

20MCA243 MOBILE APPLICATION DEVELOPMENT LAB

Lab Report Submitted By

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MASTER OF COMPUTER APPLICATIONS (2 Year)

(MCA)

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY



**AMAL JYOTHI COLLEGE OF ENGINEERING
KANJIRAPPALLY**

[Affiliated to APJ Abdul Kalam Technological University, Kerala. Approved by AICTE, Accredited by NAAC with 'A' grade. Koovapally, Kanjirappally, Kottayam, Kerala – 686518]

2021-2022

**DEPARTMENT OF COMPUTER APPLICATIONS
AMAL JYOTHI COLLEGE OF ENGINEERING
KANJIRAPPALLY**



CERTIFICATE

This is to certify that the lab report, “**20MCA243 MOBILE APPLICATION DEVELOPMENT LAB**” is the bonafide work of **VIVIN V ABRAHAM (Reg. No. : AJC20MCA-2088)** in partial fulfillment of the requirements for the award of the Degree of Master of Computer Applications under APJ Abdul Kalam Technological University during the year 2021-22.

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Program: 1

Aim:

Design a Login Form with username and password using Linear Layout and toast valid Credentials

xml code

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity"
    android:background="@color/rose">

    <TextView
        android:layout_width="200dp"
        android:layout_height="130dp"
        android:layout_marginTop="100dp"
        android:layout_marginLeft="110dp"
        android:text="LOGIN"
        android:textStyle="bold"
        android:textSize="50dp"
        android:gravity="center" />

    <TextView
        android:layout_width="209dp"
        android:layout_height="80dp"
        android:layout_marginTop="180dp"
        android:layout_marginLeft="-320dp"
        android:gravity="center"
        android:text="Username"
        android:textSize="40dp"
        android:textStyle="italic" />

    <EditText
        android:id="@+id/usr"
        android:layout_width="410dp"
        android:layout_height="50dp"
        android:layout_marginTop="220dp"
        android:layout_marginLeft="-200dp"/>
```

```

<TextView
    android:layout_width="209dp"
    android:layout_height="80dp"
    android:layout_marginTop="310dp"
    android:layout_marginLeft="-410dp"
    android:gravity="center"
    android:text="Password"
    android:textSize="40dp"
    android:textStyle="italic" />
<EditText
    android:id="@+id/pass"
    android:layout_width="410dp"
    android:layout_height="50dp"
    android:layout_marginTop="370dp"
    android:layout_marginLeft="-210dp"/>
<Button
    android:id="@+id/btn"
    android:layout_width="200dp"
    android:layout_height="60dp"
    android:layout_marginTop="470dp"
    android:layout_marginLeft="-290dp"
    android:text="Submit"
    android:textSize="30dp"/>

</LinearLayout>

```

java code

```

package com.example.login;
import androidx.appcompat.app.AppCompatActivity;
import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.TextView;
import android.widget.Toast;

public class MainActivity extends AppCompatActivity {
    EditText ed1,ed2;
    Button bt;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        ed1=findViewById(R.id.usr);
        ed2=findViewById(R.id.pass);
        bt=findViewById(R.id.btn);
        bt.setOnClickListener(new View.OnClickListener() {

```

```

@Override
public void onClick(View view) {
    String user=ed1.getText().toString().trim();
    String pass=ed2.getText().toString().trim();

    if(user.equals("")){
        Toast.makeText(MainActivity.this, "Enter your username",
Toast.LENGTH_SHORT).show();
    }
    else if(pass.equals("")){
        Toast.makeText(MainActivity.this, "Enter your password",
Toast.LENGTH_SHORT).show();
    }
    else{
        Intent j =new Intent(MainActivity.this,details.class);
        if(user.equals("admin")){
            j.putExtra("Name",user);
            startActivity(j);

        }else if(user.equals("user")){
            j.putExtra("Name",user);
            startActivity(j);
        }
        else{
            Toast.makeText(MainActivity.this, "Invalid User",
Toast.LENGTH_SHORT).show();
        }
    }
}
});
}
}

```

activity_details.xml

```

<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".details">
    <TextView
        android:id="@+id/tv"
        android:layout_width="250dp"
        android:layout_height="50dp"
        android:layout_marginTop="100dp"
        android:layout_marginLeft="90dp"
        android:textSize="30dp"/>
</LinearLayout>

```

details.java

```
package com.example.login;

import androidx.appcompat.app.ActionBar;
import androidx.appcompat.app.AppCompatActivity;

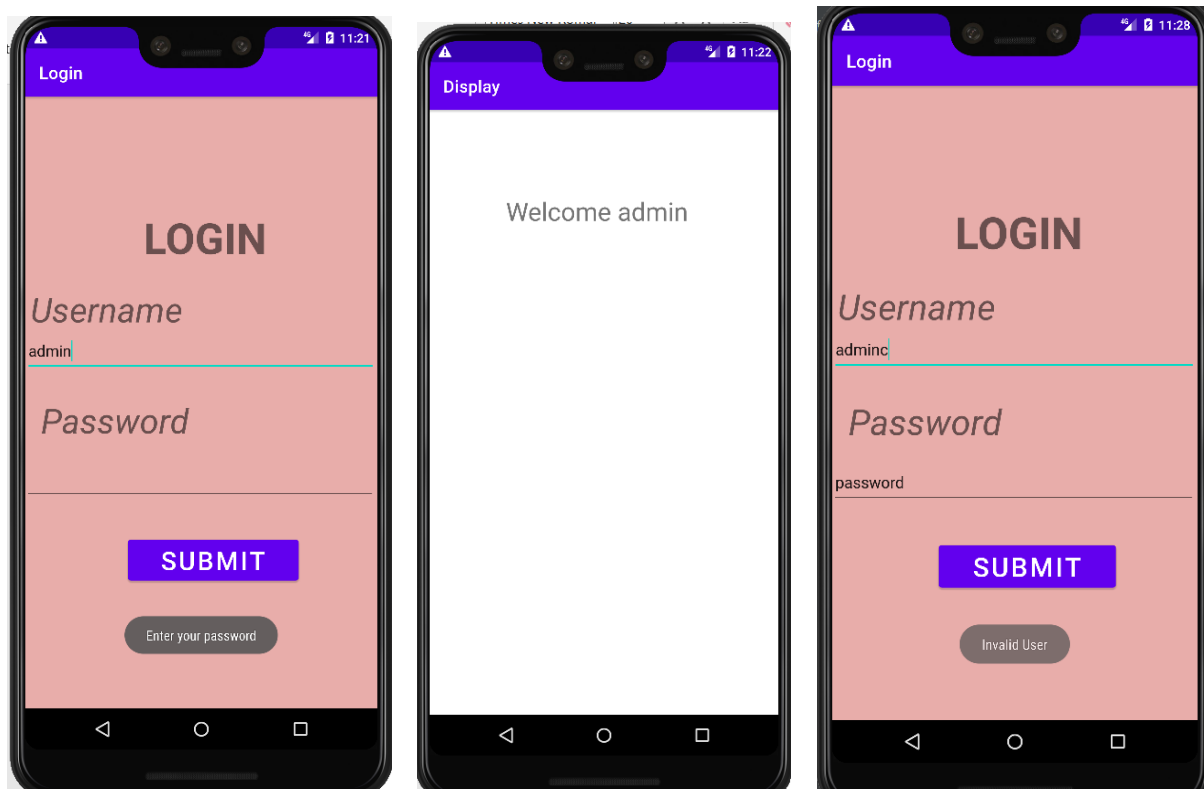
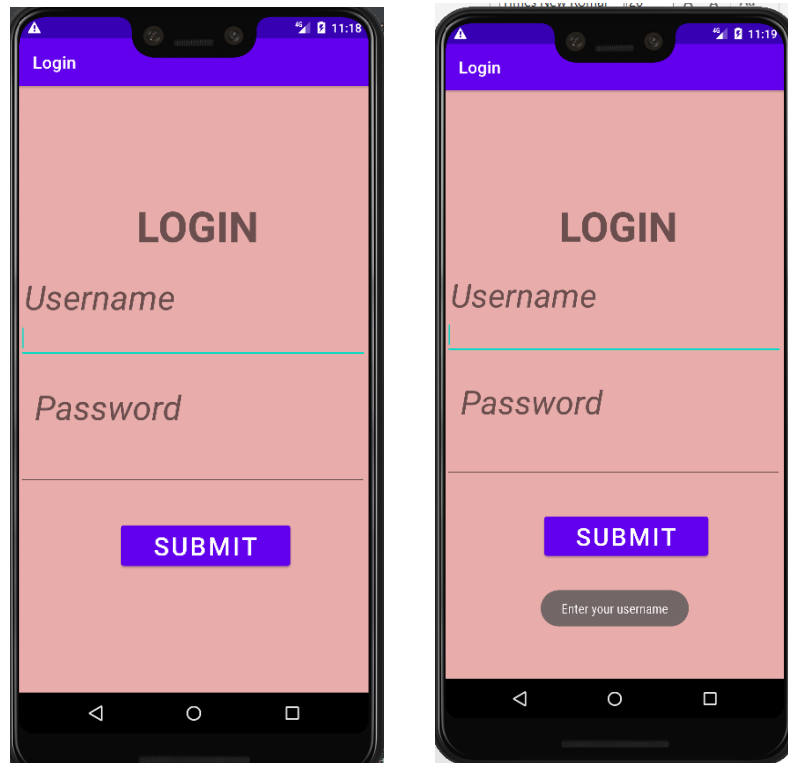
import android.content.Intent;
import android.os.Bundle;
import android.widget.TextView;

public class details extends AppCompatActivity {

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_details);
        ActionBar a=getSupportActionBar();
        a.setTitle("Display");
        TextView tv=findViewById(R.id.tv);

        Intent i=getIntent();
        String user=i.getStringExtra("Name");
        tv.setText("Welcome "+user);
    }
}
```


Output



Program: 2

Aim:

Write a program that demonstrates Activity Lifecycle.

xml code

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

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Activity Lifecycle"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintLeft_toLeftOf="parent"
        app:layout_constraintRight_toRightOf="parent"
        app:layout_constraintTop_toTopOf="parent" />

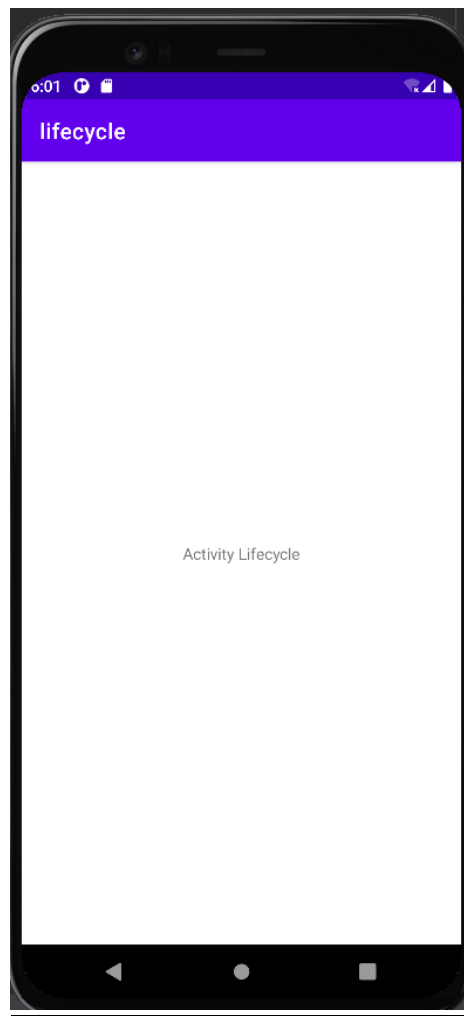
</androidx.constraintlayout.widget.ConstraintLayout>
```

java code

```
package com.example.lifecycle;
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.util.Log;
public class MainActivity extends AppCompatActivity {
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        Log.d("lifecycle","onCreate invoked");
    }
    @Override
    protected void onStart(){
        super.onStart();
        Log.d("lifecycle","onStart invoked");
    }
    @Override
    protected void onResume(){
        super.onResume();
    }
}
```

```
        Log.d("lifecycle","onResume invoked");
    }
    @Override
    protected void onPause(){
        super.onPause();
        Log.d("lifecycle","onPause invoked");
    }
    @Override
    protected void onStop(){
        super.onStop();
        Log.d("lifecycle","onStop invoked");
    }
    @Override
    protected void onRestart(){
        super.onRestart();
        Log.d("lifecycle","onRestart invoked");
    }
    @Override
    protected void onDestroy(){
        super.onDestroy();
        Log.d("lifecycle","onDestroy invoked");
    }
}
```

Output



```
2022-03-02 18:00:44.356 30743-30743/com.example.lifecycle I/Choreographer: Skipped 36 frames! The applica
2022-03-02 18:00:55.604 30743-30743/com.example.lifecycle D/lifecycle: onPause invoked
2022-03-02 18:00:57.691 30743-30743/com.example.lifecycle D/lifecycle: onStop invoked
2022-03-02 18:00:59.978 30743-30743/com.example.lifecycle D/lifecycle: onRestart invoked
2022-03-02 18:00:59.992 30743-30743/com.example.lifecycle D/lifecycle: onStart invoked
2022-03-02 18:01:00.001 30743-30743/com.example.lifecycle D/lifecycle: onResume invoked
2022-03-02 18:01:07.106 30743-30743/com.example.lifecycle D/lifecycle: onPause invoked
2022-03-02 18:01:07.773 30743-30743/com.example.lifecycle D/lifecycle: onStop invoked
2022-03-02 18:01:07.776 30743-30743/com.example.lifecycle D/lifecycle: onDestroy invoked
2022-03-02 18:01:19.059 30743-30743/com.example.lifecycle D/lifecycle: onCreate invoked
2022-03-02 18:01:19.064 30743-30743/com.example.lifecycle D/lifecycle: onStart invoked
2022-03-02 18:01:19.065 30743-30743/com.example.lifecycle D/lifecycle: onResume invoked
```

Program: 3

Aim:

Implementing basic arithmetic operations of a simple calculator

xml code

```
<?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=".Calculator">

<TextView
    android:id="@+id/textView2"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Enter the First Number"
    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="0.206" />

<TextView
    android:id="@+id/textView3"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Enter the Second Number"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.828"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.206" />

<EditText
    android:id="@+id/n1"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:ems="5"
    android:inputType="number"
```

```

app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.143"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.31" />

```

```

<EditText
    android:id="@+id/n2"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:ems="5"
    android:inputType="number"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.751"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.31" />

```

```

<Button
    android:id="@+id/add"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="add"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.136"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.424" />

```

```

<Button
    android:id="@+id/sub"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="SUB"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.736"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.424" />

```

```

<Button
    android:id="@+id/mul"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="MUL"
    app:layout_constraintBottom_toBottomOf="parent"

```

```

        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.136"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.544" />

<Button
    android:id="@+id/div"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="DIV"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.736"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.544" />

<TextView
    android:id="@+id/op"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.464"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.608" />
</androidx.constraintlayout.widget.ConstraintLayout>

```

java code

```

package com.example.myapplication;
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 Calculator extends AppCompatActivity {
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_calculator);
        EditText num1=findViewById(R.id.n1);
        EditText num2=findViewById(R.id.n2);
        Button ade=findViewById(R.id.add);
        Button sub=findViewById(R.id.sub);
        Button mul=findViewById(R.id.mul);
    }
}

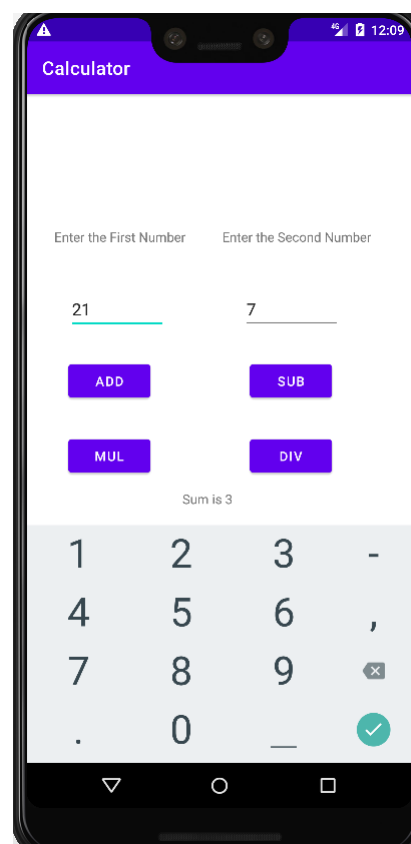
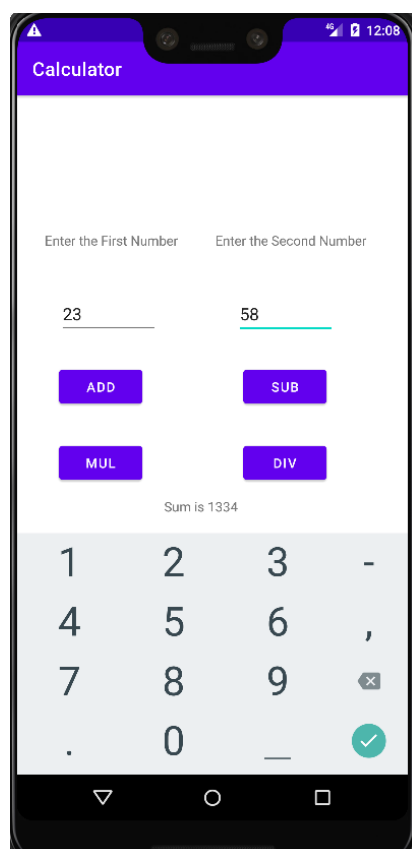
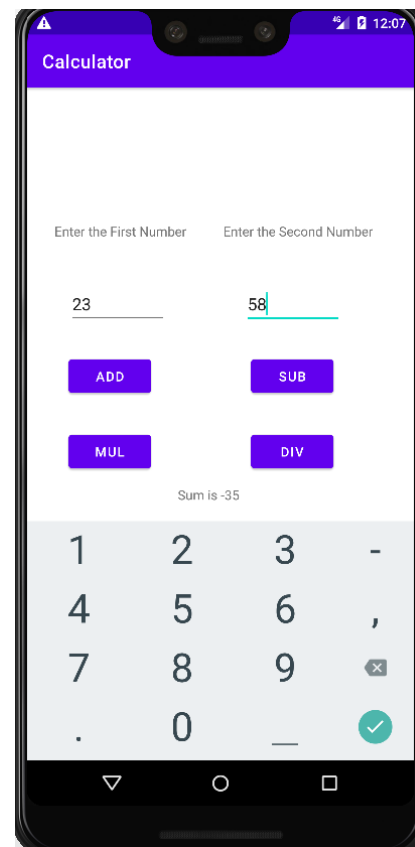
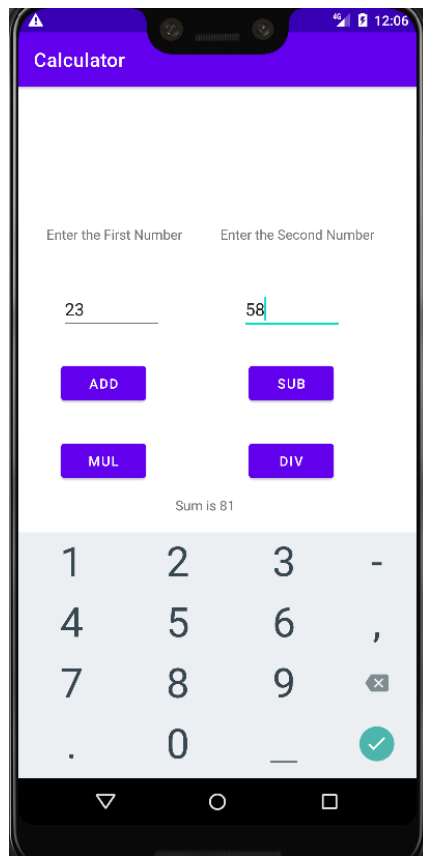
```

```

Button div=findViewById(R.id.div);
TextView res=findViewById(R.id.op);
ade.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View view) {
        Integer val1 = Integer.parseInt(num1.getText().toString());
        Integer val2 = Integer.parseInt(num2.getText().toString());
        Integer val3 = val1 + val2;
        res.setText("Sum is "+val3);
    }
});
sub.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View view) {
        Integer val1 = Integer.parseInt(num1.getText().toString());
        Integer val2 = Integer.parseInt(num2.getText().toString());
        Integer val3 = val1 - val2;
        res.setText("Sum is "+val3);
    }
});
mul.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View view) {
        Integer val1 = Integer.parseInt(num1.getText().toString());
        Integer val2 = Integer.parseInt(num2.getText().toString());
        Integer val3 = val1 * val2;
        res.setText("Sum is "+val3);
    }
});
div.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View view) {
        Integer val1 = Integer.parseInt(num1.getText().toString());
        Integer val2 = Integer.parseInt(num2.getText().toString());
        Integer val3 = val1 / val2;
        res.setText("Sum is "+val3);
    }
});
}
}

```


Output



Program: 4

Aim:

Implement validations on various UI controls

xml code

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

<EditText
    android:id="@+id/firstName"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:ems="10"
    android:inputType="text"
    android:hint="First Name"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.079"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.023" />

<EditText
    android:id="@+id/lastName"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:ems="10"
    android:inputType="text"
    android:hint="Last Name"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.079"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.11" />

<EditText
    android:id="@+id/email"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:ems="10"
```

```

        android:inputType="text"
        android:hint="Email-Id"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.0"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.192" />

```

```

<EditText
    android:id="@+id/password"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:ems="10"
    android:inputType="text"
    android:hint="Password"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.079"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.269" />

```

```

<Button
    android:id="@+id/proceed_button"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="PROCEED"
    android:backgroundTint="@color/black"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.911"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.373" />

```

```

<Button
    android:id="@+id/button2"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Cancel"
    android:backgroundTint="@color/black"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.05"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.373" />
</androidx.constraintlayout.widget.ConstraintLayout>

```

java code

```

package com.example.login;

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

public class MainActivity2 extends AppCompatActivity {
    Button procee,cancel;
    EditText first,last,emai,pass;
    boolean isAllFieldChecked=false;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main2);
        procee=findViewById(R.id.proceed_button);
        cancel=findViewById(R.id.button2);

        first=findViewById(R.id.firstName);
        last=findViewById(R.id.lastName);
        emai=findViewById(R.id.email);
        pass=findViewById(R.id.password);

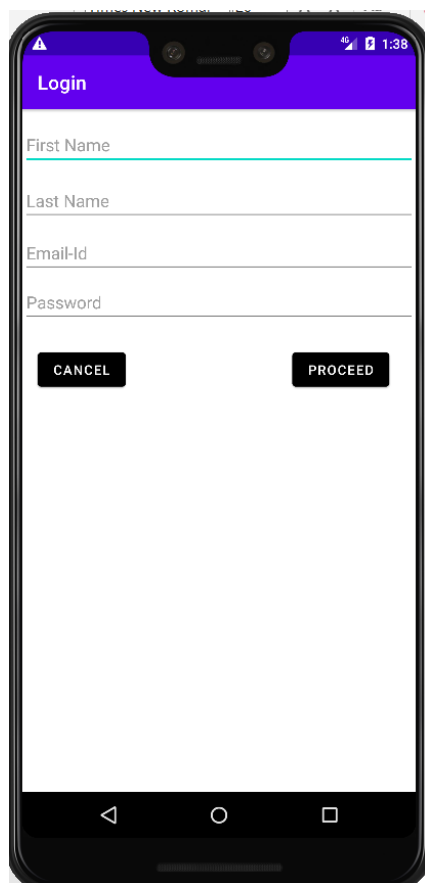
        procee.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                isAllFieldChecked = CheckAllFields();

                if(isAllFieldChecked){
                    Intent i=new Intent(MainActivity2.this,MainActivity.class);
                    startActivity(i);
                }
            }
        });
        cancel.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                MainActivity2.this.finish();
                System.exit(0);
            }
        });
    }
}

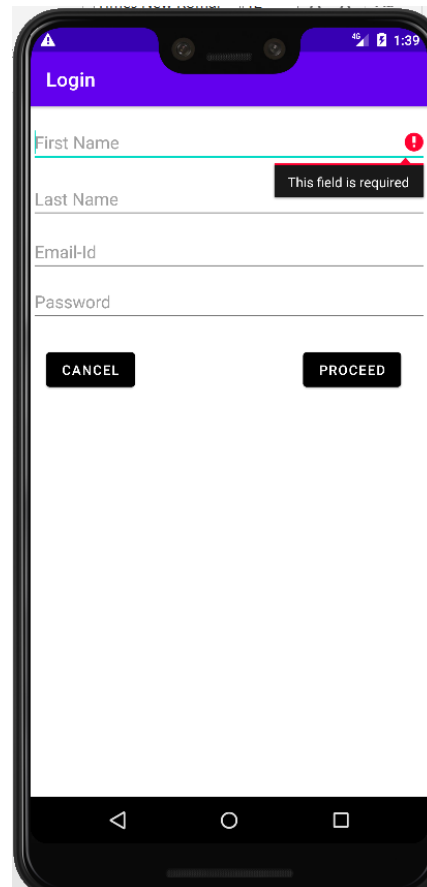
```

```
private boolean CheckAllFields(){  
  
    if(first.length()==0){  
        first.setError("This field is required");  
        return false;  
    }  
    if(last.length()==0){  
        last.setError("This field is required");  
        return false;  
    }  
    if(ema.length()==0){  
        emai.setError("This field is required");  
        return false;  
    }  
    if(pass.length()==0){  
        pass.setError("Password is required");  
        return false;  
    }  
    else if(pass.length()<8){  
        pass.setError("Password must be minimum 8 characters");  
        return false;  
    }  
  
    return true;  
}  
}
```

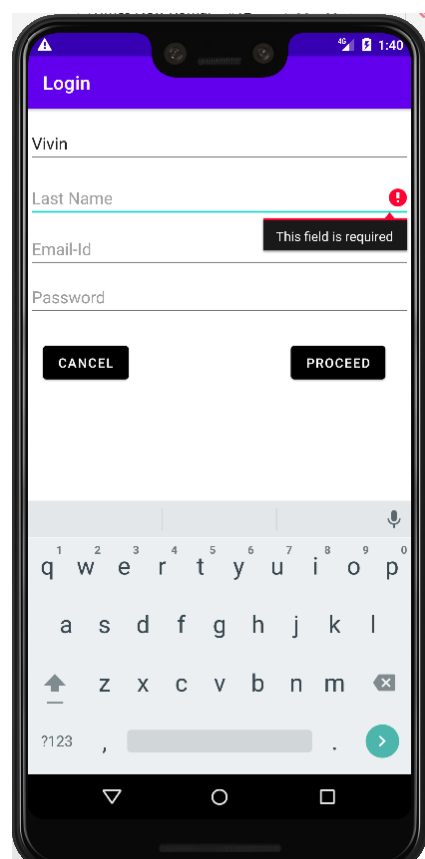
Output



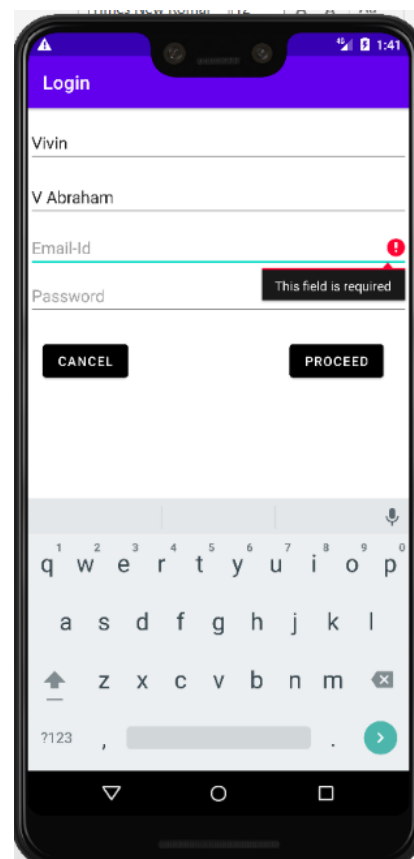
A screenshot of a mobile application's login screen. The screen has a purple header with the word "Login" in white. Below the header are four input fields: "First Name", "Last Name", "Email-Id", and "Password". At the bottom of the form are two buttons: "CANCEL" and "PROCEED". The status bar at the top shows the time as 1:39.



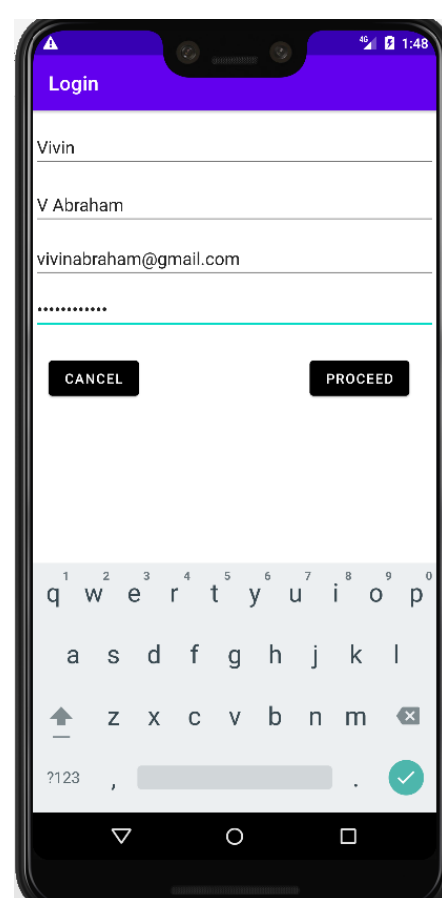
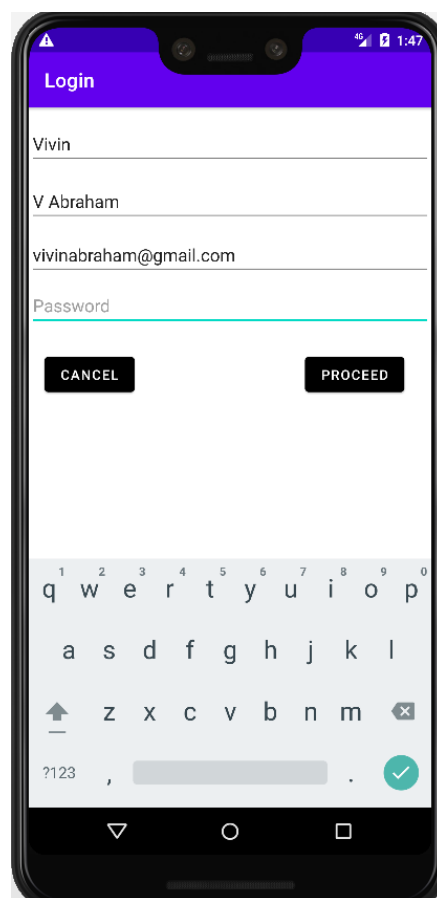
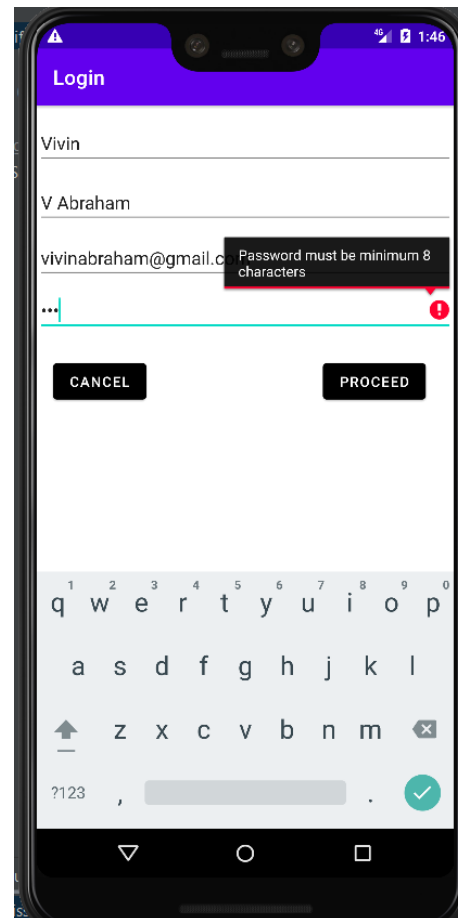
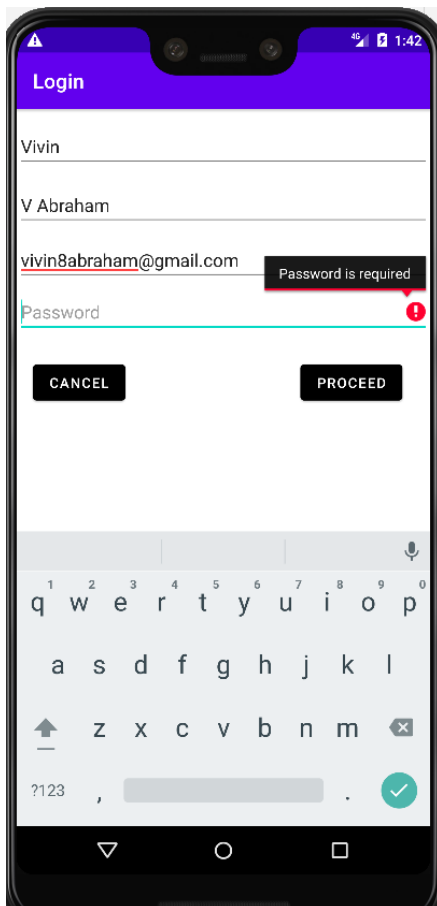
A screenshot of the login screen showing validation. A red exclamation mark icon is next to the "First Name" field, and a black tooltip with the text "This field is required" is displayed next to it. The other fields and buttons remain the same. The status bar shows the time as 1:39.



A screenshot of the login screen with the "First Name" field filled with "Vivin". The "Last Name" field now has a red exclamation mark icon and a "This field is required" tooltip. The "Email-Id" and "Password" fields are empty. A keyboard is visible at the bottom. The status bar shows the time as 1:40.



A screenshot of the login screen with "Vivin" in the "First Name" field and "V Abraham" in the "Last Name" field. Both the "Last Name" and "Email-Id" fields have red exclamation mark icons and "This field is required" tooltips. The "Password" field is empty. A keyboard is visible at the bottom. The status bar shows the time as 1:41.



Program: 5

Aim:

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

xml code

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

```
    <TextView
        android:id="@+id/textView"
        android:layout_width="387dp"
        android:layout_height="60dp"
        android:text="Enter Your Details"
        android:textSize="40dp"
        android:textStyle="bold"
        android:textColor="@color/light_green"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.666"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.087" />
```

```
    <EditText
        android:id="@+id/name"
        android:layout_width="338dp"
        android:layout_height="58dp"
        android:ems="10"
        android:hint="Name"
        android:inputType="textPersonName"
        android:textColorHint="@color/black"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.493"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.228" />
```

```
<EditText
```



```

android:id="@+id/email"
android:layout_width="340dp"
android:layout_height="63dp"
android:ems="10"
android:hint="Email-ID"
android:inputType="textPersonName"
android:textColorHint="@color/black"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.519"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.353" />

```

<EditText

```

android:id="@+id/phone"
android:layout_width="339dp"
android:layout_height="62dp"
android:ems="10"
android:hint="Phone Number"
android:inputType="textPersonName"
android:textColorHint="@color/black"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.486"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.475" />

```

<Button

```

android:id="@+id/button"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:text="Submit"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.498"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.612" />

```

</androidx.constraintlayout.widget.ConstraintLayout>

java code

```

package com.example.intentandshared;

import androidx.appcompat.app.ActionBar;
import androidx.appcompat.app.AppCompatActivity;
import android.content.Intent;
import android.content.SharedPreferences;

```

```

import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
public class MainActivity extends AppCompatActivity {

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        ActionBar Wel=getSupportActionBar();
        Wel.setTitle("Welcome");
        Button sub=findViewById(R.id.button);
        EditText name=findViewById(R.id.name);
        EditText email=findViewById(R.id.email);
        EditText phone=findViewById(R.id.phone);
        sub.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                Intent i= new Intent(MainActivity.this,show.class);
                String User=name.getText().toString();
                i.putExtra("Name",User);
                String Email=email.getText().toString();
                i.putExtra("Email",Email);
                String Phone=phone.getText().toString();
                i.putExtra("Phone",Phone);
                startActivity(i);

                SharedPreferences
sharedPreferences=getSharedPreferences("Myshare",MODE_PRIVATE);
                SharedPreferences.Editor MyEdit=sharedPreferences.edit();
                MyEdit.putString("nname",name.getText().toString());
                MyEdit.putString("Eemail",email.getText().toString());
                MyEdit.putString("pphone",phone.getText().toString());
                MyEdit.apply();

            }
        });
    }
}

```

activity_show.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=".show">

```

```

<TextView
    android:id="@+id/textView5"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Details of User using intent"
    android:textSize="22dp"
    android:textColor="@color/black"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.456"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.126" />

```

```

<TextView
    android:id="@+id/intentr"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:textColor="@color/dark"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.458"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.226" />

```

```

<TextView
    android:id="@+id/textView7"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Details of User using Shared Preference"
    android:textSize="22dp"
    android:textColor="@color/black"
    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="0.564" />

```

```

<TextView
    android:id="@+id/sharedr"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:textColor="@color/dark"
    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="0.726" />
</androidx.constraintlayout.widget.ConstraintLayout>

```

show.java

```

package com.example.intentandshared;
import androidx.appcompat.app.ActionBar;
import androidx.appcompat.app.AppCompatActivity;
import android.content.Intent;
import android.content.SharedPreferences;
import android.os.Bundle;
import android.widget.TextView;
public class show extends AppCompatActivity {
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_show);
        ActionBar dis=getSupportActionBar();
        dis.setTitle("Display");

        TextView gh=findViewById(R.id.intentr);
        TextView sha=findViewById(R.id.sharedr);
        Intent i=getIntent();
        String name=i.getStringExtra("Name");
        String email=i.getStringExtra("Email");
        String phone=i.getStringExtra("Phone");

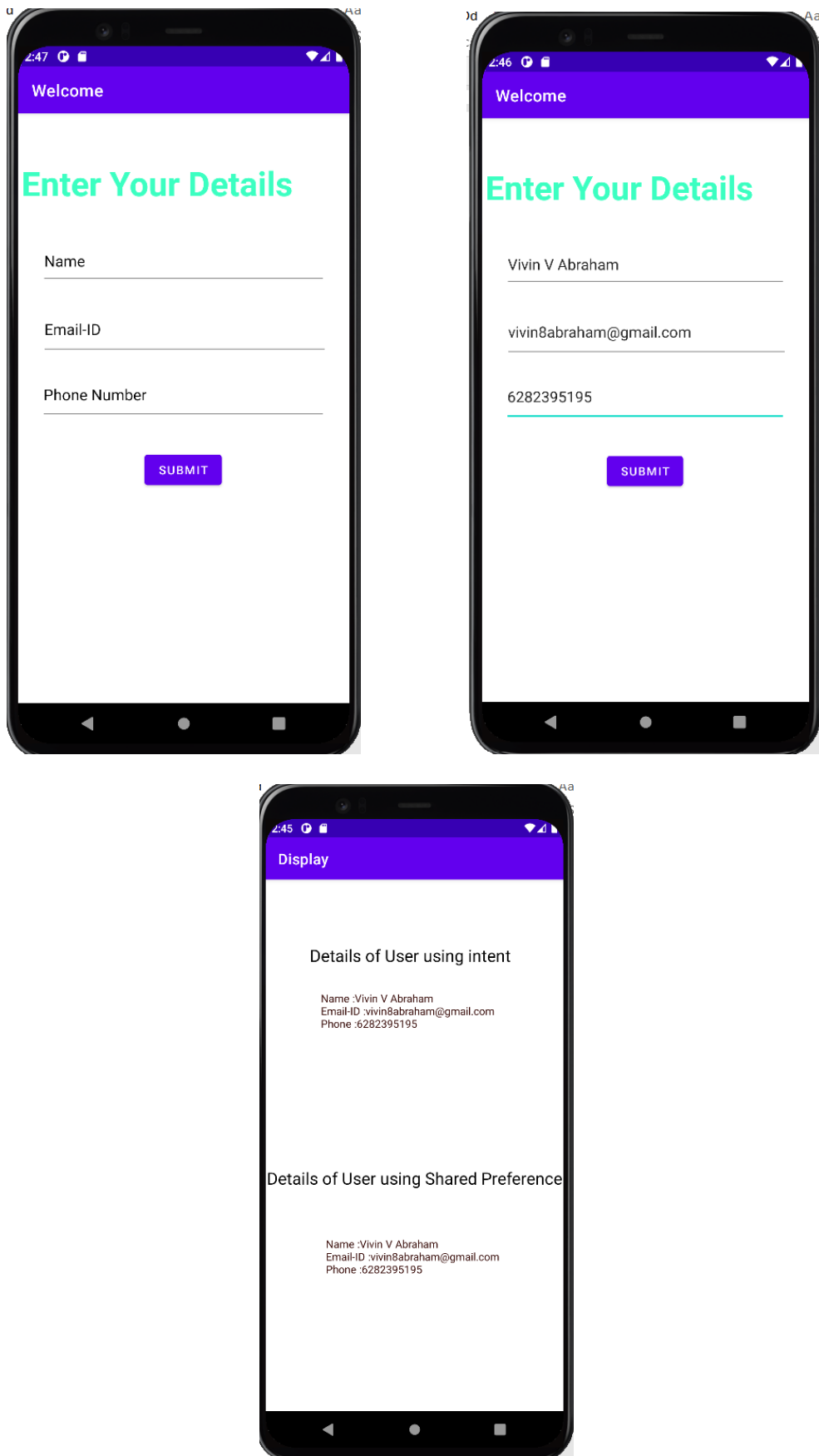
        gh.setText("Name :"+name+"\nEmail-ID :"+email+"\nPhone :"+phone);
        SharedPreferences
sharedPreferences=getSharedPreferences("Myshare",MODE_PRIVATE);
        String Name=sharedPreferences.getString( "nname","");
        String Email=sharedPreferences.getString("Eemail"," ");
        String Phone=sharedPreferences.getString("pphone"," ");

        sha.setText("Name :"+Name+"\nEmail-ID :"+Email+"\nPhone :"+Phone);

    }
}

```

Output



Program: 6

Aim:

Design a simple Calculator using GridLayout and Cascaded LinearLayout

xml code

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:background="#323030"
    android:layout_gravity="bottom"
    android:gravity="bottom"
    android:orientation="vertical"
    tools:context=".MainActivity2">

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

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

            <TextView
                android:layout_width="match_parent"
                android:layout_height="wrap_content"
                android:layout_marginEnd="20dp"
                android:text="21+23"
                android:textAlignment="textEnd"
                android:textColor="@color/white"
                android:textSize="40dp" />

            <TextView
                android:layout_width="match_parent"
                android:layout_height="wrap_content"
                android:layout_marginEnd="20dp"
                android:text="=43"
                android:textAlignment="textEnd"
                android:textColor="@color/white"
                android:textSize="40dp" />
```

```

</LinearLayout>

<GridLayout
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:columnCount="4"
    android:rowCount="4"
    android:columnWidth="1dp"
    android:numColumns="auto_fit"
    android:verticalSpacing="1dp"
    android:horizontalSpacing="1dp"
    android:stretchMode="columnWidth"
    android:gravity="center">

    <Button
        android:id="@+id/b9"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_row="0"
        android:layout_column="0"
        android:layout_margin="10dp"
        android:text="9"
        android:textColor="@color/white"
        android:textSize="25dp" />

    <Button
        android:id="@+id/b8"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_margin="10dp"
        android:text="8"
        android:textColor="@color/white"
        android:textSize="25dp" />

    <Button
        android:id="@+id/b7"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_margin="10dp"
        android:text="7"
        android:textColor="@color/white"
        android:textSize="25dp" />

    <Button
        android:id="@+id/bmult"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_margin="10dp"
        android:background="#F86605"
        android:text="x"

```

```

    android:textColor="@color/white"
    android:textSize="18dp" />

```

```

<Button
    android:id="@+id/b6"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_margin="10dp"
    android:text="6"
    android:textColor="@color/white"
    android:textSize="25dp" />

```

```

<Button
    android:id="@+id/b5"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_margin="10dp"
    android:text="5"
    android:textColor="@color/white"
    android:textSize="25dp" />

```

```

<Button
    android:id="@+id/b4"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_margin="10dp"
    android:text="4"
    android:textColor="@color/white"
    android:textSize="25dp" />

```

```

<Button
    android:id="@+id/bdiv"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_margin="10dp"
    android:background="#F86605"
    android:text="/"
    android:textColor="@color/white"
    android:textSize="25dp" />

```

```

<Button
    android:id="@+id/b3"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_margin="10dp"
    android:text="3"
    android:textColor="@color/white"
    android:textSize="25dp" />

```

```

<Button

```



```

android:id="@+id/b2"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_margin="10dp"
android:text="2"
android:textColor="@color/white"
android:textSize="25dp" />

```

```

<Button
    android:id="@+id/b1"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_margin="10dp"
    android:text="1"
    android:textColor="@color/white"
    android:textSize="25dp" />

```

```

<Button
    android:id="@+id/bminus"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_margin="10dp"
    android:background="#F86605"
    android:text="-"
    android:textColor="@color/white"
    android:textSize="25dp" />

```

```

<Button
    android:id="@+id/b0"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_margin="10dp"
    android:text="0"
    android:textColor="@color/white"
    android:textSize="25dp" />

```

```

<Button
    android:id="@+id/b."
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_margin="10dp"
    android:text="."
    android:textColor="@color/white"
    android:textSize="25dp" />

```

```

<Button
    android:id="@+id/bequal"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_margin="10dp"

```

```

        android:text=""
        android:textColor="@color/white"
        android:textSize="25dp" />

```

```

<Button
    android:id="@+id/bplus"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_margin="10dp"
    android:background="#F86605"
    android:text="+"
    android:textColor="@color/white"
    android:textSize="25dp" />

```

```

</GridLayout>

```

```

</LinearLayout>

```

```

</LinearLayout>

```

java code

```

package com.example.intentandshared;

import androidx.appcompat.app.ActionBar;
import androidx.appcompat.app.AppCompatActivity;

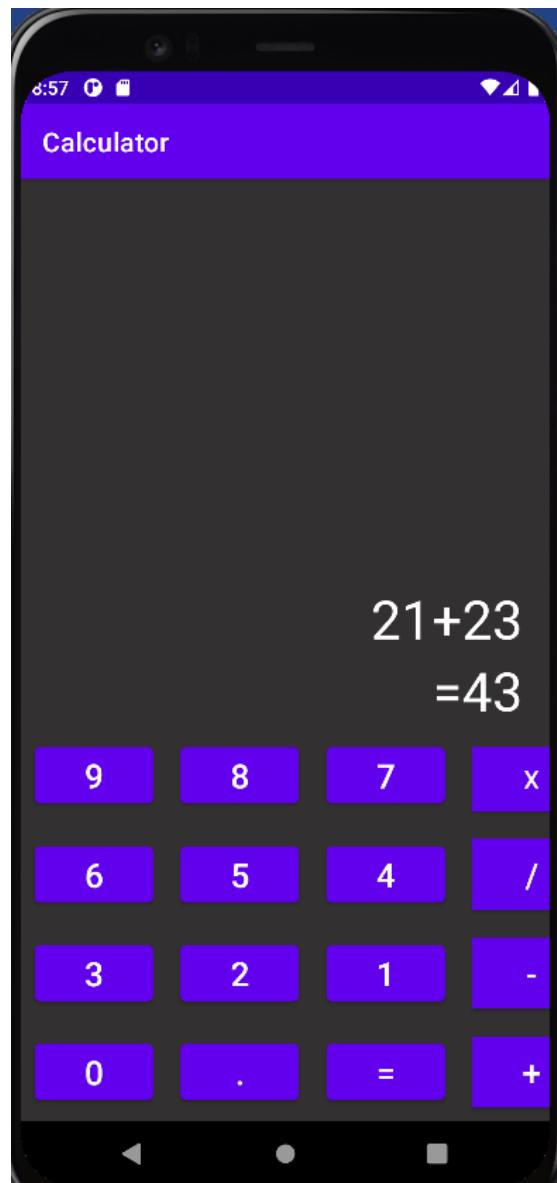
import android.os.Bundle;

public class MainActivity2 extends AppCompatActivity {

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main2);
        ActionBar cal=getSupportActionBar();
        cal.setTitle("Calculator");
    }
}

```

Output



Program: 7

Aim:

Create a Facebook page using RelativeLayout; set properties using .xml file

xml code

```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity"
    android:background="#1877F6"
    android:orientation="vertical"
    >
    <TextView
        android:id="@+id/fb"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginLeft="70dp"
        android:layout_marginTop="150dp"
        android:fontFamily="helvetica"
        android:text="facebook"
        android:textColor="@color/white"
        android:textSize="60dp"
        android:textStyle="bold" />

    <EditText
        android:id="@+id/em1"
        android:layout_width="270dp"
        android:layout_height="40dp"
        android:layout_marginLeft="70dp"
        android:layout_marginTop="300dp"
        android:background="@color/white"
        android:hint="Email-ID"
        android:textColor="@color/black"
        android:textColorHint="@color/black"
        android:textStyle="bold" />

    <EditText
        android:id="@+id/pass"
        android:layout_width="270dp"
        android:layout_height="40dp"
        android:inputType="textPassword"
```

```

    android:layout_marginLeft="70dp"
    android:layout_marginTop="350dp"
    android:textColorHint="@color/black"
    android:hint="Password"
    android:background="@color/white"
    android:textStyle="bold" />

```

```

<Button
    android:id="@+id/btn"
    android:layout_width="270dp"
    android:layout_height="40dp"
    android:layout_marginLeft="70dp"
    android:layout_marginTop="400dp"
    android:backgroundTint="@color/teal_700"
    android:text="Login"
    android:textColor="@color/white"
    android:textSize="16dp"
    android:textStyle="bold" />

```

```

<TextView
    android:id="@+id/cr"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="New to facebook ?"
    android:textColor="@color/white"
    android:textSize="20dp"
    android:textStyle="bold"
    android:layout_marginLeft="70dp"
    android:layout_marginTop="500dp"
    android:fontFamily="helvetica"
/>

```

```

<Button
    android:id="@+id/sign"
    android:layout_width="270dp"
    android:layout_height="50dp"
    android:layout_marginLeft="70dp"
    android:layout_marginTop="530dp"
    android:backgroundTint="@color/teal_200"
    android:text="Create NEW account"
    android:textColor="@color/white"
    android:textSize="16dp"
    android:textStyle="bold" />
</RelativeLayout>

```

java code

```

package com.example.facebook;
import androidx.appcompat.app.AppCompatActivity;
import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;

public class MainActivity extends AppCompatActivity {

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        EditText ee=findViewById(R.id.em1);
        EditText paa=findViewById(R.id.pass);
        Button log=findViewById(R.id.btn);
        Button sig=findViewById(R.id.sign);
        sig.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                Intent i=new Intent(MainActivity.this,Sign_In.class);
                startActivity(i);
            }
        });
        log.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                String user=ee.getText().toString();
                String pas=paa.getText().toString();

                if(user.equals(""))
                {
                    Toast.makeText(MainActivity.this, "Enter Your Name",
Toast.LENGTH_SHORT).show();
                }
                else if (pas.equals("")){
                    Toast.makeText(MainActivity.this, "Enter Your Password",
Toast.LENGTH_SHORT).show();
                }
                else {
                    Intent jk=new Intent(MainActivity.this,welcome.class);
                    if(user.equals("user")){

                        jk.putExtra("Name",user);

```

```

        startActivity(jk);
    }
    else if(user.equals("admin")){
        jk.putExtra("Name",user);
        startActivity(jk);
    }
    else{
        Toast.makeText(MainActivity.this, "Invalid User",
Toast.LENGTH_SHORT).show();
    }

}

}

});

}
}

```

Sign_In.xml

```

<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".Sign_In"
    android:orientation="vertical">

    <TextView
        android:id="@+id/textView2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginLeft="30dp"
        android:layout_marginTop="180dp"
        android:text="ADD PERSONAL DETAILS"
        android:textSize="30dp"
        android:textColor="@color/black"
        android:textStyle="bold"
    />

    <EditText
        android:id="@+id/nam"
        android:layout_width="340dp"
        android:layout_height="40dp"
        android:layout_marginLeft="30dp"
        android:layout_marginTop="250dp"

```

```

        android:textColorHint="@color/black"
        android:inputType="textPersonName"
        android:hint="Name"/>

<EditText
    android:id="@+id/email"
    android:layout_width="340dp"
    android:layout_height="40dp"
    android:layout_marginLeft="30dp"
    android:layout_marginTop="320dp"
    android:inputType="textPersonName"
    android:hint="Email-ID"
    android:textColorHint="@color/black"/>

<EditText
    android:id="@+id/phone"
    android:layout_width="340dp"
    android:layout_height="40dp"
    android:layout_marginLeft="30dp"
    android:layout_marginTop="390dp"
    android:inputType="textPersonName"
    android:hint="Phone Number"
    android:textColorHint="@color/black"/>

<Button
    android:id="@+id/sub"
    android:layout_width="340dp"
    android:layout_height="50dp"
    android:layout_marginLeft="30dp"
    android:layout_marginTop="450dp"
    android:inputType="textPersonName"
    android:text="Submit" />
</RelativeLayout>

```

Sign_In.java

```

package com.example.facebook;

import androidx.appcompat.app.AppCompatActivity;
import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;

public class Sign_In extends AppCompatActivity {

    @Override
    protected void onCreate(Bundle savedInstanceState) {

```



```

super.onCreate(savedInstanceState);
setContentView(R.layout.activity_sign_in);
EditText name=findViewById(R.id.nam);
EditText ema=findViewById(R.id.email);
EditText ph=findViewById(R.id.phone);
Button sub=findViewById(R.id.sub);

sub.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View view) {
        String nam=name.getText().toString();
        String email=ema.getText().toString();
        String phone=ph.getText().toString();

        if(nam.equals("")){
            Toast.makeText(Sign_In.this, "Enter Your Name",
Toast.LENGTH_SHORT).show();
        }
        else if(email.equals("")){
            Toast.makeText(Sign_In.this, "Enter your Email",
Toast.LENGTH_SHORT).show();
        }
        else if(phone.equals("")){
            Toast.makeText(Sign_In.this, "Enter your phone number",
Toast.LENGTH_SHORT).show();
        }
        else{
            Intent j=new Intent(Sign_In.this,display.class);
            if (nam != null) {
                j.putExtra("Name",nam);
                startActivity(j);

            }
            if (email != null)
            {
                j.putExtra("Email",email);
                startActivity(j);

            }
            if (phone != null){
                j.putExtra("Phone",phone);
                startActivity(j);

            }

        }

    }
}

```

```

    });

}
}

```

activity_display.xml

```

<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".display"
    android:orientation="vertical">

    <TextView
        android:id="@+id/textView"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="User Details"
        android:textColor="@color/black"
        android:textStyle="bold"
        android:textSize="40dp"
        android:layout_marginTop="100dp"
        android:layout_marginLeft="100dp" />
    <TextView
        android:id="@+id/ed1"
        android:textSize="16dp"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:textColor="@color/black"
        android:layout_marginTop="170dp"
        android:layout_marginLeft="100dp" />

    <Button
        android:id="@+id/button"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:textStyle="bold"
        android:textSize="10dp"
        android:layout_marginTop="300dp"
        android:layout_marginLeft="170dp"
        android:text="Sign Out" />
</RelativeLayout>

```

display.java

```
package com.example.facebook;

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

public class display extends AppCompatActivity {

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

        TextView dis=findViewById(R.id.ed1);
        Intent k=getIntent();
        String name=k.getStringExtra("Name");
        String ema=k.getStringExtra("Email");
        String pho=k.getStringExtra("Phone");

        dis.setText("Name :"+name+"\nEmail :"+ema+"\nPhone :"+pho);
        Button out=findViewById(R.id.button);

        out.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                Intent h=new Intent(display.this,MainActivity.class);
                startActivity(h);
            }
        });
    }
}
```

activity_welcome.xml

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

```

        android:orientation="vertical">

        <TextView
            android:id="@+id/wel"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_marginLeft="70dp"
            android:layout_marginTop="100dp"
            android:textSize="36dp"
            android:textColor="@color/black"

        />
        <Button
            android:id="@+id/b2"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:textStyle="bold"
            android:textSize="10dp"
            android:layout_marginTop="300dp"
            android:layout_marginLeft="170dp"
            android:text="Sign Out" />
    </RelativeLayout>

```

welcome.java

```

package com.example.facebook;

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

public class welcome extends AppCompatActivity {

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_welcome);
        Button bn=findViewById(R.id.b2);

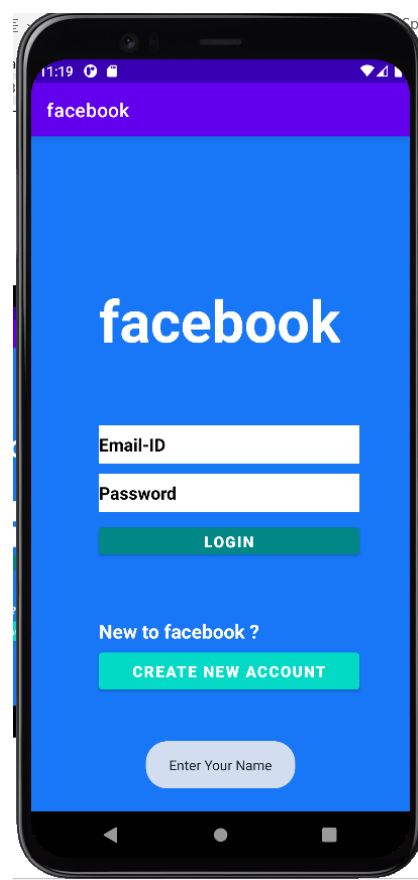
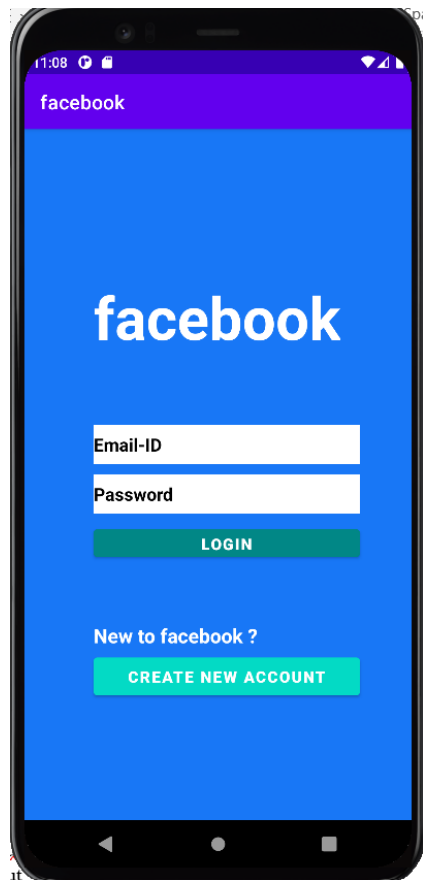
        TextView tv=findViewById(R.id.wel);
        Intent i=getIntent();
        String user=i.getStringExtra("Name");
        tv.setText("Welcome " +user);

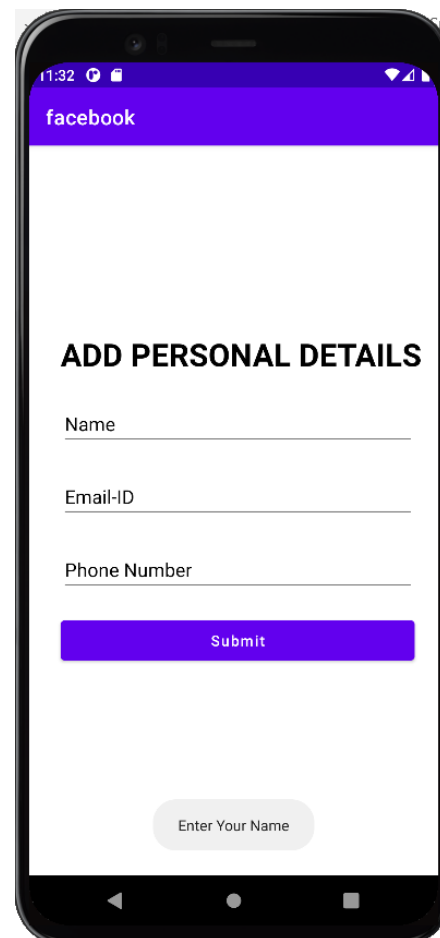
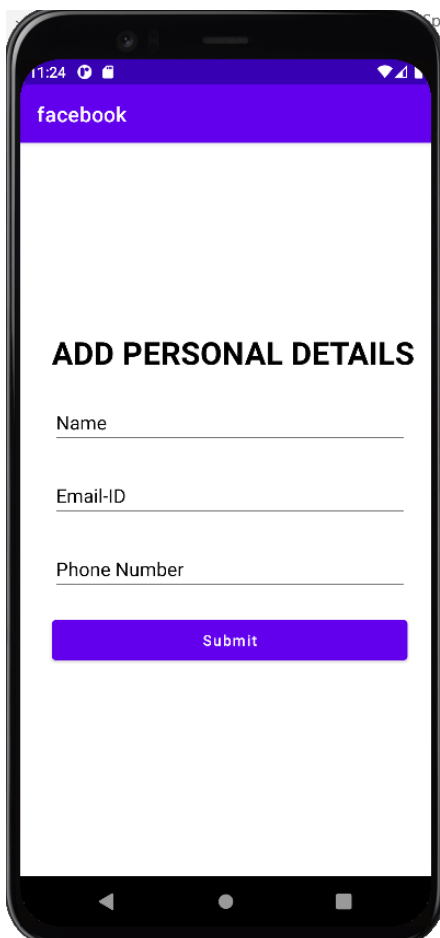
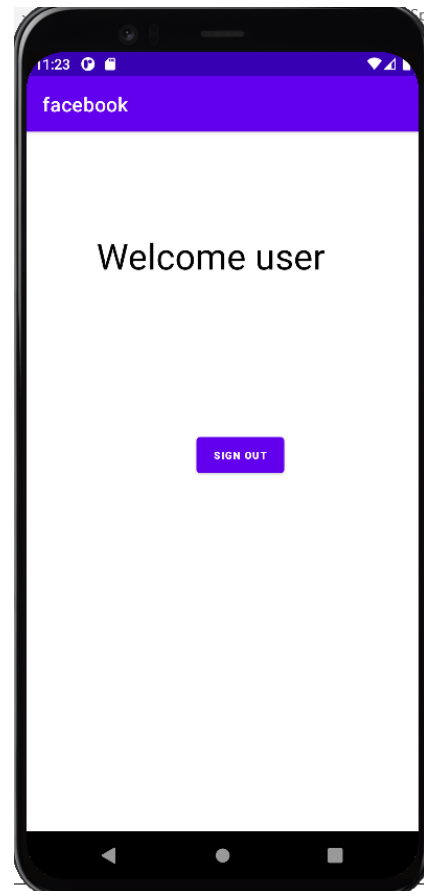
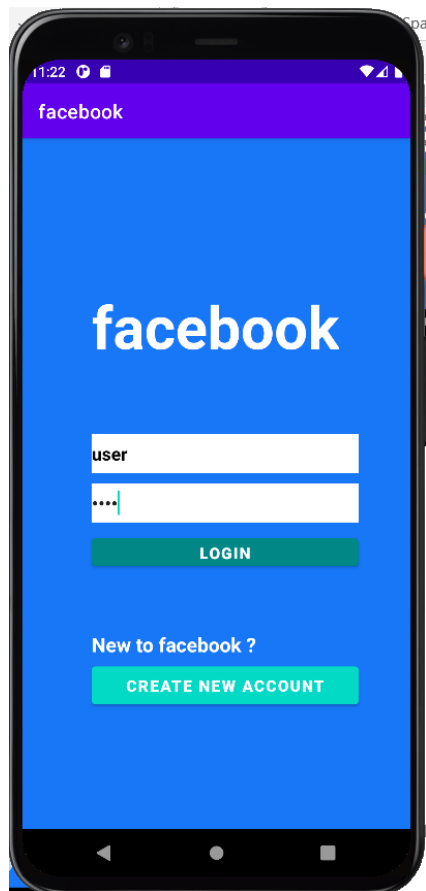
        bn.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {

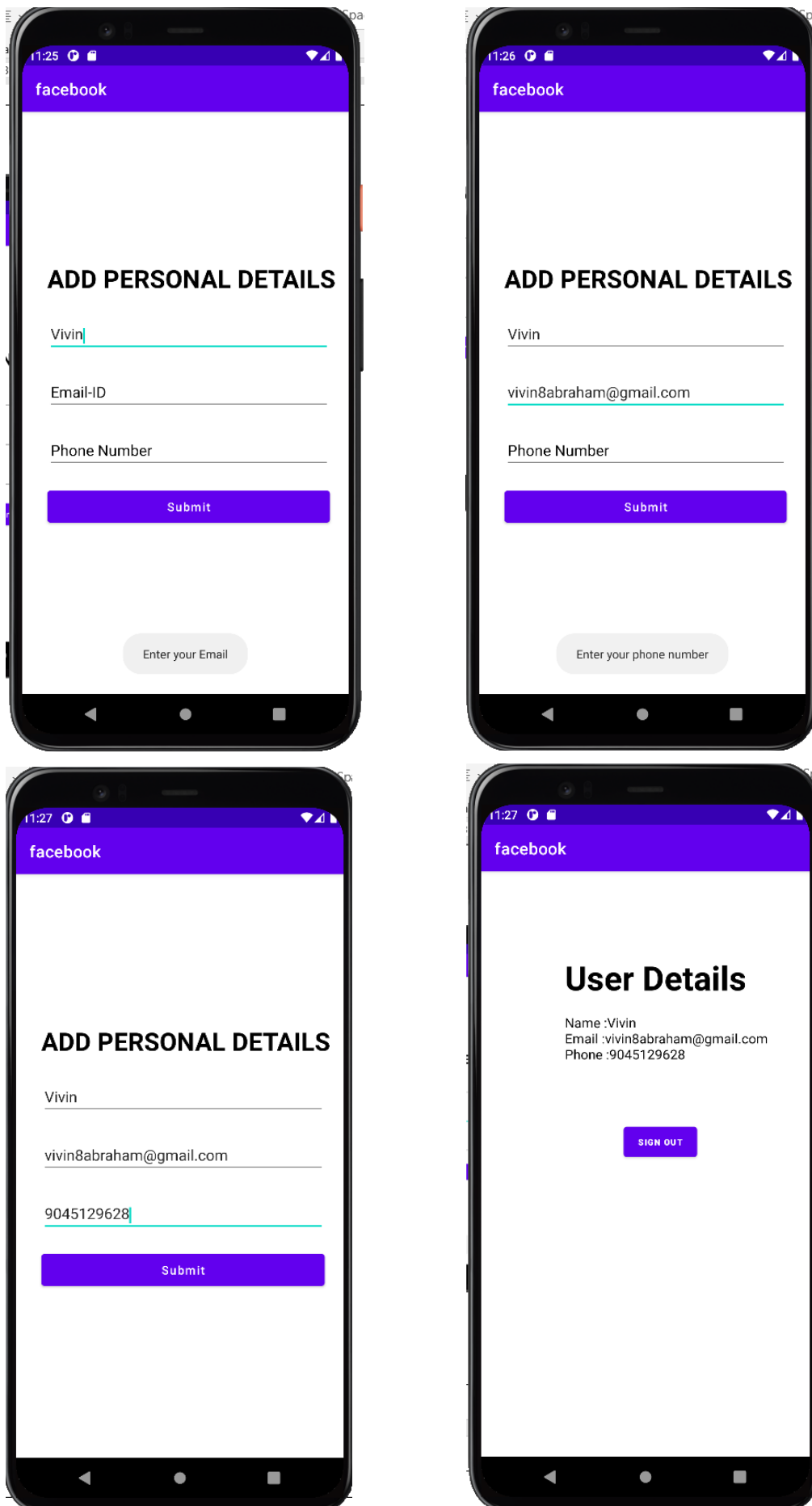
```

```
        Intent jl=new Intent(welcome.this,MainActivity.class);
        startActivity(jl);
    }
});
}
```

Output







Program: 8

Aim:

Develop an application that toggles image using FrameLayout

xml code

```
<FrameLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:orientation="vertical"
    android:layout_width="match_parent"
    android:layout_height="match_parent">

    <ImageView
        android:id="@+id/iv"
        android:src="@drawable/hello"
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:scaleType="fitXY" />

    <ImageView
        android:id="@+id/iv2"
        android:src="@drawable/mickey"
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:scaleType="fitXY" />

</FrameLayout>
```

java code

```
package com.example.MainActivity;

import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.widget.ImageView;
public class MainActivity extends AppCompatActivity {
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        ImageView mv1=findViewById(R.id.iv);
        ImageView mv2=findViewById(R.id.iv2);
        mv1.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                mv2.bringToFront();
            }
        })
    }
}
```

```
});  
mv2.setOnClickListener(new View.OnClickListener() {  
    @Override  
    public void onClick(View v) {  
        mv1.bringToFront();  
    });  
}  
}
```

Output



Program: 9

Aim:

Implement Adapters and perform exception handling

xml code

```
<?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">

    <ListView
        android:id="@+id/list"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        />

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

java code

```
package com.example.exception;

import androidx.appcompat.app.AppCompatActivity;

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

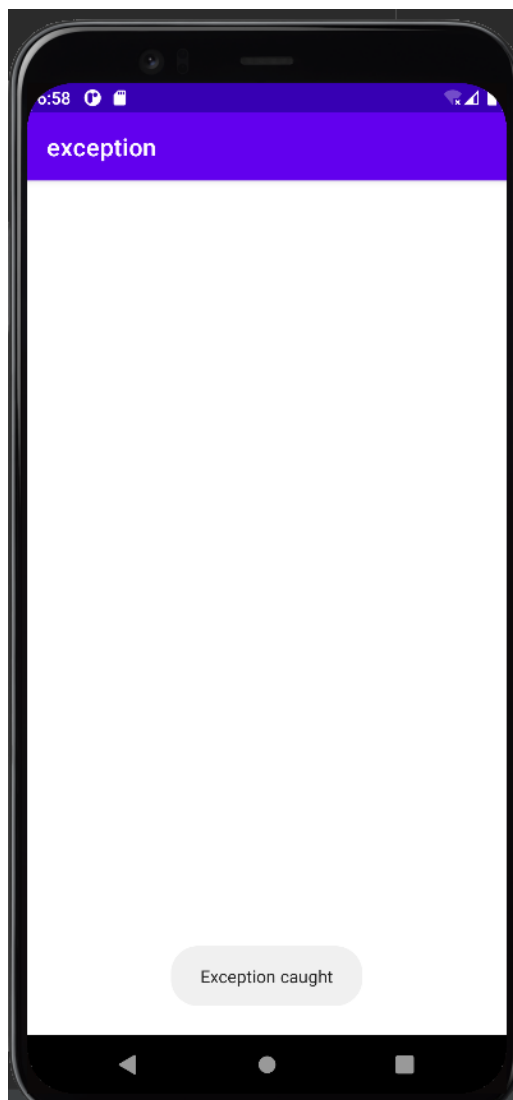
import java.util.ArrayList;
import java.util.List;

public class MainActivity extends AppCompatActivity {
    List<String> list =new ArrayList<>();

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        list.add("Item 1");
        list.add("Item 2");
        list.add("Item 3");
        list.add("Item 4");
    }
}
```

```
for(int i=0;i<6;i++){
    try{
        list.get(i);
    }
    catch (Exception e){
        Toast.makeText(this, "Exception caught", Toast.LENGTH_LONG).show();
    }
}
}
```

Output



Program: 10

Aim:

Implement Intent to navigate between multiple activities (explicit intents)

xml code

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

    <TextView
        android:id="@+id/textView"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="User Name"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.07"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.311" />

    <EditText
        android:id="@+id/user"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:ems="10"
        android:inputType="textPersonName"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.661"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.307" />

    <TextView
        android:id="@+id/textView2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Password"
        app:layout_constraintBottom_toBottomOf="parent"
```

```

app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.068"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.421" />

```

```

<EditText
    android:id="@+id/pass"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:ems="10"
    android:inputType="numberPassword"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.661"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.418" />

```

```

<Button
    android:id="@+id/log"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="LOGIN"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.444"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.569" />

```

```

<TextView
    android:id="@+id/er"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.444"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent" />

```

```

</androidx.constraintlayout.widget.ConstraintLayout>

```

java code

```

package com.example.login_reg;

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

```



```

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

public class MainActivity extends AppCompatActivity {

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        EditText user_name=findViewById(R.id.user);
        EditText password =findViewById(R.id.pass);
        TextView err=findViewById(R.id.er);
        Button save =findViewById(R.id.log);
        save.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                if
(user_name.getText().toString().equals("vivin")&&password.getText().toString().equals("123
45"))
                {
                    Intent i=new Intent(MainActivity.this,MainActivity2.class);
                    startActivity(i);

                }
                else {
                    err.setText("Error");

                }
            }
        });
    }
}

```

activity_main2.xml

```

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

    <TextView
        android:id="@+id/textView3"
        android:layout_width="wrap_content"

```

```

android:layout_height="wrap_content"
android:text="HOUSE_NAME"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.031"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.306" />

```

```

<EditText
    android:id="@+id/hn"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:ems="10"
    android:inputType="textPersonName"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.786"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.298" />

```

```

<TextView
    android:id="@+id/textView4"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="PHONE NO."
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.029"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.396" />

```

```

<EditText
    android:id="@+id/ph"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:ems="10"
    android:inputType="number"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.791"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.397" />

```

```

<TextView
    android:id="@+id/textView5"
    android:layout_width="wrap_content"

```

```

android:layout_height="wrap_content"
android:text="EMAIL ID"

```

```

app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.028"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent" />

```

```

<EditText
    android:id="@+id/eml"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:ems="10"
    android:inputType="textPersonName"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.796"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.518" />

```

```

<Button
    android:id="@+id/sve"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="SAVE"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.4"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.658" />

```

```

<TextView
    android:id="@+id/textView6"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="WELCOME VIVIN!..."
    android:textSize="28sp"
    android:textStyle="italic"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.297"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.095" />

```

```

<TextView
    android:id="@+id/textView7"

```

```

        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Add details"
        android:textSize="22sp"
        android:textStyle="bold"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.387"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.198" />
    </androidx.constraintlayout.widget.ConstraintLayout>

```

MainActivity2.java

```

package com.example.login_reg;
import androidx.appcompat.app.ActionBar;
import androidx.appcompat.app.AppCompatActivity;
import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
public class MainActivity2 extends AppCompatActivity {

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main2);
        ActionBar c=getSupportActionBar();
        c.setTitle("Add details");
        EditText hname=findViewById(R.id.hn);
        EditText phone=findViewById(R.id.ph);
        EditText ema=findViewById(R.id.eml);
        Button save=findViewById(R.id.sve);
        save.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                Intent j=new Intent(MainActivity2.this,MainActivity3.class);
                String honame=hname.getText().toString();
                j.putExtra("Hname",honame);
                String phon=phone.getText().toString();
                j.putExtra("Phone",phon);
                String emai=ema.getText().toString();
                j.putExtra("Email",emai);
            }
        });
    }
}

```

```

        startActivity(j);
    }
});
}
}

```

activity_main3.xml

```

<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
xmlns:app="http://schemas.android.com/apk/res-auto"
xmlns:tools="http://schemas.android.com/tools"
android:layout_width="match_parent"
android:layout_height="match_parent"
tools:context=".MainActivity3">

<TextView
    android:id="@+id/textView8"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Details of Vivin..."
    android:textSize="30sp"
    android:textStyle="bold"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.157" />

<TextView
    android:id="@+id/tr"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:textSize="25sp"
    android:textStyle="italic"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.474"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.318" />
</androidx.constraintlayout.widget.ConstraintLayout>

```

MainActivity3.java

```

package com.example.login_reg;

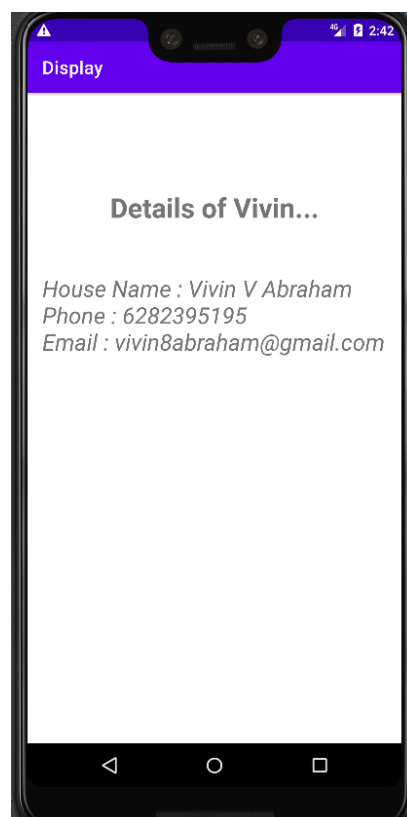
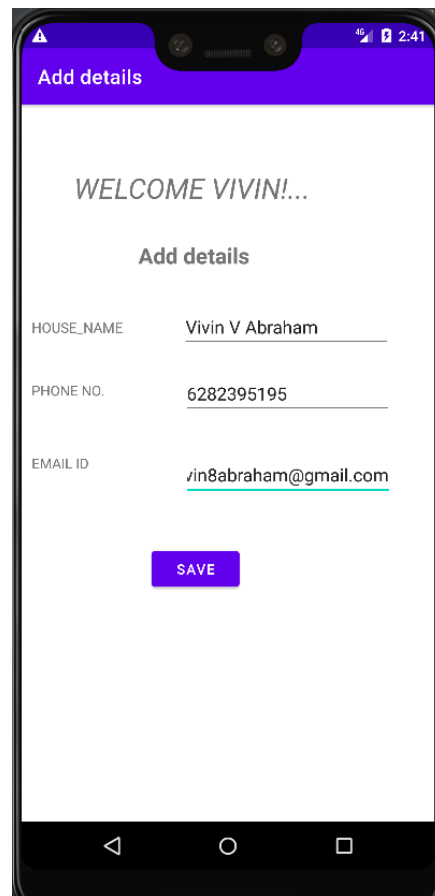
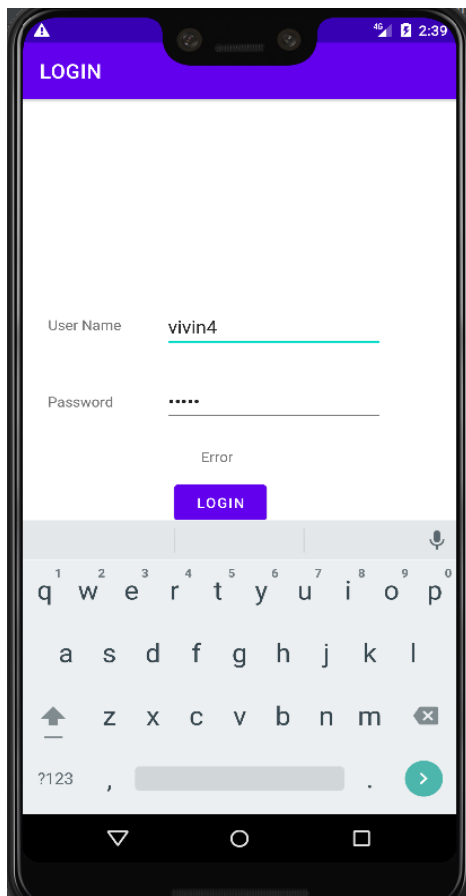
import androidx.appcompat.app.ActionBar;

```

```
import androidx.appcompat.app.AppCompatActivity;
import android.content.Intent;
import android.os.Bundle;
import android.widget.TextView;
public class MainActivity3 extends AppCompatActivity {

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        ActionBar b=getSupportActionBar();
        b.setTitle("Display");
        setContentView(R.layout.activity_main3);
        TextView tr=findViewById(R.id.tr);
        Intent k=getIntent();
        String hname=k.getStringExtra("Hname");
        String phone=k.getStringExtra("Phone");
        String email=k.getStringExtra("Email");
        tr.setText("House Name : "+hname+"\nPhone : "+phone+"\nEmail : "+email);
    }
}
```

Output



Program: 11

Aim:

Develop application that works with implicit intents

xml code

```
<?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=".implicit_intent">

    <Button
        android:id="@+id/cm"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="CLICK ME"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

implicit_intent.java

```
package com.example.myapplication;

import androidx.appcompat.app.ActionBar;
import androidx.appcompat.app.AppCompatActivity;
import android.content.Intent;
import android.net.Uri;
import android.net.UrlQuerySanitizer;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;

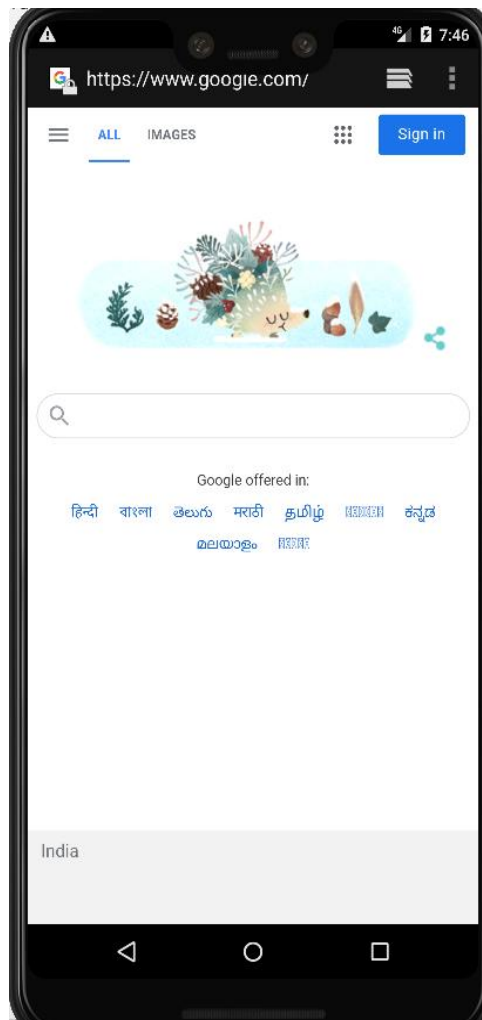
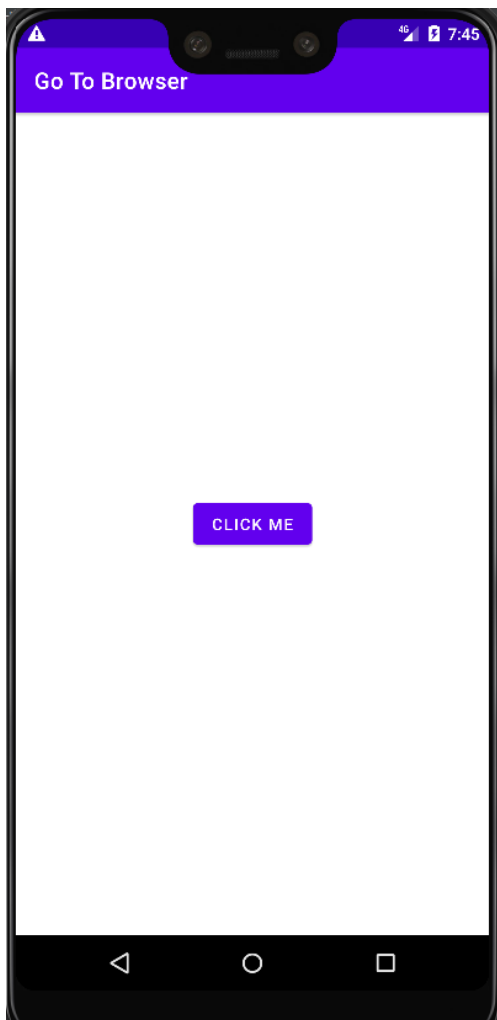
public class implicit_intent extends AppCompatActivity {

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_implicit_intent);
        ActionBar b=getSupportActionBar();
```



```
b.setTitle("Go To Browser");
Button click=findViewById(R.id.cm);
click.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View view) {
        Intent j=new Intent(Intent.ACTION_VIEW, Uri.parse("https://www.google.com/"));
        startActivity(j);
    }
});
}
```

Output



Program: 12

Aim:

Implement Options Menu to navigate to activities

menu.xml

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

    <item
        android:id="@+id/it1"
        android:icon="@drawable/about"
        android:title="About"
        app:showAsAction="withText"/>
    <item android:title="Help"
        android:id="@+id/it2"
        />
</menu>
```

xml code

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

    <ImageView
        android:id="@+id/imageView2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        tools:srcCompat="@tools:sample/avatars" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

java code

```

package com.example.myapplication;
import androidx.annotation.NonNull;
import androidx.appcompat.app.AppCompatActivity;
import android.content.Intent;
import android.os.Bundle;
import android.view.Menu;
import android.view.MenuItem;
import android.widget.ImageView;
import android.widget.Toast;
public class MainActivity extends AppCompatActivity {
    ImageView i;
    //option menu
    @Override
    public boolean onCreateOptionsMenu(Menu menu) {
        getMenuInflater().inflate(R.menu.menu,menu);
        return true;
    }
    @Override
    public boolean onOptionsItemSelected(@NonNull MenuItem item) {
        item.setIcon(R.drawable.about);
        i=findViewById(R.id.imageView2);
        //handle item selection
        switch (item.getItemId()) {
            case R.id.it1:
                //view image-about click
                i.setImageResource(R.drawable.about);
                Toast.makeText(getApplicationContext(), "You clicked About",
Toast.LENGTH_SHORT).show();
                return true;
            case R.id.it2:
                //moving to next page
                Intent in = new Intent(MainActivity.this, MainActivity2.class);
                startActivity(in);
                Toast.makeText(getApplicationContext(), "You Clicked Help",
Toast.LENGTH_SHORT).show();
                return true;
            default:
                return super.onOptionsItemSelected(item);
        }
    }
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
    }
}

```

Activity_main2.xml

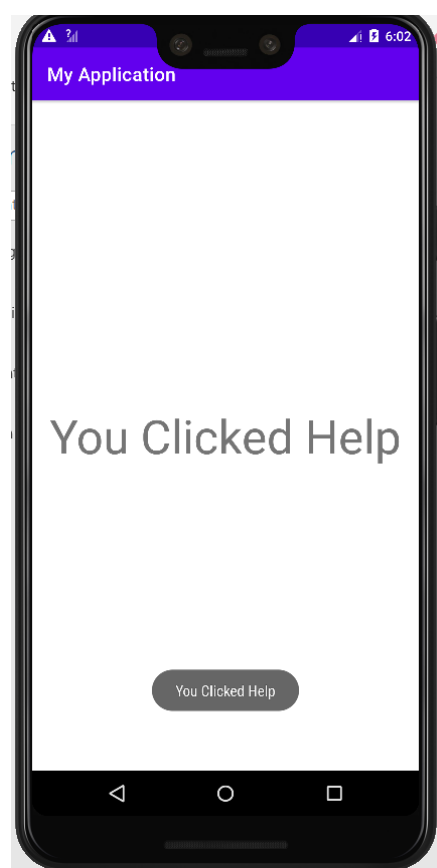
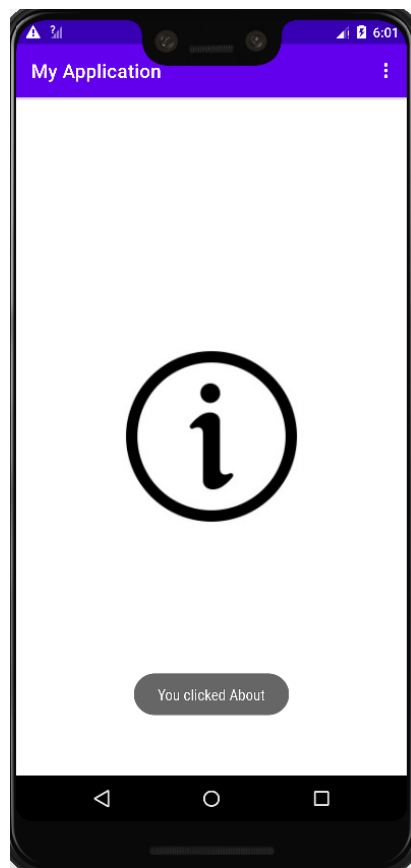
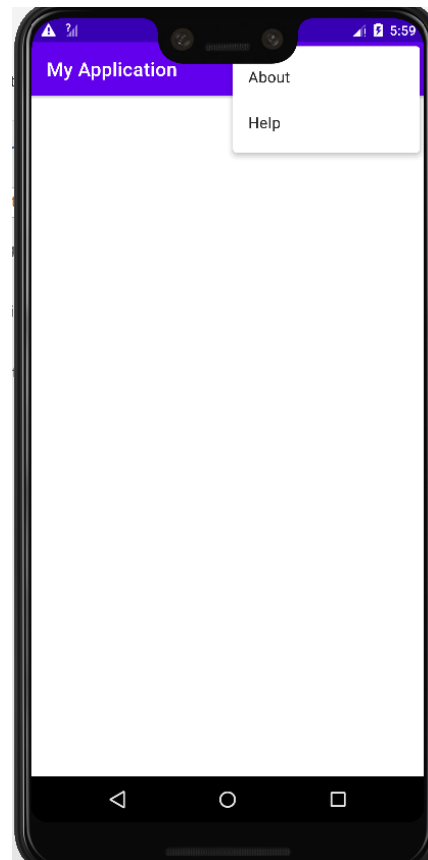
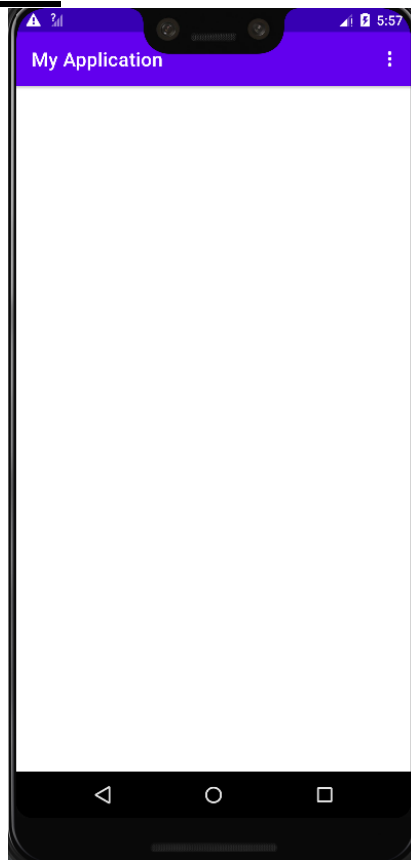
```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
xmlns:app="http://schemas.android.com/apk/res-auto"
xmlns:tools="http://schemas.android.com/tools"
android:layout_width="match_parent"
android:layout_height="match_parent"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

    <TextView
        android:id="@+id/textView"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:textSize="50dp"
        android:text="You Clicked Help"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

MainActivity2.java

```
package com.example.myapplication;
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
public class MainActivity2 extends AppCompatActivity {
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main2);
    }
}
```

Output



Program: 13

Aim:

Develop an application that uses ArrayAdapter with ListView.

xml code

```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
xmlns:app="http://schemas.android.com/apk/res-auto"
xmlns:tools="http://schemas.android.com/tools"
android:layout_width="match_parent"
android:layout_height="match_parent"
tools:context=".MainActivity3">
<TextView
    android:id="@+id/textView2"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintLeft_toLeftOf="parent"
    app:layout_constraintRight_toRightOf="parent"
    app:layout_constraintTop_toTopOf="parent" />
<ListView
    android:id="@+id/list1"
    android:layout_width="396dp"
    android:layout_height="732dp"
    android:layout_marginStart="1dp"
    android:layout_marginEnd="1dp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.461"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.0">
</ListView>
</androidx.constraintlayout.widget.ConstraintLayout>
```

java code

```
package com.example.myapplication;
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.widget.AdapterView;
import android.widget.ArrayAdapter;
import android.widget.ListView;
import android.widget.Toast;
```

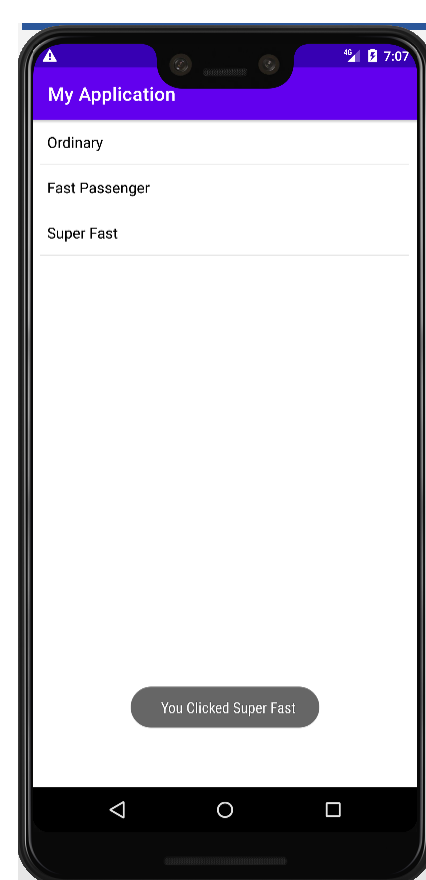
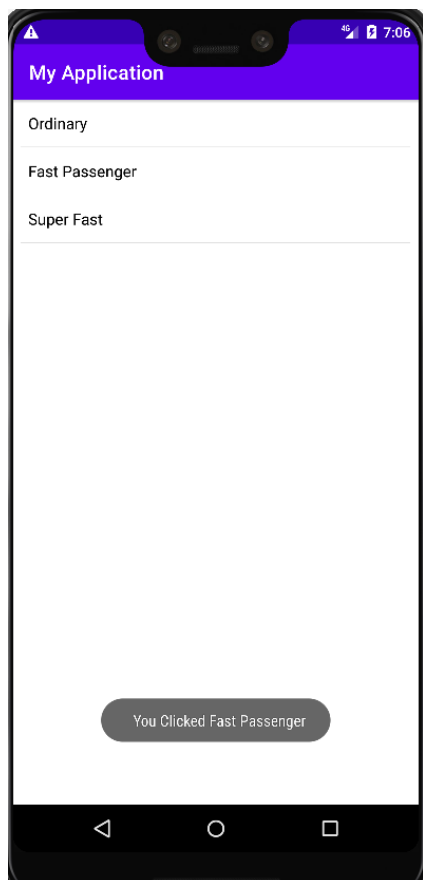
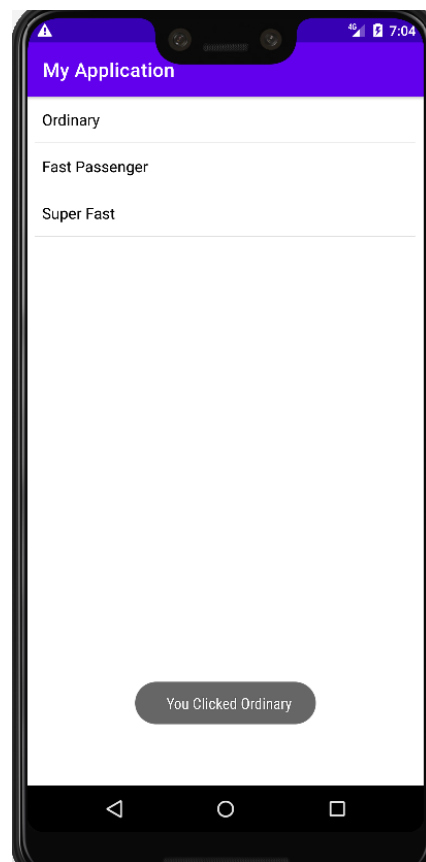
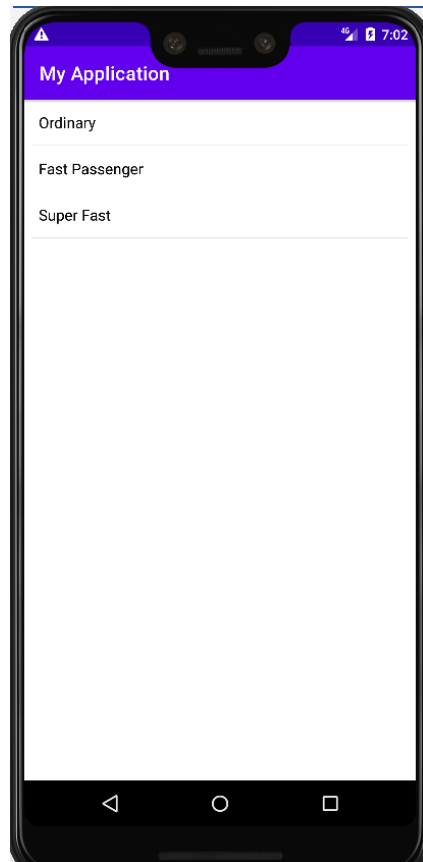
```

public class MainActivity3 extends AppCompatActivity {
    ListView l1;
    String buses[]={ "Ordinary","Fast Passenger","Super Fast","Super Delux","Minnal"};

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main3);
        l1 = findViewById(R.id.list1);
        ArrayAdapter arrayAdapter = new
            ArrayAdapter<String>(MainActivity3.this,
R.layout.support_simple_spinner_dropdown_item, buses);
        l1.setAdapter(arrayAdapter);
        //for toast while click item
        l1.setOnItemClickListener(new AdapterView.OnItemClickListener() {
            @Override
            public void onItemClick(AdapterView<?> parent, View view, int position, long id) {
                Toast.makeText(getApplicationContext()," You Clicked " + buses[position],
Toast.LENGTH_SHORT).show();
            }
        });
    }
}

```


Output



Program: 14

Aim:

Develop an application that use GridView with images and display Alert box on selection

xml code

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

    <GridView
        android:id="@+id/grid"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:numColumns="3"/>
</LinearLayout>
```

java code

```
package com.example.myapplication;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;
import android.widget.GridView;

public class MainActivity extends AppCompatActivity {
    GridView gridView;

    String det[]={ "car1","car2","car3","car4","car5","car6","car7","car8"};
    int
    img[]={ R.drawable.ford,R.drawable.car2,R.drawable.car3,R.drawable.car4,R.drawable.car5
    ,R.drawable.car6,R.drawable.car7,R.drawable.car8};
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

        gridView=findViewById(R.id.grid);
        CustomAdapter ca= new CustomAdapter(MainActivity.this,det,img);
```

```

        gridView.setAdapter(ca);
    }
}

```

grid_layout.xml

```

<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical">

    <ImageView
        android:layout_width="150dp"
        android:layout_height="150dp"
        android:id="@+id/imv"/>

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:id="@+id/tvv"
        android:textSize="20dp"/>

</LinearLayout>

```

customAdapter.java

```

package com.example.myapplication;

import android.content.Context;
import android.view.LayoutInflater;
import android.view.View;
import android.view.ViewGroup;
import android.widget.BaseAdapter;
import android.widget.ImageView;
import android.widget.TextView;

public class CustomAdapter extends BaseAdapter {
    Context context;
    String det[];
    int img[];
    LayoutInflater inflater;
    public CustomAdapter(MainActivity mainActivity, String[] det, int[] img) {
        this.context=mainActivity;
        this.det=det;
        this.img=img;
        inflater=(LayoutInflater.from(mainActivity));
    }
}

```

```

    }

    @Override
    public int getCount() {
        return det.length;
    }

    @Override
    public Object getItem(int i) {
        return null;
    }

    @Override
    public long getItemId(int i) {
        return 0;
    }

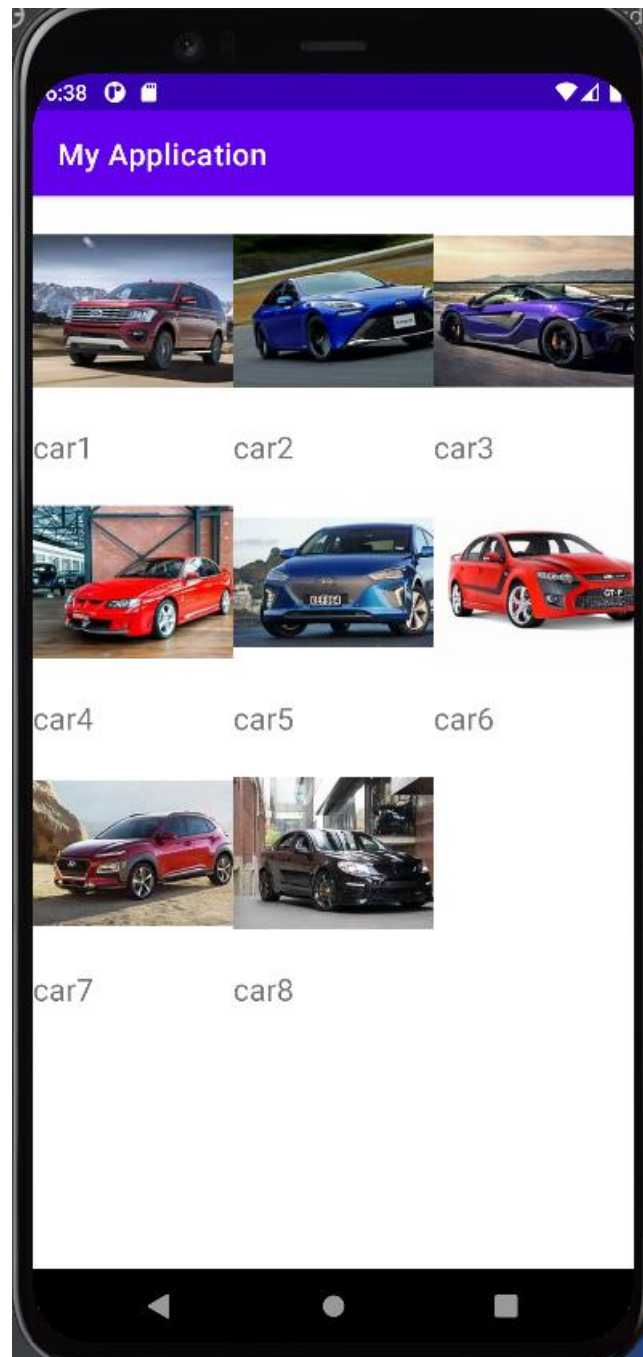
    @Override
    public View getView(int i, View convertView, ViewGroup parent) {
        convertView=layoutInflater.inflate(R.layout.grid_layout,null);

        TextView tv=convertView.findViewById(R.id.tvv);
        ImageView iv=convertView.findViewById(R.id.imv);

        tv.setText(det[i]);
        iv.setImageResource(img[i]);
        return convertView;
    }
}

```

Output



Program: 15

Aim:

Develop an application that implements Spinner component and perform event handling

xml code

```
<?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">

    <Spinner
        android:id="@+id/spinner"
        android:layout_width="209dp"
        android:layout_height="wrap_content"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.92"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.499" />

    <TextView
        android:id="@+id/textView"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Courses"
        android:textSize="20dp"
        android:textColor="@color/black"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.212"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />

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

java code

```

package com.example.spinner;

import androidx.appcompat.app.AppCompatActivity;

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

public class MainActivity extends AppCompatActivity {
    Spinner spinner;
    String[] courses={"MTech","MCA","BTech"};

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

        spinner=findViewById(R.id.spinner);

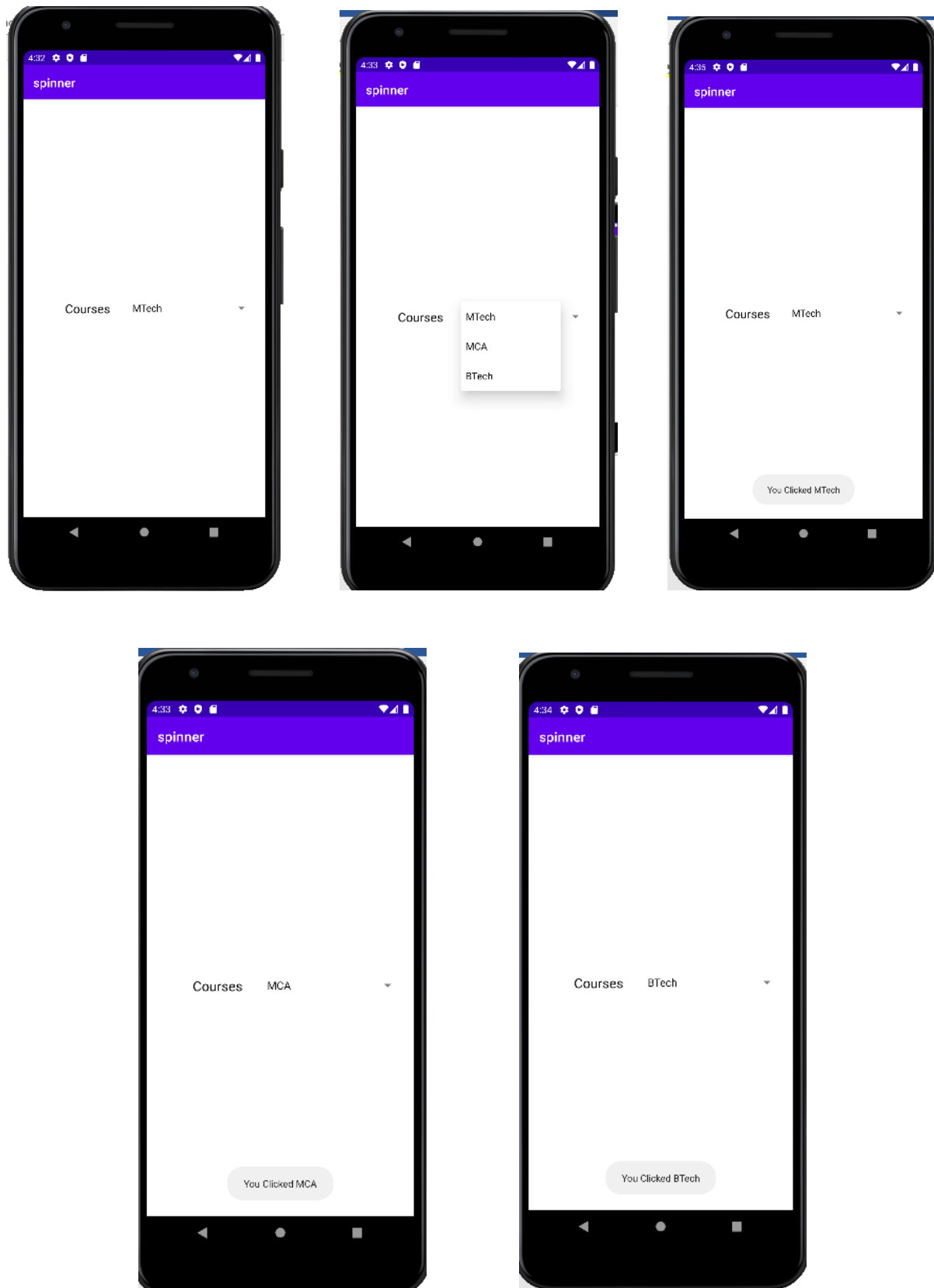
        ArrayAdapter arrayAdapter=new
        ArrayAdapter(this,R.layout.support_simple_spinner_dropdown_item,courses);
        spinner.setAdapter(arrayAdapter);

        spinner.setOnItemClickListener(new AdapterView.OnItemClickListener() {
            @Override
            public void onItemClick(AdapterView<?> parent, View view, int position, long id)
            {
                Toast.makeText(getApplicationContext(), "You Clicked "+courses[position],
                Toast.LENGTH_SHORT).show();
            }

            @Override
            public void onNothingSelected(AdapterView<?> parent) {
                return;
            }
        });
    }
}

```

Output



Program: 16

Aim:

Apply themes via code and manifest file

xml code

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

    <EditText
        android:id="@+id/editTextTextPersonName"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:ems="10"
        android:inputType="textPersonName"
        android:text="Name"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

java code

```
package com.example.themes;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;

public class MainActivity extends AppCompatActivity {

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

AndroidManifest.xml

```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    package="com.example.themes">

    <application
        android:allowBackup="true"
        android:icon="@mipmap/ic_launcher"
        android:label="@string/app_name"
        android:roundIcon="@mipmap/ic_launcher_round"
        android:supportsRtl="true"
        android:theme="@style/Theme.Themes">
        <activity
            android:name=".MainActivity"
            android:exported="true">
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />

                <category android:name="android.intent.category.LAUNCHER" />
            </intent-filter>
        </activity>
    </application>

</manifest>
```

values/themes.xml

```
<resources xmlns:tools="http://schemas.android.com/tools">
    <!-- Base application theme. -->
    <style name="Theme.Themes"
        parent="Theme.MaterialComponents.DayNight.DarkActionBar">
        <!-- Primary brand color. -->
        <item name="colorPrimary">@color/purple</item>
        <item name="colorPrimaryVariant">@color/red</item>
        <item name="colorOnPrimary">@color/white</item>
        <!-- Secondary brand color. -->
        <item name="colorSecondary">@color/white</item>
        <item name="colorSecondaryVariant">@color/orange</item>
        <item name="colorOnSecondary">@color/red</item>
        <!-- Status bar color. -->
        <item name="android:statusBarColor"
            tools:targetApi="I">?attr/colorPrimaryVariant</item>
        <!-- Customize your theme here. -->
    </style>
</resources>
```

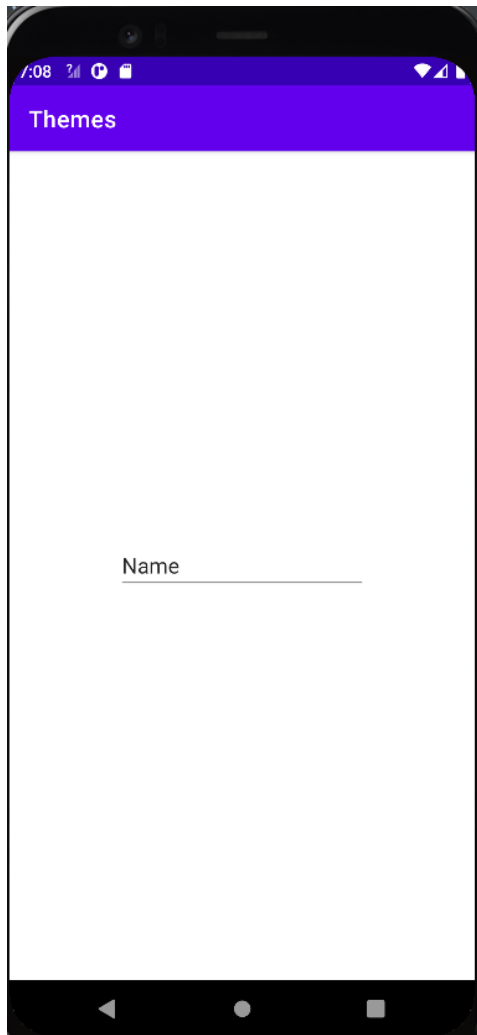
night/themes.xml

```
<resources xmlns:tools="http://schemas.android.com/tools">
  <!-- Base application theme. -->
  <style name="Theme.Themes"
parent="Theme.MaterialComponents.DayNight.DarkActionBar">
    <!-- Primary brand color. -->
    <item name="colorPrimary">@color/red</item>
    <item name="colorPrimaryVariant">@color/orange</item>
    <item name="colorOnPrimary">@color/black</item>
    <!-- Secondary brand color. -->
    <item name="colorSecondary">@color/purple</item>
    <item name="colorSecondaryVariant">@color/white</item>
    <item name="colorOnSecondary">@color/black</item>
    <!-- Status bar color. -->
    <item name="android:statusBarColor"
tools:targetApi="l">?attr/colorPrimaryVariant</item>
    <!-- Customize your theme here. -->
  </style>
</resources>
```

colors.xml

```
<?xml version="1.0" encoding="utf-8"?>
<resources>
  <color name="orange">#FF5722</color>
  <color name="black">#FF000000</color>
  <color name="purple">#E91E63</color>
  <color name="red">#F80F0F</color>
  <color name="white">#FFFFFFF</color>
</resources>
```

Output



Program: 17

Aim:

Develop application using Fragments

xml code

```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:background="@color/material_on_surface_stroke"
    tools:context=".fragment1">

    <!-- TODO: Update blank fragment layout -->
    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_centerInParent="true"
        android:textSize="30dp"
        android:text="fragment 1" />
</RelativeLayout>
```

fragment1.java

```
package com.example.fragment;
import android.os.Bundle;
import androidx.fragment.app.Fragment;
import android.view.LayoutInflater;
import android.view.View;
import android.view.ViewGroup;

public class fragment1 extends Fragment {

    @Override
    public View onCreateView(LayoutInflater inflater, ViewGroup container,
        Bundle savedInstanceState) {
        // Inflate the layout for this fragment
        return inflater.inflate(R.layout.fragment_fragment1, container, false);
    }
}
```

Fragment fragment2.xml

```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:background="@color/teal_200"
    tools:context=".fragment2">
    <!-- TODO: Update blank fragment layout -->
    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_centerInParent="true"
        android:textSize="30dp"
        android:text="fragment 2" />

</RelativeLayout>
```

fragment2.java

```
package com.example.fragmenten;
import android.os.Bundle;
import androidx.fragment.app.Fragment;
import android.view.LayoutInflater;
import android.view.View;
import android.view.ViewGroup;
public class fragment2 extends Fragment {
    @Override
    public View onCreateView(LayoutInflater inflater, ViewGroup container,
        Bundle savedInstanceState) {
        // Inflate the layout for this fragment
        return inflater.inflate(R.layout.fragment_fragment2, container, false);
    }
}
```

xml code

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

```

<FrameLayout
    android:layout_width="match_parent"
    android:layout_height="0dp"
    android:layout_weight="4"
    android:background="@color/yellow"
    android:id="@+id/framelayout"/>
<RelativeLayout
    android:layout_width="match_parent"
    android:layout_height="0dp"
    android:layout_weight="1">
<Button
    android:layout_width="160dp"
    android:layout_height="50dp"
    android:id="@+id/fragbtn1"
    android:text="fragment1"
    android:layout_alignParentBottom="true"
    android:layout_marginStart="30dp"
    android:layout_marginEnd="30dp"/>
<Button
    android:layout_width="160dp"
    android:layout_height="50dp"
    android:id="@+id/fragbtn2"
    android:text="fragment1"
    android:layout_alignParentBottom="true"
    android:layout_alignParentRight="true"
    android:layout_marginRight="30dp"
    android:layout_marginEnd="30dp"/>
</RelativeLayout>

<TextView
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text=""
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintLeft_toLeftOf="parent"
    app:layout_constraintRight_toRightOf="parent"
    app:layout_constraintTop_toTopOf="parent" />

</LinearLayout>

```

java code

```

package com.example.fragmen;

import androidx.appcompat.app.AppCompatActivity;
import androidx.fragment.app.Fragment;
import androidx.fragment.app.FragmentManager;
import androidx.fragment.app.FragmentTransaction;

```

```

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

public class MainActivity extends AppCompatActivity {

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

        Button b1=findViewById(R.id.fragbtn1);
        Button b2=findViewById(R.id.fragbtn2);

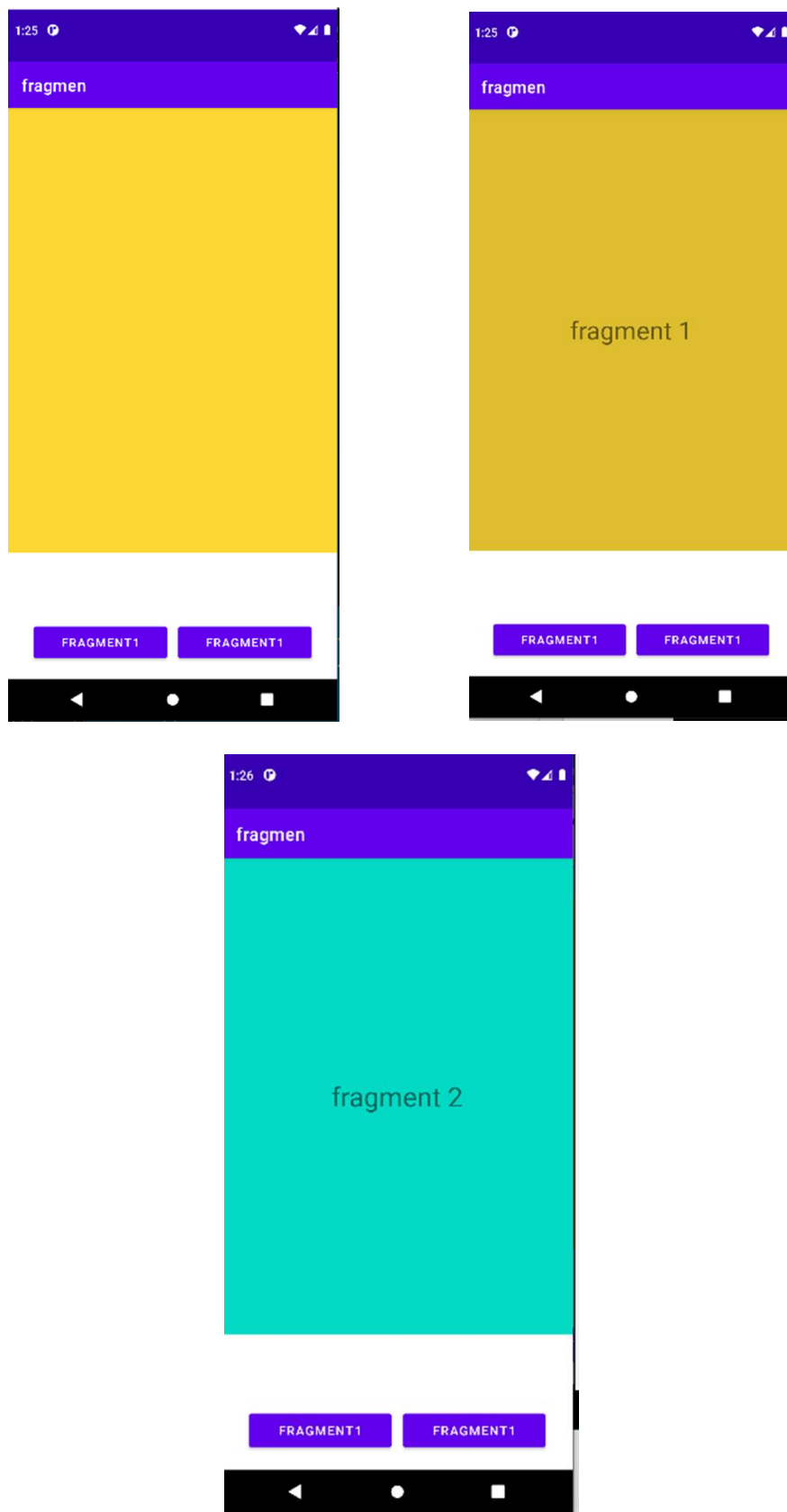
        b1.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                replaceFragment(new fragment1());
            }
        });
        b2.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                replaceFragment(new fragment2());
            }
        });
    }

    private void replaceFragment(Fragment fragment) {

        FragmentManager fragmentManager=getSupportFragmentManager();
        FragmentTransaction fragmentTransaction=fragmentManager.beginTransaction();
        fragmentTransaction.replace(R.id.frameLayout,fragment);
        fragmentTransaction.commit();
    }
}

```


Output



Program: 18

Aim:

Implement Navigation drawer

xml code

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

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

        <TextView
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:gravity="center"
            android:text="NavigationDrawer"
            android:textAlignment="center"
            android:textColor="@color/black"
            android:textSize="20dp"
            android:textStyle="bold" />

    </LinearLayout>
    <com.google.android.material.navigation.NavigationView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_gravity="start"
        app:menu="@menu/navigation_menu"/>

</androidx.drawerlayout.widget.DrawerLayout>
```

java code

```

package com.example.navigation;

import androidx.annotation.NonNull;
import androidx.appcompat.app.ActionBarDrawerToggle;
import androidx.appcompat.app.AppCompatActivity;
import androidx.drawerlayout.widget.DrawerLayout;

import android.os.Bundle;
import android.view.MenuItem;

public class MainActivity extends AppCompatActivity {
    DrawerLayout drawerLayout;
    ActionBarDrawerToggle actionBarDrawerToggle;

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

        drawerLayout=findViewById(R.id.drawererr);
        actionBarDrawerToggle=new
ActionBarDrawerToggle(this,drawerLayout,R.string.Open_app,R.string.Close);

        drawerLayout.addDrawerListener(actionBarDrawerToggle);
        actionBarDrawerToggle.syncState();

        getSupportActionBar().setDisplayHomeAsUpEnabled(true);
    }

    @Override
    public boolean onOptionsItemSelected(@NonNull MenuItem item) {
        if(actionBarDrawerToggle.onOptionsItemSelected(item))
        {
            return true;
        }

        return super.onOptionsItemSelected(item);
    }
}

```

menu.xml

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

    <item android:id="@+id/ac"
          android:title="My Account"
          android:icon="@drawable/ic_action_name"

    />

    <item android:id="@+id/set"
          android:title="Settings"
          android:icon="@drawable/ic_set"

    />

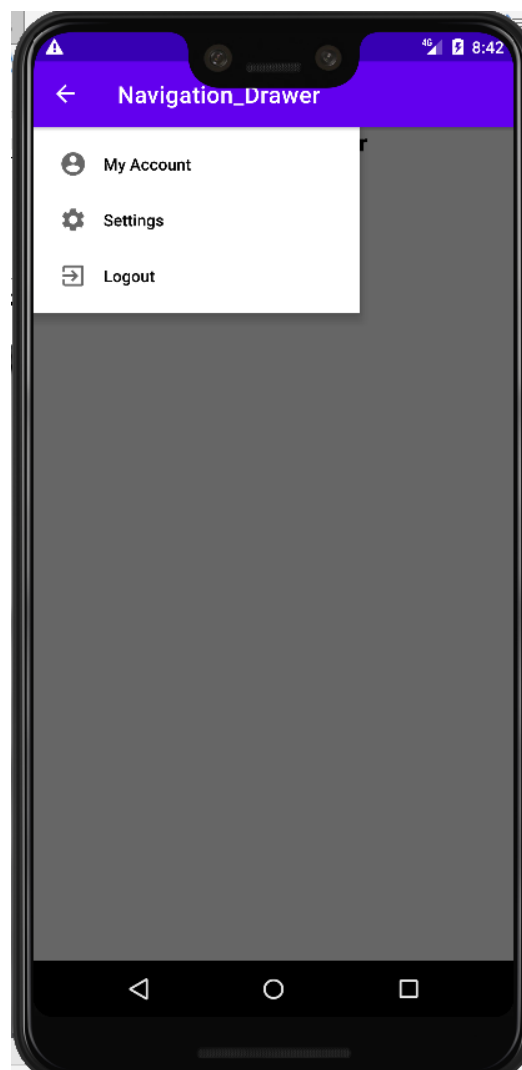
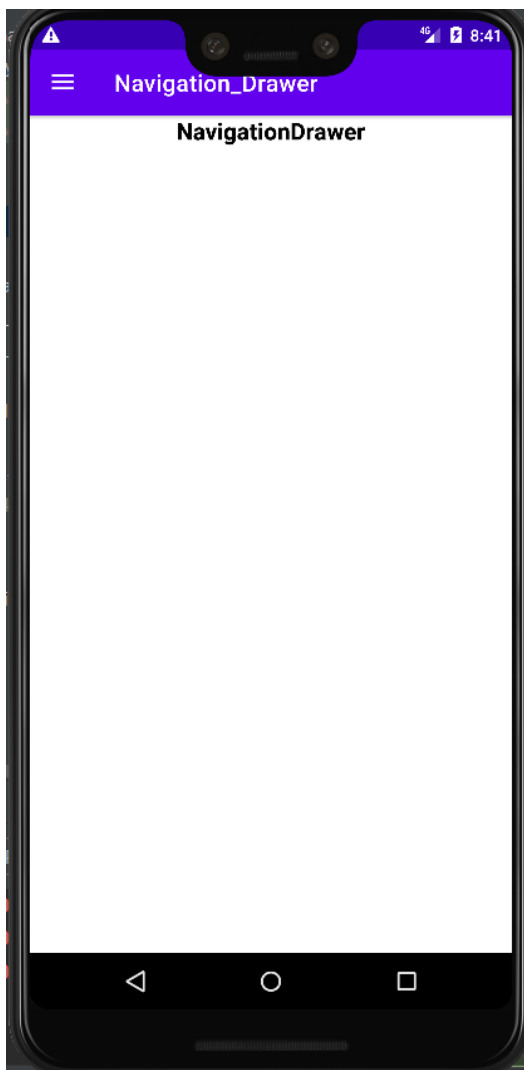
    <item android:id="@+id/log"
          android:title="Logout"
          android:icon="@drawable/ic_log"

    />
</menu>
```

string.xml

```
<resources>
    <string name="app_name">Navigation</string>
    <string name="Open_app">Open</string>
    <string name="Close">Close</string>
</resources>
```

Output



Program: 19

Aim:

Program to implement various SQLite operations:(INSERT, UPDATE, DELETE, SELECT)

xml code

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

<TextView
    android:id="@+id/textView"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Enter Your Details"
    android:textSize="30dp"
    android:textStyle="bold"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.529"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.028" />

<EditText
    android:id="@+id/ed1"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:ems="10"
    android:hint="Name"
    android:inputType="textPersonName"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.079"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.132" />

<EditText
    android:id="@+id/ed2"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
```

```

android:ems="10"
android:hint="Address"
android:inputType="textPersonName"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.079"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.239" />

```

<Button

```

android:id="@+id/add"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:text="Add Details"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.114"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.374" />

```

<Button

```

android:id="@+id/view"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:text="View Details"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.823"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.374" />

```

<Button

```

android:id="@+id/del"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:text="DELETE"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.141"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.606" />

```

<EditText

```

android:id="@+id/du"
android:layout_width="wrap_content"
android:layout_height="wrap_content"

```

```

        android:ems="10"
        android:inputType="textPersonName"
        android:hint="id to be delete/update"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />

<Button
    android:id="@+id/up"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="UPDATE"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.813"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.606" />
</androidx.constraintlayout.widget.ConstraintLayout>

```

java code

```

package com.example.data;

import androidx.appcompat.app.AppCompatActivity;

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

public class MainActivity extends AppCompatActivity {

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

        EditText e1=findViewById(R.id.ed1);
        EditText e2=findViewById(R.id.ed2);
        Button b1=findViewById(R.id.add);
        Button b2=findViewById(R.id.view);
        Button b3=findViewById(R.id.del);
        Button b4=findViewById(R.id.up);
    }
}

```



```

EditText gt=findViewById(R.id.du);

helper hel=new helper(this);
b1.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View view) {
        String name=e1.getText().toString();
        String add=e2.getText().toString();
        hel.insert(name,add);
    }
});
b2.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View view) {
        StringBuffer sb=new StringBuffer();
        Cursor cb=hel.view();
        while(cb.moveToNext()){
            sb.append("id :"+cb.getString(0)+"\n");
            sb.append("Name :"+cb.getString(1)+"\n");
            sb.append("Address :"+cb.getString(2)+"\n");
        }
        Toast.makeText(getApplicationContext(), sb.toString(),
Toast.LENGTH_SHORT).show();
    }
});
b3.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View view) {
        String val=gt.getText().toString();
        hel.delete(val);
    }
});
b4.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View view) {
        String id=gt.getText().toString();
        String name=e1.getText().toString();
        String adrs=e2.getText().toString();
        hel.update(id,name,adrs);
    }
});
}
}

```

helper.java

```

package com.example.data;

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

import androidx.annotation.Nullable;

public class helper extends SQLiteOpenHelper {

    private static String dbName="student";
    private static int dbVersion=1;

    SQLiteDatabase db;

    public helper(Context context) {
        super(context, dbName, null, dbVersion);
    }

    @Override
    public void onCreate(SQLiteDatabase sqL) {

        sqL.execSQL("create table tbl_stud(sid integer primary key autoincrement,sname
varchar(20),saddress varchar(20))");

    }

    @Override
    public void onUpgrade(SQLiteDatabase sqLiteDatabase, int i, int i1) {

    }

    public void insert(String name,String add)
    {
        db=getWritableDatabase();
        ContentValues da=new ContentValues();
        da.put("sname",name);
        da.put("saddress",add);
        db.insert("tbl_stud",null,da);
    }

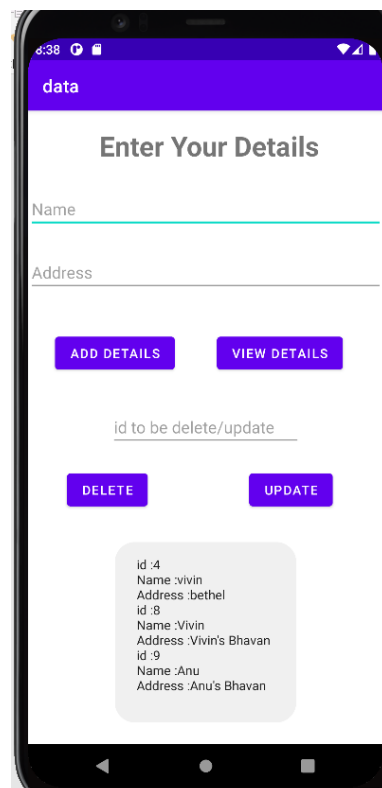
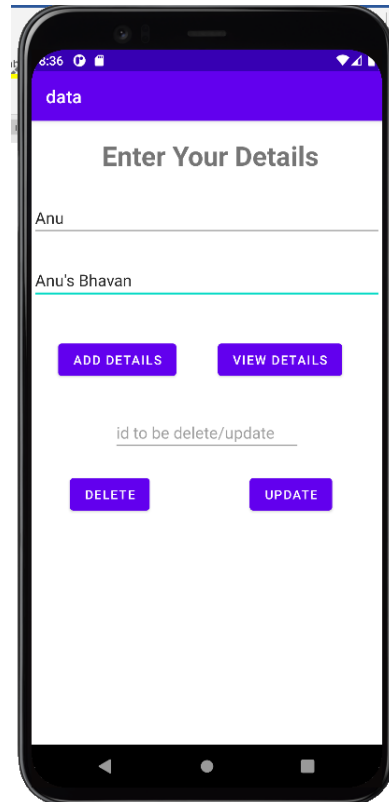
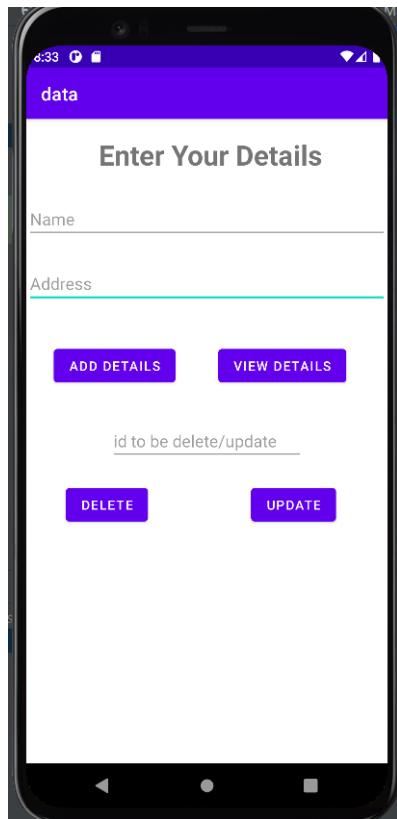
    public Cursor view(){
        db=getReadableDatabase();
        Cursor cu=db.rawQuery("select * from tbl_stud",null);
        return cu;
    }

```

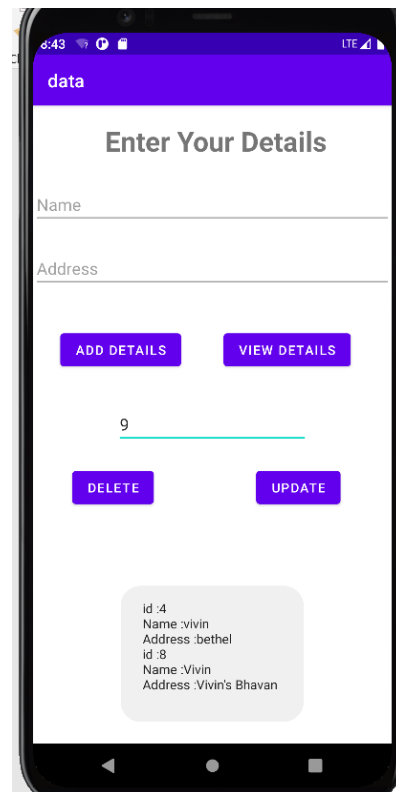
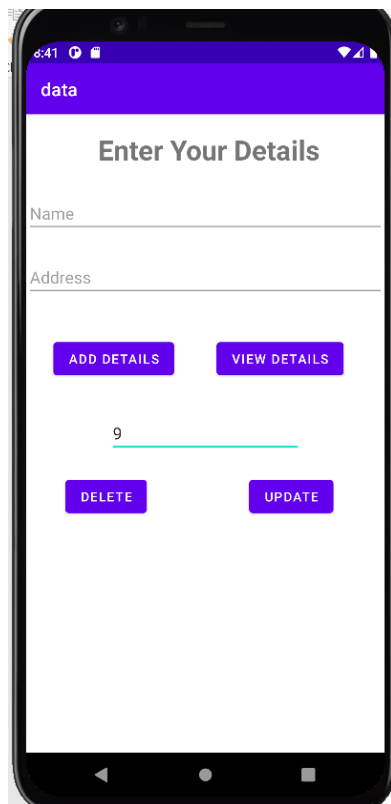
```
}  
public void delete(String val){  
    db=getWritableDatabase();  
    db.delete("tbl_stud","sid=?",new String[]{ val});  
  
}  
public void update(String id,String name,String adrs)  
{  
    db=getWritableDatabase();  
    ContentValues up=new ContentValues();  
    up.put("sname",name);  
    up.put("saddress",adrs);  
    db.update("tbl_stud",up,"sid=?",new String[]{id});  
}  
}
```

Output

Add and view details



Delete and view details



Update and view details

