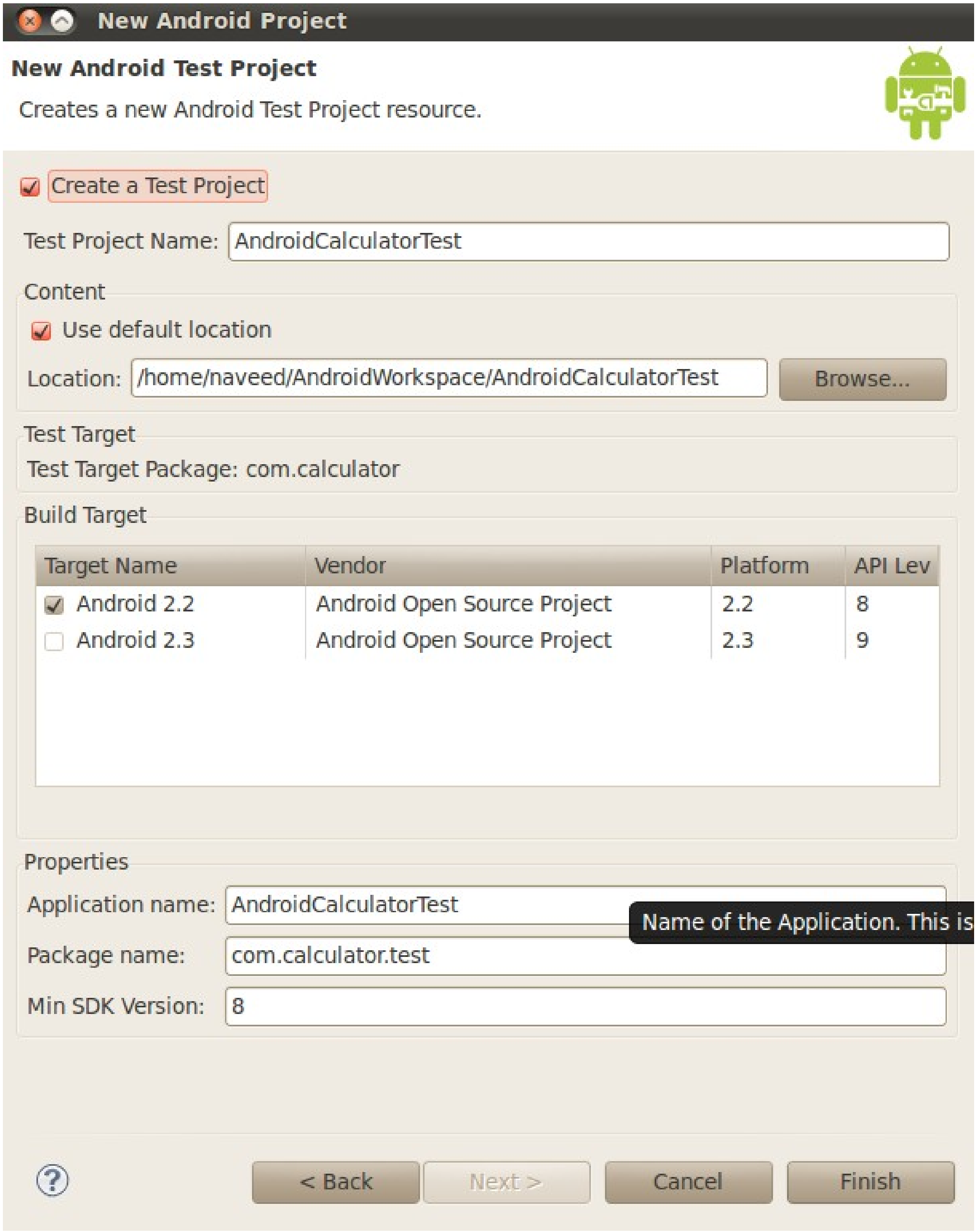
# Test Android Application with Robotium:

## 1. Create Test Project

To test an Android application using Robotium, we need to create a test project with in the package *(com.calculator)* of specific project. We have already create our test project in last section, hope you got viewing below screen,



**New Android Test Project**

Creates a new Android Test Project resource.

☑ Create a Test Project

Test Project Name: AndroidCalculatorTest

Content

☑ Use default location

Location: /home/naveed/AndroidWorkspace/AndroidCalculatorTest

Test Target

Test Target Package: com.calculator

Build Target

| Target Name | Vendor | Platform | API Lev |
|---|---|---|---|
| ☑ Android 2.2 | Android Open Source Project | 2.2 | 8 |
| ☐ Android 2.3 | Android Open Source Project | 2.3 | 9 |

Properties

Application name: AndroidCalculatorTest

Name of the Application. This is

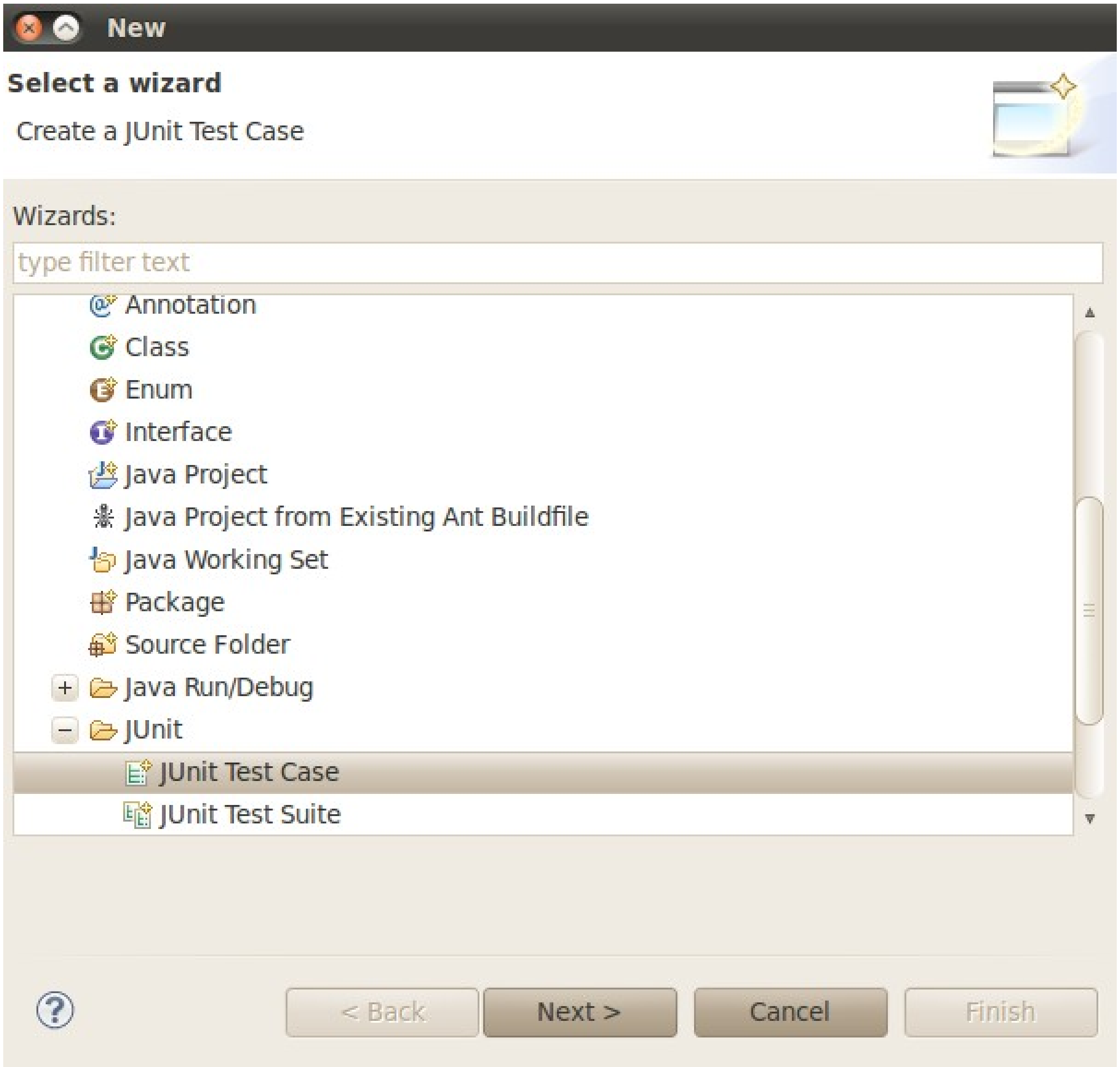
Package name: com.calculator.test

Min SDK Version: 8

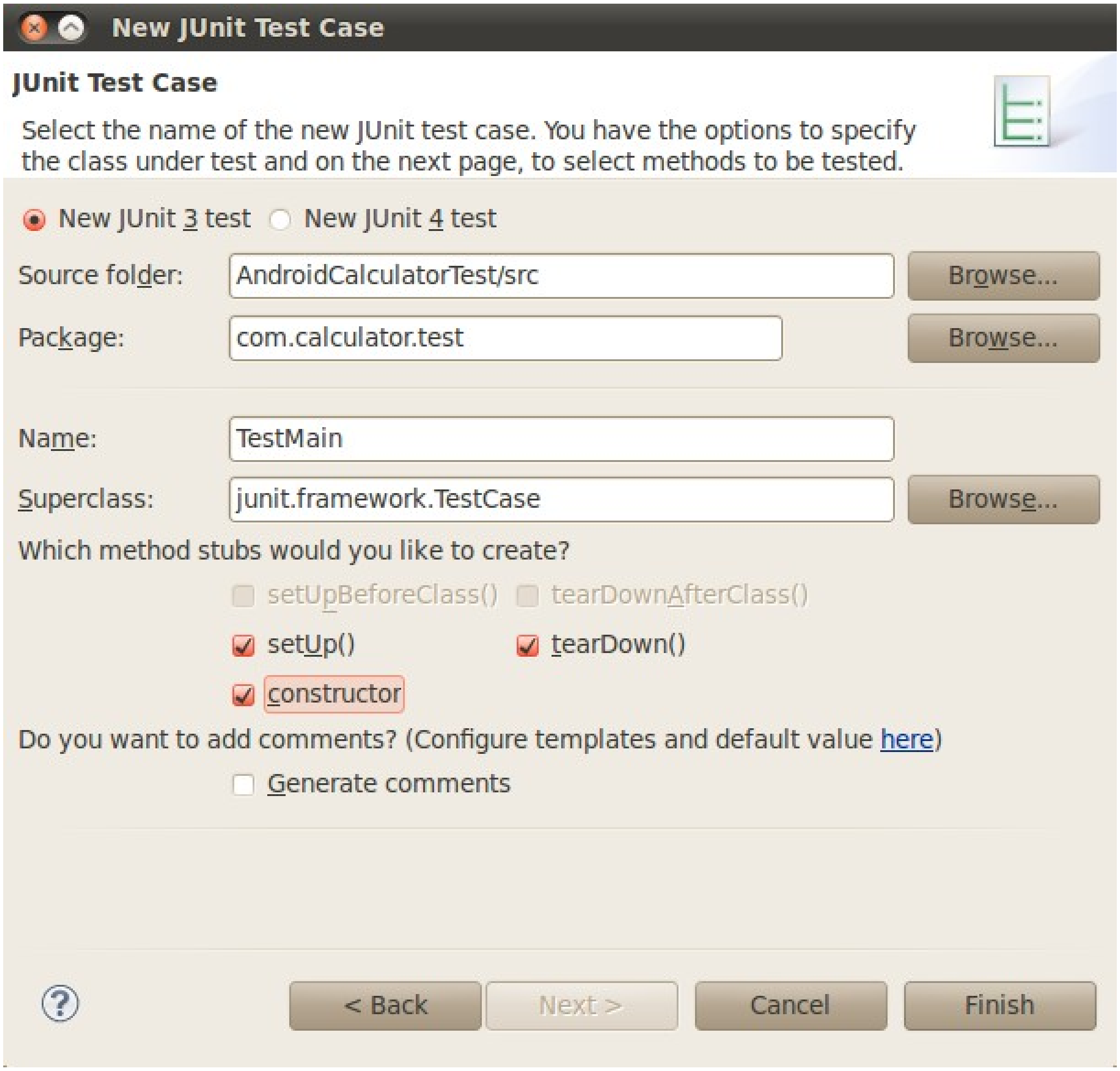
We will move on to design our logic to test AndroidCaculator. We need to create test case class where we will write code to test AndroidCalculator's main class (Main.java).

## 2. Create Test Case

In test project from project explorer window right click on *com.calculator.test* select *New* then *others*. On *New* window expand *Java* and then expand *Junit* category and select *Junit Test Case* and click on *Next*.



On *New Junit Test Case* screen, most of the options will be automatically filled as we have already created test project (AndroidCalculatorTest) with project (AndroidCalculator). We need to enter the Name of Test case, which I will enter TestMain, as I am going to test (main.java) of AndroidCalculator project. On next section check Setup(), tearDown() & Constructor options and click on Finish.



**JUnit Test Case**

Select the name of the new JUnit test case. You have the options to specify the class under test and on the next page, to select methods to be tested.

● New JUnit 3 test ○ New JUnit 4 test

Source folder: AndroidCalculatorTest/src

Package: com.calculator.test

Name: TestMain

Superclass: junit.framework.TestCase

Which method stubs would you like to create?

□ setUpBeforeClass() □ tearDownAfterClass()

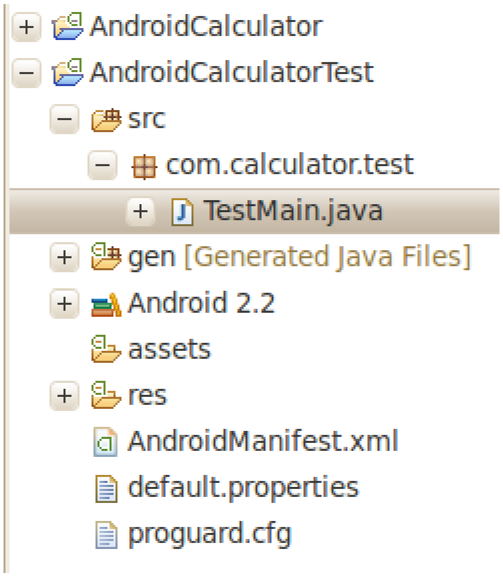
☑ setUp() ☑ tearDown()

☑ constructor

Do you want to add comments? (Configure templates and default value here)

□ Generate comments

A new test case by the name of TestMain will be created into com.calculator.test package of my test project (AndroidCaculatorTest).



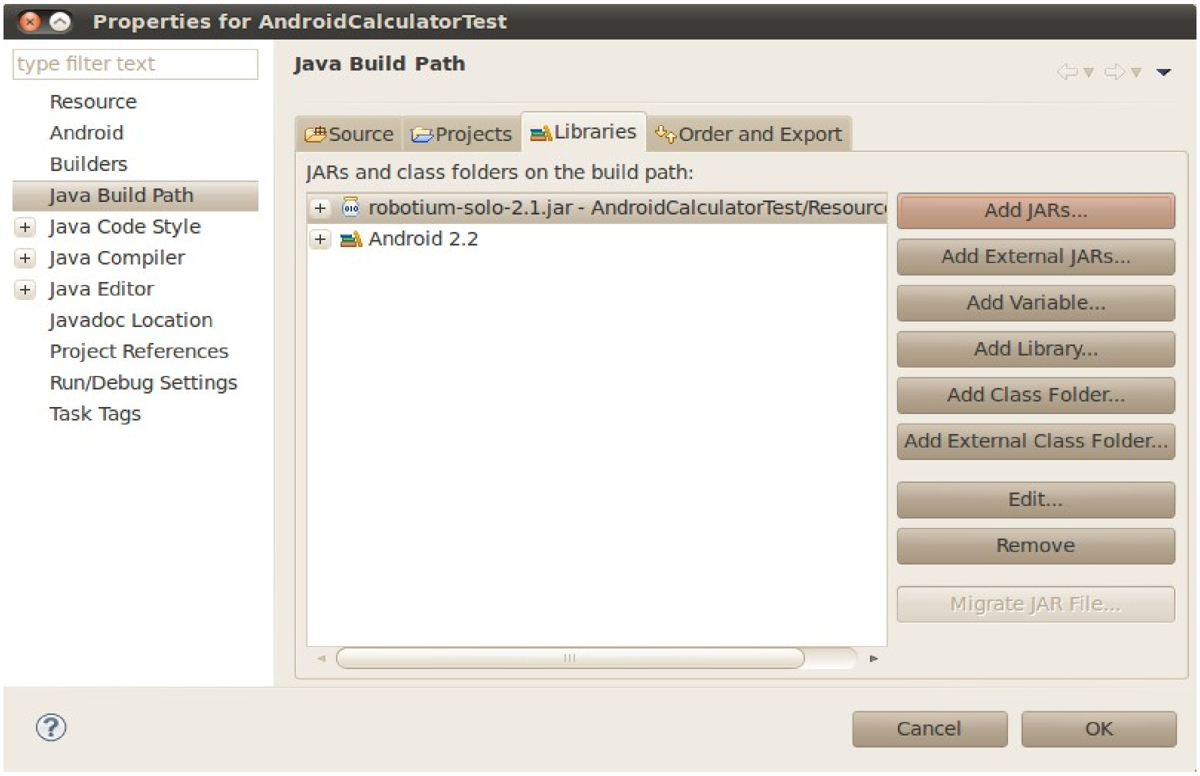
```
+ AndroidCalculator
− AndroidCalculatorTest
   − src
      − com.calculator.test
         + TestMain.java
   + gen [Generated Java Files]
   + Android 2.2
     assets
   + res
     AndroidManifest.xml
     default.properties
     proguard.cfg
```

## 3. Add Robotium jar

We need to reference the Robotium jar to our project.

Right click on project select *Build Path*, and then click on *Configure Build Path* option. On *Properties* window click on *Libraries* tab and add *Robotium* jar into project.

You can download Robotium jar from [http://code.google.com/p/robotium/downloads/list](http://code.google.com/p/robotium/downloads/list)



Properties for AndroidCalculatorTest

Java Build Path

JARs and class folders on the build path:

```
+ robotium-solo-2.1.jar - AndroidCalculatorTest/Resourc
+ Android 2.2
```

## 4. Write Test Case code

In our create test case we will access the contents of AndroidCalculator and do followings,

1. Call/Access first & second input controls (*EditFields*)
2. Enter values of our own choice
3. Access & Click on Multiply button
4. Put assert to verify their multiplication result into result field.

And add following code into *TestMain.java* class and save it.

```
package com.calculator.test;

import java.util.ArrayList;
import android.app.Activity;
import android.test.ActivityInstrumentationTestCase2;
import android.widget.EditText;
import android.widget.TextView;
import com.calculator.Main;
import com.calculator.R;
import com.jayway.android.robotium.solo.Solo;

public class TestMain extends ActivityInstrumentationTestCase2<Main> {
        private Solo solo;

        public TestMain() {
                super("com.calculator", Main.class);
        }

        @Override
        protected void setUp() throws Exception {
                super.setUp();
                solo = new Solo(getInstrumentation(), getActivity());
        }

        @Override
        protected void tearDown() throws Exception{
                try {
                        solo.finalize();
                        } catch (Throwable e) {
                        e.printStackTrace();
                        }
                        getActivity().finish();
                        super.tearDown();
                        }
```

```
    public void testDisplayBlackBox() {

        //Enter any integer/decimal value, we will enter 10 in first editfield
        solo.enterText(0, "10");

        //Enter any integer/decimal value, we will enter 20 in second editfield
        solo.enterText(1, "20");

        //Click on Multiply button
        solo.clickOnButton("Multiply");

        //Verify that resultant of 10 x 20
        assertTrue(solo.searchText("200"));

        }

    public void testDisplayWhiteBox() {

        //Defining our own values to multiply
        float firstNumber = 10;
        float secondNumber = 20;
        float resutl = firstNumber * secondNumber ;

        //Access First value (editfiled) and putting firstNumber value in it
        EditText FirsteditText = (EditText) solo.getView(R.id.EditText01);
        solo.enterText(FirsteditText, String.valueOf(firstNumber));

        //Access Second value (editfiled) and putting SecondNumber value in it
        EditText SecondeditText = (EditText) solo.getView(R.id.EditText02);
        solo.enterText(SecondeditText, String.valueOf(secondNumber));

        //Click on Multiply button
        solo.clickOnButton("Multiply");


        assertTrue(solo.searchText(String.valueOf(resutl)));

        TextView outputField = (TextView) solo.getView(R.id.TextView01);

        ArrayList currentTextViews = solo.getCurrentTextViews(outputField);
        assertFalse(currentTextViews.isEmpty());

        TextView output = (TextView) currentTextViews.get(0);

        //Assert to verify result with visible value
        assertEquals(String.valueOf(resutl), output.getText().toString());
    }
}
```

## 5. Run Test Case

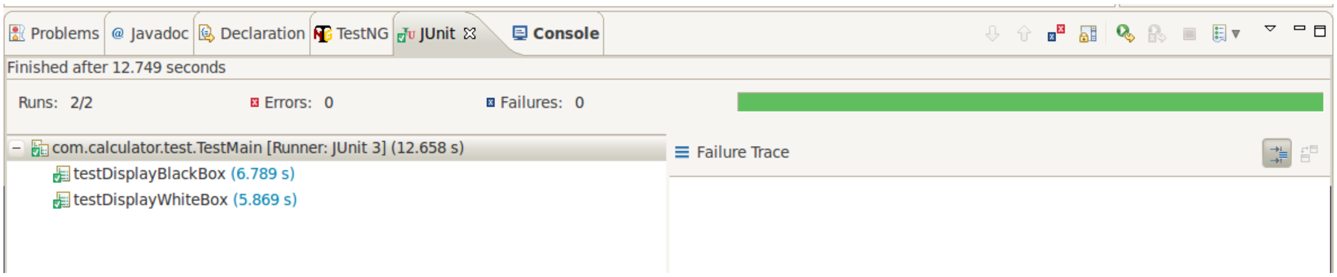
Now as we are almost done so now its time to run our test case.

Right click on *TestMain.java* file select *Run As* option and then click on *Android Junit Test.* It will start running Junit test.

Select the emulator or device to run the test (we will be using Android default emulator) , and wait for a while to see the magic of Robotium.

If things are going fine

1. Emulator will load, Unlock it.
2. AndroidCalculator application will load
3. It will automatically enter first & second values in First and Second EditField, and click on Multiply button (you can see all this happening as record & play scripts)
4. After successfully execution it will show green bar showing the successful execution and all results are passed.



Finished after 12.749 seconds

Runs: 2/2 Errors: 0 Failures: 0

com.calculator.test.TestMain [Runner: JUnit 3] (12.658 s)
testDisplayBlackBox (6.789 s)
testDisplayWhiteBox (5.869 s)