Simple Program to display Hello world

Androidmanifest.xml

*<?*xml version="1.0"encoding="utf-8"*?>*<manifest xmlns:android="http://schemas.android.com/apk/res/android"  
xmlns:tools="http://schemas.android.com/tools">  
  
<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:supportsRtl="true"  
android:theme="@style/Theme.Demo"  
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 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="@android:color/system\_accent1\_100"  
tools:context=".MainActivity">  
  
<TextView  
android:id="@+id/tv"  
android:layout\_width="152dp"  
android:layout\_height="55dp"  
android:text="Hello World!"  
android:textSize="24sp"  
app:layout\_constraintBottom\_toBottomOf="parent"  
app:layout\_constraintEnd\_toEndOf="parent"  
app:layout\_constraintStart\_toStartOf="parent"  
app:layout\_constraintTop\_toTopOf="parent"/>  
  
</androidx.constraintlayout.widget.ConstraintLayout>

MainActivity.java

package com.example.demo;  
  
import androidx.appcompat.app.AppCompatActivity;  
  
import android.os.Bundle;  
  
public class MainActivity extends AppCompatActivity {  
  
@Override  
protected void onCreate(Bundle savedInstanceState) {  
super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_main*);  
 }  
}

strings.xml

<resources>  
<string name="app\_name">nisar\_Demo</string>  
</resources>

1.Design an application that contains phone contacts in vertical linear manner.selected contacts appears at the top of the list with a large italicized font and blue background

Androidmanifest.xml

*<?*xml version="1.0"encoding="utf-8"*?>*<manifest xmlns:android="http://schemas.android.com/apk/res/android"  
xmlns:tools="http://schemas.android.com/tools">  
  
<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:supportsRtl="true"  
android:theme="@style/Theme.Nisar\_lab1"  
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 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:background="@android:color/holo\_blue\_light"  
android:layout\_height="match\_parent"  
  
tools:context=".MainActivity">  
  
<TextView  
android:id="@+id/textview"  
android:layout\_width="225dp"  
android:layout\_height="50dp"  
android:background="@android:color/holo\_blue\_bright"  
android:text="select phone number"  
app:layout\_constraintBottom\_toBottomOf="parent"  
app:layout\_constraintEnd\_toEndOf="parent"  
app:layout\_constraintHorizontal\_bias="0.182"  
app:layout\_constraintStart\_toStartOf="parent"  
app:layout\_constraintTop\_toTopOf="parent"  
app:layout\_constraintVertical\_bias="0.08"/>  
  
<ListView  
android:id="@+id/listview"  
android:layout\_width="357dp"  
android:layout\_height="482dp"  
android:background="@android:color/holo\_blue\_dark"  
app:layout\_constraintBottom\_toBottomOf="parent"  
app:layout\_constraintEnd\_toEndOf="parent"  
app:layout\_constraintHorizontal\_bias="0.629"  
app:layout\_constraintStart\_toStartOf="parent"  
app:layout\_constraintTop\_toTopOf="parent"  
app:layout\_constraintVertical\_bias="0.634"/>  
  
</androidx.constraintlayout.widget.ConstraintLayout>

MainActivity.java

package com.example.nisar\_lab1;  
  
import androidx.appcompat.app.AppCompatActivity;  
  
import android.graphics.Typeface;  
import android.os.Bundle;  
import android.view.View;  
import android.widget.AdapterView;  
import android.widget.ArrayAdapter;  
import android.widget.ListView;  
import android.widget.TextView;  
  
public class MainActivity extends AppCompatActivity {  
ListView lv;  
TextView tv;  
String[] li;  
  
@Override  
protected void onCreate(Bundle savedInstanceState) {  
super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_main*);  
li=getResources().getStringArray(R.array.*listView\_contact*);  
lv=findViewById(R.id.*listview*);  
tv=findViewById(R.id.*textview*);  
final ArrayAdapter<String>adapter= new ArrayAdapter<>(this, android.R.layout.*simple\_list\_item\_1*, android.R.id.*text1*, li);  
lv.setAdapter(adapter);  
lv.setOnItemClickListener((adapterView, view, i, l) -> {  
String value=adapter.getItem(i);  
tv.setText(value);  
tv.setTypeface(null, Typeface.*BOLD\_ITALIC*);  
 });  
 }  
}

Strings.xml

<resources>  
<string name="app\_name">Nisarga First lab Program</string>  
  
<string name="phone">selected phone contacts will display here</string>

<string-array name="listView\_contact">  
<item>Nisarga Hathwar 9449735114</item>  
<item>Nishanth Hathwar 7892229867</item>  
<item>vyshnavi 9036974509</item>  
<item>Varsha 7760069264</item>  
<item>Ullas Hathwar 9449735118</item>  
  
</string-array>  
</resources>

2. Create an application that uses Layout Managers and Event Listeners.

Androidmanifest.xml

*<?*xml version="1.0"encoding="utf-8"*?>*<manifest xmlns:android="http://schemas.android.com/apk/res/android"  
xmlns:tools="http://schemas.android.com/tools">  
  
<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:supportsRtl="true"  
android:theme="@style/Theme.Nisarga\_lab2"  
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 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="@color/purple\_200"  
tools:context=".MainActivity">  
  
<TextView  
android:id="@+id/textview1"  
android:layout\_width="199dp"  
android:layout\_height="58dp"  
android:background="@color/teal\_200"  
android:text="@string/Ev"  
android:textSize="24sp"  
app:layout\_constraintBottom\_toBottomOf="parent"  
app:layout\_constraintEnd\_toEndOf="parent"  
app:layout\_constraintHorizontal\_bias="0.281"  
app:layout\_constraintStart\_toStartOf="parent"  
app:layout\_constraintTop\_toTopOf="parent"  
app:layout\_constraintVertical\_bias="0.125"/>  
  
<TextView  
android:id="@+id/textview2"  
android:layout\_width="157dp"  
android:layout\_height="37dp"  
android:background="@android:color/holo\_orange\_dark"  
android:text="@string/Department"  
android:textSize="24sp"  
app:layout\_constraintBottom\_toBottomOf="parent"  
app:layout\_constraintEnd\_toEndOf="parent"  
app:layout\_constraintHorizontal\_bias="0.236"  
app:layout\_constraintStart\_toStartOf="parent"  
app:layout\_constraintTop\_toTopOf="parent"  
app:layout\_constraintVertical\_bias="0.247"/>  
  
<TextView  
android:id="@+id/textview3"  
android:layout\_width="142dp"  
android:layout\_height="53dp"  
android:background="@color/material\_dynamic\_neutral\_variant80"  
android:text="@string/Dept"  
android:textSize="24sp"  
app:layout\_constraintBottom\_toBottomOf="parent"  
app:layout\_constraintEnd\_toEndOf="parent"  
app:layout\_constraintHorizontal\_bias="0.223"  
app:layout\_constraintStart\_toStartOf="parent"  
app:layout\_constraintTop\_toTopOf="parent"  
app:layout\_constraintVertical\_bias="0.365"/>  
  
<Spinner  
android:id="@+id/spinner"  
android:layout\_width="255dp"  
android:layout\_height="96dp"  
app:layout\_constraintBottom\_toBottomOf="parent"  
app:layout\_constraintEnd\_toEndOf="parent"  
app:layout\_constraintHorizontal\_bias="0.384"  
app:layout\_constraintStart\_toStartOf="parent"  
app:layout\_constraintTop\_toTopOf="parent"  
app:layout\_constraintVertical\_bias="0.541"/>  
  
<Button  
android:id="@+id/Button"  
android:layout\_width="130dp"  
android:layout\_height="95dp"  
android:text="@string/Button"  
app:layout\_constraintBottom\_toBottomOf="parent"  
app:layout\_constraintEnd\_toEndOf="parent"  
app:layout\_constraintHorizontal\_bias="0.334"  
app:layout\_constraintStart\_toStartOf="parent"  
app:layout\_constraintTop\_toTopOf="parent"  
app:layout\_constraintVertical\_bias="0.772"/>  
</androidx.constraintlayout.widget.ConstraintLayout>

MainActivity.java

package com.example.nisarga\_lab2;  
  
import androidx.appcompat.app.AppCompatActivity;  
  
import android.annotation.SuppressLint;  
import android.graphics.Typeface;  
import android.os.Bundle;  
import android.view.View;  
import android.widget.AdapterView;  
import android.widget.ArrayAdapter;  
import android.widget.Button;  
import android.widget.Spinner;  
import android.widget.TextView;  
import android.widget.Toast;  
  
public class MainActivity extends AppCompatActivity {  
Spinner sl;  
Button btn\_convert;  
TextView textview;  
String [] Dept;  
  
@SuppressLint("MissingInflatedId")  
@Override  
protected void onCreate(Bundle savedInstanceState) {  
super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_main*);  
btn\_convert=findViewById(R.id.*Button*);  
Dept=getResources().getStringArray(R.array.*Department*);  
sl=findViewById(R.id.*spinner*);  
ArrayAdapter <String>adapter=new ArrayAdapter<>(this, android.R.layout.*simple\_dropdown\_item\_1line*,Dept);  
sl.setAdapter(adapter);  
sl.setOnItemSelectedListener(new AdapterView.OnItemSelectedListener() {  
@Override  
public void onItemSelected(AdapterView<?> adapterView, View view, int i, long l) {  
int index=adapterView.getSelectedItemPosition();  
if(index>0){  
Toast.*makeText*(MainActivity.this,"you have selected"+Dept[index],Toast.*LENGTH\_SHORT*).show();  
 }  
 }  
  
@Override  
public void onNothingSelected(AdapterView<?> adapterView) {  
  
 }  
 });  
btn\_convert.setOnClickListener(new View.OnClickListener() {  
@Override  
public void onClick(View view) {  
textview=findViewById(R.id.*textview3*);  
textview.setTypeface(null, Typeface.*BOLD\_ITALIC*);  
 }  
 });  
  
  
 }  
}

Strings.xml

<resources>  
<string name="app\_name">Nisarga\_lab2</string>  
<string name="Ev">Eventlistener</string>  
<string name="Department">SIT MCA</string>  
<string name="Dept">Department</string>  
<string name="Button">convert to italic</string>  
<string name="spinner">select the department</string>  
<string-array name="Department">  
<item>select the department</item>  
<item>MCA</item>  
<item>MBA</item>  
<item>BE</item>  
</string-array>  
</resources>

3.Develop a standard calculator application to perform basic calculator like addition, subtraction, multiplication and division.

Androidmanifest.xml

*<?*xml version="1.0"encoding="utf-8"*?>*<manifest xmlns:android="http://schemas.android.com/apk/res/android"  
xmlns:tools="http://schemas.android.com/tools">  
  
<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:supportsRtl="true"  
android:theme="@style/Theme.Nisar\_lab3"  
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 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="@color/material\_dynamic\_neutral90"  
tools:context=".MainActivity">  
  
<TextView  
android:id="@+id/txt\_disp"  
android:layout\_width="wrap\_content"  
android:layout\_height="wrap\_content"  
android:text="Basic Caluclator"  
android:textSize="20sp"  
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="0.073"/>  
  
<TextView  
android:id="@+id/txt\_first"  
android:layout\_width="wrap\_content"  
android:layout\_height="wrap\_content"  
android:text="FIRST NUMBER"  
app:layout\_constraintBottom\_toBottomOf="parent"  
app:layout\_constraintEnd\_toEndOf="parent"  
app:layout\_constraintHorizontal\_bias="0.085"  
app:layout\_constraintStart\_toStartOf="parent"  
app:layout\_constraintTop\_toTopOf="parent"  
app:layout\_constraintVertical\_bias="0.165"/>  
  
<TextView  
android:id="@+id/txt\_sec"  
android:layout\_width="wrap\_content"  
android:layout\_height="wrap\_content"  
android:text="SECOND NUMBER"  
app:layout\_constraintBottom\_toBottomOf="parent"  
app:layout\_constraintEnd\_toEndOf="parent"  
app:layout\_constraintHorizontal\_bias="0.033"  
app:layout\_constraintStart\_toStartOf="parent"  
app:layout\_constraintTop\_toTopOf="parent"  
app:layout\_constraintVertical\_bias="0.252"/>  
  
<EditText  
android:id="@+id/txt\_firstno"  
android:layout\_width="193dp"  
android:layout\_height="38dp"  
android:ems="10"  
android:hint="Enter first number"  
android:inputType="textPersonName"  
app:layout\_constraintBottom\_toBottomOf="parent"  
app:layout\_constraintEnd\_toEndOf="parent"  
app:layout\_constraintHorizontal\_bias="0.646"  
app:layout\_constraintStart\_toStartOf="parent"  
app:layout\_constraintTop\_toTopOf="parent"  
app:layout\_constraintVertical\_bias="0.154"  
tools:ignore="TouchTargetSizeCheck"/>  
  
<EditText  
android:id="@+id/txt\_secondno"  
android:layout\_width="185dp"  
android:layout\_height="42dp"  
android:ems="10"  
android:hint="Enter second number"  
android:inputType="textPersonName"  
app:layout\_constraintBottom\_toBottomOf="parent"  
app:layout\_constraintEnd\_toEndOf="parent"  
app:layout\_constraintHorizontal\_bias="0.623"  
app:layout\_constraintStart\_toStartOf="parent"  
app:layout\_constraintTop\_toTopOf="parent"  
app:layout\_constraintVertical\_bias="0.226"  
tools:ignore="MissingConstraints,TouchTargetSizeCheck"/>  
  
<EditText  
android:id="@+id/txt\_result"  
android:layout\_width="wrap\_content"  
android:layout\_height="wrap\_content"  
android:ems="10"  
android:hint="Result view"  
android:inputType="textPersonName"  
app:layout\_constraintBottom\_toBottomOf="parent"  
app:layout\_constraintEnd\_toEndOf="parent"  
app:layout\_constraintHorizontal\_bias="0.398"  
app:layout\_constraintStart\_toStartOf="parent"  
app:layout\_constraintTop\_toTopOf="parent"  
app:layout\_constraintVertical\_bias="0.432"  
tools:ignore="TouchTargetSizeCheck"/>  
  
<Button  
android:id="@+id/btn\_add"  
android:layout\_width="wrap\_content"  
android:layout\_height="wrap\_content"  
android:text="Addition"  
android:onClick="btn\_add"  
app:layout\_constraintBottom\_toBottomOf="parent"  
app:layout\_constraintEnd\_toEndOf="parent"  
app:layout\_constraintHorizontal\_bias="0.052"  
app:layout\_constraintStart\_toStartOf="parent"  
app:layout\_constraintTop\_toTopOf="parent"  
app:layout\_constraintVertical\_bias="0.601"/>  
  
<Button  
android:id="@+id/btn\_sub"  
android:layout\_width="wrap\_content"  
android:layout\_height="wrap\_content"  
android:text="Subtract"  
android:onClick="btn\_sub"  
app:layout\_constraintBottom\_toBottomOf="parent"  
app:layout\_constraintEnd\_toEndOf="parent"  
app:layout\_constraintStart\_toStartOf="parent"  
app:layout\_constraintTop\_toTopOf="parent"  
app:layout\_constraintVertical\_bias="0.601"/>  
  
<Button  
android:id="@+id/btn\_mul"  
android:layout\_width="wrap\_content"  
android:layout\_height="wrap\_content"  
android:text="Multiply"  
android:onClick="btn\_mul"  
app:layout\_constraintBottom\_toBottomOf="parent"  
app:layout\_constraintEnd\_toEndOf="parent"  
app:layout\_constraintHorizontal\_bias="0.949"  
app:layout\_constraintStart\_toStartOf="parent"  
app:layout\_constraintTop\_toTopOf="parent"  
app:layout\_constraintVertical\_bias="0.601"/>  
  
<Button  
android:id="@+id/btn\_div"  
android:layout\_width="wrap\_content"  
android:layout\_height="wrap\_content"  
android:text="Division"  
android:onClick="btn\_div"  
app:layout\_constraintBottom\_toBottomOf="parent"  
app:layout\_constraintEnd\_toEndOf="parent"  
app:layout\_constraintHorizontal\_bias="0.289"  
app:layout\_constraintStart\_toStartOf="parent"  
app:layout\_constraintTop\_toTopOf="parent"  
app:layout\_constraintVertical\_bias="0.711"/>  
  
<Button  
android:id="@+id/btn\_clr"  
android:layout\_width="wrap\_content"  
android:layout\_height="wrap\_content"  
android:text="Clear"  
android:onClick="btn\_clr"  
app:layout\_constraintBottom\_toBottomOf="parent"  
app:layout\_constraintEnd\_toEndOf="parent"  
app:layout\_constraintHorizontal\_bias="0.761"  
app:layout\_constraintStart\_toStartOf="parent"  
app:layout\_constraintTop\_toTopOf="parent"  
app:layout\_constraintVertical\_bias="0.711"/>  
</androidx.constraintlayout.widget.ConstraintLayout>

MainActivity.java

package com.example.nisar\_lab3;  
  
import androidx.appcompat.app.AppCompatActivity;  
  
import android.annotation.SuppressLint;  
import android.os.Bundle;  
import android.view.View;  
import android.widget.EditText;  
import android.widget.TextView;  
import android.widget.Toast;  
  
public class MainActivity extends AppCompatActivity {  
  
@Override  
protected void onCreate(Bundle savedInstanceState) {  
super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_main*);  
 }  
@SuppressLint("Initializer")  
public void btn\_add(View v)  
 {  
float num1;float num2;float sum;  
EditText t1=findViewById(R.id.*txt\_firstno*);  
EditText t2=findViewById(R.id.*txt\_secondno*);  
TextView t3=findViewById(R.id.*txt\_result*);  
t3.setText("Result");  
if(t1.length()==0||t2.length()==0)  
Toast.*makeText*(this, "Enter the values for numbered or number only", Toast.*LENGTH\_SHORT*).show();  
else  
{  
try  
{  
num1=Float.*parseFloat*(t1.getText().toString());  
num2=Float.*parseFloat*(t2.getText().toString());  
sum=num1+num2;  
t3.setText("Result"+Float.*toString*(sum));  
  
 }  
catch(NumberFormatException e)  
 {  
Toast toast= Toast.*makeText*(this, "Enter number only", Toast.*LENGTH\_SHORT*);  
toast.show();  
 }  
 }  
 }  
@SuppressLint("Initializer")  
public void btn\_sub(View v)  
 {  
float num1;float num2;float sub;  
EditText t1=findViewById(R.id.*txt\_firstno*);  
EditText t2=findViewById(R.id.*txt\_secondno*);  
TextView t3=findViewById(R.id.*txt\_result*);  
t3.setText("Result");  
if(t1.length()==0||t2.length()==0)  
Toast.*makeText*(this, "Enter the values for numbered or number only", Toast.*LENGTH\_SHORT*).show();  
else  
{  
try  
{  
num1=Float.*parseFloat*(t1.getText().toString());  
num2=Float.*parseFloat*(t2.getText().toString());  
sub=num1-num2;  
t3.setText("Result"+Float.*toString*(sub));  
  
 }  
catch(NumberFormatException e)  
 {  
Toast toast= Toast.*makeText*(this, "Enter number only", Toast.*LENGTH\_SHORT*);  
toast.show();  
 }  
 }  
 }  
@SuppressLint("Initializer")  
public void btn\_mul(View v)  
 {  
float num1;float num2;float mul;  
EditText t1=findViewById(R.id.*txt\_firstno*);  
EditText t2=findViewById(R.id.*txt\_secondno*);  
TextView t3=findViewById(R.id.*txt\_result*);  
t3.setText("Result");  
if(t1.length()==0||t2.length()==0)  
Toast.*makeText*(this, "Enter the values for numbered or number only", Toast.*LENGTH\_SHORT*).show();  
else  
{  
try  
{  
num1=Float.*parseFloat*(t1.getText().toString());  
num2=Float.*parseFloat*(t2.getText().toString());  
mul=num1\*num2;  
t3.setText("Result"+Float.*toString*(mul));  
  
 }  
catch(NumberFormatException e)  
 {  
Toast toast= Toast.*makeText*(this, "Enter number only", Toast.*LENGTH\_SHORT*);  
toast.show();  
 }  
 }  
 }  
@SuppressLint("Initializer")  
public void btn\_div(View v)  
 {  
float num1;float num2;float div;  
EditText t1=findViewById(R.id.*txt\_firstno*);  
EditText t2=findViewById(R.id.*txt\_secondno*);  
TextView t3=findViewById(R.id.*txt\_result*);  
t3.setText("Result");  
if(t1.length()==0||t2.length()==0)  
Toast.*makeText*(this, "Enter the values for numbered or number only", Toast.*LENGTH\_SHORT*).show();  
else  
{  
try  
{  
num1=Float.*parseFloat*(t1.getText().toString());  
num2=Float.*parseFloat*(t2.getText().toString());  
if(num2!=0)  
 {  
div=num1/num2;  
t3.setText("Result:"+Float.*toString*(div));  
 }  
else {  
Toast toast=Toast.*makeText*(this, "", Toast.*LENGTH\_SHORT*);  
toast.show();  
 }  
  
 }  
catch(NumberFormatException e)  
 {  
Toast toast= Toast.*makeText*(this, "Enter number only", Toast.*LENGTH\_SHORT*);  
toast.show();  
 }  
 }  
 }  
public void btn\_clr(View v)  
 {  
Float num1,num2,num3;  
EditText t1=findViewById(R.id.*txt\_firstno*);  
EditText t2=findViewById(R.id.*txt\_secondno*);  
TextView t3=findViewById(R.id.*txt\_result*);  
t1.setText(0);  
t2.setText("");  
t3.setText("Result");  
  
 }  
  
}

strings.xml

<resources>  
<string name="app\_name">nisar\_lab3</string>  
</resources>

4.Devise an application that draws basic graphical primitives (circle, rectangle) on the screen.

Androidmanifest.xml

*<?*xml version="1.0"encoding="utf-8"*?>*<manifest xmlns:android="http://schemas.android.com/apk/res/android"  
xmlns:tools="http://schemas.android.com/tools">  
  
<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:supportsRtl="true"  
android:theme="@style/Theme.Nisar\_lab4"  
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 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="@color/material\_dynamic\_primary95"  
tools:context=".MainActivity">  
  
<ImageView  
android:id="@+id/imgview"  
android:layout\_width="307dp"  
android:layout\_height="194dp"  
app:layout\_constraintBottom\_toBottomOf="parent"  
app:layout\_constraintEnd\_toEndOf="parent"  
app:layout\_constraintHorizontal\_bias="0.496"  
app:layout\_constraintStart\_toStartOf="parent"  
app:layout\_constraintTop\_toTopOf="parent"  
app:layout\_constraintVertical\_bias="0.16"  
app:srcCompat="@drawable/ic\_launcher\_foreground"  
tools:ignore="ContentDescription,ImageContrastCheck"/>  
  
<Button  
android:id="@+id/exit"  
android:layout\_width="wrap\_content"  
android:layout\_height="wrap\_content"  
android:text="EXIT"  
app:layout\_constraintBottom\_toBottomOf="parent"  
app:layout\_constraintEnd\_toEndOf="parent"  
app:layout\_constraintHorizontal\_bias="0.835"  
app:layout\_constraintStart\_toStartOf="parent"  
app:layout\_constraintTop\_toTopOf="parent"  
app:layout\_constraintVertical\_bias="0.792"  
tools:ignore="HardcodedText"/>  
  
<Button  
android:id="@+id/rect"  
android:layout\_width="wrap\_content"  
android:layout\_height="wrap\_content"  
android:onClick="draw\_ro"  
android:text="RECT"  
app:layout\_constraintBottom\_toBottomOf="parent"  
app:layout\_constraintEnd\_toEndOf="parent"  
app:layout\_constraintHorizontal\_bias="0.129"  
app:layout\_constraintStart\_toStartOf="parent"  
app:layout\_constraintTop\_toTopOf="parent"  
app:layout\_constraintVertical\_bias="0.527"  
tools:ignore="HardcodedText"/>  
  
<Button  
android:id="@+id/line"  
android:layout\_width="wrap\_content"  
android:layout\_height="wrap\_content"  
android:onClick="draw\_ro"  
android:text="LINE"  
app:layout\_constraintBottom\_toBottomOf="parent"  
app:layout\_constraintEnd\_toEndOf="parent"  
app:layout\_constraintHorizontal\_bias="0.129"  
app:layout\_constraintStart\_toStartOf="parent"  
app:layout\_constraintTop\_toTopOf="parent"  
app:layout\_constraintVertical\_bias="0.66"  
tools:ignore="HardcodedText"/>  
  
<Button  
android:id="@+id/sqrc"  
android:layout\_width="wrap\_content"  
android:layout\_height="wrap\_content"  
android:onClick="draw\_ro"  
android:text="SQUARE"  
app:layout\_constraintBottom\_toBottomOf="parent"  
app:layout\_constraintEnd\_toEndOf="parent"  
app:layout\_constraintHorizontal\_bias="0.835"  
app:layout\_constraintStart\_toStartOf="parent"  
app:layout\_constraintTop\_toTopOf="parent"  
app:layout\_constraintVertical\_bias="0.648"  
tools:ignore="HardcodedText"/>  
  
<Button  
android:id="@+id/clr"  
android:layout\_width="wrap\_content"  
android:layout\_height="wrap\_content"  
android:onClick="draw\_ro"  
android:text="CLEAR"  
app:layout\_constraintBottom\_toBottomOf="parent"  
app:layout\_constraintEnd\_toEndOf="parent"  
app:layout\_constraintHorizontal\_bias="0.129"  
app:layout\_constraintStart\_toStartOf="parent"  
app:layout\_constraintTop\_toTopOf="parent"  
app:layout\_constraintVertical\_bias="0.792"  
tools:ignore="HardcodedText"/>  
  
<Button  
android:id="@+id/circ"  
android:layout\_width="wrap\_content"  
android:layout\_height="wrap\_content"  
android:layout\_marginEnd="52dp"  
android:onClick="draw\_ro"  
android:text="CIRCLE"  
app:layout\_constraintBottom\_toBottomOf="parent"  
app:layout\_constraintEnd\_toEndOf="parent"  
app:layout\_constraintTop\_toTopOf="parent"  
app:layout\_constraintVertical\_bias="0.527"  
tools:ignore="HardcodedText"/>  
</androidx.constraintlayout.widget.ConstraintLayout>

*<?*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="@color/material\_dynamic\_primary95"  
tools:context=".MainActivity">  
  
<ImageView  
android:id="@+id/imgview"  
android:layout\_width="307dp"  
android:layout\_height="194dp"  
app:layout\_constraintBottom\_toBottomOf="parent"  
app:layout\_constraintEnd\_toEndOf="parent"  
app:layout\_constraintHorizontal\_bias="0.496"  
app:layout\_constraintStart\_toStartOf="parent"  
app:layout\_constraintTop\_toTopOf="parent"  
app:layout\_constraintVertical\_bias="0.16"  
app:srcCompat="@drawable/ic\_launcher\_foreground"  
tools:ignore="ContentDescription,ImageContrastCheck"/>  
  
<Button  
android:id="@+id/exit"  
android:layout\_width="wrap\_content"  
android:layout\_height="wrap\_content"  
android:text="EXIT"  
app:layout\_constraintBottom\_toBottomOf="parent"  
app:layout\_constraintEnd\_toEndOf="parent"  
app:layout\_constraintHorizontal\_bias="0.835"  
app:layout\_constraintStart\_toStartOf="parent"  
app:layout\_constraintTop\_toTopOf="parent"  
app:layout\_constraintVertical\_bias="0.792"  
tools:ignore="HardcodedText"/>  
  
<Button  
android:id="@+id/rect"  
android:layout\_width="wrap\_content"  
android:layout\_height="wrap\_content"  
android:onClick="draw\_ro"  
android:text="RECT"  
app:layout\_constraintBottom\_toBottomOf="parent"  
app:layout\_constraintEnd\_toEndOf="parent"  
app:layout\_constraintHorizontal\_bias="0.129"  
app:layout\_constraintStart\_toStartOf="parent"  
app:layout\_constraintTop\_toTopOf="parent"  
app:layout\_constraintVertical\_bias="0.527"  
tools:ignore="HardcodedText"/>  
  
<Button  
android:id="@+id/line"  
android:layout\_width="wrap\_content"  
android:layout\_height="wrap\_content"  
android:onClick="draw\_ro"  
android:text="LINE"  
app:layout\_constraintBottom\_toBottomOf="parent"  
app:layout\_constraintEnd\_toEndOf="parent"  
app:layout\_constraintHorizontal\_bias="0.129"  
app:layout\_constraintStart\_toStartOf="parent"  
app:layout\_constraintTop\_toTopOf="parent"  
app:layout\_constraintVertical\_bias="0.66"  
tools:ignore="HardcodedText"/>  
  
<Button  
android:id="@+id/sqrc"  
android:layout\_width="wrap\_content"  
android:layout\_height="wrap\_content"  
android:onClick="draw\_ro"  
android:text="SQUARE"  
app:layout\_constraintBottom\_toBottomOf="parent"  
app:layout\_constraintEnd\_toEndOf="parent"  
app:layout\_constraintHorizontal\_bias="0.835"  
app:layout\_constraintStart\_toStartOf="parent"  
app:layout\_constraintTop\_toTopOf="parent"  
app:layout\_constraintVertical\_bias="0.648"  
tools:ignore="HardcodedText"/>  
  
<Button  
android:id="@+id/clr"  
android:layout\_width="wrap\_content"  
android:layout\_height="wrap\_content"  
android:onClick="draw\_ro"  
android:text="CLEAR"  
app:layout\_constraintBottom\_toBottomOf="parent"  
app:layout\_constraintEnd\_toEndOf="parent"  
app:layout\_constraintHorizontal\_bias="0.129"  
app:layout\_constraintStart\_toStartOf="parent"  
app:layout\_constraintTop\_toTopOf="parent"  
app:layout\_constraintVertical\_bias="0.792"  
tools:ignore="HardcodedText"/>  
  
<Button  
android:id="@+id/circ"  
android:layout\_width="wrap\_content"  
android:layout\_height="wrap\_content"  
android:layout\_marginEnd="52dp"  
android:onClick="draw\_ro"  
android:text="CIRCLE"  
app:layout\_constraintBottom\_toBottomOf="parent"  
app:layout\_constraintEnd\_toEndOf="parent"  
app:layout\_constraintTop\_toTopOf="parent"  
app:layout\_constraintVertical\_bias="0.527"  
tools:ignore="HardcodedText"/>  
</androidx.constraintlayout.widget.ConstraintLayout>

MainActivity.java

package com.example.nisar\_lab4;  
  
import androidx.appcompat.app.AppCompatActivity;  
  
import android.graphics.Bitmap;  
import android.graphics.Canvas;  
import android.graphics.Color;  
import android.graphics.Paint;  
import android.graphics.Rect;  
import android.os.Bundle;  
import android.view.View;  
import android.widget.Button;  
import android.widget.ImageView;  
import android.widget.Toast;  
  
public class MainActivity extends AppCompatActivity {  
 ImageView iv;  
 Button rect,circ,line,sqrc,clr,exit;  
 Bitmap bitmap;  
 Canvas canvas;  
 Paint paint;  
int sp=55;  
 Rect recta;  
int CanvasRadius,CanvasPadding=7,height,width;  
  
 @Override  
protected void onCreate(Bundle savedInstanceState) {  
super.onCreate(savedInstanceState);  
 setContentView(R.layout.activity\_main);  
 iv=findViewById(R.id.imgview);  
 rect=findViewById(R.id.rect);  
 circ=findViewById(R.id.circ);  
 line=findViewById(R.id.line);  
 sqrc=findViewById(R.id.sqrc);  
clr=findViewById(R.id.*clr*);  
exit=findViewById(R.id.*exit*);  
 }  
public void draw\_ro(View view)  
 {  
bitmap=Bitmap.*createBitmap*(400,250,Bitmap.Config.*RGB\_565*);  
canvas=new Canvas(bitmap);  
canvas.drawColor(Color.*YELLOW*);  
paint=new Paint();  
paint.setStyle(Paint.Style.*FILL\_AND\_STROKE*);  
paint.setColor(Color.*MAGENTA*);  
paint.setAntiAlias(true);  
  
if(view==rect)  
 {  
recta=new Rect(55,55,350,200);  
canvas.drawRect(recta,paint);  
iv.setImageBitmap(bitmap);  
Toast.*makeText*(this, "Rectangle Drawn", Toast.*LENGTH\_SHORT*).show();  
 }  
  
if(view==circ)  
 {  
CanvasRadius=Math.*min*(canvas.getWidth(), canvas.getHeight()/2);  
canvas.drawCircle(canvas.getWidth()/2, canvas.getHeight()/2,CanvasRadius-CanvasPadding,paint);  
iv.setImageBitmap(bitmap);  
Toast.*makeText*(this, "Circle is drawn", Toast.*LENGTH\_SHORT*).show();  
 }  
  
if(view==line)  
 {  
 canvas.drawLine(200,55,200,300,paint);  
 iv.setImageBitmap(bitmap);  
 Toast.makeText(this, "Straight line is drawn", Toast.LENGTH\_SHORT).show();  
 }  
  
if(view == sqrc)  
 {  
 recta=new Rect(55,55,200,200);  
 canvas.drawRect(recta,paint);  
 iv.setImageBitmap(bitmap);  
 Toast.makeText(this, "Square is drawn", Toast.LENGTH\_SHORT).show();  
 }  
  
if(view==clr)  
 {  
 iv.setImageDrawable(null);  
 }  
if(view==exit)  
 {  
 finish();  
 }  
 }  
}

strings.xml

<resources>  
<string name="app\_name">nisar\_lab4</string>  
</resources>

5.Built a mobile application that create,save,update and delete data in sql lite/cloud data connectivity.

AndroidManifest.xml

*<?*xml version="1.0"encoding="utf-8"*?>*<manifest xmlns:android="http://schemas.android.com/apk/res/android"  
xmlns:tools="http://schemas.android.com/tools">  
  
<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:supportsRtl="true"  
android:theme="@style/Theme.nisar\_lab5"  
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 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:id="@+id/tv"  
android:layout\_width="match\_parent"  
android:layout\_height="match\_parent"

android:background="@color/material\_dynamic\_primary80"

tools:context=".MainActivity">  
  
<TextView  
android:id="@+id/txt\_name"  
android:layout\_width="wrap\_content"  
android:layout\_height="wrap\_content"  
android:text="@string/txt\_name"  
android:textSize="20sp"  
app:layout\_constraintBottom\_toBottomOf="parent"  
app:layout\_constraintEnd\_toEndOf="parent"  
app:layout\_constraintHorizontal\_bias="0.113"  
app:layout\_constraintStart\_toStartOf="parent"  
app:layout\_constraintTop\_toTopOf="parent"  
app:layout\_constraintVertical\_bias="0.08"/>  
  
<TextView  
android:id="@+id/txt\_id"  
android:layout\_width="wrap\_content"  
android:layout\_height="wrap\_content"  
android:text="@string/txt\_id"  
android:textSize="20sp"  
app:layout\_constraintBottom\_toBottomOf="parent"  
app:layout\_constraintEnd\_toEndOf="parent"  
app:layout\_constraintHorizontal\_bias="0.113"  
app:layout\_constraintStart\_toStartOf="parent"  
app:layout\_constraintTop\_toTopOf="parent"  
app:layout\_constraintVertical\_bias="0.195"/>  
  
<TextView  
android:id="@+id/txt\_sur"  
android:layout\_width="89dp"  
android:layout\_height="34dp"  
android:hint="Enter your Surname"  
android:text="@string/txt\_sur"  
android:textSize="20sp"  
app:layout\_constraintBottom\_toBottomOf="parent"  
app:layout\_constraintEnd\_toEndOf="parent"  
app:layout\_constraintHorizontal\_bias="0.113"  
app:layout\_constraintStart\_toStartOf="parent"  
app:layout\_constraintTop\_toTopOf="parent"  
app:layout\_constraintVertical\_bias="0.308"  
tools:ignore="HardcodedText,TextSizeCheck"/>  
  
<EditText  
android:id="@+id/edit\_name"  
android:layout\_width="wrap\_content"  
android:layout\_height="wrap\_content"  
android:ems="10"  
android:hint="Enter your name"  
android:inputType="textPersonName"  
app:layout\_constraintBottom\_toBottomOf="parent"  
app:layout\_constraintEnd\_toEndOf="parent"  
app:layout\_constraintHorizontal\_bias="0.8"  
app:layout\_constraintStart\_toStartOf="parent"  
app:layout\_constraintTop\_toTopOf="parent"  
app:layout\_constraintVertical\_bias="0.064"  
tools:ignore="Autofill,HardcodedText,TouchTargetSizeCheck"/>  
  
<EditText  
android:id="@+id/edit\_id"  
android:layout\_width="wrap\_content"  
android:layout\_height="wrap\_content"  
android:ems="10"  
android:hint="Enter your ID"  
android:inputType="textPersonName"  
app:layout\_constraintBottom\_toBottomOf="parent"  
app:layout\_constraintEnd\_toEndOf="parent"  
app:layout\_constraintHorizontal\_bias="0.805"  
app:layout\_constraintStart\_toStartOf="parent"  
app:layout\_constraintTop\_toTopOf="parent"  
app:layout\_constraintVertical\_bias="0.176"  
tools:ignore="Autofill,HardcodedText,TouchTargetSizeCheck"/>  
  
<EditText  
android:id="@+id/edit\_sur"  
android:layout\_width="wrap\_content"  
android:layout\_height="wrap\_content"  
android:ems="10"  
android:hint="Enter your Surname"  
android:inputType="textPersonName"  
app:layout\_constraintBottom\_toBottomOf="parent"  
app:layout\_constraintEnd\_toEndOf="parent"  
app:layout\_constraintHorizontal\_bias="0.81"  
app:layout\_constraintStart\_toStartOf="parent"  
app:layout\_constraintTop\_toTopOf="parent"  
app:layout\_constraintVertical\_bias="0.306"  
tools:ignore="Autofill,HardcodedText,TouchTargetSizeCheck"/>  
  
<Button  
android:id="@+id/btn\_add"  
android:layout\_width="wrap\_content"  
android:layout\_height="wrap\_content"  
android:text="ADD"  
app:layout\_constraintBottom\_toBottomOf="parent"  
app:layout\_constraintEnd\_toEndOf="parent"  
app:layout\_constraintHorizontal\_bias="0.126"  
app:layout\_constraintStart\_toStartOf="parent"  
app:layout\_constraintTop\_toTopOf="parent"  
app:layout\_constraintVertical\_bias="0.499"  
tools:ignore="HardcodedText"/>  
  
<Button  
android:id="@+id/btn\_upd"  
android:layout\_width="wrap\_content"  
android:layout\_height="wrap\_content"  
android:text="UPDATE"  
app:layout\_constraintBottom\_toBottomOf="parent"  
app:layout\_constraintEnd\_toEndOf="parent"  
app:layout\_constraintHorizontal\_bias="0.88"  
app:layout\_constraintStart\_toStartOf="parent"  
app:layout\_constraintTop\_toTopOf="parent"  
app:layout\_constraintVertical\_bias="0.499"  
tools:ignore="HardcodedText"/>  
  
<Button  
android:id="@+id/btn\_del"  
android:layout\_width="wrap\_content"  
android:layout\_height="wrap\_content"  
android:text="DELETE"  
app:layout\_constraintBottom\_toBottomOf="parent"  
app:layout\_constraintEnd\_toEndOf="parent"  
app:layout\_constraintHorizontal\_bias="0.126"  
app:layout\_constraintStart\_toStartOf="parent"  
app:layout\_constraintTop\_toTopOf="parent"  
app:layout\_constraintVertical\_bias="0.65"  
tools:ignore="HardcodedText"/>  
  
<Button  
android:id="@+id/btn\_view"  
android:layout\_width="wrap\_content"  
android:layout\_height="wrap\_content"  
android:text="VIEW ALL"  
app:layout\_constraintBottom\_toBottomOf="parent"  
app:layout\_constraintEnd\_toEndOf="parent"  
app:layout\_constraintHorizontal\_bias="0.88"  
app:layout\_constraintStart\_toStartOf="parent"  
app:layout\_constraintTop\_toTopOf="parent"  
app:layout\_constraintVertical\_bias="0.65"  
tools:ignore="HardcodedText"/>  
  
<Button  
android:id="@+id/btn\_clear"  
android:layout\_width="wrap\_content"  
android:layout\_height="wrap\_content"  
android:text="CLEAR"  
app:layout\_constraintBottom\_toBottomOf="parent"  
app:layout\_constraintEnd\_toEndOf="parent"  
app:layout\_constraintHorizontal\_bias="0.467"  
app:layout\_constraintStart\_toStartOf="parent"  
app:layout\_constraintTop\_toTopOf="parent"  
app:layout\_constraintVertical\_bias="0.579"  
tools:ignore="HardcodedText"/>  
  
<TextView  
android:id="@+id/tv\_show"  
android:layout\_width="325dp"  
android:layout\_height="165dp"  
android:text="result view"  
app:layout\_constraintBottom\_toBottomOf="parent"  
app:layout\_constraintEnd\_toEndOf="parent"  
app:layout\_constraintHorizontal\_bias="0.472"  
app:layout\_constraintStart\_toStartOf="parent"  
app:layout\_constraintTop\_toTopOf="parent"  
app:layout\_constraintVertical\_bias="0.922"  
tools:ignore="HardcodedText"/>  
</androidx.constraintlayout.widget.ConstraintLayout>

MainActivity.java

package com.example.nisar\_lab5;  
  
import androidx.appcompat.app.AppCompatActivity;  
  
import android.annotation.SuppressLint;  
import android.database.Cursor;  
import android.database.sqlite.SQLiteDatabase;  
import android.os.Bundle;  
import android.widget.Button;  
import android.widget.EditText;  
import android.widget.TextView;  
import android.widget.Toast;  
  
public class MainActivity extends AppCompatActivity {  
  
DataBaseHelper mydb;  
EditText edit\_name,edit\_id,edit\_sur;  
TextView tv\_show;  
Button btn\_add,btn\_upd,btn\_del,btn\_view,btn\_clr;  
@SuppressLint("MissingInflatedId")  
  
@Override  
protected void onCreate(Bundle savedInstanceState) {  
super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_main*);  
  
mydb = new DataBaseHelper(this) ;  
edit\_name = findViewById(R.id.*edit\_name*);  
edit\_id = findViewById(R.id.*edit\_id*);  
edit\_sur = findViewById(R.id.*edit\_sur*);  
btn\_add = findViewById(R.id.*btn\_add*);  
btn\_upd = findViewById(R.id.*btn\_upd*);  
btn\_del = findViewById(R.id.*btn\_del*);  
btn\_view = findViewById(R.id.*btn\_view*);  
btn\_clr = findViewById(R.id.*btn\_clear*);  
tv\_show = findViewById(R.id.*tv\_show*);  
  
 AddData();  
 viewAllData();  
 UpdateData();  
 DeleteData();  
 ClearData();  
 }  
private void ClearData()  
 {  
btn\_clr.setOnClickListener((view->  
 {  
edit\_name.setText("");  
edit\_id.setText("");  
edit\_sur.setText("");  
 }));  
 }  
public void viewAllData()  
 {  
btn\_view.setOnClickListener((view->  
 {  
Cursor res= mydb.getAllData();  
if(res.getCount()==0)  
Toast.*makeText*(this, "No Data", Toast.*LENGTH\_SHORT*).show();  
else  
{  
StringBuffer buffer=new StringBuffer();  
while(res.moveToNext())  
 {  
buffer.append("Name:"+res.getString(0)+"\t");  
buffer.append("ID:"+res.getString(1)+"\t");  
buffer.append("Surname:"+res.getString(2)+"\t");  
buffer.append("\n");  
  
 }  
tv\_show.setText("Data from Database \n"+buffer.toString());  
 }  
 }));  
 }  
public void UpdateData()  
 {  
btn\_upd.setOnClickListener((view->  
 {  
boolean ud=mydb.updateData(edit\_name.getText().toString(),edit\_id.getText().toString(),edit\_sur.getText().toString());  
if(ud==true)  
Toast.*makeText*(this, "Record updated", Toast.*LENGTH\_SHORT*).show();  
else  
Toast.*makeText*(this, "Record not updated", Toast.*LENGTH\_SHORT*).show();  
 }));  
 }  
public void AddData()  
 {  
btn\_add.setOnClickListener((view->  
 {  
boolean isinserted=mydb.insertData(edit\_name.getText().toString(),edit\_id.getText().toString(),edit\_sur.getText().toString());  
if(isinserted==true)  
Toast.*makeText*(this, "Record is not inserted", Toast.*LENGTH\_SHORT*).show();  
else  
Toast.*makeText*(this, "Record is inserted", Toast.*LENGTH\_SHORT*).show();  
 }));  
 }  
public void DeleteData()  
 {  
btn\_del.setOnClickListener((view->  
 {  
Integer dr=mydb.DeleteData(edit\_id.getText().toString());  
if(dr>0)  
Toast.*makeText*(this, "Record is deleted", Toast.*LENGTH\_SHORT*).show();  
else  
Toast.*makeText*(this, "Record is not deleted", Toast.*LENGTH\_SHORT*).show();  
 }));  
 }  
}

DataBaseHelper.java

package com.example.vysh\_lab51;  
  
import android.content.ContentValues;  
import android.content.Context;  
import android.database.Cursor;  
import android.database.sqlite.SQLiteDatabase;  
import android.database.sqlite.SQLiteOpenHelper;  
  
import androidx.annotation.Nullable;  
  
public class DataBaseHelper extends SQLiteOpenHelper {  
  
public static final String *database\_name* = "student.db";  
public static final String *Table\_name* = "student\_table", *col\_1* = "Name", *col\_2* = "ID", *col\_3* = "Surname";  
  
  
  
public DataBaseHelper(@Nullable Context context) {  
super(context,*database\_name*,null,1);  
 }  
  
@Override  
public void onCreate(SQLiteDatabase db) {  
String query = ("create table "+ *Table\_name* + " (Name Text,ID integer primary key,Surname Text)");  
 db.execSQL(query);  
  
 }  
  
@Override  
public void onUpgrade(SQLiteDatabase db, int i, int i1) {  
 db.execSQL("Drop table if Exists "+ *Table\_name*);  
 onCreate(db);  
  
 }  
  
public boolean insertData(String Name, String ID, String Surname) {  
SQLiteDatabase db = this.getWritableDatabase();  
ContentValues contentValues = new ContentValues();  
if (Name.length() == 0 || ID.length() == 0 | Surname.length() == 0) {  
return false;  
 } else {  
contentValues.put(*col\_1*, Name);  
contentValues.put(*col\_2*, ID);  
contentValues.put(*col\_3*, Surname);  
long result = db.insert(*Table\_name*, null, contentValues);  
if (result == 1)  
return true;  
else  
 return false;  
 }  
 }  
  
public Cursor getAllData() {  
SQLiteDatabase db = this.getWritableDatabase();  
Cursor res = db.rawQuery("select \* from "+ *Table\_name*, null);  
return res;  
 }  
  
public boolean updateData(String Name, String ID, String Surname) {  
int i;  
SQLiteDatabase db = this.getWritableDatabase();  
ContentValues contentValues = new ContentValues();  
if (Name.length() == 0 || ID.length() == 0 | Surname.length() == 0) {  
return false;  
 } else {  
contentValues.put(*col\_1*, Name);  
contentValues.put(*col\_2*, ID);  
contentValues.put(*col\_3*, Surname);  
i = db.update(*Table\_name*, contentValues, "ID=?", new String[]{ID});  
if (i >0)  
return true;  
else  
 return false;  
 }  
  
 }  
  
public Integer DeleteData(String ID) {  
SQLiteDatabase db = this.getWritableDatabase();  
return db.delete(*Table\_name*, "ID=?", new String[]{ID});  
 }  
}

strings.xml

<resources>  
<string name="app\_name">nisar\_lab5</string>  
<string name="txt\_name">Name</string>  
<string name="txt\_id">ID</string>  
<string name="txt\_sur">Surname</string>  
</resources>

6. Devise an application that implements Multi-Threading.

AndroidManifest.xml

*<?*xml version="1.0"encoding="utf-8"*?>*<manifest xmlns:android="http://schemas.android.com/apk/res/android"  
xmlns:tools="http://schemas.android.com/tools">  
  
<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:supportsRtl="true"  
android:theme="@style/Theme.Nisar\_lab61"  
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 version="1.0"encoding="utf-8"*?>*<androidx.constraintlayout.widget.ConstraintLayout xmlns:android="http://schemas.android.com/apk/res/android"  
xmlns:app="http://schemas.android.com/apk/res-auto"  
xmlns:tools="http://schemas.android.com/tools"  
android:layout\_width="match\_parent"  
android:layout\_height="match\_parent"  
tools:context=".MainActivity">  
  
<TextView  
android:id="@+id/textView"  
android:layout\_width="wrap\_content"  
android:layout\_height="wrap\_content"  
android:text="Displaying Images"  
android:textSize="16sp"  
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="0.105"/>  
  
<ImageView  
android:id="@+id/imageView"  
android:layout\_width="325dp"  
android:layout\_height="225dp"  
app:layout\_constraintBottom\_toBottomOf="parent"  
app:layout\_constraintEnd\_toEndOf="parent"  
app:layout\_constraintStart\_toStartOf="parent"  
app:layout\_constraintTop\_toTopOf="parent"  
app:layout\_constraintVertical\_bias="0.243"  
tools:srcCompat="@tools:sample/backgrounds/scenic"/>  
  
<Button  
android:id="@+id/button"  
android:layout\_width="wrap\_content"  
android:layout\_height="wrap\_content"  
android:text="Button 1"  
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="0.592"/>  
  
<Button  
android:id="@+id/button2"  
android:layout\_width="wrap\_content"  
android:layout\_height="wrap\_content"  
android:text="Button 2"  
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="0.699"/>  
</androidx.constraintlayout.widget.ConstraintLayout>

MainActivity.java

package com.example.nisar\_lab61;  
  
import androidx.appcompat.app.AppCompatActivity;  
  
import android.os.Bundle;  
import android.view.View;  
import android.widget.Button;  
import android.widget.ImageView;  
  
public class MainActivity extends AppCompatActivity {  
  
ImageView img;  
Button btn1,btn2;  
int count=0;  
  
@Override  
protected void onCreate(Bundle savedInstanceState) {  
super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_main*);  
  
btn1=(Button)findViewById(R.id.*button*);  
btn2=(Button)findViewById(R.id.*button2*);  
img=(ImageView)findViewById(R.id.*imageView*);  
  
btn1.setOnClickListener(new View.OnClickListener() {  
@Override  
public void onClick(View v) {  
new Thread(new Runnable() {  
@Override  
public void run() {  
img.post(new Runnable() {  
@Override  
public void run() {  
if(count==0)  
 {  
img.setImageResource(R.drawable.*na*);  
count=count+1;  
 }  
else  
{  
img.setImageResource(R.drawable.*na1*);  
 }  
 }  
 });  
 }  
 }).start();  
  
 }  
 });  
btn2.setOnClickListener(new View.OnClickListener() {  
@Override  
public void onClick(View view) {  
new Thread(new Runnable() {  
@Override  
public void run() {  
img.post(new Runnable() {  
@Override  
public void run() {  
img.setImageResource(R.drawable.*na2*);  
 }  
 });  
 }  
 }).start();  
 }  
 });  
 }  
}

strings.xml

<resources>  
<string name="app\_name">nisar\_lab61</string>  
</resources>

7.Develop a mobile application that displays the google map and different views of map.

Androidmanifest.xml

*<?*xml version="1.0" encoding="utf-8"*?>*<manifest xmlns:android="http://schemas.android.com/apk/res/android"  
 xmlns:tools="http://schemas.android.com/tools">  
  
 <uses-permission android:name="android.permission.INTERNET"></uses-permission>  
 <uses-permission android:name="android.permission.ACCESS\_FINE\_LOCATION"></uses-permission>  
 <uses-permission android:name="android.permission.ACCESS\_COARSE\_LOCATION"></uses-permission>  
  
 <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:supportsRtl="true"  
 android:theme="@style/Theme.Nisar\_lab7"  
 tools:targetApi="31">  
  
 *<!--  
 TODO: Before you run your application, you need a Google Maps API key.  
  
 To get one, follow the directions here:  
  
 https://developers.google.com/maps/documentation/android-sdk/get-api-key  
  
 Once you have your API key (it starts with "AIza"), define a new property in your  
 project's local.properties file (e.g. MAPS\_API\_KEY=Aiza...), and replace the  
 "YOUR\_API\_KEY" string in this file with "${MAPS\_API\_KEY}".  
 -->* <meta-data  
 android:name="com.google.android.geo.API\_KEY"  
 android:value="AIzaSyAlQkmBKbsQav0NSO-mTN1mu-5mR3S9gaQ" />  
  
 <activity  
 android:name=".MapsActivity"  
 android:exported="true"  
 android:label="@string/title\_activity\_maps">  
 <intent-filter>  
 <action android:name="android.intent.action.MAIN" />  
  
 <category android:name="android.intent.category.LAUNCHER" />  
 </intent-filter>  
 </activity>  
 </application>  
  
</manifest>

Activity\_maps.xml

*<?*xml version="1.0" encoding="utf-8"*?>*<fragment xmlns:android="http://schemas.android.com/apk/res/android"  
 xmlns:map="http://schemas.android.com/apk/res-auto"  
 xmlns:tools="http://schemas.android.com/tools"  
 android:id="@+id/map"  
 android:name="com.google.android.gms.maps.SupportMapFragment"  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent"  
 tools:context=".MapsActivity" />

MapsActivity.java

package com.example.nisar\_lab7;  
  
import androidx.fragment.app.FragmentActivity;  
  
import android.os.Bundle;  
  
import com.google.android.gms.maps.CameraUpdateFactory;  
import com.google.android.gms.maps.GoogleMap;  
import com.google.android.gms.maps.OnMapReadyCallback;  
import com.google.android.gms.maps.SupportMapFragment;  
import com.google.android.gms.maps.model.LatLng;  
import com.google.android.gms.maps.model.MarkerOptions;  
import com.example.nisar\_lab7.databinding.ActivityMapsBinding;  
  
public class MapsActivity extends FragmentActivity implements OnMapReadyCallback {  
  
 private GoogleMap mMap;  
 private ActivityMapsBinding binding;  
  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
  
 binding = ActivityMapsBinding.*inflate*(getLayoutInflater());  
 setContentView(binding.getRoot());  
  
 *// Obtain the SupportMapFragment and get notified when the map is ready to be used.* SupportMapFragment mapFragment = (SupportMapFragment) getSupportFragmentManager()  
 .findFragmentById(R.id.*map*);  
 mapFragment.getMapAsync(this);  
 }  
  
 */\*\*  
 \* Manipulates the map once available.  
 \* This callback is triggered when the map is ready to be used.  
 \* This is where we can add markers or lines, add listeners or move the camera. In this case,  
 \* we just add a marker near Sydney, Australia.  
 \* If Google Play services is not installed on the device, the user will be prompted to install  
 \* it inside the SupportMapFragment. This method will only be triggered once the user has  
 \* installed Google Play services and returned to the app.  
 \*/* @Override  
 public void onMapReady(GoogleMap googleMap) {  
 mMap = googleMap;  
  
 *// Add a marker in Sydney and move the camera* LatLng SIT= new LatLng(13.328132637723748, 77.1245338760764);  
 mMap.addMarker(new MarkerOptions().position(SIT).title("Marker in SIT"));  
 mMap.moveCamera(CameraUpdateFactory.*newLatLng*(SIT));  
 }  
}

strings.xml

<resources>  
 <string name="app\_name">nisar\_lab7</string>  
 <string name="title\_activity\_maps">MapsActivity</string>  
</resources>

8.Create a application which writes the data to SD Card.

AndroidManifest.xml

*<?*xml version="1.0" encoding="utf-8"*?>*<manifest xmlns:android="http://schemas.android.com/apk/res/android"  
 xmlns:tools="http://schemas.android.com/tools">  
  
 <uses-permission android:name="android.permission.WRITE\_EXTERNAL\_STORAGE"></uses-permission>  
 <uses-permission android:name="android.permission.READ\_EXTERNAL\_STORAGE"></uses-permission>  
  
 <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:supportsRtl="true"  
 android:theme="@style/Theme.Nisar\_lab8"  
 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 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="@color/material\_dynamic\_tertiary80"  
 tools:context=".MainActivity">  
  
 <TextView  
 android:id="@+id/tv"  
 android:layout\_width="290dp"  
 android:layout\_height="60dp"  
 android:text="TextView"  
 android:textSize="20sp"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintHorizontal\_bias="0.404"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent"  
 app:layout\_constraintVertical\_bias="0.093"  
 tools:ignore="HardcodedText" />  
  
 <EditText  
 android:id="@+id/et"  
 android:layout\_width="220dp"  
 android:layout\_height="149dp"  
 android:ems="10"  
 android:gravity="start|top"  
 android:inputType="textMultiLine"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintHorizontal\_bias="0.497"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent"  
 app:layout\_constraintVertical\_bias="0.776"  
 tools:ignore="Autofill,LabelFor,SpeakableTextPresentCheck" />  
  
 <LinearLayout  
 android:layout\_width="196dp"  
 android:layout\_height="54dp"  
 android:orientation="horizontal"  
 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="0.291">  
  
 <Button  
 android:id="@+id/btn1"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:text="Save"  
 tools:ignore="DuplicateSpeakableTextCheck,HardcodedText" />  
  
 <Button  
 android:id="@+id/btn2"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:text="Read"  
 tools:ignore="HardcodedText" />  
 </LinearLayout>  
  
 <TextView  
 android:id="@+id/tv1"  
 android:layout\_width="159dp"  
 android:layout\_height="66dp"  
 android:text="TextView"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent" />  
</androidx.constraintlayout.widget.ConstraintLayout>

MainActivity.java

package com.example.nisar\_lab8;  
  
import androidx.appcompat.app.AppCompatActivity;  
  
import android.content.SharedPreferences;  
import android.os.Bundle;  
import android.os.Environment;  
import android.view.View;  
import android.widget.Button;  
import android.widget.EditText;  
import android.widget.TextView;  
import android.widget.Toast;  
  
import java.io.BufferedReader;  
import java.io.DataInputStream;  
import java.io.File;  
import java.io.FileInputStream;  
import java.io.FileOutputStream;  
import java.io.FileReader;  
import java.io.FileWriter;  
import java.io.IOException;  
import java.io.InputStreamReader;  
  
public class MainActivity extends AppCompatActivity {  
 EditText inputText;  
 TextView response;  
 Button saveButton, readButton;  
  
 private String filename = "SampleFile.txt";  
 private String filepath = "MyFileStorage";  
 File myExternalFile;  
 String myData = "";  
  
  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_main*);  
  
 inputText = (EditText) findViewById(R.id.*et*);  
 response = (TextView) findViewById(R.id.*tv1*);  
  
  
 saveButton =(Button) findViewById(R.id.*btn1*);  
  
 saveButton.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View v) {  
 try {  
 FileOutputStream fos = new FileOutputStream(myExternalFile);  
 fos.write(inputText.getText().toString().getBytes());  
 fos.close();  
 } catch (IOException e) {  
 e.printStackTrace();  
 }  
 inputText.setText("");  
 inputText.setFocusable(true);  
 response.setText("SampleFile.txt saved to External Storage...");  
 }  
 });  
  
  
 readButton = (Button) findViewById(R.id.*btn2*);  
  
  
 readButton.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View v) {  
 try {  
 FileInputStream fis = new FileInputStream(myExternalFile);  
 DataInputStream in = new DataInputStream(fis);  
 BufferedReader br =  
 new BufferedReader(new InputStreamReader(in));  
 String strLine;  
 while ((strLine = br.readLine()) != null) {  
 myData = myData + strLine;  
 }  
 in.close();  
 } catch (IOException e) {  
 e.printStackTrace();  
 }  
 inputText.setText(myData);  
 response.setText("SampleFile.txt data retrieved from Internal Storage...");  
 }  
 });  
  
 if (!*isExternalStorageAvailable*() || *isExternalStorageReadOnly*()) {  
 saveButton.setEnabled(false);  
 }  
 else {  
 myExternalFile = new File(getExternalFilesDir(filepath), filename);  
 }  
  
  
 }  
 private static boolean isExternalStorageReadOnly() {  
 String extStorageState = Environment.*getExternalStorageState*();  
 if (Environment.*MEDIA\_MOUNTED\_READ\_ONLY*.equals(extStorageState)) {  
 return true;  
 }  
 return false;  
 }  
  
 private static boolean isExternalStorageAvailable() {  
 String extStorageState = Environment.*getExternalStorageState*();  
 if (Environment.*MEDIA\_MOUNTED*.equals(extStorageState)) {  
 return true;  
 }  
 return false;  
 }  
}

strings.xml

<resources>  
 <string name="app\_name">nisar\_lab8</string>  
</resources>