CS 8662 - Mobile Application Development Lab

NAME : _____
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C. ABDUL HAKEEM COLLEGE OF ENGINEERING AND TECHNOLOGY

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Ex.No: 1 Date :	**Develop an application that uses GUI Components, Fonts and Colors**

AIM:

To develop an application that uses GUI Components, Fonts and Colors.

PROCEDURE:

1. Open Eclipse IDE.
2. Create the project Ex_No_1.
3. Go to package explorer in the left-hand side. Select the project Ex_No_1.
4. Go to res folder and select layout. Double click the activity_main.xml file.
5. Now you can see the Graphical layout window.
6. Drag and drop the following components:
    a. One Text View with text MAD Lab
    b. Three Buttons with labeled as Change Font Size, Change Font Color and Change Font Style
7. Again, go to package explorer in the left-hand side. Select the project Ex_No_1.
8. Go to src folder. Double click the MainActivity.java file.
9. In java file write the activities done by the application such as, actions of buttons.
10. Finally run the android application.

PROGRAMS:

activity_main.xml:

```
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools" an-
    droid:layout_width="match_parent" android:layout_height="match_parent"
    android:paddingBottom="@dimen/activity_vertical_margin" an-
    droid:paddingLeft="@dimen/activity_horizontal_margin" an-
    droid:paddingRight="@dimen/activity_horizontal_margin" an-
    droid:paddingTop="@dimen/activity_vertical_margin"
    tools:context="com.example.ex_no_1.MainActivity" >

    <TextView
        android:id="@+id/textView1" an-
        droid:layout_width="wrap_content" an-
        droid:layout_height="wrap_content" an-
        droid:layout_alignParentTop="true" an-
        droid:layout_centerHorizontal="true" an-
        droid:layout_marginTop="53dp" an-
        droid:text="MAD Lab"
        android:textAppearance="?android:attr/textAppearanceLarge"
        tools:ignore="HardcodedText" />

    <Button
        android:id="@+id/button1" an-
        droid:layout_width="wrap_content" an-
        droid:layout_height="wrap_content" an-
        droid:layout_alignParentLeft="true"
```

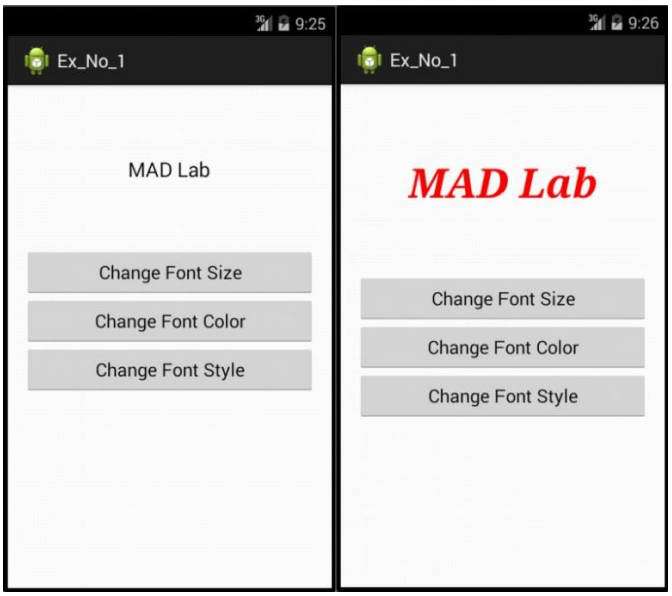
```
        android:layout_alignParentRight="true"
        android:layout_below="@+id/textView1" an-
        droid:layout_marginTop="64dp" an-
        droid:text="Change Font Size"
        tools:ignore="HardcodedText" />

    <Button
        android:id="@+id/button2" an-
        droid:layout_width="wrap_content" an-
        droid:layout_height="wrap_content" an-
        droid:layout_alignParentLeft="true" an-
        droid:layout_alignParentRight="true" an-
        droid:layout_below="@+id/button1" an-
        droid:text="Change Font Color"
        tools:ignore="HardcodedText" />

    <Button
        android:id="@+id/button3" an-
        droid:layout_width="wrap_content" an-
        droid:layout_height="wrap_content" an-
        droid:layout_alignParentLeft="true" an-
        droid:layout_alignParentRight="true" an-
        droid:layout_below="@+id/button2" an-
        droid:text="Change Font Style"
        tools:ignore="HardcodedText" />

</RelativeLayout>
```

MainActivity.java:

```
package com.example.ex_no_1;
import android.support.v7.app.ActionBarActivity;
import android.graphics.Color; im-
port android.graphics.Typeface; im-
port android.os.Bundle;
import android.view.View;
import android.view.View.OnClickListener;
import android.widget.Button;
import android.widget.TextView;
public class MainActivity extends ActionBarActivity {
       float font = 20;
       int count = 1;
       Button b1,b2,b3;
       @Override
       protected void onCreate(Bundle savedInstanceState) { su-
              per.onCreate(savedInstanceState); setCon-
              tentView(R.layout.activity_main);
              final TextView t1 = (TextView) findViewById(R.id.textView1);
              t1.setTextSize(15);
              b1 = (Button) findViewById(R.id.button1);
              b1.setOnClickListener(new OnClickListener() {
                     public void onClick(View view) {
                            t1.setTextSize(font);
                            font = font + 5;
                            if (font == 50)
```

```
                        font = 20;
                }
        });
        b2 = (Button) findViewById(R.id.button2);
        b2.setOnClickListener(new View.OnClickListener() {
                public void onClick(View view) {
                        switch (count) {
                        case 1:
                                t1.setTextColor(Color.parseColor("#7f00ff"));
                                break;
                        case 2:
                                t1.setTextColor(Color.parseColor("#00FF00"));
                                break;
                        case 3:
                                t1.setTextColor(Color.parseColor("#FF0000"));
                                break;
                        case 4:
                                t1.setTextColor(Color.parseColor("#0000FF"));
                                break;
                        }
                        count++;
                        if (count == 5)
                                count = 1;
                }
        });
        b3 = (Button) findViewById(R.id.button3);
        b3.setOnClickListener(new OnClickListener() {
                @Override
                public void onClick(View view) {
                        switch (count) {
                        case 1:
                                t1.setTypeface(Typeface.DEFAULT,  Typeface.ITALIC);
                                break;
                        case 2:
                                t1.setTypeface(Typeface.MONOSPACE,  Typeface.NORMAL);
                                break;
                        case 3:
                                t1.setTypeface(Typeface.SANS_SERIF,  Typeface.BOLD);
                                break;
                        case 4:
                                t1.setTypeface(Typeface.SERIF,  Typeface.BOLD_ITALIC);
                                break;
                        }
                        count++;
                        if (count == 5)
                                count = 1;
                }
        });
    }
}
```

OUTPUT:



RESULT:

Thus the application that uses GUI Components, Fonts and Colors has been developed and the output was verified.

Ex.No: 2 Date :	**Develop an application that uses Layout Managers and Event Listeners**

AIM:

To develop an application that uses Layout Managers and Event Listeners.

PROCEDURE:

1. Open Eclipse IDE.
2. Create the project Ex_No_2.
3. Go to package explorer in the left hand side. Select the project Ex_No_2.
4. Go to res folder and select layout. Double click the activity_main.xml file.
5. Now you can see the Graphical layout window.
6. Drag and drop the following components:
    a. Four TextViews with texts as Name, Gender, Degree and Programming Knowledge
    b. One EditText
    c. One Spinner
    d. One RadioGroup with two RadioButtons labeled as B.E. CSE and B.Tech. IT
    e. One RatingBar
    f. One Button with labeled as SUBMIT
7. Again go to package explorer in the left hand side. Select the project Ex_No_2.
8. Go to src folder. Double click the MainActivity.java file.
9. In java file write the activities done by the application such as, actions of button.
10. Finally run the android application.

PROGRAMS:

activity_main.xml:

```
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools" an-
    droid:layout_width="match_parent" android:layout_height="match_parent"
    android:paddingBottom="@dimen/activity_vertical_margin" an-
    droid:paddingLeft="@dimen/activity_horizontal_margin" an-
    droid:paddingRight="@dimen/activity_horizontal_margin" an-
    droid:paddingTop="@dimen/activity_vertical_margin"
    tools:context="com.example.ex_no_2.MainActivity" >

    <TextView
        android:id="@+id/textView1" an-
        droid:layout_width="wrap_content" an-
        droid:layout_height="wrap_content" an-
        droid:layout_alignParentLeft="true" an-
        droid:layout_alignParentTop="true" an-
        droid:text="Name"
        android:textAppearance="?android:attr/textAppearanceMedium"
        tools:ignore="HardcodedText" />

    <EditText
```

```
    android:id="@+id/editText1" an-
    droid:layout_width="wrap_content" an-
    droid:layout_height="wrap_content" an-
    droid:layout_alignTop="@+id/textView1"
    android:layout_marginLeft="14dp" an-
    droid:layout_toRightOf="@+id/textView1"
    android:ems="10"
    tools:ignore="TextFields" >

    <requestFocus />
</EditText>

<TextView
    android:id="@+id/textView2" an-
    droid:layout_width="wrap_content" an-
    droid:layout_height="wrap_content" an-
    droid:layout_alignParentLeft="true" an-
    droid:layout_below="@+id/editText1" an-
    droid:layout_marginTop="14dp" an-
    droid:text="Gender"
    android:textAppearance="?android:attr/textAppearanceMedium"
    tools:ignore="HardcodedText" />

<Spinner
    android:id="@+id/spinner1" an-
    droid:layout_width="wrap_content" an-
    droid:layout_height="wrap_content" an-
    droid:layout_alignLeft="@+id/editText1"
    android:layout_alignTop="@+id/textView2"
    android:entries="@array/Gender" />

<TextView
    android:id="@+id/textView3" an-
    droid:layout_width="wrap_content" an-
    droid:layout_height="wrap_content" an-
    droid:layout_alignParentLeft="true" an-
    droid:layout_below="@+id/spinner1" an-
    droid:text="Degree"
    android:textAppearance="?android:attr/textAppearanceMedium"
    tools:ignore="HardcodedText" />

<RadioGroup
    android:id="@+id/radioGroup1" an-
    droid:layout_width="wrap_content" an-
    droid:layout_height="wrap_content" an-
    droid:layout_alignLeft="@+id/spinner1"
    android:layout_below="@+id/spinner1" >

    <RadioButton
        android:id="@+id/radio0" an-
        droid:layout_width="wrap_content" an-
        droid:layout_height="wrap_content"
        android:checked="true" an-
        droid:text="B.E. CSE"
        tools:ignore="HardcodedText" />

    <RadioButton
```

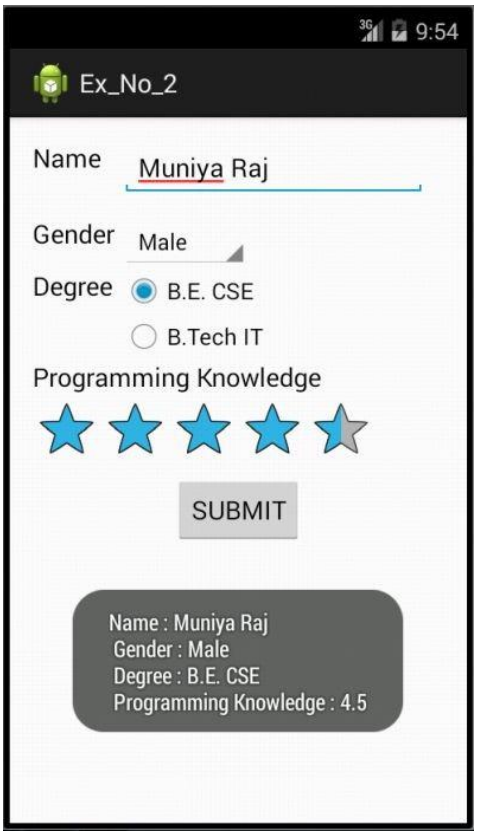
```
            android:id="@+id/radio1" an-
            droid:layout_width="wrap_content" an-
            droid:layout_height="wrap_content"
            android:text="B.Tech IT"
            tools:ignore="HardcodedText" />

    </RadioGroup>

    <RatingBar
        android:id="@+id/ratingBar1" an-
        droid:layout_width="wrap_content" an-
        droid:layout_height="wrap_content" an-
        droid:layout_alignLeft="@+id/textView4"
        android:layout_below="@+id/textView4" />

    <TextView
        android:id="@+id/textView4" an-
        droid:layout_width="wrap_content" an-
        droid:layout_height="wrap_content" an-
        droid:layout_alignLeft="@+id/textView3" an-
        droid:layout_below="@+id/radioGroup1" an-
        droid:text="Programming Knowledge" an-
        droid:textAppearance="?android:attr/textAppearanceMedium"
        tools:ignore="HardcodedText" />

    <Button
        android:id="@+id/button1" an-
        droid:layout_width="wrap_content" an-
        droid:layout_height="wrap_content" an-
        droid:layout_below="@+id/ratingBar1" an-
        droid:layout_centerHorizontal="true" an-
        droid:text="SUBMIT"
        tools:ignore="HardcodedText" />

</RelativeLayout>
```

MainActivity.java:

```
package com.example.ex_no_2;
import android.support.v7.app.ActionBarActivity;
import android.os.Bundle;
import android.view.View;
import android.view.View.OnClickListener;
import android.widget.Button; im-
port android.widget.EditText; im-
port android.widget.RadioButton;
import android.widget.RadioGroup;
import android.widget.RadioGroup.OnCheckedChangeListener;
import android.widget.RatingBar;
import android.widget.RatingBar.OnRatingBarChangeListener;
import android.widget.Spinner;
import android.widget.Toast;
public class MainActivity extends ActionBarActivity {
       String name,gender,dept;
       float prog;
       @Override
       protected void onCreate(Bundle savedInstanceState) {
```

```
        super.onCreate(savedInstanceState); setCon-
        tentView(R.layout.activity_main);
        final EditText e=(EditText)findViewById(R.id.editText1); Ra-
        dioGroup rg=(RadioGroup)findViewById(R.id.radioGroup1); fi-
        nal RadioButton r1=(RadioButton)findViewById(R.id.radio0);
        final RadioButton r2=(RadioButton)findViewById(R.id.radio1);
        final Spinner s=(Spinner)findViewById(R.id.spinner1); Rat-
        ingBar rb=(RatingBar)findViewById(R.id.ratingBar1); Button
        b=(Button)findViewById(R.id.button1);
        rg.setOnCheckedChangeListener(
                        new OnCheckedChangeListener()
                        {
                                @Override
                                public void onCheckedChanged(RadioGroup arg0, int arg1) {
                                        // TODO Auto-generated method stub
                                        if(r1.isChecked()==true)
                                                dept="B.E. CSE";
                                        if(r2.isChecked()==true)
                                                dept="B.Tech IT";
                                }
                        });
        rb.setOnRatingBarChangeListener(
                        new OnRatingBarChangeListener()
                        {
                                @Override
                                public void onRatingChanged(RatingBar arg0, float arg1,
                                                boolean arg2) {
                                        // TODO Auto-generated method stub

                                        prog=arg1;
                                }
                        });
        b.setOnClickListener(
                        new OnClickListener()
                        {
                                @Override
                                public void onClick(View arg0) {
                                        // TODO Auto-generated method stub
                                        name=e.getText().toString(); gen-
                                        der=s.getSelectedItem().toString();
                                        Toast.makeText(getApplicationContext(),       "Name      :
"+name+"\n  Gender  :  "+gender+"\n  Degree  :  "+dept+"\n  Programming  Knowledge  :  "+prog,
Toast.LENGTH_LONG).show();
                                }
                        });
        }
}
```

OUTPUT:



RESULT:

Thus the application that uses Layout Managers and Event Listener has been developed and the output was verified.

Ex.No: 3 Date :	**Develop a native calculator application**

AIM:

To develop a native calculator application.

PROCEDURE:

1. Open Eclipse IDE.
2. Create the project Ex_No_3.
3. Go to package explorer in the left hand side. Select the project Ex_No_3.
4. Go to res folder and select layout. Double click the activity_main.xml file.
5. Now you can see the Graphical layout window.
6. Drag and drop the following components:
    a. Two EditTexts with hints Enter the first number and Enter the second number
    b. Four Buttons with labeled as ADD, SUB, MUL and DIV
7. Again go to package explorer in the left hand side. Select the project Ex_No_3.
8. Go to src folder. Double click the MainActivity.java file.
9. In java file write the activities done by the application such as, actions of button.
10. Finally run the android application.

PROGRAMS:

activity_main.xml:

```
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools" an-
    droid:layout_width="match_parent" android:layout_height="match_parent"
    android:paddingBottom="@dimen/activity_vertical_margin" an-
    droid:paddingLeft="@dimen/activity_horizontal_margin" an-
    droid:paddingRight="@dimen/activity_horizontal_margin" an-
    droid:paddingTop="@dimen/activity_vertical_margin"
    tools:context="com.example.ex_no_3.MainActivity" >

       <EditText  an-
         droid:id="@+id/editText1" an-
         droid:layout_width="wrap_content"
         android:layout_height="wrap_content" an-
         droid:layout_alignParentLeft="true" an-
         droid:layout_alignParentRight="true" an-
         droid:layout_alignParentTop="true" an-
         droid:ems="10"
         android:hint="Enter the first number"
         tools:ignore="TextFields,HardcodedText"   >

         <requestFocus />
    </EditText>

    <EditText
        android:id="@+id/editText2"
```

```
    android:layout_width="wrap_content" an-
    droid:layout_height="wrap_content" an-
    droid:layout_alignParentLeft="true" an-
    droid:layout_alignParentRight="true" an-
    droid:layout_below="@+id/editText1" an-
    droid:ems="10"
    android:hint="Enter the second number"
    tools:ignore="TextFields,HardcodedText"   />

<Button
    android:id="@+id/button4" an-
    droid:layout_width="wrap_content" an-
    droid:layout_height="wrap_content" an-
    droid:layout_alignParentLeft="true" an-
    droid:layout_alignParentRight="true" an-
    droid:layout_below="@+id/button3" an-
    droid:text="DIV"
    tools:ignore="HardcodedText" />

<Button
    android:id="@+id/button1" an-
    droid:layout_width="wrap_content" an-
    droid:layout_height="wrap_content" an-
    droid:layout_alignParentLeft="true" an-
    droid:layout_alignParentRight="true" an-
    droid:layout_below="@+id/editText2" an-
    droid:text="ADD"
    tools:ignore="HardcodedText" />

<Button
    android:id="@+id/button2" an-
    droid:layout_width="wrap_content" an-
    droid:layout_height="wrap_content" an-
    droid:layout_alignParentLeft="true" an-
    droid:layout_alignParentRight="true" an-
    droid:layout_below="@+id/button1" an-
    droid:text="SUB"
    tools:ignore="HardcodedText" />

<Button
    android:id="@+id/button3" an-
    droid:layout_width="wrap_content" an-
    droid:layout_height="wrap_content" an-
    droid:layout_alignParentLeft="true" an-
    droid:layout_alignParentRight="true" an-
    droid:layout_below="@+id/button2" an-
    droid:text="MUL"
    tools:ignore="HardcodedText" />

<TextView
    android:id="@+id/textView1" an-
    droid:layout_width="wrap_content" an-
    droid:layout_height="wrap_content" an-
    droid:layout_below="@+id/button4" an-
    droid:layout_centerHorizontal="true" an-
    droid:layout_marginTop="22dp" an-
    droid:text=""
```

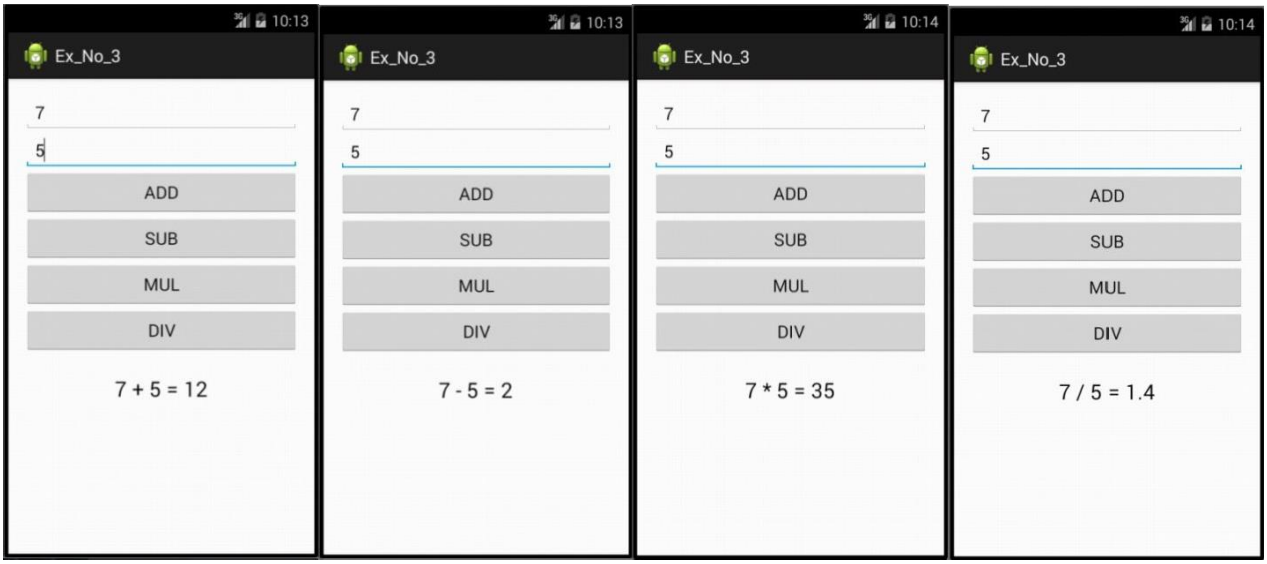
```
        android:textAppearance="?android:attr/textAppearanceLarge"    />

</RelativeLayout>
```

MainActivity.java:

```
package com.example.ex_no_3;
import android.support.v7.app.ActionBarActivity;
import android.os.Bundle;
import android.view.View;
import android.view.View.OnClickListener;
import android.widget.Button; im-
port android.widget.EditText; im-
port android.widget.TextView;
public class MainActivity extends ActionBarActivity {
	int  n1,n2;
	float num1,num2;
	@Override
	protected void onCreate(Bundle savedInstanceState) { su-
		per.onCreate(savedInstanceState); setCon-
		tentView(R.layout.activity_main);
		final EditText e1=(EditText)findViewById(R.id.editText1);
		final EditText e2=(EditText)findViewById(R.id.editText2);
		Button b1=(Button)findViewById(R.id.button1);
		Button b2=(Button)findViewById(R.id.button2);
		Button b3=(Button)findViewById(R.id.button3);
		Button b4=(Button)findViewById(R.id.button4);
		final TextView t=(TextView)findViewById(R.id.textView1);
		b1.setOnClickListener(
				new OnClickListener()
				{
					@Override
					public void onClick(View arg0) {
						// TODO Auto-generated method stub
						n1=Integer.parseInt(e1.getText().toString());
						n2=Integer.parseInt(e2.getText().toString());
						t.setText(e1.getText().toString()+"                    +
"+e2.getText().toString()+" = "+(n1+n2));
					}
				});
		b2.setOnClickListener(
				new OnClickListener()
				{
					@Override
					public void onClick(View arg0) {
						// TODO Auto-generated method stub
						n1=Integer.parseInt(e1.getText().toString());
						n2=Integer.parseInt(e2.getText().toString());
						t.setText(e1.getText().toString()+"                    -
"+e2.getText().toString()+" = "+(n1-n2));
					}
				});
		b3.setOnClickListener(
				new OnClickListener()
				{
					@Override
					public void onClick(View arg0) {
```

```
    // TODO Auto-generated method stub n1=Integer.parseInt(e1.getText().toString());
n2=Integer.parseInt(e2.getText().toString());

                                        t.setText(e1.getText().toString()+"                        *
 "+e2.getText().toString()+" = "+(n1*n2));
                                        }
                                });
                b4.setOnClickListener(
                                new OnClickListener()
                                {
                                        @Override
                                        public void onClick(View arg0) {
                                        // TODO Auto-generated method stub
                                        num1=Float.parseFloat(e1.getText().toString());
                                        num2=Float.parseFloat(e2.getText().toString());
                                        t.setText(e1.getText().toString()+"                        /
 "+e2.getText().toString()+" = "+(num1/num2));
                                        }
                                });
        }
 }
```

OUTPUT:



RESULT:

Thus the native calculator application has been developed and the output was verified.

Ex.No: 4 Date :	**Develop an application that makes use of database**

AIM:

To develop an application that makes use of database.

PROCEDURE:

1. Open Eclipse IDE.
2. Create the project Ex_No_4.
3. Go to package explorer in the left hand side. Select the project Ex_No_4.
4. Go to res folder and select layout. Double click the activity_main.xml file.
5. Now you can see the Graphical layout window.
6. Drag and drop the following components:
    a. Three TextViews with texts as Reg.No., Name and Marks
    b. Three EditTexts
    c. Five Buttons with labeled as ADD, VIEW, VIEW ALL, UPDATE and DELETE
7. Again go to package explorer in the left hand side. Select the project Ex_No_4.
8. Go to src folder. Double click the MainActivity.java file.
9. In java file write the activities done by the application such as, actions of button.
10. Finally run the android application.

PROGRAMS:

activity_main.xml:

```
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools" an-
    droid:layout_width="match_parent" android:layout_height="match_parent"
    android:paddingBottom="@dimen/activity_vertical_margin" an-
    droid:paddingLeft="@dimen/activity_horizontal_margin" an-
    droid:paddingRight="@dimen/activity_horizontal_margin" an-
    droid:paddingTop="@dimen/activity_vertical_margin"
    tools:context="com.example.ex_no_4.MainActivity" >

    <TextView
        android:id="@+id/textView1" an-
        droid:layout_width="wrap_content" an-
        droid:layout_height="wrap_content" an-
        droid:layout_alignParentLeft="true" an-
        droid:layout_alignParentTop="true" an-
        droid:text="Reg. No."
        android:textAppearance="?android:attr/textAppearanceMedium"
        tools:ignore="HardcodedText" />

    <EditText
        android:id="@+id/editText1" an-
        droid:layout_width="wrap_content" an-
        droid:layout_height="wrap_content" an-
        droid:layout_alignTop="@+id/textView1"
```

```
    android:layout_toRightOf="@+id/textView1"
    android:ems="10" an-
    droid:inputType="number" >

    <requestFocus />
</EditText>

<TextView
    android:id="@+id/textView2" an-
    droid:layout_width="wrap_content" an-
    droid:layout_height="wrap_content" an-
    droid:layout_alignLeft="@+id/textView1"
    android:layout_below="@+id/editText1" an-
    droid:layout_marginTop="20dp" an-
    droid:text="Name"
    android:textAppearance="?android:attr/textAppearanceMedium"
    tools:ignore="HardcodedText" />

<TextView
    android:id="@+id/textView3" an-
    droid:layout_width="wrap_content" an-
    droid:layout_height="wrap_content" an-
    droid:layout_alignLeft="@+id/textView2"
    android:layout_below="@+id/editText2" an-
    droid:layout_marginTop="26dp" an-
    droid:text="Marks"
    android:textAppearance="?android:attr/textAppearanceMedium"
    tools:ignore="HardcodedText" />

<EditText
    android:id="@+id/editText3" an-
    droid:layout_width="wrap_content" an-
    droid:layout_height="wrap_content" an-
    droid:layout_alignBottom="@+id/textView3"
    android:layout_alignLeft="@+id/editText2"
    android:ems="10"  an-
    droid:inputType="number" />

<EditText
    android:id="@+id/editText2" an-
    droid:layout_width="wrap_content" an-
    droid:layout_height="wrap_content" an-
    droid:layout_alignBaseline="@+id/textView2" an-
    droid:layout_alignBottom="@+id/textView2" an-
    droid:layout_alignLeft="@+id/editText1" an-
    droid:ems="10"
    tools:ignore="TextFields"  />

<Button
    android:id="@+id/button1" an-
    droid:layout_width="wrap_content" an-
    droid:layout_height="wrap_content" an-
    droid:layout_alignParentLeft="true" an-
    droid:layout_below="@+id/textView3" an-
    droid:layout_marginTop="32dp" an-
    droid:text="ADD"
    tools:ignore="HardcodedText" />
```

```
    <Button
        android:id="@+id/button3" an-
        droid:layout_width="wrap_content" an-
        droid:layout_height="wrap_content" an-
        droid:layout_alignBaseline="@+id/button2" an-
        droid:layout_alignBottom="@+id/button2" an-
        droid:layout_alignParentRight="true" an-
        droid:text="VIEW ALL"
        tools:ignore="HardcodedText" />

    <Button
        android:id="@+id/button2" an-
        droid:layout_width="wrap_content" an-
        droid:layout_height="wrap_content" an-
        droid:layout_alignBaseline="@+id/button1" an-
        droid:layout_alignBottom="@+id/button1" an-
        droid:layout_alignLeft="@+id/editText3" an-
        droid:layout_marginLeft="24dp" an-
        droid:text="VIEW" tools:ignore="HardcodedText"
        />

    <Button
        android:id="@+id/button4" an-
        droid:layout_width="wrap_content" an-
        droid:layout_height="wrap_content" an-
        droid:layout_alignLeft="@+id/button1" an-
        droid:layout_below="@+id/button1" an-
        droid:layout_marginLeft="27dp" an-
        droid:layout_marginTop="18dp" an-
        droid:text="UPDATE"
        tools:ignore="HardcodedText" />

    <Button
        android:id="@+id/button5" an-
        droid:layout_width="wrap_content" an-
        droid:layout_height="wrap_content" an-
        droid:layout_alignBaseline="@+id/button4" an-
        droid:layout_alignBottom="@+id/button4" an-
        droid:layout_marginLeft="20dp" an-
        droid:layout_toRightOf="@+id/button4" an-
        droid:text="DELETE"
        tools:ignore="HardcodedText" />

</RelativeLayout>
```

MainActivity.java:

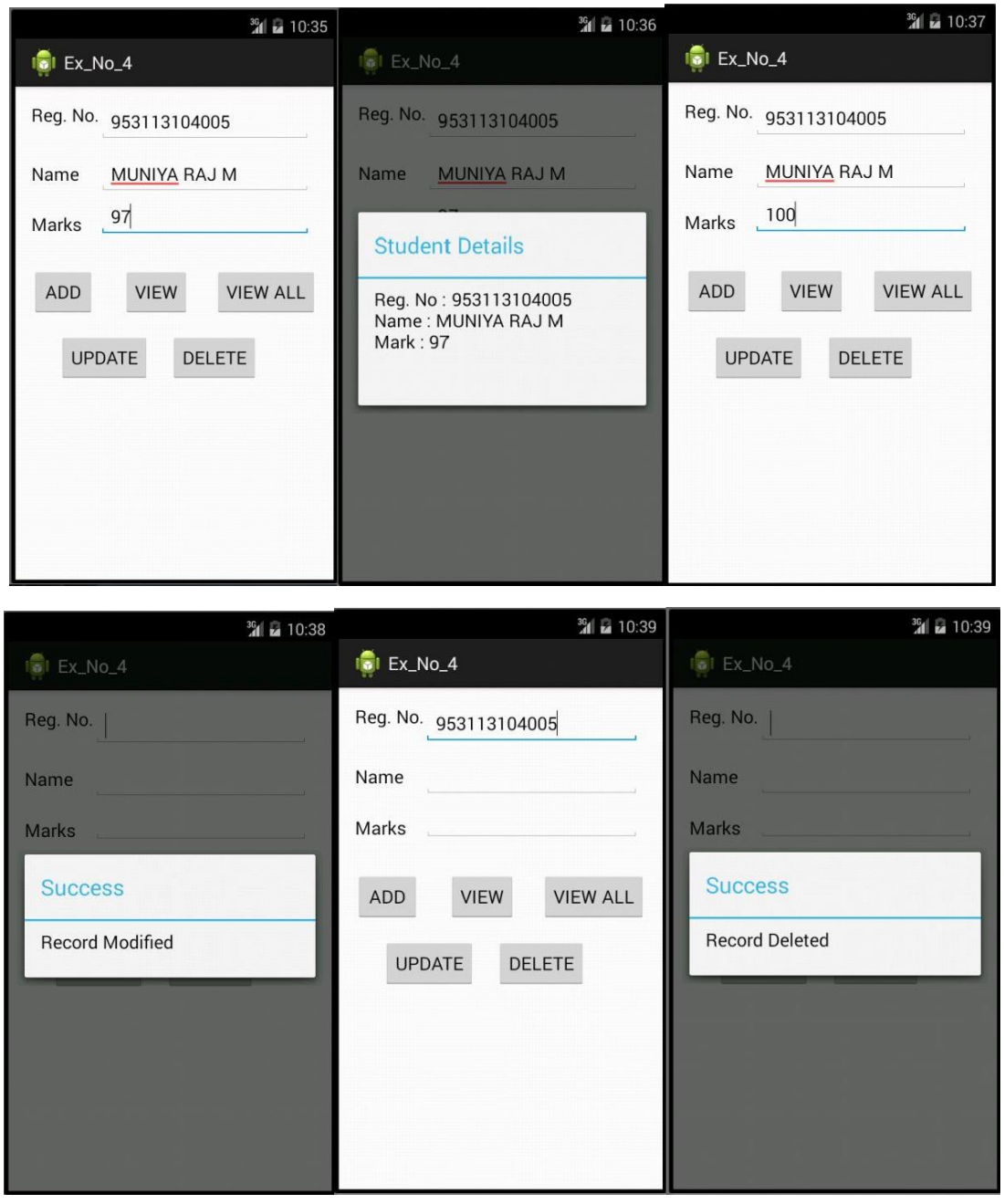
```
package com.example.ex_no_4;
import android.support.v7.app.ActionBarActivity;
import android.app.AlertDialog.Builder;
import android.content.Context;
import android.database.Cursor;
import android.database.sqlite.SQLiteDatabase;
import android.os.Bundle;
import android.view.View;
import android.view.View.OnClickListener;
```

```
import android.widget.Button;
import android.widget.EditText;
public class MainActivity extends ActionBarActivity {
	EditText name,regno,mark;
	Button btnAdd,btnDelete,btnUpdate,btnView,btnViewAll;
	SQLiteDatabase db;
	@Override
	protected void onCreate(Bundle savedInstanceState) { su-
		per.onCreate(savedInstanceState); setCon-
		tentView(R.layout.activity_main);
		regno= (EditText)findViewById(R.id.editText1);
	    name= (EditText)findViewById(R.id.editText2);
	    mark=(EditText)findViewById(R.id.editText3);
	    btnAdd=(Button)findViewById(R.id.button1);
	    btnView=(Button)findViewById(R.id.button2);
	    btnViewAll=(Button)findViewById(R.id.button3);
	    btnUpdate=(Button)findViewById(R.id.button4); btn-
	    Delete=(Button)findViewById(R.id.button5);
	    db=openOrCreateDatabase("Students", Context.MODE_PRIVATE, null);
	    db.execSQL("CREATE TABLE IF NOT EXISTS student(regno VARCHAR,name VARCHR,mark
VARCHAR);");
	    btnAdd.setOnClickListener(new  OnClickListener()
	    {
	    		@Override
	    		public void onClick(View arg0) {
	    			// TODO Auto-generated method stub

if(regno.getText().toString().trim().length()==0||name.getText().toString().trim().length()==0|
|mark.getText().toString().trim().length()==0)
	    		    {
	    		        showMessage("Error", "Please enter all values");
	    		        return;
	    		    }
	    		    db.execSQL("INSERT INTO student VAL-
UES('"+regno.getText()+"','"+name.getText()+"','"+mark.getText()+"');");
	    		    showMessage("Success", "Record added");
	    		    clearText();
	    		}
	    });
	    btnDelete.setOnClickListener(new  OnClickListener()
	    {
	    		@Override
	    		public void onClick(View v) {
	    			// TODO Auto-generated method stub
	    		    if(regno.getText().toString().trim().length()==0)
	    		    {
	    		        showMessage("Error", "Please enter Reg. No.");
	    		        return;              }
	    		    Cursor c=db.rawQuery("SELECT * FROM student WHERE reg-
no='"+regno.getText()+"'", null);
	    		    if(c.moveToFirst())
	    		    {
	    		        db.execSQL("DELETE FROM student WHERE regno='"+regno.getText()+"'");
	    		        showMessage("Success", "Record Deleted");
	    		    }
	    		    else
	    		    {
```

```
                        showMessage("Error", "Invalid Reg. No.");
                    }
                   clearText();
                }
        });
        btnUpdate.setOnClickListener(new  OnClickListener()
        {
                @Override
                public void onClick(View v) {
                      // TODO Auto-generated method stub
                   if(regno.getText().toString().trim().length()==0)
                    {
                        showMessage("Error", "Please enter Reg. No.");
            return;
                    }
                    Cursor c=db.rawQuery("SELECT * FROM student WHERE reg-
no='"+regno.getText()+"'", null);
                    if(c.moveToFirst())
                    {
                        db.execSQL("UPDATE student SET
name='"+name.getText()+"',mark='"+mark.getText()+"' WHERE regno='"+regno.getText()+"'");
                        showMessage("Success", "Record Modified");
                    }             else
                    {
                        showMessage("Error", "Invalid Reg. No.");
                    }             clearText();
                }
        });
        btnView.setOnClickListener(new  OnClickListener()
        {
                @Override
                public void onClick(View v) {
                      // TODO Auto-generated method stub
                    if(regno.getText().toString().trim().length()==0)
                    {
                        showMessage("Error", "Please enter Reg. No.");
                        return;
                    }
                    Cursor c=db.rawQuery("SELECT * FROM student WHERE reg-
no='"+regno.getText()+"'", null);
                    if(c.moveToFirst())
                    {
                        name.setText(c.getString(1));
                        mark.setText(c.getString(2));
                    }             else
                    {
                        showMessage("Error", "Invalid Reg. No.");
                        clearText();
                    }
                }
        });
        btnViewAll.setOnClickListener(new  OnClickListener()
        {
                @Override
                public void onClick(View v) {
                      // TODO Auto-generated method stub
                   Cursor c=db.rawQuery("SELECT * FROM student", null);
```

```
                    if(c.getCount()==0)
                    {
                        showMessage("Error", "No records found");
                        return;
                     }
                     StringBuffer buffer=new StringBuffer();
                     while(c.moveToNext())
                     {
                         buffer.append("Reg. No : "+c.getString(0)+"\n"); buff-
                         er.append("Name : "+c.getString(1)+"\n"); buffer.append("Mark
                         : "+c.getString(2)+"\n\n");
                     }
                      showMessage("Student Details", buffer.toString());

                }
          });
      }
        public void showMessage(String title,String message)
        {
            Builder builder=new Builder(this);
            builder.setCancelable(true); build-
            er.setTitle(title); build-
            er.setMessage(message); build-
            er.show();
        }
        public void clearText()
        {
            regno.setText("");
            name.setText("");
            mark.setText(""); reg-
            no.requestFocus();
        }
}
```

OUTPUT:



RESULT:

Thus the application that makes use of database has been developed and the output was verified.

Ex.No: 5 Date :	**Develop a native application that uses GPS location information**

AIM:

To develop a native application that uses GPS location information.

PROCEDURE:

1. Open Eclipse IDE.
2. Create the project Ex_No_5.
3. Go to package explorer in the left hand side. Select the project Ex_No_5.
4. Go to res folder and select layout. Double click the activity_main.xml file.
5. Now you can see the Graphical layout window.
6. Drag and drop the following components:
    a. One TextView with text as Current Location
    b. Two TextViews without any texts.
7. Again go to package explorer in the left hand side. Select the project Ex_No_5.
8. Go to src folder. Double click the MainActivity.java file.
9. In java file write the activities done by the application such as finding current location and print them.
10. Get the following permission in AndroidManifest.xml file:

```
<uses-permission android:name="android.permission.ACCESS_FINE_LOCATION"/>
```

11. Finally run the android application.

PROGRAMS:

activity_main.xml:

```
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools" an-
    droid:layout_width="match_parent" android:layout_height="match_parent"
    android:paddingBottom="@dimen/activity_vertical_margin" an-
    droid:paddingLeft="@dimen/activity_horizontal_margin" an-
    droid:paddingRight="@dimen/activity_horizontal_margin" an-
    droid:paddingTop="@dimen/activity_vertical_margin"
    tools:context="com.example.ex_no_5.MainActivity" >

    <TextView
        android:id="@+id/textView1" an-
        droid:layout_width="wrap_content" an-
        droid:layout_height="wrap_content" an-
        droid:layout_alignParentLeft="true" an-
        droid:layout_alignParentRight="true" an-
        droid:layout_alignParentTop="true" an-
        droid:layout_marginTop="114dp" an-
        droid:text=""
        android:textAppearance="?android:attr/textAppearanceMedium"
```

```
        tools:ignore="HardcodedText"  />

    <TextView
        android:id="@+id/textView2" an-
        droid:layout_width="wrap_content" an-
        droid:layout_height="wrap_content" an-
        droid:layout_alignLeft="@+id/textView1"
        android:layout_alignParentRight="true"
        android:layout_below="@+id/textView1" an-
        droid:layout_marginTop="51dp" an-
        droid:text=""
        android:textAppearance="?android:attr/textAppearanceMedium"
        tools:ignore="HardcodedText" />

    <TextView
        android:id="@+id/textView3" an-
        droid:layout_width="wrap_content" an-
        droid:layout_height="wrap_content" an-
        droid:layout_alignParentTop="true" an-
        droid:layout_centerHorizontal="true" an-
        droid:layout_marginTop="47dp" an-
        droid:text="Current Location"
        android:textAppearance="?android:attr/textAppearanceLarge"
        tools:ignore="HardcodedText" />

</RelativeLayout>
```

MainActivity.java:

```
package com.example.ex_no_5;
import android.support.v7.app.ActionBarActivity;
import android.content.Context;
import android.location.Criteria;
import android.location.Location;
import android.location.LocationListener;
import android.location.LocationManager;
import android.os.Bundle;
import android.widget.TextView;
import android.widget.Toast;
public class MainActivity extends ActionBarActivity implements LocationListener{
       @Override
       protected void onCreate(Bundle savedInstanceState) { su-
              per.onCreate(savedInstanceState); setCon-
              tentView(R.layout.activity_main);
              LocationManager lm=(LocationManager)getSystemService(Context.LOCATION_SERVICE); Cri-
              teria c=new Criteria();
              String s=lm.getBestProvider(c, false);
              if(s!=null && !s.equals(""))
              {
                     Location l=lm.getLastKnownLocation(s);
                     lm.requestLocationUpdates(s, 20000, 1, this);
                     if(l!=null)
                            onLocationChanged(l);
                     else
                            Toast.makeText(getApplicationContext(), "Location can't be
retrieved !!!", Toast.LENGTH_LONG).show();
              }
```

```
            else
                  Toast.makeText(getApplicationContext(), "Provider not found !!!",
Toast.LENGTH_LONG).show();
      }
      @Override
      public void onLocationChanged(Location arg0) {
            // TODO Auto-generated method stub
            TextView t1=(TextView)findViewById(R.id.textView1);
            t1.setText("Latitude : \n"+arg0.getLatitude());
            TextView t2=(TextView)findViewById(R.id.textView2);
            t2.setText("Longitude : \n"+arg0.getLongitude());
      }
      @Override
      public void onProviderDisabled(String arg0) {
            // TODO Auto-generated method stub
      }
      @Override
      public void onProviderEnabled(String arg0) {
            // TODO Auto-generated method stub
      }
      @Override
      public void onStatusChanged(String arg0, int arg1, Bundle arg2) {
            // TODO Auto-generated method stub
      }
}
```

OUTPUT:

RESULT:

Thus the application that uses GPS location information has been developed and the output was verified.

Ex.No: 6 Date :	**Implement an application that writes data to the SD card**

AIM:

To implement an application that writes data to the SD card.

PROCEDURE:

1. Open Eclipse IDE.
2. Create the project Ex_No_6.
3. Go to package explorer in the left hand side. Select the project Ex_No_6.
4. Go to res folder and select layout. Double click the activity_main.xml file.
5. Now you can see the Graphical layout window.
6. Drag and drop the following components:
   a. Two EditTexts
   b. Two Buttons with labeled as READ and SAVE
7. Again go to package explorer in the left hand side. Select the project Ex_No_6.
8. Go to src folder. Double click the MainActivity.java file.
9. In java file write the activities done by the application such as actions of buttons.
10. Get the following permission in AndroidManifest.xml file:
    `<uses-permission android:name="android.permission.WRITE_EXTERNAL_STORAGE" />`
11. Finally run the android application.

PROGRAMS:

activity_main.xml:

```
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools" an-
    droid:layout_width="match_parent" android:layout_height="match_parent"
    android:paddingBottom="@dimen/activity_vertical_margin" an-
    droid:paddingLeft="@dimen/activity_horizontal_margin" an-
    droid:paddingRight="@dimen/activity_horizontal_margin" an-
    droid:paddingTop="@dimen/activity_vertical_margin"
    tools:context="com.example.ex_no_6.MainActivity" >

    <EditText
        android:id="@+id/editText1" an-
        droid:layout_width="wrap_content" an-
        droid:layout_height="wrap_content" an-
        droid:layout_alignParentLeft="true" an-
        droid:layout_alignParentTop="true" an-
        droid:ems="10"
        android:hint="Path"
        tools:ignore="TextFields,HardcodedText" >

        <requestFocus />
    </EditText>
```

```
    <Button
        android:id="@+id/button1" an-
        droid:layout_width="wrap_content" an-
        droid:layout_height="wrap_content" an-
        droid:layout_alignTop="@+id/editText1"
        android:layout_toRightOf="@+id/editText1"
        android:text="READ"
        tools:ignore="HardcodedText" />

    <EditText
        android:id="@+id/editText2" an-
        droid:layout_width="wrap_content" an-
        droid:layout_height="wrap_content" an-
        droid:layout_alignLeft="@+id/editText1"
        android:layout_centerVertical="true" an-
        droid:ems="10"
        android:hint="Contents of File" an-
        droid:inputType="textMultiLine"
        tools:ignore="HardcodedText" />

    <Button
        android:id="@+id/button2" an-
        droid:layout_width="wrap_content" an-
        droid:layout_height="wrap_content" an-
        droid:layout_alignParentRight="true" an-
        droid:layout_centerVertical="true" an-
        droid:text="SAVE"
        tools:ignore="HardcodedText" />

</RelativeLayout>
```

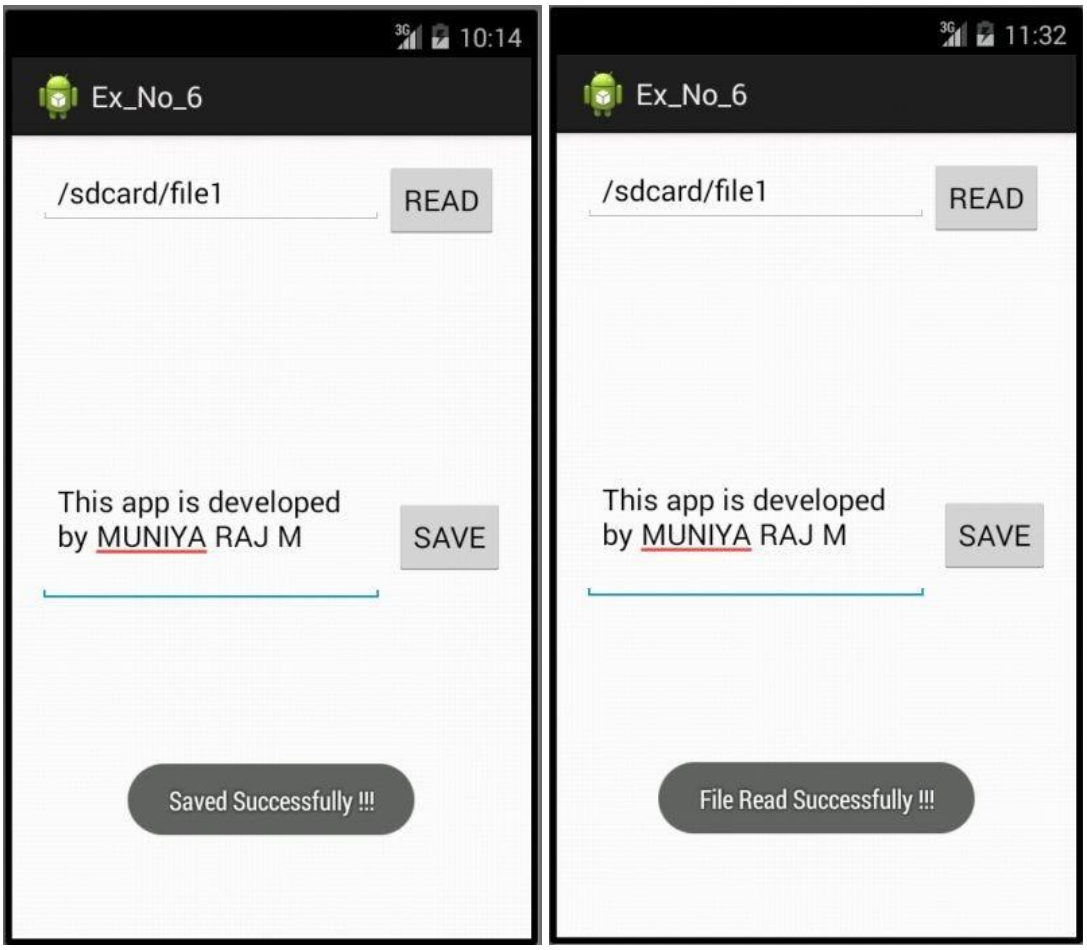
MainActivity.java:

```
package com.example.ex_no_6; im-
port java.io.BufferedReader; im-
port java.io.File;
import java.io.FileNotFoundException;
import  java.io.FileReader;
import  java.io.FileWriter;
import java.io.IOException;
import android.support.v7.app.ActionBarActivity;
import android.annotation.SuppressLint; im-
port android.content.SharedPreferences; im-
port android.os.Bundle;
import android.view.View;
import android.view.View.OnClickListener;
import android.widget.Button; im-
port android.widget.EditText; im-
port android.widget.Toast;
public class MainActivity extends ActionBarActivity {
      @SuppressLint("SdCardPath")
      @Override
      protected void onCreate(Bundle savedInstanceState) { su-
            per.onCreate(savedInstanceState); setCon-
            tentView(R.layout.activity_main);
            final EditText e1=(EditText)findViewById(R.id.editText1);
            final EditText e2=(EditText)findViewById(R.id.editText2);
```

```
Button b1=(Button)findViewById(R.id.button1);
Button b2=(Button)findViewById(R.id.button2);
String path=getPreferences(MODE_PRIVATE).getString("fpath", "/sdcard/file1");
e1.setText(path);
b1.setOnClickListener(
                new OnClickListener()
                {
                        @Override
                        public void onClick(View arg0) {
                                // TODO Auto-generated method stub

                                File f=new File(e1.getText().toString());
                                String s="";
                                StringBuilder sb=new StringBuilder();
                                FileReader fr = null;
                                try {
                                        fr = new FileReader(f);
                                } catch (FileNotFoundException e) {
                                        // TODO Auto-generated catch block
                                        e.printStackTrace();
                                }
                                BufferedReader br=new BufferedReader(fr);
                                try {
                                        while((s=br.readLine())!=null)
                                        {
                                                sb.append(s+"\n");
                                        }
                                } catch (IOException e) {
                                        // TODO Auto-generated catch block
                                        e.printStackTrace();
                                }
                                Toast.makeText(getApplicationContext(), "File Read Suc-
cessfully !!!", Toast.LENGTH_LONG).show();
                                e2.setText(sb);
                        }
                });
b2.setOnClickListener(
                new OnClickListener()
                {
                        @Override
                        public void onClick(View arg0) {
                                // TODO Auto-generated method stub

                                File f=new File(e1.getText().toString()); File-
                                Writer fw = null;
                                try {
                                        fw = new FileWriter(f);
                                } catch (IOException e3) {
                                        // TODO Auto-generated catch block
                                        e3.printStackTrace();
                                }
                                try {
                                        fw.write(e2.getText().toString());
                                } catch (IOException e2) {
                                        // TODO Auto-generated catch block
                                        e2.printStackTrace();
                                }
```

```
                                        try {
                                               fw.close();
                                        } catch (IOException e2) {
                                               // TODO Auto-generated catch block
                                               e2.printStackTrace();
                                        }
                                        SharedPreferences.Editor
e=getPreferences(MODE_PRIVATE).edit();
                                        e.putString("fpath", f.getPath());
                                        e.commit();
                                        Toast.makeText(getApplicationContext(), "Saved
 Successfully !!!", Toast.LENGTH_LONG).show();
                                    }
                                });
        }
}
```

OUTPUT:



RESULT:

Thus the application that writes data to the SD card has been implemented and the output was verified.

Ex.No: 7 Date :	**Write an application that draws basic graphical primitives on the screen**

AIM:

To develop an application that draws basic graphical primitives on the screen.

PROCEDURE:

1. Open Eclipse IDE.
2. Create the project Ex_No_7.
3. Go to package explorer in the left hand side. Select the project Ex_No_7.
4. Go to res folder and select layout. Double click the activity_main.xml file.
5. Now you can see the Graphical layout window.
6. Drag and drop only one ImageView
7. Again go to package explorer in the left hand side. Select the project Ex_No_6.
8. Go to src folder. Double click the MainActivity.java file.
9. In java file write the activities done by the application such as drawing the graphical primitives.
10. Finally run the android application.

PROGRAMS:

activity_main.xml:

```
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools" an-
    droid:layout_width="match_parent" android:layout_height="match_parent"
    android:paddingBottom="@dimen/activity_vertical_margin" an-
    droid:paddingLeft="@dimen/activity_horizontal_margin" an-
    droid:paddingRight="@dimen/activity_horizontal_margin" an-
    droid:paddingTop="@dimen/activity_vertical_margin"
    tools:context="com.example.ex_no_7.MainActivity" >

    <ImageView
        android:id="@+id/imageView1" an-
        droid:layout_width="wrap_content" an-
        droid:layout_height="wrap_content" an-
        droid:layout_alignParentBottom="true" an-
        droid:layout_alignParentLeft="true" an-
        droid:layout_alignParentRight="true" an-
        droid:layout_alignParentTop="true" an-
        droid:src="@drawable/ic_launcher"
        tools:ignore="ContentDescription" />

</RelativeLayout>
```

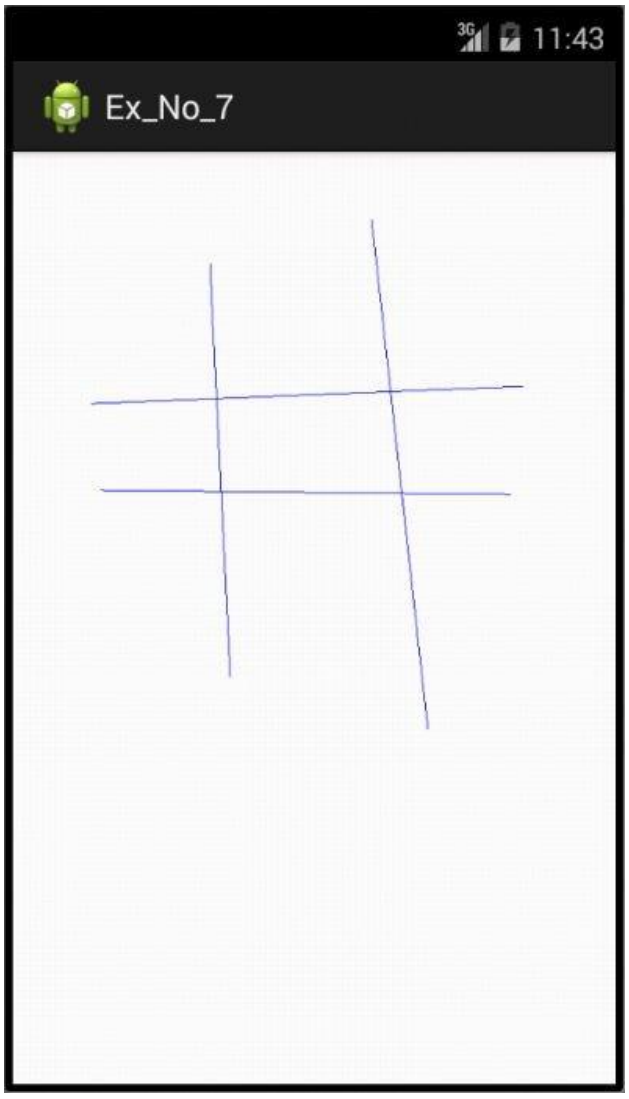
MainActivity.java:

```
package com.example.ex_no_7;
import android.support.v7.app.ActionBarActivity;
import android.annotation.SuppressLint;
```

```
import android.graphics.Bitmap;
import android.graphics.Canvas;
import android.graphics.Color;
import android.graphics.Paint;
import  android.os.Bundle;  im-
port android.view.Display; im-
port android.view.MotionEvent;
import android.view.View;
import android.view.View.OnTouchListener;
import android.widget.ImageView;
@SuppressLint("ClickableViewAccessibility")
public class MainActivity extends ActionBarActivity implements OnTouchListener { Im-
	ageView iv;
	Bitmap b;
	Canvas c;
	Paint p;
	float dx=0,dy=0,ux=0,uy=0;
	@SuppressWarnings("deprecation")
	@Override
	protected void onCreate(Bundle savedInstanceState) { su-
		per.onCreate(savedInstanceState); setCon-
		tentView(R.layout.activity_main);
		iv=(ImageView)this.findViewById(R.id.imageView1); Dis-
		play d = getWindowManager().getDefaultDisplay();
		float dw = d.getWidth();
		float dh = d.getHeight();
		b = Bitmap.createBitmap((int) dw, (int) dh,Bitmap.Config.ARGB_8888);
		c = new Canvas(b);
		p = new Paint();
		p.setColor(Color.BLUE);
		iv.setImageBitmap(b);
		iv.setOnTouchListener(this);
	}
	@Override
	public boolean onTouch(View v, MotionEvent event) {
		// TODO Auto-generated method stub
		int action = event.getAction();
		switch (action)
		{
			case MotionEvent.ACTION_DOWN:
					dx = event.getX();
					dy = event.getY();
					break;
			case MotionEvent.ACTION_MOVE:
					break;
			case MotionEvent.ACTION_UP:
					ux = event.getX();
					uy = event.getY();
					c.drawLine(dx, dy, ux, uy, p);
					iv.invalidate();
					break;
			case MotionEvent.ACTION_CANCEL:
					break;
			default:
					break;
		}
		return true;
```

```
        }
}
```

OUTPUT:



RESULT:

Thus the application that draws basic graphical primitives on the screen has been developed and the output was verified.

Ex.No: 8 Date :	**Develop an application that makes use of RSS Feed**

AIM:

To develop an application that makes use of RSS Feed.

PROCEDURE:

1. Open Eclipse IDE.
2. Create the project Ex_No_8.
3. Go to package explorer in the left hand side. Select the project Ex_No_8.
4. Go to res folder and select layout. Double click the activity_main.xml file.
5. Now you can see the Graphical layout window.
6. Create the FrameLayout.
7. Create a new layout named as fragment_layout.xml which has following components:
    a. ListView
    b. ProgressBar
8. Create another one layout named as rss_item.xml which has only one TextView.
9. Again go to package explorer in the left hand side. Select the project Ex_No_7.
10. Go to src folder. Double click the MainActivity.java file.
11. In java file write the activities done by the application.
12. Create the following additional classes for this application:
    a. Constants.java
    b. PcWorldRssParser.java
    c. RssAdapter.java
    d. RssFragement.java
    e. RssItem.java
    f. RssService.java
13. Write appropriate actions for the created additional classes.
14. Get the following permission in AndroidManifest.xml file:
    ```
    <uses-permission  android:name="android.permission.INTERNET"  />
    ```
15. Finally run the android application.

PROGRAMS:

activity_main.xml:

```
<?xml version="1.0" encoding="utf-8"?>
<FrameLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="fill_parent" an-
    droid:id="@+id/fragment_container" an-
    droid:layout_height="fill_parent" />
```

fragement_layout.xml:

```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
```

```
    android:layout_width="match_parent" an-
    droid:layout_height="match_parent" an-
    droid:orientation="vertical" >

      <ListView  an-
        droid:id="@+id/listView" an-
        droid:layout_width="fill_parent"
        android:layout_height="fill_parent"  >
    </ListView>

    <ProgressBar
        android:id="@+id/progressBar"
        style="?android:attr/progressBarStyleLarge" an-
        droid:layout_width="wrap_content" an-
        droid:layout_height="wrap_content" an-
        droid:layout_centerInParent="true" />

</RelativeLayout>
```

rss_item.xml:

```
<?xml version="1.0" encoding="utf-8"?>
<TextView xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools" an-
    droid:id="@+id/itemTitle"
    android:layout_width="match_parent" an-
    droid:layout_height="wrap_content" an-
    droid:textSize="18dp"
    tools:ignore="SpUsage" />
```

MainActivity.java:

```
package com.example.ex_no_8;
import android.os.Bundle;
import android.support.v4.app.FragmentActivity; im-
port android.support.v4.app.FragmentManager; import
android.support.v4.app.FragmentTransaction; public
class MainActivity extends FragmentActivity {
      @Override
      public void onCreate(Bundle savedInstanceState) { su-
            per.onCreate(savedInstanceState); setCon-
            tentView(R.layout.activity_main);
            if (savedInstanceState == null) {
                  addRssFragment();
            }
      }
      private void addRssFragment() {
            FragmentManager manager = getSupportFragmentManager(); Frag-
            mentTransaction transaction = manager.beginTransaction(); RssFrag-
            ment fragment = new RssFragment(); transac-
            tion.add(R.id.fragment_container, fragment); transaction.commit();
      }
      @Override
      protected void onSaveInstanceState(Bundle outState) { su-
            per.onSaveInstanceState(outState); out-
            State.putBoolean("fragment_added", true);
```

```
	}
}
```

Constants.java

```
package com.example.ex_no_8;
public class Constants {
	public static final String TAG = "RssApp";
}
```

PcWorldRssParser.java

```
package com.example.ex_no_8; im-
port java.io.IOException; import
java.io.InputStream; import ja-
va.util.ArrayList; import ja-
va.util.List;
import org.xmlpull.v1.XmlPullParser;
import org.xmlpull.v1.XmlPullParserException;
import android.util.Xml;
public class PcWorldRssParser {
	// We don't use namespaces
	private final String ns = null;
	public List<RssItem> parse(InputStream inputStream) throws XmlPullParserException, IOEx-
ception {
		try {
			XmlPullParser parser = Xml.newPullParser(); par-
			ser.setFeature(XmlPullParser.FEATURE_PROCESS_NAMESPACES, false); par-
			ser.setInput(inputStream, null);
			parser.nextTag();
			return readFeed(parser);
		} finally {
			inputStream.close();
		}
	}
	private List<RssItem> readFeed(XmlPullParser parser) throws XmlPullParserException, IOEx-
ception {
		parser.require(XmlPullParser.START_TAG, null, "rss");
		String title = null;
		String link = null;
		List<RssItem> items = new ArrayList<RssItem>();
		while (parser.next() != XmlPullParser.END_DOCUMENT) {
			if (parser.getEventType() != XmlPullParser.START_TAG) {
				continue;
			}
			String name = parser.getName();
			if (name.equals("title")) { ti-
				tle = readTitle(parser);
			} else if (name.equals("link")) {
				link = readLink(parser);
			}
			if (title != null && link != null) {
				RssItem item = new RssItem(title, link);
				items.add(item);
				title = null;
				link = null;
			}
```

```
            }
            return items;
      }
      private String readLink(XmlPullParser parser) throws XmlPullParserException, IOException
{
            parser.require(XmlPullParser.START_TAG, ns, "link");
            String link = readText(parser); par-
            ser.require(XmlPullParser.END_TAG, ns, "link"); re-
            turn link;
      }
      private String readTitle(XmlPullParser parser) throws XmlPullParserException, IO-
Exception {
            parser.require(XmlPullParser.START_TAG, ns, "title");
            String title = readText(parser); par-
            ser.require(XmlPullParser.END_TAG, ns, "title"); re-
            turn title;
      }
      // For the tags title and link, extract their text values.
      private String readText(XmlPullParser parser) throws IOException, XmlPullParserException
{
            String result = "";
            if (parser.next() == XmlPullParser.TEXT) { re-
                  sult = parser.getText(); par-
                  ser.nextTag();
            }
            return result;
      }
}
```

RssAdapter.java

```
package com.example.ex_no_8;
import java.util.List;
import android.content.Context;
import android.view.View; im-
port android.view.ViewGroup;
import android.widget.BaseAdapter;
import android.widget.TextView;
public class RssAdapter extends BaseAdapter {
      private final List<RssItem> items; pri-
      vate final Context context;
      public RssAdapter(Context context, List<RssItem> items) {
            this.items = items;
            this.context = context;
      }
      @Override
      public int getCount() {
            return items.size();
      }
      @Override
      public Object getItem(int position) {
            return items.get(position);
      }
      @Override
      public long getItemId(int id) {
            return id;
      }
```

```
	@Override
	public View getView(int position, View convertView, ViewGroup parent) {
		ViewHolder holder;
		if (convertView == null) {
			convertView = View.inflate(context, R.layout.rss_item, null);
			holder = new ViewHolder();
			holder.itemTitle = (TextView) convertView.findViewById(R.id.itemTitle); con-
			vertView.setTag(holder);
		} else {
			holder = (ViewHolder) convertView.getTag();
		}
		holder.itemTitle.setText(items.get(position).getTitle());
		return convertView;
	}
	static class ViewHolder {
		TextView itemTitle;
	}
}
```

RssFragement.java

```
package com.example.ex_no_8;
import java.util.List;
import android.content.Intent;
import  android.net.Uri;  im-
port android.os.Bundle; im-
port android.os.Handler;
import android.os.ResultReceiver; im-
port android.support.v4.app.Fragment;
import android.view.LayoutInflater; im-
port android.view.View;
import android.view.ViewGroup;
import android.widget.AdapterView;
import android.widget.AdapterView.OnItemClickListener;
import android.widget.ListView;
import android.widget.ProgressBar;
import android.widget.Toast;
public class RssFragment extends Fragment implements OnItemClickListener {
	private ProgressBar progressBar;
	private ListView listView; pri-
	vate View view;
	@Override
	public void onCreate(Bundle savedInstanceState) { su-
		per.onCreate(savedInstanceState); setRetain-
		Instance(true);
	}
	@Override
	public View onCreateView(LayoutInflater inflater, ViewGroup container, Bundle savedIn-
stanceState) {
		if (view == null) {
			view = inflater.inflate(R.layout.fragment_layout, container, false);
			progressBar = (ProgressBar) view.findViewById(R.id.progressBar);
			listView = (ListView) view.findViewById(R.id.listView);
			listView.setOnItemClickListener(this);
			startService();
		} else {
			ViewGroup parent = (ViewGroup) view.getParent();
```

```
                parent.removeView(view);
            }
            return view;
        }
        private void startService() {
            Intent intent = new Intent(getActivity(), RssService.class); in-
            tent.putExtra(RssService.RECEIVER, resultReceiver); getActivi-
            ty().startService(intent);
        }
        private final ResultReceiver resultReceiver = new ResultReceiver(new Handler()) {
            @SuppressWarnings("unchecked")
            @Override
            protected void onReceiveResult(int resultCode, Bundle resultData) { progress-
                Bar.setVisibility(View.GONE);
                List<RssItem> items = (List<RssItem>) result-
Data.getSerializable(RssService.ITEMS);
                if (items != null) {
                    RssAdapter adapter = new RssAdapter(getActivity(), items);
                    listView.setAdapter(adapter);
                } else {
                    Toast.makeText(getActivity(), "An error occured while downloading
the rss feed.",
                                Toast.LENGTH_LONG).show();
                }
            };
        };
        @Override
        public void onItemClick(AdapterView<?> parent, View view, int position, long id) { RssA-
            dapter adapter = (RssAdapter) parent.getAdapter();
            RssItem item = (RssItem) adapter.getItem(position);
            Uri uri = Uri.parse(item.getLink());
            Intent intent = new Intent(Intent.ACTION_VIEW, uri); star-
            tActivity(intent);
        }
}
```

RssItem.java

```
package com.example.ex_no_8;
public class RssItem {
        private final String title;
        private final String link;
        public RssItem(String title, String link) {
            this.title = title;
            this.link = link;
        }
        public String getTitle() {
            return title;
        }
        public String getLink() {
            return link;
        }
}
```

RssService.java

```
package com.example.ex_no_8;
```

```
import java.io.IOException; im-
port java.io.InputStream; import
java.io.Serializable; import ja-
va.net.URL;
import java.util.List;
import org.xmlpull.v1.XmlPullParserException;
import android.app.IntentService;
import android.content.Intent; im-
port android.os.Bundle;
import android.os.ResultReceiver;
import android.util.Log;
public class RssService extends IntentService {
	private static final String RSS_LINK = "http://www.pcworld.com/index.rss";
	public static final String ITEMS = "items"; pub-
	lic static final String RECEIVER = "receiver";
	public RssService() {
		super("RssService");
	}
	@Override
	protected void onHandleIntent(Intent intent) {
		Log.d(Constants.TAG, "Service started");
		List<RssItem> rssItems = null;
		try {
			PcWorldRssParser parser = new PcWorldRssParser();
			rssItems = parser.parse(getInputStream(RSS_LINK));
		} catch (XmlPullParserException e) {
			Log.w(e.getMessage(), e);
		} catch (IOException e) {
			Log.w(e.getMessage(), e);
		}
		Bundle bundle = new Bundle(); bun-
		dle.putSerializable(ITEMS, (Serializable) rssItems);
		ResultReceiver receiver = intent.getParcelableExtra(RECEIVER); receiv-
		er.send(0, bundle);
	}
	public InputStream getInputStream(String link) {
		try {
			URL url = new URL(link);
			return url.openConnection().getInputStream();
		} catch (IOException e) {
			Log.w(Constants.TAG, "Exception while retrieving the input stream", e);
			return null;
		}
	}
}
```

OUTPUT:

RESULT:

Thus the application that makes use of RSS Feed has been developed and the output was verified.

Ex.No: 9 Date :	**Implement an application that implements multi threading**

AIM:

To implement an application that implements multi threading.

PROCEDURE:

1. Open Eclipse IDE.
2. Create the project Ex_No_9.
3. Go to package explorer in the left hand side. Select the project Ex_No_9.
4. Go to res folder and select layout. Double click the activity_main.xml file.
5. Now you can see the Graphical layout window.
6. Drag and drop the following components:
    a. One ProgressBar (Horizontal)
    b. One Button with labeled as Start Progress
    c. One TextView without any texts
7. Again go to package explorer in the left hand side. Select the project Ex_No_9.
8. Go to src folder. Double click the MainActivity.java file.
9. In java file write the activities done by the application such as action of button.
10. Finally run the android application.

PROGRAMS:

activity_main.xml:

```
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools" an-
    droid:layout_width="match_parent" android:layout_height="match_parent"
    android:paddingBottom="@dimen/activity_vertical_margin" an-
    droid:paddingLeft="@dimen/activity_horizontal_margin" an-
    droid:paddingRight="@dimen/activity_horizontal_margin" an-
    droid:paddingTop="@dimen/activity_vertical_margin"
    tools:context="com.example.ex_no_9.MainActivity" >

        <ProgressBar an-
        droid:id="@+id/progressBar1"
        style="?android:attr/progressBarStyleHorizontal" an-
        droid:layout_width="wrap_content" an-
        droid:layout_height="wrap_content" an-
        droid:layout_alignParentLeft="true" an-
        droid:layout_alignParentRight="true" an-
        droid:layout_alignParentTop="true" />

    <TextView
        android:id="@+id/textView1" an-
        droid:layout_width="wrap_content" an-
        droid:layout_height="wrap_content" an-
        droid:layout_below="@+id/progressBar1"
        android:layout_centerHorizontal="true"
```

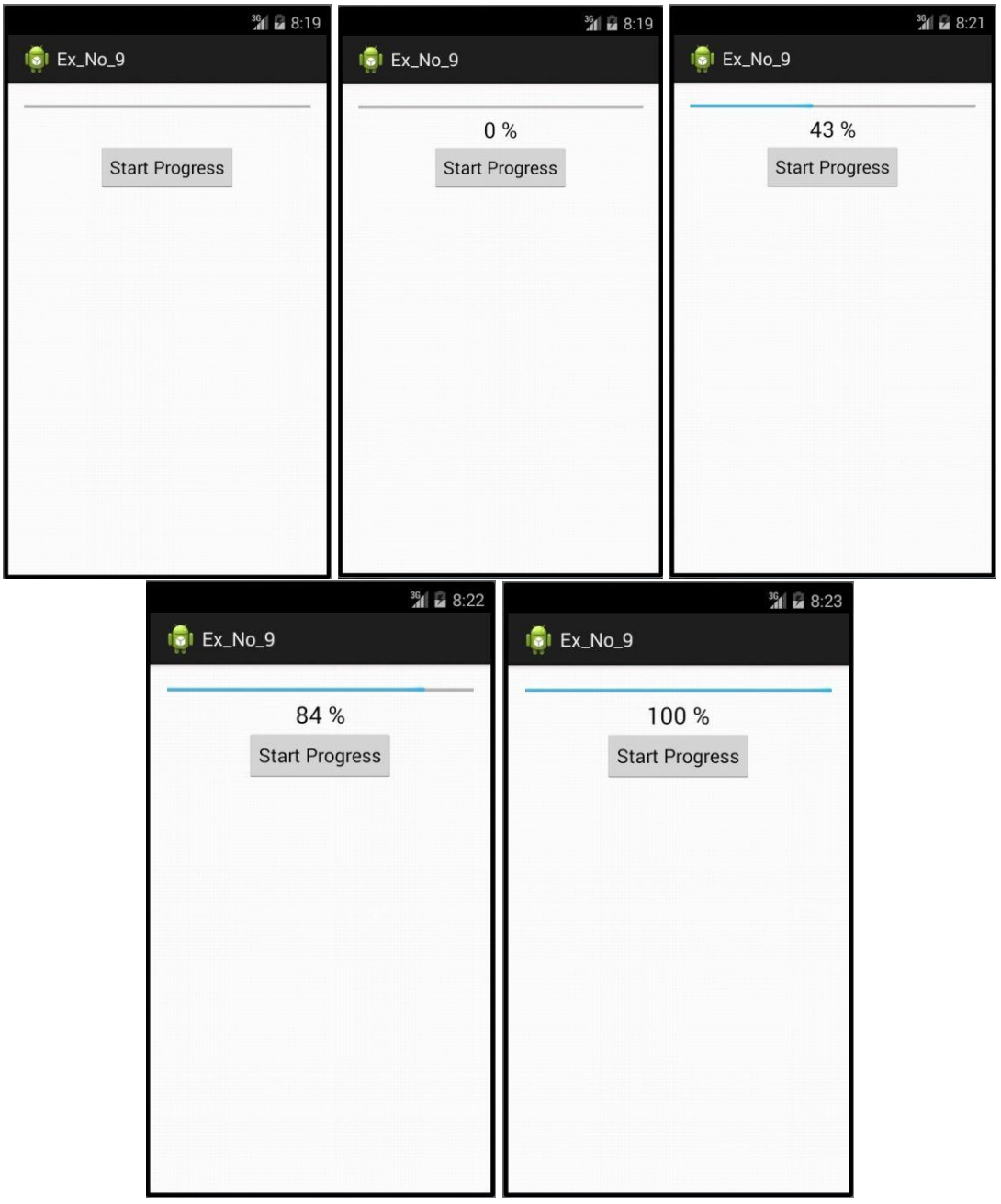
```
        android:text=" " an-
        droid:textAppearance="?android:attr/textAppearanceLarge"
        tools:ignore="HardcodedText" />

    <Button
        android:id="@+id/button1" an-
        droid:layout_width="wrap_content" an-
        droid:layout_height="wrap_content" an-
        droid:layout_below="@+id/textView1" an-
        droid:layout_centerHorizontal="true" an-
        droid:text="Start Progress"
        tools:ignore="HardcodedText" />

</RelativeLayout>
```

MainActivity.java:

```
package com.example.ex_no_9;
import android.support.v7.app.ActionBarActivity;
import android.os.Bundle;
import android.view.View;
import android.view.View.OnClickListener;
import android.widget.Button; im-
port android.widget.ProgressBar;
import android.widget.TextView;
public class MainActivity extends ActionBarActivity {
      @Override
      protected void onCreate(Bundle savedInstanceState) { su-
            per.onCreate(savedInstanceState); setCon-
            tentView(R.layout.activity_main);
            final ProgressBar p=(ProgressBar)findViewById(R.id.progressBar1);
            final TextView t=(TextView)findViewById(R.id.textView1);
            Button b=(Button)findViewById(R.id.button1);
            b.setOnClickListener(
                        new OnClickListener()
                        {
                              @Override
                              public void onClick(View arg0) {
                                    // TODO Auto-generated method stub

                                    Runnable r=new Runnable(){
                                          @Override
                                          public void run() {// TODO Auto-generated method
                                          stub

                                                for(int i=0;i<=100;i++)
                                                {
                                                      final int temp=i;
                                                      try {
                                                            Thread.sleep(2000);
                                                       } catch (InterruptedException e) {
                                                            // TODO Auto-generated catch
block

                                                            e.printStackTrace();
                                                      }
```

```
                                                        p.post(new Runnable()
                                                        {
                                                               @Override
                                                               public void run() {
                                                                      // TODO Auto-generated
method stub

                                                                      p.setProgress(temp);
                                                                      t.setText(temp+" %");

                                                               }

                                                        });
                                                 }

                                          }};
                                          new Thread(r).start();

                                   }
                            });
      }
}
```

OUTPUT:



RESULT:

Thus the application that implements multi threading has been developed and the output was verified.

Ex.No: 10 Date :	**Implement an application that creates an alert upon receiving a message**

AIM:

To implement an application that creates an alert upon receiving a message.

PROCEDURE:

1. Open Eclipse IDE.
2. Create the project Ex_No_10.
3. Go to package explorer in the left hand side. Select the project Ex_No_10.
4. Go to res folder and select layout. Double click the activity_main.xml file.
5. Now you can see the Graphical layout window.
6. This application has no components, because this just generates a notification alone.
7. Again go to package explorer in the left hand side. Select the project Ex_No_10.
8. Go to src folder. Double click the MainActivity.java file.
9. In java file write the activities done by the application such as receiving a message and notify it.
10. Get the following permissions in AndroidManifest.xml file:
```
<uses-permission android:name="android.permission.RECEIVE_SMS"/>
<uses-permission android:name="android.permission.READ_SMS"/>
```
11. Add Receiver class as receiver in AndroidManifest.xml file.
12. Finally run the android application.

PROGRAMS:

activity_main.xml:

```
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools" an-
    droid:layout_width="match_parent" android:layout_height="match_parent"
    android:paddingBottom="@dimen/activity_vertical_margin" an-
    droid:paddingLeft="@dimen/activity_horizontal_margin" an-
    droid:paddingRight="@dimen/activity_horizontal_margin" an-
    droid:paddingTop="@dimen/activity_vertical_margin"
    tools:context="com.example.ex_no_10.MainActivity" >

</RelativeLayout>
```

MainActivity.java:

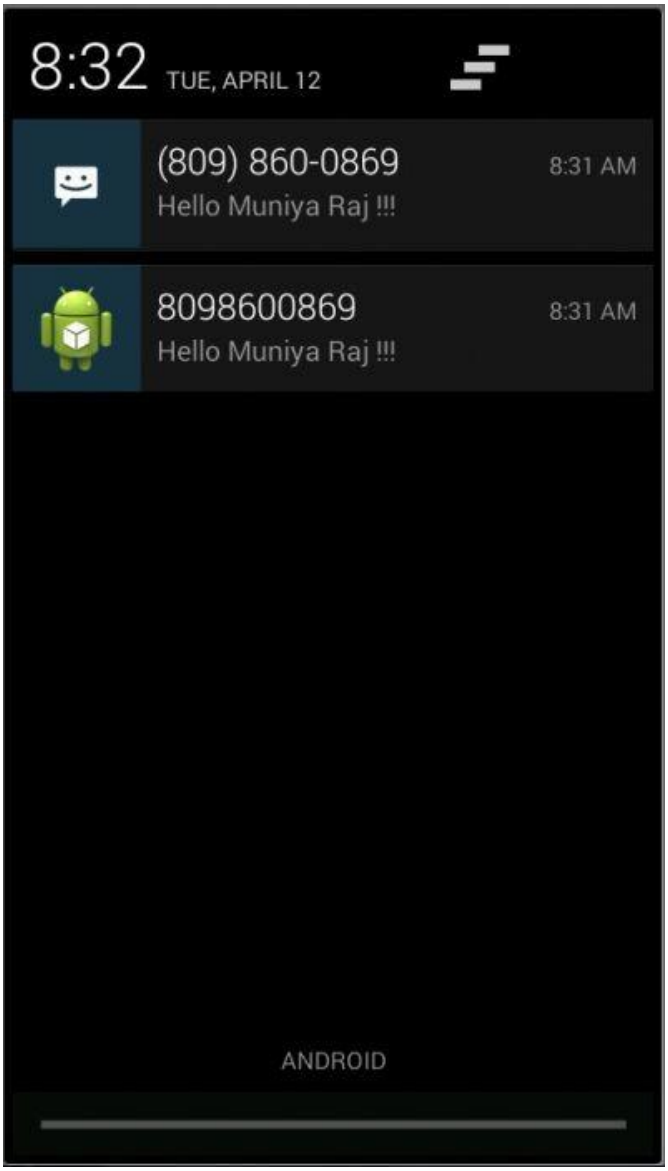
```
package com.example.ex_no_10;
import android.support.v7.app.ActionBarActivity;
import  android.app.Notification;  im-
port android.app.NotificationManager;
import android.content.Context;
import android.os.Bundle;
public class MainActivity extends ActionBarActivity {
       private static MainActivity inst;
       public static MainActivity instance() {
```

```
		// TODO Auto-generated method stub
		return inst;
	}
	public void onStart()
	{
		super.onStart();
		inst=this;
	}
	NotificationManager nm; Notifi-
	cation n;
	@SuppressWarnings("deprecation")
	@Override
	protected void onCreate(Bundle savedInstanceState) { su-
		per.onCreate(savedInstanceState); setContentView(R.layout.activity_main);
		nm=(NotificationManager)getSystemService(Context.NOTIFICATION_SERVICE);
		n=new Notification(R.drawable.ic_launcher,"SMS Alert",System.currentTimeMillis());

	}
	@SuppressWarnings("deprecation")
	public void update_notification(String no, String msg) {
		// TODO Auto-generated method stub
		n.setLatestEventInfo(getBaseContext(), no, msg, null);
		nm.notify(1337, n);
	}
}
```

Receiver.java:

```
package com.example.ex_no_10;
import android.content.BroadcastReceiver;
import android.content.Context; im-
port android.content.Intent; im-
port android.os.Bundle;
import android.telephony.SmsMessage;
public class Receiver extends BroadcastReceiver { pub-
	lic static final String SMS_BUNDLE="pdus";
	@Override
	public void onReceive(Context arg0, Intent arg1) {
		// TODO Auto-generated method stub
		String no = null,msg = null; Bun-
		dle b=arg1.getExtras();
		if(b!=null)
		{
			Object[] sms=(Object[])b.get(SMS_BUNDLE);
			for(int i=0;i<sms.length;++i)
			{
				SmsMessage sm=SmsMessage.createFromPdu((byte[])sms[i]);
				no=sm.getOriginatingAddress();
				msg=sm.getMessageBody().toString();
			}
			MainActivity inst=MainActivity.instance();
			inst.update_notification(no,msg);
		}
	}
}
```

OUTPUT:



RESULT:

Thus the application that creates an alert upon receiving a message has been developed and the output was verified.

Ex.No: 11 Date :	**Write a mobile application that creates alarm clock**

AIM:

To implement an application that creates alarm clock.

PROCEDURE:

1. Open Eclipse IDE.
2. Create the project Ex_No_11.
3. Go to package explorer in the left hand side. Select the project Ex_No_11.
4. Go to res folder and select layout. Double click the activity_main.xml file.
5. Now you can see the Graphical layout window.
6. Drag and drop the following components:
    a. DatePicker
    b. TimePicker
    c. Button with labeled as SET ALARM
7. Again go to package explorer in the left hand side. Select the project Ex_No_11.
8. Go to src folder. Double click the MainActivity.java file.
9. In java file write the activities done by the application such as notify the alarm.
10. Get the following permission in AndroidManifest.xml file:
    `<uses-permission android:name="android.permission.WAKE_LOCK"/>`
11. Add Alarm class as a receiver in AndroidManifest.xml file.
12. Finally run the android application.

PROGRAMS:

activity_main.xml:

```
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools" an-
    droid:layout_width="match_parent" android:layout_height="match_parent"
    android:paddingBottom="@dimen/activity_vertical_margin" an-
    droid:paddingLeft="@dimen/activity_horizontal_margin" an-
    droid:paddingRight="@dimen/activity_horizontal_margin" an-
    droid:paddingTop="@dimen/activity_vertical_margin"
    tools:context="com.example.ex_no_11.MainActivity" >

    <DatePicker
        android:id="@+id/datePicker1" an-
        droid:layout_width="wrap_content" an-
        droid:layout_height="wrap_content" an-
        droid:layout_alignParentLeft="true" an-
        droid:layout_alignParentRight="true" an-
        droid:layout_alignParentTop="true" />

    <TimePicker
        android:id="@+id/timePicker1" an-
        droid:layout_width="wrap_content"
```

```
        android:layout_height="wrap_content" an-
        droid:layout_alignLeft="@+id/datePicker1" an-
        droid:layout_alignParentBottom="true" an-
        droid:layout_alignParentRight="true" an-
        droid:layout_marginBottom="71dp" />

    <Button
        android:id="@+id/button1" an-
        droid:layout_width="wrap_content" an-
        droid:layout_height="wrap_content" an-
        droid:layout_alignLeft="@+id/timePicker1" an-
        droid:layout_alignParentBottom="true" an-
        droid:layout_alignParentRight="true" an-
        droid:layout_marginBottom="14dp" an-
        droid:text="SET ALARM"
        tools:ignore="HardcodedText" />

</RelativeLayout>
```

MainActivity.java:

```
package com.example.ex_no_11;
import java.util.Calendar;
import android.support.v7.app.ActionBarActivity;
import  android.app.AlarmManager;  im-
port  android.app.Notification;  import
android.app.NotificationManager; import
android.app.PendingIntent; import an-
droid.content.Context;
import android.content.Intent;
import android.os.Bundle; im-
port android.view.View;
import android.view.View.OnClickListener;
import android.widget.Button; im-
port android.widget.DatePicker; im-
port android.widget.TimePicker; im-
port android.widget.Toast;
public class MainActivity extends ActionBarActivity {
       private static MainActivity inst;
       public static MainActivity instance() {
              // TODO Auto-generated method stub
              return inst;
       }
       public void onStart()
       {
              super.onStart();
              inst=this;
       }
       NotificationManager nm; Notifi-
       cation n;
       @SuppressWarnings("deprecation")
       @Override
       protected void onCreate(Bundle savedInstanceState) { su-
              per.onCreate(savedInstanceState); setCon-
              tentView(R.layout.activity_main);
              final TimePicker tp=(TimePicker)findViewById(R.id.timePicker1);
```

```
		final DatePicker dp=(DatePicker)findViewById(R.id.datePicker1); But-
		ton b=(Button)findViewById(R.id.button1);
		nm=(NotificationManager)getSystemService(Context.NOTIFICATION_SERVICE);
		n=new Notification(R.drawable.ic_launcher,"ALARM",System.currentTimeMillis());

		tp.setIs24HourView(false);
		Calendar now=Calendar.getInstance();
		dp.init(now.get(Calendar.YEAR), now.get(Calendar.MONTH),
now.get(Calendar.DAY_OF_MONTH),null);
		tp.setCurrentHour(now.get(Calendar.HOUR_OF_DAY));
		tp.setCurrentMinute(now.get(Calendar.MINUTE));
		b.setOnClickListener(
				new OnClickListener()
				{
					@Override
					public void onClick(View arg0) {
						// TODO Auto-generated method stub

						Calendar current=Calendar.getInstance();
						Calendar alarm=Calendar.getInstance();
						alarm.set(dp.getYear(), dp.getMonth(),
dp.getDayOfMonth(), tp.getCurrentHour(), tp.getCurrentMinute(), 00);
						if(alarm.compareTo(current)<=0)
							Toast.makeText(getApplicationContext(), "Invalid
Date and Time !!!", Toast.LENGTH_LONG).show();
						else
						{
							Intent i=new
Intent(MainActivity.this,Alarm.class);
							PendingIntent
pi=PendingIntent.getBroadcast(MainActivity.this, 123, i, 0);
							AlarmManager
am=(AlarmManager)getSystemService(ALARM_SERVICE);
							am.set(AlarmManager.RTC_WAKEUP,
alarm.getTimeInMillis(),  pi);
							Toast.makeText(getApplicationContext(), "Alarm is
Set ON !!!", Toast.LENGTH_LONG).show();
						}
					}
				});
	}
	@SuppressWarnings("deprecation")
	public void update_notification(String no, String msg) {
		// TODO Auto-generated method stub
		n.setLatestEventInfo(getBaseContext(), no, msg, null);
		nm.notify(1337, n);
	}
}
```

Alarm.java:

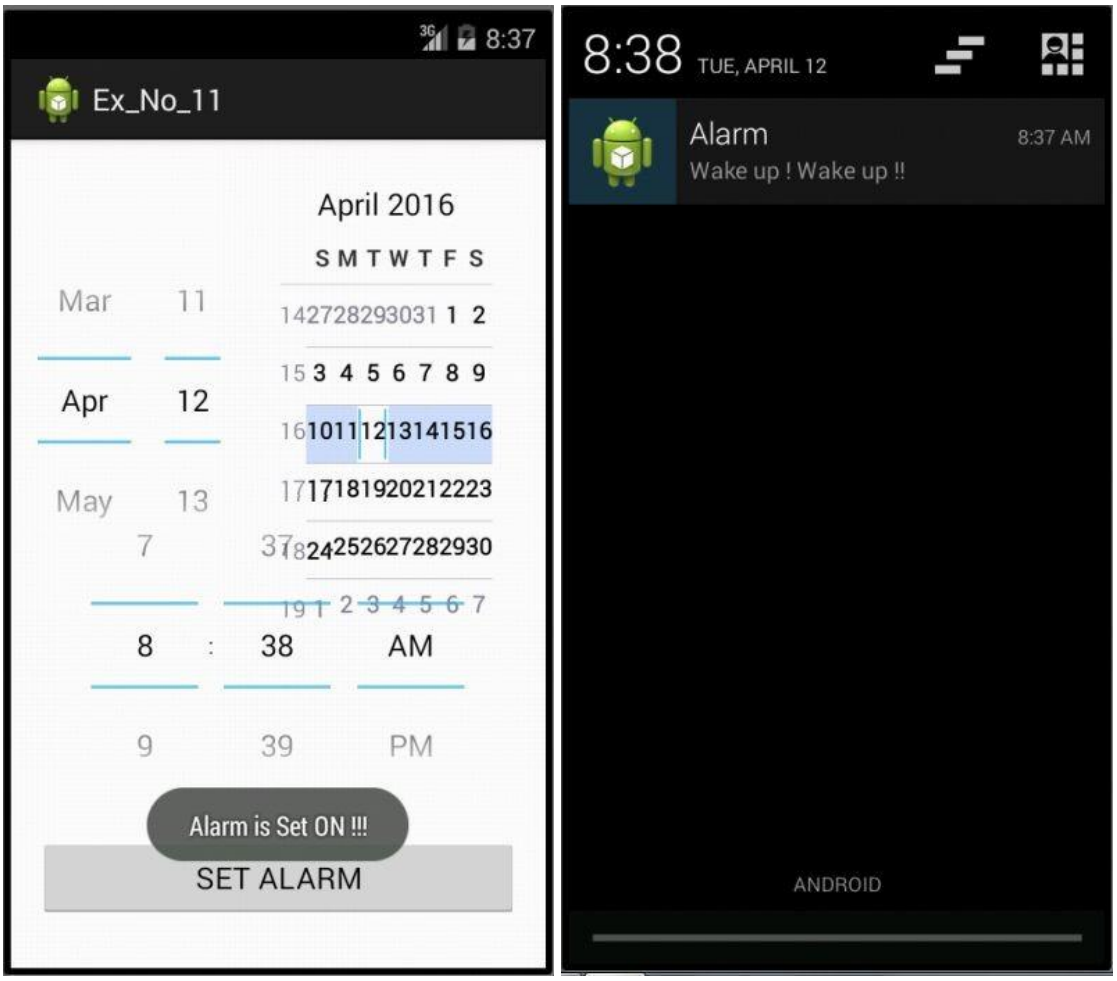
```
package com.example.ex_no_11;
import android.content.BroadcastReceiver;
import android.content.Context;
import android.content.Intent;
public class Alarm extends BroadcastReceiver{
```

```
	@Override
	public void onReceive(Context arg0, Intent arg1) {
		// TODO Auto-generated method stub MainAc-
		tivity inst=MainActivity.instance();
		inst.update_notification("Alarm","Wake up ! Wake up !!");
	}
}
```

AndroidManifest.xml:

```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    package="com.example.ex_no_11"
    android:versionCode="1" an-
    droid:versionName="1.0" >
    <uses-sdk
        android:minSdkVersion="8" an-
        droid:targetSdkVersion="21" />
    <uses-permission android:name="android.permission.WAKE_LOCK"/>
    <application
        android:allowBackup="true" an-
        droid:icon="@drawable/ic_launcher" an-
        droid:label="@string/app_name" an-
        droid:theme="@style/AppTheme" >
        <activity
            android:name=".MainActivity" an-
            droid:label="@string/app_name" >
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />
                <category  android:name="android.intent.category.LAUNCHER"  />
            </intent-filter>
        </activity>
        <receiver android:name=".Alarm" />
    </application>
</manifest>
```

OUTPUT:



RESULT:

Thus the application that creates an alert upon receiving a message has been developed and the output was verified.

Ex.No: 12 Date :	**Develop an application that makes use of Notification Manager**

Aim:

To develop an Android Application that makes use of Notification Manager.

Procedure:

Creating a New project:

- Open Android Studio and then click on **File -> New -> New project**.
- Then type the Application name as **"exno5"**and click Next.
- Then **select the Minimum SDK** as shown below and click Next.
- 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:

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout
  xmlns:android="http://schemas.android.com/apk/res/android"
  xmlns:app="http://schemas.android.com/apk/res-auto"
  xmlns:tools="http://schemas.android.com/tools" an-
  droid:layout_width="match_parent" an-
  droid:layout_height="match_parent"
  android:orientation="vertical" an-
  droid:gravity="center"
  tools:context=".MainActivity">

  <Button an-
    droid:id="@+id/btnSimpleNotification"
    android:layout_width="wrap_content" an-
    droid:layout_height="wrap_content" an-
    droid:text="Simple Notification" />

  <Button an-
    droid:id="@+id/btnNotificationIcon"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
```

```
    android:text="Notification With Icon" />

  <Button an-
    droid:id="@+id/btnNotificationImage" an-
    droid:layout_width="wrap_content" an-
    droid:layout_height="wrap_content" an-
    droid:text="Notification With Image" />

  <Button an-
    droid:id="@+id/btnNotificationWithGroupConvo" an-
    droid:layout_width="wrap_content" an-
    droid:layout_height="wrap_content" an-
    droid:text="Notification With Group Conversation" />

  <Button an-
    droid:id="@+id/btnNotificationSemantic"
    android:layout_width="wrap_content" an-
    droid:layout_height="wrap_content" an-
    droid:text="Notification Semantic Action"
    />

</LinearLayout>
```

Java Coding for the Android Application:

- Click on **app -> java -> com.example.exno5 -> MainActivity**.
- Then delete the code which is there and type the code as given below.

Code for MainActivity.java:

```
packagecom.example.exno5;

import an-
droid.app.NotificationChannel; import
android.app.NotificationManager; im-
port android.app.PendingIntent; im-
port android.content.Context;
import an-
droid.content.Intent; import
android.net.Uri;
import  androidx.core.app.NotificationCompat; im-
port androidx.appcompat.app.AppCompatActivity;
import androidx.core.app.Person;
import androidx.core.graphics.drawable.IconCompat;
import android.os.Bundle;
import android.view.View;
import an-
droid.widget.Button;
```

```
import an-
droid.widget.Toast; import
java.util.Date;
public class MainActivity extends AppCompatActivity implements View.OnClickListener {

  NotificationManager notificationManag-
  er; NotificationCompat.Builder build-
  er; NotificationChannel channel;


  CharSequence charSequence =


  ""; @Override
  protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState); setCon-
    tentView(R.layout.activity_main);

    Button btnSimpleNotification = findViewBy-
    Id(R.id.btnSimpleNotification); Button btnNotificationIcon =
    findViewById(R.id.btnNotificationIcon); Button btnNotificationImage
    = findViewById(R.id.btnNotificationImage);
    Button btnNotificationWithGroupConvo = findViewBy-
    Id(R.id.btnNotificationWithGroupConvo); Button btnNotificationSemantic = findViewBy-
    Id(R.id.btnNotificationSemantic);

    charSequence = btnNotificationIcon.getText();

    btnSimpleNotification.setOnClickListener(this); btnNotificationI-
    con.setOnClickListener(this); btnNotificationIm-
    age.setOnClickListener(this); btnNotificationWithGroupCon-
    vo.setOnClickListener(this); btnNotificationSeman-
    tic.setOnClickListener(this);

    notificationManager = (NotificationManager) getSystemService(Context.NOTIFICATION_SERVICE);
    CharSequence name = "My Notification";
    String description = "yadda yadda";
    int importance = NotificationManager.IMPORTANCE_DEFAULT;

    channel = new NotificationChannel("1", name, importance); chan-
    nel.setDescription(description);

    builder = new NotificationCompat.Builder(MainActivity.this, channel.getId())
           .setSmallIcon(R.mipmap.ic_launcher); notificationManag-

    er.createNotificationChannel(channel);
```

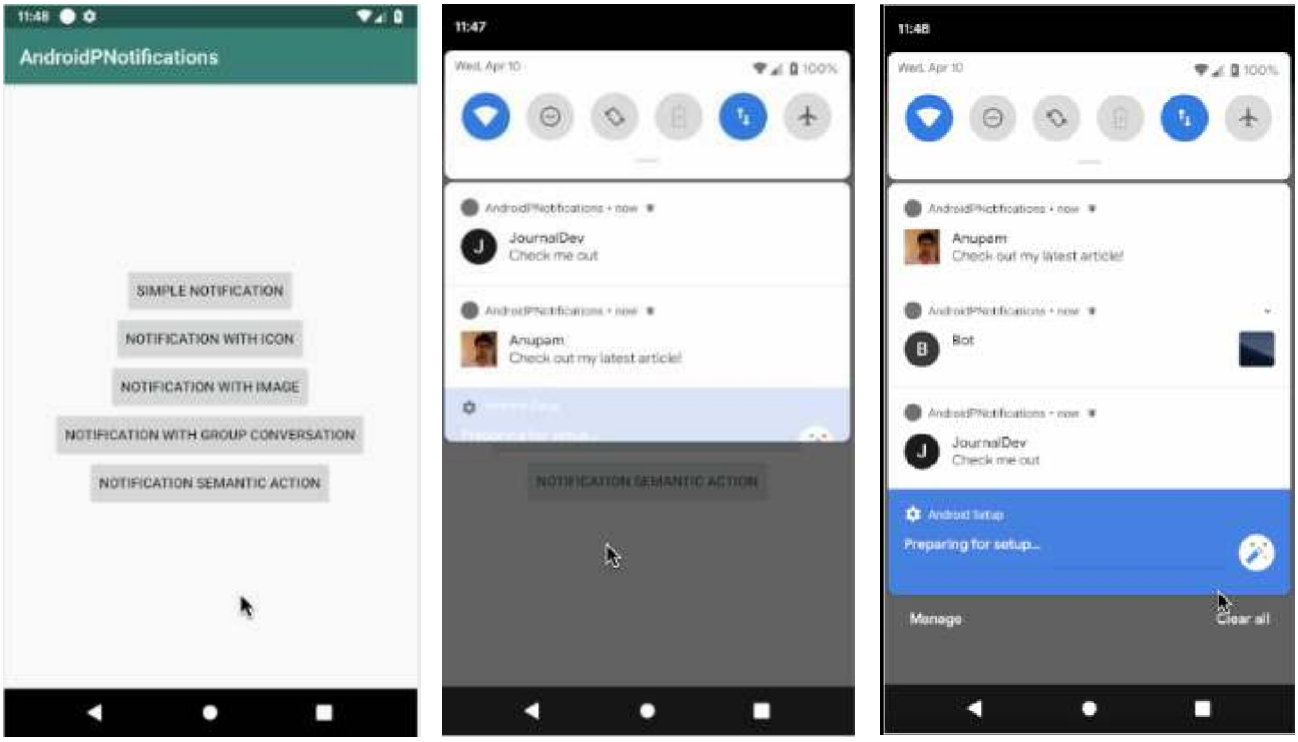
```
}

@Override
public void onClick(View v) {

  switch (v.getId()) {
    case
      R.id.btnSimpleNotification:
      simpleNotification();
      break;
    case
      R.id.btnNotificationIcon:
      notificationWithIcon();
      break;
    case
      R.id.btnNotificationImage:
      notificationWithImage();
      break;

    case
      R.id.btnNotificationWithGroupConvo:
      notificationWithGroupConvo();
      break;

    case R.id.btnNotificationSemantic:
      notificationSemantic();
      break;
  }
}
private void simpleNotification() {
  Person jd = new Person.Builder().setName("JournalDev ") .setImportant(true) .build();

  new NotificationCompat.MessagingStyle(jd)
      .addMessage("Check me out", new Date().getTime(), jd) .setBuilder(builder);

  notificationManager.notify(1, builder.build());
}
private void notificationWithIcon()
  { Person anupam = new Per-
  son.Builder()
      .setName("Anupam")
      .setIcon(IconCompat.createWithResource(this, R.drawable.index))
      .setImportant(true) .build();
  new NotificationCompat.MessagingStyle(anupam)
      .addMessage("Check out my latest article!", new Date().getTime(), anupam)
      .setBuilder(builder);
```

```
  notificationManager.notify(2, builder.build());
}
private void notification-
  WithImage() { Person bot = new
  Person.Builder()
      .setName("Bot") .setImportant(true)
      .setBot(true) .build();

  Uri uri =
  Uri.parse("android.resource://com.journaldev.androidpnotifications/drawable/"+R.drawable.bg);

  NotificationCompat.MessagingStyle.Message message = new
  NotificationCompat.MessagingStyle.Message("Check out my latest article!", new
  Date().getTime(), bot); message.setData("image/*",uri);

  new NotificationCompat.MessagingStyle(bot)
      .addMessage(message) .setGroupConversation(true).setBuilder(builder);

  notificationManager.notify(3, builder.build());
}
private void notificationWithGroupConvo()
{
  Person jd = new Person.Builder()
      .setName("JournalDev") .build();

  Person anupam = new Person.Builder()
      .setName("Anupam")
      .setIcon(IconCompat.createWithResource(this, R.drawable.samindexple_photo))
      .setImportant(true).build();

  Person bot = new Person.Builder()
      .setName("Bot").setBot(true) .build();

  Uri uri =
  Uri.parse("android.resource://com.journaldev.androidpnotifications/drawable/"+R.drawable.bg);

  NotificationCompat.MessagingStyle.Message message = new
  NotificationCompat.MessagingStyle.Message("", new Date().getTime(), bot); mes-
  sage.setData("image/*",uri);
  new NotificationCompat.MessagingStyle(bot)
      .addMessage("Hi. How are you?", new Date().getTime(), anupam)
      .addMessage(message)
      .addMessage("Does this image look good?", new Date().getTime(), bot)
      .addMessage("Looks good!", new Date().getTime(), jd)
      .setGroupConversation(true)
```

```
      .setConversationTitle("Sample Conversation")
      .setBuilder(builder); notification-

  Manager.notify(4, builder.build());

}
private void notificationSemantic()
{
 Person jd = new Person.Builder()
      .setName("JournalDev")
     .build();

  Person anupam = new Person.Builder()
      .setName("Anupam")
      .setIcon(IconCompat.createWithResource(this, R.drawable.index))
      .setImportant(true)
      .build();

  Person bot = new Person.Builder()
      .setName("Bot")
      .setBot(true)
      .build();


  Uri uri =


  Uri.parse("android.resource://com.journaldev.androidpnotifications/drawable/"+R.drawable.bg);


  Intent intent = new Intent(this, MainActivity.class);
  intent.putExtra("hi","Notifications were read");
  PendingIntent pendingIntent = PendingIntent.getActivity(this, 0, intent, 0);

 NotificationCompat.MessagingStyle.Message              message               =              new
 NotificationCompat.MessagingStyle.Message("", new Date().getTime(), bot); mes-
 sage.setData("image/*",uri);

  NotificationCompat.Action replyAction =
      new NotificationCom-
      pat.Action.Builder(
          R.drawable.bg, "MARK READ", pendingIntent)
          .setSemanticAction(NotificationCompat.Action.SEMANTIC_ACTION_MARK_AS_READ)
          .build();
  NotificationCompat.Builder separateBuilder =
  builder; separateBuilder.addAction(replyAction);

  new NotificationCompat.MessagingStyle(bot)
```

```
        .addMessage("Hi. How are you?", new Date().getTime(), anupam)
        .addMessage(message)
        .addMessage("Does this image look good?", new Date().getTime(), bot)
        .addMessage("Looks good!", new Date().getTime(), jd)
        .setGroupConversation(true)
        .setConversationTitle("Sample Conversation")
        .setBuilder(separateBuilder);

    notificationManager.notify(5, separateBuilder.build());
  }
  @Override
  protected void onResume()
    { super.onResume();

    if(getIntent()!=null && getIntent().getExtras()!=null)
    {
      String value = getIntent().getStringExtra("hi");
      Toast.makeText(getApplicationContext(),value,Toast.LENGTH_LONG).show();
    }
  }
}
```

Output:



Result:

Thus Android Application that makes use of notification manager is developed and executedsuccess-fully.

Ex.No: 13 Date :	**Develop a mobile application to send an email.**

Aim:

To develop an Android Application to send an Email.

Procedure:

Creating a New project:

- Open Android Studio and then click on **File -> New -> New project**.
- Then type the Application name as **"exno11"** and click Next.
- Then **select the Minimum SDK** as shown below and click Next.
- 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:

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout
  xmlns:android="http://schemas.android.com/apk/res/android" an-
  droid:layout_width="match_parent" an-
  droid:layout_height="match_parent"
  android:paddingLeft="20dp"
  android:paddingRight="20dp"
  an-
  droid:orientation="vertical"
  >
  <EditText an-
    droid:id="@+id/txtTo"
    android:layout_width="match_parent"
    an-
    droid:layout_height="wrap_content"
    android:hint="To"/>
  <EditText an-
    droid:id="@+id/txtSub"
    android:layout_width="match_parent"
    an
    droid:layout_height="wrap_content"
    android:hint="Subject"/>
  <EditText
```

```
  android:id="@+id/txtMsg" an-
  droid:layout_width="match_parent" an-
  droid:layout_height="0dp" an-
  droid:layout_weight="1" an-
  droid:gravity="top" an-
  droid:hint="Message"/>
  <Button an-
    droid:layout_width="100dp"
    android:layout_height="wrap_content"
    android:layout_gravity="right" an-
    droid:text="Send" an-
    droid:id="@+id/btnSend"/>
</LinearLayout>
```

Adding permissions in Manifest for the Android Application:

- Click on **app -> manifests -> AndroidManifest.xml.**
- Now include the INTERNET permissions in the AndroidManifest.xml file as shown below.

Code for AndroidManifest.xml:

```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
  xmlns:tools="http://schemas.android.com/tools" pack-
  age="com.example.exno11" >
  <uses-permission android:name="android.permission.INTERNET" />
  <application an-
    droid:allowBackup="true" an-
    droid:icon="@mipmap/ic_launcher"
    android:label="@string/app_name"
    android:theme="@style/AppTheme"
    tools:ignore="GoogleAppIndexingWarning">

    <activity an-
      droid:name="com.example.exno11.MainActivity"
      android:label="@string/app_name">

      <intent-filter>
        <action android:name="android.intent.action.MAIN" />
        <category android:name="android.intent.category.LAUNCHER" />
```

```
      <action android:name="android.intent.action.SEND"/>
      <category android:name="android.intent.category.DEFAULT"/>
      <data android:mimeType="message/rfc822"/>
     </intent-filter>
   </activity>
 </application>
</manifest>
```

- So now the Permissions are added in the Manifest.

Java Coding for the Android Application:

- Click on **app -> java -> com.example.exno10 -> MainActivity**.
- Then delete the code which is there and type the code as given below.

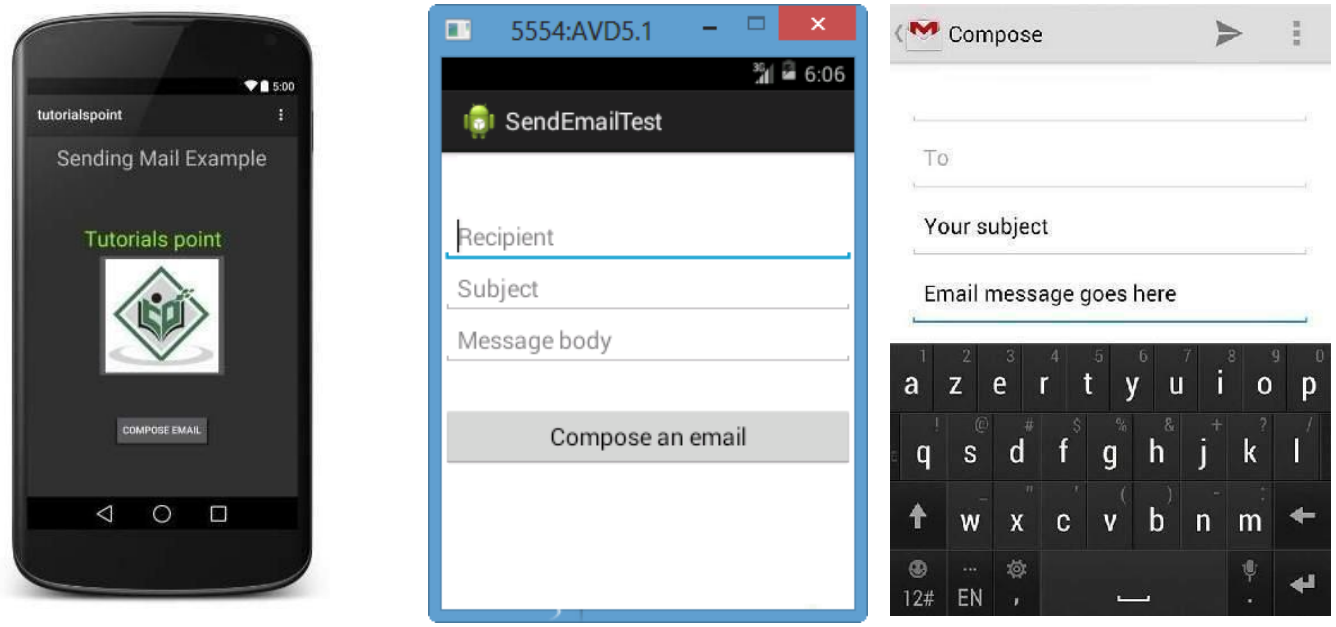
Code for MainActivity.java:

```
package com.example.exno11;

import android.content.Intent;
//import android.support.v7.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View; im-
port android.widget.Button;
import an-
droid.widget.EditText;
import androidx.appcompat.app.AppCompatActivity;
public class MainActivity extends AppCompatActivity
{

  private EditText eTo;
  private EditText eSub-
  ject; private EditText
  eMsg; private Button
  btn; @Override
  protected void onCreate(Bundle savedInstanceS-
    tate) { super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_main);
    eTo = (EditText)findViewById(R.id.txtTo);
    eSubject = (Edit-
    Text)findViewById(R.id.txtSub); eMsg =
    (EditText)findViewById(R.id.txtMsg); btn =
    (Button)findViewById(R.id.btnSend);
    btn.setOnClickListener(new
      View.OnClickListener() { @Override
```

```
    public void onClick(View v) {
      Intent it = new Intent(Intent.ACTION_SEND);
      it.putExtra(Intent.EXTRA_EMAIL, new
      String[]{eTo.getText().toString()});
      it.putExtra(Intent.EXTRA_SUBJECT,eSubject.getText().toString());
      it.putExtra(Intent.EXTRA_TEXT,eMsg.getText());
      it.setType("message/rfc822"); startActivi-
      ty(Intent.createChooser(it,"Choose Mail App"));
    }
  });
 }
}
```

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

Output:



Result:

Thus Android Application for sending an email is developed and executed successfully

Ex.No: 14 Date :	**Develop a Mobile application for simple needs (Mini Project)**

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 **"exno12"**and click Next.
- Then **select the Minimum SDK** as shown below and click Next.
- 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:

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout
  xmlns:android="http://schemas.android.com/apk/res/android
  " android:orientation="vertical" an-
  droid:layout_width="match_parent" an-
  droid:layout_height="match_parent" an-
  droid:layout_margin="20dp">

<LinearLayout an-
    droid:id="@+id/linearLayout1" an-
    droid:layout_width="match_parent" an-
    droid:layout_height="wrap_content" an-
    droid:layout_margin="20dp">

<EditText
      android:id="@+id/editText1" an-
      droid:layout_width="match_parent"
      an-
      droid:layout_height="wrap_content"
```

```
      android:layout_weight="1" an-
      droid:inputType="numberDecimal" an-
      droid:textSize="20sp" />

<EditText
      android:id="@+id/editText2" an-
      droid:layout_width="match_parent"
      an-
      droid:layout_height="wrap_content"
      android:layout_weight="1" an-
      droid:inputType="numberDecimal" an-
      droid:textSize="20sp" />

</LinearLayout>

<LinearLayout an-
    droid:id="@+id/linearLayout2" an-
    droid:layout_width="match_parent" an-
    droid:layout_height="wrap_content" an-
    droid:layout_margin="20dp">

<Button
      android:id="@+id/Add" an-
      droid:layout_width="match_parent"
      an-
      droid:layout_height="wrap_content"
      android:layout_weight="1" an-
      droid:text="+" an-
      droid:textSize="30sp"/>

<Button
      android:id="@+id/Sub" an-
      droid:layout_width="match_parent"
      an-
      droid:layout_height="wrap_content"
      android:layout_weight="1" an-
      droid:text="-" an-
      droid:textSize="30sp"/>

<Button
      android:id="@+id/Mul" an-
      droid:layout_width="match_parent"
```

```
     an-
     droid:layout_height="wrap_content"
     android:layout_weight="1" an-
     droid:text="*" an-
     droid:textSize="30sp"/>

<Button
     android:id="@+id/Div" an-
     droid:layout_width="match_parent"
     an-
     droid:layout_height="wrap_content"
     android:layout_weight="1" an-
     droid:text="/" an-
     droid:textSize="30sp"/>
</LinearLayout>

<TextView
   android:id="@+id/textView" an-
   droid:layout_width="match_parent" an-
   droid:layout_height="wrap_content" an-
   droid:layout_marginTop="50dp" an-
   droid:text="Answer is" an-
   droid:textSize="30sp" an-
   droid:gravity="center"/>
</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.exno12 -> MainActivity**.
- Then delete the code which is there and type the code as given below.

Code for MainActivi-
ty.java: pack-
agecom.example.exno12;
import an-
droid.os.Bundle;

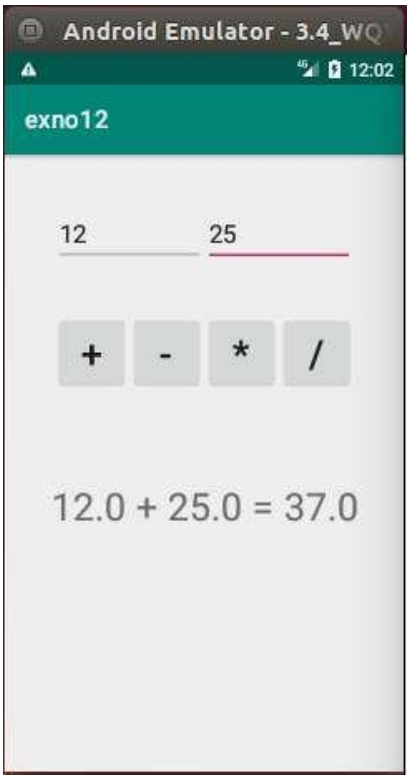
```
//import android.support.v7.app.AppCompatActivity;
import android.text.TextUtils;
import android.view.View;
import android.view.View.OnClickListener;
import android.widget.Button;
import android.widget.EditText;
```

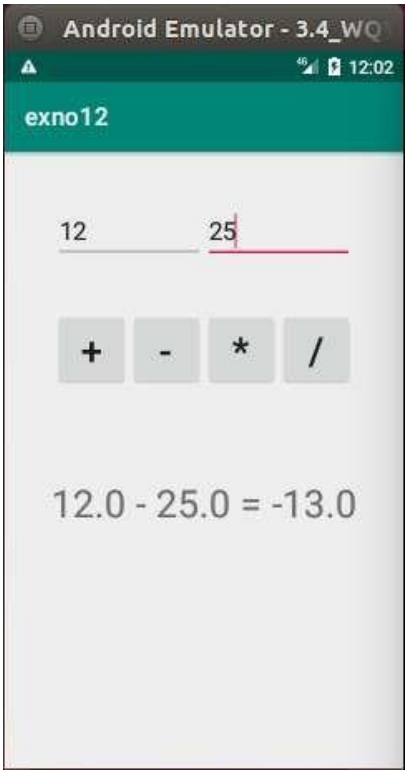
```
import an-
droid.widget.TextView;
import androidx.appcompat.app.AppCompatActivity;
public class MainActivity extends AppCompatActivity implements OnClickListener
{
  //Defining the
  Views EditText
  Num1; EditText
  Num2; Button Add;
  Button Sub;
  Button Mul;
  Button Div;
  TextView Re-
  sult;

  @Override
  public void onCreate(Bundle savedInstanceState)
  {
    super.onCreate(savedInstanceState); setCon-
    tentView(R.layout.activity_main);

    //Referring the Views
    Num1      =      (EditText)      findViewBy-
    Id(R.id.editText1);   Num2    =    (EditText)
    findViewById(R.id.editText2); Add = (Button)
    findViewById(R.id.Add);
    Sub    =    (Button)    findViewBy-
    Id(R.id.Sub);   Mul    =    (Button)
    findViewById(R.id.Mul); Div = (But-
    ton) findViewById(R.id.Div);
    Result = (TextView) findViewById(R.id.textView);

    // set a listener
    Add.setOnClickListener(this);
    Sub.setOnClickListener(this);
    Mul.setOnClickListener(this);
    Div.setOnClickListener(this);
  }
  @Override
  public void onClick (View v)
  {
```

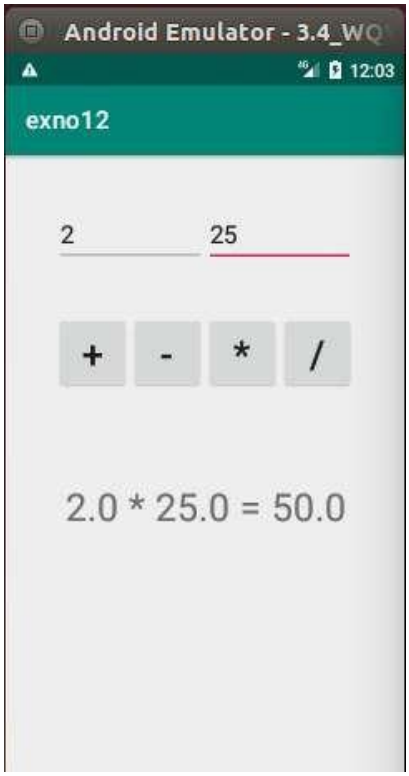
```
    float  num1  =
    0;  float  num2
    = 0; float re-
    sult    =    0;
    String  oper  =
    "";
    // check if the fields are empty
    if            (TextUtils.isEmpty(Num1.getText().toString())            ||            Tex-
        tUtils.isEmpty(Num2.getText().toString())) return;

    // read EditText and fill variables with numbers
    num1 =
    Float.parseFloat(Num1.getText().toString()); num2
    = Float.parseFloat(Num2.getText().toString());

    // defines the button that has been clicked and performs the corresponding operation
    // write operation into oper, we will use it later
    for output switch (v.getId())
    {
     case R.id.Add:
       oper = "+";
        result = num1 +
        num2; break;
     case R.id.Sub:
       oper = "-";
        result = num1 -
        num2; break;
     case R.id.Mul:
       oper = "*";
        result = num1 *
        num2; break;
     case R.id.Div:
       oper = "/";
        result = num1 /
        num2; break;
      de-
        fault
        :
        break
        ;
    }
    // form the output line
    Result.setText(num1 + " " + oper + " " + num2 + " = " + result);
  }
}
```

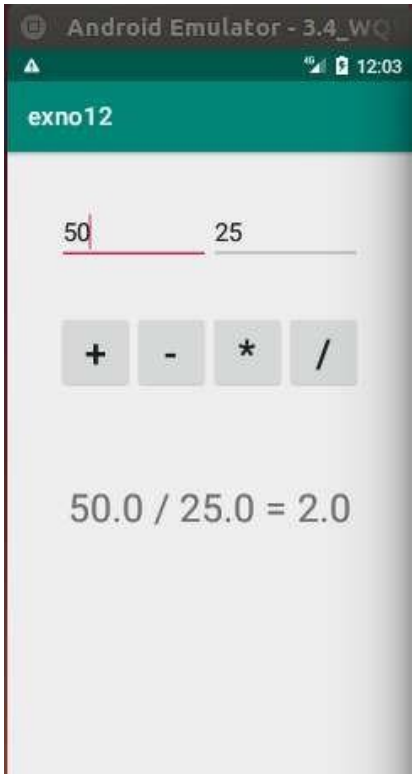
- So now the Coding part is also completed.
- Now run the application to see the output.

Output:









Result:

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