3.1 TDD with TestNG

This section will guide you:

* To understand TDD
* To perform TDD test with TestNG

**Development Environment:**

* Eclipse IDE for Enterprise Java Developers Version Oxygen.3a Release (4.7.3a)
* JavaDevelopment Kit Version 8
* Selenium Standalone Server Version 3.141.59

This guide has mainly three sub-sections, namely:

3.1.1 Performing a TDD test

3.1.2 Running the code

3.1.3 Pushing the code to your GitHub repositories

**Step 3.1.1:** Performing a TDD test:

* To perform a TDD test, follow the below steps:

1. Add the test.
2. Execute the test and see if the new one fails.
3. Write the code.
4. Execute the test.
5. Refactor the code.
6. Now, repeat the steps mentioned above.

Now, let’s look at the above steps in detail:

1. Firstly, write the code that will be based on the requirements in Eclipse. It should look something like:

**package** test.testing;

**import** org.testng.Assert;

**import** org.testng.annotations.Test;

**public** **class** AddNumbers {

**@Test**

**public** void addIntegerNumbers()

{

Calculator myCalculator = **new** Calculator();

int expected= 30;

int actual= myCalculator.add(10,20);

Assert.assertEquals(actual, expected);

}

}

1. Now, if we execute our test for the first time, we should get the below error:

FAILED: addIntegerNumbers

java.lang.Error: Unresolved compilation problems:

Calculator cannot be resolved to a type

Calculator cannot be resolved to a type

1. Write the code shown below to resolve the above error in Eclipse. It will look something like:

**package** test.testing;

**public** **class** Calculator {

**public** int add(int number1, int number2)

{

**return** 0;

}

}

1. Now, execute our test:

FAILED: addIntegerNumbers

java.lang.AssertionError: expected [30] but found [0]

1. Refactor the code in Eclipse. It will look like:

**package** test.testing;

**public** **class** Calculator {

**public** int add(int number1, int number2)

{

**return** (number1+number2);

}

}

1. Now, if execute our test again, it will show the below message:

PASSED: addIntegerNumbers

**Step 3.1.2:** Running the code:

* Run the code through Eclipse.

**Step 3.1.3:** Pushing the code to your GitHub repositories:

Open your command prompt and navigate to the folder where you have created your files:

cd <folder path>

Initialize your repository using the following command:

git init

Add all the files to your git repository using the following command:

git add . 

Commit the changes using the following command:

git commit . -m “Changes have been committed.”

Push the files to the folder you initially created using the following command:

git push -u origin master