GOVERNMENT POLYTECHNIC COLLEGE
ATTINGAL

…. Programming Smart Device Lab ….

LABORATORY RECORD

Certified that this is the bonafide record of experiment done by Miss/Mr..........Fathima S M.........of......S6..........Year/Semester (RollNo..........20............of...................CHE...............................Branch) during the year...............2023-2024.................................

Name of Subject...Programming Smart Device Lab..

Reg No...................2101150718...........................

Internal Examiner   Lecturer in charge

External Examiner   Head of Section

CONCATINATION OF TWO STRINGS

Aim: Develop an Android application for concatenating two strings.

AndroidManifest.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools">
    <application
        android:allowBackup="true"
        android:dataExtractionRules="@xml/data_extraction_rules"
        android:fullBackupContent="@xml/backup_rules"
        android:icon="@mipmap/ic_launcher"
        android:label="@string/app_name"
        android:roundIcon="@mipmap/ic_launcher_round"
        android:supportsRtl="true"
        android:theme="@style/Theme.Apple"
        tools:targetApi="31">
        <activity
            android:name=".MainActivity"
            android:exported="true">
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />
                <category android:name="android.intent.category.LAUNCHER" />
            </intent-filter>
        </activity>
    </application>
</manifest>
```

activity_main.xml

```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"
    android:background="#57D3E3"
    tools:context=".MainActivity">
    <TextView
        android:id="@+id/head"
        android:layout_width="150dp"
        android:layout_height="50dp"
        android:background="#57D3E3"
        android:gravity="center"
        android:text="String 1"
        android:textSize="25sp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.0"
        app:layout_constraintStart_toStartOf="parent"
```

```xml
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.109" />
    <TextView
        android:id="@+id/head2"
        android:layout_width="150dp"
        android:layout_height="50dp"
        android:layout_marginTop="40dp"
        android:background="#57D3E3"
        android:gravity="center"
        android:text="String 2"
        android:textSize="25sp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.0"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.175" />
    <Button
        android:id="@+id/concat"
        android:layout_width="157dp"
        android:layout_height="69dp"
        android:gravity="center"
        android:text="click"
        android:textSize="15dp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.351" />
    <EditText
        android:id="@+id/output"
        android:layout_width="214dp"
        android:layout_height="58dp"
        android:hint="Result"
        android:inputType="text"
        android:textSize="30dp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />
    <TextView
        android:id="@+id/textView"
        android:layout_width="0dp"
        android:layout_height="35dp"
        android:gravity="center"
        android:text="CONCAT STRINGS"
        android:textSize="30dp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.0"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.022" />
    <EditText
        android:id="@+id/num1"
```

```xml
    android:layout_width="200dp"
    android:layout_height="50dp"
    android:ems="10"
    android:gravity="center"
    android:hint="Enter string 1"
    android:inputType="text"
    android:textSize="25sp"/>
  <EditText
    android:id="@+id/num2"
    android:layout_width="200dp"
    android:layout_height="50dp"
    android:ems="10"
    android:gravity="center"
    android:hint="Enter string 2"
    android:inputType="text"
    android:textSize="25sp"/>
</androidx.constraintlayout.widget.ConstraintLayout>
```

MainActivity. java

```java
package com.example.apple;
import androidx.appcompat.app.AppCompatActivity;
import android.widget.Button;
import android.widget.EditText;
import android.widget.TextView;
import org.w3c.dom.Text;
public class MainActivity extends AppCompatActivity {
  TextView output1;
  Button concat1;
  EditText num11;
  EditText num21;
  protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_main);
    concat1=findViewById(R.id.concat);
    concat1.setOnClickListener(new View.OnClickListener(){
      public void onClick(View view){
        num11=findViewById(R.id.num1);
        num21=findViewById(R.id.num2);
        output1=findViewById(R.id.output);
        String var_1=num11.getText().toString();
        String var_2=num21.getText().toString();
        String var_3=var_1+" "+var_2;
        output1.setText(var_3);
      }
    });
  }
}
```

Result

The application for concatenating two strings has been Developed successfully and output is verified.

CALCULATOR

Aim: Develop an Android application for a simple calculator .

AndroidManifest.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools">
    <application
        android:allowBackup="true"
        android:dataExtractionRules="@xml/data_extraction_rules"
        android:fullBackupContent="@xml/backup_rules"
        android:icon="@mipmap/ic_launcher"
        android:label="@string/app_name"
        android:roundIcon="@mipmap/ic_launcher_round"
        android:supportsRtl="true"
        android:theme="@style/Theme.Calculator"
        tools:targetApi="31">
        <activity
            android:name=".MainActivity"
            android:exported="true">
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />
                <category android:name="android.intent.category.LAUNCHER" />
            </intent-filter>
        </activity>
    </application>
</manifest>
```

activity_main.xml

```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"
    android:background="#5DCFCF"
    tools:context=".MainActivity">
    <TextView
        android:id="@+id/textView2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="CALCULATOR"
        android:textColor="#FFFFFF"
        android:textSize="20sp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.022" />
```

```xml
<TextView
    android:id="@+id/textView"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginTop="40dp"
    android:text="First Number"
    android:textColor="#FF9800"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.051"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/textView2"
    app:layout_constraintVertical_bias="0.0" />
<TextView
    android:id="@+id/textView3"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Second Number"
    android:textColor="#FF9800"
    android:textColorHint="#A32424"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.051"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/textView"
    app:layout_constraintVertical_bias="0.101" />
<EditText
    android:id="@+id/num1"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginTop="12dp"
    android:ems="10"
    android:gravity="center"
    android:inputType="text"
    android:textColor="#ED0707"
    android:textStyle="bold"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.666"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/textView2"
    app:layout_constraintVertical_bias="0.02" />
<EditText
    android:id="@+id/num2"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:ems="10"
    android:gravity="center"
    android:inputType="text"
    android:textColor="#ED0404"
    android:textStyle="bold"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.666"
    app:layout_constraintStart_toStartOf="parent"
```

```xml
    app:layout_constraintTop_toBottomOf="@+id/num1"
    app:layout_constraintVertical_bias="0.074" />
<Button
    android:id="@+id/add"
    android:layout_width="0dp"
    android:layout_height="wrap_content"
    android:text="Addition"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.197"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/num2"
    app:layout_constraintVertical_bias="0.066" />
<Button
    android:id="@+id/sub"
    android:layout_width="0dp"
    android:layout_height="wrap_content"
    android:text="Subtraction"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.56"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/num2"
    app:layout_constraintVertical_bias="0.165" />
<Button
    android:id="@+id/mul"
    android:layout_width="0dp"
    android:layout_height="wrap_content"
    android:text="Multiplication"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.0"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/num2"
    app:layout_constraintVertical_bias="0.265" />
<Button
    android:id="@+id/div"
    android:layout_width="0dp"
    android:layout_height="wrap_content"
    android:text="Division"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.0"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/num2"
    app:layout_constraintVertical_bias="0.364" />
<EditText
    android:id="@+id/result"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:ems="10"
    android:gravity="center"
    android:hint="RESULT"
    android:inputType="text"
    android:textColorHint="#F30B0B"
```

```
        android:textStyle="bold"
        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/mul"/>
</androidx.constraintlayout.widget.ConstraintLayout>
```

MainActivity. java

```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 var_result;
    EditText var_num1;
    EditText var_num2;
    Button var_add;
    Button var_sub;
    Button var_mul;
    Button var_div;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        var_num1=findViewById(R.id.num1);
        var_num2=findViewById(R.id.num2);
        var_add=findViewById(R.id.add);
        var_sub=findViewById(R.id.sub);
        var_mul=findViewById(R.id.mul);
        var_div=findViewById(R.id.div);
        var_result=findViewById(R.id.result);
        var_add.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                Double num1=Double.parseDouble(var_num1.getText().toString());
                Double num2=Double.parseDouble(var_num2.getText().toString());
                Double result= num1+num2;
                var_result.setText(result.toString());
            }
        });
        var_sub.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                Double num1=Double.parseDouble(var_num1.getText().toString());
                Double num2=Double.parseDouble(var_num2.getText().toString());
                Double result= num1-num2;
                var_result.setText(result.toString());
            }
        });
        var_mul.setOnClickListener(new View.OnClickListener() {
            @Override
```

```
        public void onClick(View v) {
            Double num1=Double.parseDouble(var_num1.getText().toString());
            Double num2=Double.parseDouble(var_num2.getText().toString());
            Double result= num1*num2;
            var_result.setText(result.toString());
        }
    });
    var_div.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View v) {
            Double num1=Double.parseDouble(var_num1.getText().toString());
            Double num2=Double.parseDouble(var_num2.getText().toString());
            Double result= num1%num2;
            var_result.setText(result.toString());
        }
    });
  }
}
```

Result

The application for simple calculator has been Developed successfully and output is verified.

ACCOUNT MAINTENANCE

Aim: Develop an Android application for account maintenance.

AndroidManifest.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools">
    <application
        android:allowBackup="true"
        android:dataExtractionRules="@xml/data_extraction_rules"
        android:fullBackupContent="@xml/backup_rules"
        android:icon="@mipmap/ic_launcher"
        android:label="@string/app_name"
        android:roundIcon="@mipmap/ic_launcher_round"
        android:supportsRtl="true"
        android:theme="@style/Theme.Mybank"
        tools:targetApi="31">
        <activity
            android:name=".MainActivity"
            android:exported="true">
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />
                <category android:name="android.intent.category.LAUNCHER" />
            </intent-filter>
        </activity>
    </application>
</manifest>
```

activity_main.xml

```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/cred"
        android:layout_width="134dp"
        android:layout_height="53dp"
        android:text="Credit"
        android:textSize="20dp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.812"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.522" />
    <TextView
```

```
            android:id="@+id/textView"
            android:layout_width="307dp"
            android:layout_height="51dp"
            android:gravity="center"
            android:text="Bank of Baroda"
            android:textColor="#3F51B5"
            android:textSize="30dp"
            android:textStyle="bold"
            app:layout_constraintBottom_toBottomOf="parent"
            app:layout_constraintEnd_toEndOf="parent"
            app:layout_constraintStart_toStartOf="parent"
            app:layout_constraintTop_toTopOf="parent"
            app:layout_constraintVertical_bias="0.038" />
        <TextView
            android:id="@+id/textView2"
            android:layout_width="151dp"
            android:layout_height="44dp"
            android:gravity="center"
            android:text="Acc No."
            android:textColor="#FF9800"
            android:textSize="25dp"
            app:layout_constraintBottom_toBottomOf="parent"
            app:layout_constraintEnd_toEndOf="parent"
            app:layout_constraintHorizontal_bias="0.061"
            app:layout_constraintStart_toStartOf="parent"
            app:layout_constraintTop_toTopOf="parent"
            app:layout_constraintVertical_bias="0.184" />
        <TextView
            android:id="@+id/textView3"
            android:layout_width="146dp"
            android:layout_height="41dp"
            android:gravity="center"
            android:text="Balance"
            android:textColor="#FF9800"
            android:textSize="25dp"
            app:layout_constraintBottom_toBottomOf="parent"
            app:layout_constraintEnd_toEndOf="parent"
            app:layout_constraintHorizontal_bias="0.072"
            app:layout_constraintStart_toStartOf="parent"
            app:layout_constraintTop_toTopOf="parent"
            app:layout_constraintVertical_bias="0.286" />
        <TextView
            android:id="@+id/textView4"
            android:layout_width="146dp"
            android:layout_height="41dp"
            android:gravity="center"
            android:text="Amount"
            android:textColor="#FF9800"
            android:textSize="25dp"
            app:layout_constraintBottom_toBottomOf="parent"
            app:layout_constraintEnd_toEndOf="parent"
            app:layout_constraintHorizontal_bias="0.06"
            app:layout_constraintStart_toStartOf="parent"
            app:layout_constraintTop_toTopOf="parent"
            app:layout_constraintVertical_bias="0.384" />
```

```xml
    <EditText
        android:id="@+id/accno"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:ems="10"
        android:inputType="text"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.925"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.183" />
    <EditText
        android:id="@+id/bal"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:ems="10"
        android:inputType="text"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.92"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"/>
    <EditText
        android:id="@+id/amo"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:ems="10"
        android:inputType="text"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.92"
        app:layout_constraintStart_toStartOf="parent"/>
    <Button
        android:id="@+id/deb"
        android:layout_width="134dp"
        android:layout_height="53dp"
        android:text="Debit"
        android:textSize="20dp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.198"
        app:layout_constraintStart_toStartOf="parent"/>
</androidx.constraintlayout.widget.ConstraintLayout>
```

MainActivity. java

```java
package com.example.mybank;
import androidx.appcompat.app.AppCompatActivity;;
import android.widget.Button;
import android.widget.Toast;
public class MainActivity extends AppCompatActivity {
    EditText amount;
    EditText balance;
    EditText accountno;
```

```
   Button debit;
   Button credit;
   protected void onCreate(Bundle savedInstanceState) {
      super.onCreate(savedInstanceState);
      setContentView(R.layout.activity_main);
      amount = findViewById(R.id.amo);
      balance = findViewById(R.id.bal);
      accountno = findViewById(R.id.accno);
      debit = findViewById(R.id.deb);
      credit = findViewById(R.id.cred);
      debit.setOnClickListener(new View.OnClickListener() {
         public void onClick(View v) {
            String accno= accountno.getText().toString();
            if (accno.equals("")){
               Toast.makeText(getApplicationContext(), "Please enter your acc no.",
                     Toast.LENGTH_SHORT).show(); }
            Float bal = Float.parseFloat(balance.getText().toString());
            Float amo = Float.parseFloat(amount.getText().toString());
            bal = bal - amo;
               if (bal == 0){
                  Toast.makeText(getApplicationContext(), "LOW BALANCE",
                        Toast.LENGTH_SHORT).show();
               }else {
                  balance.setText(bal.toString());
                  Toast.makeText(getApplicationContext(), "SUCCESSFULLY DEBITED",
                        Toast.LENGTH_SHORT).show();
                  if (bal < 100){
                     balance.setTextColor(Color.RED);
                  } else if (bal > 1000) {
                     balance.setTextColor(Color.GREEN);
                  }else {
                     balance.setTextColor(Color.BLACK);
                  } }}
      });
      credit.setOnClickListener(new View.OnClickListener() {
         public void onClick(View v) {
            Float bal = Float.parseFloat(balance.getText().toString());
            Float amo = Float.parseFloat(amount.getText().toString());
            bal = bal + amo;
            if (bal < 100){
               balance.setTextColor(Color.RED);
            } else if (bal > 1000) {
               balance.setTextColor(Color.GREEN);
            }else {
               balance.setTextColor(Color.BLACK);
            }
            balance.setText(bal.toString());
            Toast.makeText(getApplicationContext(), "SUCCESSFULLY CREDITED!",
                  Toast.LENGTH_SHORT).show();
         }});
   }
}
```

Result

The application for account maintenance has been Developed successfully and output is verified

LINEAR LAYOUT

Aim: Develop an Android application to demonstrate the use linearlayout, searchview, scrollview, imageview.

AndroidManifest.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
   xmlns:tools="http://schemas.android.com/tools">
   <application
      android:allowBackup="true"
      android:dataExtractionRules="@xml/data_extraction_rules"
      android:fullBackupContent="@xml/backup_rules"
      android:icon="@mipmap/ic_launcher"
      android:label="@string/app_name"
      android:roundIcon="@mipmap/ic_launcher_round"
      android:supportsRtl="true"
      android:theme="@style/Theme.Scrollimg"
      tools:targetApi="31">
      <activity
         android:name=".MainActivity"
         android:exported="true">
         <intent-filter>
            <action android:name="android.intent.action.MAIN" />
            <category android:name="android.intent.category.LAUNCHER" />
         </intent-filter>
      </activity>
   </application>
</manifest>
```

search.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<selector xmlns:android="http://schemas.android.com/apk/res/android">
<item>
   <shape android:shape= "rectangle">
      <solid android:color="#0DECE4"></solid>
      <stroke android:color="#E1D610" android:width="2dp"></stroke>
   </shape>
</item>
</selector>
```

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"
   app:layoutDescription="@xml/activity_main_scene"
   tools:context=".MainActivity">
```

```xml
<ScrollView
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_weight="1">
    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:orientation="vertical">
        <LinearLayout
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:background="#FAF2F2"
            android:orientation="horizontal"
            android:padding="10dp">
            <SearchView
                android:layout_width="match_parent"
                android:layout_height="wrap_content"
                android:background="@drawable/search"
                android:iconifiedByDefault="false"
                android:queryHint="Enter CAR NAME" />
        </LinearLayout>
        <LinearLayout
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:layout_marginTop="5dp"
            android:orientation="horizontal">
            <ImageView
                android:id="@+id/imageView5"
                android:layout_width="0dp"
                android:layout_height="215dp"
                android:layout_weight="1"
                android:scaleType="fitXY"
                app:srcCompat="@drawable/doge" />
        </LinearLayout>
        <LinearLayout
            android:layout_width="match_parent"
            android:layout_height="0dp"
            android:layout_marginTop="15dp"
            android:layout_weight="1"
            android:orientation="horizontal"
            android:baselineAligned="false">
            <LinearLayout
                android:layout_width="wrap_content"
                android:layout_height="match_parent"
                android:layout_marginEnd="5dp"
                android:layout_weight="1"
                android:orientation="vertical"
                tools:ignore="NestedWeights">
                <ImageView
                    android:id="@+id/imageView7"
                    android:layout_width="match_parent"
                    android:layout_height="129dp"
                    android:layout_weight="1"
                    android:contentDescription="TODO"
                    android:scaleType="fitXY"
```

```xml
            app:srcCompat="@drawable/supramk4"
            tools:ignore="DuplicateIds" />
        <TextView
            android:id="@+id/textView"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_weight="1"
            android:text="Supra Mk4" />
    </LinearLayout>
    <LinearLayout
        android:layout_width="wrap_content"
        android:layout_height="150dp"
        android:layout_weight="1"
        android:orientation="vertical">
        <ImageView
            android:id="@+id/imageView9"
            android:layout_width="match_parent"
            android:layout_height="202dp"
            android:layout_weight="1"
            android:scaleType="fitXY"
            app:srcCompat="@drawable/audiq8" />
        <TextView
            android:id="@+id/textView2"
            android:layout_width="wrap_content"
            android:layout_height="100dp"
            android:layout_weight="1"
            android:text="Audi Q8" />
    </LinearLayout>
</LinearLayout>
<LinearLayout
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_marginTop="15dp"
    android:orientation="horizontal"
    android:baselineAligned="false">
    <LinearLayout
        android:layout_width="273dp"
        android:layout_height="wrap_content"
        android:layout_marginEnd="5dp"
        android:layout_weight="1"
        android:orientation="vertical">
        <ImageView
            android:id="@+id/imageView7"
            android:layout_width="245dp"
            android:layout_height="150dp"
            android:layout_weight="1"
            android:scaleType="fitXY"
            app:srcCompat="@drawable/bmwi7"
            tools:ignore="DuplicateIds,NestedWeights" />
        <TextView
            android:id="@+id/textView3"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_weight="1"
            android:orientation="vertical"
```

```xml
                android:text="BMW i7" />
        </LinearLayout>
        <LinearLayout
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_weight="1"
            android:orientation="vertical">
            <ImageView
                android:id="@+id/imageView8"
                android:layout_width="258dp"
                android:layout_height="148dp"
                android:layout_weight="1"
                android:scaleType="fitXY"
                app:srcCompat="@drawable/kiaev6"
                tools:ignore="NestedWeights" />
            <TextView
                android:id="@+id/textView4"
                android:layout_width="match_parent"
                android:layout_height="wrap_content"
                android:layout_weight="1"
                android:text="KIA EV6" />
        </LinearLayout>
    </LinearLayout>
    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginTop="15dp"
        android:orientation="horizontal"
        android:baselineAligned="false">
        <LinearLayout
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_marginEnd="5dp"
            android:layout_weight="1"
            android:orientation="vertical">
            <ImageView
                android:id="@+id/imageView7"
                android:layout_width="247dp"
                android:layout_height="150dp"
                android:layout_weight="1"
                android:scaleType="fitXY"
                app:srcCompat="@drawable/bugatti"
                tools:ignore="DuplicateIds,NestedWeights" />
            <TextView
                android:id="@+id/textView5"
                android:layout_width="wrap_content"
                android:layout_height="wrap_content"
                android:layout_weight="1"
                android:orientation="vertical"
                android:text="BUGATTI CHIRON" />
        </LinearLayout>
        <LinearLayout
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_weight="1"
```

```xml
      android:orientation="vertical">
      <ImageView
        android:id="@+id/imageView8"
        android:layout_width="229dp"
        android:layout_height="150dp"
        android:layout_weight="1"
        android:scaleType="fitXY"
        app:srcCompat="@drawable/jaguar"
        tools:ignore="DuplicateIds,NestedWeights" />
      <TextView
        android:id="@+id/textView6"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_weight="1"
        android:text="JAGUAR" />
    </LinearLayout>
  </LinearLayout>
  <LinearLayout
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_marginTop="15dp"
    android:orientation="horizontal"
    android:baselineAligned="false">
    <LinearLayout
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:layout_marginEnd="5dp"
      android:layout_weight="1"
      android:orientation="vertical">
      <ImageView
        android:id="@+id/imageView7"
        android:layout_width="249dp"
        android:layout_height="147dp"
        android:layout_weight="1"
        android:scaleType="fitXY"
        app:srcCompat="@drawable/benzgla"
        tools:ignore="DuplicateIds,NestedWeights" />
      <TextView
        android:id="@+id/textView7"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_weight="1"
        android:text="BENZ GLA" />
    </LinearLayout>
    <LinearLayout
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:layout_weight="1"
      android:orientation="vertical">
      <ImageView
        android:id="@+id/imageView8"
        android:layout_width="232dp"
        android:layout_height="147dp"
        android:layout_weight="1"
        android:scaleType="fitXY"
```

```xml
        app:srcCompat="@drawable/defender"
        tools:ignore="DuplicateIds,NestedWeights" />
      <TextView
        android:id="@+id/textView8"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_weight="1"
        android:text="DEFENDER" />
    </LinearLayout>
  </LinearLayout>
  <LinearLayout
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_marginTop="15dp"
    android:orientation="horizontal"
    android:baselineAligned="false">
    <LinearLayout
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:layout_marginEnd="5dp"
      android:layout_weight="1"
      android:orientation="vertical">
      <ImageView
        android:id="@+id/imageView7"
        android:layout_width="248dp"
        android:layout_height="150dp"
        android:layout_weight="1"
        android:scaleType="fitXY"
        app:srcCompat="@drawable/minicooper"
        tools:ignore="DuplicateIds,NestedWeights" />
      <TextView
        android:id="@+id/textView9"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_weight="1"
        android:text="MINI COOPER" />
    </LinearLayout>
    <LinearLayout
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:layout_weight="1"
      android:orientation="vertical">
      <ImageView
        android:id="@+id/imageView8"
        android:layout_width="228dp"
        android:layout_height="151dp"
        android:layout_weight="1"
        android:scaleType="fitXY"
        app:srcCompat="@drawable/gwagon"
        tools:ignore="DuplicateIds,NestedWeights" />
      <TextView
        android:id="@+id/textView11"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_weight="1"
```

```xml
                android:text="G WAGON" />
        </LinearLayout>
    </LinearLayout>
  </LinearLayout>
</ScrollView>
<LinearLayout
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_weight=".1"
    android:orientation="horizontal">
    <ImageView
        android:id="@+id/imageView"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_weight="1"
        android:contentDescription="@string/todo"
        app:srcCompat="@drawable/baseline_home_24"
        tools:ignore="NestedWeights" />
    <ImageView
        android:id="@+id/imageView2"
        android:layout_width="wrap_content"
        android:layout_height="match_parent"
        android:layout_weight="1"
        android:contentDescription="@string/tod"
        app:srcCompat="@drawable/baseline_directions_car_24" />
    <ImageView
        android:id="@+id/imageView3"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_weight="1"
        android:contentDescription="TODO"
        app:srcCompat="@drawable/baseline_shopping_cart_24" />
    <ImageView
        android:id="@+id/imageView4"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_weight="1"
        app:srcCompat="@drawable/baseline_manage_accounts_24" />
  </LinearLayout>
</LinearLayout>
```

Result

The application to demonstrate the use linearlayout, searchview, scrollview, imageview has been developed successfully and output is verified.

REGISTRATION FORM

Aim: Develop an Android application for Register form using different views.

AndroidManifest.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools">
    <application
        android:allowBackup="true"
        android:dataExtractionRules="@xml/data_extraction_rules"
        android:fullBackupContent="@xml/backup_rules"
        android:icon="@mipmap/ic_launcher"
        android:label="@android:string/autofill"
        android:roundIcon="@mipmap/ic_launcher_round"
        android:supportsRtl="true"
        android:theme="@style/Theme.Newregistration"
        tools:targetApi="31">
        <activity
            android:name=".MainActivity"
            android:exported="true">
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />
                <category android:name="android.intent.category.LAUNCHER" />
            </intent-filter>
        </activity>
    </application>
</manifest>
```

strings.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<resources>
    <string name="app_name"/>
    <string-array name="country">
        <item>India</item>
        <item>Sreelanka</item>
        <item>Canada</item>
        <item>United States</item>
        <item>United Kingdom</item>
    </string-array>
</resources>
```

textbg.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<selector xmlns:android="http://schemas.android.com/apk/res/android">
    <item>
        <shape android:shape="rectangle">
            <solid android:color="#3D613E"/>
            <stroke android:color="#614136" android:width="1dp"/>
            <corners android:radius="30dp"/>
```

```
        </shape>
    </item>
</selector>
```

bgclr.xml

```
<?xml version="1.0" encoding="utf-8"?>
<selector xmlns:android="http://schemas.android.com/apk/res/android">
    <item>
        <shape android:shape="rectangle">
            <gradient android:startColor="#2196F3" android:centerColor="#384697" android:endColor="#5589A1"/>
            <stroke android:color="#60463E" android:width="2dp"/>
            <corners android:radius="50dp"/>
        </shape>
    </item>
</selector>
```

activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:background="#68A86A"
    android:gravity="center"
    android:orientation="vertical"
    android:padding="20dp"
    tools:context=".MainActivity">
    <TextView
        android:id="@+id/textView"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:gravity="center"
        android:text="REGISTRATION FORM"
        android:textSize="30dp" />
    <TextView
        android:id="@+id/textView1"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:padding="10dp"
        android:text="FullName"
        android:textSize="20sp" />
    <EditText
        android:id="@+id/name"
        android:layout_width="match_parent"
        android:layout_height="54dp"
        android:background="@drawable/textbg"
        android:gravity="center"
        android:hint="Enter your name"
        android:padding="10dp"
        android:textSize="13dp"
        tools:ignore="TouchTargetSizeCheck,SpeakableTextPresentCheck" />
    <TextView
        android:id="@+id/textView2"
```

```xml
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:padding="10dp"
    android:text="Email"
    android:textSize="20sp" />
<EditText
    android:id="@+id/email"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_marginTop="10dp"
    android:background="@drawable/textbg"
    android:gravity="center"
    android:hint="Enter your email"
    android:inputType="textEmailAddress"
    android:minHeight="48dp"
    android:padding="10dp"
    android:textSize="13dp" />
<TextView
    android:id="@+id/textView3"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:padding="10dp"
    android:text="Password"
    android:textSize="20sp" />
<EditText
    android:id="@+id/pass"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_marginTop="10dp"
    android:background="@drawable/textbg"
    android:gravity="center"
    android:hint="Enter your password"
    android:inputType="textPassword"
    android:minHeight="48dp"
    android:padding="10dp"
    android:textSize="13dp" />
<TextView
    android:id="@+id/textView4"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:padding="10dp"
    android:text="Phone"
    android:textSize="20sp" />
<EditText
    android:id="@+id/phone"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_marginTop="10dp"
    android:background="@drawable/textbg"
    android:gravity="center"
    android:hint="Enter your phonenumber"
    android:inputType="phone"
    android:minHeight="48dp"
    android:padding="10dp"
    android:textSize="13dp" />
```

```xml
<RadioGroup
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:orientation="horizontal"
    android:paddingTop="10dp">
    <RadioButton
        android:id="@+id/rb_m"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginTop="10dp"
        android:text="Male" />
    <RadioButton
        android:id="@+id/rb_f"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginTop="10dp"
        android:text="Female" />
    <RadioButton
        android:id="@+id/rb_o"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginTop="10dp"
        android:text="Others" />
</RadioGroup>
<TextView
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_marginTop="10dp"
    android:text="Languages known"
    android:textSize="20dp" />
<CheckBox
    android:id="@+id/mal"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:padding="10dp"
    android:text="Malayalam" />
<CheckBox
    android:id="@+id/eng"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:padding="10dp"
    android:text="English" />
<CheckBox
    android:id="@+id/hin"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:padding="10dp"
    android:text="Hindi" />
<Spinner
    android:id="@+id/sp_cn"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:entries="@array/country"
    android:paddingTop="10dp" />
<Switch
```

```xml
    android:id="@+id/employee"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_marginTop="15dp"
    android:text="Employed?" />
  <Button
    android:id="@+id/btn"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginTop="15dp"
    android:background="@drawable/bgclr"
    android:padding="10dp"
    android:text="Submit"
    android:textSize="20dp" />
</LinearLayout>
```

MainActivity.java

```java
package com.example.newregistration;
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.RadioButton;
import android.widget.Spinner;
import android.widget.Switch;
import android.widget.Toast;
public class MainActivity extends AppCompatActivity {
    EditText ed_name,ed_email,ed_pass,ed_phone;
    Spinner var_sp_cn;
    CheckBox  cb_mal,cb_eng,cb_hin;
    Switch sw_employee;
    RadioButton b_rb_m,b_rb_f,b_rb_o;
    Button sub_btn;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        ed_name=findViewById(R.id.name);
        ed_email=findViewById(R.id.email);
        ed_pass=findViewById(R.id.pass);
        ed_phone=findViewById(R.id.phone);
        var_sp_cn=findViewById(R.id.sp_cn);
        cb_mal=findViewById(R.id.mal);
        cb_eng=findViewById(R.id.eng);
        cb_hin=findViewById(R.id.hin);
        sw_employee=findViewById(R.id.employee);
        b_rb_m=findViewById(R.id.rb_m);
        b_rb_f=findViewById(R.id.rb_f);
        b_rb_o=findViewById(R.id.rb_o);
        sub_btn=findViewById(R.id.btn);
        sub_btn.setOnClickListener(new View.OnClickListener() {
            String d_name,d_email,d_pass,d_gen,d_phone,d_lang1,d_emp,d_coun,d_lang2,d_lang3;
```

```java
        @Override
        public void onClick(View v) {
            if (ed_name.getText().toString().equals("") && ed_email.getText().toString().equals("") &&
ed_pass.getText().toString().equals("") && ed_phone.getText().toString().equals("")) {
                Toast.makeText(MainActivity.this, "", Toast.LENGTH_SHORT).makeText(getApplicationContext(), "Enter
username,Email,password,phone", Toast.LENGTH_SHORT).show();
            } else {
                d_name = ed_name.getText().toString();
                d_email = ed_email.getText().toString();
                d_pass = ed_pass.getText().toString();
                d_phone = ed_phone.getText().toString();
                if (b_rb_m.isChecked()) {
                    d_gen = b_rb_m.getText().toString();
                } else if (b_rb_f.isChecked()) {
                    d_gen = b_rb_f.getText().toString();
                } else {
                    d_gen = b_rb_o.getText().toString();
                }
                if (cb_eng.isChecked()) {
                    d_lang1 = cb_eng.getText().toString();
                }
                if (cb_mal.isChecked()) {
                    d_lang2 = cb_mal.getText().toString();
                }
                if (cb_hin.isChecked()) {
                    d_lang3 = cb_hin.getText().toString();
                }
                d_coun = var_sp_cn.getSelectedItem().toString();
                if (sw_employee.isChecked()) {
                    d_emp = "Employed";
                } else {
                    d_emp = "Unemployed";
                }
                if (ed_email.isTextSelectable()) {
                    d_email = ed_email.getText().toString();
                }
                String msg = "Username: "+d_name + "\n" +"Email: "+ d_email + "\n" +"Password: " +d_pass + "\n"
+"Phone: "+d_phone + "\n" +"Gender: "+
d_gen+"\n"+"Languages:"+d_lang1+","+d_lang2+","+d_lang3+"\n"+"Employed/not: "+d_emp+"\n"+"Country:
"+d_coun;
                Toast.makeText(MainActivity.this, msg, Toast.LENGTH_SHORT).show();
            }
        }
    });
  }
}
```

Result

The application for Register form using different views has been developed successfully and output is verified

ANIMATION

Aim:Develop an Android application for demonstrating different kind of animations(rotate, fade, slide, scale, zoom)

AndroidManifest.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools">
    <application
        android:allowBackup="true"
        android:dataExtractionRules="@xml/data_extraction_rules"
        android:fullBackupContent="@xml/backup_rules"
        android:icon="@mipmap/ic_launcher"
        android:label="@string/app_name"
        android:roundIcon="@mipmap/ic_launcher_round"
        android:supportsRtl="true"
        android:theme="@style/Theme.Animation"
        tools:targetApi="31">
        <activity
            android:name=".MainActivity"
            android:exported="true">
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />
                <category android:name="android.intent.category.LAUNCHER" />
            </intent-filter>
        </activity>
    </application>
</manifest>
```

scale.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<scale xmlns:android="http://schemas.android.com/apk/res/android"
    android:fromXScale="0.0"
    android:toXScale="1.0"
    android:fromYScale="0.0"
    android:toYScale="1.0"
    android:pivotX="1500%"
    android:pivotY="1500%"
    android:duration="1000" />
```

slide.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<set xmlns:android="http://schemas.android.com/apk/res/android">
    <scale
        android:duration = "500"
        android:fromXScale="1"
        android:fromYScale="1"
        android:toXScale="0"
        android:toYScale="5"/>
</set>
```

zoom.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<set xmlns:android="http://schemas.android.com/apk/res/android">
   <scale android:toYScale="2"
        android:toXScale="2"
        android:pivotY="50%"
        android:pivotX="50%"
        android:fromYScale="1"
        android:fromXScale="1"
        android:duration="2000"/>
</set>
```

rotate.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<set xmlns:android="http://schemas.android.com/apk/res/android">
    <rotate android:toDegrees="4000"
        android:pivotY="50%"
        android:pivotX="50%"
        android:fromDegrees="0"
        android:duration="5000"/>
</set>
```

activity_main.xml

```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"
   android:layout_marginTop="20dp"
   android:background="#FFFFFFFF"
   tools:context=".MainActivity">
   <ImageView
      android:id="@+id/imagerotate"
      android:layout_width="413dp"
      android:layout_height="354dp"
      android:scaleType="center"
      app:layout_constraintBottom_toBottomOf="parent"
      app:layout_constraintEnd_toEndOf="parent"
      app:layout_constraintHorizontal_bias="0.462"
      app:layout_constraintStart_toStartOf="parent"
      app:layout_constraintTop_toBottomOf="@+id/textView"
      app:layout_constraintVertical_bias="0.262"
      app:srcCompat="@drawable/food1" />
   <TextView
      android:id="@+id/textView"
      android:layout_width="205dp"
      android:layout_height="61dp"
      android:fontFamily="serif"
      android:gravity="center"
      android:text="Animation"
      android:textColor="#070707"
      android:textSize="34sp"
```

```xml
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.023"
        tools:ignore="TextSizeCheck" />
    <Button
        android:id="@+id/btn_rotate"
        android:layout_width="158dp"
        android:layout_height="46dp"
        android:text="Rotate"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.13"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.807" />
    <Button
        android:id="@+id/btn_zoom"
        android:layout_width="158dp"
        android:layout_height="46dp"
        android:text="Zoom"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.13"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.896" />
    <Button
        android:id="@+id/btn_slide"
        android:layout_width="158dp"
        android:layout_height="46dp"
        android:text="Slide"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.826"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"/>
    <Button
        android:id="@+id/btn_fade"
        android:layout_width="158dp"
        android:layout_height="46dp"
        android:text="Fade"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.826"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"/>
    <Button
        android:id="@+id/btn_scale"
        android:layout_width="158dp"
        android:layout_height="46dp"
        android:text="Scale"
        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" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

MainActivity. java

```java
package com.example.animation;
import android.annotation.SuppressLint;
import android.os.Bundle;
import android.view.View;
import android.view.animation.Animation;
import android.view.animation.AnimationUtils;
import androidx.appcompat.app.AppCompatActivity;
public class MainActivity extends AppCompatActivity {
  Button btn1,btn2,btn3,btn4,btn5;
  ImageView img;
  @SuppressLint("MissingInflatedId")
  protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_main);
    img = findViewById(R.id.imagerotate);
    btn1 = findViewById(R.id.btn_rotate);
    btn2 = findViewById(R.id.btn_zoom);
    btn3 = findViewById(R.id.btn_slide);
    btn4=findViewById(R.id.btn_fade);
    btn5=findViewById(R.id.btn_scale);
    btn1.setOnClickListener(new View.OnClickListener() {
      public void onClick(View v) {
        Animation rotate = AnimationUtils.loadAnimation(getApplicationContext(), R.anim.rotate);
        img.startAnimation(rotate);   }});
    btn2.setOnClickListener(new View.OnClickListener() {
      public void onClick(View v) {
        Animation fade = AnimationUtils.loadAnimation(getApplicationContext(),R.anim.zoom);
        img.startAnimation(fade);   }});
    btn3.setOnClickListener(new View.OnClickListener() {
      public void onClick(View v) {
        Animation slide = AnimationUtils.loadAnimation(getApplicationContext(),R.anim.slide);
        img.startAnimation(slide);   }});
    btn5.setOnClickListener(new View.OnClickListener() {
      public void onClick(View v) {
        img.animate().rotationBy(360f).setDuration(5000);
        img.animate().scaleY(1.5f).scaleX(0.5f).setDuration(3000);    } });
    btn4.setOnClickListener(new View.OnClickListener() {
      public void onClick(View v) {
        img.animate().rotationBy(360f).setDuration(5000);
        img.animate().scaleY(1.5f).scaleX(0.5f).setDuration(3000);
        img.animate().alpha(0.2f).setDuration(3000);
      }
    });
  }
}
```

Result

The application for demonstrating different kind of animations has been developed successfully and output is verified.

SEND AN EMAIL USING IMPLICIT INTEENT

Aim: Develop an Android application for sending an email using implicit indent.

AndroidManifest.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools">
    <application
        android:allowBackup="true"
        android:dataExtractionRules="@xml/data_extraction_rules"
        android:fullBackupContent="@xml/backup_rules"
        android:icon="@mipmap/ic_launcher"
        android:label="@string/app_name"
        android:roundIcon="@mipmap/ic_launcher_round"
        android:supportsRtl="true"
        android:theme="@style/Theme.Emali"
        tools:targetApi="31">
        <activity
            android:name=".MainActivity"
            android:exported="true">
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />
                <category android:name="android.intent.category.LAUNCHER" />
            </intent-filter>
        </activity>
    </application>
</manifest>
```

activity_main.xml

```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:background="#B9D39B"
    tools:context=".MainActivity">
    <EditText
        android:id="@+id/from"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_below="@+id/textView"
        android:layout_marginTop="10dp"
        android:ems="10"
        android:hint="From"
        android:inputType="text" />
    <EditText
        android:id="@+id/to"
        android:layout_width="match_parent"
```

```xml
        android:layout_height="wrap_content"
        android:layout_below="@+id/from"
        android:layout_marginTop="10dp"
        android:ems="10"
        android:hint="To"
        android:inputType="text" />
    <EditText
        android:id="@+id/sub"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_below="@+id/to"
        android:layout_marginTop="10dp"
        android:ems="10"
        android:hint="Subject"
        android:inputType="text" />
    <EditText
        android:id="@+id/msg"
        android:layout_width="match_parent"
        android:layout_height="207dp"
        android:layout_below="@+id/sub"
        android:layout_marginTop="10dp"
        android:ems="10"
        android:gravity="start"
        android:hint="Messege"
        android:inputType="text" />
    <TextView
        android:id="@+id/textView"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginTop="20dp"
        android:fontFamily="sans-serif"
        android:gravity="center"
        android:text="SENDING EMAIL"
        android:textSize="24sp" />
    <Button
        android:id="@+id/send"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_below="@+id/msg"
        android:layout_marginLeft="60dp"
        android:layout_marginTop="22dp"
        android:text="Send" />
    <Button
        android:id="@+id/cancel"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_below="@+id/msg"
        android:layout_marginLeft="120dp"
        android:layout_marginTop="22dp"
        android:layout_toRightOf="@+id/send"
        android:text="Cancel" />
</RelativeLayout>
```

MainActivity. java

```java
package com.example.emali;
import androidx.appcompat.app.AppCompatActivity;
import android.content.Intent;
import android.os.Bundle;
import android.widget.EditText;
import android.widget.Toast;
public class MainActivity extends AppCompatActivity {
    EditText newfrom,newto,newsub,newmsg;
    Button newsend,newcancel;
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        newfrom = findViewById(R.id.from);
        newto = findViewById(R.id.to);
        newsub = findViewById(R.id.sub);
        newmsg = findViewById(R.id.msg);
        newsend = findViewById(R.id.send);
        newcancel = findViewById(R.id.cancel);
        newcancel.setOnClickListener(new View.OnClickListener() {
            public void onClick(View v) {
                newto.setText("");
                newfrom.setText("");
                newsub.setText("");
                newmsg.setText("");
            }
        });
        newsend.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                if(newto.getText().toString().isEmpty()) {
                    Toast.makeText(MainActivity.this, "FILL THE FIELD", Toast.LENGTH_SHORT).show();
                } else if (newsub.getText().toString().isEmpty()) {
                    Toast.makeText(MainActivity.this, "FILL THE FIELD", Toast.LENGTH_SHORT).show();
                } else if (newmsg.getText().toString().isEmpty()) {
                    Toast.makeText(MainActivity.this, "FILL THE FIELD", Toast.LENGTH_SHORT).show();
                } else {
                    Intent mail = new Intent(Intent.ACTION_SEND);
                    String[] address = new String[]{newto.getText().toString().trim()};
                    String sub = newsub.getText().toString().trim();
                    String mess = newmsg.getText().toString().trim();
                    mail.putExtra(Intent.EXTRA_EMAIL, address);
                    mail.putExtra(Intent.EXTRA_SUBJECT, sub);
                    mail.putExtra(Intent.EXTRA_TEXT, mess);
                    mail.setType("message/rfc822");
                    Intent chooser = Intent.createChooser(mail, "goto");
                    startActivity(chooser);
                }
            }
        });
    }
}
```

Result

The application for sending an email using implicit indent has been developed successfully and output is verified.

BROWSING AND LAUNCH MAP USING IMPLICIT INTENT

Aim: Develop an Android application for browsing and launch map using implicit Intent.

AndroidManifest.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools">
    <application
        android:allowBackup="true"
        android:dataExtractionRules="@xml/data_extraction_rules"
        android:fullBackupContent="@xml/backup_rules"
        android:icon="@mipmap/ic_launcher"
        android:label="@string/app_name"
        android:roundIcon="@mipmap/ic_launcher_round"
        android:supportsRtl="true"
        android:theme="@style/Theme.Browse"
        tools:targetApi="31">
        <activity
            android:name=".MainActivity"
            android:exported="true">
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />
                <category android:name="android.intent.category.LAUNCHER" />
            </intent-filter>
        </activity>
    </application>
</manifest>
```

activity_main.xml

```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/browse"
        android:layout_width="152dp"
        android:layout_height="62dp"
        android:text="Browse"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.061"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.303" />
    <EditText
        android:id="@+id/second"
```

```xml
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:ems="10"
        android:hint="Enter second cordinate"
        android:inputType="text"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.079"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.645" />
    <TextView
        android:id="@+id/textView"
        android:layout_width="209dp"
        android:layout_height="53dp"
        android:gravity="center"
        android:text="Browse"
        android:textSize="30dp"
        android:textStyle="bold"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.082" />
    <EditText
        android:id="@+id/url"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:ems="10"
        android:hint="Enter the URL"
        android:inputType="text"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.079"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.193" />
    <Button
        android:id="@+id/search"
        android:layout_width="152dp"
        android:layout_height="62dp"
        android:text="Search"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.061"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.76" />
    <TextView
        android:id="@+id/textView3"
        android:layout_width="201dp"
        android:layout_height="49dp"
        android:gravity="center"
        android:text="Launch Map"
        android:textSize="30dp"
```

```xml
        android:textStyle="bold"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.48"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.444" />
    <EditText
        android:id="@+id/first"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:ems="10"
        android:hint="Enter first cordinate"
        android:inputType="text"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.079"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.558" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

MainActivity. Java

```java
package com.example.browse;
import androidx.appcompat.app.AppCompatActivity;
import android.content.Intent;
import android.net.Uri;
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 {
    Button newbrowse,newsearch;
    EditText newurl,newfirst,newsecond;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        newbrowse = findViewById(R.id.browse);
        newsearch = findViewById(R.id.search);
        newurl = findViewById(R.id.url);
        newfirst = findViewById(R.id.first);
        newsecond = findViewById(R.id.second);
        newbrowse.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                if (newurl.getText().toString().isEmpty()) {
                    Toast.makeText(MainActivity.this, "PLEASE ENTER THE CORRECT URL", Toast.LENGTH_SHORT).show();
                }else {
                    String search = newurl.getText().toString().trim();
                    Intent browse = new Intent(Intent.ACTION_VIEW);
                    browse.setData(Uri.parse(search));
                    Intent chooser = Intent.createChooser(browse,"Select");
```

```java
                startActivity(chooser);
            }
        }
    });
    newsearch.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View v) {
            if(newfirst.getText().toString().isEmpty())  {
                Toast.makeText(MainActivity.this, "PLEASE ENTER THE CORDINATE", Toast.LENGTH_SHORT).show();
            } else if (newsecond.getText().toString().isEmpty()) {
                Toast.makeText(MainActivity.this, "PLEASE ENTER THE CORDINATE", Toast.LENGTH_SHORT).show();
            }else {
                String lat2 = newfirst.getText().toString().trim();
                String lon2 = newsecond.getText().toString().trim();
                Toast.makeText(MainActivity.this,lat2 + " " + lon2, Toast.LENGTH_SHORT).show();
                Intent map = new Intent(Intent.ACTION_VIEW);
                map.setData(Uri.parse("geo:" + lat2 + " " + lon2));
                Intent chooser = Intent.createChooser(map, "Select");
                startActivity(chooser);
            }
        }
    });
  }
}
```

Result

The application for browsing and launch map using implicit intent has been developed successfully and output is verified.

EXPLICIT INTENT

Aim: Develop an Android application for login and registration page using explicit intent.

AndroidManifest.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools">
    <application
        android:allowBackup="true"
        android:dataExtractionRules="@xml/data_extraction_rules"
        android:fullBackupContent="@xml/backup_rules"
        android:icon="@mipmap/ic_launcher"
        android:label="@string/app_name"
        android:roundIcon="@mipmap/ic_launcher_round"
        android:supportsRtl="true"
        android:theme="@style/Theme.Regpage"
        tools:targetApi="31">
        <activity
            android:name=".MainActivity2"
            android:exported="false" />
        <activity
            android:name=".MainActivity"
            android:exported="true">
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />
                <category android:name="android.intent.category.LAUNCHER" />
            </intent-filter>
        </activity>
    </application>
</manifest>
```

activity_main.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity" >
    <ImageView
        android:id="@+id/imageView"
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:scaleType="fitXY"
        app:srcCompat="@drawable/sa" />
    <Button
        android:id="@+id/register"
        android:layout_width="100dp"
        android:layout_height="wrap_content"
```

```xml
        android:layout_below="@+id/dont"
        android:layout_alignParentStart="true"
        android:layout_alignParentEnd="true"
        android:layout_marginStart="156dp"
        android:layout_marginTop="18dp"
        android:layout_marginEnd="154dp"
        android:gravity="center"
        android:text="Register" />
    <TextView
        android:id="@+id/h1"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginTop="20dp"
        android:gravity="center"
        android:text="SIGN UP"
        android:textSize="30dp"
        android:textStyle="bold" />
    <EditText
        android:id="@+id/user"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_below="@+id/h1"
        android:layout_marginTop="30dp"
        android:hint="Enter User Name"
        android:textSize="20dp" />
    <EditText
        android:id="@+id/pass"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_below="@+id/user"
        android:layout_marginTop="30dp"
        android:hint="Enter Password"
        android:textSize="20dp" />
    <TextView
        android:id="@+id/dont"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_below="@+id/pass"
        android:layout_marginTop="80dp"
        android:gravity="center"
        android:text="Don't have an account please register"
        android:textSize="17dp" />
    <Button
        android:id="@+id/login"
        android:layout_width="100dp"
        android:layout_height="wrap_content"
        android:layout_below="@+id/dont"
        android:layout_alignParentStart="true"
        android:layout_alignParentEnd="true"
        android:layout_marginStart="156dp"
        android:layout_marginTop="-82dp"
        android:layout_marginEnd="154dp"
        android:gravity="center"
        android:text="Login" />
</RelativeLayout>
```

activity_main2.xml

```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"
    android:layout_width="match_parent"
    android:layout_height="match_parent">
    <ImageView
        android:id="@+id/imageView2"
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:scaleType="fitXY"
        app:srcCompat="@drawable/sa" />
    <Button
        android:id="@+id/register1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_below="@+id/pass2"
        android:layout_marginStart="37dp"
        android:layout_marginTop="30dp"
        android:text="Register" />
    <TextView
        android:id="@+id/h2"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginTop="25dp"
        android:gravity="center"
        android:text="REGISTER INTO THE APPLICATION"
        android:textSize="25dp"
        android:textStyle="bold" />
    <EditText
        android:id="@+id/user1"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_below="@+id/h2"
        android:layout_marginTop="20dp"
        android:ems="10"
        android:hint="USERNAME"
        android:inputType="text" />
    <EditText
        android:id="@+id/mobile"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_below="@+id/user1"
        android:layout_marginTop="20dp"
        android:ems="10"
        android:hint="Phone NO"
        android:inputType="number" />
    <EditText
        android:id="@+id/email"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_below="@+id/mobile"
        android:layout_marginTop="20dp"
        android:ems="10"
```

```xml
        android:hint="EMAIL"
        android:inputType="textEmailAddress" />
    <EditText
        android:id="@+id/pass"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_below="@+id/email"
        android:layout_marginTop="20dp"
        android:ems="10"
        android:hint="Type Password"
        android:inputType="textPassword" />
    <EditText
        android:id="@+id/pass2"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_below="@+id/pass"
        android:layout_marginTop="20dp"
        android:ems="10"
        android:hint="Re-Type Password"
        android:inputType="textPassword" />
    <Button
        android:id="@+id/back"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_below="@+id/pass2"
        android:layout_marginLeft="130dp"
        android:layout_marginTop="30dp"
        android:layout_toRightOf="@+id/register1"
        android:text="Go Back" />
</RelativeLayout>
```

MainActivity. Java

```java
package com.example.regpage;
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 {
    Button Lbtn,Rbtn;
    EditText newuser,newpass;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        Lbtn = findViewById(R.id.login);
        newuser = findViewById(R.id.user);
        newpass = findViewById(R.id.pass);
        Rbtn = findViewById(R.id.register);
        Intent back = getIntent();
        Bundle data = back.getExtras();
        String user2 = data.getString("user");
```

```
         String pass3 = data.getString("pass");
      newuser.setText(user2);
      newpass.setText(pass3);
      Rbtn.setOnClickListener(new View.OnClickListener() {
         @Override
         public void onClick(View v) {
            Intent signup = new Intent(getApplicationContext(),MainActivity2.class);
            startActivity(signup);
         }
      });
      Lbtn.setOnClickListener(new View.OnClickListener(){
         @Override
         public void onClick(View v) {
            if (newuser.getText().toString().isEmpty()) {
               Toast.makeText(MainActivity.this, "ENTER THE USERNAME", Toast.LENGTH_SHORT).show();
            } else if (newpass.getText().toString().isEmpty()) {
               Toast.makeText(MainActivity.this, "ENTER THE PASSWORD", Toast.LENGTH_SHORT).show();
            } else {
               Toast.makeText(MainActivity.this, "NOT FOUND YOUR ACCOUNT,REGISTER NOW",
Toast.LENGTH_SHORT).show();
            }
         }
      });
   }
}
```

MainActivity2. Java

```
package com.example.regpage;
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 MainActivity2 extends AppCompatActivity {
   Button newsign,newreturn;
   EditText newuser,newpass,newpass1,newphone,newemail;
   @Override
   protected void onCreate(Bundle savedInstanceState) {
      super.onCreate(savedInstanceState);
      setContentView(R.layout.activity_main2);
      newuser = findViewById(R.id.user1);
      newpass = findViewById(R.id.pass);
      newpass1 = findViewById(R.id.pass2);
      newemail = findViewById(R.id.email);
      newphone = findViewById(R.id.mobile);
      newreturn = findViewById(R.id.back);
      newsign = findViewById(R.id.register1);
      newreturn.setOnClickListener(new View.OnClickListener() {
         @Override
         public void onClick(View v) {
            Intent back = new Intent(getApplicationContext(), MainActivity.class);
            String user1 = newuser.getText().toString().trim();
```

```java
            String pass1 = newpass.getText().toString().trim();
            Bundle data = new Bundle();
            data.putString("user",user1);
            data.putString("pass",pass1);
            back.putExtras(data);
            startActivity(back);
        }
    });
    newsign.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View v) {
            if (newuser.getText().toString().isEmpty()) {
                Toast.makeText(MainActivity2.this, "Enter Username", Toast.LENGTH_SHORT).show();
            } else if (newemail.getText().toString().isEmpty()) {
                Toast.makeText(MainActivity2.this, "Enter Email", Toast.LENGTH_SHORT).show();
            } else if (newphone.getText().toString().isEmpty()) {
                Toast.makeText(MainActivity2.this, "Enter Phone number", Toast.LENGTH_SHORT).show();
            } else if (newpass.getText().toString().isEmpty()) {
                Toast.makeText(MainActivity2.this, "Enter Password", Toast.LENGTH_SHORT).show();
            } else if ((newpass.getText().toString()).equals(newpass1.getText().toString())) {
                Toast.makeText(MainActivity2.this, "PASSWORD DOESN'T MATCH", Toast.LENGTH_SHORT).show();
            } else {
                Toast.makeText(MainActivity2.this, "Registration Successfull", Toast.LENGTH_SHORT).show();
            }
        }
    });
  }
}
```

Result

The application for login page using explicit intent has been developed successfully and output is verified.

STUDENT FORM USING EXPLICIT INTENT

Aim: Develop an Android application for population student information using explicit intent

AndroidManifest.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
  xmlns:tools="http://schemas.android.com/tools">
  <application
    android:allowBackup="true"
    android:dataExtractionRules="@xml/data_extraction_rules"
    android:fullBackupContent="@xml/backup_rules"
    android:icon="@mipmap/ic_launcher"
    android:label="@string/app_name"
    android:roundIcon="@mipmap/ic_launcher_round"
    android:supportsRtl="true"
    android:theme="@style/Theme.StudentRegistration"
    tools:targetApi="31">
    <activity
      android:name=".MainActivity4"
      android:exported="false" />
    <activity
      android:name=".MainActivity3"
      android:exported="false" />
    <activity
      android:name=".MainActivity2"
      android:exported="false" />
    <activity
      android:name=".MainActivity"
      android:exported="true">
      <intent-filter>
        <action android:name="android.intent.action.MAIN" />
        <category android:name="android.intent.category.LAUNCHER" />
      </intent-filter>
    </activity>
  </application>
</manifest>
```

college.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<resources>
  <string-array name="college">
    <item> College Name</item>
    <item>G P T C Attingal</item>
    <item>G P T C Punaloor</item>
    <item>G P T C Kottiyam</item>
    <item>C P T C Ezhukone</item>
  </string-array>
</resources>
```

dept.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<resources>
  <string-array name="dept">
    <item> Department </item>
    <item>Computer</item>
    <item>Mechanical</item>
    <item>Automobile</item>
    <item>Mechanical</item>
  </string-array>
</resources
```

marks.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<resources>
  <string-array name="marks">
    <item>Subject</item>
    <item>I O T</item>
    <item>web programming</item>
    <item>P S D</item>
    <item>D B M S</item>
    <item>Open Elective</item>
  </string-array>
</resources>
```

semester.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<resources>
  <string-array name="semester">
    <item>semester</item>
    <item>Sem 1</item>
    <item>Sem 2</item>
    <item>Sem 3</item>
    <item>Sem 4</item>
    <item>Sem 5</item>
    <item>Sem 6</item>
  </string-array>
</resources>
```

strings.xml

```xml
<resources>
  <string name="app_name">Student Registration</string>
</resources>
```

activity_main.xml

```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
```

```xml
        android:id="@+id/imageView"
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:scaleType="fitXY"
        app:srcCompat="@drawable/white"
        tools:layout_editor_absoluteX="25dp"
        tools:layout_editor_absoluteY="-364dp" />
    <TextView
        android:id="@+id/textView"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:gravity="center"
        android:text="STUDENT PORTAL"
        android:textSize="24sp"
        android:textStyle="bold"
        app:layout_constraintBottom_toBottomOf="@+id/imageView"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.062"
        tools:layout_editor_absoluteX="-16dp" />
    <TextView
        android:id="@+id/textView2"
        android:layout_width="match_parent"
        android:layout_height="30dp"
        android:text="FULL  NAME "
        android:textSize="20dp"
        android:textStyle="bold"
        app:layout_constraintBottom_toBottomOf="@+id/imageView"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.199"
        tools:layout_editor_absoluteX="0dp" />
    <EditText
        android:id="@+id/name"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:ems="10"
        android:hint="Enter your name"
        android:inputType="text"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.247"
        tools:layout_editor_absoluteX="0dp" />
    <TextView
        android:id="@+id/textView3"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="REGISTER  NUMBER"
        android:textSize="20dp"
        android:textStyle="bold"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.335"
        tools:layout_editor_absoluteX="0dp" />
    <EditText
        android:id="@+id/reg"
        android:layout_width="match_parent"
```

```
        android:layout_height="wrap_content"
        android:ems="10"
        android:hint="Enter your register number"
        android:inputType="text"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.383"
        tools:layout_editor_absoluteX="0dp" />
    <Button
        android:id="@+id/button"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Submit"
        app:layout_constraintBottom_toBottomOf="@+id/imageView"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.499" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

activity_main2.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=".MainActivity2">
    <ImageView
        android:id="@+id/imageView2"
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:scaleType="fitXY"
        app:srcCompat="@drawable/white"
        tools:layout_editor_absoluteX="0dp"
        tools:layout_editor_absoluteY="-16dp" />
    <TextView
        android:id="@+id/textView4"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:gravity="center"
        android:text="STUDENT REGISTRATION"
        android:textSize="24sp"
        android:textStyle="bold"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.022"
        tools:layout_editor_absoluteX="0dp" />
    <TextView
        android:id="@+id/textView5"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="FULL NAME"
        android:textSize="18sp"
```

```xml
      android:textStyle="normal"
      app:layout_constraintBottom_toBottomOf="parent"
      app:layout_constraintTop_toTopOf="@+id/imageView2"
      app:layout_constraintVertical_bias="0.089"
      tools:layout_editor_absoluteX="0dp" />
  <EditText
      android:id="@+id/name2"
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
      android:ems="10"
      android:hint="Enter your name"
      android:inputType="text"
      app:layout_constraintBottom_toBottomOf="@+id/imageView2"
      app:layout_constraintTop_toTopOf="parent"
      app:layout_constraintVertical_bias="0.126"
      tools:layout_editor_absoluteX="0dp" />
  <TextView
      android:id="@+id/textView6"
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
      android:text="REGISTER NUMBER"
      android:textSize="18sp"
      android:textStyle="normal"
      app:layout_constraintBottom_toBottomOf="parent"
      app:layout_constraintTop_toTopOf="parent"
      app:layout_constraintVertical_bias="0.195"
      tools:layout_editor_absoluteX="0dp" />
  <EditText
      android:id="@+id/reg2"
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
      android:ems="10"
      android:hint="Enter your register number"
      android:inputType="text"
      app:layout_constraintBottom_toBottomOf="parent"
      app:layout_constraintTop_toTopOf="parent"
      app:layout_constraintVertical_bias="0.236"
      tools:layout_editor_absoluteX="0dp" />
  <TextView
      android:id="@+id/textView7"
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
      android:text="PHONE NO"
      android:textSize="18sp"
      app:layout_constraintBottom_toBottomOf="parent"
      app:layout_constraintTop_toTopOf="parent"
      app:layout_constraintVertical_bias="0.302"
      tools:layout_editor_absoluteX="0dp" />
  <EditText
      android:id="@+id/phone2"
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
      android:ems="10"
      android:hint="Enter your phone number"
      android:inputType="text"
```

```xml
        app:layout_constraintBottom_toBottomOf="@+id/imageView2"
        app:layout_constraintTop_toTopOf="@+id/imageView2"
        app:layout_constraintVertical_bias="0.346"
        tools:layout_editor_absoluteX="0dp" />
    <TextView
        android:id="@+id/textView8"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="EMAIL"
        android:textSize="18sp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.413"
        tools:layout_editor_absoluteX="0dp" />
    <EditText
        android:id="@+id/mail2"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:ems="10"
        android:hint="Enter your email"
        android:inputType="text"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.46"
        tools:layout_editor_absoluteX="0dp" />
    <TextView
        android:id="@+id/textView9"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="Gender"
        android:textSize="14sp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.521"
        tools:layout_editor_absoluteX="0dp" />
    <RadioGroup
        android:id="@+id/radioGroup"
        android:layout_width="404dp"
        android:layout_height="33dp"
        android:orientation="horizontal"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.558"
        tools:layout_editor_absoluteX="0dp">
        <RadioButton
            android:id="@+id/radioButton"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="M" />
        <RadioButton
            android:id="@+id/radioButton2"
            android:layout_width="wrap_content"
            android:layout_height="38dp"
            android:text="F" />
        <RadioButton
```

```xml
        android:id="@+id/radioButton3"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="O" />
</RadioGroup>
<TextView
    android:id="@+id/textView10"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:text="College"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintTop_toTopOf="@+id/imageView2"
    app:layout_constraintVertical_bias="0.613"
    tools:layout_editor_absoluteX="0dp" />
<Spinner
    android:entries="@array/college"
    android:id="@+id/clg"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    app:layout_constraintBottom_toBottomOf="@+id/imageView2"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.644"
    tools:layout_editor_absoluteX="0dp" />
<TextView
    android:id="@+id/textView11"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:text="Semester"
    app:layout_constraintBottom_toBottomOf="@+id/imageView2"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.689"
    tools:layout_editor_absoluteX="0dp" />
<Spinner
    android:entries="@array/semester"
    android:id="@+id/sem"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.721"
    tools:layout_editor_absoluteX="0dp" />
<TextView
    android:id="@+id/dept1"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:text="Department"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.762"
    tools:layout_editor_absoluteX="0dp" />
<Spinner
    android:entries="@array/dept"
    android:id="@+id/dept"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
```

```xml
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintTop_toTopOf="@+id/imageView2"
        app:layout_constraintVertical_bias="0.793"
        tools:layout_editor_absoluteX="0dp" />
    <Switch
        android:id="@+id/switch1"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="Day Scholar"
        app:layout_constraintBottom_toBottomOf="@+id/imageView2"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.845"
        tools:layout_editor_absoluteX="-2dp" />
    <Button
        android:id="@+id/button2"
        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"
        app:layout_constraintVertical_bias="0.95" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

activity_main3.xml

```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=".MainActivity3">
    <ImageView
        android:id="@+id/imageView3"
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:scaleType="fitXY"
        app:srcCompat="@drawable/white" />
    <TextView
        android:id="@+id/textView12"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:gravity="center"
        android:text="UPLOAD MARKS"
        android:textSize="24sp"
        android:textStyle="bold"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.057"
        tools:layout_editor_absoluteX="16dp" />
    <EditText
        android:id="@+id/nm"
        android:layout_width="match_parent"
```

```
    android:layout_height="wrap_content"
    android:ems="10"
    android:hint="Enter your name"
    android:inputType="text"
    android:textSize="18sp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.154" />
<EditText
    android:id="@+id/regstr"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:ems="10"
    android:hint="Enter your registernumber"
    android:inputType="text"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.208"
    tools:layout_editor_absoluteX="0dp" />
<EditText
    android:id="@+id/dpr"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:ems="10"
    android:hint="Enter department"
    android:inputType="text"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.262"
    tools:layout_editor_absoluteX="0dp" />
<EditText
    android:id="@+id/smr"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:ems="10"
    android:hint="Enter semester"
    android:inputType="text"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.314"
    tools:layout_editor_absoluteX="0dp" />
<TextView
    android:id="@+id/textView13"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:text="Upload your mark"
    android:textSize="20sp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.0"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.425" />
<Spinner
```

```xml
    android:id="@+id/mark1"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:entries="@array/marks"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.473"
    tools:layout_editor_absoluteX="0dp" />
<Spinner
    android:id="@+id/mark2"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:entries="@array/marks"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.585"
    tools:layout_editor_absoluteX="0dp" />
<Spinner
    android:id="@+id/mark3"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:entries="@array/marks"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.697"
    tools:layout_editor_absoluteX="0dp" />
<Spinner
    android:id="@+id/mark4"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:entries="@array/marks"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.81"
    tools:layout_editor_absoluteX="0dp" />
<Button
    android:id="@+id/mark"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Upload"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.976" />
<EditText
    android:id="@+id/editTextText2"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:ems="10"
    android:hint="Enter your mark"
    android:inputType="text"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.521"
```

```xml
        tools:layout_editor_absoluteX="0dp" />
    <EditText
        android:id="@+id/editTextText3"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:ems="10"
        android:hint="Enter your mark"
        android:inputType="text"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.638"
        tools:layout_editor_absoluteX="0dp" />
    <EditText
        android:id="@+id/editTextText4"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:ems="10"
        android:hint="Enter your mark"
        android:inputType="text"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.753"
        tools:layout_editor_absoluteX="-28dp" />
    <EditText
        android:id="@+id/editTextText5"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:ems="10"
        android:hint="Enter your mark"
        android:inputType="text"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.87"
        tools:layout_editor_absoluteX="-39dp" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

activity_main4.xml

```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=".MainActivity4">
    <ImageView
        android:id="@+id/imageView4"
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:scaleType="fitXY"
        app:srcCompat="@drawable/white" />
    <androidx.constraintlayout.widget.ConstraintLayout
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        tools:context=".MainActivity4">
```

```xml
<androidx.constraintlayout.widget.ConstraintLayout
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity4"
    tools:layout_editor_absoluteX="16dp"
    tools:layout_editor_absoluteY="53dp">
    <androidx.constraintlayout.widget.ConstraintLayout
        android:id="@+id/constraintLayout"
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        tools:context=".MainActivity4"
        tools:layout_editor_absoluteX="55dp"
        tools:layout_editor_absoluteY="-286dp">
        <TextView
            android:id="@+id/textView14"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:gravity="center"
            android:text="STUDENT INFORMATION"
            android:textSize="24sp"
            android:textStyle="bold"
            app:layout_constraintBottom_toBottomOf="parent"
            app:layout_constraintTop_toTopOf="parent"
            app:layout_constraintVertical_bias="0.075"
            tools:layout_editor_absoluteX="0dp" />
        <TextView
            android:id="@+id/textView15"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="Name"
            android:textSize="18sp"
            app:layout_constraintBottom_toBottomOf="parent"
            app:layout_constraintEnd_toEndOf="parent"
            app:layout_constraintHorizontal_bias="0.044"
            app:layout_constraintStart_toStartOf="parent"
            app:layout_constraintTop_toTopOf="parent"
            app:layout_constraintVertical_bias="0.199" />
        <TextView
            android:id="@+id/textView16"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="Register No"
            android:textSize="18sp"
            app:layout_constraintBottom_toBottomOf="parent"
            app:layout_constraintEnd_toEndOf="parent"
            app:layout_constraintHorizontal_bias="0.05"
            app:layout_constraintStart_toStartOf="parent"
            app:layout_constraintTop_toTopOf="parent"
            app:layout_constraintVertical_bias="0.265" />
        <TextView
            android:id="@+id/textView17"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="Department"
            android:textSize="18sp"
```

```xml
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.05"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.332" />
    <EditText
        android:id="@+id/lregno"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:ems="10"
        android:inputType="text"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.676"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.258" />
    <EditText
        android:id="@+id/ldept"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:ems="10"
        android:inputType="text"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.676"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.323" />
    <EditText
        android:id="@+id/lsem"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:ems="10"
        android:inputType="text"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.676"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.389" />
    <EditText
        android:id="@+id/lname"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:ems="10"
        android:inputType="text"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.676"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.192" />
    <Button
```

```xml
        android:id="@+id/new_dt"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Upload New"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.56" />
    <TextView
        android:id="@+id/textView19"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Total Marks"
        android:textSize="18sp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.05"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.463" />
    <EditText
        android:id="@+id/tmark"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:ems="10"
        android:inputType="text"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.676"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.454" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

MainActivity.java

```java
package com.example.studentregistration;
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 newname, newreg;
    Button sub;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        newname = findViewById(R.id.name);
        newreg = findViewById(R.id.reg);
        sub = findViewById(R.id.button);
        sub.setOnClickListener(new View.OnClickListener() {
```

```
        @Override
        public void onClick(View v) {
            Intent info = new Intent(getApplicationContext(), MainActivity2.class);
            Bundle data = new Bundle();
            data.putString("name1", newname.getText().toString().trim());
            data.putString("reg1", newreg.getText().toString().trim());
            info.putExtras(data);
            startActivity(info);
        }
    });
  }
}
```

MainActivity.2java

```
package com.example.studentregistration;
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.Spinner;
import android.widget.Toast;
public class MainActivity2 extends AppCompatActivity {
  Button submitButton, uploadButton;
  EditText nameEditText, emailEditText, phoneEditText, regEditText;
  Spinner departmentSpinner, semesterSpinner;
  @Override
  protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_main2);
    Intent info = getIntent();
    Bundle data = info.getExtras();
    if (data == null) {
      finish();
      return;
    }
    submitButton = findViewById(R.id.button2);
    departmentSpinner = findViewById(R.id.dept);
    semesterSpinner = findViewById(R.id.sem);
    nameEditText = findViewById(R.id.name2);
    regEditText = findViewById(R.id.reg2);
    emailEditText = findViewById(R.id.mail2);
    phoneEditText = findViewById(R.id.phone2);
    nameEditText.setText(data.getString("name1"));
    regEditText.setText(data.getString("reg1"));
    submitButton.setOnClickListener(new View.OnClickListener() {
      @Override
      public void onClick(View v) {
        if (emailEditText.getText().toString().isEmpty()) {
          Toast.makeText(MainActivity2.this, "Please enter email", Toast.LENGTH_SHORT).show();
        } else if (phoneEditText.getText().toString().isEmpty()) {
          Toast.makeText(MainActivity2.this, "Please enter phone number", Toast.LENGTH_SHORT).show();
        } else {
```

```java
            Intent uploadIntent = new Intent(getApplicationContext(), MainActivity3.class);
            String username = nameEditText.getText().toString().trim();
            String register = regEditText.getText().toString().trim();
            String semester = semesterSpinner.getSelectedItem().toString();
            String department = departmentSpinner.getSelectedItem().toString();
            Bundle data2 = new Bundle();
            data2.putString("name3", username);
            data2.putString("reg3", register);
            data2.putString("sem3", semester);
            data2.putString("dep3", department);
            uploadIntent.putExtras(data2);
            startActivity(uploadIntent);
        }
      }
    });
  }
}
```

MainActivity3.java

```java
package com.example.studentregistration;
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;
import android.widget.TextView;
import android.widget.Toast;
public class MainActivity3 extends AppCompatActivity {
  TextView nam, reg1, dep1, sem1;
  Button mrk;
  EditText mrk1, mrk2, mrk3, mrk4;
  @SuppressLint("MissingInflatedId")
  @Override
  protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_main3);
    nam = findViewById(R.id.nm);
    reg1 = findViewById(R.id.regstr);
    dep1 = findViewById(R.id.dpr);
    sem1 = findViewById(R.id.smr);
    mrk1 = findViewById(R.id.s1);
    mrk2 = findViewById(R.id.s2);
    mrk3 = findViewById(R.id.s3);
    mrk4 = findViewById(R.id.s4);
    Intent upload = getIntent();
    Bundle data = upload.getExtras();
    if (data != null) {
      String n = data.getString("name3");
      String r = data.getString("reg3");
      String d = data.getString("dep3");
      String s = data.getString("sem3");
      nam.setText(n);
```

```java
            reg1.setText(r);
            dep1.setText(d);
            sem1.setText(s);
        }
        mrk = findViewById(R.id.mark);
        mrk.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                String mark1 = mrk1.getText().toString();
                String mark2 = mrk2.getText().toString();
                String mark3 = mrk3.getText().toString();
                String mark4 = mrk4.getText().toString();
                int totalMarks = Integer.parseInt(mark1) + Integer.parseInt(mark2) + Integer.parseInt(mark3) +
Integer.parseInt(mark4);
                Intent upload = getIntent();
                Bundle data2 = upload.getExtras();
                if (data2 != null) {
                    String n = data2.getString("name3");
                    String r = data2.getString("reg3");
                    String d = data2.getString("dep3");
                    String s = data2.getString("sem3");
                    Toast.makeText(MainActivity3.this, "Uploaded Marks", Toast.LENGTH_SHORT).show();
                    Intent display = new Intent(getApplicationContext(), MainActivity4.class);
                    display.putExtra("name4", n);
                    display.putExtra("reg4", r);
                    display.putExtra("dep4", d);
                    display.putExtra("sem4", s);
                    display.putExtra("totalmark", totalMarks);
                    Bundle l = new Bundle();
                    l.putString("reg", reg1.getText().toString());
                    l.putString("hk", nam.getText().toString());
                    l.putString("dept", dep1.getText().toString());
                    l.putString("sem", sem1.getText().toString());
                    display.putExtras(l);
                    startActivity(display);
                }
            }
        });
    }
}


MainActivity4.java
package com.example.studentregistration;
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 MainActivity4 extends AppCompatActivity {
    Button reset;
    EditText lastname, lastregno, lastdept, lastsem, totalmark;
    @SuppressLint("MissingInflatedId")
```

```java
@Override
protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_main4);
    lastname = findViewById(R.id.lname);
    lastregno = findViewById(R.id.lregno);
    lastdept = findViewById(R.id.ldept);
    lastsem = findViewById(R.id.lsem);
    totalmark = findViewById(R.id.tmark);
    reset = findViewById(R.id.new_dt);
    Intent display = getIntent();
    Bundle l = display.getExtras();
    String nm = l.getString("hk");
    String reg = l.getString("reg");
    String dept = l.getString("dept");
    String sem = l.getString("sem");
    int marks = l.getInt("totalmark");
    lastname.setText(nm);
    lastregno.setText(reg);
    lastdept.setText(dept);
    lastsem.setText(sem);
    totalmark.setText(String.valueOf(marks));
    reset.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View v) {
            Intent repeat = new Intent(getApplicationContext(), MainActivity.class);
            setResult(101, repeat);
            finish();
        }
    });
}
}
```

Result

The application for concatenating two strings has been Developed successfully and output is verified.

EXPLICIT INTENT USING STARTACTIVITYFORRESULT

Aim: Develop an Android application using explicit intent and startactivityforresult

AndroidManifest.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools">
    <application
        android:allowBackup="true"
        android:dataExtractionRules="@xml/data_extraction_rules"
        android:fullBackupContent="@xml/backup_rules"
        android:icon="@mipmap/ic_launcher"
        android:label="@string/app_name"
        android:roundIcon="@mipmap/ic_launcher_round"
        android:supportsRtl="true"
        android:theme="@style/Theme.LoginPage"
        tools:targetApi="31">
        <activity
            android:name=".MainActivity2"
            android:exported="false" />
        <activity
            android:name=".MainActivity"
            android:exported="true">
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />
                <category android:name="android.intent.category.LAUNCHER" />
            </intent-filter>
        </activity>
    </application>
</manifest>
```

activity_main.xml

```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="match_parent"
        android:layout_height="match_parent"
        android:scaleType="fitXY"
        app:srcCompat="@drawable/hill"
        tools:layout_editor_absoluteX="74dp"
        tools:layout_editor_absoluteY="-188dp" />
    <TextView
        android:id="@+id/textView"
```

```xml
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:gravity="center"
        android:text="LOGIN"
        android:textSize="24sp"
        android:textStyle="bold"
        app:layout_constraintBottom_toBottomOf="@+id/imageView"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.196"
        tools:layout_editor_absoluteX="0dp" />
    <EditText
        android:id="@+id/username1"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:ems="10"
        android:hint="Enter Username"
        android:inputType="text"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.3"
        tools:layout_editor_absoluteX="0dp" />
    <EditText
        android:id="@+id/password1"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:ems="10"
        android:hint="Enter Password"
        android:inputType="textPassword"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.387"
        tools:layout_editor_absoluteX="0dp" />
    <Button
        android:id="@+id/login"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Login"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.483" />
    <TextView
        android:id="@+id/textView2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="If you don't have an account,"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.068"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.588" />
    <Button
        android:id="@+id/reg"
```

```
        android:layout_width="119dp"
        android:layout_height="44dp"
        android:background="@drawable/regbtn"
        android:text="Register"
        android:textColor="#F40404"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.555"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.589" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

activity_main2.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=".MainActivity2">
    <ImageView
        android:id="@+id/imageView2"
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:scaleType="fitXY"
        app:srcCompat="@drawable/hill"
        tools:layout_editor_absoluteX="132dp"
        tools:layout_editor_absoluteY="180dp" />
    <TextView
        android:id="@+id/textView3"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:gravity="center"
        android:text="SIGN UP"
        android:textSize="24sp"
        android:textStyle="bold"
        app:layout_constraintBottom_toBottomOf="@+id/imageView2"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.135"
        tools:layout_editor_absoluteX="0dp" />
    <EditText
        android:id="@+id/username"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:ems="10"
        android:hint="Enter Username"
        android:inputType="text"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.246"
        tools:layout_editor_absoluteX="0dp" />
    <EditText
        android:id="@+id/email"
```

```xml
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:ems="10"
    android:hint="Enter Email address"
    android:inputType="text"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintTop_toTopOf="@+id/imageView2"
    app:layout_constraintVertical_bias="0.33"
    tools:layout_editor_absoluteX="0dp" />
<EditText
    android:id="@+id/phone"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:ems="10"
    android:hint="Enter PhoneNumber"
    android:inputType="text"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintTop_toTopOf="@+id/imageView2"
    app:layout_constraintVertical_bias="0.412"
    tools:layout_editor_absoluteX="0dp" />
<EditText
    android:id="@+id/password"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:ems="10"
    android:hint="Enter Password"
    android:inputType="textPassword"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    tools:layout_editor_absoluteX="0dp" />
<EditText
    android:id="@+id/conpass"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:ems="10"
    android:hint="Conform Password"
    android:inputType="textPassword"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintTop_toTopOf="@+id/imageView2"
    app:layout_constraintVertical_bias="0.584"
    tools:layout_editor_absoluteX="0dp" />
<Button
    android:id="@+id/sign"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Sign Up"
    app:layout_constraintBottom_toBottomOf="@+id/imageView2"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.682" />
<TextView
    android:id="@+id/textView5"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
```

```xml
        android:text="If you have account,"
        app:layout_constraintBottom_toBottomOf="@+id/imageView2"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.055"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.757" />
    <Button
        android:id="@+id/login_btn"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:background="@drawable/regbtn"
        android:text="Login Now"
        android:textColor="#F40404"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.406"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.77" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

MainActivity.java

```java
package com.example.loginpage;
import androidx.activity.result.ActivityResult;
import androidx.activity.result.ActivityResultCallback;
import androidx.activity.result.ActivityResultLauncher;
import androidx.activity.result.contract.ActivityResultContract;
import androidx.activity.result.contract.ActivityResultContracts;
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;
import android.widget.TextView;
import android.widget.Toast;
public class MainActivity extends AppCompatActivity {
    TextView register;
    Button btn;
    EditText user1,pass1;
    ActivityResultLauncher<Intent> outputLauncher = registerForActivityResult(
            new ActivityResultContracts.StartActivityForResult(), new ActivityResultCallback<ActivityResult>() {
                @Override
                public void onActivityResult(ActivityResult result) {
                    if (result.getResultCode() == 101){
                        Intent login = result.getData();
                        Bundle data = login.getExtras();
                        String user = data.getString("username");
                        String pass = data.getString("password");
                        user1.setText(user);
                        pass1.setText(pass);
                    }
```

```java
            }
        }
    );
    ActivityResultLauncher<Intent> loginLauncher = registerForActivityResult(
        new ActivityResultContracts.StartActivityForResult(), new ActivityResultCallback<ActivityResult>() {
            @Override
            public void onActivityResult(ActivityResult result) {
                if (result.getResultCode() ==102){
                }
            }
        }
    );
    @SuppressLint("MissingInflatedId")
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        btn = findViewById(R.id.login);
        user1 = findViewById(R.id.username1);
        pass1 = findViewById(R.id.password1);
        register = findViewById(R.id.reg);
        register.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                Intent sign_in = new Intent(getApplicationContext(), MainActivity2.class);
                outputLauncher.launch(sign_in);
            }
        });
        btn.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                if (user1.getText().toString().isEmpty()){
                    Toast.makeText(MainActivity.this, "Enter Username", Toast.LENGTH_SHORT).show();
                }
                if (pass1.getText().toString().isEmpty())
                {
                    Toast.makeText(MainActivity.this, "Enter Password ", Toast.LENGTH_SHORT).show();
                }
                else{
                    Toast.makeText(MainActivity.this, "No Account found please Register", Toast.LENGTH_SHORT).show();
                }
            }
        });
    }
}
```

MainActivity2.java

```java
package com.example.loginpage;
import androidx.activity.result.ActivityResult;
import androidx.activity.result.ActivityResultCallback;
import androidx.activity.result.ActivityResultLauncher;
import androidx.activity.result.contract.ActivityResultContract;
import androidx.activity.result.contract.ActivityResultContracts;
import androidx.appcompat.app.AppCompatActivity;
```

```java
import android.annotation.SuppressLint;
import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.TextView;
import android.widget.Toast;
public class MainActivity2 extends AppCompatActivity {
    Button reg_btn;
    TextView log_btn;
    EditText user,mail,pho,pass,con;
    @SuppressLint("MissingInflatedId")
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main2);
        user =findViewById(R.id.username);
        mail =findViewById(R.id.email);
        pho = findViewById(R.id.phone);
        pass =findViewById(R.id.password);
        con = findViewById(R.id.conpass);
        reg_btn = findViewById(R.id.sign);
        log_btn = findViewById(R.id.login_btn);
        reg_btn.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                if (user.getText().toString().isEmpty()) {
                    Toast.makeText(MainActivity2.this, "Enter Username", Toast.LENGTH_SHORT).show();
                } else if (mail.getText().toString().isEmpty()) {
                    Toast.makeText(MainActivity2.this, "Enter Email", Toast.LENGTH_SHORT).show();
                } else if (pho.getText().toString().isEmpty()) {
                    Toast.makeText(MainActivity2.this, "Enter PhoneNumber", Toast.LENGTH_SHORT).show();
                } else if (pass.getText().toString().isEmpty()) {
                    Toast.makeText(MainActivity2.this, "Enter Password", Toast.LENGTH_SHORT).show();
                } else if (con.getText().toString().isEmpty()) {
                    Toast.makeText(MainActivity2.this, "Confirm Password", Toast.LENGTH_SHORT).show();
                }
                if (pass.getText().toString().equals(con.getText().toString())) {
                    Toast.makeText(MainActivity2.this, "Registration Successful", Toast.LENGTH_SHORT).show();
                    Intent login = new Intent(getApplicationContext(), MainActivity.class);
                    Bundle data = new Bundle();
                    data.putString("username", user.getText().toString().trim());
                    data.putString("password", pass.getText().toString().trim());
                    login.putExtras(data);
                    setResult(101, login);
                    finish();
                }
                else {
                    Toast.makeText(MainActivity2.this, "Password Doesn't match", Toast.LENGTH_SHORT).show();
                }
            }
        });
        log_btn.setOnClickListener(new View.OnClickListener() {
            @Override
```

```
        public void onClick(View v) {
            Intent log = new Intent(getApplicationContext(),MainActivity.class);
            setResult(102,log);
            finish();
        }
    });
  }
}
```

Result

The application for concatenating two strings has been Developed successfully and output is verified.

MENUS IN ANDROID

Aim: Develop an Android application for demonstrating different types of menus in android

AndroidManifest.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools">
    <application
        android:allowBackup="true"
        android:dataExtractionRules="@xml/data_extraction_rules"
        android:fullBackupContent="@xml/backup_rules"
        android:icon="@mipmap/ic_launcher"
        android:label="@string/app_name"
        android:roundIcon="@mipmap/ic_launcher_round"
        android:supportsRtl="true"
        android:theme="@style/Theme.Buttons"
        tools:targetApi="31">
        <activity
            android:name=".MainActivity"
            android:exported="true">
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />
                <category android:name="android.intent.category.LAUNCHER" />
            </intent-filter>
        </activity>
    </application>
</manifest>
```

optionmenu.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<menu xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto">
    <item android:id="@+id/file" android:title="FILE">
        <menu>
            <item android:id="@+id/New" android:title="NEW"/>
            <item android:id="@+id/edit" android:title="EDIT"/>
        </menu>
    </item>
    <item android:id="@+id/settings" android:title="SETTINGS"
android:icon="@drawable/baseline_directions_run_24" app:showAsAction="ifRoom"/>
    <item android:id="@+id/refresh" android:title="REFRESH" android:icon="@drawable/download"
app:showAsAction="ifRoom"/>
    <item android:id="@+id/about" android:title="ABOUT"/>
</menu>
```

contextmenu.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<menu xmlns:android="http://schemas.android.com/apk/res/android">
    <item android:id="@+id/item1" android:title="ITEM 1">
```

```xml
    <menu>
      <item android:id="@+id/New" android:title="NEW"/>
      <item android:id="@+id/edit" android:title="EDIT"/>
    </menu>
  </item>
  <item android:id="@+id/item2" android:title="ITEM 2"/>
  <item android:id="@+id/item3" android:title="ITEM 3"/>
  <item android:id="@+id/item4" android:title="ITEM 4"/>
</menu>
```

popupmenu.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<menu xmlns:android="http://schemas.android.com/apk/res/android">
  <item android:id="@+id/acc" android:title="ACCOUNT">
    <menu>
      <item android:id="@+id/New" android:title="NEW"/>
      <item android:id="@+id/edit" android:title="EDIT"/>
    </menu>
  </item>
  <item android:id="@+id/privacy" android:title="PRIVACY"/>
  <item android:id="@+id/chat" android:title="CHAT"/>
  <item android:id="@+id/notification" android:title="NOTIFICATION"/>
</menu>
```

activity_main.xml

```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/imageView2"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:scaleType="fitXY"
    app:srcCompat="@drawable/tree" />
  <TextView
    android:id="@+id/text"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Context View"
    android:textColor="#35371D"
    android:textSize="20dp"
    android:textStyle="bold"
    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="0.362" />
  <Button
    android:id="@+id/button"
```

```xml
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="POP UP"
            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="0.449"
            android:onClick="showPopup"/>
</androidx.constraintlayout.widget.ConstraintLayout>
```

MainActivity. Java

```java
package com.example.buttons;
import androidx.annotation.NonNull;
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.view.ContextMenu;
import android.view.Menu;
import android.view.MenuInflater;
import android.view.MenuItem;
import android.view.View;
import android.widget.Button;
import android.widget.PopupMenu;
import android.widget.TextView;
import android.widget.Toast;
public class MainActivity extends AppCompatActivity implements PopupMenu.OnMenuItemClickListener {
    TextView context;
    Button btn;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        context = findViewById(R.id.text);
        registerForContextMenu(context);
    }
    @Override
    public void onCreateContextMenu(ContextMenu menu, View v, ContextMenu.ContextMenuInfo menuInfo) {
        MenuInflater menuInflater = getMenuInflater();
        menuInflater.inflate(R.menu.context, menu);
        super.onCreateContextMenu(menu, v, menuInfo);
    }
    @Override
    public boolean onCreateOptionsMenu(Menu menu) {
        MenuInflater menuInflater = getMenuInflater();
        menuInflater.inflate(R.menu.optionmenu, menu);
        return super.onCreateOptionsMenu(menu);
    }
    @Override
    public boolean onContextItemSelected(@NonNull MenuItem item) {
        if (item.getItemId() == R.id.item1) {
            Toast.makeText(this, "ITEM 1 IS SELECTED", Toast.LENGTH_SHORT).show();
        } else if (item.getItemId() == R.id.item2) {
            Toast.makeText(this, "ITEM 2 IS SELECTED", Toast.LENGTH_SHORT).show();
```

```
    } else if (item.getItemId() == R.id.item3) {
      Toast.makeText(this, "ITEM 3 IS SELECTED", Toast.LENGTH_SHORT).show();
    } else if (item.getItemId() == R.id.item4) {
      Toast.makeText(this, "ITEM 4 IS SELECTED", Toast.LENGTH_SHORT).show();
    } else if (item.getItemId() == R.id.New) {
      Toast.makeText(this, "NEW SELECTED", Toast.LENGTH_SHORT).show();
    } else if (item.getItemId() == R.id.edit) {
      Toast.makeText(this, "EDIT SELECTED", Toast.LENGTH_SHORT).show();
    }
    return super.onContextItemSelected(item);
  }
  @Override
  public boolean onOptionsItemSelected(@NonNull MenuItem item) {
    if (item.getItemId() == R.id.file) {
      Toast.makeText(this, "FILE SELECTED", Toast.LENGTH_SHORT).show();
    } else if (item.getItemId() == R.id.settings) {
      Toast.makeText(this, "RUNNING", Toast.LENGTH_SHORT).show();
    } else if (item.getItemId() == R.id.refresh) {
      Toast.makeText(this, "DOWNLOAD COMPLETED", Toast.LENGTH_SHORT).show();
    } else if (item.getItemId() == R.id.about) {
      Toast.makeText(this, "ABOUT IS SELECTED", Toast.LENGTH_SHORT).show();
    } else if (item.getItemId() == R.id.New) {
      Toast.makeText(this, "NEW SELECTED", Toast.LENGTH_SHORT).show();
    } else if (item.getItemId() == R.id.edit) {
      Toast.makeText(this, "EDIT SELECTED", Toast.LENGTH_SHORT).show();
    }
    return super.onOptionsItemSelected(item);
  }
  public void showPopup(View v) {
    PopupMenu popup = new PopupMenu(this, v);
    popup.setOnMenuItemClickListener(this);
    popup.inflate(R.menu.popupmenu);
    popup.show();
  }
  public boolean onMenuItemClick(MenuItem item) {
    if (item.getItemId() == R.id.acc) {
      Toast.makeText(this, "ACCOUNT IS SELECTED", Toast.LENGTH_SHORT).show();
    } else if (item.getItemId() == R.id.privacy) {
      Toast.makeText(this, "PRIVACY IS SELECTED", Toast.LENGTH_SHORT).show();
    } else if (item.getItemId() == R.id.chat) {
      Toast.makeText(this, "CHAT SELECTED", Toast.LENGTH_SHORT).show();
    } else if (item.getItemId() == R.id.notification) {
      Toast.makeText(this, "NOTIFICATION IS SELECTED", Toast.LENGTH_SHORT).show();
    } else if (item.getItemId() == R.id.New) {
      Toast.makeText(this, "NEW SELECTED", Toast.LENGTH_SHORT).show();
    } else if (item.getItemId() == R.id.edit) {
      Toast.makeText(this, "EDIT SELECTED", Toast.LENGTH_SHORT).show();
    }
    return false;
  }
}
}
```

Result

The application for demonstrating different types of menus in android has been Developed successfully and output is verified.

LIST VIEW,SPINNER USING BUILTIN ADAPTER

Aim: Develop an Android application to demonstrate listview, spinner using builtin adapter.

AndroidManifest.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
   xmlns:tools="http://schemas.android.com/tools">
   <application
      android:allowBackup="true"
      android:dataExtractionRules="@xml/data_extraction_rules"
      android:fullBackupContent="@xml/backup_rules"
      android:icon="@mipmap/ic_launcher"
      android:label="@string/app_name"
      android:roundIcon="@mipmap/ic_launcher_round"
      android:supportsRtl="true"
      android:theme="@style/Theme.View"
      tools:targetApi="31">
      <activity
         android:name=".MainActivity"
         android:exported="true">
         <intent-filter>
            <action android:name="android.intent.action.MAIN" />
            <category android:name="android.intent.category.LAUNCHER" />
         </intent-filter>
      </activity>
   </application>
</manifest>
```

background.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<selector xmlns:android="http://schemas.android.com/apk/res/android">
   <item>
      <shape android:shape="rectangle">
         <solid android:color="#A872E6DB"></solid>
         <stroke android:color="#000000" android:width="1dp"/>
         <corners android:radius="2dp"/>
      </shape>
   </item>
</selector>
```

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:background="@drawable/background"
   android:orientation="vertical"
```

```xml
      android:padding="20dp"
      tools:context=".MainActivity">
    <TextView
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="ACTORS LISTS"
        android:textSize="25sp" />
    <ListView
        android:id="@+id/listview"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:dividerHeight="1dp" />
    <Spinner
        android:id="@+id/spinner"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_gravity="center"
        android:layout_marginTop="160dp"
        android:minHeight="32dp" />
</LinearLayout>
```

MainActivity.java

```java
package com.example.view;
import androidx.appcompat.app.AppCompatActivity;
import android.annotation.SuppressLint;
import android.widget.AdapterView;
import android.widget.ArrayAdapter;
import android.widget.ListView;
import android.widget.Spinner;
import java.util.ArrayList;
public class MainActivity extends AppCompatActivity {
    ListView l1;
    Spinner s1;
    ArrayList<String> names=new ArrayList<>();
    String[] languages={"Malayalam","Tamil","Hindi","English","Kannada","Telungu"};
    @SuppressLint("MissingInflatedId")
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        l1=findViewById(R.id.listview);
        s1=findViewById(R.id.spinner);
        names.add("Suriya");
        names.add("Prabhas");
        names.add("Vijay");
        names.add("Dulquer Salmaan");
        names.add("Tovino Thomas");
        names.add("Allu Arjun");
        names.add("Ram Charan");
        names.add("Nagarjuna");
        ArrayAdapter<String> adapter=new ArrayAdapter<>(getApplicationContext(),
android.R.layout.simple_list_item_1,names);
        l1.setAdapter(adapter);
        ArrayAdapter<String> adapter1=new ArrayAdapter<>(getApplicationContext(),
android.R.layout.simple_spinner_item,languages);
```

```
        s1.setAdapter(adapter1);
    }
}
```

Result

The application to demonstrate listview, spinner using built in adapter.has been Developed successfully and output is verified

LIST VIEW USING BASE ADAPTER

Aim: Develop an Android application to demonstrate listview using base adapter
.

AndroidManifest.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools">
    <application
        android:allowBackup="true"
        android:dataExtractionRules="@xml/data_extraction_rules"
        android:fullBackupContent="@xml/backup_rules"
        android:icon="@mipmap/ic_launcher"
        android:label="@string/app_name"
        android:roundIcon="@mipmap/ic_launcher_round"
        android:supportsRtl="true"
        android:theme="@style/Theme.ListView"
        tools:targetApi="31">
        <activity
            android:name=".MainActivity2"
            android:exported="false" />
        <activity
            android:name=".MainActivity"
            android:exported="true">
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />
                <category android:name="android.intent.category.LAUNCHER" />
            </intent-filter>
        </activity>
    </application>
</manifest>
```

activity_main.xml

```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"
    android:padding="10dp">
    <ListView
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:numColumns="3"
        android:id="@+id/l_view"
        android:gravity="center" />
</RelativeLayout>
```

activity_main2.xml

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

```xml
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:padding="10dp">
    <ImageView
        android:layout_width="100dp"
        android:layout_height="100dp"
        android:id="@+id/img1"/>
    <TextView
        android:id="@+id/txt1"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_below="@+id/img1"
        android:layout_marginTop="10dp"
        android:gravity="start"
        android:textColor="@android:color/black" />
    <TextView
        android:id="@+id/txt2"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_below="@+id/txt1"
        android:layout_marginTop="10dp"
        android:gravity="start"
        android:textColor="@android:color/black" />
</RelativeLayout>
```

MainActivity.java

```java
package com.example.listview;
import androidx.appcompat.app.AppCompatActivity;
import android.annotation.SuppressLint;
import android.os.Bundle;
import android.widget.GridLayout;
import android.widget.GridView;
import android.widget.ListView;
public class MainActivity extends AppCompatActivity {
    GridView datagv;
    String[] namearr={"Aavakaaya","Aloogobi","Bhurta","Dal","Piperade","Ratatouille"};
    int[]
imgarr={R.drawable.aavakaaya,R.drawable.aloogobi,R.drawable.bhurta,R.drawable.dal,R.drawable.piperade,R.drawable.ratatouille};
    String[] desarr={"A variety pickle from Southern India","Vegetarian dish made with potatoes,cauliflower and Indian
spices","Mixture of mashed vegetables","Made with yellow moong dal,warming spices,creamy coconut milk and
boost of veggies","Tomato-pepper sauce spiced with piment d'Espelette","Stewed vegetables"};
    ListView l_view;
    @SuppressLint("MissingInflatedId")
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        l_view=findViewById(R.id.l_view);
        MainActivity2 adapter=new MainActivity2(getApplicationContext(),imgarr,namearr,desarr);
        l_view.setAdapter(adapter);
    }
}
```

MainActivity2.java

```java
package com.example.listview;
import android.content.Context;
import android.view.LayoutInflater;
import android.view.View;
import android.view.ViewGroup;
import android.widget.BaseAdapter;
import android.widget.ImageView;
import android.widget.TextView;
public class MainActivity2 extends BaseAdapter {
    Context context;
    String[] namelist;
    int[] imglist;
    String[] deslist;
    LayoutInflater inflater;
    public MainActivity2(Context context,int[] imgs,String[] names,String[] desc) {
        this.context = context;
        this.imglist=imgs;
        this.namelist=names;
        this.deslist=desc;
        inflater=LayoutInflater.from(context);
    }
    @Override
    public int getCount() {
        return namelist.length;
    }
    @Override
    public Object getItem(int position) {
        return null;
    }
    @Override
    public long getItemId(int position) {
        return 0;
    }
    @Override
    public View getView(int position, View convertView, ViewGroup parent) {
        convertView =inflater.inflate(R.layout.activity_main2,null);
        ImageView img=convertView.findViewById(R.id.img1);
        TextView txt=convertView.findViewById(R.id.txt1);
        TextView txt1=convertView.findViewById(R.id.txt2);
        img.setImageResource(imglist[position]);
        txt.setText(namelist[position]);
        txt1.setText(deslist[position]);
        return convertView;
    }
}
```

Result

The application to demonstrate listview using base adapter has been Developed successfully and output is verified.

Experiment No : 15   **Date:15/02/24**

GRID VIEW USING BASE ADAPTER

Aim: Develop an Android application to demonstrate gridview using base adapter.

AndroidManifest.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools">
    <application
        android:allowBackup="true"
        android:dataExtractionRules="@xml/data_extraction_rules"
        android:fullBackupContent="@xml/backup_rules"
        android:icon="@mipmap/ic_launcher"
        android:label="@string/app_name"
        android:roundIcon="@mipmap/ic_launcher_round"
        android:supportsRtl="true"
        android:theme="@style/Theme.Gridview"
        tools:targetApi="31">
        <activity
            android:name=".MainActivity2"
            android:exported="false" />
        <activity
            android:name=".MainActivity"
            android:exported="true">
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />
                <category android:name="android.intent.category.LAUNCHER" />
            </intent-filter>
        </activity>
    </application>
</manifest>
```

activity_main.xml

```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"
    android:padding="10dp">
    <GridView
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:numColumns="3"
        android:id="@+id/gd_view"
        android:gravity="center"/>
</RelativeLayout>
```

activity_main2.xml

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

```xml
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:padding="10dp">
    <ImageView
        android:layout_width="100dp"
        android:layout_height="100dp"
        android:id="@+id/img1"/>
    <TextView
        android:id="@+id/txt1"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_below="@+id/img1"
        android:layout_marginTop="10dp"" />
    <TextView
        android:id="@+id/txt2"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_below="@+id/txt1"
        android:layout_marginTop="10dp"
        android:textAlignment="textStart" />
</RelativeLayout>
```

MainActivity.java

```java
package com.example.gridview;
import androidx.appcompat.app.AppCompatActivity;
import android.annotation.SuppressLint;
import android.os.Bundle;
import android.widget.GridLayout;
import android.widget.GridView;
import com.example.gridview.MainActivity2;
public class MainActivity extends AppCompatActivity {
    GridView datagv;
    String[]
namearr={"Aavakaaya","Aloogobi","Bhurta","dal","Piperade","Ratatouille","Aavakaaya","Aloogobi","Bhurta","dal","Piperade","Ratatouille"};
    String[] pricearr={"Price-140rs","Price-210rs","Price-280rs","Price-195rs","Price-1400rs","Price-325rs","Price-140rs","Price-210rs","Price-280rs","Price-195rs","Price-1400rs","Price-325rs"};
    int[]
imgarr={R.drawable.aavakaaya,R.drawable.aloogobi,R.drawable.bhurta,R.drawable.dal,R.drawable.piperade,R.drawable.ratatouille,R.drawable.aavakaaya,R.drawable.aloogobi,R.drawable.bhurta,R.drawable.dal,R.drawable.piperade,R.drawable.ratatouille};
    GridView gd_view;
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        gd_view=findViewById(R.id.gd_view);
        com.example.gridview.MainActivity2 adapter=new
MainActivity2(getApplicationContext(),imgarr,namearr,pricearr);
        gd_view.setAdapter(adapter);
    }
}
```

MainActivity2.java

```java
package com.example.gridview;
import android.annotation.SuppressLint;
import android.content.Context;
import android.view.LayoutInflater;
import android.view.View;
import android.view.ViewGroup;
import android.widget.BaseAdapter;
import android.widget.ImageView;
import android.widget.TextView;
import com.example.gridview.R;
public class MainActivity2 extends BaseAdapter {
    Context context;
    String[] namelist;
    String[] pricelist;
    int[] imglist;
    LayoutInflater inflater;
    public MainActivity2(Context context,int[] imgs,String[] names,String[] prices) {
        this.context = context;
        this.imglist=imgs;
        this.namelist=names;
        this.pricelist=prices;
        inflater=LayoutInflater.from(context);
    }
    @Override
    public int getCount() {
        return namelist.length;
    }
    @Override
    public Object getItem(int position) {
        return null;
    }
    @Override
    public long getItemId(int position) {
        return 0;
    }
    @SuppressLint("ViewHolder")
    @Override
    public View getView(int position, View convertView, ViewGroup parent) {
        convertView =inflater.inflate(R.layout.activity_main2,null);
        ImageView img=convertView.findViewById(R.id.img1);
        TextView txt=convertView.findViewById(R.id.txt1);
        TextView txt1=convertView.findViewById(R.id.txt2);
        img.setImageResource(imglist[position]);
        txt.setText(namelist[position]);
        txt1.setText(pricelist[position]);
        return convertView;
    }
}
```

Result

The application to demonstrate gridview using base adapter has been developed successfully and output is verified.

LISTVIEW USING ARRAY ADAPTER

Aim: Develop an Android application to demonstrate listview using array adapter

AndroidManifest.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools">
    <application
        android:allowBackup="true"
        android:dataExtractionRules="@xml/data_extraction_rules"
        android:fullBackupContent="@xml/backup_rules"
        android:icon="@mipmap/ic_launcher"
        android:label="@string/app_name"
        android:roundIcon="@mipmap/ic_launcher_round"
        android:supportsRtl="true"
        android:theme="@style/Theme.Adapter"
        tools:targetApi="31">
        <activity
            android:name=".MainActivity"
            android:exported="true">
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />
                <category android:name="android.intent.category.LAUNCHER" />
            </intent-filter>
        </activity>
    </application>
</manifest>
```

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"
    tools:context=".MainActivity"
    android:orientation="vertical">
    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_gravity="center"
        android:text="CARS"
        android:textSize="30dp"
        android:textStyle="bold" />
    <ListView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:id="@+id/list"
        android:divider="#000"
```

```xml
        android:dividerHeight="2dp"/>
</LinearLayout>
```

imglist.xml
```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="110dp"
    android:layout_marginLeft="5dp"
    android:layout_marginRight="5dp"
    android:orientation="horizontal">
    <ImageView
        android:id="@+id/image"
        android:layout_width="100dp"
        android:layout_height="100dp"
        android:layout_marginTop="10dp"
        android:layout_marginBottom="200dp"
        android:src="@drawable/defe" />
    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:orientation="vertical">
        <TextView
            android:id="@+id/name"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:layout_marginStart="10dp"
            android:layout_marginTop="10dp"
            android:textSize="18sp" />
        <TextView
            android:id="@+id/price"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:layout_marginStart="10dp"
            android:layout_marginTop="10dp"
            android:textSize="18sp" />
    </LinearLayout>
</LinearLayout>
```

MainActivity.java
```java
package com.example.adapter;
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.widget.AdapterView;
import android.widget.GridView;
import android.widget.ListView;
import android.widget.TextView;
import android.widget.Toast;
import com.example.adapter.cars;
import java.util.ArrayList;
public class MainActivity extends AppCompatActivity {
    ListView list1;
```

```java
    String[] name ={"Defender","G-Wagon","Lamborgini Urus","Dodge Challenger","Porsche Cayenne","Rolls royce
Phantom","Defender","G-Wagon","Lamborgini Urus","Dodge Challenger","Porsche Cayenne","Rolls royce Phantom"};
    String[] price ={"Defender price is 2.35cr","G-Wagon price is 3.5cr","Lamborgini Urus price is 4.22cr","Dodge
Challenger price is 1.30cr","Porsche Cayenne price is 1.99cr","Rolls royce Phantom price is 10.92cr","Defender price
is 2.35cr","G-Wagon price is 3.5cr","Lamborgini Urus price is 4.22cr","Dodge Challenger price is 1.30cr","Porsche
Cayenne price is 1.99cr","Rolls royce Phantom price is 10.92cr"};
    int[] img =
{R.drawable.defe,R.drawable.gwag,R.drawable.uru,R.drawable.dod,R.drawable.por,R.drawable.rolls,R.drawable.def
e,R.drawable.gwag,R.drawable.uru,R.drawable.dod,R.drawable.por,R.drawable.rolls};
    ArrayList array_car;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        list1 = findViewById(R.id.list);
        array_car=new ArrayList<>();
        for(int i=0;i<name.length;i++){
            array_car.add(new cars(name[i],price[i],img[i]));
        }
        custom adapt = new custom(getApplication(),array_car,R.layout.imglist);
        list1.setAdapter(adapt);
        list1.setOnItemClickListener(new AdapterView.OnItemClickListener() {
            @Override
            public void onItemClick(AdapterView<?> parent, View view, int position, long id) {
                TextView name=view.findViewById(R.id.name);
                Toast.makeText(MainActivity.this,name.getText().toString(),Toast.LENGTH_SHORT).show();
            }
        });
    }
}


custom.java
package com.example.adapter;
import android.content.Context;
import android.view.LayoutInflater;
import android.view.View;
import android.view.ViewGroup;
import android.widget.ArrayAdapter;
import android.widget.ImageView;
import android.widget.TextView;
import androidx.annotation.NonNull;
import java.util.ArrayList;
public class custom extends ArrayAdapter<cars> {
    Context context;
    String [] txt;
    int[]img;
    ArrayList<cars> list;
    LayoutInflater insert;
    public custom(Context a,ArrayList<cars> b,int c) {
        super(a, c, b);
        this.context = a;
        this.list=b;
    }
    @Override
```

```java
public int getCount() {
    return list.size();
}
@Override
public cars getItem(int position) {
    return null;
}
@Override
public long getItemId(int position) {
    return 0;
}
@Override
public View getView(int position, View convertView, @NonNull ViewGroup parent) {
    View v = convertView;
    v =LayoutInflater.from(getContext()).inflate(R.layout.imglist,parent,false);
    ImageView img3 = v.findViewById(R.id.image);
    TextView name3 = v.findViewById(R.id.name);
    TextView price3 = v.findViewById(R.id.price);
    img3.setImageResource(list.get(position).getImg());
    name3.setText(list.get(position).getName());
    price3.setText(list.get(position).getPrice());
    return v;
}
}
```

cars.java

```java
package com.example.adapter;
public class cars {
    String name;
    String price;
    int img;
    public cars(String name, String price, int img) {
        this.name = name;
        this.price = price;
        this.img = img;
    }
    public String getName() {
        return name;
    }
    public String getPrice() {
        return price;
    }
    public int getImg() {
        return img;
    }
}
```

Result

The application to demonstrate listview using array adapter has been Developed successfully and output is verified.

SHARED PREFERENCE

Aim: Develop an Android application to demonstrate the uses of shared preferences.

AndroidManifest.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools">
    <application
        android:allowBackup="true"
        android:dataExtractionRules="@xml/data_extraction_rules"
        android:fullBackupContent="@xml/backup_rules"
        android:icon="@mipmap/ic_launcher"
        android:label="@string/app_name"
        android:roundIcon="@mipmap/ic_launcher_round"
        android:supportsRtl="true"
        android:theme="@style/Theme.SharedPreference"
        tools:targetApi="31">
        <activity
            android:name=".MainActivity2"
            android:exported="false" />
        <activity
            android:name=".MainActivity"
            android:exported="true">
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />
                <category android:name="android.intent.category.LAUNCHER" />
            </intent-filter>
        </activity>
    </application>
</manifest>
```

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:background="#D2C0F3"
    android:orientation="vertical"
    android:padding="20dp"
    tools:context=".MainActivity">
    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_gravity="center"
        android:text="LOGIN PAGE"
        android:textColor="@color/black"
        android:textSize="40dp"
```

```xml
        android:textStyle="bold"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />
    <EditText
        android:id="@+id/username"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginStart="20dp"
        android:layout_marginTop="100dp"
        android:layout_marginEnd="20dp"
        android:hint="Username"
        android:minHeight="48dp"
        android:textColorHint="@color/black"
        android:textStyle="normal" />
    <EditText
        android:id="@+id/pass"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginStart="20dp"
        android:layout_marginTop="50dp"
        android:layout_marginEnd="20dp"
        android:hint="Password"
        android:inputType="textPassword"
        android:minHeight="48dp"
        android:textColorHint="@color/black"
        android:textStyle="normal" />
    <CheckBox
        android:id="@+id/ch_reg"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginLeft="10dp"
        android:layout_marginTop="20dp"
        android:checked="false"
        android:text="Remember me"
        android:textColor="@android:color/black" />
    <Button
        android:id="@+id/btn"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_gravity="center"
        android:layout_marginTop="20dp"
        android:text="LOGIN"
        android:textColor="@color/white" />
    <TextView
        android:id="@+id/txt_reg"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginStart="20dp"
        android:layout_marginTop="20dp"
        android:gravity="center"
        android:text="Not registered?REGISTER"
        android:textColor="@color/black" />
</LinearLayout>
```

activity_main2.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:background="#D2C0F3"
    android:orientation="vertical"
    android:padding="30dp"
    tools:context=".MainActivity2">
    <TextView
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="Register"
        android:textAlignment="center"
        android:textColor="@color/black"
        android:textSize="40dp"
        android:textStyle="bold" />
    <EditText
        android:id="@+id/edname"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginTop="20dp"
        android:hint="NAME"
        android:minHeight="48dp"
        android:textColor="@color/black"
        android:textColorHint="@color/black" />
    <EditText
        android:id="@+id/edphone"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginTop="20dp"
        android:hint="PHONE NUMBER"
        android:inputType="phone"
        android:minHeight="48dp"
        android:textColor="@color/black"
        android:textColorHint="@color/black" />
    <EditText
        android:id="@+id/edemail"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginTop="20dp"
        android:hint="EMAIL"
        android:minHeight="48dp"
        android:textColor="@color/black"
        android:textColorHint="@color/black" />
    <EditText
        android:id="@+id/edpass"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginTop="20dp"
        android:hint="PASSWORD"
```

```xml
        android:inputType="textPassword"
        android:minHeight="48dp"
        android:textColor="@color/black"
        android:textColorHint="@color/black" />
    <EditText
        android:id="@+id/co_pass"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginTop="20dp"
        android:hint="CONFORM PASSWORD"
        android:inputType="textPassword"
        android:minHeight="48dp"
        android:textColor="@color/black"
        android:textColorHint="@color/black" />
    <Button
        android:id="@+id/btn1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_gravity="center"
        android:layout_marginTop="20dp"
        android:text="REGISTER" />
    <TextView
        android:id="@+id/txt_login"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginTop="20dp"
        android:gravity="center"
        android:text="Already registered?LOGIN"
        android:textColor="@color/black" />
</LinearLayout>
```

MainActivity.java

```java
package com.example.sharedpreference;
import androidx.appcompat.app.AppCompatActivity;
import android.content.Intent;
import android.content.SharedPreferences;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.CheckBox;
import android.widget.EditText;
import android.widget.TextView;
import android.widget.Toast;
public class MainActivity extends AppCompatActivity {
    EditText user, pass;
    Button btn;
    TextView txt_reg;
    CheckBox ch;
    String chb_value;
    private final static String MESSAGE_ID="preference";
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
```

```java
    user = findViewById(R.id.username);
    pass = findViewById(R.id.pass);
    btn = findViewById(R.id.btn);
    ch=findViewById(R.id.ch_reg);
    txt_reg = findViewById(R.id.txt_reg);
    SharedPreferences sh_rec = getSharedPreferences(MESSAGE_ID, MODE_PRIVATE);
    String value_name=sh_rec.getString("username","");
    String value_pass=sh_rec.getString("password","");
    String value_rem=sh_rec.getString("remember_me","");
    user.setText(value_name.toString());
    pass.setText(value_pass.toString());
    if (value_rem.equals("Y")){
        ch.setChecked(true);
    }
    else{
        ch.setChecked(false);
    }
    txt_reg.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View v) {
            Intent intent = new Intent(getApplicationContext(), MainActivity2.class);
            startActivity(intent);
        }
    });
    btn.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View v) {
            if(ch.isChecked()){
                chb_value="Y";
            }else{
                chb_value="N";
            }
            if (user.getText().toString().isEmpty() || pass.getText().toString().isEmpty()) {
                Toast.makeText(MainActivity.this, "Login incomplete,Go to Registration page",
Toast.LENGTH_SHORT).show();
                user.setText(" ");
                pass.setText(" ");
            } else {
                if (ch.isChecked()) {
                    SharedPreferences sh = getSharedPreferences(MESSAGE_ID, MODE_PRIVATE);
                    SharedPreferences.Editor editor = sh.edit();
                    editor.putString("username",(user.getText().toString()));
                    editor.putString("password",  pass.getText().toString());
                    editor.putString("remember_me", chb_value);
                    editor.apply();
                }else{
                    SharedPreferences sh = getSharedPreferences(MESSAGE_ID, MODE_PRIVATE);
                    SharedPreferences.Editor editor = sh.edit();
                    editor.putString("username", "");
                    editor.putString("password","");
                    editor.putString("remember_me",chb_value);
                    editor.apply();
                }
            } }
    });
```

```java
        if (getIntent().hasExtra("user") && getIntent().hasExtra("pass")) {
            Bundle extras = getIntent().getExtras();
            String username = extras.getString("user");
            String password = extras.getString("pass");
            user.setText(username);
            pass.setText(password);
        } }
}
```

MainActivity2.java

```java
package com.example.sharedpreference;
import androidx.appcompat.app.AppCompatActivity;
import android.annotation.SuppressLint;
import android.content.Intent;
import android.content.SharedPreferences;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.CheckBox;
import android.widget.EditText;
import android.widget.TextView;
import android.widget.Toast;
public class MainActivity2 extends AppCompatActivity {
    EditText name, phone, email, pass1,con;
    Button reg;
    TextView txt_login;
    String con_pass;
    String password;
    CheckBox ch;
    private final static String MESSAGE_ID="preference";
    @SuppressLint("MissingInflatedId")
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main2);
        reg = findViewById(R.id.btn1);
        name = findViewById(R.id.edname);
        phone = findViewById(R.id.edphone);
        email = findViewById(R.id.edemail);
        pass1 = findViewById(R.id.edpass);
        con = findViewById(R.id.co_pass);
        ch=findViewById(R.id.ch_reg);
        txt_login = findViewById(R.id.txt_login);
        txt_login.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                Intent data = new Intent(getApplicationContext(), MainActivity.class);
                startActivity(data);
                finish();
            }
        });
        reg.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
```

```java
        if (reg.getText().toString().isEmpty() || name.getText().toString().isEmpty() ||
phone.getText().toString().isEmpty() || email.getText().toString().isEmpty() || pass1.getText().toString().isEmpty() ||
con.getText().toString().isEmpty()) {
            Toast.makeText(MainActivity2.this, "please fill all fields", Toast.LENGTH_SHORT).show();
        } else {
            con_pass = con.getText().toString().trim();
            password = pass1.getText().toString().trim();
            if (!password.equals(con_pass)) {
                Toast.makeText(MainActivity2.this, "incorrect password", Toast.LENGTH_SHORT).show();
            } else {
                SharedPreferences sh = getSharedPreferences(MESSAGE_ID, MODE_PRIVATE);
                SharedPreferences.Editor editor = sh.edit();
                editor.putString("username", (name.getText().toString()));
                editor.putString("password", pass1.getText().toString());
                editor.apply();
                Intent returns = new Intent(getApplicationContext(), MainActivity.class);
                startActivity(returns);
            }
        }
    }
    });
  }
}
```

Result

The application to demonstrate the uses of shared preferences has been Developed successfully and output is verified.

CREATION OF DATABASE AND RELATED OBJECTS AND INSERT DATA

Aim: Develop an Android application to create of database and related objects and insert data.

AndroidManifest.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
  xmlns:tools="http://schemas.android.com/tools">
  <application
    android:allowBackup="true"
    android:dataExtractionRules="@xml/data_extraction_rules"
    android:fullBackupContent="@xml/backup_rules"
    android:icon="@mipmap/ic_launcher"
    android:label="@string/app_name"
    android:roundIcon="@mipmap/ic_launcher_round"
    android:supportsRtl="true"
    android:theme="@style/Theme.InsertData"
    tools:targetApi="31">
    <activity
      android:name=".MainActivity"
      android:exported="true">
      <intent-filter>
        <action android:name="android.intent.action.MAIN" />
        <category android:name="android.intent.category.LAUNCHER" />
      </intent-filter>
    </activity>
  </application>
</manifest>
```

activity_main.xml

```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:id="@+id/nuser"
  android:layout_width="match_parent"
  android:layout_height="match_parent"
  android:orientation="vertical"
  tools:context=".MainActivity">
  <com.google.android.material.textfield.TextInputLayout
    android:id="@+id/us"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_below="@+id/main"
    android:layout_marginTop="20dp"
    app:startIconDrawable="@drawable/baseline_shopping_bag_24"
    tools:ignore="MissingConstraints">
    <com.google.android.material.textfield.TextInputEditText
      android:id="@+id/user"
```

```xml
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginTop="80dp"
        android:hint="Enter Bag Brand" />
</com.google.android.material.textfield.TextInputLayout>
<com.google.android.material.textfield.TextInputLayout
    android:id="@+id/pro"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_below="@+id/co"
    app:startIconDrawable="@drawable/baseline_production_quantity_limits_24"
    android:layout_marginTop="20dp"
    tools:ignore="MissingConstraints">
    <com.google.android.material.textfield.TextInputEditText
        android:id="@+id/production"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="Enter Production" />
</com.google.android.material.textfield.TextInputLayout>
<com.google.android.material.textfield.TextInputLayout
    android:id="@+id/ty"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_below="@+id/pro"
    app:startIconDrawable="@drawable/baseline_bookmark_24"
    android:layout_marginTop="20dp"
    tools:ignore="MissingConstraints">
    <com.google.android.material.textfield.TextInputEditText
        android:id="@+id/type"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="Enter Bag type" />
</com.google.android.material.textfield.TextInputLayout>
<com.google.android.material.textfield.TextInputLayout
    android:id="@+id/mat"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_below="@+id/ty"
    app:startIconDrawable="@drawable/baseline_bolt_24"
    android:layout_marginTop="20dp"
    tools:ignore="MissingConstraints">
    <com.google.android.material.textfield.TextInputEditText
        android:id="@+id/material"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="Enter Material" />
</com.google.android.material.textfield.TextInputLayout>
<com.google.android.material.textfield.TextInputLayout
    android:id="@+id/vol"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_below="@+id/mat"
    app:startIconDrawable="@drawable/baseline_inbox_24"
    android:layout_marginTop="20dp"
    tools:ignore="MissingConstraints">
```

```xml
    <com.google.android.material.textfield.TextInputEditText
        android:id="@+id/volume"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="Enter Bag Volume" />
    </com.google.android.material.textfield.TextInputLayout>
    <com.google.android.material.textfield.TextInputLayout
        android:id="@+id/co"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_below="@+id/us"
        app:startIconDrawable="@drawable/baseline_color_lens_24"
        android:layout_marginTop="20dp"
        tools:ignore="MissingConstraints">
        <com.google.android.material.textfield.TextInputEditText
            android:id="@+id/color"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:hint="Enter Bag Colour" />
    </com.google.android.material.textfield.TextInputLayout>
    <LinearLayout
        android:layout_width="wrap_content"
        android:layout_height="match_parent"
        android:layout_marginStart="90dp"
        android:layout_marginTop="600dp"
        android:layout_marginEnd="40dp"
        android:orientation="horizontal">
        <Button
            android:id="@+id/save"
            style="?attr/materialButtonOutlinedStyle"
            android:layout_width="221dp"
            android:layout_height="wrap_content"
            android:layout_weight="1"
            android:text="Insert"
            android:textSize="15sp"
            app:icon="@drawable/baseline_add_to_queue_24" />
    </LinearLayout>
    <TextView
        android:id="@+id/main"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginTop="30dp"
        android:gravity="center"
        android:text="ADD NEW BAG"
        android:textSize="25dp"
        android:textStyle="bold" />
</RelativeLayout>
```

MainActivity.java

```java
package com.example.insertdata;
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
```

```java
import android.widget.Toast;
import com.google.android.material.textfield.TextInputEditText;
public class MainActivity extends AppCompatActivity {
    TextInputEditText name,color,production,type,material,volume;
    Button up;
    db dbms;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        name = findViewById(R.id.user);
        dbms = new db(this);
        color = findViewById(R.id.color);
        production = findViewById(R.id.production);
        type = findViewById(R.id.type);
        material = findViewById(R.id.material);
        volume = findViewById(R.id.volume);
        up = findViewById(R.id.save);
        up.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                if (name.getText().toString().isEmpty()) {
                    Toast.makeText(MainActivity.this, "Enter Bag Brand", Toast.LENGTH_SHORT).show();
                } else if (color.getText().toString().isEmpty()) {
                    Toast.makeText(MainActivity.this, "Enter Bag Colour", Toast.LENGTH_SHORT).show();
                } if (production.getText().toString().isEmpty()) {
                    Toast.makeText(MainActivity.this, "Enter Production", Toast.LENGTH_SHORT).show();
                } else if (type.getText().toString().isEmpty()) {
                    Toast.makeText(MainActivity.this, "Enter Bag Type", Toast.LENGTH_SHORT).show();
                }if (material.getText().toString().isEmpty()) {
                    Toast.makeText(MainActivity.this, "Enter Bag Material", Toast.LENGTH_SHORT).show();
                } else if (volume.getText().toString().isEmpty()) {
                    Toast.makeText(MainActivity.this, "Enter Bag Volume", Toast.LENGTH_SHORT).show();
                } else {
                    String NAME = name.getText().toString().trim();
                    String COLOR = color.getText().toString().trim();
                    String PRODUCTION = production.getText().toString().trim();
                    String TYPE = type.getText().toString().trim();
                    String MATERIAL = material.getText().toString().trim();
                    String VOLUME = volume.getText().toString().trim();
                    dbms.add_user(NAME,COLOR,PRODUCTION,TYPE,MATERIAL,VOLUME);
                }
            }
        });
    }
}
```

db.java

```java
package com.example.insertdata;
import android.content.ContentValues;
import android.content.Context;
import android.database.sqlite.SQLiteDatabase;
import android.database.sqlite.SQLiteOpenHelper;
import android.widget.Toast;
```

```java
import androidx.annotation.Nullable;
public class db extends SQLiteOpenHelper {
    private Context context;
    private static final String NAME = "bag.db";
    private static final String USER_ID = "id_users";
    private static final String NAME_COL = "name_column";
    private static final String COLOR_COL = "color_column";
    private static final String PRODUCTION_COL = "production_column";
    private static final String TYPE_COL = "type_column";
    private static final String MATERIAL_COL = "material_column";
    private static final String VOLUME_COL = "volume_column";
    private static final String USER_TB = "bags_table";
    public db(@Nullable Context context) {
        super(context, NAME,null,1);
        this.context = context;
    }
    @Override
    public void onCreate(SQLiteDatabase db) {
        String query = "CREATE TABLE " + USER_TB + "(" + USER_ID + " INTEGER PRIMARY KEY AUTOINCREMENT,"
                + NAME_COL + " TEXT," + COLOR_COL + " TEXT," + PRODUCTION_COL + " TEXT," + TYPE_COL + " TEXT, " +
MATERIAL_COL + " TEXT, " + VOLUME_COL +" TEXT);";
        db.execSQL(query);
    }
    @Override
    public void onUpgrade(SQLiteDatabase db, int i, int i1) {
    }
    public void add_user(String name, String color, String production, String type, String material, String volume ) {
        SQLiteDatabase dbms1 = this.getWritableDatabase();
        ContentValues val = new ContentValues();
        val.put(NAME_COL, name);
        val.put(COLOR_COL, color);
        val.put(PRODUCTION_COL, production);
        val.put(TYPE_COL, type);
        val.put(MATERIAL_COL, material);
        val.put(VOLUME_COL, volume);
        float result = dbms1.insert(USER_TB ,null,val);
        if(result==-1){
            Toast.makeText(context, "Failed To Insert", Toast.LENGTH_SHORT).show();
        }
        else{
            Toast.makeText(context, "New Bag Details Added", Toast.LENGTH_SHORT).show();
        }
    }
}
```

Result

The application to create of database and related objects and insert data has been Developed successfully and output is verified.

Experiment No : 19   **Date:14/03/24**

READ DATA FROM THE DATABASE AND SHOW IT USING RECYCLER VIEW

Aim: Develop an Android application for reading data from the database and show it using recycler view

AndroidManifest.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
  xmlns:tools="http://schemas.android.com/tools">
  <application
    android:allowBackup="true"
    android:dataExtractionRules="@xml/data_extraction_rules"
    android:fullBackupContent="@xml/backup_rules"
    android:icon="@mipmap/ic_launcher"
    android:label="@string/app_name"
    android:roundIcon="@mipmap/ic_launcher_round"
    android:supportsRtl="true"
    android:theme="@style/Theme.ViewData"
    tools:targetApi="31">
    <activity
      android:name=".MainActivity2"
      android:exported="false" />
    <activity
      android:name=".MainActivity"
      android:exported="true">
      <intent-filter>
        <action android:name="android.intent.action.MAIN" />
        <category android:name="android.intent.category.LAUNCHER" />
      </intent-filter>
    </activity>
  </application>
</manifest>
```

activity_main.xml

```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=".MainActivity2">
  <androidx.recyclerview.widget.RecyclerView
    android:id="@+id/recyclerView"
    android:layout_width="412dp"
    android:layout_height="730dp"
    android:layout_marginTop="50dp"
    android:textAlignment="center"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.0"
```

```xml
                tools:ignore="MissingConstraints"
                tools:layout_editor_absoluteX="-1dp" />
        <com.google.android.material.floatingactionbutton.FloatingActionButton
                android:id="@+id/imgbtn"
                style="?attr/materialButtonOutlinedStyle"
                android:layout_width="wrap_content"
                android:layout_height="wrap_content"
                android:clickable="true"
                android:scaleType="centerCrop"
                android:src="@drawable/baseline_shopping_bag_24"
                app:icon="@drawable/edit"
                app:layout_constraintBottom_toBottomOf="parent"
                app:layout_constraintEnd_toEndOf="parent"
                app:layout_constraintHorizontal_bias="0.898"
                app:layout_constraintStart_toStartOf="parent"
                app:layout_constraintTop_toTopOf="parent"
                app:layout_constraintVertical_bias="0.917" />
        <TextView
                android:id="@+id/textView"
                android:layout_width="wrap_content"
                android:layout_height="wrap_content"
                android:text="BAGS LIST"
                android:textSize="30dp"
                android:textStyle="bold"
                app:layout_constraintBottom_toBottomOf="parent"
                app:layout_constraintEnd_toEndOf="parent"
                app:layout_constraintHorizontal_bias="0.544"
                app:layout_constraintStart_toStartOf="parent"
                app:layout_constraintTop_toTopOf="parent"
                app:layout_constraintVertical_bias="0.023" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

activity_main2.xml
```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:id="@+id/nuser"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical"
    tools:context=".MainActivity">
    <com.google.android.material.textfield.TextInputLayout
        android:id="@+id/us"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_below="@+id/main"
        android:layout_marginTop="20dp"
        app:startIconDrawable="@drawable/baseline_shopping_bag_24"
        tools:ignore="MissingConstraints">
        <com.google.android.material.textfield.TextInputEditText
            android:id="@+id/user"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
```

```xml
            android:layout_marginTop="80dp"
            android:hint="Enter Bag Brand" />
    </com.google.android.material.textfield.TextInputLayout>

    <com.google.android.material.textfield.TextInputLayout
        android:id="@+id/pro"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_below="@+id/co"
        app:startIconDrawable="@drawable/baseline_production_quantity_limits_24"
        android:layout_marginTop="20dp"
        tools:ignore="MissingConstraints">
        <com.google.android.material.textfield.TextInputEditText
            android:id="@+id/production"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:hint="Enter Production" />
    </com.google.android.material.textfield.TextInputLayout>
    <com.google.android.material.textfield.TextInputLayout
        android:id="@+id/ty"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_below="@+id/pro"
        app:startIconDrawable="@drawable/baseline_bookmark_24"
        android:layout_marginTop="20dp"
        tools:ignore="MissingConstraints">
        <com.google.android.material.textfield.TextInputEditText
            android:id="@+id/type"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:hint="Enter Bag type" />
    </com.google.android.material.textfield.TextInputLayout>
    <com.google.android.material.textfield.TextInputLayout
        android:id="@+id/mat"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_below="@+id/ty"
        app:startIconDrawable="@drawable/baseline_bolt_24"
        android:layout_marginTop="20dp"
        tools:ignore="MissingConstraints">
        <com.google.android.material.textfield.TextInputEditText
            android:id="@+id/material"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:hint="Enter Material" />
    </com.google.android.material.textfield.TextInputLayout>
    <com.google.android.material.textfield.TextInputLayout
        android:id="@+id/vol"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_below="@+id/mat"
        app:startIconDrawable="@drawable/baseline_inbox_24"
        android:layout_marginTop="20dp"
        tools:ignore="MissingConstraints">
        <com.google.android.material.textfield.TextInputEditText
```

```xml
        android:id="@+id/volume"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="Enter Bag Volume" />
</com.google.android.material.textfield.TextInputLayout>
<com.google.android.material.textfield.TextInputLayout
    android:id="@+id/co"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_below="@+id/us"
    app:startIconDrawable="@drawable/baseline_color_lens_24"
    android:layout_marginTop="20dp"
    tools:ignore="MissingConstraints">
    <com.google.android.material.textfield.TextInputEditText
        android:id="@+id/color"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="Enter Bag Colour" />
</com.google.android.material.textfield.TextInputLayout>
<LinearLayout
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:layout_marginStart="40dp"
    android:layout_marginTop="600dp"
    android:layout_marginEnd="40dp"
    android:orientation="horizontal">
    <Button
        android:id="@+id/save"
        style="?attr/materialButtonOutlinedStyle"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_weight="1"
        android:text="Insert"
        android:textSize="15sp"
        app:icon="@drawable/baseline_add_to_queue_24" />
    <Button
        android:id="@+id/delete"
        style="?attr/materialButtonOutlinedStyle"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_weight="1"
        android:text="Clear"
        android:textSize="15sp"
        app:icon="@drawable/baseline_remove_circle_outline_24" />
    <Button
        android:id="@+id/view"
        style="?attr/materialButtonOutlinedStyle"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_weight="1"
        android:text="View"
        android:textSize="15sp"
        app:icon="@drawable/eye" />
</LinearLayout>
<TextView
```

```xml
        android:id="@+id/main"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginTop="30dp"
        android:gravity="center"
        android:text="ADD NEW BAG"
        android:textSize="25dp"
        android:textStyle="bold" />
</RelativeLayout>
```

data_list.xml

```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="wrap_content"
    xmlns:app="http://schemas.android.com/apk/res-auto">
    <androidx.cardview.widget.CardView
        android:id="@+id/card"
        android:layout_width="381dp"
        android:layout_height="179dp"
        android:layout_marginLeft="20dp"
        android:layout_marginTop="10dp"
        android:layout_marginRight="20dp"
        android:padding="10dp"
        app:cardCornerRadius="10dp">
        <ImageView
            android:id="@+id/imageView2"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:scaleType="fitXY"
            app:srcCompat="@drawable/baimg" />
        <RelativeLayout
            android:id="@+id/layout"
            android:layout_width="371dp"
            android:layout_height="179dp"
            android:layout_marginLeft="10dp">
            <TextView
                android:id="@+id/textname"
                android:layout_width="84dp"
                android:layout_height="27dp"
                android:text="Bag Name"
                android:textStyle="bold" />
            <TextView
                android:id="@+id/textcolor"
                android:layout_width="83dp"
                android:layout_height="27dp"
                android:layout_below="@+id/textname"
                android:text="Bag Colour"
                android:textStyle="bold" />
            <TextView
                android:id="@+id/textprod"
                android:layout_width="wrap_content"
                android:layout_height="27dp"
                android:layout_below="@+id/textcolor"
```

```xml
                android:text="Bag Production"
                android:textStyle="bold" />
            <TextView
                android:id="@+id/texttype"
                android:layout_width="wrap_content"
                android:layout_height="27dp"
                android:layout_below="@+id/textprod"
                android:text="Bag Type"
                android:textStyle="bold" />
            <TextView
                android:id="@+id/textmat"
                android:layout_width="wrap_content"
                android:layout_height="27dp"
                android:layout_below="@+id/texttype"
                android:text="Bag Material"
                android:textStyle="bold" />
            <TextView
                android:id="@+id/textvol"
                android:layout_width="wrap_content"
                android:layout_height="27dp"
                android:layout_below="@+id/textmat"
                android:text="Bag Volume"
                android:textStyle="bold" />
            <TextView
                android:id="@+id/list_name"
                android:layout_width="270dp"
                android:layout_height="wrap_content"
                android:layout_marginStart="80dp"
                android:gravity="start"
                android:paddingLeft="40dp"
                android:text="NAME"
                android:textAlignment="textStart"
                android:textColor="#fff"
                android:textSize="20sp"
                android:textStyle="bold" />
            <TextView
                android:id="@+id/list_color"
                android:layout_width="222dp"
                android:layout_height="wrap_content"
                android:layout_below="@+id/list_name"
                android:layout_marginStart="120dp"
                android:text="COLOR"
                android:textAlignment="textStart"
                android:textColor="#fff"
                android:textSize="20sp"
                android:textStyle="bold" />
            <TextView
                android:id="@+id/list_production"
                android:layout_width="222dp"
                android:layout_height="wrap_content"
                android:layout_below="@+id/list_color"
                android:layout_marginStart="120dp"
                android:text="PRODUCTION"
                android:textAlignment="textStart"
                android:textColor="#fff"
```

```xml
                    android:textSize="20sp"
                    android:textStyle="bold" />
                <TextView
                    android:id="@+id/list_type"
                    android:layout_width="222dp"
                    android:layout_height="wrap_content"
                    android:layout_below="@+id/list_production"
                    android:layout_marginStart="120dp"
                    android:text="TYPE"
                    android:textAlignment="textStart"
                    android:textColor="#fff"
                    android:textSize="20sp"
                    android:textStyle="bold" />
                <TextView
                    android:id="@+id/list_material"
                    android:layout_width="222dp"
                    android:layout_height="wrap_content"
                    android:layout_below="@+id/list_type"
                    android:layout_marginStart="120dp"
                    android:text="MATERIAL"
                    android:textAlignment="textStart"
                    android:textColor="#fff"
                    android:textSize="20sp"
                    android:textStyle="bold" />
                <TextView
                    android:id="@+id/list_volume"
                    android:layout_width="222dp"
                    android:layout_height="wrap_content"
                    android:layout_below="@+id/list_material"
                    android:layout_marginStart="120dp"
                    android:text="VOLUME"
                    android:textAlignment="textStart"
                    android:textColor="#fff"
                    android:textSize="20sp"
                    android:textStyle="bold" />
        </RelativeLayout>
    </androidx.cardview.widget.CardView>
</LinearLayout>
```

MainActivity.java

```java
package com.example.viewdata;
import androidx.annotation.Nullable;
import androidx.appcompat.app.AppCompatActivity;
import androidx.recyclerview.widget.LinearLayoutManager;
import androidx.recyclerview.widget.RecyclerView;
import android.content.Intent;
import android.database.Cursor;
import android.os.Bundle;
import android.view.View;
import android.widget.Toast;
import com.google.android.material.floatingactionbutton.FloatingActionButton;
import java.util.ArrayList;
public class MainActivity extends AppCompatActivity {
    RecyclerView userlists;
```

```java
    FloatingActionButton add;
    db dbms;
    ArrayList<String> var_name,var_color,var_production,var_type,var_material,var_volume,var_id;
    CustomAdaptor adaptor;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        userlists = findViewById(R.id.recyclerView);
        add = findViewById(R.id.imgbtn);
        add.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                Intent new_add = new Intent(getApplicationContext(), MainActivity2.class);
                startActivityForResult(new_add,1);
            }
        });
        var_id = new ArrayList<>();
        var_name = new ArrayList<>();
        var_color = new ArrayList<>();
        var_production = new ArrayList<>();
        var_type = new ArrayList<>();
        var_material = new ArrayList<>();
        var_volume = new ArrayList<>();
        dbms = new db(this);
        showdata();
        adaptor = new
CustomAdaptor(MainActivity.this,var_name,var_color,var_production,var_type,var_material,var_volume,var_id);
        userlists.setLayoutManager(new LinearLayoutManager(getApplicationContext()));
        userlists.setAdapter(adaptor);
    }
    void showdata() {
        Cursor data = dbms.collect();
        if (data.getCount() == 0) {
            Toast.makeText(this, "NO BAGS", Toast.LENGTH_SHORT).show();
        } else {
            while (data.moveToNext()) {
                var_id.add(data.getString(0));
                var_name.add(data.getString(1));
                var_color.add(data.getString(2));
                var_production.add(data.getString(3));
                var_type.add(data.getString(4));
                var_material.add(data.getString(5));
                var_volume.add(data.getString(6));
            }
        }
    }
    protected void onActivityResult(int requestCode, int resultCode, @Nullable Intent data) {
        super.onActivityResult(requestCode, resultCode, data);
        if (requestCode==1) {
            recreate();
        } else if (requestCode==10) {
            recreate();
        }
    }
}
```

```
}
```

MainActivity2.java

```java
package com.example.viewdata;
import androidx.appcompat.app.AppCompatActivity;
import android.app.Activity;
import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.Toast;
import com.google.android.material.textfield.TextInputEditText;
public class MainActivity2 extends AppCompatActivity {
    TextInputEditText name,color,production,type,material,volume;
    Button clr,up,back;
    db dbms;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main2);
        dbms = new db(this);
        name = findViewById(R.id.user);
        color = findViewById(R.id.color);
        production = findViewById(R.id.production);
        type = findViewById(R.id.type);
        material = findViewById(R.id.material);
        volume = findViewById(R.id.volume);
        up = findViewById(R.id.save);
        clr = findViewById(R.id.delete);
        back = findViewById(R.id.view);
        up.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                if (name.getText().toString().isEmpty()) {
                    Toast.makeText(MainActivity2.this, "Enter Bag Brand", Toast.LENGTH_SHORT).show();
                } else if (color.getText().toString().isEmpty()) {
                    Toast.makeText(MainActivity2.this, "Enter Bag Colour", Toast.LENGTH_SHORT).show();
                } if (production.getText().toString().isEmpty()) {
                    Toast.makeText(MainActivity2.this, "Enter Production", Toast.LENGTH_SHORT).show();
                } else if (type.getText().toString().isEmpty()) {
                    Toast.makeText(MainActivity2.this, "Enter Bag Type", Toast.LENGTH_SHORT).show();
                }if (material.getText().toString().isEmpty()) {
                    Toast.makeText(MainActivity2.this, "Enter Bag Material", Toast.LENGTH_SHORT).show();
                } else if (volume.getText().toString().isEmpty()) {
                    Toast.makeText(MainActivity2.this, "Enter Bag Volume", Toast.LENGTH_SHORT).show();
                }
                else {
                    String NAME = name.getText().toString().trim();
                    String COLOR = color.getText().toString().trim();
                    String PRODUCTION = production.getText().toString().trim();
                    String TYPE = type.getText().toString().trim();
                    String MATERIAL = material.getText().toString().trim();
                    String VOLUME = volume.getText().toString().trim();
                    dbms.add_user(NAME,COLOR,PRODUCTION,TYPE,MATERIAL,VOLUME);
```

```
            }
          }
        });
        clr.setOnClickListener(new View.OnClickListener() {
          @Override
          public void onClick(View v) {
            name.setText("");
            color.setText("");
            production.setText("");
            type.setText("");
            material.setText("");
            volume.setText("");
          }
        });
        back.setOnClickListener(new View.OnClickListener() {
          @Override
          public void onClick(View v) {
            Intent goback = new Intent();
            setResult(Activity.RESULT_CANCELED,goback);
            finish();
          }
        });
    }
}
```

CustomAdaptor

```
package com.example.viewdata;
import android.content.Context;
import android.view.LayoutInflater;
import android.view.View;
import android.view.ViewGroup;
import android.widget.RelativeLayout;
import android.widget.TextView;
import androidx.annotation.NonNull;
import androidx.recyclerview.widget.RecyclerView;
import java.util.ArrayList;
public class CustomAdaptor extends RecyclerView.Adapter<CustomAdaptor.dataViewHolder> {
    Context context;
    ArrayList<String> name,color,production,type,material,volume,id;
    LayoutInflater layout;
    public CustomAdaptor(Context context, ArrayList<String> name, ArrayList<String> color,ArrayList<String>
production, ArrayList<String> type,ArrayList<String> material, ArrayList<String> volume, ArrayList<String> id) {
        this.context = context;
        this.id = id;
        this.name = name;
        this.color = color;
        this.production = production;
        this.type = type;
        this.material = material;
        this.volume = volume;
        layout = LayoutInflater.from(context);
    }
    @NonNull
    @Override
```

```java
public dataViewHolder onCreateViewHolder(@NonNull ViewGroup parent, int viewType) {
    View v = layout.inflate(R.layout.data_list,parent,false);
    return new dataViewHolder(v);
}
@Override
public void onBindViewHolder(@NonNull CustomAdaptor.dataViewHolder holder, int position) {
    holder.val_name.setText(String.valueOf(name.get(position)));
    holder.val_color.setText(String.valueOf(color.get(position)));
    holder.val_production.setText(String.valueOf(production.get(position)));
    holder.val_type.setText(String.valueOf(type.get(position)));
    holder.val_material.setText(String.valueOf(material.get(position)));
    holder.val_volume.setText(String.valueOf(volume.get(position)));
}
@Override
public int getItemCount() {
    return name.size();
}
public class dataViewHolder extends RecyclerView.ViewHolder {
    TextView val_name,val_color,val_production,val_type,val_material,val_volume;
    RelativeLayout data_list;
    public dataViewHolder(@NonNull View itemView) {
        super(itemView);
        val_name = itemView.findViewById(R.id.list_name);
        val_color = itemView.findViewById(R.id.list_color);
        val_production = itemView.findViewById(R.id.list_production);
        val_type = itemView.findViewById(R.id.list_type);
        val_material = itemView.findViewById(R.id.list_material);
        val_volume = itemView.findViewById(R.id.list_volume);
        data_list = itemView.findViewById(R.id.layout);
    }
}
}
```

db.java

```java
package com.example.viewdata;
import android.content.ContentValues;
import android.content.Context;
import android.database.Cursor;
import android.database.sqlite.SQLiteDatabase;
import android.database.sqlite.SQLiteOpenHelper;
import android.widget.Toast;
import androidx.annotation.Nullable;
public class db extends SQLiteOpenHelper {
    private Context context;
    private static final String NAME = "bag.db";
    private static final String USER_ID = "id_users";
    private static final String NAME_COL = "name_column";
    private static final String COLOR_COL = "color_column";
    private static final String PRODUCTION_COL = "production_column";
    private static final String TYPE_COL = "type_column";
    private static final String MATERIAL_COL = "material_column";
    private static final String VOLUME_COL = "volume_column";
    private static final String USER_TB = "bags_table";
    public db(@Nullable Context context)
```

```java
    {
        super(context, NAME, null, 1);
        this.context = context;
    }
    @Override
    public void onCreate(SQLiteDatabase db) {
        String query = "CREATE TABLE " + USER_TB + "(" + USER_ID + " INTEGER PRIMARY KEY AUTOINCREMENT,"
                + NAME_COL + " TEXT," + COLOR_COL + " TEXT," + PRODUCTION_COL + " TEXT," + TYPE_COL + " TEXT, " +
MATERIAL_COL + " TEXT, " + VOLUME_COL +" TEXT);";
        db.execSQL(query);
    }
    @Override
    public void onUpgrade(SQLiteDatabase db, int i, int i1) {
        db.execSQL("DROP TABLE IF EXISTS " + USER_TB);
        onCreate(db);
    }
    public void add_user(String name, String color, String production, String type, String material, String volume ) {
        SQLiteDatabase dbms1 = this.getWritableDatabase();
        ContentValues val = new ContentValues();
        val.put(NAME_COL, name);
        val.put(COLOR_COL, color);
        val.put(PRODUCTION_COL, production);
        val.put(TYPE_COL, type);
        val.put(MATERIAL_COL, material);
        val.put(VOLUME_COL, volume);
        float result = dbms1.insert(USER_TB ,null,val);
        if(result==-1){
            Toast.makeText(context, "Failed To Insert", Toast.LENGTH_SHORT).show();
        }
        else{
            Toast.makeText(context, "New Bag Details Added", Toast.LENGTH_SHORT).show();
        }
    }
    Cursor collect(){
        SQLiteDatabase dbms = this.getReadableDatabase();
        Cursor data ;
        data= dbms.rawQuery(" SELECT * FROM " + USER_TB,null);
        return data;
    }
}
```

Result
The application for reading data from the database and show it using recycler view has been Developed successfully and output is verified.

UPDATE AND DELETE DATA FROM DATABASE

Aim: Develop an Android application for updating and deleting data from database

AndroidManifest.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools">
    <application
        android:allowBackup="true"
        android:dataExtractionRules="@xml/data_extraction_rules"
        android:fullBackupContent="@xml/backup_rules"
        android:icon="@mipmap/ic_launcher"
        android:label="@string/app_name"
        android:roundIcon="@mipmap/ic_launcher_round"
        android:supportsRtl="true"
        android:theme="@style/Theme.DataEntry"
        tools:targetApi="31">
        <activity
            android:name=".MainActivity2"
            android:exported="false" />
        <activity
            android:name=".EditUser"
            android:exported="false" />
        <activity
            android:name=".MainActivity"
            android:exported="true">
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />
                <category android:name="android.intent.category.LAUNCHER" />
            </intent-filter>
        </activity>
    </application>
</manifest>
```

activity_main.xml

```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=".MainActivity2">
    <androidx.recyclerview.widget.RecyclerView
        android:id="@+id/recyclerView"
        android:layout_width="412dp"
        android:layout_height="730dp"
        android:layout_marginTop="50dp"
        android:textAlignment="center"
        app:layout_constraintBottom_toBottomOf="parent"
```

```xml
            app:layout_constraintTop_toTopOf="parent"
            app:layout_constraintVertical_bias="0.0"
            tools:ignore="MissingConstraints"
            tools:layout_editor_absoluteX="-1dp" />
    <com.google.android.material.floatingactionbutton.FloatingActionButton
            android:id="@+id/imgbtn"
            style="?attr/materialButtonOutlinedStyle"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:clickable="true"
            android:scaleType="centerCrop"
            android:src="@drawable/baseline_shopping_bag_24"
            app:icon="@drawable/edit"
            app:layout_constraintBottom_toBottomOf="parent"
            app:layout_constraintEnd_toEndOf="parent"
            app:layout_constraintHorizontal_bias="0.898"
            app:layout_constraintStart_toStartOf="parent"
            app:layout_constraintTop_toTopOf="parent"
            app:layout_constraintVertical_bias="0.917" />
    <TextView
            android:id="@+id/textView"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="BAGS LIST"
            android:textSize="30dp"
            android:textStyle="bold"
            app:layout_constraintBottom_toBottomOf="parent"
            app:layout_constraintEnd_toEndOf="parent"
            app:layout_constraintHorizontal_bias="0.544"
            app:layout_constraintStart_toStartOf="parent"
            app:layout_constraintTop_toTopOf="parent"
            app:layout_constraintVertical_bias="0.023" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

activity_main2.xml

```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:id="@+id/nuser"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:layout_marginLeft="5dp"
    android:layout_marginRight="5dp"
    android:orientation="vertical"
    tools:context=".MainActivity">
    <com.google.android.material.textfield.TextInputLayout
        android:id="@+id/us"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_below="@+id/main"
        android:layout_marginTop="20dp"
        app:startIconDrawable="@drawable/baseline_shopping_bag_24"
        tools:ignore="MissingConstraints">
```

```xml
        <com.google.android.material.textfield.TextInputEditText
          android:id="@+id/user"
          android:layout_width="match_parent"
          android:layout_height="wrap_content"
          android:layout_marginTop="80dp"
          android:hint="Enter Bag Brand" />
    </com.google.android.material.textfield.TextInputLayout>
    <com.google.android.material.textfield.TextInputLayout
      android:id="@+id/pro"
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
      android:layout_below="@+id/co"
      android:layout_marginTop="20dp"
      app:startIconDrawable="@drawable/baseline_production_quantity_limits_24"
      tools:ignore="MissingConstraints">
      <com.google.android.material.textfield.TextInputEditText
        android:id="@+id/production"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="Enter Production" />
    </com.google.android.material.textfield.TextInputLayout>
    <com.google.android.material.textfield.TextInputLayout
      android:id="@+id/ty"
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
      android:layout_below="@+id/pro"
      android:layout_marginTop="20dp"
      app:startIconDrawable="@drawable/baseline_bookmark_24"
      tools:ignore="MissingConstraints">
      <AutoCompleteTextView
        android:id="@+id/type"
        style="@style/ThemeOverlay.Material3.AutoCompleteTextView.OutlinedBox"
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:hint="Enter Bag Type" />
    </com.google.android.material.textfield.TextInputLayout>
    <com.google.android.material.textfield.TextInputLayout
      android:id="@+id/mat"
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
      android:layout_below="@+id/ty"
      android:layout_marginTop="20dp"
      app:startIconDrawable="@drawable/baseline_bolt_24"
      tools:ignore="MissingConstraints">

      <com.google.android.material.textfield.TextInputEditText
        android:id="@+id/material"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="Enter Material" />
    </com.google.android.material.textfield.TextInputLayout>
    <com.google.android.material.textfield.TextInputLayout
      android:id="@+id/vol"
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
```

```xml
            android:layout_below="@+id/mat"
            android:layout_marginTop="20dp"
            app:startIconDrawable="@drawable/baseline_inbox_24"
            tools:ignore="MissingConstraints">
        <com.google.android.material.textfield.TextInputEditText
            android:id="@+id/volume"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:hint="Enter Bag Volume" />
    </com.google.android.material.textfield.TextInputLayout>
    <com.google.android.material.textfield.TextInputLayout
        android:id="@+id/co"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_below="@+id/us"
        android:layout_marginTop="20dp"
        app:startIconDrawable="@drawable/baseline_color_lens_24"
        tools:ignore="MissingConstraints">
        <com.google.android.material.textfield.TextInputEditText
            android:id="@+id/color"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:hint="Enter Bag Colour" />
    </com.google.android.material.textfield.TextInputLayout>
    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:layout_marginStart="40dp"
        android:layout_marginTop="600dp"
        android:layout_marginEnd="40dp"
        android:orientation="horizontal">
        <Button
            android:id="@+id/save"
            style="?attr/materialButtonOutlinedStyle"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_weight="1"
            android:text="Insert"
            android:textSize="15sp"
            app:icon="@drawable/baseline_add_to_queue_24" />
        <Button
            android:id="@+id/delete"
            style="?attr/materialButtonOutlinedStyle"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_weight="1"
            android:text="Clear"
            android:textSize="15sp"
            app:icon="@drawable/baseline_remove_circle_outline_24" />
        <Button
            android:id="@+id/view"
            style="?attr/materialButtonOutlinedStyle"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_weight="1"
```

```xml
            android:text="View"
            android:textSize="15sp"
            app:icon="@drawable/eye" />
    </LinearLayout>
    <TextView
        android:id="@+id/main"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginTop="30dp"
        android:gravity="center"
        android:text="ADD NEW BAG"
        android:textSize="25dp"
        android:textStyle="bold" />
</RelativeLayout>
```

data_list.xml

```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="wrap_content"
    xmlns:app="http://schemas.android.com/apk/res-auto">
    <androidx.cardview.widget.CardView
        android:id="@+id/card"
        android:layout_width="381dp"
        android:layout_height="179dp"
        android:layout_marginLeft="20dp"
        android:layout_marginTop="10dp"
        android:layout_marginRight="20dp"
        android:padding="10dp"
        app:cardCornerRadius="10dp">
        <ImageView
            android:id="@+id/imageView2"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:scaleType="fitXY"
            app:srcCompat="@drawable/baimg" />
        <RelativeLayout
            android:id="@+id/layout"
            android:layout_width="371dp"
            android:layout_height="179dp"
            android:layout_marginLeft="10dp">
            <TextView
                android:id="@+id/textname"
                android:layout_width="84dp"
                android:layout_height="27dp"
                android:text="Bag Name"
                android:textStyle="bold" />
            <TextView
                android:id="@+id/textcolor"
                android:layout_width="83dp"
                android:layout_height="27dp"
                android:layout_below="@+id/textname"
                android:text="Bag Colour"
                android:textStyle="bold" />
```

```xml
<TextView
    android:id="@+id/textprod"
    android:layout_width="wrap_content"
    android:layout_height="27dp"
    android:layout_below="@+id/textcolor"
    android:text="Bag Production"
    android:textStyle="bold" />
<TextView
    android:id="@+id/texttype"
    android:layout_width="wrap_content"
    android:layout_height="27dp"
    android:layout_below="@+id/textprod"
    android:text="Bag Type"
    android:textStyle="bold" />
<TextView
    android:id="@+id/textmat"
    android:layout_width="wrap_content"
    android:layout_height="27dp"
    android:layout_below="@+id/texttype"
    android:text="Bag Material"
    android:textStyle="bold" />
<TextView
    android:id="@+id/textvol"
    android:layout_width="wrap_content"
    android:layout_height="27dp"
    android:layout_below="@+id/textmat"
    android:text="Bag Volume"
    android:textStyle="bold" />
<TextView
    android:id="@+id/list_name"
    android:layout_width="270dp"
    android:layout_height="wrap_content"
    android:layout_marginStart="80dp"
    android:gravity="start"
    android:paddingLeft="40dp"
    android:text="NAME"
    android:textAlignment="textStart"
    android:textColor="#fff"
    android:textSize="20sp"
    android:textStyle="bold" />
<TextView
    android:id="@+id/list_color"
    android:layout_width="222dp"
    android:layout_height="wrap_content"
    android:layout_below="@+id/list_name"
    android:layout_marginStart="120dp"
    android:text="COLOR"
    android:textAlignment="textStart"
    android:textColor="#fff"
    android:textSize="20sp"
    android:textStyle="bold" />
<TextView
    android:id="@+id/list_production"
    android:layout_width="222dp"
    android:layout_height="wrap_content"
```

```xml
        android:layout_below="@+id/list_color"
        android:layout_marginStart="120dp"
        android:text="PRODUCTION"
        android:textAlignment="textStart"
        android:textColor="#fff"
        android:textSize="20sp"
        android:textStyle="bold" />
    <TextView
        android:id="@+id/list_type"
        android:layout_width="222dp"
        android:layout_height="wrap_content"
        android:layout_below="@+id/list_production"
        android:layout_marginStart="120dp"
        android:text="TYPE"
        android:textAlignment="textStart"
        android:textColor="#fff"
        android:textSize="20sp"
        android:textStyle="bold" />
    <TextView
        android:id="@+id/list_material"
        android:layout_width="222dp"
        android:layout_height="wrap_content"
        android:layout_below="@+id/list_type"
        android:layout_marginStart="120dp"
        android:text="MATERIAL"
        android:textAlignment="textStart"
        android:textColor="#fff"
        android:textSize="20sp"
        android:textStyle="bold" />
    <TextView
        android:id="@+id/list_volume"
        android:layout_width="222dp"
        android:layout_height="wrap_content"
        android:layout_below="@+id/list_material"
        android:layout_marginStart="120dp"
        android:text="VOLUME"
        android:textAlignment="textStart"
        android:textColor="#fff"
        android:textSize="20sp"
        android:textStyle="bold" />
    </RelativeLayout>
  </androidx.cardview.widget.CardView>
</LinearLayout>
```

edit_user.xml
```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:id="@+id/neuser"
  android:layout_width="match_parent"
  android:layout_height="match_parent"
  android:layout_marginLeft="10dp"
  android:layout_marginRight="10dp"
```

```xml
    android:orientation="vertical"
    tools:context=".MainActivity">
    <com.google.android.material.textfield.TextInputLayout
        android:id="@+id/us"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_below="@+id/main"
        android:layout_marginTop="20dp"
        app:startIconDrawable="@drawable/baseline_shopping_bag_24"
        tools:ignore="MissingConstraints">
        <com.google.android.material.textfield.TextInputEditText
            android:id="@+id/user"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:layout_marginTop="30dp"
            android:hint="Enter Bag Name" />
    </com.google.android.material.textfield.TextInputLayout>
    <com.google.android.material.textfield.TextInputLayout
        android:id="@+id/co"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_below="@+id/us"
        android:layout_marginTop="30dp"
        app:startIconDrawable="@drawable/baseline_color_lens_24"
        tools:ignore="MissingConstraints">
        <com.google.android.material.textfield.TextInputEditText
            android:id="@+id/color"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:hint="Enter Bag Colour" />
    </com.google.android.material.textfield.TextInputLayout>
    <com.google.android.material.textfield.TextInputLayout
        android:id="@+id/pro"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_below="@+id/co"
        android:layout_marginTop="30dp"
        app:startIconDrawable="@drawable/baseline_production_quantity_limits_24"
        tools:ignore="MissingConstraints">
        <com.google.android.material.textfield.TextInputEditText
            android:id="@+id/production"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:hint="Enter Production" />
    </com.google.android.material.textfield.TextInputLayout>
    <com.google.android.material.textfield.TextInputLayout
        android:id="@+id/ty"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_below="@+id/pro"
        android:layout_marginTop="30dp"
        app:startIconDrawable="@drawable/baseline_bookmark_24"
        tools:ignore="MissingConstraints">
        <AutoCompleteTextView
            android:id="@+id/type"
```

```xml
        style="@style/ThemeOverlay.Material3.AutoCompleteTextView.OutlinedBox"
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:hint="Enter Bag Type" />
</com.google.android.material.textfield.TextInputLayout>
<com.google.android.material.textfield.TextInputLayout
    android:id="@+id/mat"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_below="@+id/ty"
    android:layout_marginTop="30dp"
    app:startIconDrawable="@drawable/baseline_bolt_24"
    tools:ignore="MissingConstraints">
    <com.google.android.material.textfield.TextInputEditText
        android:id="@+id/material"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="Enter Bag Material" />
</com.google.android.material.textfield.TextInputLayout>
<com.google.android.material.textfield.TextInputLayout
    android:id="@+id/vol"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_below="@+id/mat"
    android:layout_marginTop="30dp"
    app:startIconDrawable="@drawable/baseline_inbox_24"
    tools:ignore="MissingConstraints">
    <com.google.android.material.textfield.TextInputEditText
        android:id="@+id/volume"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="Enter Bag Volume" />
</com.google.android.material.textfield.TextInputLayout>
<TextView
    android:id="@+id/main"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_marginTop="60dp"
    android:gravity="center"
    android:text="EDIT BAG DETAILS"
    android:textSize="25dp"
    android:textStyle="bold" />
<LinearLayout
    android:id="@+id/linear"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_below="@+id/vol"
    android:layout_marginTop="30dp"
    android:orientation="horizontal">
    <Button
        android:id="@+id/edit"
        style="?attr/materialButtonOutlinedStyle"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_weight="1"
```

```xml
            android:text="Change"
            app:icon="@drawable/edit" />
        <Button
            android:id="@+id/clear"
            style="?attr/materialButtonOutlinedStyle"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_weight="1"
            android:text="Delete"
            app:icon="@drawable/trash" />
        <Button
            android:id="@+id/viewnew"
            style="?attr/materialButtonOutlinedStyle"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_weight="1"
            android:text="View"
            app:icon="@drawable/eye" />
    </LinearLayout>
</RelativeLayout>
```

MainActivity.java

```java
package com.example.dataentry;
import androidx.annotation.Nullable;
import androidx.appcompat.app.AppCompatActivity;
import androidx.recyclerview.widget.LinearLayoutManager;
import androidx.recyclerview.widget.RecyclerView;
import android.content.Intent;
import android.database.Cursor;
import android.os.Bundle;
import android.view.View;
import android.widget.Toast;
import com.google.android.material.floatingactionbutton.FloatingActionButton;
import java.util.ArrayList;
public class MainActivity extends AppCompatActivity {
    RecyclerView userlists;
    FloatingActionButton add;
    db dbms;
    ArrayList<String> var_name,var_color,var_production,var_type,var_material,var_volume,var_id;
    CustomAdaptor adaptor;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        userlists = findViewById(R.id.recyclerView);
        add = findViewById(R.id.imgbtn);
        add.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                Intent new_add = new Intent(getApplicationContext(), MainActivity2.class);
                startActivityForResult(new_add,1);
            }
        });
```

```
    var_id = new ArrayList<>();
    var_name = new ArrayList<>();
    var_color = new ArrayList<>();
    var_production = new ArrayList<>();
    var_type = new ArrayList<>();
    var_material = new ArrayList<>();
    var_volume = new ArrayList<>();
    dbms = new db(this);
    showdata();
    adaptor = new
CustomAdaptor(MainActivity.this,var_name,var_color,var_production,var_type,var_material,var_volume,var_id);
    userlists.setLayoutManager(new LinearLayoutManager(getApplicationContext()));
    userlists.setAdapter(adaptor);
  }
  void showdata() {
    Cursor data = dbms.collect();
    if (data.getCount() == 0) {
      Toast.makeText(this, "NO BAGS", Toast.LENGTH_SHORT).show();
    } else {
      while (data.moveToNext()) {
        var_id.add(data.getString(0));
        var_name.add(data.getString(1));
        var_color.add(data.getString(2));
        var_production.add(data.getString(3));
        var_type.add(data.getString(4));
        var_material.add(data.getString(5));
        var_volume.add(data.getString(6));
      }
    }
  }
  protected void onActivityResult(int requestCode, int resultCode, @Nullable Intent data) {
    super.onActivityResult(requestCode, resultCode, data);
    if (requestCode==1) {
      recreate();
    } else if (requestCode==10) {
      recreate();
    }
  }
}
```

MainActivity2.java

```
package com.example.dataentry;
import androidx.appcompat.app.AppCompatActivity;
import android.app.Activity;
import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.ArrayAdapter;
import android.widget.AutoCompleteTextView;
import android.widget.Button;
import android.widget.Toast;
import com.google.android.material.textfield.TextInputEditText;
public class MainActivity2 extends AppCompatActivity {
  TextInputEditText name,color,production,material,volume;
```

```java
    AutoCompleteTextView type1;
    Button clr,up,back;
    db dbms;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main2);
        dbms = new db(this);
        name = findViewById(R.id.user);
        color = findViewById(R.id.color);
        production = findViewById(R.id.production);
        type1 = findViewById(R.id.type);
        String[] newtype = getResources().getStringArray(R.array.type);
        ArrayAdapter <String> adapter = new ArrayAdapter<>(this,
android.R.layout.simple_spinner_dropdown_item,newtype);
        type1.setAdapter(adapter);
        material = findViewById(R.id.material);
        volume = findViewById(R.id.volume);
        up = findViewById(R.id.save);
        clr = findViewById(R.id.delete);
        back = findViewById(R.id.view);
        type1.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                type1.showDropDown();
            }
        });
        up.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                if (name.getText().toString().isEmpty()) {
                    Toast.makeText(MainActivity2.this, "Enter Bag Brand", Toast.LENGTH_SHORT).show();
                } else if (color.getText().toString().isEmpty()) {
                    Toast.makeText(MainActivity2.this, "Enter Bag Colour", Toast.LENGTH_SHORT).show();
                } if (production.getText().toString().isEmpty()) {
                    Toast.makeText(MainActivity2.this, "Enter Production", Toast.LENGTH_SHORT).show();
                } else if (type1.getText().toString().isEmpty()) {
                    Toast.makeText(MainActivity2.this, "Enter Bag Type", Toast.LENGTH_SHORT).show();
                }if (material.getText().toString().isEmpty()) {
                    Toast.makeText(MainActivity2.this, "Enter Bag Material", Toast.LENGTH_SHORT).show();
                } else if (volume.getText().toString().isEmpty()) {
                    Toast.makeText(MainActivity2.this, "Enter Bag Volume", Toast.LENGTH_SHORT).show();
                }
                else {
                    String NAME = name.getText().toString().trim();
                    String COLOR = color.getText().toString().trim();
                    String PRODUCTION = production.getText().toString().trim();
                    String TYPE = type1.getText().toString().trim();
                    String MATERIAL = material.getText().toString().trim();
                    String VOLUME = volume.getText().toString().trim();
                    dbms.add_user(NAME,COLOR,PRODUCTION,TYPE,MATERIAL,VOLUME);
                }
            }
        });
        clr.setOnClickListener(new View.OnClickListener() {
```

```java
            @Override
            public void onClick(View v) {
                name.setText("");
                color.setText("");
                production.setText("");
                type1.setText("");
                material.setText("");
                volume.setText("");
            }
        });
        back.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                Intent goback = new Intent();
                setResult(Activity.RESULT_CANCELED,goback);
                finish();
            }
        });
    }
}
```

CustomAdaptor.java

```java
package com.example.dataentry;
import android.app.Activity;
import android.content.Context;
import android.content.Intent;
import android.os.Bundle;
import android.view.LayoutInflater;
import android.view.View;
import android.view.ViewGroup;
import android.widget.RelativeLayout;
import android.widget.TextView;
import androidx.annotation.NonNull;
import androidx.cardview.widget.CardView;
import androidx.recyclerview.widget.RecyclerView;
import java.util.ArrayList;
public class CustomAdaptor extends RecyclerView.Adapter<CustomAdaptor.dataViewHolder> {
    Context context;
    ArrayList<String> name,color,production,type,material,volume,id;
    LayoutInflater layout;
    public CustomAdaptor(Context context, ArrayList<String> name, ArrayList<String> color,ArrayList<String>
production, ArrayList<String> type,ArrayList<String> material, ArrayList<String> volume, ArrayList<String> id) {
        this.context = context;
        this.id = id;
        this.name = name;
        this.color = color;
        this.production = production;
        this.type = type;
        this.material = material;
        this.volume = volume;
        layout = LayoutInflater.from(context);
    }
    @NonNull
    @Override
```

```java
    public dataViewHolder onCreateViewHolder(@NonNull ViewGroup parent, int viewType) {
        View v = layout.inflate(R.layout.data_list,parent,false);
        return new dataViewHolder(v);
    }
    @Override
    public void onBindViewHolder(@NonNull CustomAdaptor.dataViewHolder holder, int position) {
        holder.val_name.setText(String.valueOf(name.get(position)));
        holder.val_color.setText(String.valueOf(color.get(position)));
        holder.val_production.setText(String.valueOf(production.get(position)));
        holder.val_type.setText(String.valueOf(type.get(position)));
        holder.val_material.setText(String.valueOf(material.get(position)));
        holder.val_volume.setText(String.valueOf(volume.get(position)));
        holder.card_clk.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                Intent edit_data = new Intent(context, EditUser.class);
                Bundle contacts= new Bundle();
                contacts.putString("id",id.get(position));
                contacts.putString("Name",name.get(position));
                contacts.putString("color",color.get(position));
                contacts.putString("production",production.get(position));
                contacts.putString("type",type.get(position));
                contacts.putString("material",material.get(position));
                contacts.putString("volume",volume.get(position));
                edit_data.putExtras(contacts);
                ((Activity) context).startActivityForResult(edit_data,10);
            }
        });
    }
    @Override
    public int getItemCount() {
        return name.size();
    }
    public class dataViewHolder extends RecyclerView.ViewHolder {
        TextView val_name,val_color,val_production,val_type,val_material,val_volume;
        RelativeLayout data_list;
        CardView card_clk;
        public dataViewHolder(@NonNull View itemView) {
            super(itemView);
            val_name = itemView.findViewById(R.id.list_name);
            val_color = itemView.findViewById(R.id.list_color);
            val_production = itemView.findViewById(R.id.list_production);
            val_type = itemView.findViewById(R.id.list_type);
            val_material = itemView.findViewById(R.id.list_material);
            val_volume = itemView.findViewById(R.id.list_volume);
            data_list = itemView.findViewById(R.id.layout);
            card_clk = itemView.findViewById(R.id.card);
        }
    }
}

db.java
package com.example.dataentry;
import android.content.ContentValues;
```

```java
import android.content.Context;
import android.database.Cursor;
import android.database.sqlite.SQLiteDatabase;
import android.database.sqlite.SQLiteOpenHelper;
import android.widget.Toast;
import androidx.annotation.Nullable;
public class db extends SQLiteOpenHelper {
    private Context context;
    private static final String NAME = "bag.db";
    private static final String USER_ID = "id_users";
    private static final String NAME_COL = "name_column";
    private static final String COLOR_COL = "color_column";
    private static final String PRODUCTION_COL = "production_column";
    private static final String TYPE_COL = "type_column";
    private static final String MATERIAL_COL = "material_column";
    private static final String VOLUME_COL = "volume_column";
    private static final String USER_TB = "bags_table";
    public db(@Nullable Context context)
    {
        super(context, NAME, null, 1);
        this.context = context;
    }
    @Override
    public void onCreate(SQLiteDatabase db) {
        String query = "CREATE TABLE " + USER_TB + "(" + USER_ID + " INTEGER PRIMARY KEY AUTOINCREMENT,"
                + NAME_COL + " TEXT," + COLOR_COL + " TEXT," + PRODUCTION_COL + " TEXT," + TYPE_COL + " TEXT, " +
MATERIAL_COL + " TEXT, " + VOLUME_COL +" TEXT);";
        db.execSQL(query);
    }
    @Override
    public void onUpgrade(SQLiteDatabase db, int i, int i1) {
        db.execSQL("DROP TABLE IF EXISTS " + USER_TB);
        onCreate(db);
    }
    public void add_user(String name, String color, String production, String type, String material, String volume ) {
        SQLiteDatabase dbms1 = this.getWritableDatabase();
        ContentValues val = new ContentValues();
        val.put(NAME_COL, name);
        val.put(COLOR_COL, color);
        val.put(PRODUCTION_COL, production);
        val.put(TYPE_COL, type);
        val.put(MATERIAL_COL, material);
        val.put(VOLUME_COL, volume);
        float result = dbms1.insert(USER_TB ,null,val);
        if(result==-1){
            Toast.makeText(context, "Failed To Insert", Toast.LENGTH_SHORT).show();
        }
        else{
            Toast.makeText(context, "New Bag Details Added", Toast.LENGTH_SHORT).show();
        }
    }
    Cursor collect(){
        SQLiteDatabase dbms = this.getReadableDatabase();
        Cursor data ;
        data= dbms.rawQuery(" SELECT * FROM " + USER_TB,null);
```

```java
        return data;
    }
    public void UpdateData(String id, String name, String color,String production, String type, String material, String
volume) {
        SQLiteDatabase dbms1 = this.getWritableDatabase();
        ContentValues val = new ContentValues();
        val.put(NAME_COL, name);
        val.put(COLOR_COL, color);
        val.put(PRODUCTION_COL, production);
        val.put(TYPE_COL, type);
        val.put(MATERIAL_COL, material);
        val.put(VOLUME_COL, volume);
        float result = dbms1.update(USER_TB,val,"id_users=?",new String[]{id});
        if(result==-1){
            Toast.makeText(context, "Failed To Insert", Toast.LENGTH_SHORT).show();
        }
        else{
            Toast.makeText(context, "Bag Details Edited", Toast.LENGTH_SHORT).show();
        }
    }
    public void deletedata(String id) {
        SQLiteDatabase dbms1 = this.getWritableDatabase();
        float result = dbms1.delete(USER_TB,"id_users=?",new String[]{id});
        if(result==-1){
            Toast.makeText(context, "Failed To Insert", Toast.LENGTH_SHORT).show();
        }
        else{
            Toast.makeText(context, "Bag Details Deleted", Toast.LENGTH_SHORT).show();
        }
    }
}


```

EditUser.java

```java
package com.example.dataentry;
import androidx.appcompat.app.AppCompatActivity;
import android.app.Activity;
import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.ArrayAdapter;
import android.widget.AutoCompleteTextView;
import android.widget.Button;
import com.example.dataentry.db;
import com.google.android.material.textfield.TextInputEditText;
public class EditUser extends AppCompatActivity {
    TextInputEditText edt_name,edt_color,edt_production,edt_material,edt_volume;
    Button edit,remove,back;
    db dbms;
    AutoCompleteTextView edt_type;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.edit_user);
        edt_name = findViewById(R.id.user);
```

```java
        edt_color = findViewById(R.id.color);
        edt_production = findViewById(R.id.production);
        edt_type = findViewById(R.id.type);
        edt_material = findViewById(R.id.material);
        edt_volume = findViewById(R.id.volume);
        edit = findViewById(R.id.edit);
        remove = findViewById(R.id.clear);
        back = findViewById(R.id.viewnew);
        dbms = new db(this);
        String[] newtype = getResources().getStringArray(R.array.type);
        ArrayAdapter<String> adapter = new ArrayAdapter<>(this,
android.R.layout.simple_spinner_dropdown_item,newtype);
        edt_type.setAdapter(adapter);
        Intent edit_data = getIntent();
        Bundle contact = edit_data.getExtras();
        edt_name.setText(contact.getString("Name"));
        edt_color.setText(contact.getString("color"));
        edt_production.setText(contact.getString("production"));
        edt_type.setText(contact.getString("type"));
        edt_material.setText(contact.getString("material"));
        edt_volume.setText(contact.getString("volume"));
        String id = contact.getString("id");
        edt_type.setOnClickListener(new View.OnClickListener() {
          @Override
          public void onClick(View v) {
            edt_type.showDropDown();
          }
        });
        edit.setOnClickListener(new View.OnClickListener() {
          @Override
          public void onClick(View v) {
            String id,name,color,production,type,material,volume;
            id = contact.getString("id");
            name=edt_name.getText().toString().trim();
            color=edt_color.getText().toString().trim();
            production=edt_production.getText().toString().trim();
            type=edt_type.getText().toString().trim();
            material=edt_material.getText().toString().trim();
            volume=edt_volume.getText().toString().trim();
            dbms.UpdateData(id,name,color,production,type,material,volume);
          }
        });
        remove.setOnClickListener(new View.OnClickListener() {
          @Override
          public void onClick(View v) {
            String  id = contact.getString("id");
            dbms.deletedata(id);
          }
        });
        back.setOnClickListener(new View.OnClickListener() {
          @Override
          public void onClick(View v) {
            Intent goback = new Intent();
            setResult(Activity.RESULT_CANCELED,goback);
            finish();
```

```
      }
    });
  }
}
```

Result

The application for updating and deleting data from database has been Developed successfully and output is verified.