Android Slips

Slip 1:-

Q1. A) Create an application to send and receive messages using SMS Manager.

Main.xml file:-

main.xml file

```xml
<?xml version="1.0" encoding="utf-8"?>

<androidx.constraintlayout.widget.ConstraintLayout
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">


    <EditText

        android:id="@+id/editTextTextMultiLine"

        android:layout_width="wrap_content"

        android:layout_height="wrap_content"

        android:ems="10"

        android:gravity="start|top"

        android:inputType="textMultiLine"

        android:hint="Enter a message"

        app:layout_constraintBottom_toBottomOf="parent"

        app:layout_constraintEnd_toEndOf="parent"

        app:layout_constraintHorizontal_bias="0.497"

        app:layout_constraintStart_toStartOf="parent"

        app:layout_constraintTop_toBottomOf="@+id/editTextPhone"

        app:layout_constraintVertical_bias="0.07" />


    <EditText

        android:id="@+id/editTextPhone"
```

```xml
        android:layout_width="wrap_content"

        android:layout_height="wrap_content"

        android:layout_marginTop="128dp"

        android:ems="10"

        android:inputType="phone"

        android:hint="Enter a number"

        app:layout_constraintEnd_toEndOf="parent"

        app:layout_constraintHorizontal_bias="0.502"

        app:layout_constraintStart_toStartOf="parent"

        app:layout_constraintTop_toTopOf="parent" />


    <Button

        android:id="@+id/btnsms"

        android:layout_width="wrap_content"

        android:layout_height="wrap_content"

        android:text="Message"

        android:drawableLeft="@drawable/ic_baseline_message_24"

        app:layout_constraintBottom_toBottomOf="parent"

        app:layout_constraintEnd_toEndOf="parent"

        app:layout_constraintHorizontal_bias="0.498"

        app:layout_constraintStart_toStartOf="parent"

        app:layout_constraintTop_toBottomOf="@+id/editTextTextMultiLine"

        app:layout_constraintVertical_bias="0.286" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

Manifest.xml

```xml
<uses-permission android:name="android.permission.SEND_SMS"/>
<uses-permission android:name="android.permission.RECEIVE_SMS"/>
```

Main.java file:-

```java
package com.example.smsusingandroid;
```

```java
import androidx.appcompat.app.AppCompatActivity;

import android.content.Intent;
import android.net.Uri;
import android.os.Bundle;
import android.text.TextUtils;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;

public class MainActivity extends AppCompatActivity {
    EditText phone,msg;
    Button message;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

        phone = (EditText) findViewById(R.id.editTextPhone);
        msg = (EditText) findViewById(R.id.editTextTextMultiLine);
        message = (Button) findViewById(R.id.btnsms);

        Button btnmsg = (Button) findViewById(R.id.btnsms);
        final EditText mssget = (EditText) findViewById(R.id.editTextTextMultiLine);
        final EditText phonenoet = (EditText) findViewById(R.id.editTextPhone);

        btnmsg.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
```

```java
        String msgsms = mssget.getText().toString();

        String phoneno = phonenoet.getText().toString();

        if (!TextUtils.isEmpty(msgsms) && !TextUtils.isEmpty(phoneno)){

            Intent smsIntent = new Intent(Intent.ACTION_SENDTO, Uri.parse("smsto:-"+phoneno));

            smsIntent.putExtra("sms_body",msgsms);

            startActivity(smsIntent);

        }

        else

            Toast.makeText(MainActivity.this, "flieds are required", Toast.LENGTH_SHORT).show();

        }

    });

  }

}
```

Q1. B) Create a Simple Application which shows the Life cycle of Activity.

Main.java file:-

package com.example.lifecycle;


import androidx.appcompat.app.AppCompatActivity;

import android.util.Log;

import android.os.Bundle;


public class MainActivity extends AppCompatActivity {


  @Override

  protected void onCreate(Bundle savedInstanceState) {

    super.onCreate(savedInstanceState);

    setContentView(R.layout.activity_main);

    Log.d("lifecycle","onCreate invoked");

  }

```java
@Override

protected void onResume() {

    super.onResume();

    Log.d("lifecycle","onResume invoked");

}

@Override

protected void onPause() {

    super.onPause();

    Log.d("lifecycle","onPause invoked");

}

@Override

protected void onStop() {

    super.onStop();

    Log.d("lifecycle","onStop invoked");

}
```

```java
    @Override

    protected void onRestart() {

        super.onRestart();

        Log.d("lifecycle","onRestart invoked");

    }

    @Override

    protected void onDestroy() {

        super.onDestroy();

        Log.d("lifecycle","onDestroy invoked");

    }

}
```

Slip 2:-

Q1. A) Write a program to search a specific location on Google Map.

main.xml file

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

```xml
    xmlns:tools="http://schemas.android.com/tools"

    android:id="@+id/map"

    android:name="com.google.android.gms.maps.SupportMapFragment"

    android:layout_width="match_parent"

    android:layout_height="match_parent"

    tools:context="com.example.googlemap_activity.MapsActivity" />
```

manifest.xml file

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

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

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

main.java file

```java
package com.example.googlemap_activity;


import android.support.v4.app.FragmentActivity;

import android.os.Bundle;

import com.google.android.gms.maps.CameraUpdateFactory;

import com.google.android.gms.maps.GoogleMap;

import com.google.android.gms.maps.OnMapReadyCallback;

import com.google.android.gms.maps.SupportMapFragment;

import com.google.android.gms.maps.model.LatLng;

import com.google.android.gms.maps.model.MarkerOptions;


public class MapsActivity extends FragmentActivity implements OnMapReadyCallback{


    private GoogleMap mMap;


    @Override
```

```java
protected void onCreate(Bundle savedInstanceState) {

    super.onCreate(savedInstanceState);

    setContentView(R.layout.activity_maps);

    // Obtain the SupportMapFragment and get notified when the map is ready to be used.

    SupportMapFragment mapFragment = (SupportMapFragment) getSupportFragmentManager()

        .findFragmentById(R.id.map);

    mapFragment.getMapAsync(this);


}


@Override
public void onMapReady(GoogleMap googleMap) {

    mMap = googleMap;


    // Add a marker in Sydney and move the camera

    LatLng sydney = new LatLng(-34, 151);

    mMap.addMarker(new MarkerOptions().position(sydney).title("Marker in Sydney"));

    mMap.moveCamera(CameraUpdateFactory.newLatLng(sydney));


}
}
```

Q1. B) Create an Android Application Which reads the person, greet message from one activity and display the Greet message on another activity on click of Button (Use Intent).


main.xml file

```xml
<?xml version="1.0" encoding="utf-8"?>

<androidx.constraintlayout.widget.ConstraintLayout
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"
```

```xml
    android:layout_width="match_parent"

    android:layout_height="match_parent"

    tools:context=".MainActivity">


    <EditText

        android:id="@+id/ettpnName"

        android:layout_width="303dp"

        android:layout_height="47dp"

        android:ems="10"

        android:hint="Name:"

        android:inputType="textPersonName"

        app:layout_constraintBottom_toBottomOf="parent"

        app:layout_constraintEnd_toEndOf="parent"

        app:layout_constraintStart_toStartOf="parent"

        app:layout_constraintTop_toTopOf="parent"

        app:layout_constraintVertical_bias="0.14" />


    <Button

        android:id="@+id/button"

        android:layout_width="wrap_content"

        android:layout_height="wrap_content"

        android:text="Send"

        app:layout_constraintBottom_toBottomOf="parent"

        app:layout_constraintEnd_toEndOf="parent"

        app:layout_constraintHorizontal_bias="0.498"

        app:layout_constraintStart_toStartOf="parent"

        app:layout_constraintTop_toTopOf="parent"

        app:layout_constraintVertical_bias="0.364" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

second.xml file

```xml
<?xml version="1.0" encoding="utf-8"?>

<androidx.constraintlayout.widget.ConstraintLayout
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=".secondactivity">


    <TextView

        android:id="@+id/received_value_id"

        android:layout_width="300dp"

        android:layout_height="50dp"

        android:textSize="40sp"

        android:textStyle="bold"

        app:layout_constraintBottom_toBottomOf="parent"

        app:layout_constraintEnd_toEndOf="parent"

        app:layout_constraintHorizontal_bias="0.495"

        app:layout_constraintStart_toStartOf="parent"

        app:layout_constraintTop_toTopOf="parent"

        app:layout_constraintVertical_bias="0.16"

        tools:ignore="MissingConstraints" />


    <TextView

        android:id="@+id/textView"

        android:layout_width="wrap_content"

        android:layout_height="wrap_content"

        android:text="Good afternoon......."

        android:textSize="20dp"

        app:layout_constraintBottom_toBottomOf="parent"
```

```
            app:layout_constraintEnd_toEndOf="parent"

            app:layout_constraintHorizontal_bias="0.76"

            app:layout_constraintStart_toStartOf="parent"

            app:layout_constraintTop_toTopOf="parent"

            app:layout_constraintVertical_bias="0.225" />


</androidx.constraintlayout.widget.ConstraintLayout>


main.java file


package com.example.slip2q1b;


import androidx.appcompat.app.AppCompatActivity;


import android.annotation.SuppressLint;

import android.content.Intent;

import android.os.Bundle;

import android.view.View;

import android.widget.Button;

import android.widget.EditText;


public class MainActivity extends AppCompatActivity {

    EditText name;

    Button send;

    @SuppressLint("MissingInflatedId")

    @Override

    protected void onCreate(Bundle savedInstanceState) {

        super.onCreate(savedInstanceState);

        setContentView(R.layout.activity_main);


        name = (EditText) findViewById(R.id.ettpnName);
```

```java
        send = (Button) findViewById(R.id.button);


        send.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                String str = name.getText().toString();
                Intent intent = new Intent(getApplicationContext(),secondactivity.class);
                intent.putExtra("message_key", str);
                startActivity(intent);
            }
        });
    }
}
```

second.java file


```java
package com.example.slip2q1b;


import androidx.appcompat.app.AppCompatActivity;


import android.content.Intent;
import android.os.Bundle;
import android.widget.TextView;

public class secondactivity extends AppCompatActivity {

    TextView receiver_msg;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_secondactivity);
```

```java
        receiver_msg = findViewById(R.id.received_value_id);

        // create the get Intent object

        Intent intent = getIntent();

        // receive the value by getStringExtra() method and

        // key must be same which is send by first activity

        String str = intent.getStringExtra("message_key");

        // display the string into textView

        receiver_msg.setText(str);

    }

}
```

Q2. Create a Custom Listview in Android Application

main.xml file

```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">


    <ListView

        android:id="@+id/list"

        android:layout_width="match_parent"

        android:layout_height="wrap_content"

        android:layout_marginBottom="50dp">

    </ListView>
```

</RelativeLayout>

mylist.xml file

```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="horizontal">

    <ImageView
        android:id="@+id/icon"
        android:layout_width="60dp"
        android:layout_height="60dp"
        android:padding="5dp" />

    <LinearLayout
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:orientation="vertical">

        <TextView
            android:id="@+id/title"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="Medium Text"
            android:textStyle="bold"
            android:textAppearance="?android:attr/textAppearanceMedium"
            android:layout_marginLeft="10dp"
            android:layout_marginTop="5dp"
```

```xml
        android:padding="2dp"

        android:textColor="#4d4d4d" />

    <TextView

        android:id="@+id/subtitle"

        android:layout_width="wrap_content"

        android:layout_height="wrap_content"

        android:text="TextView"

        android:layout_marginLeft="10dp"/>

    </LinearLayout>


</LinearLayout>
```

main.java file


```java
package com.example.slip2q2customlistview;


import androidx.appcompat.app.AppCompatActivity;


import android.os.Bundle;

import android.view.View;

import android.widget.AdapterView;

import android.widget.ListView;

import android.widget.Toast;


public class MainActivity extends AppCompatActivity {

    ListView list;


    String[] maintitle ={

        "Title 1","Title 2",

        "Title 3",

    };
```

```java
    String[] subtitle ={

        "Sub Title 1","Sub Title 2",

        "Sub Title 3",

    };


    Integer[] imgid={

        R.drawable.facebook,R.drawable.logo,

        R.drawable.youtube,

    };

    @Override

    protected void onCreate(Bundle savedInstanceState) {

        super.onCreate(savedInstanceState);

        setContentView(R.layout.activity_main);


        MyListAdapter adapter=new MyListAdapter(this, maintitle, subtitle,imgid);

        list=(ListView)findViewById(R.id.list);

        list.setAdapter(adapter);


        list.setOnItemClickListener(new AdapterView.OnItemClickListener() {


            @Override

            public void onItemClick(AdapterView<?> parent, View view,int position, long id) {

                // TODO Auto-generated method stub

                if(position == 0) {

                    //code specific to first list item

                    Toast.makeText(getApplicationContext(),"Place Your First Option
Code",Toast.LENGTH_SHORT).show();

                }
```

```java
        else if(position == 1) {

            //code specific to 2nd list item

            Toast.makeText(getApplicationContext(),"Place Your Second Option
Code",Toast.LENGTH_SHORT).show();

        }


        else if(position == 2) {


            Toast.makeText(getApplicationContext(),"Place Your Third Option
Code",Toast.LENGTH_SHORT).show();

        }

        else if(position == 3) {


            Toast.makeText(getApplicationContext(),"Place Your Forth Option
Code",Toast.LENGTH_SHORT).show();

        }

        else if(position == 4) {


            Toast.makeText(getApplicationContext(),"Place Your Fifth Option
Code",Toast.LENGTH_SHORT).show();

        }


    }
    });
  }
}
```

mylistadapter.java file

```java
package com.example.slip2q2customlistview;


import  android.app.Activity;
```

```java
import android.view.LayoutInflater;

import android.view.View;

import android.view.ViewGroup;

import android.widget.ArrayAdapter;

import android.widget.ImageView;

import android.widget.TextView;


public class MyListAdapter extends ArrayAdapter<String> {


    private final Activity context;

    private final String[] maintitle;

    private final String[] subtitle;

    private final Integer[] imgid;


    public MyListAdapter(Activity context, String[] maintitle, String[] subtitle, Integer[] imgid) {

        super(context, R.layout.mylist, maintitle);

        // TODO Auto-generated constructor stub


        this.context=context;

        this.maintitle=maintitle;

        this.subtitle=subtitle;

        this.imgid=imgid;


    }


    public View getView(int position,View view,ViewGroup parent) {

        LayoutInflater inflater=context.getLayoutInflater();

        View rowView=inflater.inflate(R.layout.mylist, null,true);


        TextView titleText = (TextView) rowView.findViewById(R.id.title);

        ImageView imageView = (ImageView) rowView.findViewById(R.id.icon);
```

```java
        TextView subtitleText = (TextView) rowView.findViewById(R.id.subtitle);


        titleText.setText(maintitle[position]);

        imageView.setImageResource(imgid[position]);

        subtitleText.setText(subtitle[position]);


        return rowView;


    };
}
```

Slip 3:-

Q1. A) Create an Android Application to accept a number and display the multiplication table.

 (Use table Layout)


main.xml file


```xml
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
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">


    <ToggleButton

        android:id="@+id/toggleButton"

        android:layout_width="wrap_content"

        android:layout_height="wrap_content"

        android:layout_marginLeft="8dp"
```

```xml
        android:layout_marginTop="80dp"

        android:text="ToggleButton"

        android:textOff="Off"

        android:textOn="On"

        app:layout_constraintEnd_toStartOf="@+id/toggleButton2"

        app:layout_constraintStart_toStartOf="parent"

        app:layout_constraintTop_toTopOf="parent" />


    <ToggleButton

        android:id="@+id/toggleButton2"

        android:layout_width="wrap_content"

        android:layout_height="wrap_content"

        android:layout_marginRight="60dp"

        android:layout_marginTop="80dp"

        android:text="ToggleButton"

        android:textOff="Off"

        android:textOn="On"

        app:layout_constraintEnd_toEndOf="parent"

        app:layout_constraintTop_toTopOf="parent" />


    <Button

        android:id="@+id/button"

        android:layout_width="wrap_content"

        android:layout_height="wrap_content"

        android:layout_marginBottom="144dp"

        android:layout_marginLeft="148dp"

        android:text="Submit"

        app:layout_constraintBottom_toBottomOf="parent"

        app:layout_constraintStart_toStartOf="parent" />


</androidx.constraintlayout.widget.ConstraintLayout>
```

main.java file

package com.example.slip3q1a;

```java
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.Toast;
import android.widget.ToggleButton;

public class MainActivity extends AppCompatActivity {
    private ToggleButton toggleButton1, toggleButton2;
    private Button buttonSubmit;

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

        addListenerOnButtonClick();
    }
    public void addListenerOnButtonClick(){
        //Getting the ToggleButton and Button instance from the layout xml file
        toggleButton1=(ToggleButton)findViewById(R.id.toggleButton);
        toggleButton2=(ToggleButton)findViewById(R.id.toggleButton2);
        buttonSubmit=(Button)findViewById(R.id.button);

        //Performing action on button click
        buttonSubmit.setOnClickListener(new View.OnClickListener(){
```

```java
        @Override

        public void onClick(View view) {

            StringBuilder result = new StringBuilder();

            result.append("ToggleButton1 : ").append(toggleButton1.getText());

            result.append("\nToggleButton2 : ").append(toggleButton2.getText());

            //Displaying the message in toast

            Toast.makeText(getApplicationContext(), result.toString(),Toast.LENGTH_LONG).show();

        }


    });


    }
}
```

Q1. B) Create an Android Application that Demonstrate Switch and Toggle Button.


main.xml file


```xml
<?xml version="1.0" encoding="utf-8"?>

<androidx.constraintlayout.widget.ConstraintLayout
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">


    <!-- Add the button for run table logic and print result-->

    <!-- give id "button"-->

    <Button
```

```xml
    android:id="@+id/button"

    android:layout_width="wrap_content"

    android:layout_height="wrap_content"

    android:layout_marginTop="16dp"

    android:text="TABLE"

    app:layout_constraintEnd_toEndOf="parent"

    app:layout_constraintStart_toEndOf="@+id/editText"

    app:layout_constraintTop_toTopOf="parent" />


<!-- Text view for result view-->
<!-- give the id TextView-->
<TextView

    android:id="@+id/textView"

    android:layout_width="0dp"

    android:layout_height="0dp"

    android:layout_marginBottom="18dp"

    android:layout_marginEnd="36dp"

    android:layout_marginLeft="36dp"

    android:layout_marginRight="36dp"

    android:layout_marginStart="36dp"

    android:textColor="@color/black"

    app:layout_constraintBottom_toBottomOf="parent"

    app:layout_constraintEnd_toEndOf="parent"

    app:layout_constraintStart_toStartOf="parent"

    app:layout_constraintTop_toBottomOf="@+id/editText" />


<!-- edit Text for take input from user-->
<!-- give the id editText-->
<EditText

    android:id="@+id/editText"

    android:layout_width="wrap_content"
```

```xml
        android:layout_height="wrap_content"

        android:layout_marginBottom="20dp"

        android:layout_marginEnd="9dp"

        android:layout_marginRight="9dp"

        android:layout_marginTop="16dp"

        android:ems="10"

        android:inputType="number"

        app:layout_constraintBottom_toTopOf="@+id/textView2"

        app:layout_constraintEnd_toStartOf="@+id/button"

        app:layout_constraintHorizontal_chainStyle="packed"

        app:layout_constraintStart_toStartOf="parent"

        app:layout_constraintTop_toTopOf="parent"

        tools:ignore="UnknownId" />


</androidx.constraintlayout.widget.ConstraintLayout>
```

main.java file

```java
package com.example.slip3q1b;


import android.os.Bundle;

import android.view.View;

import android.widget.Button;

import android.widget.EditText;

import android.widget.TextView;

import androidx.appcompat.app.AppCompatActivity;


public class MainActivity extends AppCompatActivity implements View.OnClickListener {


    // define the global variable
```

```java
// variable number1, number2 for input input number
// Add_button, result textView

EditText editText;
Button button;
TextView result;
int ans = 0;

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


    // by ID we can use each component
    // whose id is assigned in the XML file


    editText = (EditText)findViewById(R.id.editText);
    button = (Button)findViewById(R.id.button);
    result = (TextView)findViewById(R.id.textView);


    // set clickListener on button
    button.setOnClickListener(this);
}

@Override
public void onClick(View v)
{

    switch (v.getId()) {

        case R.id.button:
```

```java
            StringBuffer buffer = new StringBuffer();

            int res;


            // get the input number from editText

            String fs = editText.getText().toString();


            // convert it to integer

            int n = Integer.parseInt(fs);


            // build the logic for table

            for (int i = 1; i <= 10; i++) {

                ans = (i * n);

                buffer.append(n + " X " + i + " = " + ans + "\n\n");

            }


            // set the buffer textview

            result.setText(buffer);

            break;

        }

    }

}
```

Q2 Create an Android calculator application of calculator and perform all the operations.


main.xml file


```xml
<?xml version="1.0" encoding="utf-8"?>

<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"

    xmlns:app="http://schemas.android.com/apk/res-auto"
```

```xml
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity">

    <Button
        android:id="@+id/btnequal"
        android:layout_width="354dp"
        android:layout_height="41dp"
        android:text="="
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.479"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.843" />

    <Button
        android:id="@+id/btnadd"
        android:layout_width="65dp"
        android:layout_height="42dp"
        android:text="+"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.927"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.264" />

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

```
        android:layout_width="65dp"

        android:layout_height="42dp"

        android:text="C"

        app:layout_constraintBottom_toBottomOf="parent"

        app:layout_constraintEnd_toEndOf="parent"

        app:layout_constraintHorizontal_bias="0.554"

        app:layout_constraintStart_toStartOf="parent"

        app:layout_constraintTop_toTopOf="parent"

        app:layout_constraintVertical_bias="0.703" />


    <Button

        android:id="@+id/btndot"

        android:layout_width="65dp"

        android:layout_height="42dp"

        android:text="."

        app:layout_constraintBottom_toBottomOf="parent"

        app:layout_constraintEnd_toEndOf="parent"

        app:layout_constraintHorizontal_bias="0.3"

        app:layout_constraintStart_toStartOf="parent"

        app:layout_constraintTop_toTopOf="parent"

        app:layout_constraintVertical_bias="0.703" />


    <Button

        android:id="@+id/btn0"

        android:layout_width="65dp"

        android:layout_height="42dp"

        android:text="0"

        app:layout_constraintBottom_toBottomOf="parent"

        app:layout_constraintEnd_toEndOf="parent"

        app:layout_constraintHorizontal_bias="0.046"

        app:layout_constraintStart_toStartOf="parent"
```

```
        app:layout_constraintTop_toTopOf="parent"

        app:layout_constraintVertical_bias="0.703" />


    <Button

        android:id="@+id/btn2"

        android:layout_width="65dp"

        android:layout_height="42dp"

        android:text="2"

        app:layout_constraintBottom_toBottomOf="parent"

        app:layout_constraintEnd_toEndOf="parent"

        app:layout_constraintHorizontal_bias="0.3"

        app:layout_constraintStart_toStartOf="parent"

        app:layout_constraintTop_toTopOf="parent"

        app:layout_constraintVertical_bias="0.552" />


    <Button

        android:id="@+id/btn3"

        android:layout_width="65dp"

        android:layout_height="42dp"

        android:text="3"

        app:layout_constraintBottom_toBottomOf="parent"

        app:layout_constraintEnd_toEndOf="parent"

        app:layout_constraintHorizontal_bias="0.554"

        app:layout_constraintStart_toStartOf="parent"

        app:layout_constraintTop_toTopOf="parent"

        app:layout_constraintVertical_bias="0.552" />


    <Button

        android:id="@+id/btn1"

        android:layout_width="65dp"

        android:layout_height="42dp"
```

```xml
        android:text="1"

        app:layout_constraintBottom_toBottomOf="parent"

        app:layout_constraintEnd_toEndOf="parent"

        app:layout_constraintHorizontal_bias="0.046"

        app:layout_constraintStart_toStartOf="parent"

        app:layout_constraintTop_toTopOf="parent"

        app:layout_constraintVertical_bias="0.552" />


    <Button

        android:id="@+id/btn5"

        android:layout_width="65dp"

        android:layout_height="42dp"

        android:text="5"

        app:layout_constraintBottom_toBottomOf="parent"

        app:layout_constraintEnd_toEndOf="parent"

        app:layout_constraintHorizontal_bias="0.291"

        app:layout_constraintStart_toStartOf="parent"

        app:layout_constraintTop_toTopOf="parent"

        app:layout_constraintVertical_bias="0.415" />


    <Button

        android:id="@+id/btn4"

        android:layout_width="65dp"

        android:layout_height="42dp"

        android:text="4"

        app:layout_constraintBottom_toBottomOf="parent"

        app:layout_constraintEnd_toEndOf="parent"

        app:layout_constraintHorizontal_bias="0.046"

        app:layout_constraintStart_toStartOf="parent"

        app:layout_constraintTop_toTopOf="parent"

        app:layout_constraintVertical_bias="0.415" />
```

```xml
<EditText
    android:id="@+id/cal"
    android:layout_width="360dp"
    android:layout_height="42dp"
    android:ems="10"
    android:hint="Calculater"
    android:inputType="textPersonName"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.497"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.102" />

<Button
    android:id="@+id/btn7"
    android:layout_width="65dp"
    android:layout_height="42dp"
    android:text="7"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.046"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.264" />

<Button
    android:id="@+id/btnsub"
    android:layout_width="65dp"
    android:layout_height="42dp"
```

```xml
        android:text="-"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.927"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.415" />

    <Button
        android:id="@+id/btndiv"
        android:layout_width="65dp"
        android:layout_height="42dp"
        android:text="/"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.927"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.552" />

    <Button
        android:id="@+id/btnmul"
        android:layout_width="65dp"
        android:layout_height="42dp"
        android:text="*"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.927"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.703" />
```

```xml
<Button
    android:id="@+id/btn8"
    android:layout_width="69dp"
    android:layout_height="40dp"
    android:text="8"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.295"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.266" />

<Button
    android:id="@+id/btn9"
    android:layout_width="65dp"
    android:layout_height="37dp"
    android:text="9"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.554"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.265" />

<Button
    android:id="@+id/btn6"
    android:layout_width="65dp"
    android:layout_height="42dp"
    android:text="6"
    app:layout_constraintBottom_toBottomOf="parent"
```

```xml
        app:layout_constraintEnd_toEndOf="parent"

        app:layout_constraintHorizontal_bias="0.554"

        app:layout_constraintStart_toStartOf="parent"

        app:layout_constraintTop_toTopOf="parent"

        app:layout_constraintVertical_bias="0.415" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

main.java file

```java
package com.example.calculator;


import androidx.appcompat.app.AppCompatActivity;


import android.os.Bundle;

import android.view.View;

import android.widget.Button;

import android.widget.EditText;


public class MainActivity extends AppCompatActivity {

    EditText TextViewcal;

    Button button1,button2,button3,button4,button5,button6,button7,button8,button9,button0,

        buttonadd,buttonsub,buttondiv,buttonmul,buttonclear,buttonequal,buttondot;

    Float value1,value2;

    boolean addition,subtraction,division,multiplication;

    @Override

    protected void onCreate(Bundle savedInstanceState) {

        super.onCreate(savedInstanceState);

        setContentView(R.layout.activity_main);


        TextViewcal = (EditText) findViewById(R.id.cal);

        button1 = findViewById(R.id.btn1);
```

```java
button2 = findViewById(R.id.btn2);

button3 = findViewById(R.id.btn3);

button4 = findViewById(R.id.btn4);

button5 = findViewById(R.id.btn5);

button6 = findViewById(R.id.btn6);

button7 = findViewById(R.id.btn7);

button8 = findViewById(R.id.btn8);

button9 = findViewById(R.id.btn9);

button0 = findViewById(R.id.btn0);

buttonadd = findViewById(R.id.btnadd);

buttonsub = findViewById(R.id.btnsub);

buttonmul = findViewById(R.id.btnmul);

buttondiv = findViewById(R.id.btndiv);

buttondot = findViewById(R.id.btndot);

buttonclear = findViewById(R.id.btnclear);

buttonequal = findViewById(R.id.btnequal);


button1.setOnClickListener(new View.OnClickListener() {

    @Override

    public void onClick(View view) {

        TextViewcal.setText(TextViewcal.getText() + "1");

    }

});
button2.setOnClickListener(new View.OnClickListener() {

    @Override

    public void onClick(View view) {

        TextViewcal.setText(TextViewcal.getText() + "2");

    }

});
button3.setOnClickListener(new View.OnClickListener() {

    @Override
```

```java
        public void onClick(View view) {

            TextViewcal.setText(TextViewcal.getText() + "3");

        }

    });

    button4.setOnClickListener(new View.OnClickListener() {

        @Override

        public void onClick(View view) {

            TextViewcal.setText(TextViewcal.getText() + "4");

        }

    });

    button5.setOnClickListener(new View.OnClickListener() {

        @Override

        public void onClick(View view) {

            TextViewcal.setText(TextViewcal.getText() + "5");

        }

    });

    button6.setOnClickListener(new View.OnClickListener() {

        @Override

        public void onClick(View view) {

            TextViewcal.setText(TextViewcal.getText() + "6");

        }

    });

    button7.setOnClickListener(new View.OnClickListener() {

        @Override

        public void onClick(View view) {

            TextViewcal.setText(TextViewcal.getText() + "7");

        }

    });

    button8.setOnClickListener(new View.OnClickListener() {

        @Override

        public void onClick(View view) {
```

```java
        TextViewcal.setText(TextViewcal.getText() + "8");

    }
});button9.setOnClickListener(new View.OnClickListener() {

    @Override

    public void onClick(View view) {

        TextViewcal.setText(TextViewcal.getText() + "9");

    }
});

button0.setOnClickListener(new View.OnClickListener() {

    @Override

    public void onClick(View view) {

        TextViewcal.setText(TextViewcal.getText() + "0");

    }
});


buttonadd.setOnClickListener(new View.OnClickListener() {

    @Override

    public void onClick(View view) {

        value1 = Float.parseFloat(TextViewcal.getText() + "");

        addition = true;

        TextViewcal.setText(null);

    }
});
buttonsub.setOnClickListener(new View.OnClickListener() {

    @Override

    public void onClick(View view) {

        value1 = Float.parseFloat(TextViewcal.getText() + "");

        subtraction = true;

        TextViewcal.setText(null);

    }
});
```

```java
buttonmul.setOnClickListener(new View.OnClickListener() {

    @Override

    public void onClick(View view) {

        value1 = Float.parseFloat(TextViewcal.getText() + "");

        multiplication = true;

        TextViewcal.setText(null);

    }

});

buttondiv.setOnClickListener(new View.OnClickListener() {

    @Override

    public void onClick(View view) {

        value1 = Float.parseFloat(TextViewcal.getText() + "");

        division = true;

        TextViewcal.setText(null);

    }

});


buttonequal.setOnClickListener(new View.OnClickListener() {

    @Override

    public void onClick(View view) {

        value2 = Float.parseFloat(TextViewcal.getText() + "");

        if (addition==true){

            TextViewcal.setText(value1 + value2 + "");

            addition=false;

        }

        if(subtraction==true){

            TextViewcal.setText(value1 - value2 + "");

            subtraction=false;

        }

        if (multiplication==true){

            TextViewcal.setText(value1 * value2 + "");
```

```java
                multiplication=false;

            }

            if (division==true) {

                TextViewcal.setText(value1 / value2 + "");

                division=false;

            }

        }

    });


    buttonclear.setOnClickListener(new View.OnClickListener() {

        @Override

        public void onClick(View view) {

            TextViewcal.setText("");

        }

    });


    buttondot.setOnClickListener(new View.OnClickListener() {

        @Override

        public void onClick(View view) {

            TextViewcal.setText(TextViewcal.getText() + ".");

        }

    });
  }
}
```

Slip 4:-

Q1. A) Create an application to send and receive messages using SMS Manager using Intent.


main.xml file


```xml
<?xml version="1.0" encoding="utf-8"?>
```

```xml
<androidx.constraintlayout.widget.ConstraintLayout
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">


    <EditText

        android:id="@+id/editTextTextMultiLine"

        android:layout_width="wrap_content"

        android:layout_height="wrap_content"

        android:ems="10"

        android:gravity="start|top"

        android:inputType="textMultiLine"

        android:hint="Enter a message"

        app:layout_constraintBottom_toBottomOf="parent"

        app:layout_constraintEnd_toEndOf="parent"

        app:layout_constraintHorizontal_bias="0.497"

        app:layout_constraintStart_toStartOf="parent"

        app:layout_constraintTop_toBottomOf="@+id/editTextPhone"

        app:layout_constraintVertical_bias="0.07" />


    <EditText

        android:id="@+id/editTextPhone"

        android:layout_width="wrap_content"

        android:layout_height="wrap_content"

        android:layout_marginTop="128dp"

        android:ems="10"

        android:inputType="phone"

        android:hint="Enter a number"
```

```xml
        app:layout_constraintEnd_toEndOf="parent"

        app:layout_constraintHorizontal_bias="0.502"

        app:layout_constraintStart_toStartOf="parent"

        app:layout_constraintTop_toTopOf="parent" />


    <Button

        android:id="@+id/btnsms"

        android:layout_width="wrap_content"

        android:layout_height="wrap_content"

        android:text="Message"

        android:drawableLeft="@drawable/ic_baseline_message_24"

        app:layout_constraintBottom_toBottomOf="parent"

        app:layout_constraintEnd_toEndOf="parent"

        app:layout_constraintHorizontal_bias="0.498"

        app:layout_constraintStart_toStartOf="parent"

        app:layout_constraintTop_toBottomOf="@+id/editTextTextMultiLine"

        app:layout_constraintVertical_bias="0.286" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

manifest.xml file

```xml
<uses-permission android:name="android.permission.SEND_SMS"/>
<uses-permission android:name="android.permission.RECEIVE_SMS"/>
```

main.java file

```java
package com.example.smsusingandroid;


import androidx.appcompat.app.AppCompatActivity;


import android.content.Intent;
```

```java
import android.net.Uri;

import android.os.Bundle;

import android.text.TextUtils;

import android.view.View;

import android.widget.Button;

import android.widget.EditText;

import android.widget.Toast;


public class MainActivity extends AppCompatActivity {

    EditText phone,msg;

    Button message;

    @Override

    protected void onCreate(Bundle savedInstanceState) {

        super.onCreate(savedInstanceState);

        setContentView(R.layout.activity_main);


        phone = (EditText) findViewById(R.id.editTextPhone);

        msg = (EditText) findViewById(R.id.editTextTextMultiLine);

        message = (Button) findViewById(R.id.btnsms);


        Button btnmsg = (Button) findViewById(R.id.btnsms);

        final EditText mssget = (EditText) findViewById(R.id.editTextTextMultiLine);

        final EditText phonenoet = (EditText) findViewById(R.id.editTextPhone);


        btnmsg.setOnClickListener(new View.OnClickListener() {

            @Override

            public void onClick(View view) {

                String msgsms = mssget.getText().toString();

                String phoneno = phonenoet.getText().toString();

                if (!TextUtils.isEmpty(msgsms) && !TextUtils.isEmpty(phoneno)){

                    Intent smsIntent = new Intent(Intent.ACTION_SENDTO, Uri.parse("smsto:-"+phoneno));
```

```
                smsIntent.putExtra("sms_body",msgsms);

                startActivity(smsIntent);

            }

            else

                Toast.makeText(MainActivity.this, "flieds are required", Toast.LENGTH_SHORT).show();

        }

    });

  }

}
```

Q1. B) . Create a Simple Application, which reads a positive number from the user and display its factorial value in another activity.

main.xml file

```xml
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
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">


  <EditText

    android:id="@+id/editTextNumber"

    android:layout_width="316dp"

    android:layout_height="47dp"

    android:ems="10"

    android:inputType="number"
```

```xml
        android:hint="Enter a number"

        app:layout_constraintBottom_toBottomOf="parent"

        app:layout_constraintEnd_toEndOf="parent"

        app:layout_constraintHorizontal_bias="0.497"

        app:layout_constraintStart_toStartOf="parent"

        app:layout_constraintTop_toTopOf="parent"

        app:layout_constraintVertical_bias="0.167" />


    <Button

        android:id="@+id/button"

        android:layout_width="wrap_content"

        android:layout_height="wrap_content"

        android:text="Submit"

        app:layout_constraintBottom_toBottomOf="parent"

        app:layout_constraintEnd_toEndOf="parent"

        app:layout_constraintStart_toStartOf="parent"

        app:layout_constraintTop_toTopOf="parent" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

second.xml file

```xml
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
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=".secondactivity">


    <TextView
```

```xml
        android:id="@+id/textView"

        android:layout_width="359dp"

        android:layout_height="46dp"

        android:text="Factorial of a given number is :-"

        android:textColor="#FF5722"

        android:textSize="25dp"

        app:layout_constraintBottom_toBottomOf="parent"

        app:layout_constraintEnd_toEndOf="parent"

        app:layout_constraintHorizontal_bias="0.307"

        app:layout_constraintStart_toStartOf="parent"

        app:layout_constraintTop_toTopOf="parent"

        app:layout_constraintVertical_bias="0.065" />


    <TextView

        android:id="@+id/received_value_id"

        android:layout_width="300dp"

        android:layout_height="50dp"

        android:textSize="40sp"

        android:textStyle="bold"

        app:layout_constraintBottom_toBottomOf="parent"

        app:layout_constraintEnd_toEndOf="parent"

        app:layout_constraintHorizontal_bias="0.495"

        app:layout_constraintStart_toStartOf="parent"

        app:layout_constraintTop_toTopOf="parent"

        app:layout_constraintVertical_bias="0.16"

        tools:ignore="MissingConstraints" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

main.java file


```java
package com.example.slip4q1b;
```

```java
import androidx.appcompat.app.AppCompatActivity;

import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;

public class MainActivity extends AppCompatActivity {
    EditText num;
    Button submit;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

        num = (EditText) findViewById(R.id.editTextNumber);
        submit = (Button) findViewById(R.id.button);

        submit.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                String str = num.getText().toString();
                Intent intent = new Intent(getApplicationContext(),secondactivity.class);
                intent.putExtra("msg key",str);
                startActivity(intent);
            }
        });
    }
}
```

second.java file

```java
package com.example.slip4q1b;

import androidx.appcompat.app.AppCompatActivity;

import android.content.Intent;
import android.os.Bundle;
import android.widget.TextView;

public class secondactivity extends AppCompatActivity {
    TextView receiver_msg;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_secondactivity);

        receiver_msg = (TextView) findViewById(R.id.received_value_id);
        Intent intent = getIntent();
        String str = intent.getStringExtra("msg key");
        int i,fact=1;
        int number= Integer.parseInt(str);//It is the number to calculate factorial
        for(i=1;i<=number;i++){
            fact=fact*i;
        }
        receiver_msg.setText(fact);
    }
}
```

Q2 Create table car (carno, name, model, colour). Create Application to perform the following operations. (Using SQLite Database).

 i) Update the car details whose colour is blue.

 ii) Display all the records.

main.xml file

```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"
    tools:context=".MainActivity"
    android:orientation="vertical">

    <!--Edit text to enter course name-->
    <EditText
        android:id="@+id/idEdtCourseName"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_margin="10dp"
        android:hint="Enter Car Number" />

    <!--edit text to enter course duration-->
    <EditText
        android:id="@+id/idEdtCourseDuration"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_margin="10dp"
        android:hint="Enter Car Name" />
```

```xml
<!--edit text to display course tracks-->
<EditText
    android:id="@+id/idEdtCourseTracks"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_margin="10dp"
    android:hint="Enter Car Model" />

<!--edit text for course description-->
<EditText
    android:id="@+id/idEdtCourseDescription"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_margin="10dp"
    android:hint="Enter Car Color" />

<!--button for update car details-->
<Button
    android:id="@+id/idbtninsertdata"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_margin="10dp"
    android:text="Insert Data"
    android:textAllCaps="false" />

<!--button for view car details-->
<Button
    android:id="@+id/idbtnviewdata"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
```

```xml
        android:layout_margin="10dp"

        android:text="View Data"

        android:textAllCaps="false" />


    <Button

        android:id="@+id/idbtnupdatedata"

        android:layout_width="match_parent"

        android:layout_height="wrap_content"

        android:layout_margin="10dp"

        android:text="Update Data"

        android:textAllCaps="false" />


</LinearLayout>
```

manifest.xml file

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

main.java file

```java
package com.example.slip4q2;


import androidx.appcompat.app.AlertDialog;

import androidx.appcompat.app.AppCompatActivity;


import android.annotation.SuppressLint;

import android.database.Cursor;

import android.os.Bundle;

import android.view.View;

import android.widget.Button;

import android.widget.EditText;

import android.widget.Toast;
```

```java
public class MainActivity extends AppCompatActivity {

    // creating variables for our edittext, button and dbhandler
    EditText carNumEdt, carNameEdt, carModelEdt, carColorEdt;
    Button insertbtn,viewbtn,updatebtn;
    DBHandler dbHandler;

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

        // initializing all our variables.
        carNumEdt = findViewById(R.id.idEdtCourseName);
        carNameEdt = findViewById(R.id.idEdtCourseTracks);
        carModelEdt = findViewById(R.id.idEdtCourseDuration);
        carColorEdt = findViewById(R.id.idEdtCourseDescription);
        insertbtn = findViewById(R.id.idbtninsertdata);
        viewbtn = findViewById(R.id.idbtnviewdata);
        updatebtn = findViewById(R.id.idbtnupdatedata);

        // creating a new dbhandler class
        // and passing our context to it.
        dbHandler = new DBHandler(MainActivity.this);

        // below line is to add on click listener for our add course button.
        insertbtn.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
```

```java
        // below line is to get data from all edit text fields.

        String carNum = carNumEdt.getText().toString();

        String carName = carNameEdt.getText().toString();

        String carModel = carModelEdt.getText().toString();

        String carColor = carColorEdt.getText().toString();


        // validating if the text fields are empty or not.

        if (carNum.isEmpty() && carName.isEmpty() && carModel.isEmpty() && carColor.isEmpty())
{

            Toast.makeText(MainActivity.this, "Please enter all the data..",
Toast.LENGTH_SHORT).show();

            return;

        }


        // on below line we are calling a method to add new

        // course to sqlite data and pass all our values to it.

        dbHandler.addNewcardetails(carNum, carName, carModel, carColor);


        // after adding the data we are displaying a toast message.

        Toast.makeText(MainActivity.this, "Car Details has been added.",
Toast.LENGTH_SHORT).show();

        carNumEdt.setText("");

        carModelEdt.setText("");

        carNameEdt.setText("");

        carColorEdt.setText("");

      }

    });


    viewbtn.setOnClickListener(new View.OnClickListener() {

      @Override

      public void onClick(View v) {
```

```java
        Cursor res = dbHandler.getdata();

        if(res.getCount()==0)

        {

            Toast.makeText(MainActivity.this,"No Data Exists", Toast.LENGTH_SHORT).show();

            return;

        }

        StringBuffer buffer = new StringBuffer();

        while (res.moveToNext()){

            buffer.append("Car num :"+res.getString(0)+"\n");

            buffer.append("Car name :"+res.getString(1)+"\n");

            buffer.append("Car model:"+res.getString(2)+"\n");

            buffer.append("Car color:"+res.getString(3)+"\n");

        }


        AlertDialog.Builder builder = new AlertDialog.Builder(MainActivity.this);

        builder.setCancelable(true);

        builder.setTitle("Customer Entries");

        builder.setMessage(buffer.toString());

        builder.show();

    }
});


updatebtn.setOnClickListener(new View.OnClickListener() {

    @Override

    public void onClick(View v) {

        String carnum = carNumEdt.getText().toString();

        String carname = carNameEdt.getText().toString();

        String carmodel = carModelEdt.getText().toString();

        String carcolor = carColorEdt.getText().toString();


        Boolean checkupdatedata = dbHandler.updatedata(carnum ,carname ,carmodel ,carcolor );
```

```java
        if(checkupdatedata==true)
            Toast.makeText(MainActivity.this, "Data Updated", Toast.LENGTH_SHORT).show();
        else
            Toast.makeText(MainActivity.this, "Data Not Updated", Toast.LENGTH_SHORT).show();
        }
    });
  }
}
```

DBhandler.java file

```java
package com.example.slip4q2;


import android.content.ContentValues;

import android.content.Context;

import android.database.Cursor;

import android.database.sqlite.SQLiteDatabase;

import android.database.sqlite.SQLiteOpenHelper;


public class DBHandler extends SQLiteOpenHelper{
    // creating a constant variables for our database.
    // below variable is for our database name.
    private static final String DB_NAME = "car.db";


    // below int is our database version
    private static final int DB_VERSION = 1;


    // below variable is for our table name.
    private static final String TABLE_NAME = "cardetails";


    // below variable is for our id column.
```

```java
private static final String ID_COL = "carnum";


// below variable is for our course name column
private static final String NAME_COL = "carname";


// below variable id for our course duration column.
private static final String Model_COL = "carmodel";


// below variable for our course description column.
private static final String Color_COL = "carcolor";


// creating a constructor for our database handler.
public DBHandler(Context context) {
    super(context, DB_NAME, null, DB_VERSION);
}


// below method is for creating a database by running a sqlite query
@Override
public void onCreate(SQLiteDatabase db) {
    // on below line we are creating
    // an sqlite query and we are
    // setting our column names
    // along with their data types.
    String query = "CREATE TABLE " + TABLE_NAME + " ("
            + ID_COL + " INTEGER PRIMARY KEY AUTOINCREMENT, "
            + NAME_COL + " TEXT,"
            + Model_COL + " TEXT,"
            + Color_COL + " TEXT)";

    // at last we are calling a exec sql
    // method to execute above sql query
```

```java
        db.execSQL(query);
    }


    // this method is use to add new course to our sqlite database.
    public void addNewcardetails(String carNum, String carName, String carModel, String carColor) {


        // on below line we are creating a variable for
        // our sqlite database and calling writable method
        // as we are writing data in our database.
        SQLiteDatabase db = this.getWritableDatabase();


        // on below line we are creating a
        // variable for content values.
        ContentValues values = new ContentValues();


        // on below line we are passing all values
        // along with its key and value pair.
        values.put(ID_COL, carNum);

        values.put(NAME_COL, carName);

        values.put(Model_COL, carModel);

        values.put(Color_COL, carColor);


        // after adding all values we are passing
        // content values to our table.
        db.insert(TABLE_NAME, null, values);


        // at last we are closing our
        // database after adding database.
        db.close();
    }
```

```java
@Override
public void onUpgrade(SQLiteDatabase db, int oldVersion, int newVersion) {
    // this method is called to check if the table exists already.
    db.execSQL("DROP TABLE IF EXISTS " + TABLE_NAME);
    onCreate(db);
}


public Cursor getdata() {
    SQLiteDatabase DB = this.getWritableDatabase();
    Cursor cursor = DB.rawQuery("Select * from CarDetails", null);
    return cursor;
}


public Boolean updatedata(String carnum, String carname, String carmodel, String carcolor) {
    SQLiteDatabase DB = this.getWritableDatabase();
    ContentValues contentValues = new ContentValues();
    contentValues.put("carnum",carnum );
    contentValues.put("carname", carname);
    contentValues.put("carmodel", carmodel);
    contentValues.put("carcolor", carcolor);
    Cursor cursor = DB.rawQuery("Select * from CarDetails where num = ?", new String[]{carnum});
    if (cursor.getCount() > 0) {
        long result = DB.update("CarDetails", contentValues, "num = ?", new String[]{carnum});
        if (result == -1) {
            return false;
        } else {
            return true;
        }
    } else {
        return false;
    }
```

```
    }

}
```

Slip 5:-

Q1. A) Write an Android Program to Design a Login Form using Linear Layout, Table Layout, And Constraint Layout.

Main.xml file:-

```xml
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
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">

    <Button
        android:id="@+id/button3"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Submit"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.498"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.42" />

    <TextView
        android:id="@+id/textView3"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="LOGIN PAGE"
        android:textStyle="bold"
        android:textSize="30dp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.114"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.068" />

    <EditText
        android:id="@+id/editTextTextPersonName2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:drawableLeft="@drawable/ic_baseline_person_outline_24"
        android:ems="10"
        android:hint="Username"
        android:inputType="textPersonName"
        android:padding="10dp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.497"
        app:layout_constraintStart_toStartOf="parent"
```

```xml
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.205"
        tools:ignore="MissingConstraints" />

    <EditText
        android:id="@+id/editTextTextPersonName"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:drawableLeft="@drawable/ic_baseline_lock_24"
        android:ems="10"
        android:hint="Password"
        android:inputType="textPersonName"
        android:padding="10dp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.497"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.318"
        tools:ignore="MissingConstraints" />

</androidx.constraintlayout.widget.ConstraintLayout>
```

Main.java file:-

```java
package com.example.loginpage;

import androidx.appcompat.app.AppCompatActivity;

import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;

public class MainActivity extends AppCompatActivity {
    EditText TextView1, TextView2;
    Button button;

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

        TextView1 = (EditText) findViewById(R.id.editTextTextPersonName2);
        TextView2 = (EditText) findViewById(R.id.editTextTextPersonName);

        button = findViewById(R.id.button3);
        button.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                String username = TextView1.getText().toString();
                String password = TextView2.getText().toString();

                //nextActivity();
                if (username.equals("admin") && password.equals("1234"))
                {
                    Toast.makeText( MainActivity.this, "Login Successful",
Toast.LENGTH_SHORT).show();
```

```java
                    Intent intent = new Intent(getApplicationContext(),
NewLoginActivity.class);
                    startActivity(intent);

            }
            else
            {
                Toast.makeText( MainActivity.this, "Invalid Username
and Password", Toast.LENGTH_SHORT).show();
            }
        }
    });
    }
}
```

B) Write an Android Program to display the List of Friends Name and Images (View: TextView &
ImageView)

Main.xml file:-

```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">

    <ListView
        android:id="@+id/list"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginBottom="50dp">
    </ListView>

</RelativeLayout>
```

Mylist.xml file:-

```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="horizontal">

    <ImageView
        android:id="@+id/icon"
        android:layout_width="60dp"
        android:layout_height="60dp"
        android:padding="5dp" />

    <LinearLayout
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:orientation="vertical">

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

```xml
            android:layout_height="wrap_content"
            android:text="Medium Text"
            android:textStyle="bold"
            android:textAppearance="?android:attr/textAppearanceMedium"
            android:layout_marginLeft="10dp"
            android:layout_marginTop="5dp"
            android:padding="2dp"
            android:textColor="#4d4d4d" />
        <TextView
            android:id="@+id/subtitle"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="TextView"
            android:layout_marginLeft="10dp"/>
    </LinearLayout>

</LinearLayout>
```

Main.java file:-

```java
package com.example.slip2q2customlistview;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;
import android.view.View;
import android.widget.AdapterView;
import android.widget.ListView;
import android.widget.Toast;

public class MainActivity extends AppCompatActivity {
    ListView list;

    String[] maintitle ={
            "Title 1","Title 2",
            "Title 3",
    };

    String[] subtitle ={
            "Sub Title 1","Sub Title 2",
            "Sub Title 3",
    };

    Integer[] imgid={
            R.drawable.facebook,R.drawable.logo,
            R.drawable.youtube,
    };
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

        MyListAdapter adapter=new MyListAdapter(this, maintitle,
subtitle,imgid);
        list=(ListView)findViewById(R.id.list);
        list.setAdapter(adapter);


        list.setOnItemClickListener(new AdapterView.OnItemClickListener() {
```

```java
                @Override
            public void onItemClick(AdapterView<?> parent, View view,int
position, long id) {
                // TODO Auto-generated method stub
                if(position == 0) {
                    //code specific to first list item
                    Toast.makeText(getApplicationContext(),"Place Your
First Option Code",Toast.LENGTH_SHORT).show();
                }

                else if(position == 1) {
                    //code specific to 2nd list item
                    Toast.makeText(getApplicationContext(),"Place Your
Second Option Code",Toast.LENGTH_SHORT).show();
                }

                else if(position == 2) {

                    Toast.makeText(getApplicationContext(),"Place Your
Third Option Code",Toast.LENGTH_SHORT).show();
                }
                else if(position == 3) {

                    Toast.makeText(getApplicationContext(),"Place Your
Forth Option Code",Toast.LENGTH_SHORT).show();
                }
                else if(position == 4) {

                    Toast.makeText(getApplicationContext(),"Place Your
Fifth Option Code",Toast.LENGTH_SHORT).show();
                }

            }
        });
    }
}
```

Mylistadapter.java file:-

```java
package com.example.slip2q2customlistview;

import  android.app.Activity;
import android.view.LayoutInflater;
import android.view.View;
import android.view.ViewGroup;
import android.widget.ArrayAdapter;
import android.widget.ImageView;
import android.widget.TextView;

public class MyListAdapter extends ArrayAdapter<String> {

    private final Activity context;
    private final String[] maintitle;
    private final String[] subtitle;
    private final Integer[] imgid;

    public MyListAdapter(Activity context, String[] maintitle, String[]
subtitle, Integer[] imgid) {
        super(context, R.layout.mylist, maintitle);
        // TODO Auto-generated constructor stub
```

```
        this.context=context;
        this.maintitle=maintitle;
        this.subtitle=subtitle;
        this.imgid=imgid;


    }

    public View getView(int position,View view,ViewGroup parent) {
        LayoutInflater inflater=context.getLayoutInflater();
        View rowView=inflater.inflate(R.layout.mylist, null,true);

        TextView titleText = (TextView) rowView.findViewById(R.id.title);
        ImageView imageView = (ImageView) rowView.findViewById(R.id.icon);
        TextView subtitleText = (TextView)
rowView.findViewById(R.id.subtitle);

        titleText.setText(maintitle[position]);
        imageView.setImageResource(imgid[position]);
        subtitleText.setText(subtitle[position]);

        return rowView;

    };
}
```

Q2 Create an Android Application that Demonstrates DatePicker and DatePicker Dialog.

Main.xml file:-

1.  **<?xml** version="1.0" encoding="utf-8"**?>**
2.  **<RelativeLayout** xmlns:android="http://schemas.android.com/apk/res/android"
3.      xmlns:app="http://schemas.android.com/apk/res-auto"
4.      xmlns:tools="http://schemas.android.com/tools"
5.      android:layout_width="match_parent"
6.      android:layout_height="match_parent"
7.      tools:context="example.javatpoint.com.datepicker.MainActivity">
8.  
9.      **<TextView**
10.         android:id="@+id/textView1"
11.         android:layout_width="wrap_content"
12.         android:layout_height="wrap_content"
13.         android:layout_above="@+id/button1"
14.         android:layout_alignParentLeft="true"
15.         android:layout_alignParentStart="true"
16.         android:layout_marginBottom="102dp"
17.         android:layout_marginLeft="30dp"
18.         android:layout_marginStart="30dp"

19.      android:text="" **/>**

20.

21.  **<Button**

22.      android:id="@+id/button1"

23.      android:layout_width="wrap_content"

24.      android:layout_height="wrap_content"

25.      android:layout_alignParentBottom="true"

26.      android:layout_centerHorizontal="true"

27.      android:layout_marginBottom="20dp"

28.      android:text="Change Date" **/>**

29.

30.  **<DatePicker**

31.      android:id="@+id/datePicker"

32.      android:layout_width="wrap_content"

33.      android:layout_height="wrap_content"

34.      android:layout_above="@+id/textView1"

35.      android:layout_centerHorizontal="true"

36.      android:layout_marginBottom="36dp" **/>**

37.

38. **</RelativeLayout>**

Main.java file:-

1.  **package** example.javatpoint.com.datepicker;

2.

3.  **import** android.support.v7.app.AppCompatActivity;

4.  **import** android.os.Bundle;

5.  **import** android.view.View;

6.  **import** android.widget.Button;

7.  **import** android.widget.DatePicker;

8.  **import** android.widget.TextView;

9.

10. **public class** MainActivity **extends** AppCompatActivity {

11.    DatePicker picker;

12.    Button displayDate;

13.    TextView textview1;

14.    @Override

```java
15.    protected void onCreate(Bundle savedInstanceState) {
16.        super.onCreate(savedInstanceState);
17.        setContentView(R.layout.activity_main);
18.
19.        textview1=(TextView)findViewById(R.id.textView1);
20.        picker=(DatePicker)findViewById(R.id.datePicker);
21.        displayDate=(Button)findViewById(R.id.button1);
22.
23.        textview1.setText("Current Date: "+getCurrentDate());
24.
25.        displayDate.setOnClickListener(new View.OnClickListener(){
26.            @Override
27.            public void onClick(View view) {
28.
29.                textview1.setText("Change Date: "+getCurrentDate());
30.            }
31.
32.        });
33.
34.    }
35.    public String getCurrentDate(){
36.        StringBuilder builder=new StringBuilder();;
37.        builder.append((picker.getMonth() + 1)+"/");//month is 0 based
38.        builder.append(picker.getDayOfMonth()+"/");
39.        builder.append(picker.getYear());
40.        return builder.toString();
41.    }
42. }
```

Slip 6:-

Q1. A) Create an Android Application to accept two numbers and find power and Average. Display the result on the next activity on Button click.

Xml file:-

activity_main.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
```

```xml
<androidx.constraintlayout.widget.ConstraintLayout
    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">

    <TextView
        android:id="@+id/textView2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Number 2"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toStartOf="@+id/etNum2"
        app:layout_constraintHorizontal_bias="0.306"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/textView"
        app:layout_constraintVertical_bias="0.153" />

    <EditText
        android:id="@+id/etNum1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:ems="10"
        android:inputType="number"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.746"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
```

```
        app:layout_constraintVertical_bias="0.217" />


    <EditText

        android:id="@+id/etNum2"

        android:layout_width="wrap_content"

        android:layout_height="wrap_content"

        android:ems="10"

        android:inputType="number"

        app:layout_constraintBottom_toBottomOf="parent"

        app:layout_constraintEnd_toEndOf="parent"

        app:layout_constraintHorizontal_bias="0.746"

        app:layout_constraintStart_toStartOf="parent"

        app:layout_constraintTop_toBottomOf="@+id/etNum1"

        app:layout_constraintVertical_bias="0.119" />


    <TextView

        android:id="@+id/textView"

        android:layout_width="wrap_content"

        android:layout_height="wrap_content"

        android:text="Number 1"

        app:layout_constraintBottom_toBottomOf="parent"

        app:layout_constraintEnd_toEndOf="parent"

        app:layout_constraintHorizontal_bias="0.076"

        app:layout_constraintStart_toStartOf="parent"

        app:layout_constraintTop_toTopOf="parent"

        app:layout_constraintVertical_bias="0.231" />


    <Button

        android:id="@+id/power"

        android:layout_width="wrap_content"

        android:layout_height="wrap_content"
```

```xml
        android:layout_marginTop="104dp"

        android:text="Power"

        app:layout_constraintEnd_toStartOf="@+id/average"

        app:layout_constraintHorizontal_bias="0.364"

        app:layout_constraintStart_toStartOf="parent"

        app:layout_constraintTop_toBottomOf="@+id/etNum2" />


    <Button

        android:id="@+id/average"

        android:layout_width="wrap_content"

        android:layout_height="wrap_content"

        android:layout_marginTop="104dp"

        android:text="Average"

        app:layout_constraintEnd_toEndOf="parent"

        app:layout_constraintHorizontal_bias="0.834"

        app:layout_constraintStart_toStartOf="parent"

        app:layout_constraintTop_toBottomOf="@+id/etNum2" />


    <TextView

        android:id="@+id/answer"

        android:layout_width="wrap_content"

        android:layout_height="wrap_content"

        android:text="Answer"

        android:textSize="32sp"

        app:layout_constraintBottom_toBottomOf="parent"

        app:layout_constraintEnd_toEndOf="parent"

        app:layout_constraintStart_toStartOf="parent"

        app:layout_constraintTop_toTopOf="parent"

        app:layout_constraintVertical_bias="0.702" />


</androidx.constraintlayout.widget.ConstraintLayout>
```

MainActivity.java

```java
package com.example.poweraverage3a;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.TextView;

public class MainActivity extends AppCompatActivity {

    //Variable declare
    private EditText num1;
    private EditText num2;
    private Button power;
    private Button average;
    private TextView answer;

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

        //variable assign to widgets
        num1 = (EditText) findViewById(R.id.etNum1);
        num2 = (EditText) findViewById(R.id.etNum2);
        power= (Button) findViewById(R.id.power);
```

```java
        average=(Button) findViewById(R.id.average);

        answer=(TextView) findViewById(R.id.answer);


        //add onclick listener
        power.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                int number1 = Integer.parseInt(num1.getText().toString());
                int number2 = Integer.parseInt(num2.getText().toString());
                int pow=1;
                for (int i =0;i<number2;i++)
                    pow = pow * number1;
                answer.setText("Power : "+String.valueOf(pow));
            }
        });


        average.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                float number1 = Integer.parseInt(num1.getText().toString());
                float number2 = Integer.parseInt(num2.getText().toString());
                float average = (number1 + number2)/2;


                answer.setText("Average : "+String.valueOf(average));
            }
        });
    }
}
```

B) Create table Student (id, name, address, phno). Create Application for performing the following operation on the table.

i) Insert New Student Details.

ii) Show All the Students Details

Xml file:-

```xml
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
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">

    <EditText
        android:id="@+id/editText"
        android:layout_width="350dp"
        android:layout_height="50dp"
        android:ems="10"
        android:hint="Name"
        android:inputType="textPersonName"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.491"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.101" />

    <EditText
        android:id="@+id/editText4"
        android:layout_width="350dp"
        android:layout_height="50dp"
        android:ems="10"
        android:hint="ID"
        android:inputType="textPersonName"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.491"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.436" />

    <EditText
        android:id="@+id/editText2"
        android:layout_width="350dp"
        android:layout_height="50dp"
        android:ems="10"
        android:hint="Surname"
        android:inputType="textPersonName"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.491"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.212" />

    <EditText
        android:id="@+id/editText3"
        android:layout_width="350dp"
```

```xml
        android:layout_height="50dp"
        android:ems="10"
        android:hint="Marks"
        android:inputType="textPersonName"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.491"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.324" />

    <Button
        android:id="@+id/btnSubmit"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Insert"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.139"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.585" />

        <Button
        android:id="@+id/btnView"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="View All"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.495"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.585" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

Main Java file:-

```java
package com.example.dbdemo;

import androidx.appcompat.app.AlertDialog;
import androidx.appcompat.app.AppCompatActivity;

import android.annotation.SuppressLint;
import android.database.Cursor;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;

import java.text.BreakIterator;

public class MainActivity extends AppCompatActivity {
    EditText t1, t2, t3, t4;
    Button btn1, btn2, btn3, btn4;
    DatabaseHelper myDB;

    @SuppressLint("MissingInflatedId")
    @Override
    protected void onCreate(Bundle savedInstanceState) {
```

```java
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        myDB = new DatabaseHelper(this);

        t1 = (EditText) findViewById(R.id.editText);
        t2 = (EditText) findViewById(R.id.editText2);
        t3 = (EditText) findViewById(R.id.editText3);
        t4 = (EditText) findViewById(R.id.editText4);
        btn1 = (Button) findViewById(R.id.btnSubmit);
        btn2 = (Button) findViewById(R.id.btnView);
        btn3 = (Button) findViewById(R.id.btnupdate);
        btn4 = (Button) findViewById(R.id.btndelete);
        AddData();
        viewAll();
        public void AddData()
    {
        btn1.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                boolean isInserterd =
myDB.insertData(t1.getText().toString(),
                        t2.getEditableText().toString(),
                        t3.getText().toString());

                if (isInserterd == true)
                    Toast.makeText(MainActivity.this, "Data Inserted",
Toast.LENGTH_SHORT).show();
                else
                    Toast.makeText(MainActivity.this, "Data not Inserted",
Toast.LENGTH_SHORT).show();
            }
        });
    }

    public void viewAll()
    {
        btn2.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                Cursor res = myDB.getAllData();

                if (res.getCount() == 0)
                {
                    // show message
                    showMessage("Error", "Nothing Found Data");
                    return;
                }

                StringBuffer buffer = new StringBuffer();
                while (res.moveToNext())
                {
                    buffer.append("ID : "+res.getString(0)+"\n");
                    buffer.append("Name : "+res.getString(1)+"\n");
                    buffer.append("Surname : "+res.getString(2)+"\n");
                    buffer.append("Marks : "+res.getString(3)+"\n\n");
                }
                showMessage("Data", buffer.toString());

            }
        });
    }
```

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


}
```

DBhelper java file:-

```java
package com.example.dbdemo;

import android.content.ContentValues;
import android.content.Context;
import android.database.Cursor;
import android.database.sqlite.SQLiteDatabase;
import android.database.sqlite.SQLiteOpenHelper;

import androidx.annotation.Nullable;

public class DatabaseHelper extends SQLiteOpenHelper {
    public static final String DATABASE_NAME = "student.db";
    public static final String TABLE_NAME = "student_table";
    public static final String COL_1 = "ID";
    public static final String COL_2 = "NAME";
    public static final String COL_3 = "SURNAME";
    public static final String COL_4 = "MARKS";


    public DatabaseHelper(@Nullable Context context) {
        super(context, DATABASE_NAME, null, 1);

    }

    @Override
    public void onCreate(SQLiteDatabase db) {
        db.execSQL("create table "+TABLE_NAME+"(ID INTEGER PRIMARY KEY
AUTOINCREMENT, NAME TEXT, SURNAME TEXT, MARKS INTEGER)");

    }

    @Override
    public void onUpgrade(SQLiteDatabase db, int i, int i1) {
        db.execSQL("DROP TABLE IF EXISTS "+ TABLE_NAME);
        onCreate(db);

    }

    public boolean insertData(String name, String surname, String marks)
    {
        SQLiteDatabase db = this.getWritableDatabase();
        ContentValues cv = new ContentValues();
        cv.put(COL_2,name);
        cv.put(COL_3,surname);
        cv.put(COL_4,marks);
        Long result = db.insert(TABLE_NAME, null, cv);
```

```java
            if(result == -1)
                return false;
            else
                return true;

    }

    public Cursor getAllData(){
        SQLiteDatabase db = this.getWritableDatabase();
        Cursor res = db.rawQuery("select * from "+TABLE_NAME, null);
        return res;
    }
}
```

Q2 .Create an Android Application that Demonstrates ListView and Onclick of List Display the Toast.

activity_main.xml

```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">
    <EditText
        android:id = "@+id/name"
        android:layout_width = "match_parent"
        android:layout_height = "wrap_content" />
    <LinearLayout
        android:layout_width = "wrap_content"
        android:layout_height = "wrap_content">
        <Button
            android:id = "@+id/save"
            android:text = "Add"
            android:layout_width = "wrap_content"
            android:layout_height = "wrap_content" />
        <Button
            android:id = "@+id/refresh"
            android:text = "Search"
            android:layout_width = "wrap_content"
            android:layout_height = "wrap_content" />
        <Button
            android:id = "@+id/delete"
            android:text = "Delete"
            android:layout_width = "wrap_content"
            android:layout_height = "wrap_content" />
    </LinearLayout>
    <ListView
        android:id = "@+id/listView"
        android:layout_width = "match_parent"
        android:layout_height = "wrap_content">
    </ListView>
</LinearLayout>
```

MainActivity.java

```java
package com.example.listview;
```

```java
import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;
import android.text.Editable;
import android.text.TextWatcher;
import android.view.View;
import android.widget.ArrayAdapter;
import android.widget.Button;
import android.widget.EditText;
import android.widget.ListView;
import android.widget.Toast;

import java.util.ArrayList;

public class MainActivity extends AppCompatActivity {
    Button save, refresh;
    EditText name;
    ArrayAdapter arrayAdapter;
    private ListView listView;
    ArrayList array_list;
    @Override
    protected void onCreate(Bundle savedInstanceState)
    {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        array_list = new ArrayList();
        name = (EditText)findViewById(R.id.name);
        refresh = (Button)findViewById(R.id.refresh);
        listView = findViewById(R.id.listView);
        findViewById(R.id.delete).setOnClickListener(new
View.OnClickListener() {
            @Override
            public void onClick(View v) {
                if(array_list.size()>0) {
                    if (!name.getText().toString().isEmpty()) {
                        array_list.remove(name.getText().toString());
                        arrayAdapter = new ArrayAdapter(MainActivity.this,
android.R.layout.simple_list_item_1, array_list);
                        listView.setAdapter(arrayAdapter);
                        name.setText("");
                        Toast.makeText(MainActivity.this, "deleted",
Toast.LENGTH_LONG).show();
                    }
                } else {
                    Toast.makeText(MainActivity.this, "There is no element
to delete", Toast.LENGTH_LONG).show();
                }
            }
        });
        findViewById(R.id.save).setOnClickListener(new
View.OnClickListener() {
            @Override
            public void onClick(View v) {
                String str = name.getText().toString();
                if(!array_list.contains(str))
                {
                    array_list.add(name.getText().toString());
                    arrayAdapter = new ArrayAdapter(MainActivity.this,
android.R.layout.simple_list_item_1, array_list);
                    listView.setAdapter(arrayAdapter);
```

```java
                name.setText("");
                Toast.makeText(MainActivity.this, "Inserted",
Toast.LENGTH_LONG).show();
            }
            else
            {
                Toast.makeText(MainActivity.this, "Already Exist",
Toast.LENGTH_LONG).show();
                name.setText("");
            }
        }
    });
    refresh.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View v)
        {
            name.addTextChangedListener(new TextWatcher()
            {
                @Override
                public void beforeTextChanged(CharSequence s, int
start, int count, int after)
                {
                }
                @Override
                public void onTextChanged(CharSequence s, int start,
int before, int count) {
                    arrayAdapter.getFilter().filter(s);
                }
                @Override
                public void afterTextChanged(Editable s)
                {
                }
            });
        }
    });
}
}
```

Slip 7:-

Q1. A) Create an Android application that plays an audio(song) in the
background. Audio will not be stopped even if you switch to another
activity. To stop the audio, you need to stop the service

Xml file:-

```xml
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
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">

    <VideoView
        android:id="@+id/videoView"
        android:layout_width="405dp"
        android:layout_height="290dp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
```

```xml
            app:layout_constraintStart_toStartOf="parent"
            app:layout_constraintTop_toTopOf="parent"
            app:layout_constraintVertical_bias="0.476" />

</androidx.constraintlayout.widget.ConstraintLayout>
```

Main java file:-

```java
package com.example.vedio_android;

import androidx.appcompat.app.AppCompatActivity;

import android.net.Uri;
import android.os.Bundle;
import android.widget.Button;
import android.widget.MediaController;
import android.widget.VideoView;

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

        videov = (VideoView) findViewById(R.id.videoView);

        String videoPath = "android.resource://" + getPackageName() + "/"
+R.raw.nature;
        Uri uri = Uri.parse(videoPath);
        videov.setVideoURI(uri);

        MediaController mediaController = new MediaController(this);
        videov.setMediaController(mediaController);
        mediaController.setAnchorView(videov);
    }
}
```

Q.2. Create an Android Application to find the factorial of a number and Display the Result on Alert Box.

xml file
```xml
<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">

    <EditText
        android:id="@+id/num"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="num"
        android:layout_marginLeft="30dp"
        android:layout_marginRight="30dp"
        android:layout_marginTop="388dp"
        tools:ignore="InvalidId" />

    <Button
```

```
            android:id="@+id/fact"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:layout_marginLeft="50dp"
            android:layout_marginRight="50dp"
            android:layout_marginTop="50dp"
            android:text="factorial"/>

</LinearLayout>

java file
import androidx.appcompat.app.AppCompatActivity;

import android.annotation.SuppressLint;
import android.app.AlertDialog;
import android.content.DialogInterface;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;

public class MainActivity extends AppCompatActivity {
    EditText num;
    Button fact;
    @SuppressLint("MissingInflatedId")
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

        num = (EditText) findViewById(R.id.num);
        fact = (Button) findViewById(R.id.fact);

        fact.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                factorial();
            }
        });
    }
```

Slip 9:-

Q1. B) Construct an application that toggles a light bulb ON and OFF when the user clicks on the toggle button

Xml file:-

```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
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">

    <ToggleButton
        android:id="@+id/toggleButton"
        android:layout_width="wrap_content"
```

```xml
        android:layout_height="wrap_content"
        android:layout_marginLeft="8dp"
        android:layout_marginTop="80dp"
        android:text="ToggleButton"
        android:textOff="Off"
        android:textOn="On"
        app:layout_constraintEnd_toStartOf="@+id/toggleButton2"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />

    <ToggleButton
        android:id="@+id/toggleButton2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginRight="60dp"
        android:layout_marginTop="80dp"
        android:text="ToggleButton"
        android:textOff="Off"
        android:textOn="On"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintTop_toTopOf="parent" />

    <Button
        android:id="@+id/button"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginBottom="144dp"
        android:layout_marginLeft="148dp"
        android:text="Submit"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintStart_toStartOf="parent" />

</androidx.constraintlayout.widget.ConstraintLayout>
```

Main java file:-

```java
package com.example.slip3q1a;

import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.Toast;
import android.widget.ToggleButton;

public class MainActivity extends AppCompatActivity {
    private ToggleButton toggleButton1, toggleButton2;
    private Button buttonSubmit;

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

        addListenerOnButtonClick();
    }
    public void addListenerOnButtonClick(){
        //Getting the ToggleButton and Button instance from the layout xml
file
        toggleButton1=(ToggleButton)findViewById(R.id.toggleButton);
        toggleButton2=(ToggleButton)findViewById(R.id.toggleButton2);
```

```java
            buttonSubmit=(Button)findViewById(R.id.button);

            //Performing action on button click
            buttonSubmit.setOnClickListener(new View.OnClickListener(){

                @Override
                public void onClick(View view) {
                    StringBuilder result = new StringBuilder();
                    result.append("ToggleButton1 :
").append(toggleButton1.getText());
                    result.append("\nToggleButton2 :
").append(toggleButton2.getText());
                    //Displaying the message in toast
                    Toast.makeText(getApplicationContext(),
result.toString(),Toast.LENGTH_LONG).show();
                }

            });

    }
}
```

Q 2) Create the simple calculator shown below and also perform appropriate operations.

Xml file:-

```xml
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
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">

    <Button
        android:id="@+id/btnequal"
        android:layout_width="354dp"
        android:layout_height="41dp"
        android:text="="
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.479"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.843" />

    <Button
        android:id="@+id/btnadd"
        android:layout_width="65dp"
        android:layout_height="42dp"
        android:text="+"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.927"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.264" />

    <Button
```

```xml
        android:id="@+id/btnclear"
        android:layout_width="65dp"
        android:layout_height="42dp"
        android:text="C"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.554"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.703" />

    <Button
        android:id="@+id/btndot"
        android:layout_width="65dp"
        android:layout_height="42dp"
        android:text="."
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.3"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.703" />

    <Button
        android:id="@+id/btn0"
        android:layout_width="65dp"
        android:layout_height="42dp"
        android:text="0"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.046"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.703" />

    <Button
        android:id="@+id/btn2"
        android:layout_width="65dp"
        android:layout_height="42dp"
        android:text="2"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.3"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.552" />

    <Button
        android:id="@+id/btn3"
        android:layout_width="65dp"
        android:layout_height="42dp"
        android:text="3"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.554"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.552" />

    <Button
        android:id="@+id/btn1"
```

```xml
        android:layout_width="65dp"
        android:layout_height="42dp"
        android:text="1"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.046"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.552" />

    <Button
        android:id="@+id/btn5"
        android:layout_width="65dp"
        android:layout_height="42dp"
        android:text="5"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.291"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.415" />

    <Button
        android:id="@+id/btn4"
        android:layout_width="65dp"
        android:layout_height="42dp"
        android:text="4"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.046"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.415" />

    <EditText
        android:id="@+id/cal"
        android:layout_width="360dp"
        android:layout_height="42dp"
        android:ems="10"
        android:hint="Calculater"
        android:inputType="textPersonName"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.497"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.102" />

    <Button
        android:id="@+id/btn7"
        android:layout_width="65dp"
        android:layout_height="42dp"
        android:text="7"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.046"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.264" />

    <Button
```

```xml
        android:id="@+id/btnsub"
        android:layout_width="65dp"
        android:layout_height="42dp"
        android:text="-"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.927"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.415" />

    <Button
        android:id="@+id/btndiv"
        android:layout_width="65dp"
        android:layout_height="42dp"
        android:text="/"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.927"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.552" />

    <Button
        android:id="@+id/btnmul"
        android:layout_width="65dp"
        android:layout_height="42dp"
        android:text="*"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.927"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.703" />

    <Button
        android:id="@+id/btn8"
        android:layout_width="69dp"
        android:layout_height="40dp"
        android:text="8"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.295"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.266" />

    <Button
        android:id="@+id/btn9"
        android:layout_width="65dp"
        android:layout_height="37dp"
        android:text="9"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.554"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.265" />

    <Button
        android:id="@+id/btn6"
```

```
            android:layout_width="65dp"
            android:layout_height="42dp"
            android:text="6"
            app:layout_constraintBottom_toBottomOf="parent"
            app:layout_constraintEnd_toEndOf="parent"
            app:layout_constraintHorizontal_bias="0.554"
            app:layout_constraintStart_toStartOf="parent"
            app:layout_constraintTop_toTopOf="parent"
            app:layout_constraintVertical_bias="0.415" />
</androidx.constraintlayout.widget.ConstraintLayout>


Main java file:-

package com.example.calculator;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;

public class MainActivity extends AppCompatActivity {
    EditText TextViewcal;
    Button
button1,button2,button3,button4,button5,button6,button7,button8,button9,button0,

buttonadd,buttonsub,buttondiv,buttonmul,buttonclear,buttonequal,buttondot;
    Float value1,value2;
    boolean addition,subtraction,division,multiplication;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

        TextViewcal = (EditText) findViewById(R.id.cal);
        button1 = findViewById(R.id.btn1);
        button2 = findViewById(R.id.btn2);
        button3 = findViewById(R.id.btn3);
        button4 = findViewById(R.id.btn4);
        button5 = findViewById(R.id.btn5);
        button6 = findViewById(R.id.btn6);
        button7 = findViewById(R.id.btn7);
        button8 = findViewById(R.id.btn8);
        button9 = findViewById(R.id.btn9);
        button0 = findViewById(R.id.btn0);
        buttonadd = findViewById(R.id.btnadd);
        buttonsub = findViewById(R.id.btnsub);
        buttonmul = findViewById(R.id.btnmul);
        buttondiv = findViewById(R.id.btndiv);
        buttondot = findViewById(R.id.btndot);
        buttonclear = findViewById(R.id.btnclear);
        buttonequal = findViewById(R.id.btnequal);

        button1.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                TextViewcal.setText(TextViewcal.getText() + "1");
            }
        });
```

```java
button2.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View view) {
        TextViewcal.setText(TextViewcal.getText() + "2");
    }
});
button3.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View view) {
        TextViewcal.setText(TextViewcal.getText() + "3");
    }
});
button4.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View view) {
        TextViewcal.setText(TextViewcal.getText() + "4");
    }
});
button5.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View view) {
        TextViewcal.setText(TextViewcal.getText() + "5");
    }
});
button6.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View view) {
        TextViewcal.setText(TextViewcal.getText() + "6");
    }
});
button7.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View view) {
        TextViewcal.setText(TextViewcal.getText() + "7");
    }
});
button8.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View view) {
        TextViewcal.setText(TextViewcal.getText() + "8");
    }
});button9.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View view) {
        TextViewcal.setText(TextViewcal.getText() + "9");
    }
});
button0.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View view) {
        TextViewcal.setText(TextViewcal.getText() + "0");
    }
});

buttonadd.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View view) {
            value1 = Float.parseFloat(TextViewcal.getText() + "");
            addition = true;
            TextViewcal.setText(null);
    }
```

```java
        });
        buttonsub.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                value1 = Float.parseFloat(TextViewcal.getText() + "");
                subtraction = true;
                TextViewcal.setText(null);
            }
        });
        buttonmul.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                value1 = Float.parseFloat(TextViewcal.getText() + "");
                multiplication = true;
                TextViewcal.setText(null);
            }
        });
        buttondiv.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                value1 = Float.parseFloat(TextViewcal.getText() + "");
                division = true;
                TextViewcal.setText(null);
            }
        });

        buttonequal.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                value2 = Float.parseFloat(TextViewcal.getText() + "");
                if (addition==true){
                    TextViewcal.setText(value1 + value2 + "");
                    addition=false;
                }
                if(subtraction==true){
                    TextViewcal.setText(value1 - value2 + "");
                    subtraction=false;
                }
                if (multiplication==true){
                    TextViewcal.setText(value1 * value2 + "");
                    multiplication=false;
                }
                if (division==true) {
                    TextViewcal.setText(value1 / value2 + "");
                    division=false;
                }
            }
        });

        buttonclear.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                TextViewcal.setText("");
            }
        });

        buttondot.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                TextViewcal.setText(TextViewcal.getText() + ".");
            }
```

```
            });
        }
}


Slip 10:-

Q1. A) Design android application for login activity. Write android code to
check login credentials with username = "mca" and password = "android".
Display appropriate toast message to the user.

Xml file:-

<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
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">

    <Button
        android:id="@+id/button3"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Submit"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.498"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.42" />

    <TextView
        android:id="@+id/textView3"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="LOGIN PAGE"
        android:textStyle="bold"
        android:textSize="30dp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.114"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.068" />

    <EditText
        android:id="@+id/editTextTextPersonName2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:drawableLeft="@drawable/ic_baseline_person_outline_24"
        android:ems="10"
        android:hint="Username"
        android:inputType="textPersonName"
        android:padding="10dp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.497"
        app:layout_constraintStart_toStartOf="parent"
```

```xml
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.205"
        tools:ignore="MissingConstraints" />

    <EditText
        android:id="@+id/editTextTextPersonName"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:drawableLeft="@drawable/ic_baseline_lock_24"
        android:ems="10"
        android:hint="Password"
        android:inputType="textPersonName"
        android:padding="10dp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.497"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.318"
        tools:ignore="MissingConstraints" />

</androidx.constraintlayout.widget.ConstraintLayout>
```

Main java file:-

```java
package com.example.loginpage;

import androidx.appcompat.app.AppCompatActivity;

import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;

public class MainActivity extends AppCompatActivity {
    EditText TextView1, TextView2;
    Button button;

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

        TextView1 = (EditText) findViewById(R.id.editTextTextPersonName2);
        TextView2 = (EditText) findViewById(R.id.editTextTextPersonName);

        button = findViewById(R.id.button3);
        button.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                String username = TextView1.getText().toString();
                String password = TextView2.getText().toString();

                //nextActivity();
                if (username.equals("admin") && password.equals("1234"))
                {
                    Toast.makeText( MainActivity.this, "Login Successful",
Toast.LENGTH_SHORT).show();
                    Intent intent = new Intent(getApplicationContext(),
```

```
                NewLoginActivity.class);
                                startActivity(intent);

                        }
                        else
                        {
                                Toast.makeText( MainActivity.this, "Invalid Username
and Password", Toast.LENGTH_SHORT).show();
                        }
                }
        });
    }
}



B) Create registration form given below. Also perform appropriate
validation

Xml file:-

<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
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">

        <TextView
            android:id="@+id/textView"
            android:layout_width="328dp"
            android:layout_height="34dp"
            android:text="Online Registration Form"
            android:textAlignment="center"
            android:textSize="25dp"
            android:textStyle="bold"
            app:layout_constraintBottom_toBottomOf="parent"
            app:layout_constraintEnd_toEndOf="parent"
            app:layout_constraintHorizontal_bias="0.493"
            app:layout_constraintStart_toStartOf="parent"
            app:layout_constraintTop_toTopOf="parent"
            app:layout_constraintVertical_bias="0.022" />

    <EditText
        android:id="@+id/et1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:ems="10"
        android:hint="Enter your name"
        android:inputType="textPersonName"
        android:textStyle="italic"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.81"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.137" />

    <EditText
        android:id="@+id/et3"
```

```xml
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:ems="10"
        android:hint="Enter your email id"
        android:inputType="textPersonName"
        android:textStyle="italic"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.8"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />

    <EditText
        android:id="@+id/et4"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:ems="10"
        android:hint="Enter your password"
        android:inputType="textPersonName"
        android:textStyle="italic"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.805"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.612" />

    <TextView
            android:id="@+id/textView2"
            android:layout_width="126dp"
            android:layout_height="45dp"
            android:gravity="center"
            android:text="Name"
            android:textStyle="italic"
            app:layout_constraintBottom_toBottomOf="parent"
            app:layout_constraintEnd_toEndOf="parent"
            app:layout_constraintHorizontal_bias="0.056"
            app:layout_constraintStart_toStartOf="parent"
            app:layout_constraintTop_toTopOf="parent"
            app:layout_constraintVertical_bias="0.137" />

    <TextView
        android:id="@+id/textView6"
        android:layout_width="126dp"
        android:layout_height="45dp"
        android:gravity="center"
        android:text="Password"
        android:textStyle="italic"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.056"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.612" />

    <TextView
        android:id="@+id/textView5"
        android:layout_width="126dp"
        android:layout_height="45dp"
        android:gravity="center"
        android:text="E-mail"
```

```xml
        android:textStyle="italic"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.056"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />

    <TextView
        android:id="@+id/textView3"
        android:layout_width="126dp"
        android:layout_height="45dp"
        android:gravity="center"
        android:text="Contactno"
        android:textStyle="italic"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.056"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.263" />

    <EditText
        android:id="@+id/et2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:ems="10"
        android:hint="Enter your contactno"
        android:inputType="textPersonName"
        android:textStyle="italic"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.81"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.263" />

    <TextView
        android:id="@+id/textView4"
        android:layout_width="126dp"
        android:layout_height="45dp"
        android:gravity="center"
        android:text="Gender"
        android:textStyle="italic"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.056"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.381" />

    <CheckBox
        android:id="@+id/cb1"
        android:layout_width="81dp"
        android:layout_height="46dp"
        android:text="Male"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.515"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.381"
```

```xml
            tools:ignore="MissingConstraints" />

    <CheckBox
        android:id="@+id/cb2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Female"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.843"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.382"
        tools:ignore="MissingConstraints" />

    <Button
        android:id="@+id/btnButton"
        android:layout_width="222dp"
        android:layout_height="53dp"
        android:text="Submit"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.758" />


</androidx.constraintlayout.widget.ConstraintLayout>
```

Main java file:-

```java
package com.example.registrationform;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.CheckBox;
import android.widget.EditText;
import android.widget.Toast;

public class MainActivity extends AppCompatActivity {
    EditText Textview1,Textview2,Textview3,Textview4;
    Button button;
    CheckBox box1,box2;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

        Textview1 = (EditText) findViewById(R.id.et1);
        Textview2 = (EditText) findViewById(R.id.et2);
        Textview3 = (EditText) findViewById(R.id.et3);
        Textview4 = (EditText) findViewById(R.id.et4);

        box1 = (CheckBox) findViewById(R.id.cb1);
        box2 = (CheckBox) findViewById(R.id.cb2);

        button = (Button) findViewById(R.id.btnButton);
```

```java
        button.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                Toast.makeText( MainActivity.this, "Your record has been
successfully registered", Toast.LENGTH_SHORT).show();
            }
        });
    }
}
```

Q2. Create an Android application to send email with an attachment.

Xml file:-

```xml
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
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">

    <EditText
        android:id="@+id/email"
        android:layout_width="335dp"
        android:layout_height="50dp"
        android:ems="10"
        android:hint="Email"
        android:inputType="textEmailAddress"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.497"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.074" />

    <EditText
        android:id="@+id/subject"
        android:layout_width="335dp"
        android:layout_height="50dp"
        android:ems="10"
        android:hint="Subject"
        android:inputType="textPersonName"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.497"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.189" />

    <EditText
        android:id="@+id/msg"
        android:layout_width="335dp"
        android:layout_height="200dp"
        android:ems="10"
        android:gravity="left"
        android:hint="Message"
        android:inputType="textMultiLine"
        app:layout_constraintBottom_toBottomOf="parent"
```

```xml
            app:layout_constraintEnd_toEndOf="parent"
            app:layout_constraintHorizontal_bias="0.497"
            app:layout_constraintStart_toStartOf="parent"
            app:layout_constraintTop_toTopOf="parent"
            app:layout_constraintVertical_bias="0.368" />

    <Button
            android:id="@+id/btnsend"
            android:layout_width="329dp"
            android:layout_height="57dp"
            android:backgroundTint="@color/white"
            android:drawableLeft="@drawable/ic_baseline_send_24"
            android:text="                                    Send"
            android:textColor="@color/teal_200"
            app:layout_constraintBottom_toBottomOf="parent"
            app:layout_constraintEnd_toEndOf="parent"
            app:layout_constraintStart_toStartOf="parent"
            app:layout_constraintTop_toTopOf="parent"
            app:layout_constraintVertical_bias="0.724" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

Main java file:-

```java
package com.example.emailapplication;

import androidx.appcompat.app.AppCompatActivity;

import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;

public class MainActivity extends AppCompatActivity {

    EditText et_email,et_subject,et_msg;
    Button send;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

        et_email = (EditText) findViewById(R.id.email);
        et_subject = (EditText) findViewById(R.id.subject);
        et_msg = (EditText) findViewById(R.id.msg);

        send = (Button) findViewById(R.id.btnsend);

        send.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                String to = et_email.getText().toString();
                String subject = et_subject.getText().toString();
                String message = et_msg.getText().toString();

                Intent intent = new Intent(Intent.ACTION_SEND);
                intent.putExtra(Intent.EXTRA_EMAIL, new String[]{to});
                intent.putExtra(Intent.EXTRA_SUBJECT, subject);
                intent.putExtra(Intent.EXTRA_TEXT, message);

                intent.setType("message/rfc822");
```

```
                    startActivity(Intent.createChooser(intent, "Select Email
App"));
                }
            });
        }
}


Slip 11:-

Q1. A) Create application with Login Screen. On successful login, gives
message go to next Activity (Without Using Database).

Xml file:-

<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
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">

    <Button
        android:id="@+id/button3"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Submit"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.498"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.42" />

    <TextView
        android:id="@+id/textView3"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="LOGIN PAGE"
        android:textStyle="bold"
        android:textSize="30dp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.114"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.068" />

    <EditText
        android:id="@+id/editTextTextPersonName2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:drawableLeft="@drawable/ic_baseline_person_outline_24"
        android:ems="10"
        android:hint="Username"
        android:inputType="textPersonName"
        android:padding="10dp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
```

```xml
            app:layout_constraintHorizontal_bias="0.497"
            app:layout_constraintStart_toStartOf="parent"
            app:layout_constraintTop_toTopOf="parent"
            app:layout_constraintVertical_bias="0.205"
            tools:ignore="MissingConstraints" />

    <EditText
            android:id="@+id/editTextTextPersonName"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:drawableLeft="@drawable/ic_baseline_lock_24"
            android:ems="10"
            android:hint="Password"
            android:inputType="textPersonName"
            android:padding="10dp"
            app:layout_constraintBottom_toBottomOf="parent"
            app:layout_constraintEnd_toEndOf="parent"
            app:layout_constraintHorizontal_bias="0.497"
            app:layout_constraintStart_toStartOf="parent"
            app:layout_constraintTop_toTopOf="parent"
            app:layout_constraintVertical_bias="0.318"
            tools:ignore="MissingConstraints" />

</androidx.constraintlayout.widget.ConstraintLayout>
```

Main java file:-

```java
package com.example.loginpage;

import androidx.appcompat.app.AppCompatActivity;

import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;

public class MainActivity extends AppCompatActivity {
    EditText TextView1, TextView2;
    Button button;

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

        TextView1 = (EditText) findViewById(R.id.editTextTextPersonName2);
        TextView2 = (EditText) findViewById(R.id.editTextTextPersonName);

        button = findViewById(R.id.button3);
        button.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                String username = TextView1.getText().toString();
                String password = TextView2.getText().toString();

                //nextActivity();
                if (username.equals("admin") && password.equals("1234"))
                {
                    Toast.makeText( MainActivity.this, "Login Successful",
```

```java
                Toast.LENGTH_SHORT).show();
                        Intent intent = new Intent(getApplicationContext(),
NewLoginActivity.class);
                        startActivity(intent);

                }
                else
                {
                        Toast.makeText( MainActivity.this, "Invalid Username
and Password", Toast.LENGTH_SHORT).show();
                }
            }
        });
    }
}
```

B) Construct a bank app to display different menu like withdraw, deposit
etc.

Xml file:-

```xml
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
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:id="@+id/imageView"
        android:layout_width="369dp"
        android:layout_height="326dp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.392"
        app:srcCompat="@drawable/bank" />

    <TextView
        android:id="@+id/textView"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:fontFamily="cursive"
        android:text="Central Bank"
        android:textColor="#009688"
        android:textSize="40dp"
        android:textStyle="bold|italic"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.278"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.071" />

    <ImageView
        android:id="@+id/ivmenu"
        android:layout_width="45dp"
```

```xml
        android:layout_height="51dp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.923"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.07"
        app:srcCompat="@android:drawable/ic_menu_sort_by_size" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

Option.xml file:-

```xml
<?xml version="1.0" encoding="utf-8"?>
<menu xmlns:android="http://schemas.android.com/apk/res/android">
    <item
        android:title="About"
        android:id="@+id/aboutus"/>

    <item
        android:title="Deposite"
        android:id="@+id/deposite"/>


    <item
        android:title="Withdrawal"
        android:id="@+id/withdrawal"/>
</menu>
```

Java file:-

```java
package com.example.menudrivenprogram;

import androidx.appcompat.app.AppCompatActivity;

import android.content.Intent;
import android.os.Bundle;
import android.view.MenuItem;
import android.view.View;
import android.widget.ImageView;
import android.widget.PopupMenu;
import android.widget.Toast;

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

        menu = (ImageView) findViewById(R.id.ivmenu);

        menu.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                showMenu(view);
            }
        });
    }
    private void showMenu(View view){
        PopupMenu popupMenu = new PopupMenu(MainActivity.this,view);
```

```java
        popupMenu.getMenuInflater().inflate(R.menu.option,popupMenu.getMenu());
        popupMenu.setOnMenuItemClickListener(new
PopupMenu.OnMenuItemClickListener() {
            @Override
            public boolean onMenuItemClick(MenuItem menuItem) {
                if (menuItem.getItemId() == R.id.aboutus){
                    Intent intent = new Intent(getApplicationContext() ,
AboutActivity.class);
                    startActivity(intent);
                }
                if (menuItem.getItemId() == R.id.deposite){
                    Intent intent = new Intent(getApplicationContext() ,
DepositeActivity.class);
                    startActivity(intent);
                }
                if (menuItem.getItemId() == R.id.withdrawal){
                    Intent intent = new Intent(getApplicationContext() ,
WithdrawalActivity.class);
                    startActivity(intent);
                }
                return true;
            }
        });
        popupMenu.show();
    }
}
```

Slip 12:-

Q1. A) Construct a register app to display different menu like add, delete, edit etc.

Xml file:-

```xml
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
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:id="@+id/imageView"
        android:layout_width="369dp"
        android:layout_height="326dp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.392"
        app:srcCompat="@drawable/bank" />

    <TextView
        android:id="@+id/textView"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:fontFamily="cursive"
```

```xml
        android:text="Central Bank"
        android:textColor="#009688"
        android:textSize="40dp"
        android:textStyle="bold|italic"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.278"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.071" />

    <ImageView
        android:id="@+id/ivmenu"
        android:layout_width="45dp"
        android:layout_height="51dp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.923"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.07"
        app:srcCompat="@android:drawable/ic_menu_sort_by_size" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

Option.xml file:-

```xml
<?xml version="1.0" encoding="utf-8"?>
<menu xmlns:android="http://schemas.android.com/apk/res/android">
    <item
        android:title="About"
        android:id="@+id/aboutus"/>

    <item
        android:title="Deposite"
        android:id="@+id/deposite"/>


    <item
        android:title="Withdrawal"
        android:id="@+id/withdrawal"/>
</menu>
```

Java file:-

```java
package com.example.menudrivenprogram;

import androidx.appcompat.app.AppCompatActivity;

import android.content.Intent;
import android.os.Bundle;
import android.view.MenuItem;
import android.view.View;
import android.widget.ImageView;
import android.widget.PopupMenu;
import android.widget.Toast;

public class MainActivity extends AppCompatActivity {
    ImageView menu;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
```

```java
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

        menu = (ImageView) findViewById(R.id.ivmenu);

        menu.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                showMenu(view);
            }
        });
    }
    private void showMenu(View view){
        PopupMenu popupMenu = new PopupMenu(MainActivity.this,view);

popupMenu.getMenuInflater().inflate(R.menu.option,popupMenu.getMenu());
        popupMenu.setOnMenuItemClickListener(new
PopupMenu.OnMenuItemClickListener() {
            @Override
            public boolean onMenuItemClick(MenuItem menuItem) {
                if (menuItem.getItemId() == R.id.aboutus){
                    Intent intent = new Intent(getApplicationContext() ,
AboutActivity.class);
                    startActivity(intent);
                }
                if (menuItem.getItemId() == R.id.deposite){
                    Intent intent = new Intent(getApplicationContext() ,
DepositeActivity.class);
                    startActivity(intent);
                }
                if (menuItem.getItemId() == R.id.withdrawal){
                    Intent intent = new Intent(getApplicationContext() ,
WithdrawalActivity.class);
                    startActivity(intent);
                }
                return true;
            }
        });
        popupMenu.show();
    }
}
```

B) Create First Activity to accept information like Student First Name,
Middle Name, Last Name, Date of birth, Address, Email ID and display all
information on Second Activity when user click on Submit button.

Xml file:-

```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"
    tools:context=".MainActivity"
    android:orientation="vertical"
    android:gravity="center"
    android:padding="10dp">

    <EditText
```

```xml
        android:id="@+id/firstname"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginLeft="30dp"
        android:layout_marginRight="30dp"
        android:hint=" Enter First Name" />

    <EditText
        android:id="@+id/middlename"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginLeft="30dp"
        android:layout_marginRight="30dp"
        android:hint=" Enter Middle Name" />

    <EditText
        android:id="@+id/lastname"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginLeft="30dp"
        android:layout_marginRight="30dp"
        android:hint=" Enter Last Name" />

    <EditText
        android:id="@+id/dob"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginLeft="30dp"
        android:layout_marginRight="30dp"
        android:hint=" Enter Date of Birth" />

    <EditText
        android:id="@+id/add"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginLeft="30dp"
        android:layout_marginRight="30dp"
        android:hint=" Enter Address" />

    <EditText
        android:id="@+id/emailid"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginLeft="30dp"
        android:layout_marginRight="30dp"
        android:hint=" Enter Email id" />

    <Button
        android:id="@+id/submit"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="Submit"
        android:layout_marginLeft="20dp"
        android:layout_marginRight="20dp"/>
</LinearLayout>

Second xml file:-

<?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"
```

```xml
        xmlns:tools="http://schemas.android.com/tools"
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:orientation="vertical"
        android:padding="10dp"
        android:gravity="center"
        tools:context=".secondactivity">

    <TextView
        android:id="@+id/result"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginLeft="50dp"
        android:layout_marginRight="50dp"
        android:textSize="30dp"/>

</LinearLayout>
```

Java file:-

```java
package com.example.intentdata;

import androidx.appcompat.app.AppCompatActivity;

import android.annotation.SuppressLint;
import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;

public class MainActivity extends AppCompatActivity {

    Button submit;
    @SuppressLint("MissingInflatedId")
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

        final EditText firstet = findViewById(R.id.firstname);
        final EditText middleet = findViewById(R.id.middlename);
        final EditText lastet = findViewById(R.id.lastname);
        final EditText dobet = findViewById(R.id.dob);
        final EditText addet = findViewById(R.id.add);
        final EditText emailidet = findViewById(R.id.emailid);

        submit = (Button) findViewById(R.id.submit);

        submit.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                String first = firstet.getText().toString();
                String middle = middleet.getText().toString();
                String last = lastet.getText().toString();
                String dob = dobet.getText().toString();
                String add = addet.getText().toString();
                String emailid = emailidet.getText().toString();

                Intent intent = new
```

```java
                Intent(MainActivity.this,secondactivity.class);
                intent.putExtra("first",first);
                intent.putExtra("middle",middle);
                intent.putExtra("last",last);
                intent.putExtra("dob",dob);
                intent.putExtra("add",add);
                intent.putExtra("emailid",emailid);
                startActivity(intent);
            }
        });
    }
}


second java file:-

package com.example.intentdata;

import androidx.appcompat.app.AppCompatActivity;

import android.content.Intent;
import android.os.Bundle;
import android.widget.TextView;

public class secondactivity extends AppCompatActivity {
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_secondactivity);

      final TextView  result = findViewById(R.id.result);

        Intent intent = getIntent();
        String first = intent.getStringExtra("first");
        String middle = intent.getStringExtra("middle");
        String last = intent.getStringExtra("last");
        String dob = intent.getStringExtra("dob");
        String add = intent.getStringExtra("add");
        String emailid = intent.getStringExtra("emailid");

        result.setText("First Name: "+first+"\nMiddle Name:
"+middle+"\nLast Name: "+last+
                "\nDate Of Birth: "+dob+"\nAddress"+add+"\nEmail ID:
"+emailid);
    }
}
```

Q2. Create an application to send SMS with image and contact as an
attachment.

Xml file:-
```xml
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
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">

    <EditText
```

```xml
        android:id="@+id/editTextTextMultiLine"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:ems="10"
        android:gravity="start|top"
        android:inputType="textMultiLine"
        android:hint="Enter a message"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.497"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/editTextPhone"
        app:layout_constraintVertical_bias="0.07" />

    <EditText
        android:id="@+id/editTextPhone"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginTop="128dp"
        android:ems="10"
        android:inputType="phone"
        android:hint="Enter a number"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.502"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />

    <Button
        android:id="@+id/btnsms"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Message"
        android:drawableLeft="@drawable/ic_baseline_message_24"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.498"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/editTextTextMultiLine"
        app:layout_constraintVertical_bias="0.286" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

Manifest.xml file:-

```xml
<uses-permission android:name="android.permission.SEND_SMS"/>
<uses-permission android:name="android.permission.RECEIVE_SMS"/>
```

Java file:-

```java
package com.example.smsusingandroid;

import androidx.appcompat.app.AppCompatActivity;

import android.content.Intent;
import android.net.Uri;
import android.os.Bundle;
import android.text.TextUtils;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;
```

```java
public class MainActivity extends AppCompatActivity {
    EditText phone,msg;
    Button message;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

        phone = (EditText) findViewById(R.id.editTextPhone);
        msg = (EditText) findViewById(R.id.editTextTextMultiLine);
        message = (Button) findViewById(R.id.btnsms);

        Button btnmsg = (Button) findViewById(R.id.btnsms);
        final EditText mssget = (EditText)
findViewById(R.id.editTextTextMultiLine);
        final EditText phonenoet = (EditText)
findViewById(R.id.editTextPhone);

        btnmsg.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                String msgsms = mssget.getText().toString();
                String phoneno = phonenoet.getText().toString();
                if (!TextUtils.isEmpty(msgsms) &&
!TextUtils.isEmpty(phoneno)){
                    Intent smsIntent = new Intent(Intent.ACTION_SENDTO,
Uri.parse("smsto:-"+phoneno));
                    smsIntent.putExtra("sms_body",msgsms);
                    startActivity(smsIntent);
                }
                else
                    Toast.makeText(MainActivity.this, "flieds are
required", Toast.LENGTH_SHORT).show();
            }
        });
    }
}
```

Slip 13:-

Q1. A) Create a Simple Application Which Send —Hi message from one activity
to another with help of Button (Use Intent)

Xml file:-

```xml
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
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">

    <EditText
        android:id="@+id/ettpnName"
        android:layout_width="303dp"
        android:layout_height="47dp"
        android:ems="10"
```

```xml
        android:hint="Name:"
        android:inputType="textPersonName"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.14" />

    <Button
        android:id="@+id/button"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Send"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.498"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.364" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

Second xml file:-

```xml
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
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=".secondactivity">

<TextView
    android:id="@+id/received_value_id"
    android:layout_width="300dp"
    android:layout_height="50dp"
    android:textSize="40sp"
    android:textStyle="bold"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.495"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.16"
    tools:ignore="MissingConstraints" />

<TextView
    android:id="@+id/textView"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Good afternoon......."
    android:textSize="20dp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.76"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.225" />

</androidx.constraintlayout.widget.ConstraintLayout>
```

**Java file:-**

```java
package com.example.slip2q1b;

import androidx.appcompat.app.AppCompatActivity;

import android.annotation.SuppressLint;
import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;

public class MainActivity extends AppCompatActivity {
    EditText name;
    Button send;
    @SuppressLint("MissingInflatedId")
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

        name = (EditText) findViewById(R.id.ettpnName);
        send = (Button) findViewById(R.id.button);

        send.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                String str = name.getText().toString();
                Intent intent = new
Intent(getApplicationContext(),secondactivity.class);
                intent.putExtra("message_key", str);
                startActivity(intent);
            }
        });
    }
}
```

second java file:-

```java
package com.example.slip2q1b;

import androidx.appcompat.app.AppCompatActivity;

import android.content.Intent;
import android.os.Bundle;
import android.widget.TextView;

public class secondactivity extends AppCompatActivity {

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

        receiver_msg = findViewById(R.id.received_value_id);
        // create the get Intent object
        Intent intent = getIntent();
        // receive the value by getStringExtra() method and
        // key must be same which is send by first activity
```

```
            String str = intent.getStringExtra("message_key");
            // display the string into textView
            receiver_msg.setText(str);
        }
    }
}


B) Create First Activity to accept information like Student First Name,
Middle Name, Last Name, Date of birth, Address, Email ID and display all
information on Second Activity when user click on the Submit button

Xml file:-
<?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"
    tools:context=".MainActivity"
    android:orientation="vertical"
    android:gravity="center"
    android:padding="10dp">

    <EditText
        android:id="@+id/firstname"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginLeft="30dp"
        android:layout_marginRight="30dp"
        android:hint=" Enter First Name" />

    <EditText
        android:id="@+id/middlename"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginLeft="30dp"
        android:layout_marginRight="30dp"
        android:hint=" Enter Middle Name" />

    <EditText
        android:id="@+id/lastname"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginLeft="30dp"
        android:layout_marginRight="30dp"
        android:hint=" Enter Last Name" />

    <EditText
        android:id="@+id/dob"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginLeft="30dp"
        android:layout_marginRight="30dp"
        android:hint=" Enter Date of Birth" />

    <EditText
        android:id="@+id/add"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginLeft="30dp"
        android:layout_marginRight="30dp"
```

```xml
                android:hint=" Enter Address" />

        <EditText
            android:id="@+id/emailid"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:layout_marginLeft="30dp"
            android:layout_marginRight="30dp"
            android:hint=" Enter Email id" />

        <Button
            android:id="@+id/submit"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:text="Submit"
            android:layout_marginLeft="20dp"
            android:layout_marginRight="20dp"/>
</LinearLayout>
```

Second xmlfile:-

```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"
    android:padding="10dp"
    android:gravity="center"
    tools:context=".secondactivity">

    <TextView
        android:id="@+id/result"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginLeft="50dp"
        android:layout_marginRight="50dp"
        android:textSize="30dp"/>

</LinearLayout>
```

Java file:-

```java
package com.example.intentdata;

import androidx.appcompat.app.AppCompatActivity;

import android.annotation.SuppressLint;
import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;

public class MainActivity extends AppCompatActivity {

    Button submit;
    @SuppressLint("MissingInflatedId")
    @Override
    protected void onCreate(Bundle savedInstanceState) {
```

```java
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

        final EditText firstet = findViewById(R.id.firstname);
        final EditText middleet = findViewById(R.id.middlename);
        final EditText lastet = findViewById(R.id.lastname);
        final EditText dobet = findViewById(R.id.dob);
        final EditText addet = findViewById(R.id.add);
        final EditText emailidet = findViewById(R.id.emailid);

        submit = (Button) findViewById(R.id.submit);

        submit.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                String first = firstet.getText().toString();
                String middle = middleet.getText().toString();
                String last = lastet.getText().toString();
                String dob = dobet.getText().toString();
                String add = addet.getText().toString();
                String emailid = emailidet.getText().toString();

                Intent intent = new
Intent(MainActivity.this,secondactivity.class);
                intent.putExtra("first",first);
                intent.putExtra("middle",middle);
                intent.putExtra("last",last);
                intent.putExtra("dob",dob);
                intent.putExtra("add",add);
                intent.putExtra("emailid",emailid);
                startActivity(intent);
            }
        });
    }
}

second java file:-

package com.example.intentdata;

import androidx.appcompat.app.AppCompatActivity;

import android.content.Intent;
import android.os.Bundle;
import android.widget.TextView;

public class secondactivity extends AppCompatActivity {
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_secondactivity);

      final TextView  result = findViewById(R.id.result);

        Intent intent = getIntent();
        String first = intent.getStringExtra("first");
        String middle = intent.getStringExtra("middle");
        String last = intent.getStringExtra("last");
        String dob = intent.getStringExtra("dob");
        String add = intent.getStringExtra("add");
        String emailid = intent.getStringExtra("emailid");
```

```
            result.setText("First Name: "+first+"\nMiddle Name:
"+middle+"\nLast Name: "+last+
                "\nDate Of Birth: "+dob+"\nAddress"+add+"\nEmail ID:
"+emailid);
    }
}


Slip 14:-

Q2 . Write an android application using SQLite to create table and perform
CRUD operations (Example. COURSE table (ID, Name, Duration, Description),
perform ADD, UPDATE, DELETE and READ operations).

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"
    android:padding="10dp"
    tools:context=".MainActivity">

    <TextView
        android:id="@+id/texttitle"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="Please Enter Customer details below"
        android:textSize="20dp"
        android:layout_marginTop="20dp"
         />

    <EditText
        android:id="@+id/name"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="Enter Name"
        android:textSize="15dp"
        android:layout_below="@+id/texttitle"
        android:inputType="textPersonName"/>

    <EditText
        android:id="@+id/address"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="Enter Address"
        android:textSize="15dp"
        android:layout_below="@+id/name"
        android:padding="10dp"
        android:inputType="textShortMessage"/>

    <EditText
        android:id="@+id/contact"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="Enter Contact Number"
        android:textSize="15dp"
        android:layout_below="@+id/address"
```

```xml
        android:inputType="number"/>

    <Button
        android:id="@+id/btnInsert"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:textSize="20dp"
        android:text="Insert New Data"
        android:layout_marginTop="15dp"
        android:layout_below="@id/contact"/>

    <Button
        android:id="@+id/btnUpdate"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:textSize="20dp"
        android:text="Update"
        android:layout_marginTop="15dp"
        android:layout_below="@id/btnInsert"/>

    <Button
        android:id="@+id/btnDelete"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:textSize="20dp"
        android:text="Delete"
        android:layout_marginTop="15dp"
        android:layout_below="@id/btnUpdate"/>

    <Button
        android:id="@+id/btnView"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:textSize="20dp"
        android:text="View Data"
        android:layout_marginTop="15dp"
        android:layout_below="@id/btnDelete"/>

</RelativeLayout>
```

MainActivity.java

```java
package com.example.sqliteapplication;

import androidx.appcompat.app.AlertDialog;
import androidx.appcompat.app.AppCompatActivity;

import android.database.Cursor;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;

public class MainActivity extends AppCompatActivity {

    EditText name, address, contact;
    Button insert, update, delete, view;
    DBHelper DB;

    @Override
```

```java
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

        name=findViewById(R.id.name);
        address=findViewById(R.id.address);
        contact=findViewById(R.id.contact);

        insert=findViewById(R.id.btnInsert);
        update=findViewById(R.id.btnUpdate);
        delete=findViewById(R.id.btnDelete);
        view = findViewById(R.id.btnView);
        DB = new DBHelper(this);

        insert.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                String nameTxt = name.getText().toString();
                String addressTxt = address.getText().toString();
                String contactTxt = contact.getText().toString();

                Boolean checkinsertdata = DB.insertdata(nameTxt,
addressTxt, contactTxt);
                if(checkinsertdata==true)
                    Toast.makeText(MainActivity.this, "New Data Inserted",
Toast.LENGTH_SHORT).show();
                else
                    Toast.makeText(MainActivity.this, "New Data Not
Inserted", Toast.LENGTH_SHORT).show();
            }
        });

        update.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                String nameTxt = name.getText().toString();
                String addressTxt = address.getText().toString();
                String contactTxt = contact.getText().toString();

                Boolean checkupdatedata = DB.updatedata(nameTxt,
addressTxt, contactTxt);
                if(checkupdatedata==true)
                    Toast.makeText(MainActivity.this, "Data Updated",
Toast.LENGTH_SHORT).show();
                else
                    Toast.makeText(MainActivity.this, "Data Not Updated",
Toast.LENGTH_SHORT).show();
            }
        });

        delete.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                String nameTxt = name.getText().toString();

                Boolean checkdeletedata = DB.deletedata(nameTxt);
                if(checkdeletedata==true)
                    Toast.makeText(MainActivity.this, "Data Deleted",
Toast.LENGTH_SHORT).show();
                else
```

```java
                        Toast.makeText(MainActivity.this, "Data Not Deleted",
Toast.LENGTH_SHORT).show();
                }
        });

        view.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                Cursor res = DB.getdata();
                if(res.getCount()==0)
                {
                        Toast.makeText(MainActivity.this,"No Data Exists",
Toast.LENGTH_SHORT).show();
                    return;
                }
                StringBuffer buffer = new StringBuffer();
                while (res.moveToNext()){
                    buffer.append("Name :"+res.getString(0)+"\n");
                    buffer.append("Address :"+res.getString(1)+"\n");
                    buffer.append("Contact :"+res.getString(2)+"\n");
                }

                AlertDialog.Builder builder = new
AlertDialog.Builder(MainActivity.this);
                builder.setCancelable(true);
                builder.setTitle("Customer Entries");
                builder.setMessage(buffer.toString());
                builder.show();
            }
        });
    }
}

DBHelper.java

package com.example.sqliteapplication;

import android.content.ContentValues;
import android.content.Context;
import android.database.Cursor;
import android.database.sqlite.SQLiteDatabase;
import android.database.sqlite.SQLiteOpenHelper;

import androidx.annotation.Nullable;

public class DBHelper extends SQLiteOpenHelper {

    public DBHelper(Context context) {
        super(context, "Customer123.db", null, 1);

    }

    @Override
    public void onCreate(SQLiteDatabase db) {
        db.execSQL("create Table CustomerDetails(name TEXT primary key,
address TEXT, contact TEXT)");
    }

    @Override
    public void onUpgrade(SQLiteDatabase db, int oldVersion, int
newVersion) {
```

```java
        db.execSQL("drop Table if exists CustomerDetails");
    }

    public Boolean insertdata(String name, String address, String contact)
{
        SQLiteDatabase DB = this.getWritableDatabase();
        ContentValues contentValues = new ContentValues();
        contentValues.put("name", name);
        contentValues.put("address", address);
        contentValues.put("contact", contact);
        long result = DB.insert("CustomerDetails", null, contentValues);
        if (result == -1) {
            return false;
        } else {
            return true;
        }
    }

    public Boolean updatedata(String name, String address, String contact)
{
        SQLiteDatabase DB = this.getWritableDatabase();
        ContentValues contentValues = new ContentValues();
        contentValues.put("address", address);
        contentValues.put("contact", contact);
        Cursor cursor = DB.rawQuery("Select * from CustomerDetails where
name = ?", new String[]{name});
        if (cursor.getCount() > 0) {
            long result = DB.update("CustomerDetails", contentValues, "name
= ?", new String[]{name});
            if (result == -1) {
                return false;
            } else {
                return true;
            }
        } else {
            return false;
        }
    }

    public Boolean deletedata(String name) {
        SQLiteDatabase DB = this.getWritableDatabase();
        Cursor cursor = DB.rawQuery("Select * from CustomerDetails where
name = ?", new String[]{name});
        if (cursor.getCount() > 0) {
            long result = DB.delete("CustomerDetails", "name=?", new
String[]{name});
            if (result == -1) {
                return false;
            } else {
                return true;
            }
        } else {
            return false;
        }
    }

    public Cursor getdata() {
        SQLiteDatabase DB = this.getWritableDatabase();
        Cursor cursor = DB.rawQuery("Select * from CustomerDetails", null);
        return cursor;
    }
```

```
}


Slip 15:-

Q1. A) Create an Android App, it reads the Students Details (Name, Surname,
Class, Gender, Hobbies, Marks) and display the all information in another
activity in table format on click of Submit button.

Xml file:-
<?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"
    tools:context=".MainActivity"
    android:orientation="vertical"
    android:gravity="center"
    android:padding="10dp">

    <EditText
        android:id="@+id/firstname"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginLeft="30dp"
        android:layout_marginRight="30dp"
        android:hint=" Enter First Name" />

    <EditText
        android:id="@+id/middlename"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginLeft="30dp"
        android:layout_marginRight="30dp"
        android:hint=" Enter Middle Name" />

    <EditText
        android:id="@+id/lastname"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginLeft="30dp"
        android:layout_marginRight="30dp"
        android:hint=" Enter Last Name" />

    <EditText
        android:id="@+id/dob"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginLeft="30dp"
        android:layout_marginRight="30dp"
        android:hint=" Enter Date of Birth" />

    <EditText
        android:id="@+id/add"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginLeft="30dp"
        android:layout_marginRight="30dp"
        android:hint=" Enter Address" />
```

```xml
    <EditText
        android:id="@+id/emailid"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginLeft="30dp"
        android:layout_marginRight="30dp"
        android:hint=" Enter Email id" />

    <Button
        android:id="@+id/submit"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="Submit"
        android:layout_marginLeft="20dp"
        android:layout_marginRight="20dp"/>
</LinearLayout>
```

Second xmlfile:-

```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"
    android:padding="10dp"
    android:gravity="center"
    tools:context=".secondactivity">

    <TextView
        android:id="@+id/result"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginLeft="50dp"
        android:layout_marginRight="50dp"
        android:textSize="30dp"/>

</LinearLayout>
```

Java file:-

```java
package com.example.intentdata;

import androidx.appcompat.app.AppCompatActivity;

import android.annotation.SuppressLint;
import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;

public class MainActivity extends AppCompatActivity {

    Button submit;
    @SuppressLint("MissingInflatedId")
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
```

```java
        final EditText firstet = findViewById(R.id.firstname);
        final EditText middleet = findViewById(R.id.middlename);
        final EditText lastet = findViewById(R.id.lastname);
        final EditText dobet = findViewById(R.id.dob);
        final EditText addet = findViewById(R.id.add);
        final EditText emailidet = findViewById(R.id.emailid);

        submit = (Button) findViewById(R.id.submit);

        submit.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                String first = firstet.getText().toString();
                String middle = middleet.getText().toString();
                String last = lastet.getText().toString();
                String dob = dobet.getText().toString();
                String add = addet.getText().toString();
                String emailid = emailidet.getText().toString();

                Intent intent = new
Intent(MainActivity.this,secondactivity.class);
                intent.putExtra("first",first);
                intent.putExtra("middle",middle);
                intent.putExtra("last",last);
                intent.putExtra("dob",dob);
                intent.putExtra("add",add);
                intent.putExtra("emailid",emailid);
                startActivity(intent);
            }
        });
    }
}

second java file:-

package com.example.intentdata;

import androidx.appcompat.app.AppCompatActivity;

import android.content.Intent;
import android.os.Bundle;
import android.widget.TextView;

public class secondactivity extends AppCompatActivity {
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_secondactivity);

      final TextView  result = findViewById(R.id.result);

        Intent intent = getIntent();
        String first = intent.getStringExtra("first");
        String middle = intent.getStringExtra("middle");
        String last = intent.getStringExtra("last");
        String dob = intent.getStringExtra("dob");
        String add = intent.getStringExtra("add");
        String emailid = intent.getStringExtra("emailid");

        result.setText("First Name: "+first+"\nMiddle Name:
```

```
"+middle+"\nLast Name: "+last+
            "\nDate Of Birth: "+dob+"\nAddress"+add+"\nEmail ID:
"+emailid);
    }
}


Q2 Create a Simple calculator.

Xml file:-
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
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">

    <Button
        android:id="@+id/btnequal"
        android:layout_width="354dp"
        android:layout_height="41dp"
        android:text="="
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.479"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.843" />

    <Button
        android:id="@+id/btnadd"
        android:layout_width="65dp"
        android:layout_height="42dp"
        android:text="+"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.927"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.264" />

    <Button
        android:id="@+id/btnclear"
        android:layout_width="65dp"
        android:layout_height="42dp"
        android:text="C"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.554"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.703" />

    <Button
        android:id="@+id/btndot"
        android:layout_width="65dp"
        android:layout_height="42dp"
        android:text="."
        app:layout_constraintBottom_toBottomOf="parent"
```

```xml
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.3"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.703" />

    <Button
        android:id="@+id/btn0"
        android:layout_width="65dp"
        android:layout_height="42dp"
        android:text="0"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.046"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.703" />

    <Button
        android:id="@+id/btn2"
        android:layout_width="65dp"
        android:layout_height="42dp"
        android:text="2"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.3"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.552" />

    <Button
        android:id="@+id/btn3"
        android:layout_width="65dp"
        android:layout_height="42dp"
        android:text="3"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.554"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.552" />

    <Button
        android:id="@+id/btn1"
        android:layout_width="65dp"
        android:layout_height="42dp"
        android:text="1"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.046"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.552" />

    <Button
        android:id="@+id/btn5"
        android:layout_width="65dp"
        android:layout_height="42dp"
        android:text="5"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
```

```xml
        app:layout_constraintHorizontal_bias="0.291"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.415" />

    <Button
        android:id="@+id/btn4"
        android:layout_width="65dp"
        android:layout_height="42dp"
        android:text="4"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.046"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.415" />

    <EditText
        android:id="@+id/cal"
        android:layout_width="360dp"
        android:layout_height="42dp"
        android:ems="10"
        android:hint="Calculater"
        android:inputType="textPersonName"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.497"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.102" />

    <Button
        android:id="@+id/btn7"
        android:layout_width="65dp"
        android:layout_height="42dp"
        android:text="7"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.046"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.264" />

    <Button
        android:id="@+id/btnsub"
        android:layout_width="65dp"
        android:layout_height="42dp"
        android:text="-"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.927"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.415" />

    <Button
        android:id="@+id/btndiv"
        android:layout_width="65dp"
        android:layout_height="42dp"
        android:text="/"
        app:layout_constraintBottom_toBottomOf="parent"
```

```xml
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.927"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.552" />

    <Button
        android:id="@+id/btnmul"
        android:layout_width="65dp"
        android:layout_height="42dp"
        android:text="*"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.927"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.703" />

    <Button
        android:id="@+id/btn8"
        android:layout_width="69dp"
        android:layout_height="40dp"
        android:text="8"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.295"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.266" />

    <Button
        android:id="@+id/btn9"
        android:layout_width="65dp"
        android:layout_height="37dp"
        android:text="9"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.554"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.265" />

    <Button
        android:id="@+id/btn6"
        android:layout_width="65dp"
        android:layout_height="42dp"
        android:text="6"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.554"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.415" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

Java file:-

```java
package com.example.calculator;

import androidx.appcompat.app.AppCompatActivity;
```

```java
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;

public class MainActivity extends AppCompatActivity {
    EditText TextViewcal;
    Button
button1,button2,button3,button4,button5,button6,button7,button8,button9,button0,

buttonadd,buttonsub,buttondiv,buttonmul,buttonclear,buttonequal,buttondot;
    Float value1,value2;
    boolean addition,subtraction,division,multiplication;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

        TextViewcal = (EditText) findViewById(R.id.cal);
        button1 = findViewById(R.id.btn1);
        button2 = findViewById(R.id.btn2);
        button3 = findViewById(R.id.btn3);
        button4 = findViewById(R.id.btn4);
        button5 = findViewById(R.id.btn5);
        button6 = findViewById(R.id.btn6);
        button7 = findViewById(R.id.btn7);
        button8 = findViewById(R.id.btn8);
        button9 = findViewById(R.id.btn9);
        button0 = findViewById(R.id.btn0);
        buttonadd = findViewById(R.id.btnadd);
        buttonsub = findViewById(R.id.btnsub);
        buttonmul = findViewById(R.id.btnmul);
        buttondiv = findViewById(R.id.btndiv);
        buttondot = findViewById(R.id.btndot);
        buttonclear = findViewById(R.id.btnclear);
        buttonequal = findViewById(R.id.btnequal);

        button1.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                TextViewcal.setText(TextViewcal.getText() + "1");
            }
        });
        button2.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                TextViewcal.setText(TextViewcal.getText() + "2");
            }
        });
        button3.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                TextViewcal.setText(TextViewcal.getText() + "3");
            }
        });
        button4.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                TextViewcal.setText(TextViewcal.getText() + "4");
            }
```

```java
        });
        button5.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                TextViewcal.setText(TextViewcal.getText() + "5");
            }
        });
        button6.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                TextViewcal.setText(TextViewcal.getText() + "6");
            }
        });
        button7.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                TextViewcal.setText(TextViewcal.getText() + "7");
            }
        });
        button8.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                TextViewcal.setText(TextViewcal.getText() + "8");
            }
        });button9.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                TextViewcal.setText(TextViewcal.getText() + "9");
            }
        });
        button0.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                TextViewcal.setText(TextViewcal.getText() + "0");
            }
        });

        buttonadd.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                    value1 = Float.parseFloat(TextViewcal.getText() + "");
                    addition = true;
                    TextViewcal.setText(null);
            }
        });
        buttonsub.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                value1 = Float.parseFloat(TextViewcal.getText() + "");
                subtraction = true;
                TextViewcal.setText(null);
            }
        });
        buttonmul.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                value1 = Float.parseFloat(TextViewcal.getText() + "");
                multiplication = true;
                TextViewcal.setText(null);
            }
        });
```

```java
        buttondiv.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                value1 = Float.parseFloat(TextViewcal.getText() + "");
                division = true;
                TextViewcal.setText(null);
            }
        });

        buttonequal.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                value2 = Float.parseFloat(TextViewcal.getText() + "");
                if (addition==true){
                    TextViewcal.setText(value1 + value2 + "");
                    addition=false;
                }
                if(subtraction==true){
                    TextViewcal.setText(value1 - value2 + "");
                    subtraction=false;
                }
                if (multiplication==true){
                    TextViewcal.setText(value1 * value2 + "");
                    multiplication=false;
                }
                if (division==true) {
                    TextViewcal.setText(value1 / value2 + "");
                    division=false;
                }
            }
        });

        buttonclear.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                TextViewcal.setText("");
            }
        });

        buttondot.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                TextViewcal.setText(TextViewcal.getText() + ".");
            }
        });
    }
}
```