# Create Android Sample Application:

After setting up working environment we will start designing our own sample application, which we will be tested using Robotium in next section.

It would be a simple calculator to multiply two integer/decimal values. It will take two inputs and on clicking 'Multiply' will show their multiply result.
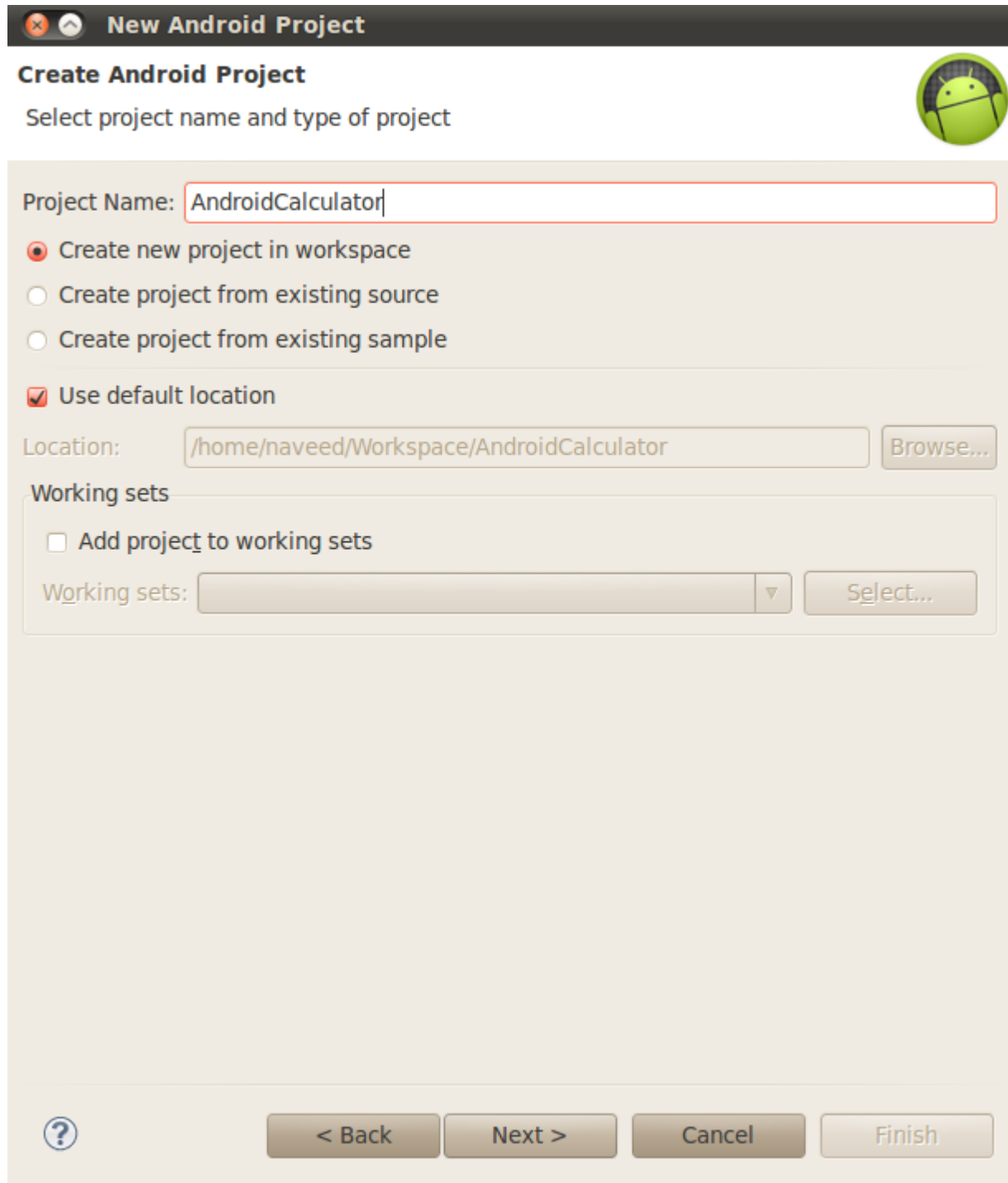
For simplicity steps are categorized as,

1. Create Project

Click on *File* menu, select *New* and click on the *Others*,
From *New* window, Drag down to *Android* option, expand it, and select *Android Project* and Click on *Next*
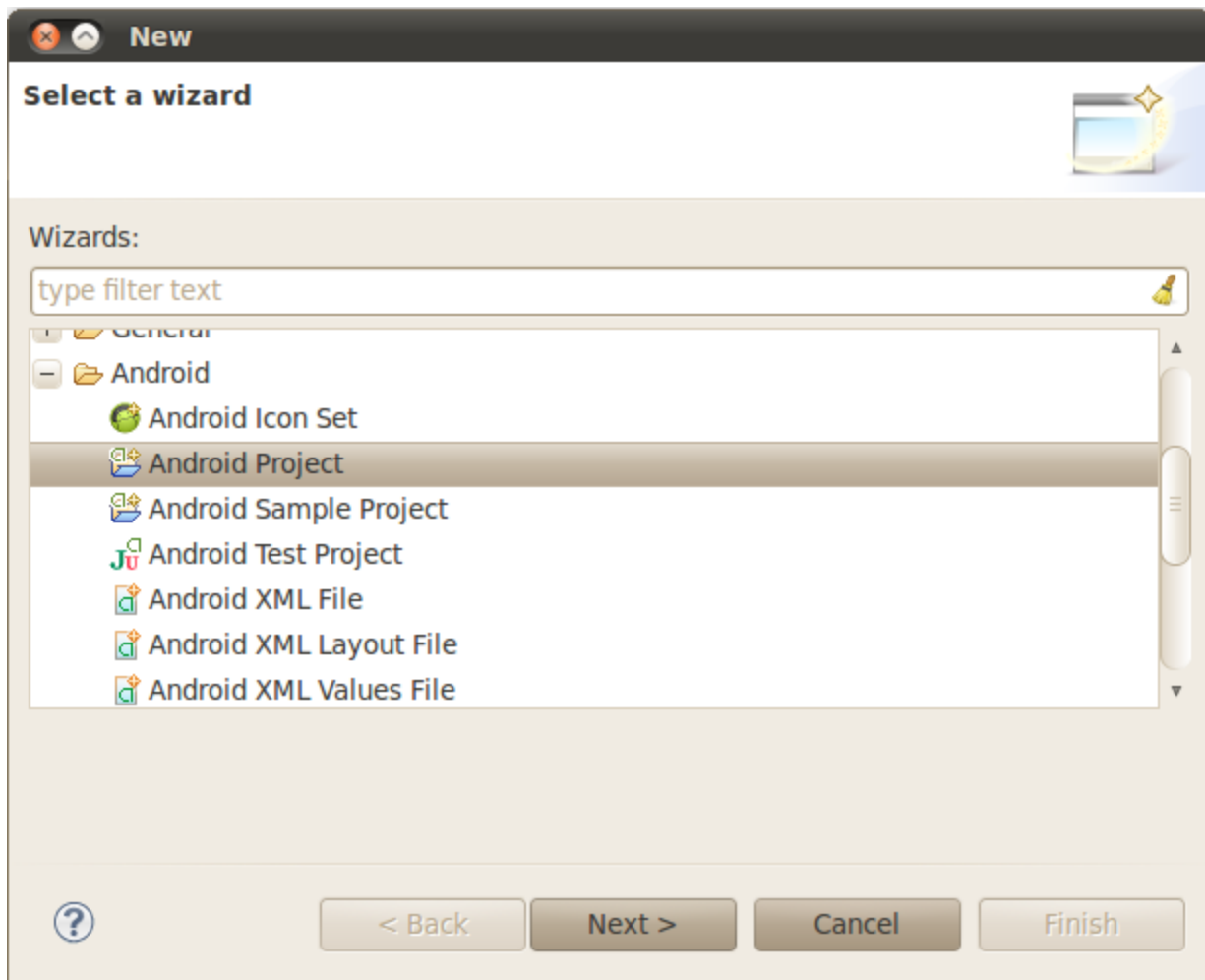
From *New Android Project* Window, enter Project Name as 'AndroidCalculator', select 'Create New Project in workspace' and Click on *Next*
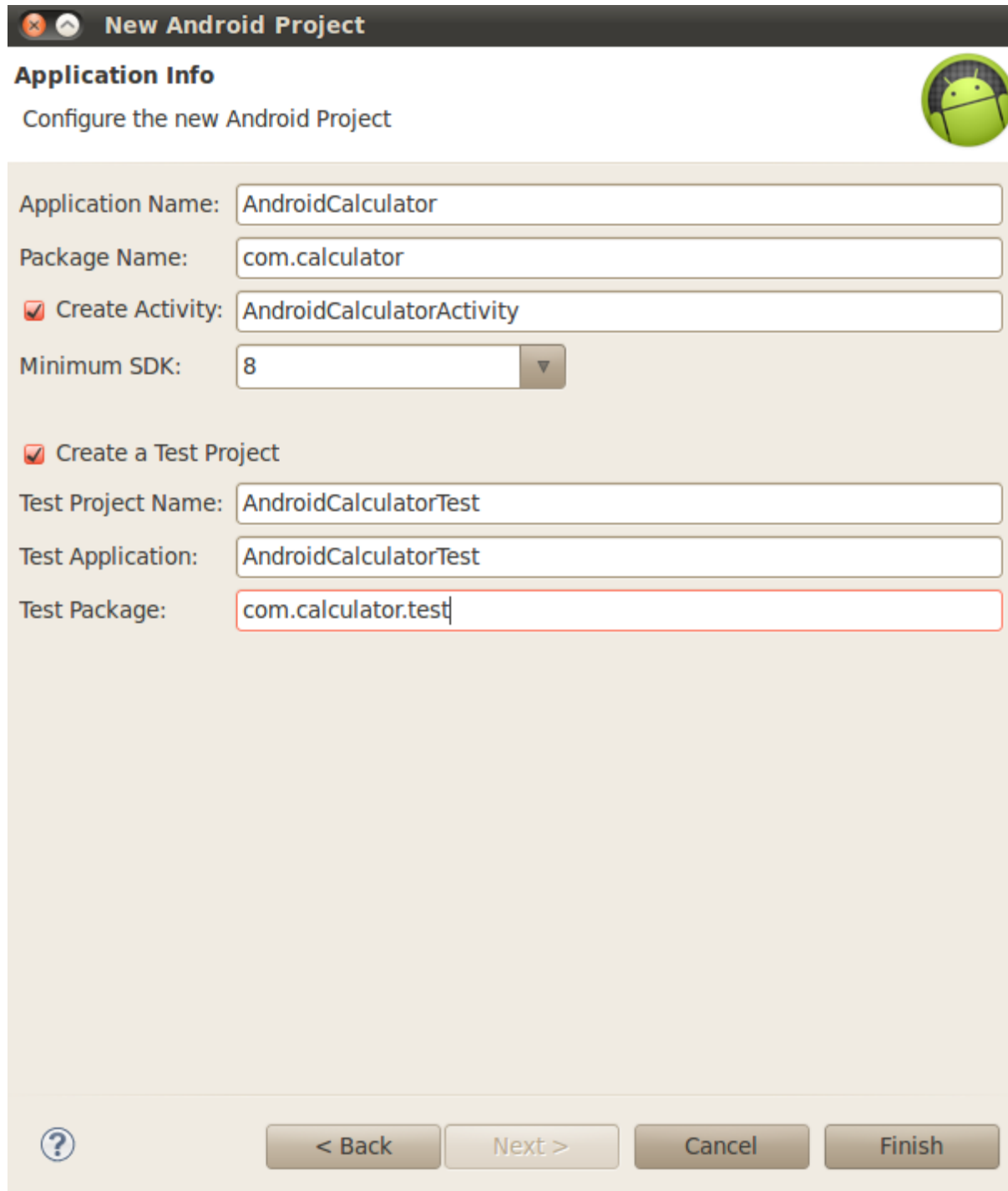
Check *Android 2.2* from *Select Build Target* and Click on *Next*

New Android Project

Select Build Target

Choose an SDK to target

Build Target

Target Name	Vendor	Platform	API Lev
☐ Android 1.5	Android Open Source Project	1.5	3
☐ Google APIs	Google Inc.	1.5	3
☐ Android 1.6	Android Open Source Project	1.6	4
☐ Google APIs	Google Inc.	1.6	4
☐ Android 2.1	Android Open Source Project	2.1	7
☐ Google APIs	Google Inc.	2.1	7
☑ Android 2.2	Android Open Source Project	2.2	8
☐ Google APIs	Google Inc.	2.2	8
☐ DTS Add-On	KYOCERA Corporation	2.2	8
☐ DTS Add-On	KYOCERA Corporation	2.2	8
☐ Real3D Add-On	LGE	2.2	8
☐ Real3D Add-On	LGE	2.2	8
☐ Real3D Add-On	LGE	2.2	8
☐ GALAXY Tab Addon	Samsung Electronics Co., Ltd.	2.2	8
☐ GALAXY Tab Addon	Samsung Electronics Co., Ltd.	2.2	8
☐ GALAXY Tab Addon	Samsung Electronics Co., Ltd.	2.2	8
☐ Android 2.3.1	Android Open Source Project	2.3.1	9

Standard Android platform 2.2

[< Back] [Next >] [Cancel] [Finish]

In *Application Info* enter following information
Application Name 'AndroidCalculator'
Package Name 'com.calculator'
Create Activity 'AndroidCalculatorActivity'

Min SDK Version 8

Note: One can enter any other options best suits to his need.

On creating any project eclipse also offer to create TestProject to test specific project.
We will check *Create a Test Project* option, at this time we will avail this feature to
test 'AndroidCalculator' we made above, on checking eclipse will automatically fill all parameters
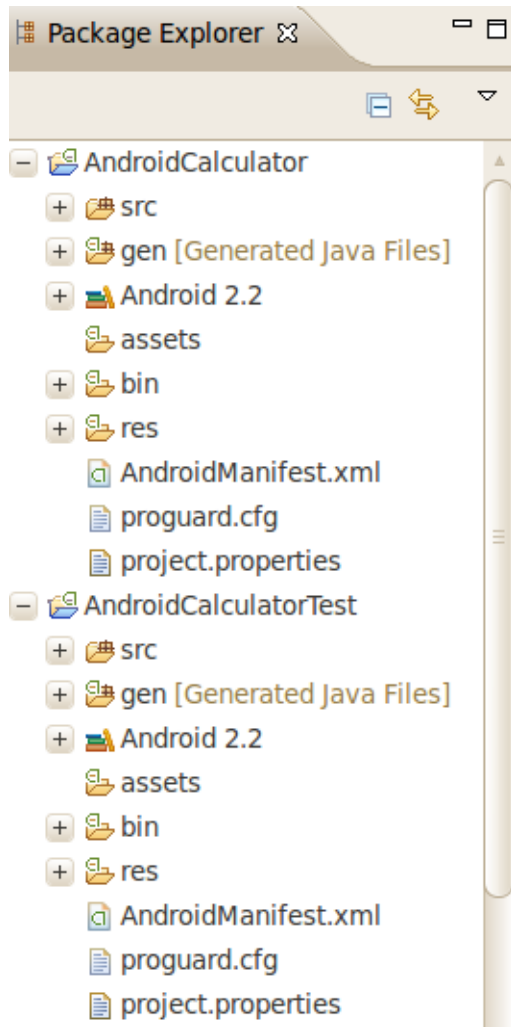for test project.

Note: As our current focus is to design sample project, so we will just create test project and in next tutorials we will be working on this new created project to test AndroidCalculator.

Click on *Finish &* after successfully creating projects, our Project explorer screen should look like,

Now two projects are created, we will simply work on first project to design our sample calculator application.

2. Understanding Project Architect

Expand the *src* directory then expand *com.calculator* directory, *AndroidCalculatorActivity.java* file contains application logic.
In *rec* directory we can define application's UI interface.
In *main.xml* we can put controls on application interface and in *string.xml* we can define their string values,which would be visible on UI.

We will not get into more details, as it's not in our scope so far.

3. Designing Layout

In main.xml enter following code and save it.

```xml
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
android:orientation="vertical"
android:layout_width="fill_parent"
android:layout_height="fill_parent" >

<TextView
android:layout_width="fill_parent"
android:layout_height="wrap_content"
android:text="@string/hello" />

<TextView
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:text="@string/txtSpace" />

<TextView
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:text="@string/txtFirstNumber" />

<EditText
android:inputType="numberDecimal"
android:id="@+id/EditText01"
android:layout_width="fill_parent"
android:layout_height="wrap_content" > </EditText>
<TextView
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:text="@string/txtSpace" />

<TextView
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:text="@string/txtSecondNumber" />

<EditText
android:inputType="numberDecimal"
android:id="@+id/EditText02"
android:layout_width="fill_parent"
android:layout_height="wrap_content"> </EditText>

<TextView
```

```
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:text="@string/txtSpace" />

<TextView
android:id="@+id/TextView01"
android:layout_width="wrap_content"
android:layout_height="wrap_content" />

<TextView
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:text="@string/txtSpace" />

<Button
android:text="Multiply"
android:id="@+id/Button01"
android:layout_width="fill_parent"
android:layout_height="wrap_content"> </Button>

</LinearLayout>
```

In *string.xml* enter following code

```
<?xml version="1.0" encoding="utf-8"?>
<resources>
<string name="hello">Enter two values and click on Calculate to multiply them.</string>
<string name="app_name">AndroidSimpleCalculator</string>
<string name="txtFirstNumber">Enter First Number</string>
<string name="txtSecondNumber">Enter Second Number</string>
<string name="txtSpace"></string>
</resources>
```

4. Designing Application Logic

In Main.java enter following code and save it.
```
package com.calculator;
import com.calculator.R;
import android.app.Activity;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.TextView;
import android.text.Editable;

public class AndroidCalculatorActivity extends Activity {
EditText FirstValue;
```

```java
EditText SecondValue;
TextView Result;
Button Calculate;
float num1 , num2;

@Override
public void onCreate(Bundle savedInstanceState) {
super.onCreate(savedInstanceState);
setContentView(R.layout.main);
FirstValue = (EditText) findViewById(R.id.EditText01);
SecondValue = (EditText) findViewById(R.id.EditText02);
Result = (TextView) findViewById(R.id.TextView01);
Result.setText("0.00");
Calculate = (Button) findViewById(R.id.Button01);

//Adding listener to button
Calculate.setOnClickListener(new View.OnClickListener() {
public void onClick(View v) {
//Getting first & second values and passing to show result
showResult(FirstValue.getText(), SecondValue.getText());
}
});
}

//Showing multiply results
protected void showResult(Editable first, Editable second)
{
float num1 = Float.parseFloat(first.toString());
float num2 = Float.parseFloat(second.toString());
float result = num1 * num2;
Result.setText(String.valueOf(result));
}
}
```

Our application is designed and its time to run it.
Right click on project select *Run As* and then select *Android Application* & and wait for while.
It will load Android simulator, you need to wait for some time, it will launch application itself.

Our simple multiply calculator is ready, enter some integer/decimal values and click on Multiply, it will show the result above Click button.
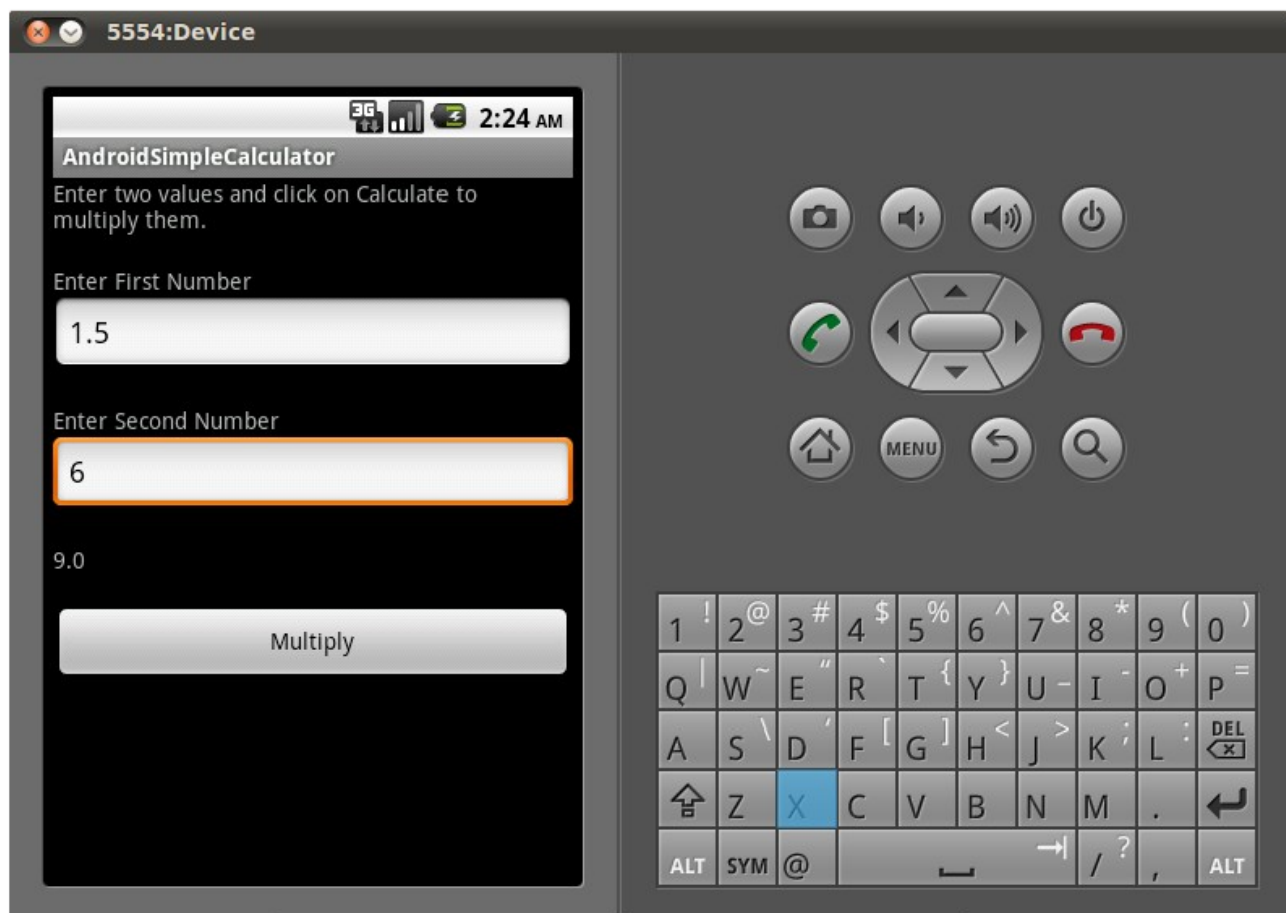
Next: In next step we will work on AndroidCaculatorTest project to test this calculator app.