Assignment 01 –

b.Create an Android app to run the first mobile app of the "Hello Universe" Application.

XML FILE –

```
<LinearLayout
    xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical"
    android:gravity="center"
    android:background="#6200EE">

    <TextView
        android:id="@+id/helloText"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Hello Universe!"
        android:textSize="24sp"
        android:textColor="#FFFFFF"
        android:textStyle="bold" />

</LinearLayout>
```

CODE FILE –

```
package com.example.helloworld;

import android.os.Bundle;
import androidx.appcompat.app.AppCompatActivity;

import com.example.helloworld.R;

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

OUTPUT :

Hello Universe!

Assignment 02-

Android activity life cycle: Design and develop an application to demonstrate the android activity life cycle. Also demonstrate the whole process through proper diagram.

XML FILE –

```xml
<LinearLayout

    xmlns:android="http://schemas.android.com/apk/res/android"

    android:layout_width="match_parent"

    android:layout_height="match_parent"

    android:orientation="vertical"

    android:padding="16dp">


    <TextView

        android:id="@+id/lifecycleTextView"

        android:layout_width="match_parent"

        android:layout_height="match_parent"

        android:text="Activity Lifecycle Events"

        android:textSize="16sp"

        android:background="#F5F5F5"

        android:padding="8dp"

        android:scrollbars="vertical" />

</LinearLayout>
```

CODE FILE –

package com.example.lifecycleapp;

import android.os.Bundle;

import android.util.Log;

import android.widget.TextView;

import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {

```java
  private static final String TAG = "ActivityLifecycle";
  private TextView lifecycleTextView;

  @Override
  protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_main);
    lifecycleTextView = findViewById(R.id.lifecycleTextView);
    logEvent("onCreate");
  }

  @Override
  protected void onStart() {
    super.onStart();
    logEvent("onStart");
  }

  @Override
  protected void onResume() {
```

```java
    super.onResume();

    logEvent("onResume");

}

@Override
protected void onPause() {
    super.onPause();

    logEvent("onPause");

}

@Override
protected void onStop() {
    super.onStop();

    logEvent("onStop");

}

@Override
protected void onRestart() {
    super.onRestart();

    logEvent("onRestart");

}

@Override
protected void onDestroy() {
    super.onDestroy();

    logEvent("onDestroy");

}

private void logEvent(String event) {
```
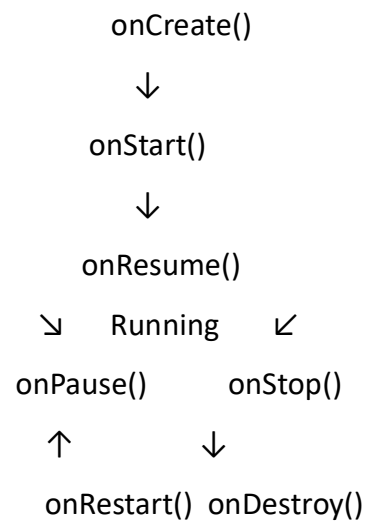
```
        Log.d(TAG, event);

        String currentText = lifecycleTextView.getText().toString();

        lifecycleTextView.setText(currentText + "\n" + event);

    }

}
```

Diagram of the Android Activity Lifecycle :

```
        onCreate()

           ↓

      onStart()

           ↓

      onResume()

  ↘    Running    ↙

onPause()      onStop()

   ↑              ↓

  onRestart()  onDestroy()
```

Assignment 03 –

Create an application that takes the name from a text box and shows a hello message along with the name entered in the text box when the user clicks the OK button.

XML FILE –

```xml
<LinearLayout
    xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical"
    android:padding="16dp"
    android:gravity="center">

    <EditText
        android:id="@+id/nameInput"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="Enter your name"
        android:padding="8dp"
        android:inputType="textPersonName" />

    <Button
        android:id="@+id/okButton"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="OK"
        android:layout_marginTop="16dp" />

    <TextView
        android:id="@+id/resultTextView"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Hello, there!"
        android:textSize="18sp"
        android:textStyle="bold"
        android:layout_marginTop="16dp"
        android:visibility="invisible" />
</LinearLayout>
```

CODE FILE –

```java
package com.example.hello;

import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.TextView;
import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {

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

        EditText nameInput = findViewById(R.id.nameInput);
        Button okButton = findViewById(R.id.okButton);
        TextView resultTextView = findViewById(R.id.resultTextView);

        okButton.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                String name = nameInput.getText().toString().trim();
                if (!name.isEmpty()) {
                    resultTextView.setText("Hello, " + name + "!");
                    resultTextView.setVisibility(View.VISIBLE);
                } else {
                    resultTextView.setText("Please enter your name.");
                    resultTextView.setVisibility(View.VISIBLE);
                }
            }
        });
    }
}
```

10:43

65%

Sir

OK

Hello, Sir!

Assignment 04 :

Create an Android app using ImageView to show a Picture using Linear Layout and try to design a basic gallery.

XML FILE –

```xml
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity">

    <ImageView
        android:id="@+id/imageView"
        android:layout_width="93dp"
        android:layout_height="116dp"
        android:foreground="@drawable/image1"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.107"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.069"
        app:srcCompat="@drawable/image1"
        tools:srcCompat="@tools:sample/avatars" />

    <ImageView
        android:id="@+id/imageView2"
        android:layout_width="93dp"
        android:layout_height="116dp"
        android:foreground="@drawable/image2"
        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="0.069"
        app:srcCompat="@drawable/image2"
        tools:srcCompat="@tools:sample/avatars" />

    <ImageView
```

```xml
    android:id="@+id/imageView3"
    android:layout_width="95dp"
    android:layout_height="114dp"
    android:foreground="@drawable/image3"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.897"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.069"
    app:srcCompat="@drawable/image3"
    tools:srcCompat="@tools:sample/avatars" />

<RadioGroup
    android:layout_width="228dp"
    android:layout_height="159dp"
    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="0.321" >

    <RadioGroup
        android:layout_width="match_parent"
        android:layout_height="match_parent" >

        <RadioGroup
            android:layout_width="match_parent"
            android:layout_height="match_parent" >

            <RadioButton
                android:id="@+id/radioButton"
                android:layout_width="match_parent"
                android:layout_height="wrap_content"
                android:text="image1" />

            <RadioButton
                android:id="@+id/radioButton2"
                android:layout_width="match_parent"
                android:layout_height="wrap_content"
                android:text="image2" />
```

```xml
        <RadioButton
            android:id="@+id/radioButton3"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:text="image3" />
    </RadioGroup>
    </RadioGroup>
</RadioGroup>

<CheckBox
    android:id="@+id/checkBox"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Show image"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.158"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.562" />

<Button
    android:id="@+id/button"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="OK"
    android:onClick="solve_image"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.842"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.562" />

<ImageView
    android:id="@+id/imageView4"
    android:layout_width="340dp"
    android:layout_height="201dp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.535"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
```

```
        app:layout_constraintVertical_bias="0.943"
        tools:srcCompat="@tools:sample/avatars" />

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

CODE FILE –

```java
package com.example.imagegallery;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;
import android.provider.MediaStore;
import android.util.Log;
import android.view.View;
import android.widget.CheckBox;
import android.widget.ImageView;
import android.widget.RadioButton;
import android.widget.Toast;

public class MainActivity extends AppCompatActivity {

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        Log.d("Lifecycle","onCreate invoked");
        setContentView(R.layout.activity_main);
        int i=0;


    }
    protected void onStart(){

        super.onStart();
        Log.d("lifecycle","onStart invoked");
    }
    protected void onResume(){

        super.onResume();
        Log.d("Lifecycle","onResume invoked");
    }
    protected void onPause(){
        super.onPause();
        Log.d("Lifecycle","onPause invoked");
    }
    protected void onStop(){
        super.onStop();
        Log.d("Lifecycle","onStop invoked");
    }
```

```java
protected void onRestart(){
    super.onRestart();
    Log.d("Lifecycle","onRestart invoked");
}
protected void onDestroy(){
    super.onDestroy();
    Log.d("Lifecycle","onDestroy invoked");
}
public void solve_image(View view){
    ImageView i1 = findViewById(R.id.imageView);
    ImageView i2 = findViewById(R.id.imageView2);
    ImageView i3 = findViewById(R.id.imageView3);
    ImageView i4 = findViewById(R.id.imageView4);

    RadioButton r1 = findViewById(R.id.radioButton);
    RadioButton r2 = findViewById(R.id.radioButton2);
    RadioButton r3 = findViewById(R.id.radioButton3);

    CheckBox c = findViewById(R.id.checkBox);

    if(r1.isChecked()){
        i4.setImageDrawable(i1.getDrawable());
    }
    else if(r2.isChecked()){
        i4.setImageDrawable(i2.getDrawable());
    }
    else if(r3.isChecked()){
        i4.setImageDrawable(i3.getDrawable());
    }
    else{
        Toast t = Toast.makeText(this,"Please select an image",Toast.LENGTH_LONG);
        t.show();
    }
    if(c.isChecked()){
        i4.setVisibility(View.VISIBLE);
    }
    else{
        i4.setVisibility(View.INVISIBLE);
    }
}
}
```

Assignment 05 :

   a. Create an Android app to add and subtract two numbers supplied from the user interface having two text boxes.

XML FILE –

```xml
<LinearLayout
   xmlns:android="http://schemas.android.com/apk/res/android"
   android:layout_width="match_parent"
   android:layout_height="match_parent"
   android:orientation="vertical"
   android:padding="16dp"
   android:gravity="center">

   <EditText
      android:id="@+id/number1"
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
      android:hint="Enter first number"
      android:inputType="numberDecimal"
      android:padding="8dp" />

   <EditText
      android:id="@+id/number2"
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
      android:hint="Enter second number"
      android:inputType="numberDecimal"
      android:padding="8dp"
      android:layout_marginTop="8dp" />

   <Button
      android:id="@+id/addButton"
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:text="Add"
      android:layout_marginTop="16dp" />

   <Button
      android:id="@+id/subtractButton"
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:text="Subtract"
      android:layout_marginTop="8dp" />
```

```xml
    <TextView
        android:id="@+id/resultTextView"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Result will be displayed here"
        android:textSize="18sp"
        android:textStyle="bold"
        android:layout_marginTop="16dp" />
</LinearLayout>
```

CODE FILE –

```java
package com.example.addsubtractapp;

import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.TextView;
import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {

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

        EditText number1 = findViewById(R.id.number1);
        EditText number2 = findViewById(R.id.number2);
        Button addButton = findViewById(R.id.addButton);
        Button subtractButton = findViewById(R.id.subtractButton);
        TextView resultTextView = findViewById(R.id.resultTextView);

        addButton.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                String num1 = number1.getText().toString().trim();
                String num2 = number2.getText().toString().trim();

                if (!num1.isEmpty() && !num2.isEmpty()) {
                    double value1 = Double.parseDouble(num1);
                    double value2 = Double.parseDouble(num2);
                    double result = value1 + value2;
                    resultTextView.setText("Result: " + result);
                } else {
                    resultTextView.setText("Please enter both numbers.");
                }
            }
        });

        subtractButton.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
```

```java
        String num1 = number1.getText().toString().trim();
        String num2 = number2.getText().toString().trim();

        if (!num1.isEmpty() && !num2.isEmpty()) {
            double value1 = Double.parseDouble(num1);
            double value2 = Double.parseDouble(num2);
            double result = value1 - value2;
            resultTextView.setText("Result: " + result);
        } else {
            resultTextView.setText("Please enter both numbers.");
        }
    }
});
    }
}
```
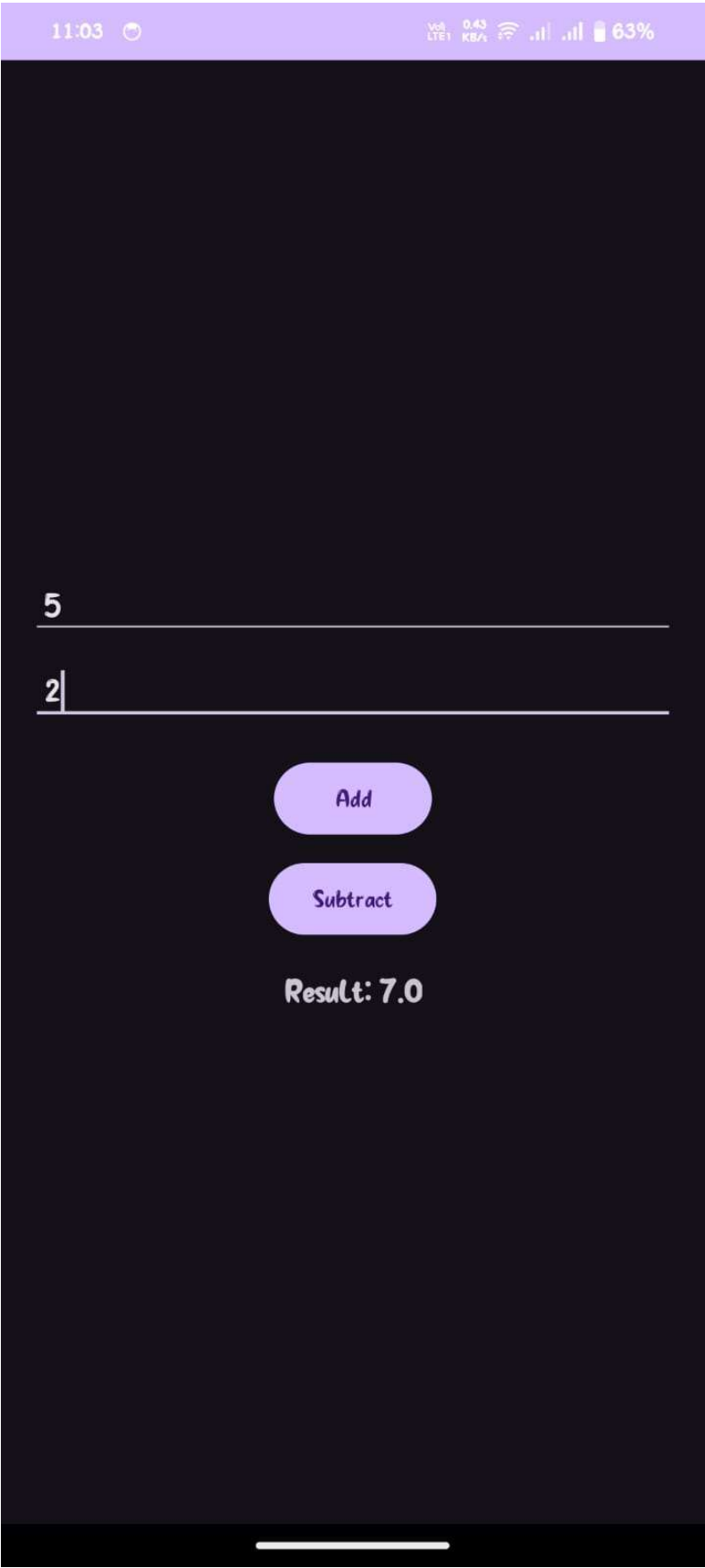
OUTPUT :

5

2

Add

Subtract

Result: 7.0

b. Create an Android app to multiply and divide two numbers supplied from the user interface having two text boxes.

XML FILE –

```xml
<LinearLayout
    xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical"
    android:padding="16dp"
    android:gravity="center">

    <EditText
        android:id="@+id/number1"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="Enter first number"
        android:inputType="numberDecimal"
        android:padding="8dp" />

    <EditText
        android:id="@+id/number2"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="Enter second number"
        android:inputType="numberDecimal"
        android:padding="8dp"
        android:layout_marginTop="8dp" />

    <Button
        android:id="@+id/multiplyButton"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Multiply"
        android:layout_marginTop="16dp" />

    <Button
        android:id="@+id/divideButton"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Divide"
        android:layout_marginTop="8dp" />
```

```xml
    <TextView
        android:id="@+id/resultTextView"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Result will be displayed here"
        android:textSize="18sp"
        android:textStyle="bold"
        android:layout_marginTop="16dp" />
</LinearLayout>
```

CODE FILE –

```java
package com.example.multiplydivideapp;

import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.TextView;
import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {

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

        EditText number1 = findViewById(R.id.number1);
        EditText number2 = findViewById(R.id.number2);
        Button multiplyButton = findViewById(R.id.multiplyButton);
        Button divideButton = findViewById(R.id.divideButton);
        TextView resultTextView = findViewById(R.id.resultTextView);

        multiplyButton.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                String num1 = number1.getText().toString().trim();
                String num2 = number2.getText().toString().trim();

                if (!num1.isEmpty() && !num2.isEmpty()) {
                    double value1 = Double.parseDouble(num1);
                    double value2 = Double.parseDouble(num2);
                    double result = value1 * value2;
                    resultTextView.setText("Result: " + result);
                } else {
                    resultTextView.setText("Please enter both numbers.");
                }
            }
        });

        divideButton.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
```

```java
        String num1 = number1.getText().toString().trim();
        String num2 = number2.getText().toString().trim();

        if (!num1.isEmpty() && !num2.isEmpty()) {
            double value1 = Double.parseDouble(num1);
            double value2 = Double.parseDouble(num2);

            if (value2 != 0) {
                double result = value1 / value2;
                resultTextView.setText("Result: " + result);
            } else {
                resultTextView.setText("Division by zero is not allowed.");
            }
        } else {
            resultTextView.setText("Please enter both numbers.");
        }
    }
});
    }
}
```
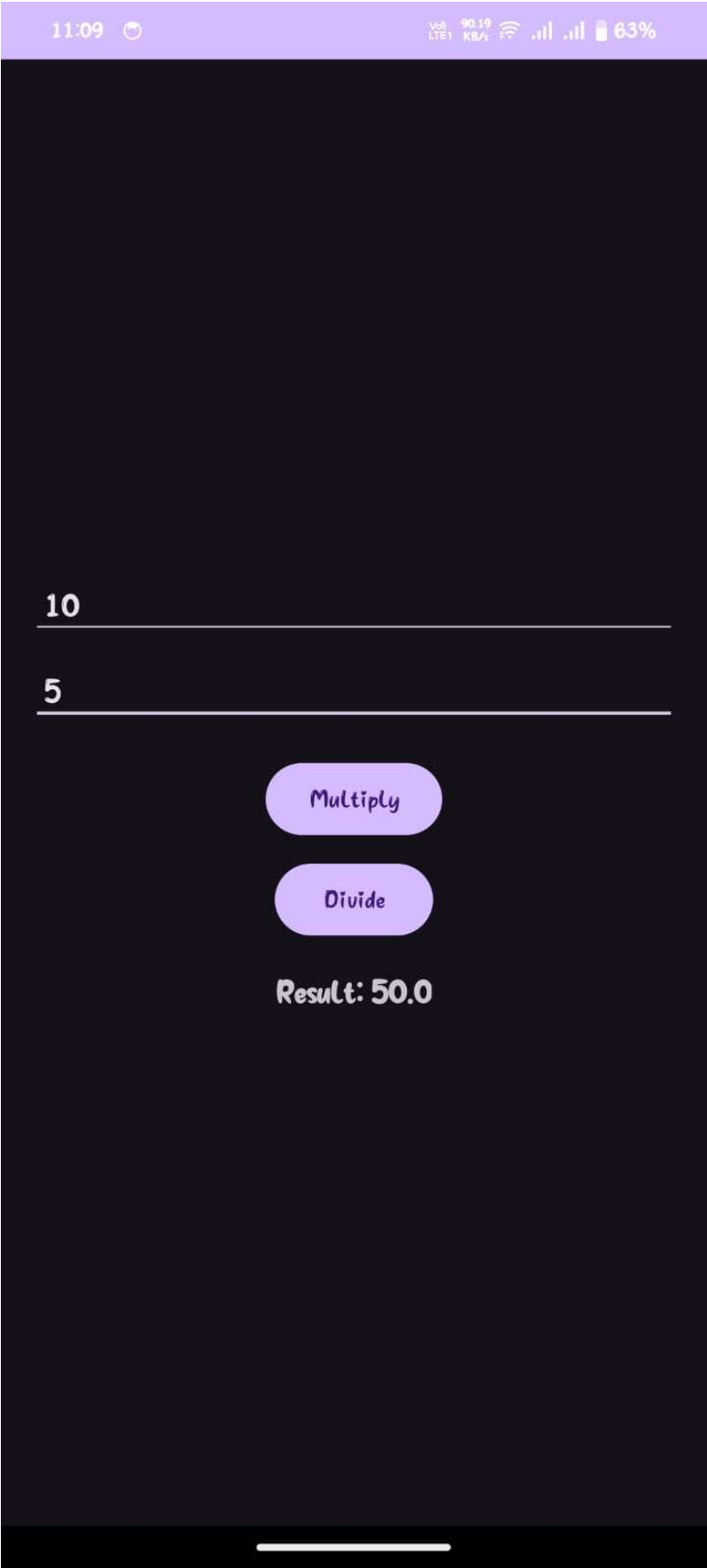
Assignment 06 :

a. Create a screen that has input boxes for User Name, Password, Address, Gender (radio buttons for male and female), Age (numeric), Date of Birth (Date Picker), State (Spinner), and a Submit button. On clicking the submit button, print all the data below the Submit Button (use any layout).

XML FILE –

```
<ScrollView
    xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:padding="16dp">

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

        <EditText
            android:id="@+id/userName"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:hint="User Name"
            android:inputType="textPersonName"
            android:padding="8dp" />

        <EditText
            android:id="@+id/password"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:hint="Password"
            android:inputType="textPassword"
            android:padding="8dp"
            android:layout_marginTop="8dp" />

        <EditText
            android:id="@+id/address"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:hint="Address"
            android:inputType="textPostalAddress"
            android:padding="8dp"
```

```xml
    android:layout_marginTop="8dp" />

<TextView
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Gender:"
    android:textSize="16sp"
    android:layout_marginTop="8dp" />

<RadioGroup
    android:id="@+id/genderGroup"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:orientation="horizontal">

    <RadioButton
        android:id="@+id/male"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Male" />

    <RadioButton
        android:id="@+id/female"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Female" />
</RadioGroup>

<EditText
    android:id="@+id/age"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:hint="Age"
    android:inputType="number"
    android:padding="8dp"
    android:layout_marginTop="8dp" />

<TextView
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Date of Birth:"
    android:textSize="16sp"
    android:layout_marginTop="8dp" />
```

```xml
    <DatePicker
        android:id="@+id/datePicker"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginTop="8dp" />

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="State:"
        android:textSize="16sp"
        android:layout_marginTop="8dp" />

    <Spinner
        android:id="@+id/stateSpinner"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginTop="8dp" />

    <Button
        android:id="@+id/submitButton"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Submit"
        android:layout_marginTop="16dp" />

    <TextView
        android:id="@+id/outputText"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:textSize="16sp"
        android:layout_marginTop="16dp" />
    </LinearLayout>
</ScrollView>
```

CODE FILE –

```java
package com.example.userdetailsapp;

import android.os.Bundle;
import android.view.View;
import android.widget.*;
import androidx.appcompat.app.AppCompatActivity;

import java.util.Calendar;

public class MainActivity extends AppCompatActivity {

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

        EditText userName = findViewById(R.id.userName);
        EditText password = findViewById(R.id.password);
        EditText address = findViewById(R.id.address);
        RadioGroup genderGroup = findViewById(R.id.genderGroup);
        EditText age = findViewById(R.id.age);
        DatePicker datePicker = findViewById(R.id.datePicker);
        Spinner stateSpinner = findViewById(R.id.stateSpinner);
        Button submitButton = findViewById(R.id.submitButton);
        TextView outputText = findViewById(R.id.outputText);

        // Populate Spinner with states
        String[] states = {"Select State", "California", "Texas", "Florida", "New York"};
        ArrayAdapter<String> adapter = new ArrayAdapter<>(this,
android.R.layout.simple_spinner_item, states);

adapter.setDropDownViewResource(android.R.layout.simple_spinner_dropdown_item);
        stateSpinner.setAdapter(adapter);

        submitButton.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                String name = userName.getText().toString().trim();
                String pwd = password.getText().toString().trim();
                String addr = address.getText().toString().trim();
                String ageValue = age.getText().toString().trim();
```

```java
        int genderId = genderGroup.getCheckedRadioButtonId();
        String gender = (genderId == R.id.male) ? "Male" : (genderId == R.id.female)
? "Female" : "Not Selected";

        int day = datePicker.getDayOfMonth();
        int month = datePicker.getMonth() + 1; // Month is 0-indexed
        int year = datePicker.getYear();
        String dob = day + "/" + month + "/" + year;

        String state = stateSpinner.getSelectedItem().toString();

        if (state.equals("Select State")) {
            state = "Not Selected";
        }

        String result = "Name: " + name + "\nPassword: " + pwd + "\nAddress: " +
addr +
                "\nGender: " + gender + "\nAge: " + ageValue + "\nDOB: " + dob +
                "\nState: " + state;

        outputText.setText(result);
      }
    });
  }
}
```

OUTPUT :

11:18

User Name

Password

Address

Gender:

◉ Male ◯ Female

Age

Date of Birth:

2024
Tue, Nov 19

		November 2024				❯
S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

State:

Select State ⌄

Submit

b. Create an Android app that will check whether the given number supplied as an input is prime or not.

XML FILE –

```xml
<LinearLayout
    xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical"
    android:padding="16dp"
    android:gravity="center">

    <EditText
        android:id="@+id/numberInput"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="Enter a number"
        android:inputType="number"
        android:padding="8dp" />

    <Button
        android:id="@+id/checkPrimeButton"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Check Prime"
        android:layout_marginTop="16dp" />

    <TextView
        android:id="@+id/resultTextView"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Result will appear here"
        android:textSize="16sp"
        android:layout_marginTop="16dp" />
</LinearLayout>
```

CODE FILE –

package com.example.primecheckerapp;

import android.os.Bundle;
import android.view.View;
import android.widget.*;
import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {

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

    EditText numberInput = findViewById(R.id.numberInput);
    Button checkPrimeButton = findViewById(R.id.checkPrimeButton);
    TextView resultTextView = findViewById(R.id.resultTextView);

    checkPrimeButton.setOnClickListener(new View.OnClickListener() {
      @Override
      public void onClick(View v) {
   String input = numberInput.getText().toString().trim();

        if (!input.isEmpty()) {
          int number = Integer.*parseInt*(input);
          if (number < 2) {
            resultTextView.setText("Not a Prime Number");
            return;
          }

          boolean isPrime = true;
          for (int i = 2; i <= Math.*sqrt*(number); i++) {
            if (number % i == 0) {
              isPrime = false;
              break;
            }
          }

          resultTextView.setText(isPrime ? "Prime Number" : "Not a Prime
Number");
        } else {
          resultTextView.setText("Please enter a number.");

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

11:25

60%

10

Check Prime

Not a Prime Number
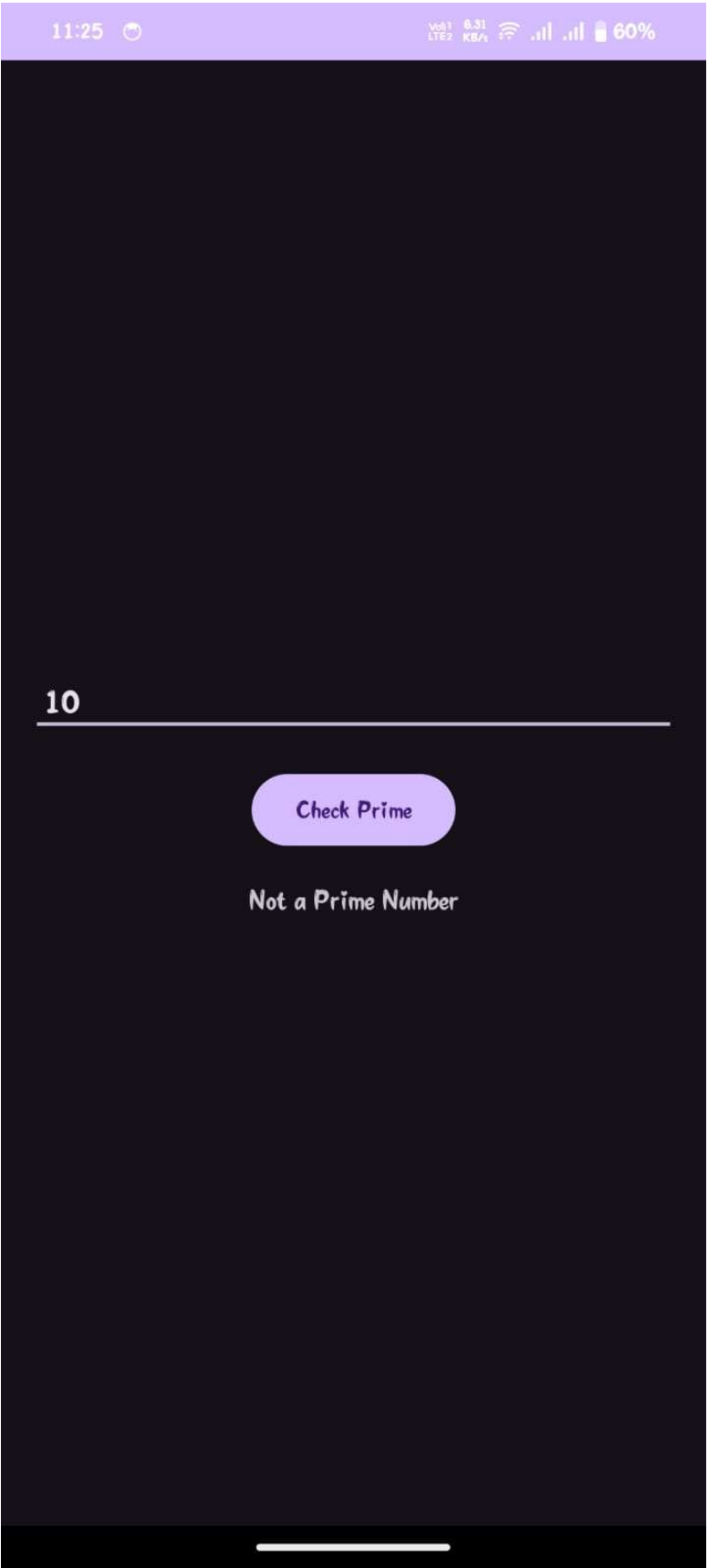
c. Create an Android app that will check whether given two numbers are palindrome or not.

XML FILE –

```xml
<?xml version="1.0" encoding="u -8"?>
<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="h p://schemas.android.com/apk/res/android"
xmlns:app="h p://schemas.android.com/apk/res-auto"
xmlns:tools="h p://schemas.android.com/tools"
android:id="@+id/main"
android:layout_width="match_parent"
android:layout_height="match_parent"
tools:context=".MainAc vity">
<EditText
android:id="@+id/editTextText"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_marginTop="160dp"
android:ems="10"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.497"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent" />
<EditText
android:id="@+id/editTextText2"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_marginTop="28dp"
android:ems="10"
android:inputType="text"
app:layout_constraintBo om_toBo omOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.497"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toBo omOf="@+id/editTextText"
app:layout_constraintVer cal_bias="0.035" />
<TextView
android:id="@+id/textView"
android:layout_width="303dp"
android:layout_height="94dp"
android:text="Hello there"
android:textSize="20sp"
app:layout_constraintBo om_toBo omOf="parent"
```

```xml
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBo omOf="@+id/editTextText2"
        app:layout_constraintVer cal_bias="0.676" />
    <Bu on
        android:id="@+id/bu on"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Submit"
        android:onClick="doCheck"
        app:layout_constraintBo om_toTopOf="@+id/textView"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.796"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBo omOf="@+id/editTextText2"
        app:layout_constraintVer cal_bias="0.368" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

CODE FILE –

```java
package com.example.palindrome;
import android.os.Bundle;
import android.view.View;
import android.widget.EditText;
import android.widget.TextView;
import androidx.ac  vity.EdgeToEdge;
import androidx.appcompat.app.AppCompatAc  vity;
import androidx.core.graphics.Insets;
import androidx.core.view.ViewCompat;
import androidx.core.view.WindowInsetsCompat;
public class MainAc  vity extends AppCompatAc  vity {
@Override
protected void onCreate(Bundle savedInstanceState) {
super.onCreate(savedInstanceState);
EdgeToEdge.enable(this);
setContentView(R.layout.ac  vity_main);
ViewCompat.setOnApplyWindowInsetsListener(findViewById(R.id.main), (v, insets) ->
{
Insets systemBars = insets.getInsets(WindowInsetsCompat.Type.systemBars());
v.setPadding(systemBars.le  , systemBars.top, systemBars.right, systemBars.bo  om);
return insets;
});
}
public void doCheck(View view){
EditText t1=findViewById(R.id.editTextText);
EditText t2=findViewById(R.id.editTextText2);
TextView result=findViewById(R.id.textView);
int a=Integer.parseInt(t1.getText().toString());
int b=Integer.parseInt(t2.getText().toString());
if (checkPalindrome(a) && checkPalindrome(b))
result.setText("Both A and B are Palindrome");
else if (checkPalindrome(a))
result.setText("A is palindrome but B is not palindrome");
else if (checkPalindrome(b))
result.setText("B is palindrome but A is not palindrome");
else
result.setText("A,B both are not palindrome");
}
public boolean checkPalindrome(int n){
int temp=n,rev=0;
while (temp>0){
int d=temp%10;
```

```
rev=rev*10+d;
temp=temp/10;
}
if (n==rev){
return true;
}
return false;
}
}
```

OUTPUT :

11:31

5
_____

7
_____

Submit

Both A and B are Palindrome

Assignment 07 :

b. Develop an Android Application that can calculate the sum of digit of a given number.
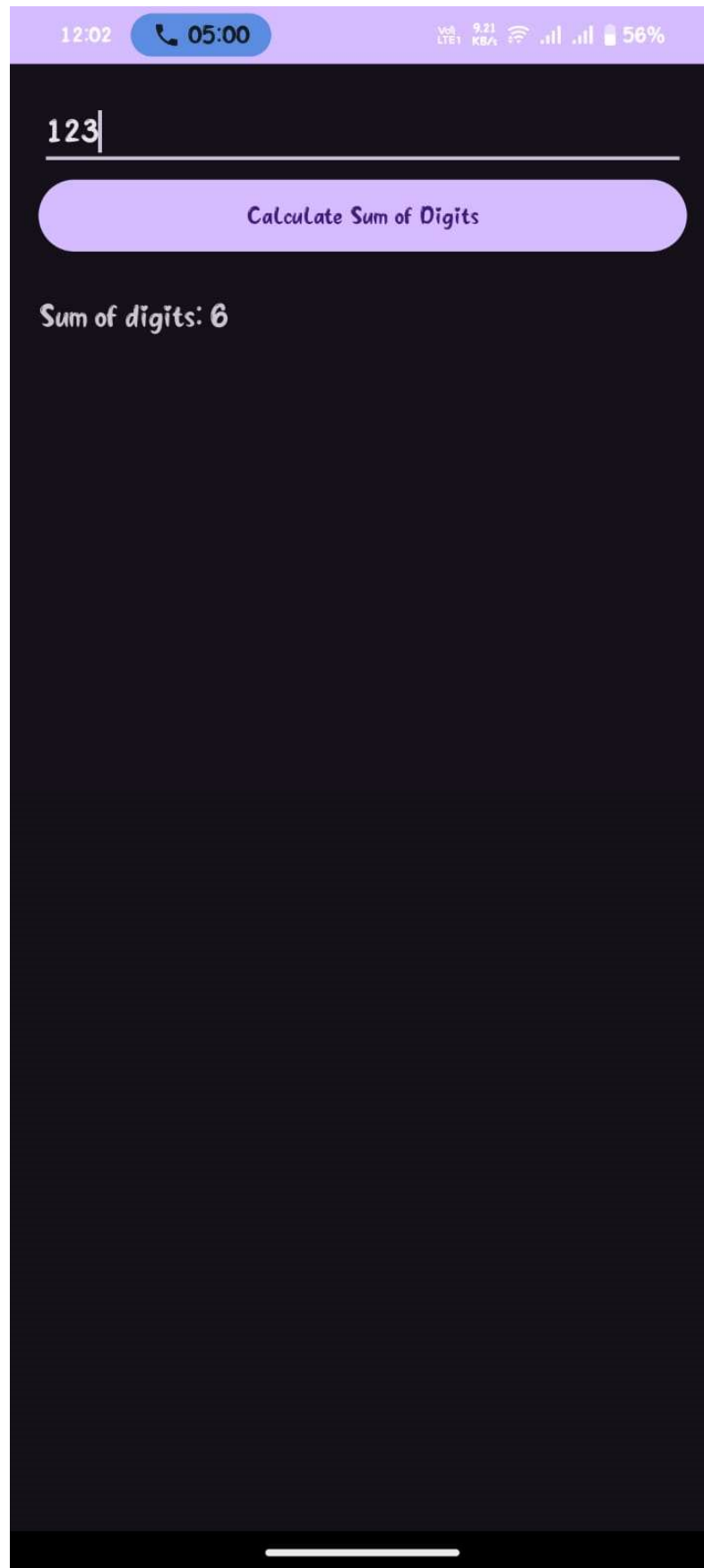
XML FILE –

```
<LinearLayout xmlns:android="h p://schemas.android.com/apk/res/android"
android:layout_width="match_parent"
android:layout_height="match_parent"
android:orienta on="ver cal"
android:padding="16dp">
<EditText
android:id="@+id/inputNumber"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:hint="Enter a number"
android:inputType="number" />
<Bu on
android:id="@+id/btnCalculate"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:text="Calculate Sum of Digits" />
<TextView
android:id="@+id/txtResult"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:text="Result will be displayed here"
android:textSize="18sp"
android:paddingTop="20dp" />
</LinearLayout>
```

CODE FILE –

```java
package com.example.sumofdigits;
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.TextView;
public class MainActivity extends AppCompatActivity {
EditText inputNumber;
Button btnCalculate;
TextView txtResult;
@Override
protected void onCreate(Bundle savedInstanceState) {
super.onCreate(savedInstanceState);
setContentView(R.layout.activity_main);
inputNumber = findViewById(R.id.inputNumber);
btnCalculate = findViewById(R.id.btnCalculate);
txtResult = findViewById(R.id.txtResult);
btnCalculate.setOnClickListener(new View.OnClickListener() {
@Override
public void onClick(View v) {
String input = inputNumber.getText().toString();
if (!input.isEmpty()) {
int number = Integer.parseInt(input);
int sum = calculateSumOfDigits(number);
txtResult.setText("Sum of digits: " + sum);
} else {
txtResult.setText("Please enter a number");
}
}
});
}
private int calculateSumOfDigits(int number) {
int sum = 0;
while (number != 0) {
sum += number % 10;
number /= 10;
}
return sum;
}
}
```

OUTPUT :

Assignment 08 :

Write an android app to develop a calculator with basic operations.

XML FILE –

```xml
<LinearLayout
    xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical"
    android:padding="16dp"
    android:gravity="center">

    <!-- Display Screen -->
    <EditText
        android:id="@+id/resultScreen"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="0"
        android:textSize="36sp"
        android:inputType="none"
        android:gravity="end|center_vertical"
        android:focusable="false"
        android:editable="false" />

    <!-- Calculator Buttons -->
    <GridLayout
        android:layout_width="match_parent"
        android:layout_height="0dp"
        android:layout_weight="1"
        android:columnCount="4"
        android:rowCount="5"
        android:padding="8dp">

        <!-- Row 1 -->
        <Button
            android:id="@+id/button7"
            android:text="7"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
```

```xml
        android:textSize="24sp" />
<Button
    android:id="@+id/button8"
    android:text="8"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:textSize="24sp" />
<Button
    android:id="@+id/button9"
    android:text="9"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:textSize="24sp" />
<Button
    android:id="@+id/buttonDivide"
    android:text="/"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:textSize="24sp" />

<!-- Row 2 -->
<Button
    android:id="@+id/button4"
    android:text="4"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:textSize="24sp" />
<Button
    android:id="@+id/button5"
    android:text="5"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:textSize="24sp" />
<Button
    android:id="@+id/button6"
    android:text="6"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
```

```xml
    android:textSize="24sp" />
<Button
    android:id="@+id/buttonMultiply"
    android:text="*"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:textSize="24sp" />

<!-- Row 3 -->
<Button
    android:id="@+id/button1"
    android:text="1"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:textSize="24sp" />
<Button
    android:id="@+id/button2"
    android:text="2"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:textSize="24sp" />
<Button
    android:id="@+id/button3"
    android:text="3"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:textSize="24sp" />
<Button
    android:id="@+id/buttonSubtract"
    android:text="-"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:textSize="24sp" />

<!-- Row 4 -->
<Button
    android:id="@+id/button0"
    android:text="0"
```

```xml
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:textSize="24sp" />
        <Button
            android:id="@+id/buttonClear"
            android:text="C"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:textSize="24sp" />
        <Button
            android:id="@+id/buttonEquals"
            android:text="="
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:textSize="24sp" />
        <Button
            android:id="@+id/buttonAdd"
            android:text="+"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:textSize="24sp" />
    </GridLayout>
</LinearLayout>
```

CODE FILE –

```java
package com.example.basiccalculatorapp;

import android.os.Bundle;
import android.view.View;
import android.widget.*;
import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {

    private String currentInput = "";
    private String previousInput = "";
    private String operator = "";

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

        EditText resultScreen = findViewById(R.id.resultScreen);

        // Number button click listeners
        findViewById(R.id.button0).setOnClickListener(v -> appendNumber("0",
resultScreen));
        findViewById(R.id.button1).setOnClickListener(v -> appendNumber("1",
resultScreen));
        findViewById(R.id.button2).setOnClickListener(v -> appendNumber("2",
resultScreen));
        findViewById(R.id.button3).setOnClickListener(v -> appendNumber("3",
resultScreen));
        findViewById(R.id.button4).setOnClickListener(v -> appendNumber("4",
resultScreen));
        findViewById(R.id.button5).setOnClickListener(v -> appendNumber("5",
resultScreen));
        findViewById(R.id.button6).setOnClickListener(v -> appendNumber("6",
resultScreen));
        findViewById(R.id.button7).setOnClickListener(v -> appendNumber("7",
resultScreen));
```

```java
        findViewById(R.id.button8).setOnClickListener(v -> appendNumber("8",
resultScreen));
        findViewById(R.id.button9).setOnClickListener(v -> appendNumber("9",
resultScreen));

        // Operator button click listeners
        findViewById(R.id.buttonAdd).setOnClickListener(v -> setOperator("+"));
        findViewById(R.id.buttonSubtract).setOnClickListener(v -> setOperator("-"));
        findViewById(R.id.buttonMultiply).setOnClickListener(v -> setOperator("*"));
        findViewById(R.id.buttonDivide).setOnClickListener(v -> setOperator("/"));

        // Clear button click listener
        findViewById(R.id.buttonClear).setOnClickListener(v -> clear(resultScreen));

        // Equals button click listener
        findViewById(R.id.buttonEquals).setOnClickListener(v -> calculate(resultScreen));
    }

    private void appendNumber(String number, EditText resultScreen) {
        currentInput += number;
        resultScreen.setText(currentInput);
    }

    private void setOperator(String op) {
        if (!currentInput.isEmpty()) {
            previousInput = currentInput;
            currentInput = "";
            operator = op;
        }
    }

    private void clear(EditText resultScreen) {
        currentInput = "";
        previousInput = "";
        operator = "";
        resultScreen.setText("0");
    }
```

```java
private void calculate(EditText resultScreen) {
    if (!previousInput.isEmpty() && !currentInput.isEmpty()) {
        double num1 = Double.parseDouble(previousInput);
        double num2 = Double.parseDouble(currentInput);
        double result = 0;

        switch (operator) {
            case "+":
                result = num1 + num2;
                break;
            case "-":
                result = num1 - num2;
                break;
            case "*":
                result = num1 * num2;
                break;
            case "/":
                if (num2 != 0) {
                    result = num1 / num2;
                } else {
                    resultScreen.setText("Error");
                    return;
                }
                break;
        }

        resultScreen.setText(String.valueOf(result));
        currentInput = String.valueOf(result);
        operator = "";
        previousInput = "";
    }
}
```

OUTPUT :
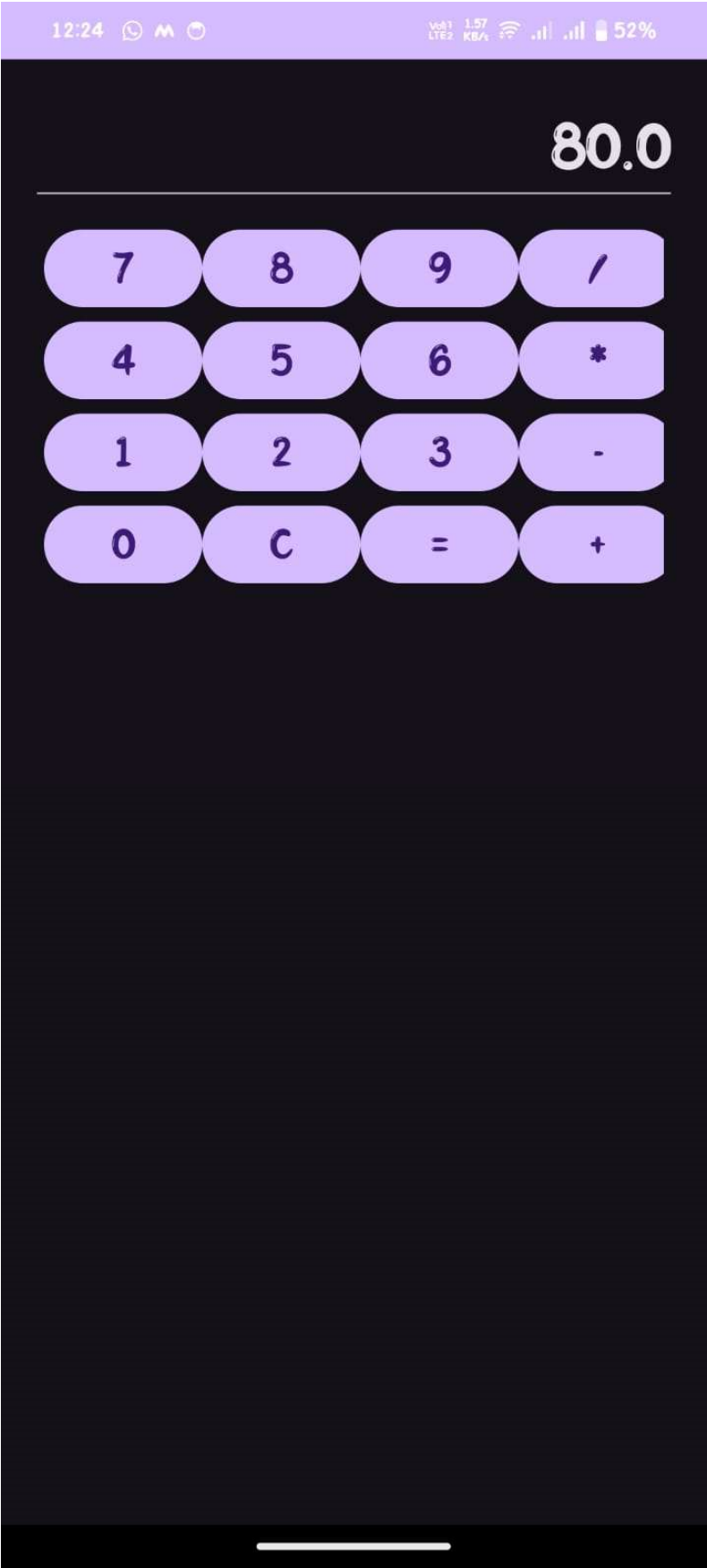
Assignment 09 :

Create an android app that will check whether given user name and password matches with the predefined user name and password.

XML FILE –

```xml
<LinearLayout
    xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical"
    android:padding="32dp"
    android:gravity="center">

    <!-- Username Input -->
    <EditText
        android:id="@+id/usernameInput"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="Enter Username"
        android:padding="16dp"
        android:textSize="18sp"
        android:inputType="text" />

    <!-- Password Input -->
    <EditText
        android:id="@+id/passwordInput"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="Enter Password"
        android:padding="16dp"
        android:textSize="18sp"
        android:inputType="textPassword"
        android:layout_marginTop="16dp" />

    <!-- Login Button -->
    <Button
        android:id="@+id/loginButton"
        android:layout_width="match_parent"
```

```xml
        android:layout_height="wrap_content"
        android:text="Login"
        android:textSize="18sp"
        android:layout_marginTop="32dp" />

    <!-- Login Result Text -->
    <TextView
        android:id="@+id/loginResult"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text=""
        android:textSize="18sp"
        android:textColor="@android:color/holo_red_dark"
        android:layout_marginTop="32dp" />

</LinearLayout>
```

CODE FILE –

```java
package com.example.loginapp;

import android.os.Bundle;
import android.view.View;
import android.widget.*;
import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {

    private static final String PREDEFINED_USERNAME = "admin";
    private static final String PREDEFINED_PASSWORD = "12345";

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

        EditText usernameInput = findViewById(R.id.usernameInput);
        EditText passwordInput = findViewById(R.id.passwordInput);
        Button loginButton = findViewById(R.id.loginButton);
        TextView loginResult = findViewById(R.id.loginResult);

        loginButton.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                String username = usernameInput.getText().toString().trim();
                String password = passwordInput.getText().toString().trim();

                if (username.equals(PREDEFINED_USERNAME) &&
password.equals(PREDEFINED_PASSWORD)) {
                    loginResult.setText("Login Successful");

loginResult.setTextColor(getResources().getColor(android.R.color.holo_green_dark));
                } else {
                    loginResult.setText("Invalid Username or Password");

loginResult.setTextColor(getResources().getColor(android.R.color.holo_red_dark));
                }
            }
        });
    }
}
```
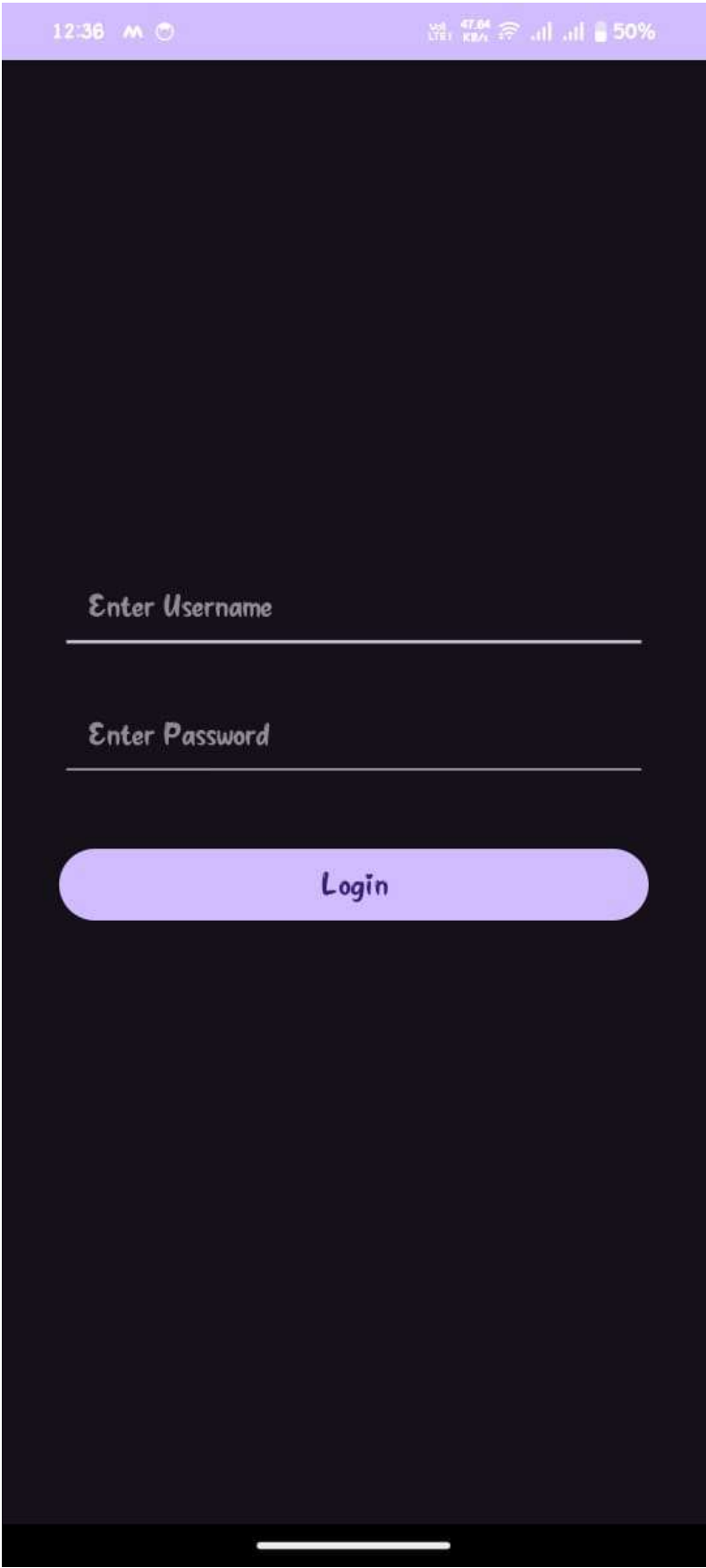
Enter Username

Enter Password

Login

Assignment 10 :
Create an android application demonstrating Toast, Intent etc.

XML FILE –
Main Activity –

```xml
<LinearLayout
    xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical"
    android:padding="32dp"
    android:gravity="center">

    <!-- Button to show Toast -->
    <Button
        android:id="@+id/toastButton"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Show Toast"
        android:textSize="18sp" />

    <!-- EditText to input data -->
    <EditText
        android:id="@+id/editTextData"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="Enter data to send"
        android:padding="16dp"
        android:textSize="18sp"
        android:layout_marginTop="16dp" />

    <!-- Button to navigate to the second activity -->
    <Button
        android:id="@+id/intentButton"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Go to Second Activity"
        android:textSize="18sp"
        android:layout_marginTop="32dp" />

</LinearLayout>
```

Second Activity –

```xml
<LinearLayout
    xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical"
    android:padding="32dp"
    android:gravity="center">

    <!-- TextView to display passed data -->
    <TextView
        android:id="@+id/receivedDataTextView"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Data will be displayed here"
        android:textSize="18sp" />
</LinearLayout>
```

CODE FILE –
MainActivity.java

```java
package com.example.demoapp;

import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.*;

import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {

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

        // Button to show Toast
        Button toastButton = findViewById(R.id.toastButton);
        toastButton.setOnClickListener(v -> {
            Toast.makeText(MainActivity.this, "This is a Toast message!",
Toast.LENGTH_SHORT).show();
        });

        // EditText to enter data
        EditText editTextData = findViewById(R.id.editTextData);

        // Button to navigate to SecondActivity
        Button intentButton = findViewById(R.id.intentButton);
        intentButton.setOnClickListener(v -> {
            String dataToSend = editTextData.getText().toString();

            // Check if the EditText is not empty
            if (!dataToSend.isEmpty()) {
                Intent intent = new Intent(MainActivity.this, SecondActivity.class);
                intent.putExtra("dataKey", dataToSend);  // Pass data using Intent
                startActivity(intent);
            } else {
                Toast.makeText(MainActivity.this, "Please enter some data",
Toast.LENGTH_SHORT).show();
            }
```

```
        });
    }
}
```

SecondActivity.java

```java
package com.example.demoapp;

import android.os.Bundle;
import android.widget.TextView;
import androidx.appcompat.app.AppCompatActivity;

public class SecondActivity extends AppCompatActivity {

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

        // Retrieve the data passed from the main activity
        String receivedData = getIntent().getStringExtra("dataKey");

        // Display the received data
        TextView receivedDataTextView = findViewById(R.id.receivedDataTextView);
        receivedDataTextView.setText(receivedData);
    }
}
```

OUTPUT :