

Week 4: Create a native calculator application.

Simple Android Application for Native Calculator

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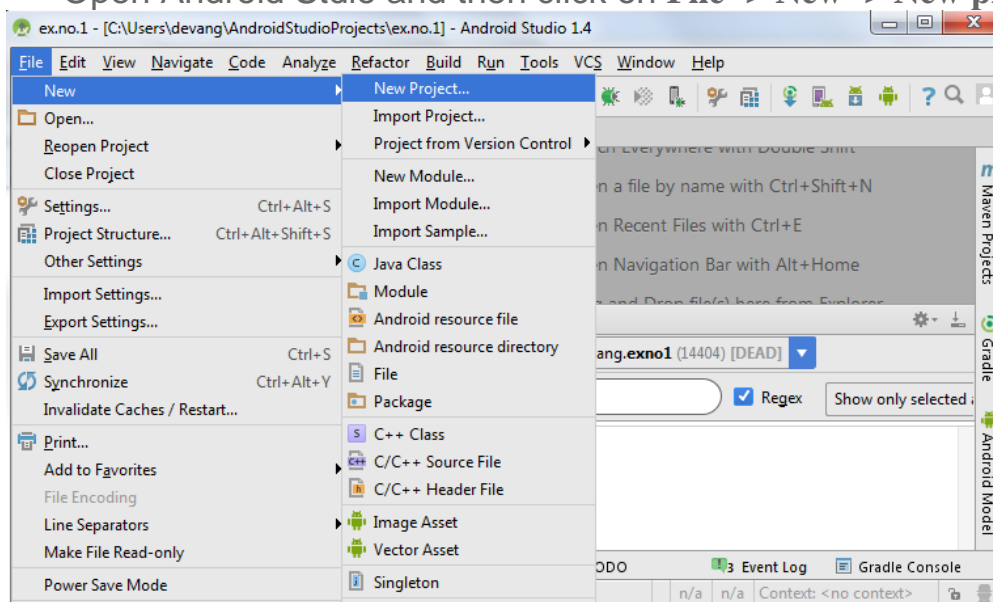
Aim:

To develop a Simple Android Application for Native Calculator.

Procedure:

Creating a New project:

- Open Android Studio and then click on **File -> New -> New project**.



- Then type the Application name as “**week4**” and click **Next**.

Create New Project

New Project

Android Studio

Configure your new project

Application name:

Company Domain:

Package name: [Edit](#)

Project location:

The application name for most apps begins with an uppercase letter

[Previous](#) [Next](#) [Cancel](#) [Finish](#)

- Then select the **Minimum SDK** as shown below and click Next.

Create New Project

Target Android Devices

Select the form factors your app will run on

Different platforms may require separate SDKs

☒ Phone and Tablet
Minimum SDK:

☐ Wear
Minimum SDK:

☐ TV
Minimum SDK:

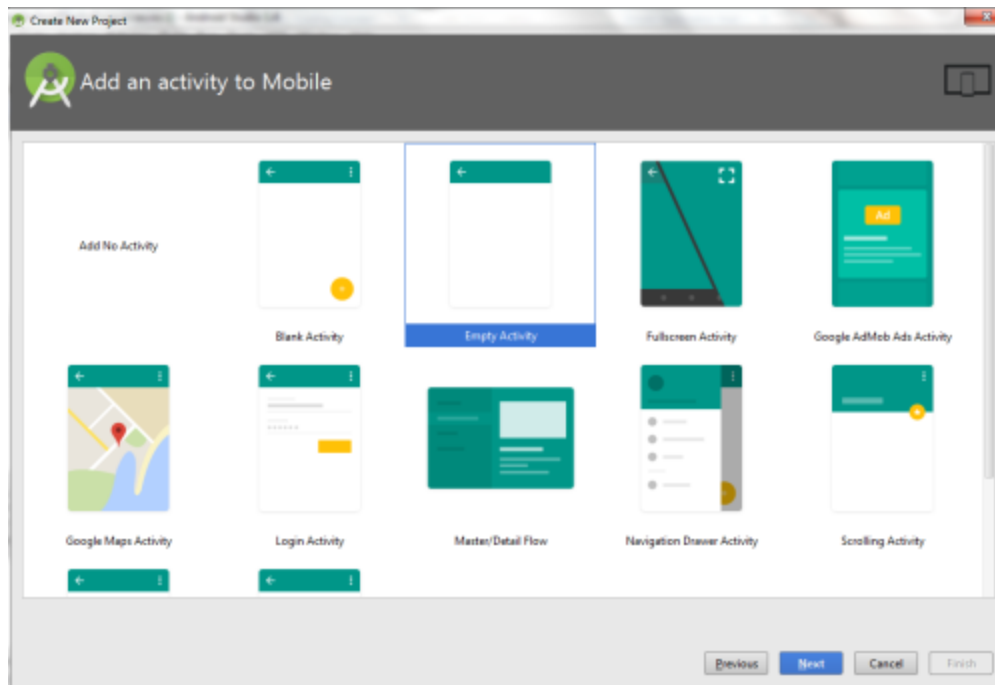
☐ Android Auto
Minimum SDK:

☐ Glass (Not Installed)
Minimum SDK:

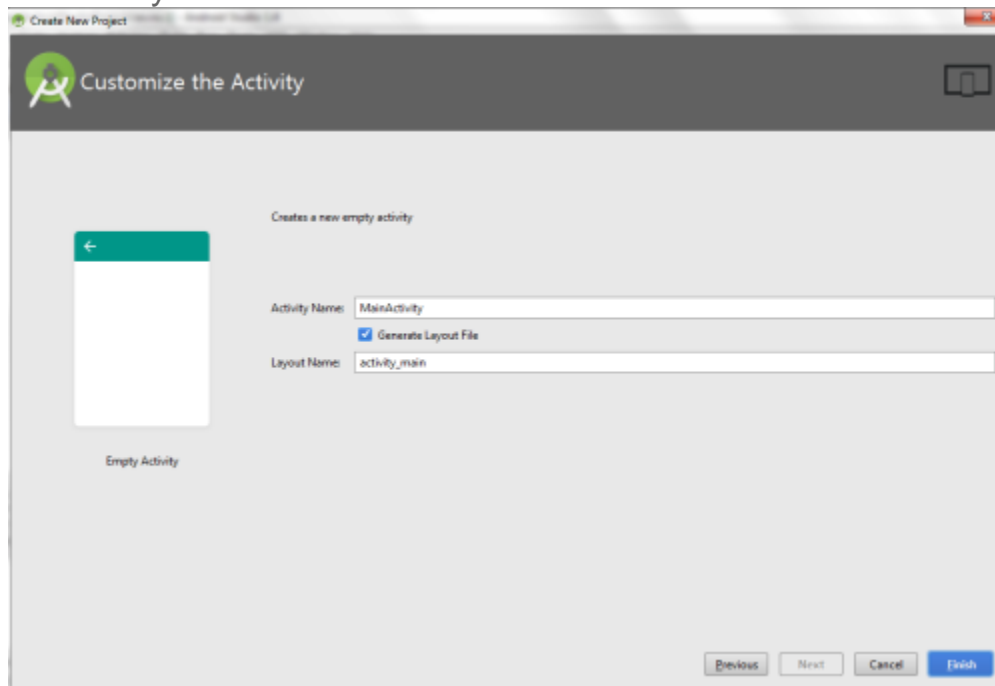
Lower API levels target more devices, but have fewer features available. By targeting API 15 and later, your app will run on approximately **94.0%** of the devices that are active on the Google Play Store.
[Help me choose](#)

[Previous](#) [Next](#) [Cancel](#) [Finish](#)

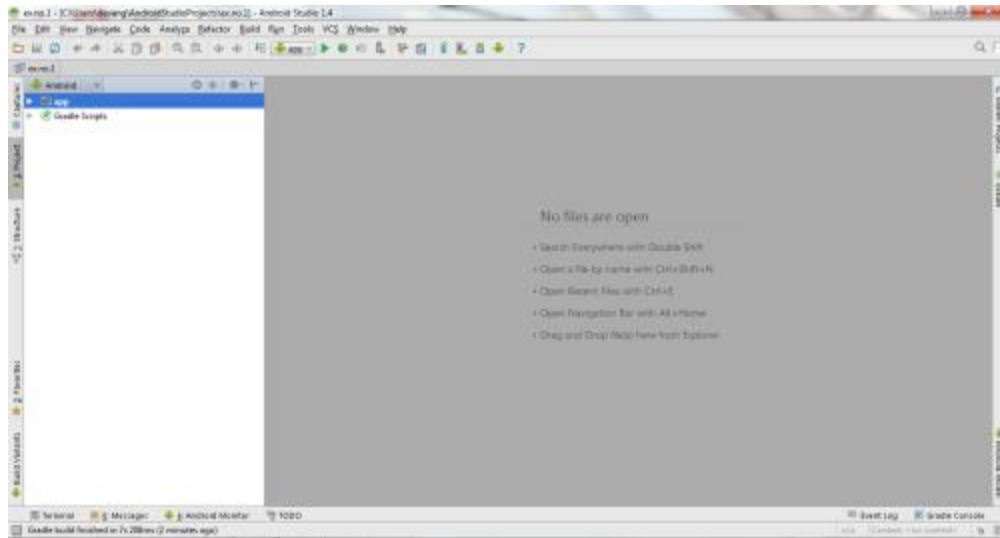
- Then select the **Empty Activity** and click Next.



- Finally click **Finish**.

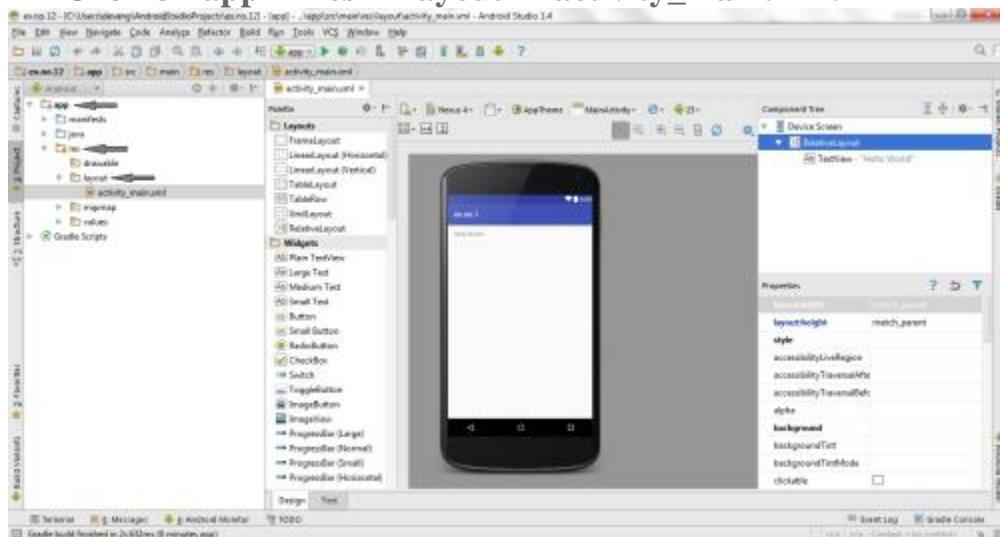


- It will take some time to build and load the project.
- After completion it will look as given below.

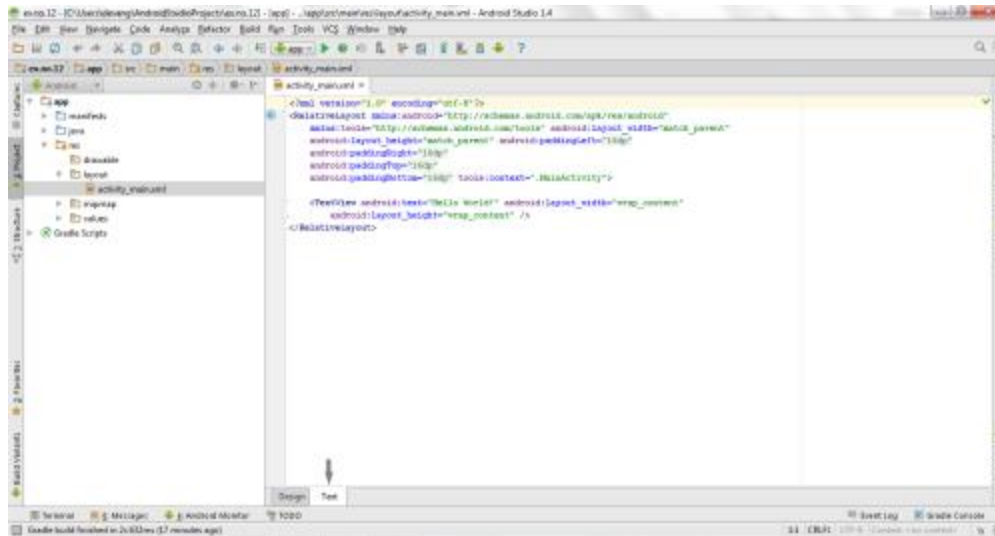


Designing layout for the Android Application:

- Click on app -> res -> layout -> activity_main.xml.



- Now click on **Text** as shown below.



- Then delete the code which is there and type the code as given below.

Code for Activity_main.xml:

```

1  <?xml version="1.0" encoding="utf-8"?>
2  <LinearLayout
3      xmlns:android="http://schemas.android.com/apk/res/android"
4      android:orientation="vertical"
5      android:layout_width="match_parent"
6      android:layout_height="match_parent"
7      android:layout_margin="20dp">
8
9      <LinearLayout
10         android:id="@+id/linearLayout1"
11         android:layout_width="match_parent"
12         android:layout_height="wrap_content"
13         android:layout_margin="20dp">
14
15         <EditText
16             android:id="@+id/editText1"
17             android:layout_width="match_parent"
18             android:layout_height="wrap_content"
19             android:layout_weight="1"
20             android:inputType="numberDecimal"
21             android:textSize="20sp" />
22
23         <EditText
24             android:id="@+id/editText2"
25             android:layout_width="match_parent"
26             android:layout_height="wrap_content"
27             android:layout_weight="1"
28             android:inputType="numberDecimal"
29             android:textSize="20sp" />
30
31     </LinearLayout>
32
33     <LinearLayout
34         android:id="@+id/linearLayout2"

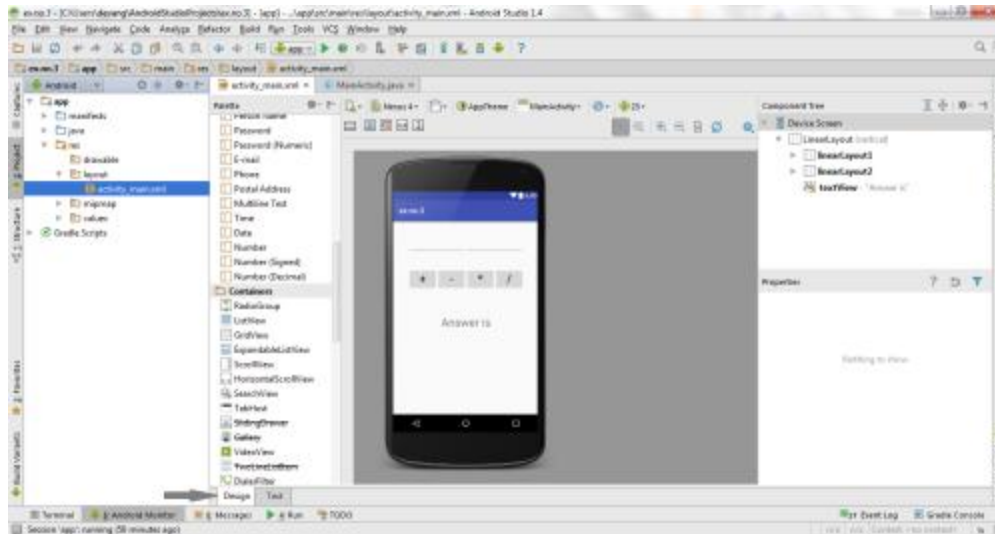
```

```

35     android:layout_width="match_parent"
36     android:layout_height="wrap_content"
37     android:layout_margin="20dp">
38
39     <Button
40         android:id="@+id/Add"
41         android:layout_width="match_parent"
42         android:layout_height="wrap_content"
43         android:layout_weight="1"
44         android:text="+"
45         android:textSize="30sp"/>
46
47     <Button
48         android:id="@+id/Sub"
49         android:layout_width="match_parent"
50         android:layout_height="wrap_content"
51         android:layout_weight="1"
52         android:text="-"
53         android:textSize="30sp"/>
54
55     <Button
56         android:id="@+id/Mul"
57         android:layout_width="match_parent"
58         android:layout_height="wrap_content"
59         android:layout_weight="1"
60         android:text="*"
61         android:textSize="30sp"/>
62
63     <Button
64         android:id="@+id/Div"
65         android:layout_width="match_parent"
66         android:layout_height="wrap_content"
67         android:layout_weight="1"
68         android:text="/"
69         android:textSize="30sp"/>
70
71 </LinearLayout>
72
73 <TextView
74     android:id="@+id/textView"
75     android:layout_width="match_parent"
76     android:layout_height="wrap_content"
77     android:layout_marginTop="50dp"
78     android:text="Answer is"
79     android:textSize="30sp"
80     android:gravity="center"/>
81
82 </LinearLayout>

```

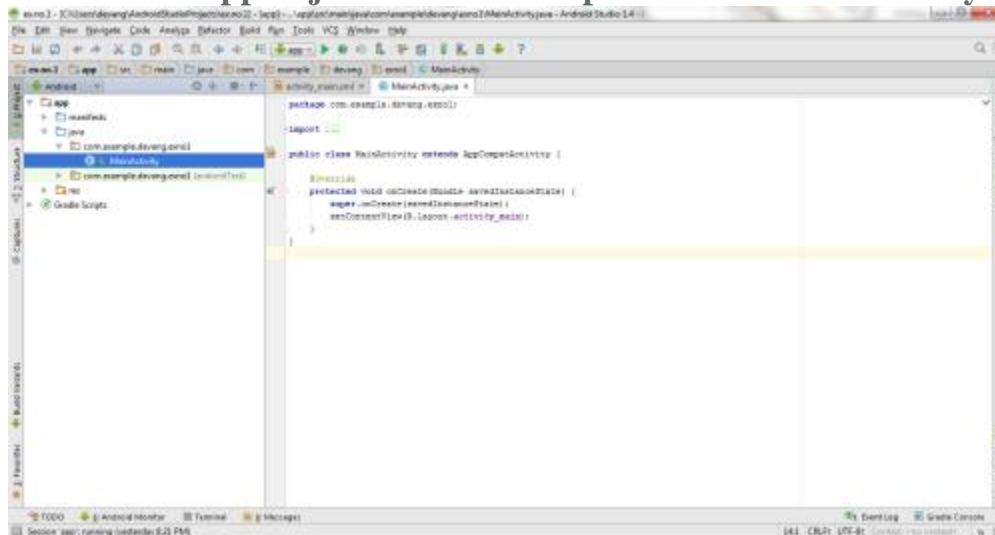
- Now click on Design and your application will look as given below.



- So now the designing part is completed.

Java Coding for the Android Application:

- Click on app -> java -> com.example.exno3 -> MainActivity.



- Then delete the code which is there and type the code as given below.

Code for MainActivity.java:

```

1 package com.example.devang.week4;
2
3 import android.os.Bundle;
4 import android.support.v7.app.AppCompatActivity;
5 import android.text.TextUtils;
6 import android.view.View;
7 import android.view.View.OnClickListener;
8 import android.widget.Button;
9 import android.widget.EditText;
10 import android.widget.TextView;
11
12 public class MainActivity extends AppCompatActivity implements

```

```

13 OnClickListener
14 {
15     //Defining the Views
16     EditText Num1;
17     EditText Num2;
18     Button Add;
19     Button Sub;
20     Button Mul;
21     Button Div;
22     TextView Result;
23
24     @Override
25     public void onCreate(Bundle savedInstanceState)
26     {
27         super.onCreate(savedInstanceState);
28         setContentView(R.layout.activity_main);
29
30         //Referring the Views
31         Num1 = (EditText) findViewById(R.id.editText1);
32         Num2 = (EditText) findViewById(R.id.editText2);
33         Add = (Button) findViewById(R.id.Add);
34         Sub = (Button) findViewById(R.id.Sub);
35         Mul = (Button) findViewById(R.id.Mul);
36         Div = (Button) findViewById(R.id.Div);
37         Result = (TextView) findViewById(R.id.textView);
38
39         // set a listener
40         Add.setOnClickListener(this);
41         Sub.setOnClickListener(this);
42         Mul.setOnClickListener(this);
43         Div.setOnClickListener(this);
44     }
45
46     @Override
47     public void onClick (View v)
48     {
49
50         float num1 = 0;
51         float num2 = 0;
52         float result = 0;
53         String oper = "";
54
55         // check if the fields are empty
56         if (TextUtils.isEmpty(Num1.getText().toString()) ||
57 TextUtils.isEmpty(Num2.getText().toString()))
58             return;
59
60         // read EditText and fill variables with numbers
61         num1 = Float.parseFloat(Num1.getText().toString());
62         num2 = Float.parseFloat(Num2.getText().toString());
63
64         // defines the button that has been clicked and performs the
65 corresponding operation
66         // write operation into oper, we will use it later for output

```



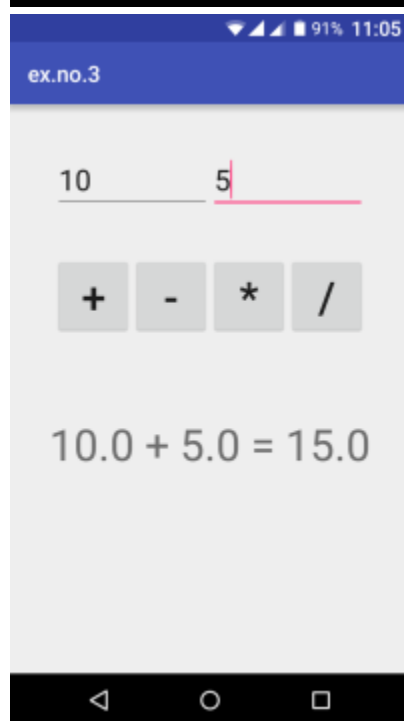
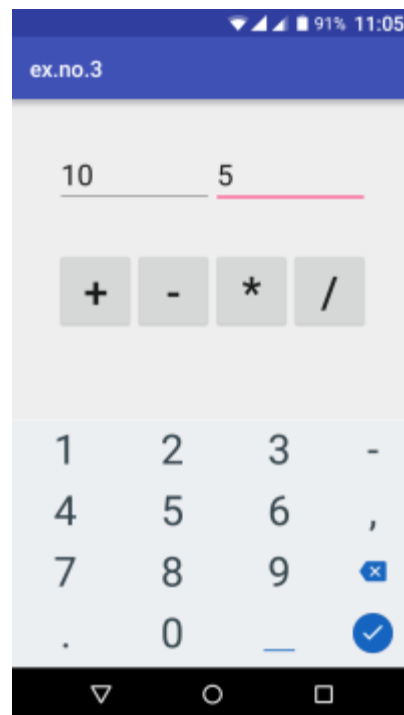
```

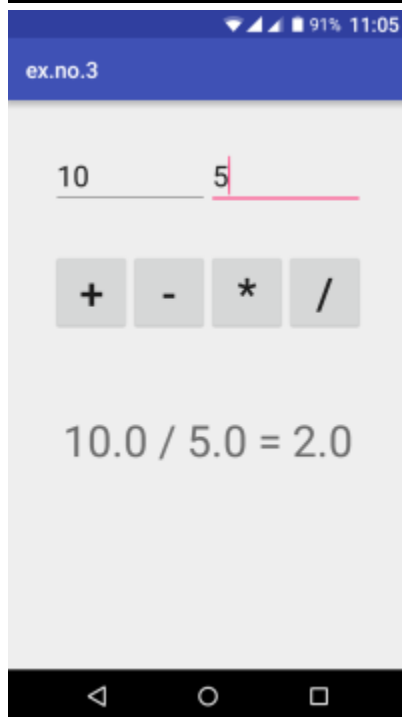
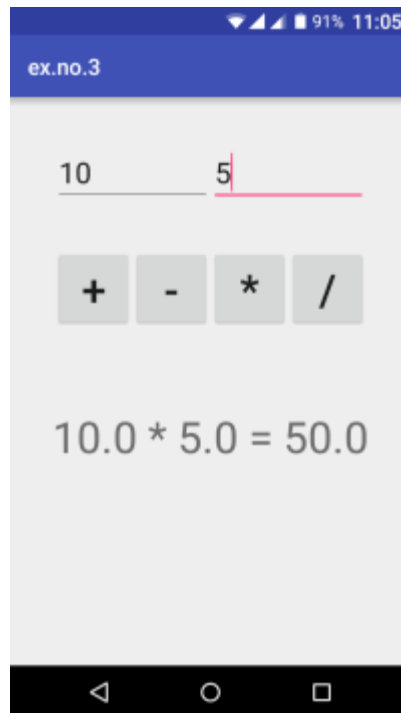
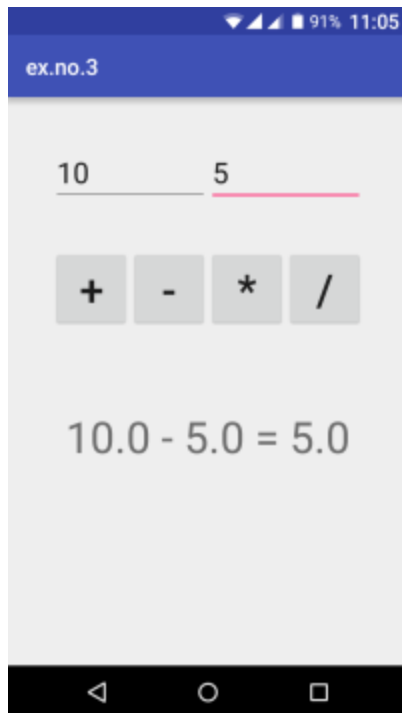
67         switch (v.getId())
68         {
69             case R.id.Add:
70                 oper = "+";
71                 result = num1 + num2;
72                 break;
73             case R.id.Sub:
74                 oper = "-";
75                 result = num1 - num2;
76                 break;
77             case R.id.Mul:
78                 oper = "*";
79                 result = num1 * num2;
80                 break;
81             case R.id.Div:
82                 oper = "/";
83                 result = num1 / num2;
84                 break;
85             default:
86                 break;
87         }
88         // form the output line
        Result.setText(num1 + " " + oper + " " + num2 + " = " + result);
    }
}

```

- So now the Coding part is also completed.
- Now run the application to see the output.

Output:





Result:

Thus a Simple Android Application for Native Calculator is developed and executed successfully.

