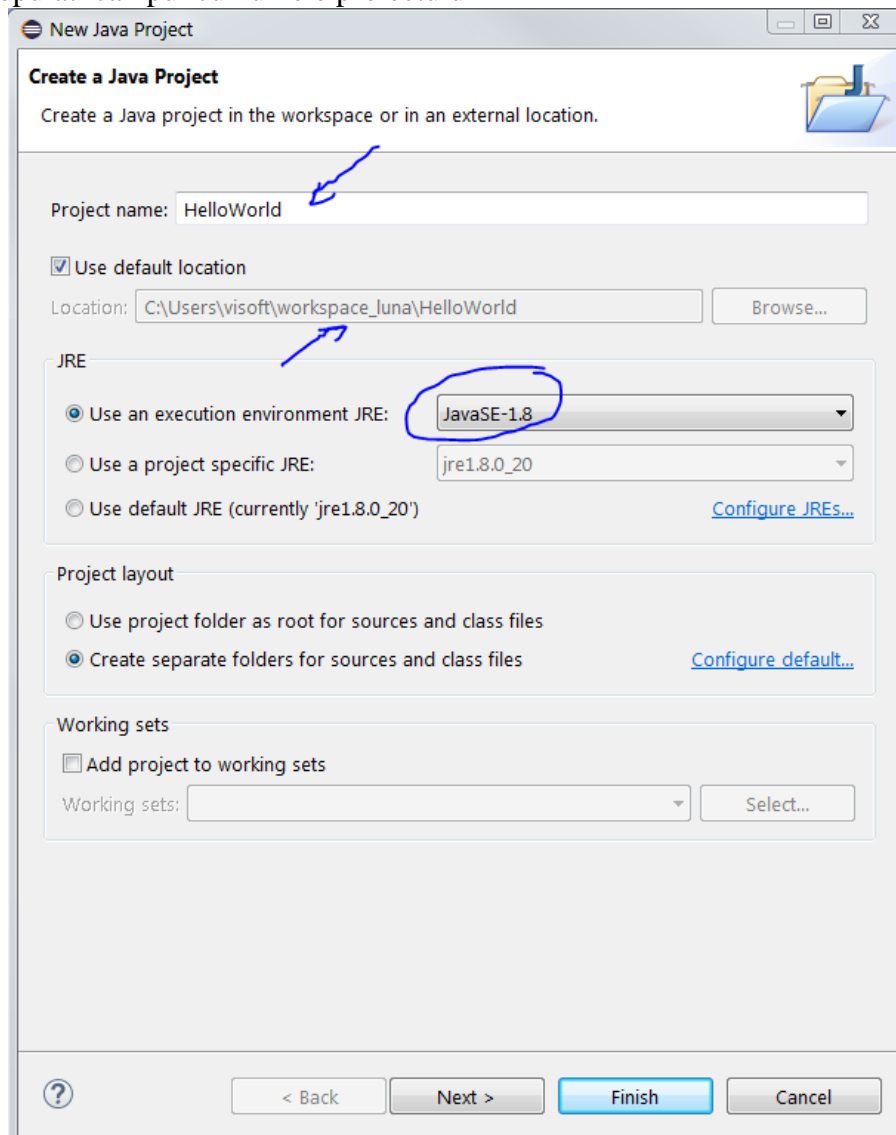
7.1 Crearea unui proiect nou

Acesti pasi ii veti face de fiecare data cand vreti sa creati un proiect nou

1. Selectati File -> New -> Java Project

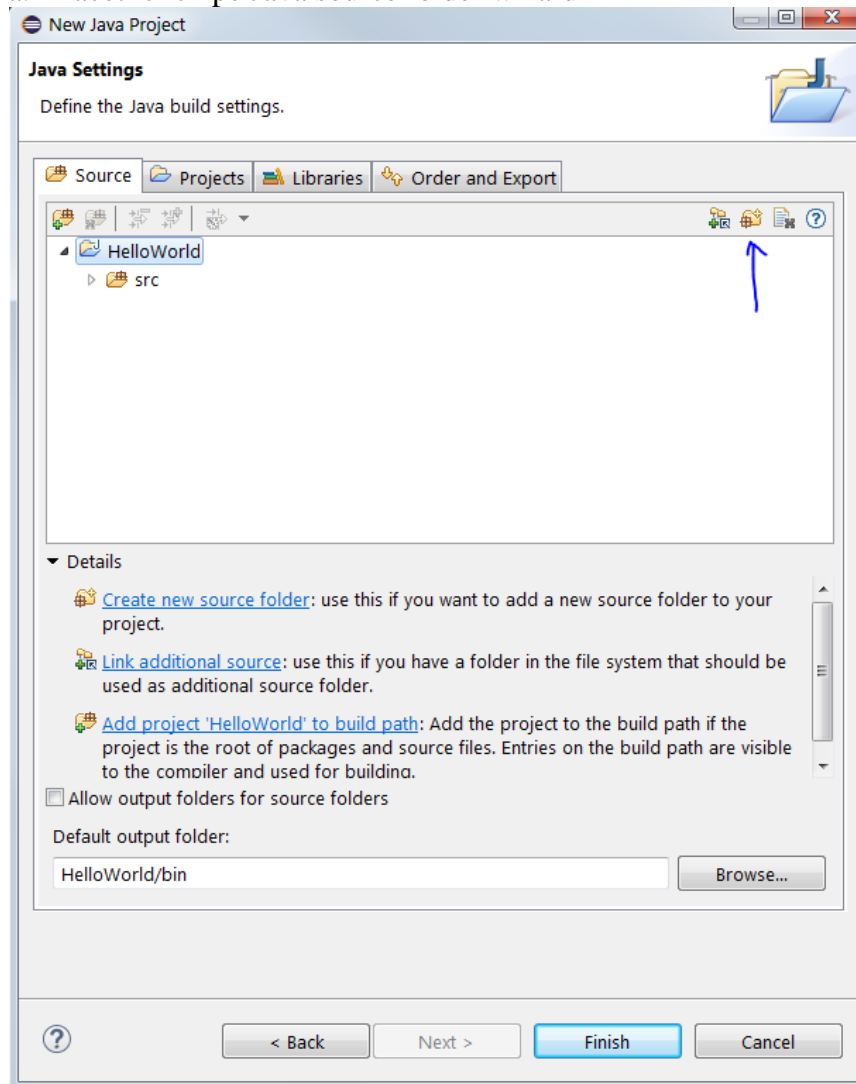


2. Se deschide New Java Project:
3. Populati campul cu numele proiectului

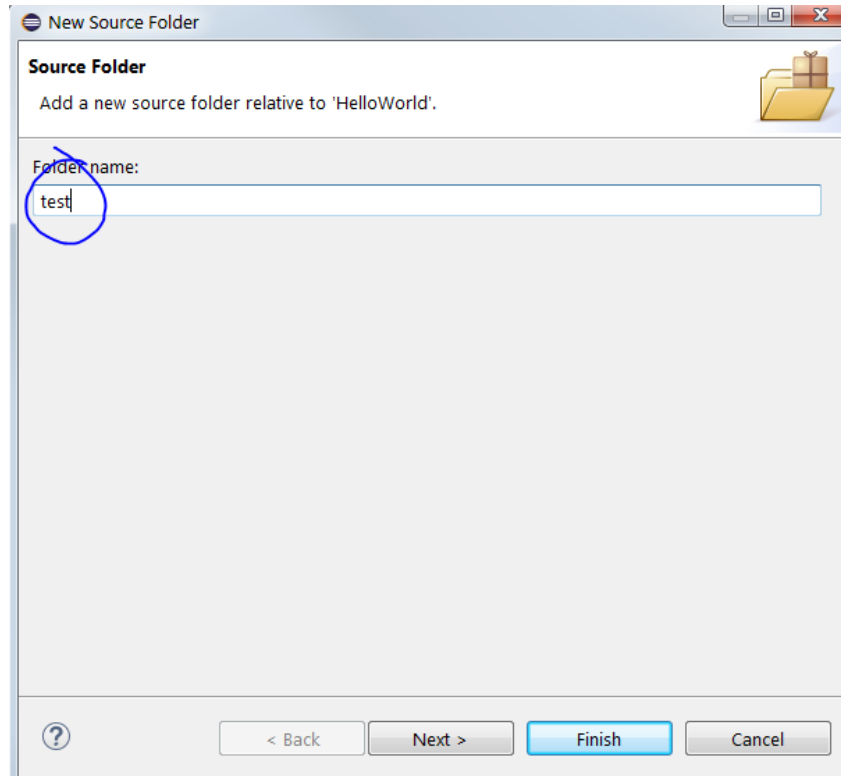


4. Click Next
5. Aduagati un nou source folder numit test:

a. Faceti click pe Java source folder wizard

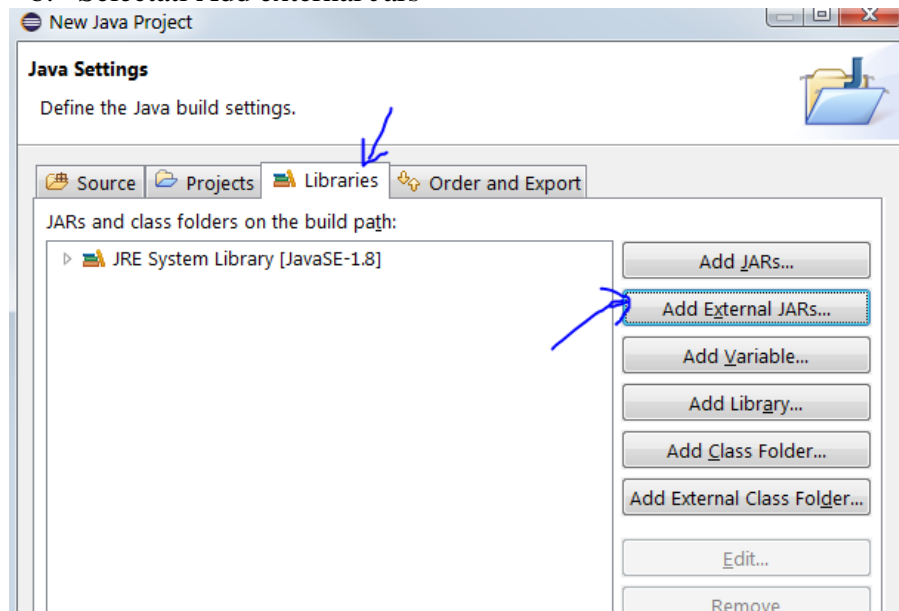


b. Scrieti test la Folder name

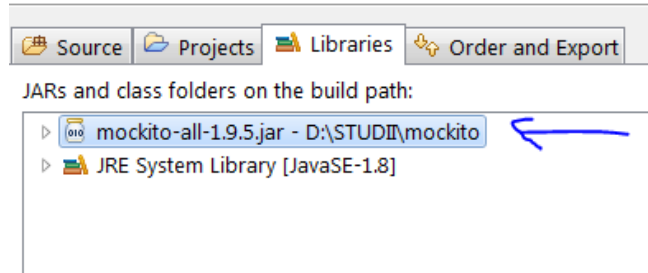


c. si Finish.

6. Adaugati alte biblioteci necesare proiectului
 - a. Intrati pe tab-ul Libraries din fereastra New Java Project
 - b. Selectati Add external Jars

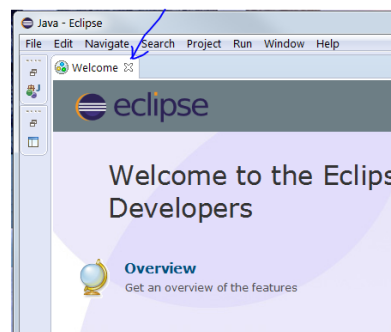


c. Navigati la locatia unde ati despachetat mockito si selectati mochito-all-1.9.5.jar

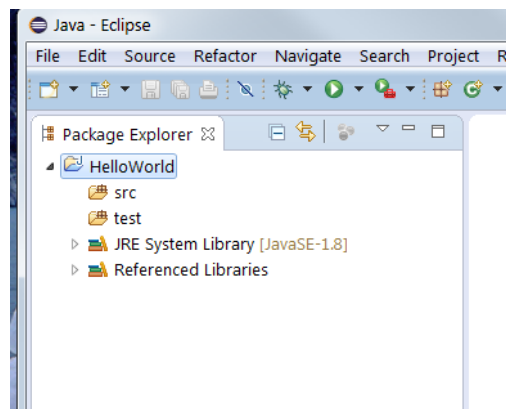


d. Dati pe Finish

7. Inchideti fereastra Welcome, daca e deschisa.



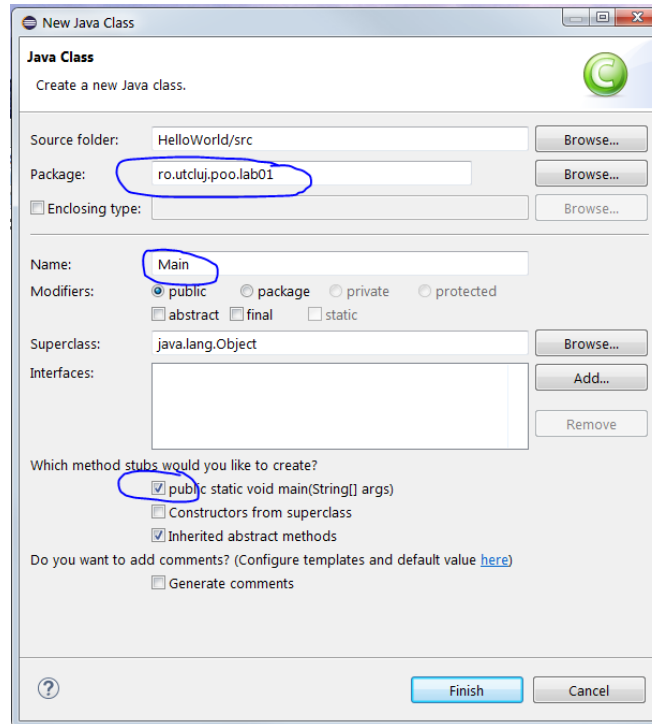
Va apare structura proiectului nou creat, cu cele 2 foldere.



7.2 Crearea unei clase

Pasii de la acest captioli sunt necesari de fiecare data cand creati o clasa noua. Nu este singura metoda de a crea o clasa, dar e cea mai usoara.

1. Dati File -> New -> Class

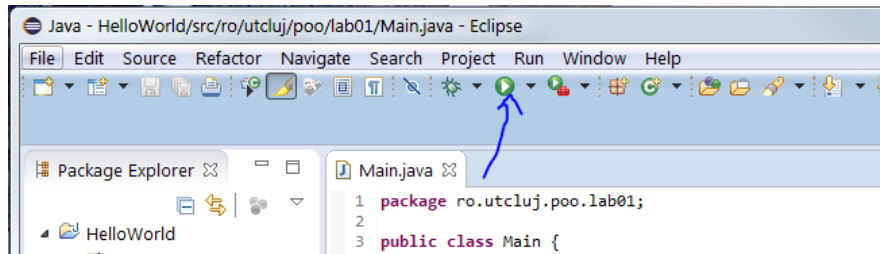


2. Dati Finish si adaugati linile de cod, ca mai jos:

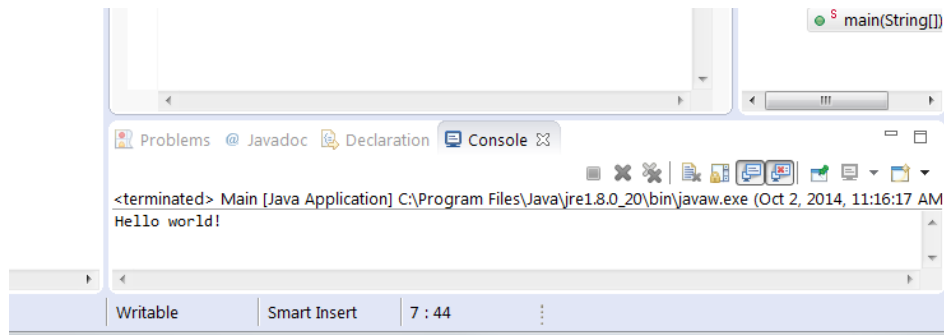
```
1 package ro.utcluj.poo.lab01;
2
3 public class Main {
4     public String getMessage(){
5         return "";
6     }
7     public static void main(String[] args) {
8         // TODO Auto-generated method stub
9         System.out.println("Hello world!");
10    }
11 }
12 }
13 }
```

7.3 Rularea unui program

Dupa ce ati scris, salvati si apasati pe Run (butonul verde, cu triunghi alb)



In partea de jos a ferestrei se observa consola:

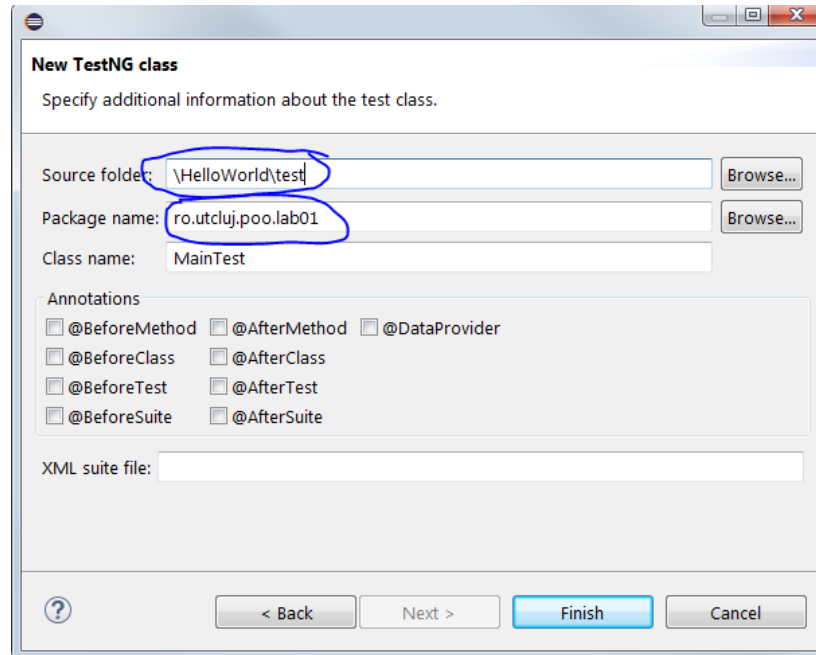


7.4 Adaugaera de teste

Testarea software este o parte vitala in dezvoltarea oricarei aplicatii. Vom insista mai incolo asupra ei. Deocamdata trebuie sa va asigurati ca infrastructura merge.

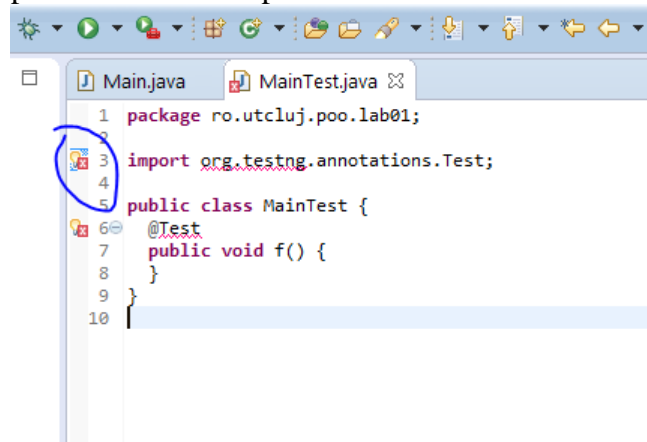
1. Faceti click dreapta pe Main.java, din Package Explorer. Alegeti TestNG -> Create TestNG class

Dati next:

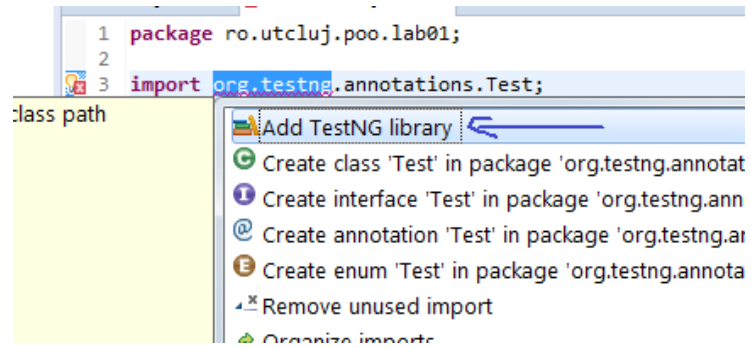


Apoi faceti click pe Finish.

2. Navigati in MainTest.java
3. Faceti click pe x-ul rosu din dreptul liniei 3



Dublu click pe Add TestNG library



Toate sublinierile si bulinele rosii ar trebui sa dispara.

4. Scrieti urmatorul cod:

```
Main.java MainTest.java
1 package ro.utcluj.poo.lab01;
2
3 import org.mockito.Mock;
4 import org.mockito.Mockito;
5 import static org.mockito.MockitoAnnotations.*;
6 import org.testng.annotations.Test;
7 public class MainTest {
8     @Mock
9     Main main;
10    @Test
11    public void f() {
12        initMocks(this);
13        Mockito.when(main.getMessage()).thenReturn("WORKING!");
14        System.out.println(main.getMessage());
15    }
16 }
17 }
```

7.5 Rularea testelor:

Avand fisierul de test deschis, dati din nou run si observati consola:

```
[TestNG] Running:  
C:\Users\visoft\AppData\Local\Temp\testng-eclipse--480054403\testng-customsuite.xml
```

```
WORKING!  
PASSED: f
```

```
=====  
Default test  
Tests run: 1, Failures: 0, Skips: 0  
=====
```

```
=====  
Default suite  
Total tests run: 1, Failures: 0, Skips: 0  
=====
```

```
[TestNG] Time taken by org.testng.reporters.JUnitReportReporter@626b2d4a: 10 ms  
[TestNG] Time taken by org.testng.reporters.SuiteHTMLReporter@73a8dfcc: 31 ms  
[TestNG] Time taken by org.testng.reporters.EmailableReporter2@6f2b958e: 4 ms  
[TestNG] Time taken by [FailedReporter passed=0 failed=0 skipped=0]: 0 ms  
[TestNG] Time taken by org.testng.reporters.jq.Main@aec6354: 29 ms  
[TestNG] Time taken by org.testng.reporters.XMLReporter@c2e1f26: 4 ms
```

8 Evaluare

Tema se considera incheiata cand:

1. Programul ruleaza si apare „Hello World”
2. Testele ruleaza si apare mesajul „WORKING”

9 Instrumente ajutatoare:

<http://wiki.eclipse.org/Eclipse/Installation>

<http://testng.org/doc/download.html>

<http://eclipsesource.com/blogs/2011/09/19/effective-mockito-part-1/>

Arhivator: 7-zip: <http://www.7-zip.org/>