BCA

VI SEMESTER

MOBILE APPLICATION DEVELOPMENT LAB

Total Teaching Hours: 20 **Hours/Week: 4**

Max Marks: 40 **Credits: 4**

1. Develop an application that uses GUI components, Font and Colors
2. Develop an application that uses Layout Managers and event listeners.
3. Develop a native calculator application.
4. Write an application that draws basic graphical primitives on the screen.
5. Develop an application that makes use of database.

1. Develop an application that uses GUI components, Font and Colors.

Algorithm:

1. Create a New Android Project
    a. Click New in the toolbar.
    b. In the window that appears, open the Android folder, select Android Application Project, and click next.
    c. Provide the application name and the project name and then finally give the desired package name.
    d. Choose a launcher icon for your application and then select Blank Activity and then click Next
    e. Provide the desired Activity name for your project and then click Finish.
2. Create a New AVD (Android Virtual Device):
    a. Click Android Virtual Device Manager from the toolbar.
    b. In the Android Virtual Device Manager panel, click New.
    c. Fill in the details for the AVD. Give it a name, a platform target, an SD card size, and a skin (HVGA is default).
    d. Click Create AVD and Select the new AVD from the Android Virtual Device Manager and click Start
3. Design the graphical layout with a text view and two command buttons.
4. Run the application.
5. On pressing the change color button, color of the text gets changed.
6. On pressing the change font size button, the size of the font gets altered.
7. Close the Android project.

MainActivity.java

```
package com.example.mobileapplicationbca;
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.app.Activity;
import android.graphics.Typeface;
import android.graphics.Color;
import android.view.View;
import android.widget.Button;
import android.widget.TextView;

public class MainActivity extends AppCompatActivity {
    float font = 24;
    int i = 1;
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
       final TextView t1 = (TextView)findViewById(R.id.textView1);
        Button b1 = (Button)findViewById(R.id.button1);
        b1.setOnClickListener(new View.OnClickListener(){
            public void onClick(View view) {
                t1.setTextSize(font);
                font = font+4;
                if(font==40)
                    font = 20;
            }});
        Button b2 = (Button)findViewById(R.id.button2);
```

```
        b2.setOnClickListener(new View.OnClickListener(){
            public void onClick(View view) {
                switch(i)
                {
                    case 1:
                        t1.setTextColor(Color.parseColor("#0000FF"));
                        break;
                    case 2:
                        t1.setTextColor(Color.parseColor("#00FF00"));
                        break;
                    case 3:
                        t1.setTextColor(Color.parseColor("#FF0000"));
                        break;
                    case 4:
                        t1.setTextColor(Color.parseColor("#800000"));
                        break;
                }
                i++;
                if(i==5)
                    i = 1;
            }
        });
    }
}
```

acitivity_main.xml:

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout
xmlns:android="http://schemas.android.com/apk/res/android"
   android:layout_width="match_parent"
   android:layout_height="match_parent"
   android:orientation="vertical">
   <TextView
      android:id="@+id/textView1"
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
      android:layout_margin="20sp"
      android:gravity="center"
      android:text="@string/welcome"
      android:textSize="20sp"
      android:textStyle="bold" />
   <Button
      android:id="@+id/button1"
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
      android:layout_margin="20sp"
      android:gravity="center"
      android:text="@string/change_font_size"
      android:backgroundTint="#3F51B5"/>
      <Button
      android:id="@+id/button2"
      android:layout_width="match_parent"
```

```
        android:layout_height="wrap_content"
        android:gravity="center"
        android:layout_margin="20sp"
        android:text="@string/change_color"
        android:backgroundTint="#3F51B5"/>
</LinearLayout>
```

Output:

2.Develop an application that uses Layout Managers and event Listeners.

Alogorithm:

1. Create a New Android Project:
    a. Click New in the toolbar.
    b. In the window that appears, open the Android folder, select Android Application Project, and click next.
    c. Provide the application name and the project name and then finally give the desired package name.
    d. Choose a launcher icon for your application and then select Blank Activity and then click Next
    e. Provide the desired Activity name for your project and then click Finish
2. Create a New AVD (Android Virtual Device):
    a. click Android Virtual Device Manager from the toolbar.
    b. In the Android Virtual Device Manager panel, click New.
    c. Fill in the details for the AVD. Give it a name, a platform target, an SD card size, and a skin (HVGA is default).
    d. Click Create AVD and Select the new AVD from the Android Virtual Device Manager and click Start.
3. Design the graphical layout with buttons, edit text and text view.
4. Run the application.
5. Provide the required inputs to perform the desired arithmetic operation.
6. Display the result.
7. Close the Android project.

MainActivity.java:

```
package com.example.pgm2;

import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.app.Activity;
import android.view.View;
import android.view.View.OnClickListener;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;


public class MainActivity extends AppCompatActivity {
   EditText txtData1,txtData2;
   float num1,num2,result1,result2;

   @Override
   protected void onCreate(Bundle savedInstanceState) {
      super.onCreate(savedInstanceState);
      setContentView(R.layout.activity_main);

      Button add = (Button)findViewById(R.id.button1);
      add.setOnClickListener(new OnClickListener(){
         public void onClick(View v){
            try
            {
               txtData1 = (EditText)findViewById(R.id.editText1);
               txtData2 = (EditText)findViewById(R.id.editText2);
               num1 = Float.parseFloat(txtData1.getText().toString());
               num2 = Float.parseFloat(txtData2.getText().toString());
               result1 = num1+num2;

Toast.makeText(getBaseContext(),"ANSWER:"+result1,Toast.LENGTH_SHO
RT).show();
            }
            catch(Exception e)
            {
```

```
Toast.makeText(getBaseContext(),e.getMessage(),Toast.LENGTH_SHORT).sh
ow();
            }
        }
    });
    Button sub = (Button)findViewById(R.id.button3);
    sub.setOnClickListener(new OnClickListener(){
        public void onClick(View v)
        {
            try
            {
                txtData1 = (EditText)findViewById(R.id.editText1);
                txtData2 = (EditText)findViewById(R.id.editText2);
                num1 = Float.parseFloat(txtData1.getText().toString());
                num2 = Float.parseFloat(txtData2.getText().toString());
                result2 = num1-num2;
Toast.makeText(getBaseContext(),"ANSWER:"+result2,Toast.LENGTH_SHO
RT).show();
            }
            catch(Exception e)
            {

Toast.makeText(getBaseContext(),e.getMessage(),Toast.LENGTH_SHORT).sh
ow();
            }
        }
    });
    Button clear = (Button)findViewById(R.id.button2);
    clear.setOnClickListener(new OnClickListener() {
        public void onClick(View v)
        {
            try
            {
                txtData1.setText("");
                txtData2.setText("");
            }
            catch(Exception e)
            {

Toast.makeText(getBaseContext(),e.getMessage(),Toast.LENGTH_SHORT).sh
```

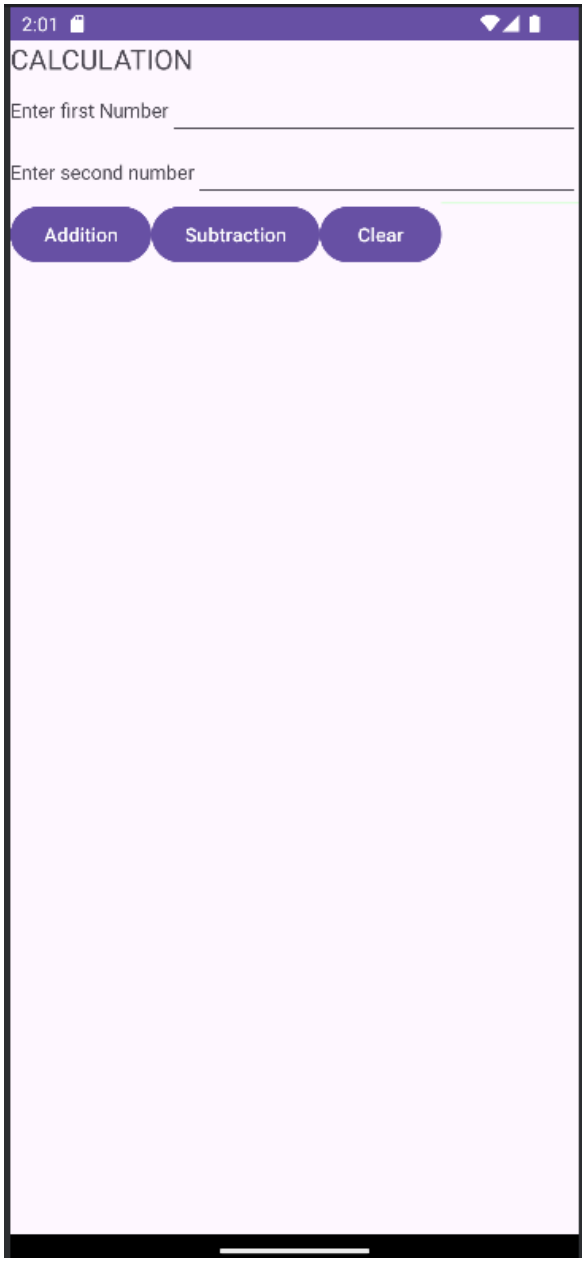
```
ow();
            }
          }
       });

   }
}
```

acitivity_main.xml:

```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout 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"
   android:layout_width="fill_parent"
   android:layout_height="fill_parent"
   tools:context=".MainActivity"
   android:id="@+id/relativeLayout1">

  <LinearLayout
     android:layout_width="wrap_content"
     android:layout_height="wrap_content"
     android:id="@+id/linearLayout1"
     android:layout_alignParentStart="true"
     android:layout_alignParentEnd="true"
     android:layout_alignParentTop="true"
     android:orientation="horizontal">

     <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="@string/calculation"
        android:layout_gravity="center"
        android:textSize="20sp">
     </TextView>

  </LinearLayout>

   <LinearLayout
      android:id="@+id/linearLayout2"
      android:layout_width="wrap_content"
```

```
        android:layout_height="wrap_content"
        android:layout_alignParentStart="true"
        android:layout_alignParentEnd="true"
        android:layout_below="@+id/linearLayout1">
        <TextView
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="@string/enter_first_number" />
        <EditText
            android:id="@+id/editText1"
            android:layout_width="0dp"
            android:layout_height="wrap_content"
            android:layout_weight="0.20"
            android:inputType="number">
        </EditText>
    </LinearLayout>


    <LinearLayout
        android:id="@+id/linearLayout3"
        android:layout_width="wrap_content"
android:layout_height="wrap_content"
        android:layout_alignParentStart="true"
        android:layout_alignParentEnd="true"
        android:layout_below="@+id/linearLayout2">
        <TextView
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="@string/enter_no_2" />
        <EditText
            android:id="@+id/editText2"
            android:layout_width="0dp"
            android:layout_height="wrap_content"
            android:layout_weight="0.20"
            android:inputType="number">
        </EditText>
    </LinearLayout>
    <LinearLayout
        android:id="@+id/linearLayout4"
        android:layout_width="fill_parent"
```

```
        android:layout_height="wrap_content"
        android:layout_alignParentStart="true"
        android:layout_alignParentEnd="true"
        android:layout_below="@+id/linearLayout3"
        android:orientation="horizontal">
        <Button
            android:id="@+id/button1"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_gravity="center"
            android:text="Addition"
            />
        <Button
            android:id="@+id/button3"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_gravity="center"
            android:text="@string/subtraction" />
        <Button
            android:id="@+id/button2"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_gravity="center"
            android:text="@string/clear" />
        <View
            android:id="@+id/linearLayout5"
            android:layout_width="fill_parent"
            android:layout_height="2dp"
            android:background="#DDFFDD" />
    </LinearLayout>
</RelativeLayout>
```


2:01
CALCULATION
Enter first Number
Enter second number
Addition
Subtraction
Clear

3. Develop a native calculator application

AIM: To develop a calculator android application.

ALGORITHM:

1. Create a New Android Project:
    - Click New in the toolbar.
    - In the window that appears, open the Android folder, select Android Application Project, and click next.
    - Provide the application name and the project name and then finally give the desired package name.
    - Choose a launcher icon for your application and then select Blank Activity and then click Next
    - Provide the desired Activity name for your project and then click Finish.
2. Create a New AVD (Android Virtual Device):
    - click Android Virtual Device Manager from the toolbar.
    - In the Android Virtual Device Manager panel, click New.
    - Fill in the details for the AVD. Give it a name, a platform target, an SD card size, and a skin (HVGA is default).
    - Click Create AVD and Select the new AVD from the Android Virtual Device Manager and click Start.
3. Run the application.
4. Provide any two input numbers.
5. Choose any arithmetic operations of your choice and the output gets displayed on the display screen of the calculator application.
6. Close the Android project.

Program Code:

MainActivity.java:

```
package com.example.pgm2_nativecalculator;
import androidx.appcompat.app.AppCompatActivity;
import android.annotation.SuppressLint;
import android.os.Bundle;
import android.text.TextUtils;
import android.view.View;
import android.view.View.OnClickListener;
import android.widget.Button;
import android.widget.EditText;
import android.widget.TextView;

public class MainActivity extends AppCompatActivity implements
OnClickListener {
   //Defining the Views
   EditText Num1;
   EditText Num2;
   Button Add;
   Button Sub;
   Button Mul;
   Button Div;
   TextView Result;
   Button clearButton;


   @Override
   protected void onCreate(Bundle savedInstanceState) {
      super.onCreate(savedInstanceState);
      setContentView(R.layout.activity_main);

      //Referring the Views
      Num1 = (EditText) findViewById(R.id.editText1);
      Num2 = (EditText) findViewById(R.id.editText2);
      Add = (Button) findViewById(R.id.Add);
      Sub = (Button) findViewById(R.id.Sub);
      Mul = (Button) findViewById(R.id.Mul);
      Div = (Button) findViewById(R.id.Div);
      Result = (TextView) findViewById(R.id.ResultView);
```

```
        clearButton = findViewById(R.id.clearButton);
        // set a listener
        Add.setOnClickListener(this);
        Sub.setOnClickListener(this);
        Mul.setOnClickListener(this);
        Div.setOnClickListener(this);
        clearButton.setOnClickListener(this);
    }

    @SuppressLint("SetTextI18n")
    public void onClick(View v) {
        float num1 = 0;
        float num2 = 0;
        float result = 0;
        String oper = "";

        // check if the fields are empty
        if (TextUtils.isEmpty(Num1.getText().toString()) ||
TextUtils.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
        int id = v.getId();
        if (id == R.id.Add) {
            oper = "+";
            result = num1 + num2;
        } else if (id == R.id.Sub) {
            oper = "-";
            result = num1 - num2;
        } else if (id == R.id.Mul) {
            oper = "*";
            result = num1 * num2;
        } else if (id == R.id.Div) {
            oper = "/";
```

```
            result = num1 / num2;
        }
        // form the output line
        Result.setText(num1 + " " + oper + " " + num2 + " = " + result);
        //Clear the textfields
        if(id == R.id.clearButton) {
            Num1.setText("");
            Num2.setText("");
            Result.setText("");
        }
    }
}
```

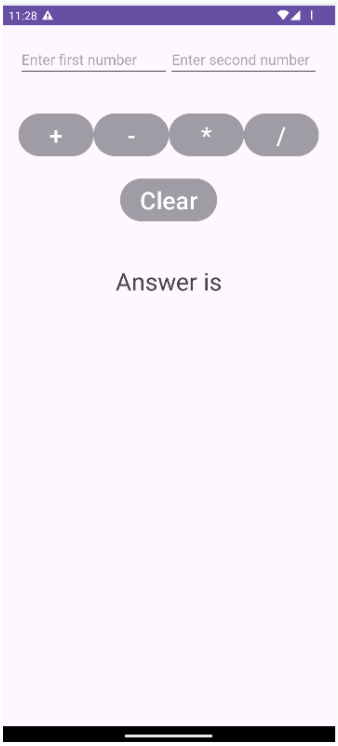
activity_main.xml:

```
<?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"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical"
    tools:context=".MainActivity">

    <LinearLayout
        android:id="@+id/linearLayout1"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_margin="20dp">
        <EditText
            android:id="@+id/editText1"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:layout_weight="1"
            android:inputType="numberDecimal"
            android:hint="Enter first number"
            android:textSize="18sp" />

        <EditText
```

```
        android:id="@+id/editText2"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_weight="1"
        android:inputType="numberDecimal"
        android:hint="Enter second number"
        android:textSize="18sp"/>

</LinearLayout>

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

    <Button
        android:id="@+id/Add"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_weight="1"
        android:text="+"
        android:textSize="30sp"
        android:backgroundTint="#A09CA6"/>

    <Button
        android:id="@+id/Sub"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_weight="1"
        android:text="-"
        android:textSize="30sp"
        android:backgroundTint="#A09CA6"/>

    <Button
        android:id="@+id/Mul"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_weight="1"
        android:text="*"
```

```
            android:textSize="30sp"
            android:backgroundTint="#A09CA6"/>

        <Button
            android:id="@+id/Div"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:layout_weight="1"
            android:text="/"
            android:textSize="30sp"
            android:backgroundTint="#A09CA6"/>
    </LinearLayout>
    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:orientation="vertical"
        android:gravity="center">
        <Button
            android:id="@+id/clearButton"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="Clear"
            android:textSize="30sp"
            android:backgroundTint="#A09CA6"/>
    </LinearLayout>
    <TextView
        android:id="@+id/ResultView"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginTop="50dp"
        android:text="Answer is"
        android:textSize="30sp"
        android:gravity="center"/>
</LinearLayout>
```

Output:


11:28
Enter first number
Enter second number
+
-
*
/
Clear
Answer is


11:29
25
10
+
-
*
/
Clear
25.0 + 10.0 = 35.0

4. Write an application that draws basic graphical primitives on the screen

Program Code:

activity_main.xml:

Mainactivity.java:

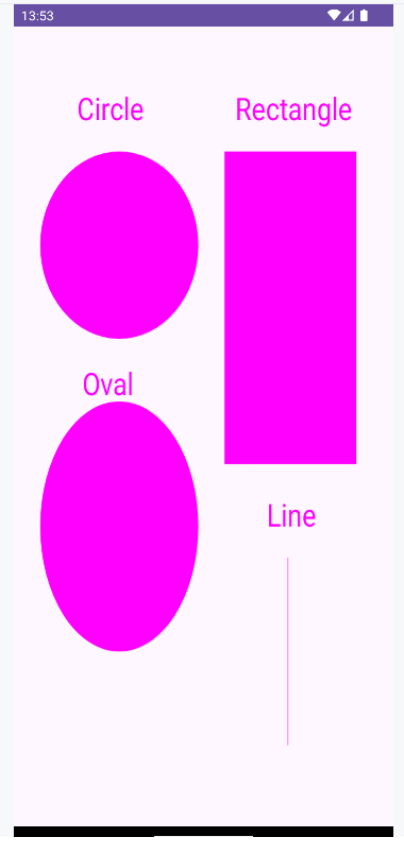
```
package com.example.pgm4;

import android.app.Activity;
import android.graphics.Bitmap;
import android.graphics.Canvas;
import android.graphics.Color;
import android.graphics.Mesh;
import android.graphics.Paint;
import android.graphics.drawable.BitmapDrawable;
import android.os.Bundle;
import android.widget.ImageView;

public class MainActivity extends Activity {
   @Override
   public void onCreate(Bundle savedInstanceState)
   {
      super.onCreate(savedInstanceState);
      setContentView(R.layout.activity_main);

      //Creating a Bitmap
      Bitmap bg = Bitmap.createBitmap(720, 1280,
Bitmap.Config.ARGB_8888);

      //Setting the Bitmap as background for the ImageView
      ImageView i = (ImageView) findViewById(R.id.imageView);
      i.setBackgroundDrawable(new BitmapDrawable(bg));

      //Creating the Canvas Object
      Canvas canvas = new Canvas(bg);

      //Creating the Paint Object and set its color & TextSize
      Paint paint = new Paint();
      paint.setColor(Color.MAGENTA);
      paint.setTextSize(50);
```

```
        Paint paint1 = new Paint();
        paint1.setColor(Color.YELLOW);
        paint1.setTextSize(25);

        //To draw a Rectangle
        canvas.drawText("Rectangle", 420, 150, paint);
        canvas.drawRect(400, 200, 650, 700, paint);

        //To draw a Circle
        canvas.drawText("Circle", 120, 150, paint);
        canvas.drawCircle(200, 350, 150, paint);


        //To draw a Oval
        canvas.drawText("Oval", 130, 590, paint);
        canvas.drawOval(50,600,350,1000,paint);


        //To draw a Line
        canvas.drawText("Line", 480, 800, paint);
        canvas.drawLine(520, 850, 520, 1150, paint);
    }
}
```

activity_main.xml:

```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout 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"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity">

    <ImageView
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:id="@+id/imageView"
```

```
        android:contentDescription="@string/todo" />

</RelativeLayout>
```



5. Develop an application that makes use of database

MainActivity.java:

```
package com.example.pgm5;

import android.app.Activity;
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 Activity implements OnClickListener {
    EditText Rollno,Name,Marks;
    Button Insert,Delete,Update,View,ViewAll,Clear;
    SQLiteDatabase db;
    /** Called when the activity is first created. */
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        Rollno=(EditText)findViewById(R.id.Rollno);
        Name=(EditText)findViewById(R.id.Name);
        Marks=(EditText)findViewById(R.id.Marks);
        Insert=(Button)findViewById(R.id.Insert);
        Delete=(Button)findViewById(R.id.Delete);
        Update=(Button)findViewById(R.id.Update);
        View=(Button)findViewById(R.id.View);
        ViewAll=(Button)findViewById(R.id.ViewAll);
        Clear=(Button)findViewById(R.id.Clear);
        Insert.setOnClickListener(this);
        Delete.setOnClickListener(this);
        Update.setOnClickListener(this);
        View.setOnClickListener(this);
        ViewAll.setOnClickListener(this);
        Clear.setOnClickListener(this);
```

```
        // Creating database and table
        db=openOrCreateDatabase("StudentDB", Context.MODE_PRIVATE,
null);
        db.execSQL("CREATE TABLE IF NOT EXISTS student(rollno
VARCHAR,name VARCHAR,marks VARCHAR);");
    }

    @Override
    public void onClick(View view){
        // Inserting a record to the Student table
        if(view==Insert)
        {
            // Checking for empty fields
            if(Rollno.getText().toString().trim().length()==0||
                    Name.getText().toString().trim().length()==0||
                    Marks.getText().toString().trim().length()==0)
            {
                showMessage("Error", "Please enter all values");
                return;
            }
            db.execSQL("INSERT INTO student
VALUES('"+Rollno.getText()+"','"+Name.getText()+
                    "','"+Marks.getText()+"');");
            showMessage("Success", "Record added");
            clearText();
        }
        // Deleting a record from the Student table
        if(view==Delete)
        {
        // Checking for empty roll number
            if(Rollno.getText().toString().trim().length()==0)
            {
                showMessage("Error", "Please enter Rollno");
                return;
            }
            Cursor c=db.rawQuery("SELECT * FROM student WHERE
rollno='"+Rollno.getText()+"'", null);
            if(c.moveToFirst())
            {
                db.execSQL("DELETE FROM student WHERE
```

```
rollno='"+Rollno.getText()+"'");
            showMessage("Success", "Record Deleted");
          }
          else
          {
            showMessage("Error", "Invalid Rollno");
          }
          clearText();
        }
        // Updating a record in the Student table
        if(view==Update)
        {
        // Checking for empty roll number
          if(Rollno.getText().toString().trim().length()==0)
          {
            showMessage("Error", "Please enter Rollno");
            return;
          }
          Cursor c=db.rawQuery("SELECT * FROM student WHERE
rollno='"+Rollno.getText()+"'", null);
          if(c.moveToFirst()) {
            db.execSQL("UPDATE student SET name='" + Name.getText() +
"',marks='" +
                  Marks.getText() +
                  "' WHERE rollno='"+Rollno.getText()+"'");
            showMessage("Success", "Record Modified");
          }
          else {
            showMessage("Error", "Invalid Rollno");
          }
          clearText();
        }
        // Display a record from the Student table
        if(view==View)
        {
        // Checking for empty roll number
          if(Rollno.getText().toString().trim().length()==0)
          {
            showMessage("Error", "Please enter Rollno");
            return;
```

```
        }
        Cursor c=db.rawQuery("SELECT * FROM student WHERE
rollno='"+Rollno.getText()+"'", null);
        if(c.moveToFirst())
        {
           Name.setText(c.getString(1));
           Marks.setText(c.getString(2));
        }
        else
        {
           showMessage("Error", "Invalid Rollno");
           clearText();
        }
     }
     // Displaying all the records
     if(view==ViewAll)
     {
        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("Rollno: "+c.getString(0)+"\n");
           buffer.append("Name: "+c.getString(1)+"\n");
           buffer.append("Marks: "+c.getString(2)+"\n\n");
        }
        showMessage("Student Details", buffer.toString());
     }
     if(view==Clear) {
        Rollno.setText("");
        Name.setText("");
        Marks.setText("");
        Rollno.requestFocus();

     }
  }
```

```
    public void showMessage(String title,String message) {
        Builder builder = new Builder(this);
        builder.setCancelable(true);
        builder.setTitle(title);
        builder.setMessage(message);
        builder.show();
    }

    public void clearText()
    {
        Rollno.setText("");
        Name.setText("");
        Marks.setText("");
        Rollno.requestFocus();
    }
}
```

activity_main.xml:

```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout 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"
    android:layout_width="wrap_content"
    android:layout_height="match_parent"
    android:orientation="horizontal"
    tools:context=".MainActivity">

    <TextView
        android:id="@+id/title"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_centerHorizontal="true"
        android:layout_marginTop="10dp"
        android:text="@string/student_details"
        android:textColor="#FF5722"
        android:textSize="35sp" />

    <TextView
        android:id="@+id/LabelRno"
        android:layout_width="wrap_content"
```

```
    android:layout_height="wrap_content"
    android:layout_marginStart="20dp"
    android:layout_marginTop="110dp"
    android:text="Enter Rollno:"
    android:textColor="#000000"
    android:textSize="20sp" />

<TextView
    android:id="@+id/LabelName"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_below="@+id/LabelRno"
    android:layout_marginStart="20dp"
    android:layout_marginTop="25dp"
    android:text="Name:"
    android:textColor="#000000"
    android:textSize="20sp" />

<TextView
    android:id="@+id/LabelMarks"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_below="@+id/LabelName"
    android:layout_marginStart="20dp"
    android:layout_marginTop="30dp"
    android:text="Marks:"
    android:textColor="#000000"
    android:textSize="20sp" />

<EditText
    android:id="@+id/Rollno"
    android:layout_width="fill_parent"
    android:layout_height="40dp"
    android:layout_marginTop="100dp"
    android:layout_toRightOf="@+id/LabelRno"
    android:hint="Enter Roll No" />


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

```
        android:layout_width="fill_parent"
        android:layout_height="60dp"
        android:layout_below="@+id/Rollno"
        android:layout_centerVertical="true"
        android:layout_toRightOf="@+id/LabelName"
        android:hint="Name" />

    <EditText
        android:id="@+id/Marks"
        android:layout_width="fill_parent"
        android:layout_height="60dp"
        android:layout_below="@+id/Name"
        android:layout_centerVertical="true"
        android:layout_toRightOf="@+id/LabelMarks"
        android:hint="Marks" />

<LinearLayout
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:orientation="horizontal"
    android:layout_marginTop="270dp"
    android:layout_centerHorizontal="true">

    <Button
        android:id="@+id/Insert"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Insert"
        android:backgroundTint="#3F51B5"
        android:textColor="@color/white"/>

    <Button
        android:id="@+id/Delete"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginLeft="15dp"
        android:text="Delete"
        android:backgroundTint="#3F51B5"
        android:textColor="@color/white"/>
</LinearLayout>
```

```
<LinearLayout
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:orientation="horizontal"
    android:layout_marginTop="320dp"
    android:layout_centerHorizontal="true">
    <Button
    android:id="@+id/Update"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Update"
        android:backgroundTint="#3F51B5"
        android:textColor="@color/white"/>

    <Button
        android:id="@+id/View"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginLeft="15dp"
        android:text="View"
        android:backgroundTint="#3F51B5"
        android:textColor="@color/white"/>
</LinearLayout>

<LinearLayout
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:orientation="horizontal"
    android:layout_marginTop="370dp"
    android:layout_centerHorizontal="true">
<Button
    android:id="@+id/ViewAll"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="ViewAll"
    android:backgroundTint="#3F51B5"
    android:textColor="@color/white"/>

    <Button
        android:id="@+id/Clear"
```

```
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginLeft="15dp"
        android:text="Reset"
        android:backgroundTint="#3F51B5"
        android:textColor="@color/white"/>
    </LinearLayout>
</RelativeLayout>
```