

MOBILE APPLICATION DEVELOPMENT LAB

(20MCA243)

LAB RECORD

Submitted in partial fulfilment of the requirements for the award of the degree of Master of Computer Applications of A P J Abdul Kalam Technological University, Kerala.

Submitted by:

SREYAS SATHEESH (SJC23MCA-2053)



**MASTER OF COMPUTER APPLICATIONS
ST. JOSEPH'S COLLEGE OF ENGINEERING AND
TECHNOLOGY, PALAI**

CHOONDACHERRY P.O, KOTTAYAM

KERALA

November 2024

ST. JOSEPH' S COLLEGE OF ENGINEERING AND TECHNOLOGY, PALAI

(An ISO 9001: 2015 Certified College)

CHOONDACHERRY P.O, KOTTAYAM, KERALA



CERTIFICATE

This is to certify that the Mobile Application Development Lab Record (20MCA243) submitted by **Sreyas Satheesh**, student of **Third** semester **MCA** at **ST. JOSEPH'S COLLEGE OF ENGINEERING AND TECHNOLOGY, PALAI** in partial fulfilment for the award of Master of Computer Applications is a bonafide record of the lab work carried out by him under our guidance and supervision. This record in any form has not been submitted to any other University or Institute for any purpose.

Dr. Rahul Shajan

Associate Professor
(Head, Department of
Computer Applications)

Ms. Jeena Maria Sebastian

Assistant Professor,
Dept. of Computer Applications
(Faculty In-Charge)

Submitted for the End Semester Examination held on _____

Examiner 1:

Examiner 2:

DECLARATION

I Sreyas Satheesh, do hereby declare that the Mobile Application Development Lab Record (20MCA243) is a record of work carried out under the guidance of Ms. Jeena Maria Sebastian, Asst. Professor, Department of Computer Applications, SJCTET, Palai as per the requirement of the curriculum of Master of Computer Applications Programme of A P J Abdul Kalam Technology University, Thiruvananthapuram. Further, I also declare that this record has not been submitted, full or part thereof, in any University / Institution for the award of any Degree / Diploma.

Place : Choondacherry

SREYAS SATHEESH

Date :

(SJC23MCA-2053)

DEPARTMENT OF COMPUTER APPLICATIONS

VISION

To emerge as a center of excellence in the field of computer education with distinct identity and quality in all areas of its activities and develop a new generation of computer professionals with proper leadership, commitment and moral values.

MISSION

- Provide quality education in Computer Applications and bridge the gap between the academia and industry.
- Promoting innovation research and leadership in areas relevant to the socio economic progress of the country.
- Develop intellectual curiosity and a commitment to lifelong learning instudents, with societal and environmental concerns.

COURSE OUTCOMES

After the completion of the course 20MCA243 Mobile Application Development Lab the student will be able to :

CO 1	Design and develop user interfaces for mobile apps using basic building blocks, UI components and application structure using Emulator	K3 (Apply)
CO 2	Write simple programs and develop small applications using the concepts of UI design, layouts and preferences	K3 (Apply)
CO 3	Develop applications with multiple activities using intents, array adapter, exceptions and options menu.	K3 (Apply)
CO 4	Implement activities with dialogs, spinner, fragments and navigation drawer by applying themes	K3 (Apply)
CO 5	Develop mobile applications using SQLite.	K3 (Apply)

CONTENT

Sl. No.	Program List	Page No.	Date	Remarks
1	Write a program to change text on button click	1	25-07-2024	
2	Write a program to toast text on button click	4	08-08-2024	
3	Write a program to change background color on button click	7	21-08-2024	
4	Design a Login Form with username and password using Constraint Layout and toast valid credentials	10	22-08-2024	
5	Write a program that demonstrates Activity Lifecycle.	14	29-08-2024	
6	Implementing basic arithmetic operations of a simple calculator	18	04-09-2024	
7	Implement Intent to navigate between multiple pages	24	05-09-2024	
8	Design a registration activity and store registration details in local memory of phone using Intents and Shared Preferences	30	12-09-2024	
9	Write a program to open Facebook page on button click	42	25-09-2024	
10	Design a Login Form with username and password using Linear Layout	45	03-10-2024	
11	Design a Login Form with username and password using Relative Layout	48	09-10-2024	
12	Develop an application that uses ArrayAdapter with List View	51	16-10-2024	
13	Develop an application that uses ArrayAdapter with Grid View	54	17-10-2024	
14	Create database using SQLite and perform INSERT, SELECT, UPDATE and DELETE	57	23-10-2024	

PROGRAM 1:**Write a program to change text on button click****Code :****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/main"
android:layout_width="match_parent"
android:layout_height="match_parent"
tools:context=".MainActivity">

<TextView
    android:id="@+id/t1"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginStart="50dp"
    android:layout_marginTop="20dp"
    android:layout_marginEnd="50dp"
    android:text="Hello World!"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.529"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/button"
    app:layout_constraintVertical_bias="0.11" />

<EditText
    android:id="@+id/e1"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginStart="50dp"
    android:layout_marginTop="228dp"
    android:layout_marginEnd="50dp"
    android:ems="10"
    android:hint="enter the text"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent"
```

```
app:layout_constraintTop_toTopOf="parent" />

<Button
    android:id="@+id/button"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginStart="50dp"
    android:layout_marginTop="35dp"
    android:layout_marginEnd="50dp"
    android:onClick="view"
    android:text="Button"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/e1" />

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

MainActivity.java:

```
package com.example.toastmessage;

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

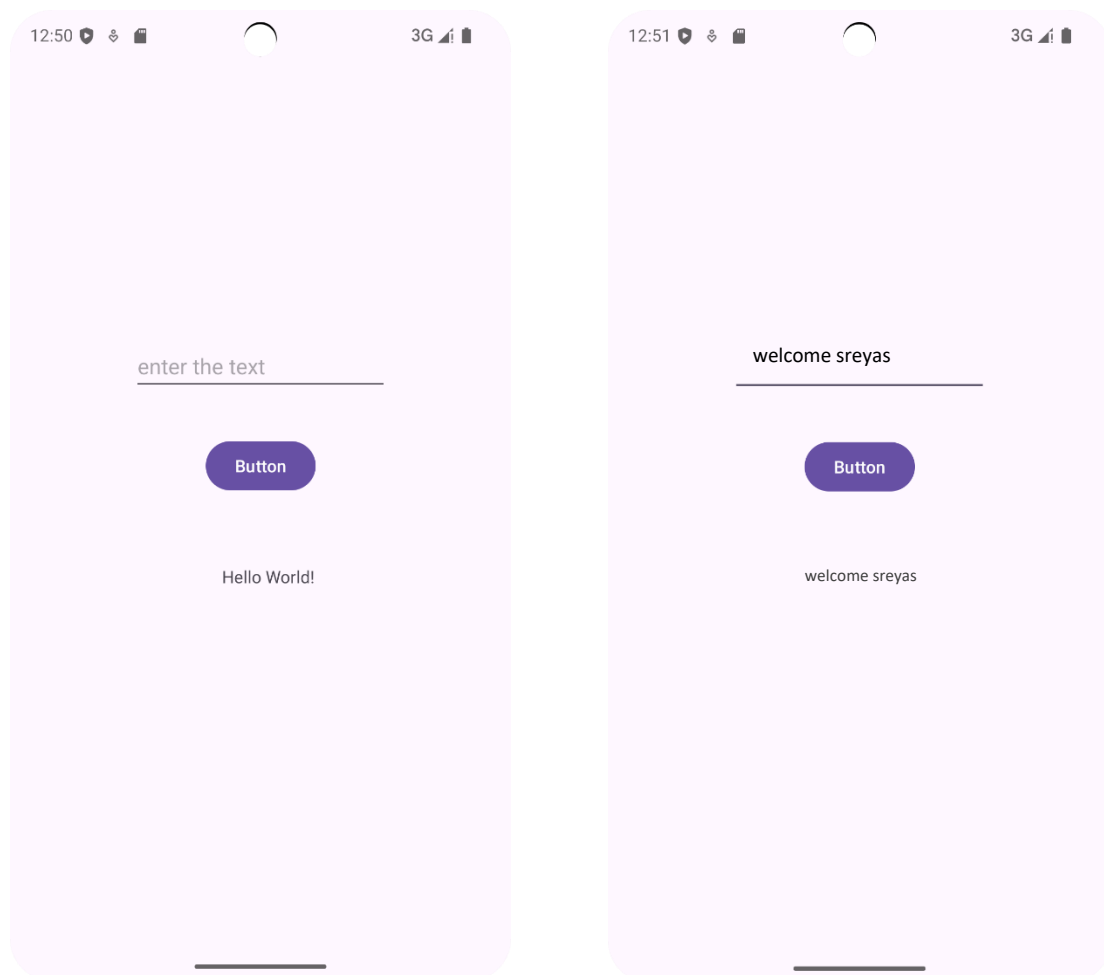
import androidx.activity.EdgeToEdge;
import androidx.appcompat.app.AppCompatActivity;
import androidx.core.graphics.Insets;
import androidx.core.view.ViewCompat;
import androidx.core.view.WindowInsetsCompat;

public class MainActivity extends AppCompatActivity {
    private EditText t1;
    private TextView tv;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        EdgeToEdge.enable(this);
        setContentView(R.layout.activity_main);

        ViewCompat.setOnApplyWindowInsetsListener(findViewById(R.id.main), (v, insets) -> {
            Insets systemBars =
            insets.getInsets(WindowInsetsCompat.Type.systemBars());
```

```
        v.setPadding(systemBars.left, systemBars.top, systemBars.right,
systemBars.bottom);
        return insets;
    });
    t1 = findViewById(R.id.e1);
    tv = findViewById(R.id.t1);
}

public void view(View view) {
    tv.setText(t1.getText().toString());
}
}
```

Output :

PROGRAM 2:**Write a program to toast text on button click****Code :****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/main"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity">

    <Button
        android:id="@+id/button"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginStart="20dp"
        android:layout_marginTop="28dp"
        android:layout_marginEnd="20dp"
        android:text="click here"
        android:onClick="click"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/editTextText" />

    <EditText
        android:id="@+id/editTextText"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginStart="20dp"
        android:layout_marginTop="205dp"
        android:layout_marginEnd="20dp"
        android:ems="10"
        android:hint="Enter text"
        android:inputType="text"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />
```

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

MainActivity.java:

```
package com.example.toast;

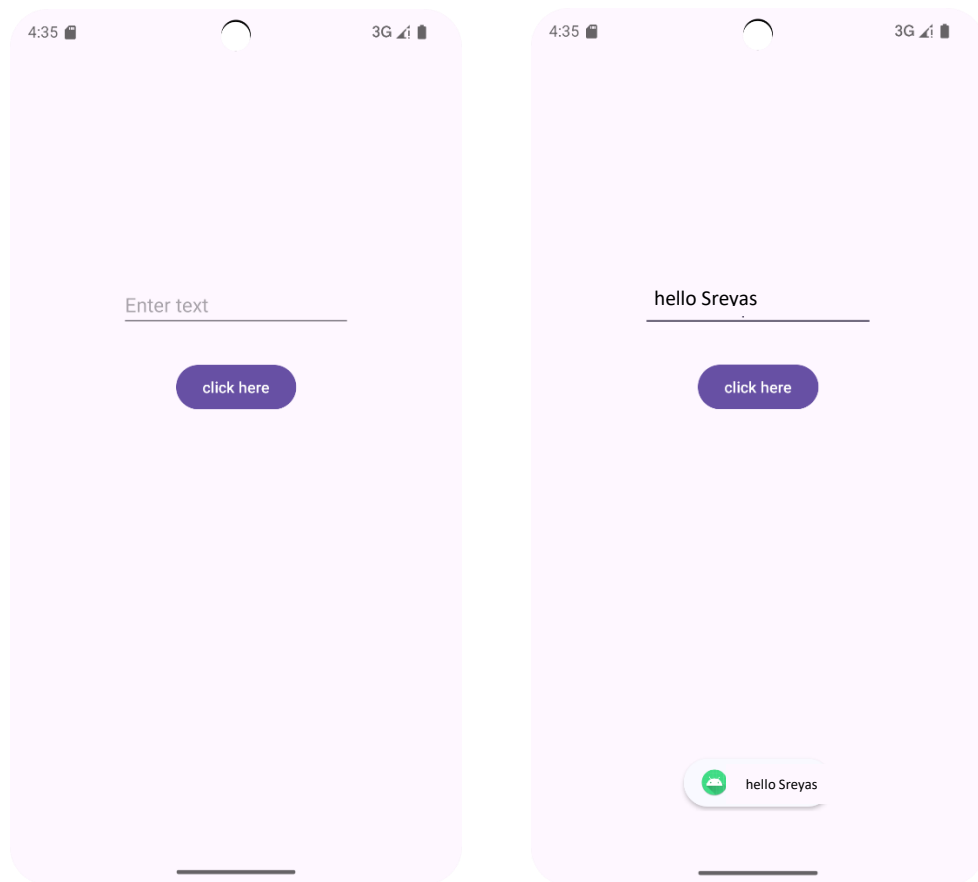
import android.os.Bundle;
import android.view.View;
import android.widget.EditText;
import android.widget.Toast;

import androidx.activity.EdgeToEdge;
import androidx.appcompat.app.AppCompatActivity;
import androidx.core.graphics.Insets;
import androidx.core.view.ViewCompat;
import androidx.core.view.WindowInsetsCompat;

    public class MainActivity extends AppCompatActivity {
        private EditText t1;
        @Override
        protected void onCreate(Bundle savedInstanceState) {
            super.onCreate(savedInstanceState);
            EdgeToEdge.enable(this);
            setContentView(R.layout.activity_main);

            ViewCompat.setOnApplyWindowInsetsListener(findViewById(R.id.main),
            (v, insets) -> {
                Insets systemBars =
            insets.getInsets(WindowInsetsCompat.Type.systemBars());
                v.setPadding(systemBars.left, systemBars.top, systemBars.right,
            systemBars.bottom);
                return insets;
            });
            t1 = findViewById(R.id.editTextText);
        }

        public void click(View view) {
            String s1=t1.getText().toString();
            Toast.makeText(this, s1, Toast.LENGTH_SHORT).show();
        }
    }
```

Output :

PROGRAM 3:

Write a program to change background color on button click

Code :

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/main"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity">

    <Button
        android:id="@+id/button"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginStart="151dp"
        android:layout_marginTop="287dp"
        android:layout_marginEnd="169dp"
        android:text="Click here to change background"
        android:onClick="colorchange"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

MainActivity.java:

```
package com.example.randomcolor;

import android.graphics.Color;
import android.os.Bundle;
import android.view.View;

import androidx.activity.EdgeToEdge;
import androidx.appcompat.app.AppCompatActivity;
import androidx.constraintlayout.widget.ConstraintLayout;
```

```
import androidx.core.graphics.Insets;
import androidx.core.view.ViewCompat;
import androidx.core.view.WindowInsetsCompat;

import java.util.Random;

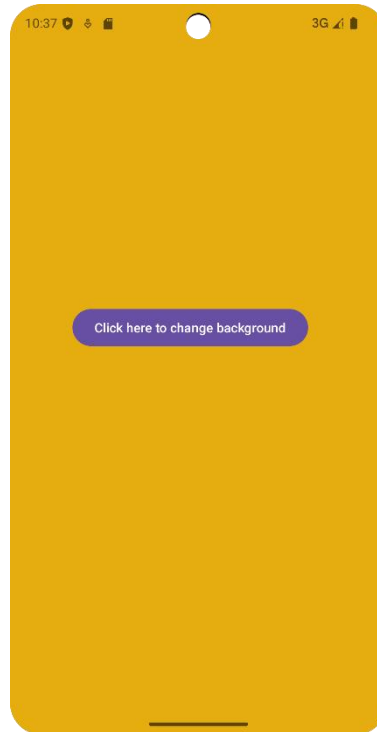
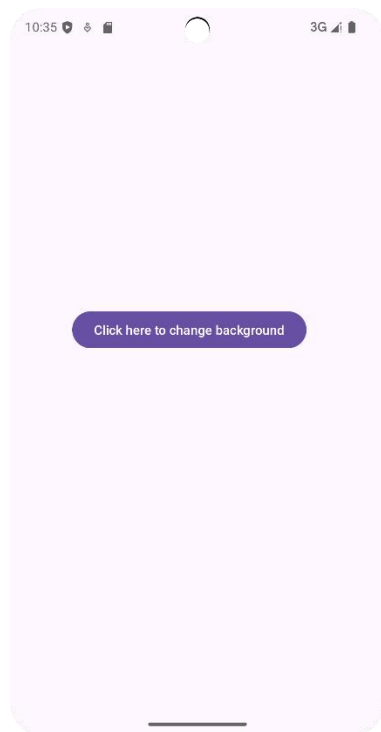
public class MainActivity extends AppCompatActivity {

    private ConstraintLayout b1;

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

        ViewCompat.setOnApplyWindowInsetsListener(findViewById(R.id.main), (v,
insets) -> {
            Insets systemBars =
insets.getInsets(WindowInsetsCompat.Type.systemBars());
            v.setPadding(systemBars.left, systemBars.top, systemBars.right,
systemBars.bottom);
            return insets;
        });
        // Initialize the ConstraintLayout
        b1 = findViewById(R.id.main);
    }

    public void colorchange(View view) {
        Random random = new Random();
        int red = random.nextInt(256); // Use 256 to include 255
        int green = random.nextInt(256); // Use 256 to include 255
        int blue = random.nextInt(256); // Use 256 to include 255
        b1.setBackgroundColor(Color.rgb(red, green, blue));
    }
}
```

Output :

PROGRAM 4:

Design a Login Form with username and password using Constraint Layout and toast valid credentials

Code :

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/main"
android:layout_width="match_parent"
android:layout_height="match_parent"
tools:context=".MainActivity">

    <EditText
        android:id="@+id/ed1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginStart="20dp"
        android:layout_marginTop="100dp"
        android:layout_marginEnd="20dp"
        android:ems="10"
        android:hint="Username"
        android:inputType="text"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />

    <EditText
        android:id="@+id/ed2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginStart="20dp"
        android:layout_marginTop="20dp"
        android:layout_marginEnd="20dp"
        android:ems="10"
        android:hint="Password"
        android:inputType="text"
```

```
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toBottomOf="@+id/ed1" />

<Button
    android:id="@+id/button"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginStart="108dp"
    android:layout_marginTop="48dp"
    android:text="login"
    android:onClick="login"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/ed2" />

<Button
    android:id="@+id/button2"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginTop="48dp"
    android:layout_marginEnd="112dp"
    android:text="cancel"
    android:onClick="cancel"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/ed2" />

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

MainActivity.java:

```
package com.example.login;

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

import androidx.activity.EdgeToEdge;
import androidx.appcompat.app.AppCompatActivity;
import androidx.core.graphics.Insets;
import androidx.core.view.ViewCompat;
import androidx.core.view.WindowInsetsCompat;

public class MainActivity extends AppCompatActivity {
```



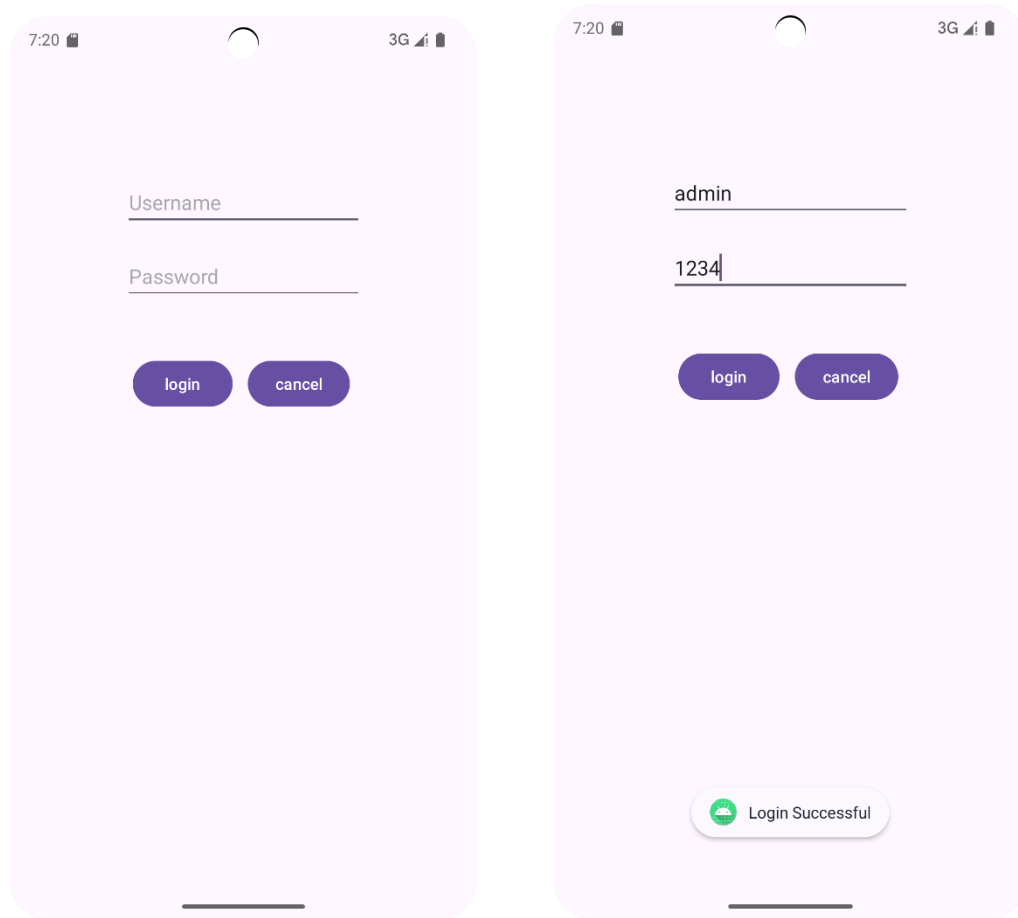
```
private EditText o1;
private EditText o2;
private TextView v1;
@Override
protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    EdgeToEdge.enable(this);
    setContentView(R.layout.activity_main);

    ViewCompat.setOnApplyWindowInsetsListener(findViewById(R.id.main), (v,
insets) -> {
        Insets systemBars =
insets.getInsets(WindowInsetsCompat.Type.systemBars());
        v.setPadding(systemBars.left, systemBars.top, systemBars.right,
systemBars.bottom);
        return insets;
    });
    o1 = findViewById(R.id.ed1);
    o2 = findViewById(R.id.ed2);
}

public void login(View view) {
    String username = o1.getText().toString();
    String password = o2.getText().toString();
    if (isValidCredentials(username, password)) {
        Toast.makeText(this, "Login Successful", Toast.LENGTH_SHORT).show();
    } else {
        Toast.makeText(this, "Invalid credentials", Toast.LENGTH_SHORT).show();
    }
}

public void cancel(View view) {
    o1.setText("");
    o2.setText("");
}

private boolean isValidCredentials(String username, String password) {
    return username.equals("admin") && password.equals("1234");
}
}
```

Output :

PROGRAM 5:

Write a program that demonstrates Activity Lifecycle.

Code :

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/main"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity">

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Hello World!"
        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.activity;

import android.os.Bundle;
import android.util.Log;
import android.widget.Toast;

import androidx.activity.EdgeToEdge;
import androidx.appcompat.app.AppCompatActivity;
import androidx.core.graphics.Insets;
import androidx.core.view.ViewCompat;
import androidx.core.view.WindowInsetsCompat;

public class MainActivity extends AppCompatActivity {
```

```
private static final String TAG = "LifecycleExample";
@Override
protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    EdgeToEdge.enable(this);
    setContentView(R.layout.activity_main);

    ViewCompat.setOnApplyWindowInsetsListener(findViewById(R.id.main),
    (v, insets) -> {
        Insets systemBars =
    insets.getInsets(WindowInsetsCompat.Type.systemBars());
        v.setPadding(systemBars.left, systemBars.top, systemBars.right,
    systemBars.bottom);
        return insets;
    });

    Log.d(TAG, "On create called");
    Toast.makeText(this, "Activity Created", Toast.LENGTH_SHORT).show();
}

@Override
protected void onStart() {
    super.onStart();
    Log.d(TAG, "onStart called");
    Toast.makeText(this, "Activity Started", Toast.LENGTH_SHORT).show();
}

@Override
protected void onResume() {
    super.onResume();
    Log.d(TAG, "onResume called");
    Toast.makeText(this, "Activity Resumed", Toast.LENGTH_SHORT).show();
}

@Override
protected void onPause() {
    super.onPause();
    Log.d(TAG, "onPause called");
    Toast.makeText(this, "Activity Paused", Toast.LENGTH_SHORT).show();
}

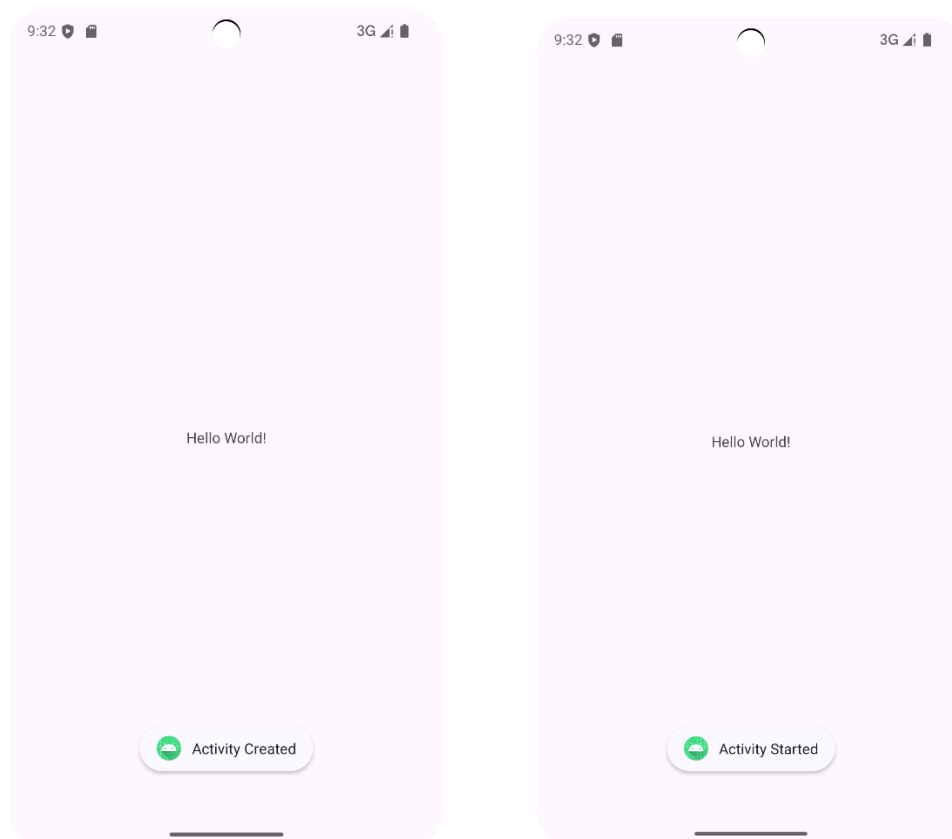
@Override
protected void onStop() {
    super.onStop();
    Log.d(TAG, "onStop called");
    Toast.makeText(this, "Activity Stopped", Toast.LENGTH_SHORT).show();
}
```

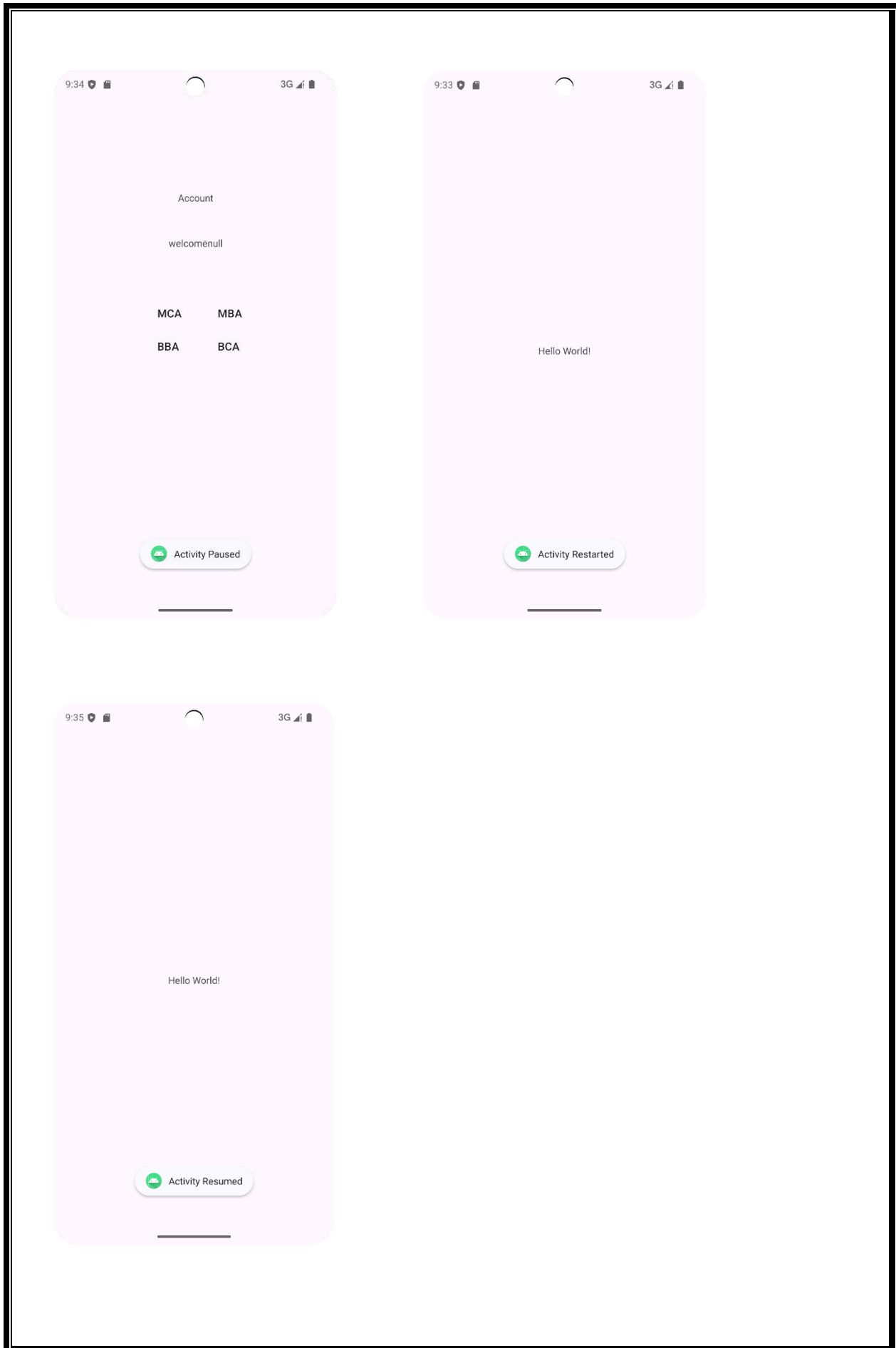
```
}

@Override
protected void onRestart() {
    super.onRestart();
    Log.d(TAG, "onRestart called");
    Toast.makeText(this, "Activity Restarted", Toast.LENGTH_SHORT).show();
}

@Override
protected void onDestroy() {
    super.onDestroy();
    Log.d(TAG, "onDestroy called");
    Toast.makeText(this, "Activity Destroyed", Toast.LENGTH_SHORT).show();
}
}
```

Output :





PROGRAM 6:**Implementing basic arithmetic operations of a simple calculator****Code :****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/main"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity">

    <TextView
        android:id="@+id/t1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginStart="25dp"
        android:layout_marginTop="236dp"
        android:layout_marginEnd="25dp"
        android:text="result"
        app:layout_constraintEnd_toStartOf="@+id/button2"
        app:layout_constraintHorizontal_bias="1.0"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/e2" />

    <EditText
        android:id="@+id/e1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginStart="50dp"
        android:layout_marginTop="120dp"
        android:layout_marginEnd="50dp"
        android:ems="10"
        android:hint="enter number 1 :"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.504"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />
```

```
<EditText
    android:id="@+id/e2"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginStart="50dp"
    android:layout_marginTop="20dp"
    android:layout_marginEnd="50dp"
    android:ems="10"
    android:hint="enter number 2 :."
    android:inputType="text"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/e1" />
```

```
<Button
    android:id="@+id/button"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginStart="20dp"
    android:layout_marginTop="40dp"
    android:layout_marginEnd="20dp"
    android:text="+"
    android:onClick="add"
    app:layout_constraintEnd_toStartOf="@+id/button2"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/e2" />
```

```
<Button
    android:id="@+id/button2"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginStart="20dp"
    android:layout_marginTop="40dp"
    android:layout_marginEnd="20dp"
    android:text="-"
    android:onClick="subtract"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toEndOf="@+id/button"
    app:layout_constraintTop_toBottomOf="@+id/e2" />
```

```
<Button
    android:id="@+id/button3"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginStart="20dp"
```



```

        android:layout_marginTop="36dp"
        android:layout_marginEnd="20dp"
        android:text="*"
        android:onClick="multiply"
        app:layout_constraintEnd_toStartOf="@+id/button4"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/button" />

<Button
    android:id="@+id/button4"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginStart="20dp"
    android:layout_marginTop="36dp"
    android:layout_marginEnd="20dp"
    android:text="/"
    android:onClick="divison"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toEndOf="@+id/button3"
    app:layout_constraintTop_toBottomOf="@+id/button2" />

</androidx.constraintlayout.widget.ConstraintLayout>

```

MainActivity.java:

```

package com.example.calculator;

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

import androidx.activity.EdgeToEdge;
import androidx.appcompat.app.AppCompatActivity;
import androidx.core.graphics.Insets;
import androidx.core.view.ViewCompat;
import androidx.core.view.WindowInsetsCompat;

public class MainActivity extends AppCompatActivity {
    private EditText o1;
    private EditText o2;
    private TextView tv;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
    }
}

```

```
EdgeToEdge.enable(this);
setContentView(R.layout.activity_main);
ViewCompat.setOnApplyWindowInsetsListener(findViewById(R.id.main),
(v, insets) -> {
    Insets systemBars =
insets.getInsets(WindowInsetsCompat.Type.systemBars());
    v.setPadding(systemBars.left, systemBars.top, systemBars.right,
systemBars.bottom);
    return insets;
});
o1 = findViewById(R.id.e1);
o2 = findViewById(R.id.e2);
tv = findViewById(R.id.t1);
}
```

```
public void add(View view) {
    String s1 = o1.getText().toString();
    String s2 = o2.getText().toString();
    float num1 = Float.parseFloat(s1);
    float num2 = Float.parseFloat(s2);
    float sum = num1 + num2;
    tv.setText("result : "+Float.toString(sum));
}
```

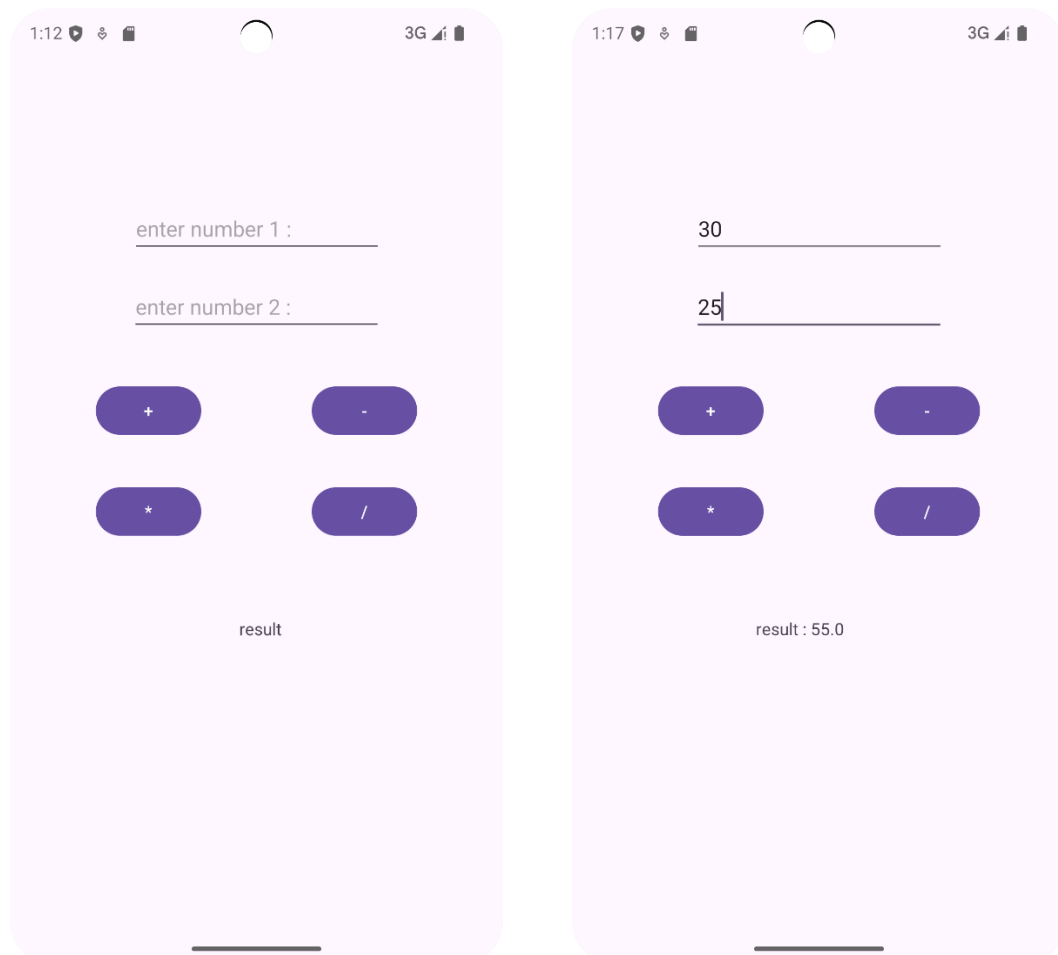
```
public void subtract(View view) {
    String s1 = o1.getText().toString();
    String s2 = o2.getText().toString();
    float num1 = Float.parseFloat(s1);
    float num2 = Float.parseFloat(s2);
    float sub = num1 - num2;
    tv.setText("result : "+Float.toString(sub));
}
```

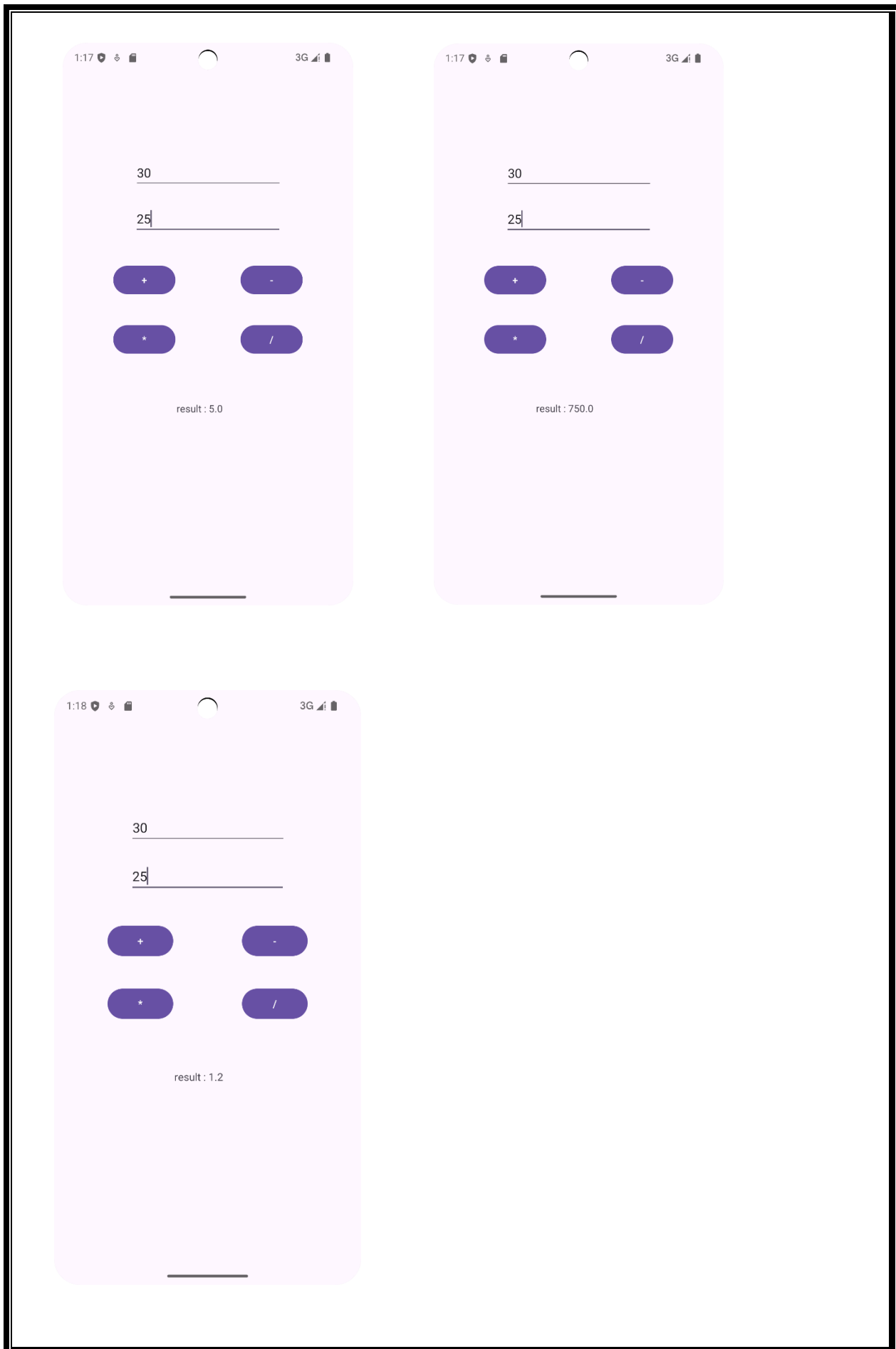
```
public void multiply(View view) {
    String s1 = o1.getText().toString();
    String s2 = o2.getText().toString();
    float num1 = Float.parseFloat(s1);
    float num2 = Float.parseFloat(s2);
    float mul = num1 * num2;
    tv.setText("result : "+Float.toString(mul));
}
```

```
public void divison(View view) {
    String s1 = o1.getText().toString();
    String s2 = o2.getText().toString();
    float num1 = Float.parseFloat(s1);
```

```
float num2 = Float.parseFloat(s2);

if (num2 != 0) {
    float div = num1 / num2;
    tv.setText("result : "+Float.toString(div));
} else {
    tv.setText("Cannot divide by zero");
}
}
```

Output :



PROGRAM 7:**Implement Intent to navigate between multiple pages****Code :****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/main"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity">

    <EditText
        android:id="@+id/ed1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginStart="20dp"
        android:layout_marginTop="100dp"
        android:layout_marginEnd="20dp"
        android:ems="10"
        android:hint="Username"
        android:inputType="text"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />

    <EditText
        android:id="@+id/ed2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginStart="20dp"
        android:layout_marginTop="20dp"
        android:layout_marginEnd="20dp"
        android:ems="10"
        android:hint="Password"
        android:inputType="text"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
```

```
app:layout_constraintTop_toBottomOf="@+id/ed1" />

<Button
    android:id="@+id/button"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginStart="108dp"
    android:layout_marginTop="48dp"
    android:text="login"
    android:onClick="login"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/ed2" />

<Button
    android:id="@+id/button2"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginTop="48dp"
    android:layout_marginEnd="112dp"
    android:text="cancel"
    android:onClick="cancel"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/ed2" />

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

MainActivity.java:

```
package com.example.login;

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

import androidx.activity.EdgeToEdge;
import androidx.appcompat.app.AppCompatActivity;
import androidx.core.graphics.Insets;
import androidx.core.view.ViewCompat;
import androidx.core.view.WindowInsetsCompat;

public class MainActivity extends AppCompatActivity {
    private EditText o1;
```

```
private EditText o2;
private TextView v1;
@Override
protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    EdgeToEdge.enable(this);
    setContentView(R.layout.activity_main);

    ViewCompat.setOnApplyWindowInsetsListener(findViewById(R.id.main), (v, insets) -> {
        Insets systemBars =
insets.getInsets(WindowInsetsCompat.Type.systemBars());
        v.setPadding(systemBars.left, systemBars.top, systemBars.right,
systemBars.bottom);
        return insets;
    });
    o1 = findViewById(R.id.ed1);
    o2 = findViewById(R.id.ed2);
}

public void login(View view) {
    String username = o1.getText().toString();
    String password = o2.getText().toString();
    if (isValidCredentials(username, password)) {
        Toast.makeText(this, "Login Successful", Toast.LENGTH_SHORT).show();
        Intent intent = new Intent(MainActivity.this, MainActivity2.class);
        intent.putExtra("USERNAME", username);
        startActivity(intent);
    } else {
        Toast.makeText(this, "Invalid credentials", Toast.LENGTH_SHORT).show();
    }
}

public void cancel(View view) {
    o1.setText("");
    o2.setText("");
}

private boolean isValidCredentials(String username, String password) {
    return username.equals("admin") && password.equals("1234");
}
}
```

activity_main2.xml:

```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:id="@+id/main"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity2">

    <TextView
        android:id="@+id/e3"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginStart="79dp"
        android:layout_marginTop="80dp"
        android:text="TextView"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />

    <Button
        android:id="@+id/b3"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginTop="80dp"
        android:layout_marginEnd="86dp"
        android:onClick="logout"
        android:text="logout"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintTop_toTopOf="parent" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

MainActivity2.java:

```
package com.example.login;

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



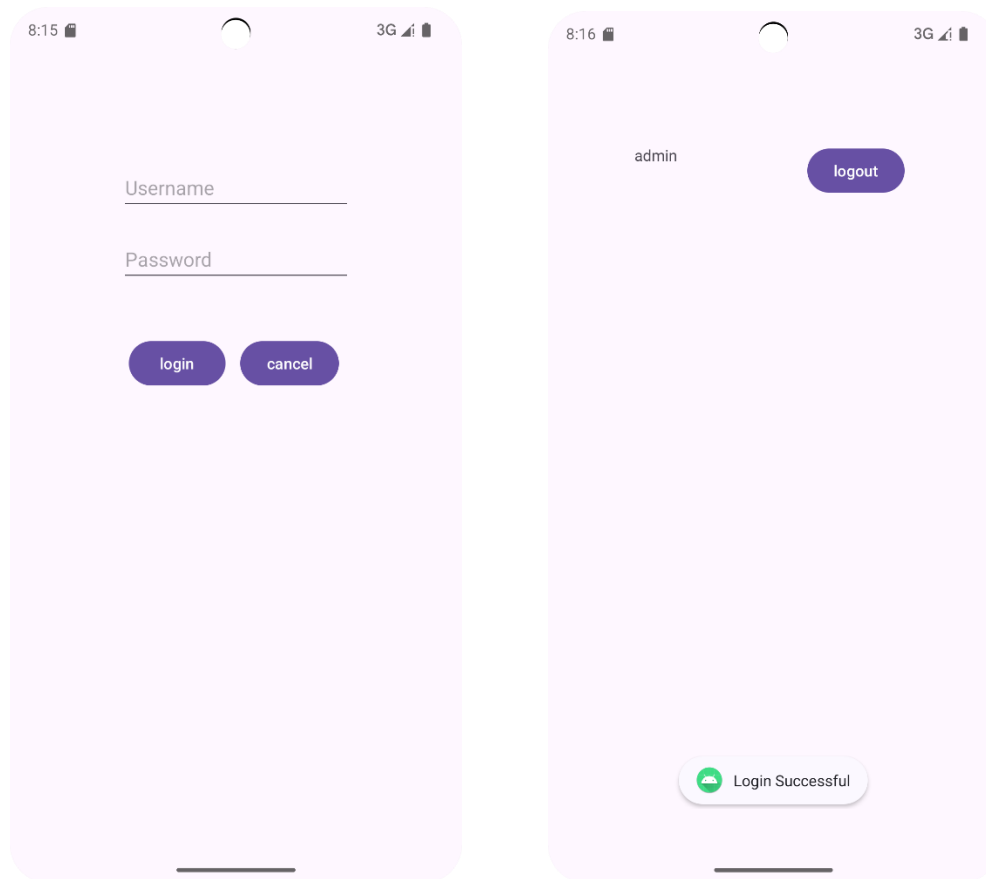
```
import androidx.activity.EdgeToEdge;
import androidx.appcompat.app.AppCompatActivity;
import androidx.core.graphics.Insets;
import androidx.core.view.ViewCompat;
import androidx.core.view.WindowInsetsCompat;

public class MainActivity2 extends AppCompatActivity {
    private TextView usernameDisplay;
    private Button logoutButton;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        EdgeToEdge.enable(this);
        setContentView(R.layout.activity_main2);

        ViewCompat.setOnApplyWindowInsetsListener(findViewById(R.id.main), (v,
insets) -> {
            Insets systemBars =
insets.getInsets(WindowInsetsCompat.Type.systemBars());
            v.setPadding(systemBars.left, systemBars.top, systemBars.right,
systemBars.bottom);
            return insets;
        });
        Intent intent = getIntent();
        String username = intent.getStringExtra("USERNAME");
        usernameDisplay = findViewById(R.id.e3);
        usernameDisplay.setText(username);

        // Set up the logout button
        logoutButton = findViewById(R.id.b3);
        logoutButton.setOnClickListener(this::logout);
    }

    public void logout(View view) {
        Intent intent = new Intent(MainActivity2.this, MainActivity.class);
        // Optional: Clear activity stack to ensure MainActivity is at the top
        intent.setFlags(Intent.FLAG_ACTIVITY_NEW_TASK |
Intent.FLAG_ACTIVITY_CLEAR_TASK);
        startActivity(intent);
        finish();
    }
}
```

Output :

PROGRAM 8:

Design a registration activity and store registration details in local memory of phone using Intents and Shared Preferences

Code :

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/main"
android:layout_width="match_parent"
android:layout_height="match_parent"
tools:context=".MainActivity">

    <EditText
        android:id="@+id/e1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginStart="10dp"
        android:layout_marginTop="84dp"
        android:layout_marginEnd="10dp"
        android:ems="10"
        android:hint="enter first name"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toEndOf="@+id/t1"
        app:layout_constraintTop_toTopOf="parent" />

    <TextView
        android:id="@+id/t2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginStart="10dp"
        android:layout_marginTop="20dp"
        android:layout_marginEnd="10dp"
        android:text="last name :."
        app:layout_constraintEnd_toStartOf="@+id/e2"
        app:layout_constraintHorizontal_bias="0.0"
        app:layout_constraintStart_toStartOf="parent"
```

```
app:layout_constraintTop_toBottomOf="@+id/t1" />

<EditText
    android:id="@+id/e2"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginStart="10dp"
    android:layout_marginTop="8dp"
    android:layout_marginEnd="10dp"
    android:ems="10"
    android:hint="enter last name"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toEndOf="@+id/t2"
    app:layout_constraintTop_toBottomOf="@+id/e1" />

<TextView
    android:id="@+id/t3"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginStart="10dp"
    android:layout_marginTop="60dp"
    android:layout_marginEnd="10dp"
    android:text="gender :"
    app:layout_constraintEnd_toStartOf="@+id/e2"
    app:layout_constraintHorizontal_bias="0.34"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/t2" />

<EditText
    android:id="@+id/e4"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginStart="10dp"
    android:layout_marginTop="30dp"
    android:layout_marginEnd="10dp"
    android:ems="10"
    android:hint="enter email id"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toEndOf="@+id/t4"
    app:layout_constraintTop_toBottomOf="@+id/radioGroup" />

<TextView
    android:id="@+id/t4"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginStart="5dp"
```

```
        android:layout_marginTop="84dp"
        android:layout_marginEnd="10dp"
        android:text="email :"
        app:layout_constraintEnd_toStartOf="@+id/e4"
        app:layout_constraintHorizontal_bias="0.254"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/t3" />

<TextView
    android:id="@+id/t5"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginStart="40dp"
    android:layout_marginTop="48dp"
    android:text="Phone No :"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/t4" />

<EditText
    android:id="@+id/e5"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginStart="10dp"
    android:layout_marginTop="20dp"
    android:layout_marginEnd="10dp"
    android:ems="10"
    android:hint="enter phone number"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toEndOf="@+id/t5"
    app:layout_constraintTop_toBottomOf="@+id/e4" />

<TextView
    android:id="@+id/t6"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginStart="10dp"
    android:layout_marginTop="36dp"
    android:layout_marginEnd="10dp"
    android:text="password :"
    app:layout_constraintEnd_toStartOf="@+id/e4"
    app:layout_constraintHorizontal_bias="0.346"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/t5" />

<EditText
    android:id="@+id/e6"
```

```
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginStart="10dp"
        android:layout_marginTop="20dp"
        android:layout_marginEnd="10dp"
        android:ems="10"
        android:hint="enter password"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toEndOf="@+id/t6"
        app:layout_constraintTop_toBottomOf="@+id/e5" />

<TextView
    android:id="@+id/t7"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginStart="20dp"
    android:layout_marginTop="56dp"
    android:layout_marginEnd="20dp"
    android:text="Date of Birth"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.041"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/t6" />

<EditText
    android:id="@+id/e7"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginStart="10dp"
    android:layout_marginTop="20dp"
    android:layout_marginEnd="10dp"
    android:ems="10"
    android:hint="enter date of birth"
    android:inputType="date"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toEndOf="@+id/t7"
    app:layout_constraintTop_toBottomOf="@+id/e6" />

<TextView
    android:id="@+id/t1"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginStart="10dp"
    android:layout_marginTop="100dp"
    android:layout_marginEnd="10dp"
    android:text="first name :"
```

```
app:layout_constraintEnd_toStartOf="@+id/e1"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent" />

<Button
    android:id="@+id/b1"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginStart="128dp"
    android:layout_marginTop="40dp"
    android:layout_marginEnd="193dp"
    android:text="Register"
    android:onClick="register"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/e7" />

<RadioGroup
    android:id="@+id/radioGroup"
    android:layout_width="232dp"
    android:layout_height="60dp"
    android:layout_marginStart="10dp"
    android:layout_marginTop="36dp"
    android:layout_marginEnd="10dp"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.882"
    app:layout_constraintStart_toEndOf="@+id/t3"
    app:layout_constraintTop_toBottomOf="@+id/e2">

    <RadioButton
        android:id="@+id/r1"
        android:layout_width="match_parent"
        android:layout_height="24dp"
        android:text="male" />

    <RadioButton
        android:id="@+id/r2"
        android:layout_width="match_parent"
        android:layout_height="36dp"
        android:text="female" />

</RadioGroup>

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

MainActivity.java:

```
package com.example.registration;

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

import android.widget.RadioGroup;
import android.widget.Toast;

import androidx.activity.EdgeToEdge;
import androidx.appcompat.app.AppCompatActivity;
import androidx.core.graphics.Insets;
import androidx.core.view.ViewCompat;
import androidx.core.view.WindowInsetsCompat;

public class MainActivity extends AppCompatActivity {
    private EditText firstNameEditText;
    private EditText lastNameEditText;
    private Button registerButton;
    private RadioGroup radioGroup;
    private EditText emailEditText;
    private EditText phoneNumberEditText;
    private EditText passwordEditText;
    private EditText dateOfBirthEditText;

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

        ViewCompat.setOnApplyWindowInsetsListener(findViewById(R.id.main), (v, insets) -> {
            Insets systemBars =
            insets.getInsets(WindowInsetsCompat.Type.systemBars());
            v.setPadding(systemBars.left, systemBars.top,
            systemBars.right, systemBars.bottom);
```



```
        return insets;
    });

    firstNameEditText = findViewById(R.id.e1);
    lastNameEditText = findViewById(R.id.e2);
    registerButton = findViewById(R.id.b1);
    radioGroup = findViewById(R.id.radioGroup);
    emailEditText = findViewById(R.id.e4);
    phoneNumberEditText = findViewById(R.id.e5);
    passwordEditText = findViewById(R.id.e6);
    dateOfBirthEditText = findViewById(R.id.e7);
}

public void register(View view) {
    clearErrors();

    String firstName = firstNameEditText.getText().toString();
    String lastName = lastNameEditText.getText().toString();
    String email = emailEditText.getText().toString();
    String phoneNumber = phoneNumberEditText.getText().toString();
    String password = passwordEditText.getText().toString();
    String dateOfBirth = dateOfBirthEditText.getText().toString();

    boolean hasError = false;
    String selectedOption = null;

    if (firstName.isEmpty()) {
        firstNameEditText.setError("First Name is required");
        hasError = true;
    }
    if (lastName.isEmpty()) {
        lastNameEditText.setError("Last Name is required");
        hasError = true;
    }

    // Check if a gender is selected
    int selectedId = radioGroup.getCheckedRadioButtonId();
    if (selectedId == -1) {
        Toast.makeText(this, "Gender is required", Toast.LENGTH_SHORT).show();
        hasError = true;
    } else {
        RadioButton selectedRadioButton = findViewById(selectedId);
        selectedOption = selectedRadioButton.getText().toString();
    }

    // Validate email
```

```
if (email.isEmpty()) {
    emailEditText.setError("Email is required");
    hasError = true;
} else if (!email.contains("@")) {
    emailEditText.setError("Email must contain '@'");
    hasError = true;
}

// Validate phone number
if (phoneNumber.isEmpty()) {
    phoneNumberEditText.setError("Phone Number is required");
    hasError = true;
} else if (!phoneNumber.matches("\\d+")) {
// Check if phone number contains only digits
    phoneNumberEditText.setError("Phone Number must contain only
    digits");
    hasError = true;
}

// Validate password
if (password.isEmpty()) {
    passwordEditText.setError("Password is required");
    hasError = true;
}

// Validate date of birth (assuming format YYYY)
if (dateOfBirth.isEmpty()) {
    dateOfBirthEditText.setError("Date of Birth is required");
    hasError = true;
}

if (hasError) return;

// Save to SharedPreferences
SharedPreferences sharedPreferences =
getSharedPreferences("UserPreferences", Context.MODE_PRIVATE);
SharedPreferences.Editor editor = sharedPreferences.edit();
editor.putString("FIRST_NAME", firstName);
editor.putString("LAST_NAME", lastName);
editor.putString("SELECTED_OPTION", selectedOption);
// Store selected option text
editor.putString("EMAIL", email);
editor.putString("PHONE_NUMBER", phoneNumber);
editor.putString("PASSWORD", password);
editor.putString("DATE_OF_BIRTH", dateOfBirth);
editor.apply();
```

```
// Start the next activity
Intent intent = new Intent(MainActivity.this, MainActivity2.class);
startActivity(intent);
}

private void clearErrors() {
    firstNameEditText.setError(null);
    lastNameEditText.setError(null);
    emailEditText.setError(null);
    phoneNumberEditText.setError(null);
    passwordEditText.setError(null);
    dateOfBirthEditText.setError(null);
}
}
```

activity_main2.xml:

```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
    xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:id="@+id/main"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity2">

    <TextView
        android:id="@+id/11"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginStart="153dp"
        android:layout_marginTop="137dp"
        android:layout_marginEnd="200dp"
        android:text="TextView"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />

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

MainActivity2.java:

```
package com.example.registration;

import android.content.Context;
import android.content.SharedPreferences;
import android.os.Bundle;
import android.widget.TextView;
import androidx.activity.EdgeToEdge;
import androidx.appcompat.app.AppCompatActivity;
import androidx.core.graphics.Insets;
import androidx.core.view.ViewCompat;
import androidx.core.view.WindowInsetsCompat;

public class MainActivity2 extends AppCompatActivity {
    private TextView displayNameTextView;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        EdgeToEdge.enable(this);
        setContentView(R.layout.activity_main2);

        ViewCompat.setOnApplyWindowInsetsListener(findViewById(R.id.main),
        (v, insets) -> {
            Insets systemBars =
insets.getInsets(WindowInsetsCompat.Type.systemBars());
            v.setPadding(systemBars.left, systemBars.top, systemBars.right,
systemBars.bottom);
            return insets;
        });

        displayNameTextView = findViewById(R.id.ll);
        SharedPreferences sharedPreferences =
getSharedPreferences("UserPreferences", Context.MODE_PRIVATE);

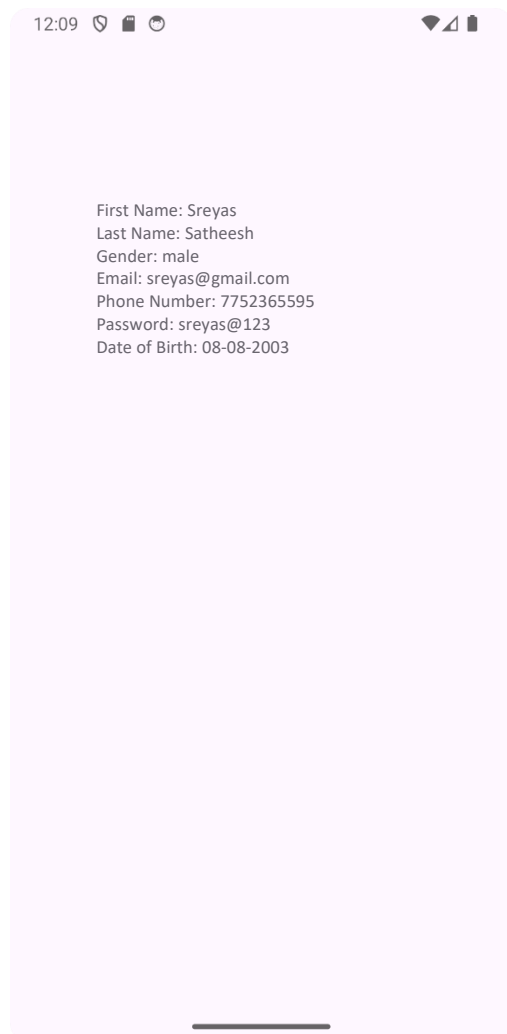
        String firstName = sharedPreferences.getString("FIRST_NAME",
"N/A");
        String lastName = sharedPreferences.getString("LAST_NAME", "N/A");
        String selectedOption =
sharedPreferences.getString("SELECTED_OPTION", "N/A");
        String email = sharedPreferences.getString("EMAIL", "N/A");
        String phoneNumber =
sharedPreferences.getString("PHONE_NUMBER", "N/A");
        String password = sharedPreferences.getString("PASSWORD", "N/A");
        String dateOfBirth = sharedPreferences.getString("DATE_OF_BIRTH",
```

```
"N/A");

displayNameTextView.setText("First Name: " + firstName + "\n" + "Last
Name: " + lastName + "\n" + "Gender: " + selectedOption + "\n" + "Email:
" + email + "\n" + "Phone Number: " + phoneNumber + "\n" + "Password:
" + password + "\n" + "Date of Birth: " + dateOfBirth);
}
}
```

Output :

The image displays two side-by-side screenshots of a mobile application's registration screen. The left screenshot, taken at 12:08, shows the form with placeholder text: 'first name : enter first name', 'last name : enter last name', 'gender : ☐ male ☐ female', 'email : enter email id', 'Phone No : enter phone number', 'password : enter password', and 'Date of Birth enter date of birth'. A purple 'Register' button is at the bottom. The right screenshot, taken at 12:09, shows the same form with data entered: 'first name : Sreyas', 'last name : Satheesh', 'gender : ☒ male ☐ female', 'email : sreyas@gmail.com', 'Phone No : 7752365595', 'password : sreyas@123', and 'Date of Birth 08-08-2003'. The purple 'Register' button remains at the bottom.



PROGRAM 9:

Write a program to open Facebook page on button click

Code :

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/main"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity">

    <Button
        android:id="@+id/button"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginStart="20dp"
        android:layout_marginTop="350dp"
        android:layout_marginEnd="20dp"
        android:onClick="fb"
        android:text="Click here"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />

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

MainActivity.java:

```
package com.example.fb;

import android.content.Intent;
import android.net.Uri;
import android.os.Bundle;
import android.view.View;

import androidx.activity.EdgeToEdge;
import androidx.appcompat.app.AppCompatActivity;
import androidx.core.graphics.Insets;
```

```
import androidx.core.view.ViewCompat;
import androidx.core.view.WindowInsetsCompat;

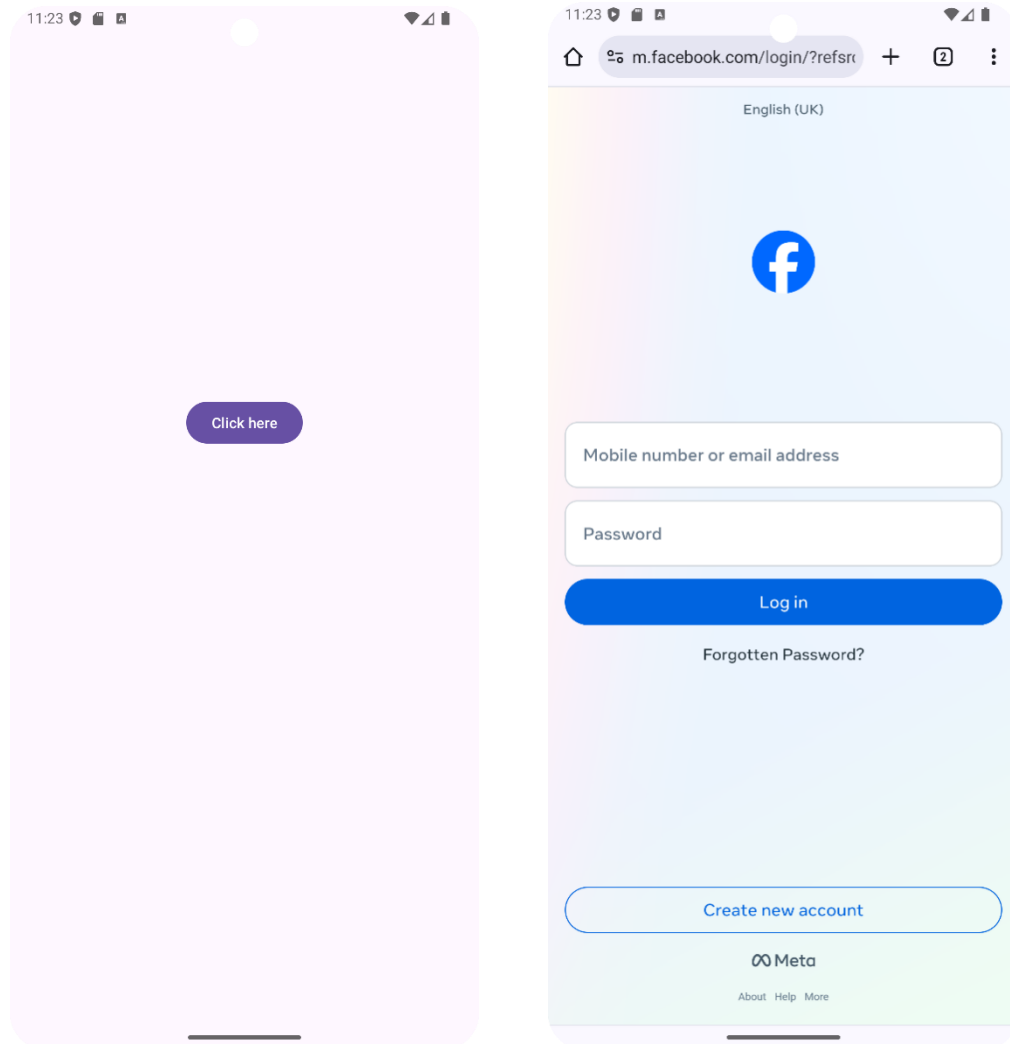
public class MainActivity extends AppCompatActivity {

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

        ViewCompat.setOnApplyWindowInsetsListener(findViewById(R.id.main),
        (v, insets) -> {
            Insets systemBars =
insets.getInsets(WindowInsetsCompat.Type.systemBars());
            v.setPadding(systemBars.left, systemBars.top, systemBars.right,
systemBars.bottom);
            return insets;
        });
    }

    public void fb(View view) {
        String url = "https://www.facebook.com/login/";

        Intent intent = new Intent(Intent.ACTION_VIEW, Uri.parse(url));
        startActivity(intent);
    }
}
```


Output :

PROGRAM 10:**Design a Login Form with username and password using Linear Layout****Code :****activity_main.xml:**

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:id="@+id/main"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical"
    android:gravity="center"
    tools:context=".MainActivity">
    <EditText
        android:id="@+id/username"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="Username"
        android:layout_marginLeft="25dp"
        android:layout_marginRight="25dp"
        android:layout_marginBottom="20dp"
        android:inputType="text"/>

    <EditText
        android:id="@+id/password"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="Password"
        android:layout_marginLeft="25dp"
        android:layout_marginRight="25dp"
        android:layout_marginTop="20dp"
        android:inputType="textPassword"/>

    <Button
        android:id="@+id/login_button"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginLeft="25dp"
        android:layout_marginRight="25dp"
```

```
        android:layout_marginTop="40dp"
        android:onClick="login"
        android:text="Login"/>
```

```
</LinearLayout>
```

MainActivity.java:

```
package com.example.lin;

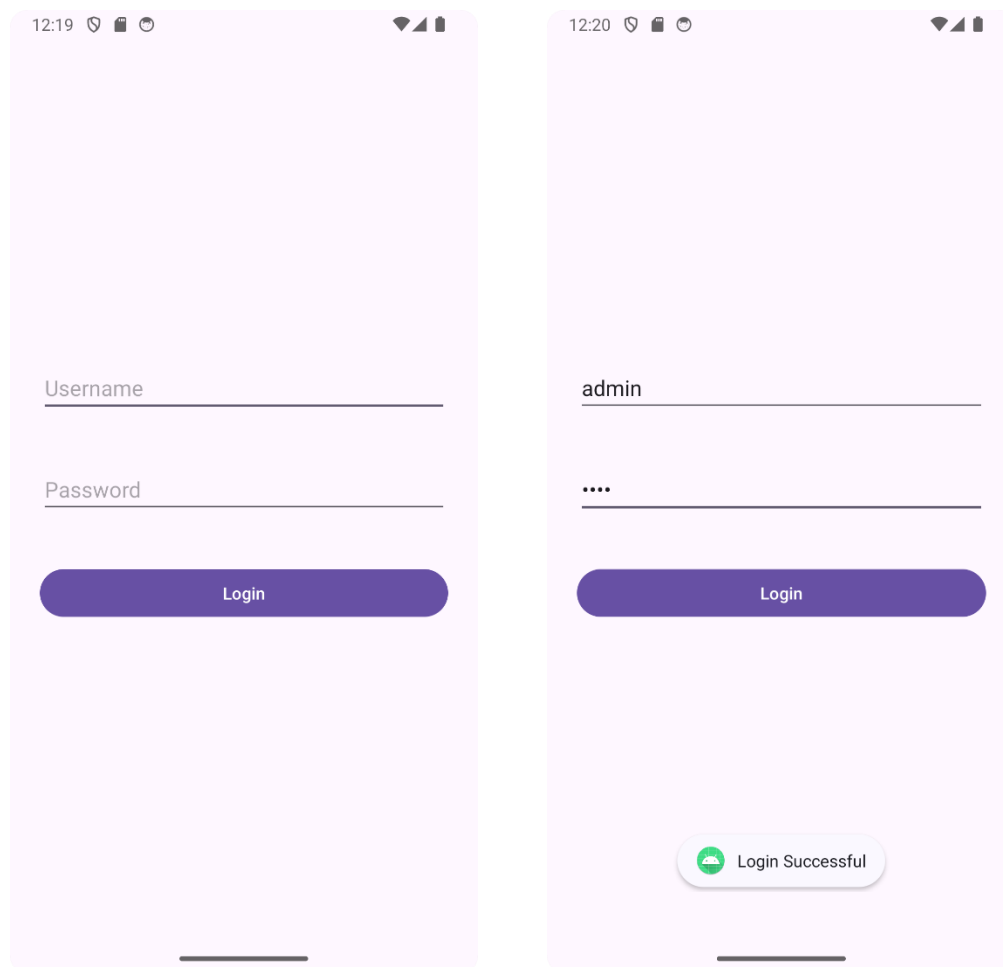
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;

import androidx.activity.EdgeToEdge;
import androidx.appcompat.app.AppCompatActivity;
import androidx.core.graphics.Insets;
import androidx.core.view.ViewCompat;
import androidx.core.view.WindowInsetsCompat;

public class MainActivity extends AppCompatActivity {
    private EditText o1;
    private EditText o2;
    private Button loginButton;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        EdgeToEdge.enable(this);
        setContentView(R.layout.activity_main);

        ViewCompat.setOnApplyWindowInsetsListener(findViewById(R.id.main),
        (v, insets) -> {
            Insets systemBars =
insets.getInsets(WindowInsetsCompat.Type.systemBars());
            v.setPadding(systemBars.left, systemBars.top, systemBars.right,
systemBars.bottom);
            return insets;
        });
        o1 = findViewById(R.id.username);
        o2 = findViewById(R.id.password);
        loginButton = findViewById(R.id.login_button);
    }
}
```

```
public void login(View view) {  
    String username = o1.getText().toString();  
    String password = o2.getText().toString();  
    if (isValidCredentials(username, password)) {  
        Toast.makeText(this, "Login Successful", Toast.LENGTH_SHORT).show();  
    } else {  
        Toast.makeText(this, "Invalid credentials", Toast.LENGTH_SHORT).show();  
    }  
}  
private boolean isValidCredentials(String username, String password) {  
    // Example validation: Replace with your own logic  
    return username.equals("admin") && password.equals("1234");  
}
```

Output :

PROGRAM 11:**Design a Login Form with username and password using Relative Layout****Code :****activity_main.xml:**

```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout
xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:id="@+id/main"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:gravity="center"
    tools:context=".MainActivity">

    <EditText
        android:id="@+id/name"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginLeft="40dp"
        android:layout_marginRight="40dp"
        android:hint="name"/>
    <EditText
        android:id="@+id/address"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginRight="10dp"
        android:layout_marginLeft="40dp"
        android:layout_below="@+id/name"
        android:hint="address"/>
    <EditText
        android:id="@+id/RollNo"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_below="@id/name"
        android:layout_marginLeft="20dp"
        android:layout_marginRight="90dp"
        android:layout_toRightOf="@id/address"
        android:hint="Roll No"/>
```

```
<EditText
    android:id="@+id/PhNo"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_below="@id/address"
    android:layout_centerHorizontal="true"
    android:hint="Ph No"/>
</RelativeLayout>
```

MainActivity.java:

```
package com.example.relative;

import android.os.Bundle;

import androidx.activity.EdgeToEdge;
import androidx.appcompat.app.AppCompatActivity;
import androidx.core.graphics.Insets;
import androidx.core.view.ViewCompat;
import androidx.core.view.WindowInsetsCompat;

public class MainActivity extends AppCompatActivity {

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

        ViewCompat.setOnApplyWindowInsetsListener(findViewById(R.id.main),
        (v, insets) -> {
            Insets systemBars =
            insets.getInsets(WindowInsetsCompat.Type.systemBars());
            v.setPadding(systemBars.left, systemBars.top, systemBars.right,
            systemBars.bottom);
            return insets;
        });
    }
}
```

Output :

12:22

name

address

Roll No

Ph No

PROGRAM 12:**Develop an application that uses ArrayAdapter with List View****Code :****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/main"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity">

    <TextView
        android:id="@+id/e1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginStart="50dp"
        android:layout_marginTop="20dp"
        android:layout_marginEnd="50dp"
        android:text="Hello World!"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />

    <ListView
        android:id="@+id/l1"
        android:layout_width="338dp"
        android:layout_height="186dp"
        android:layout_marginStart="50dp"
        android:layout_marginTop="51dp"
        android:layout_marginEnd="50dp"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/e1" />

    <TextView
        android:id="@+id/textView"
```



```

        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginStart="50dp"
        android:layout_marginTop="267dp"
        android:layout_marginEnd="50dp"
        android:text="Account"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />

</androidx.constraintlayout.widget.ConstraintLayout>

```

MainActivity.java:

```

package com.example.listview;

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

import androidx.activity.EdgeToEdge;
import androidx.appcompat.app.AppCompatActivity;
import androidx.core.graphics.Insets;
import androidx.core.view.ViewCompat;
import androidx.core.view.WindowInsetsCompat;

public class MainActivity extends AppCompatActivity implements
    AdapterView.OnItemClickListener {
    private TextView tv;
    private ListView lv;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        EdgeToEdge.enable(this);
        setContentView(R.layout.activity_main);

        ViewCompat.setOnApplyWindowInsetsListener(findViewById(R.id.main),
            (v, insets) -> {
                Insets systemBars =
                insets.getInsets(WindowInsetsCompat.Type.systemBars());
                v.setPadding(systemBars.left, systemBars.top, systemBars.right,
                    systemBars.bottom);
            }
        );
    }
}

```

```

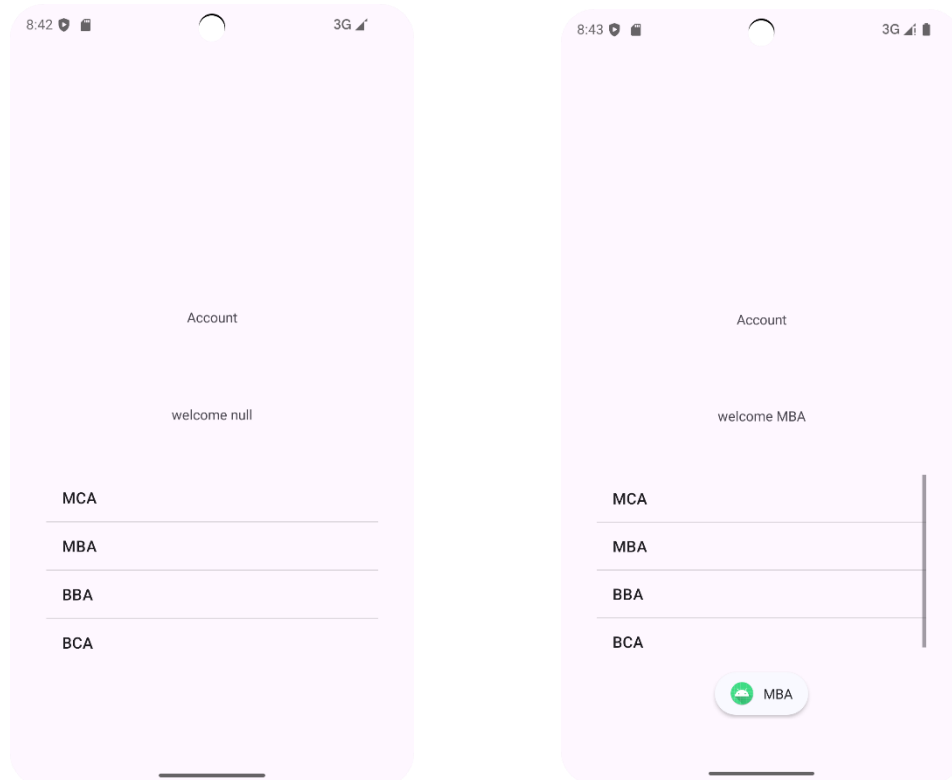
        return insets;
    });
    tv=findViewById(R.id.e1);
    String msg=getIntent().getStringExtra("mykey");// receiving the data
    tv.setText("welcome " + msg);
    lv=findViewById(R.id.l1);// display(welcome changing to admin)
    // listview operation
    String[] courses={"MCA","MBA","BBA","BCA"};
    ArrayAdapter adapter = new ArrayAdapter(this,
    android.R.layout.simple_list_item_1,courses);
    lv.setAdapter(adapter);
    // attach listener
    lv.setOnItemClickListener(this);//implement the method by alt+enter
}

public void onItemClick(AdapterView<?> adapterView, View view, int i,
long l) {
    String itemname=lv.getItemAtPosition(i).toString();
    tv.setText("welcome " + itemname);
    Toast.makeText(this,itemname,Toast.LENGTH_SHORT).show();
}

}

```

Output :



PROGRAM 13:**Develop an application that uses ArrayAdapter with Grid View****Code :****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/main"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity">

    <TextView
        android:id="@+id/e1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginStart="20dp"
        android:layout_marginTop="47dp"
        android:layout_marginEnd="20dp"
        android:layout_marginBottom="512dp"
        android:text="Hello World!"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/textView" />

    <TextView
        android:id="@+id/textView"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginStart="20dp"
        android:layout_marginTop="134dp"
        android:layout_marginEnd="20dp"
        android:text="Account"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />

    <GridView
```

```
android:id="@+id/grid"
android:layout_width="176dp"
android:layout_height="353dp"
android:layout_marginStart="20dp"
android:layout_marginTop="68dp"
android:layout_marginEnd="20dp"
android:numColumns="2"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.584"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toBottomOf="@+id/e1" />
```

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

MainActivity.java:

```
package com.example.gridview;

import android.os.Bundle;
import android.view.View;
import android.widget.AdapterView;
import android.widget.AdapterView.OnItemClickListener;
import android.widget.GridView;
import android.widget.TextView;
import android.widget.Toast;

import androidx.activity.EdgeToEdge;
import androidx.appcompat.app.AppCompatActivity;
import androidx.core.graphics.Insets;
import androidx.core.view.ViewCompat;
import androidx.core.view.WindowInsetsCompat;

public class MainActivity extends AppCompatActivity implements
AdapterView.OnItemClickListener {
    private TextView tv;
    private GridView gv;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        EdgeToEdge.enable(this);
        setContentView(R.layout.activity_main);

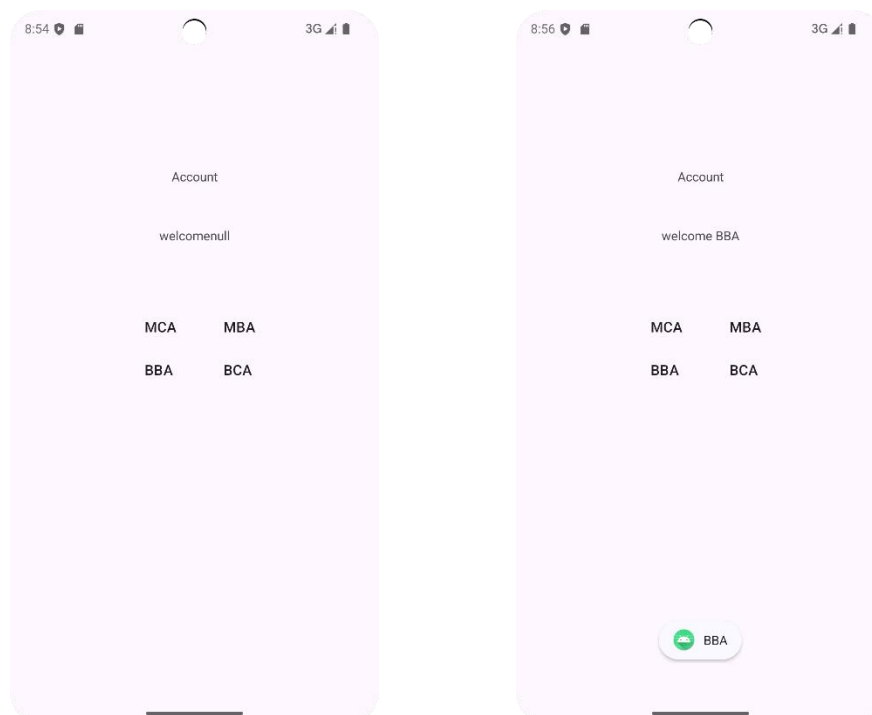
        ViewCompat.setOnApplyWindowInsetsListener(findViewById(R.id.main),
        (v, insets) -> {
```

```

        Insets systemBars =
insets.getInsets(WindowInsetsCompat.Type.systemBars());
        v.setPadding(systemBars.left, systemBars.top, systemBars.right,
systemBars.bottom);
        return insets;
    });
    tv=findViewById(R.id.e1);
    String msg=getIntent().getStringExtra("mykey");// receiving the data
    tv.setText("welcome"+msg);
    gv=findViewById(R.id.grid);// display(welcome changing to admin)
    // listview operation
    String[] courses={"MCA","MBA","BBA","BCA"};
    ArrayAdapter adapter = new ArrayAdapter(this,
    android.R.layout.simple_list_item_1,courses);
    gv.setAdapter(adapter);
    // attach listener
    gv.setOnItemClickListener(this);
}
public void onItemClick(AdapterView<?> adapterView, View view, int i,
long l) {
    String itemname=gv.getItemAtPosition(i).toString();
    tv.setText("welcome "+itemname);
    Toast.makeText(this,itemname,Toast.LENGTH_SHORT).show();
}
}
}

```

Output :



PROGRAM 14:

Create database using SQLite and perform INSERT, SELECT, UPDATE and DELETE

Code :

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/main"
android:layout_width="match_parent"
android:layout_height="match_parent"
tools:context=".MainActivity">

<EditText
    android:id="@+id/ed1"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginStart="20dp"
    android:layout_marginTop="20dp"
    android:layout_marginEnd="20dp"
    android:ems="10"
    android:hint="Name"
    android:inputType="text"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent" />

<EditText
    android:id="@+id/ed2"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginStart="20dp"
    android:layout_marginTop="20dp"
    android:layout_marginEnd="20dp"
    android:ems="10"
    android:hint="Surname"
    android:inputType="text"
```

```
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toBottomOf="@+id/ed1" />
```

```
<EditText
    android:id="@+id/ed3"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginStart="20dp"
    android:layout_marginTop="20dp"
    android:layout_marginEnd="20dp"
    android:ems="10"
    android:hint="Marks"
    android:inputType="text"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/ed2" />
```

```
<Button
    android:id="@+id/button"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginStart="104dp"
    android:layout_marginTop="52dp"
    android:text="insert"
    android:onClick="SaveData"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/ed3" />
```

```
<Button
    android:id="@+id/button2"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginTop="52dp"
    android:layout_marginEnd="104dp"
    android:text="Display"
    android:onClick="read"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/ed3" />
```

```
<Button
    android:id="@+id/button3"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginStart="104dp"
    android:layout_marginTop="24dp"
```

```
        android:text="Update"
        android:onClick="update"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/button" />

<Button
    android:id="@+id/button4"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginTop="24dp"
    android:layout_marginEnd="103dp"
    android:text="Delete"
    android:onClick="delete"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/button2" />

<TextView
    android:id="@+id/textView"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginStart="20dp"
    android:layout_marginTop="74dp"
    android:layout_marginEnd="20dp"
    android:text="Details"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/button3" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

MainActivity.java:

```
package com.example.db;
import android.database.Cursor;
import android.os.Bundle;
import android.view.View;
import android.widget.EditText;
import android.widget.TextView;
import android.widget.Toast;

import androidx.activity.EdgeToEdge;
import androidx.appcompat.app.AppCompatActivity;
import androidx.core.graphics.Insets;
import androidx.core.view.ViewCompat;
import androidx.core.view.WindowInsetsCompat;

public class MainActivity extends AppCompatActivity {
```



```

private EditText Name,Mark,Surname;
private TextView DataV;
MyDatabase database = new MyDatabase(this) ;
@Override
protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    EdgeToEdge.enable(this);
    setContentView(R.layout.activity_main);

    ViewCompat.setOnApplyWindowInsetsListener(findViewById(R.id.main), (v,
insets) -> {
        Insets systemBars =
insets.getInsets(WindowInsetsCompat.Type.systemBars());
        v.setPadding(systemBars.left, systemBars.top, systemBars.right,
systemBars.bottom);
        return insets;
    });
    Name = findViewById(R.id.ed1);
    Surname = findViewById(R.id.ed2);
    Mark = findViewById(R.id.ed3);
    DataV = findViewById(R.id.textView);
}

public void SaveData(View view) {
    String UserVal = Name.getText().toString();
    String SurnameVal = Surname.getText().toString();
    Integer PassVal = Integer.parseInt(Mark.getText().toString());
    Boolean result = database.insertdata(UserVal, PassVal,SurnameVal);
    if (result == true) {
        Toast.makeText(getApplicationContext(), "Data inserted Sucessfully",
            Toast.LENGTH_SHORT).show();
    } else {
        Toast.makeText(getApplicationContext(), "Data inserted failed",
            Toast.LENGTH_SHORT).show();
    }
}

public void update(View view) {
    String UserVal = Name.getText().toString();
    String SurnameVal = Surname.getText().toString();
    Integer PassVal = Integer.parseInt(Mark.getText().toString());
    Boolean result = database.updateData(UserVal, PassVal, SurnameVal);
    if (result==true){
        Toast.makeText(getApplicationContext(), "Data updated
            Successfully", Toast.LENGTH_SHORT).show();
        read(view);
    }
}

```

```

    }
    else {
        Toast.makeText(getApplicationContext(), "No Rows Affected",
            Toast.LENGTH_SHORT).show();
    }
}
}
public void delete(View view) {
    String UserVal = Name.getText().toString();
    int result=database.deletedata(UserVal);
    Toast.makeText(getApplicationContext(), "Data deleted Successfully",
        Toast.LENGTH_SHORT).show();
}
public void read(View view) {
    Cursor res = database.getAllData();
    StringBuffer stringBuffer = new StringBuffer();
    if (res != null && res.getCount() > 0) {
        while (res.moveToNext()) {
            stringBuffer.append("Id: " + res.getString(0) + "\n");
            stringBuffer.append("Name: " + res.getString(1) + "\n");
            stringBuffer.append("Surname: " + res.getString(2) + "\n");
            stringBuffer.append("marks: " + res.getString(3) + "\n");
        }
        DataV .setText(stringBuffer.toString());
    } else {
        Toast.makeText(getApplicationContext(), "Data Retrieved Successfully",
            Toast.LENGTH_SHORT).show();
    }
    Toast.makeText(getApplicationContext(), "Data Retrieved Successfully",
        Toast.LENGTH_SHORT).show();
}
}
}

```

activity_my_database.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/main"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MyDatabase">

</androidx.constraintlayout.widget.ConstraintLayout>

```

MyDatabase.java

```
package com.example.db;
import android.content.ContentValues;
import android.content.Context;
import android.database.Cursor;
import android.database.sqlite.SQLiteDatabase;
import android.database.sqlite.SQLiteOpenHelper;
import android.os.Bundle;

import androidx.activity.EdgeToEdge;
import androidx.appcompat.app.AppCompatActivity;
import androidx.core.graphics.Insets;
import androidx.core.view.ViewCompat;
import androidx.core.view.WindowInsetsCompat;

public class MyDatabase extends SQLiteOpenHelper {

    public MyDatabase(Context context) {
        super(context, "Login.db", null, 1);
    }
    public void onCreate(SQLiteDatabase db) {
        db.execSQL("Create table USERS(ID INTEGER PRIMARY KEY
        AUTOINCREMENT,NAME text,SURNAME text,MARKS INTEGER)");
    }

    public void onUpgrade(SQLiteDatabase db, int oldVersion, int newVersion)
    {
        db.execSQL("DROP TABLE IF EXISTS USERS");
    }
    public Cursor getAllData() {
        SQLiteDatabase db=this.getWritableDatabase();
        Cursor res = db.rawQuery("Select * from USERS",null);
        return res;
    }
    public Boolean insertdata(String userVal, Integer passVal, String
    surnameVal) {
        SQLiteDatabase db = this.getWritableDatabase();
        ContentValues contentValues = new ContentValues();
        contentValues.put("NAME", userVal);
        contentValues.put("SURNAME", surnameVal);
        contentValues.put("MARKS", passVal);
        long result = db.insert("USERS", null, contentValues);
        db.close();
    }
}
```

```

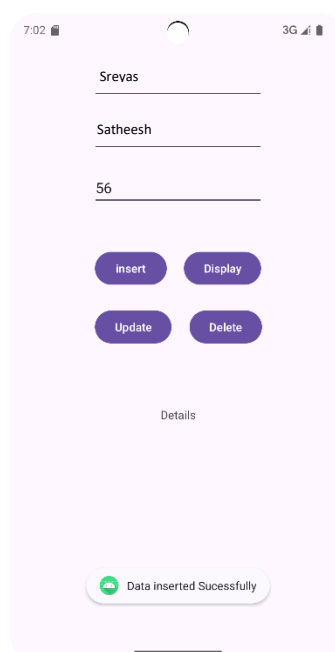
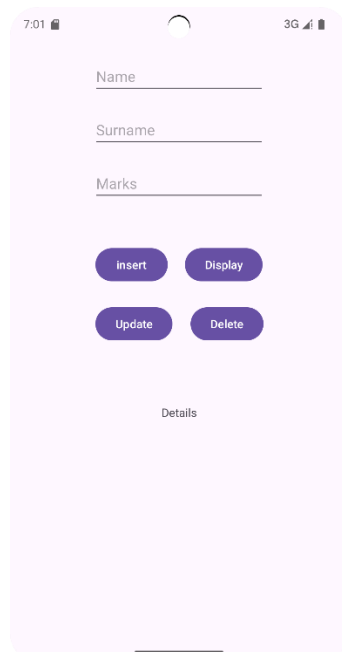
        if (result == -1) {
            return false;
        } else {
            return true;
        }
    }
}

public int deletedata(String userVal) {
    SQLiteDatabase db=this.getWritableDatabase();
    int i=db.delete("USERS","NAME=?",new String[]{userVal});
    return i;
}

public Boolean updateData(String userVal, Integer passVal, String
surnameVal) {
    SQLiteDatabase db = this.getWritableDatabase();
    ContentValues contentValues = new ContentValues();
    contentValues.put("NAME", userVal);
    contentValues.put("SURNAME", surnameVal);
    contentValues.put("MARKS", passVal);
    int result = db.update("USERS", contentValues, "NAME=?", new
String[]{userVal});
    if (result > 0) {
        return true;
    } else {
        return false;
    }
}
}
}

```

Output :



7:02 3G

Sreyas

Satheesh

56

insert Display

Update Delete

Id: 1
Name: Sreyas
Surname: Satheesh
Marks: 56

Data Retrieved Successfully

7:02 3G

Sreyas

Satheesh

58

insert Display

Update Delete

Id: 1
Name: Sreyas
Surname: Satheesh
Marks: 58

Data updated Successfully

7:03 3G

Sreyas

Satheesh

58

insert Display

Update Delete

Id: 1
Name: Sreyas
Surname: Satheesh
Marks: 58

Data deleted Successfully