

# **20MCA243 MOBILE APPLICATION DEVELOPMENT LAB**

*Lab Report Submitted By*

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**APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY**



**AMAL JYOTHI COLLEGE OF ENGINEERING  
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**CERTIFICATE**

This is to certify that the lab report, “**20MCA243 MOBILE APPLICATION DEVELOPMENT LAB**” is the bonafide work of **ABHISHEK SCARIYA M B (Reg.No:AJC20MCA-2001)** 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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# CONTENT

S.No	Content	Date	Page No:
1	Program to develop the android mobile application which consist of GUI components for Login Page creation.		1
2	Program to display the content of EditText in TextView on button click.		5
3	Program to design a Login Form with username and password using LinearLayout and toast valid credentials		9
4	Program to implementing basic arithmetic operations of a simple calculator		15
5	Program to implement validations on various UI controls		24
6	Program to design a registration activity and store registration details in local memory of phone using Intents and SharedPreferences		33
7	Program to design a simple Calculator using GridLayout and Cascaded LinearLayout		45
8	Program to create a Facebook page using RelativeLayout; set properties using .xml file		56
9	Program to develop an application that toggles image using FrameLayout		61
10	Program to implement Adapters and perform exception handling		64
11	Program to implement Intent to navigate between multiple activities (Explicit Intent)		68
12	Program to develop an application that works with Implicit intents		<b>77</b>
13	Program to implement Options Menu to navigate to activities		80
14	Program to develop an application that uses ArrayAdapter with ListView		84
15	Program to develop an application that use GridView with images and display Alert box on selection		87
16	Program to develop an application that implements Spinner component and perform event handling		93
17	Program to apply themes via code from manifest file		96
18	Program to develop application using Fragments		100
19	Program to implement Navigation drawer		106

20	Program to implement activity life cycle		110
21	Program to implement various SQLite operations : (INSERT, UPDATE ,DELETE ,SELECT)		

**Program no:1**

**Aim:** Program to develop the android mobile application which consist of GUI components for Login Page creation.

**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"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity"
    android:orientation="vertical">

    <TextView
        android:id="@+id/l1"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:ems="10"
        android:gravity="center"
        android:text="Login"
        android:textColor="#630DFB"
        android:textSize="50dp"
        tools:layout_editor_absoluteX="31dp"
        tools:layout_editor_absoluteY="39dp" />

    <EditText
        android:id="@+id/e1"
```

```
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:ems="10"
    android:inputType="textPersonName"
    android:minHeight="48dp"
    android:text="User Name" />
<EditText
    android:id="@+id/e2"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:ems="10"
    android:inputType="textPassword"
    android:minHeight="48dp"
    android:text="Password" />
<Button
    android:id="@+id/b1"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_gravity="right"
    android:text="Login" />
</LinearLayout>
```

**Java Code:**

```
package com.example.login_2;

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

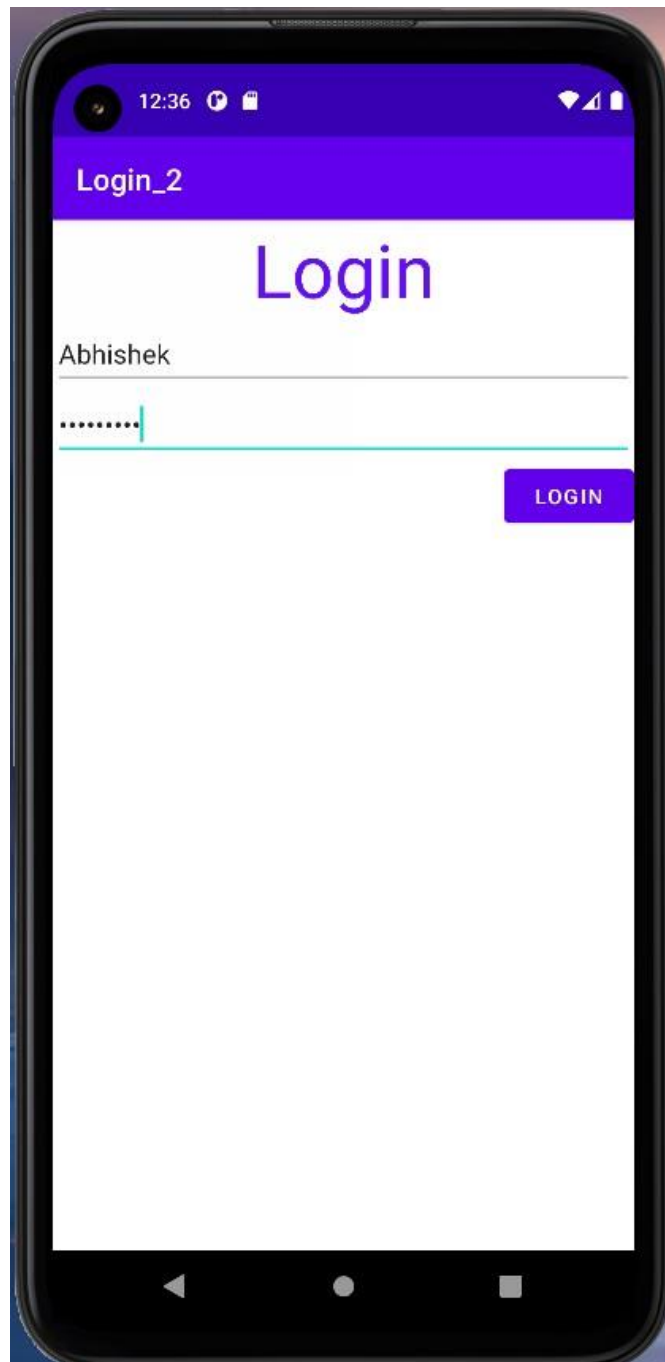
public class MainActivity extends AppCompatActivity {

    private TextView t1;
    private EditText e1;
    private EditText e2;
    private Button b1;

    @Override

    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        b1=findViewById(R.id.b1);
        e1=findViewById(R.id.e1);
        e2=findViewById(R.id.e2);
    }
}
```

**Output:**





**Program no:2**

**Aim:** Program to display the content of EditText in TextView on button click.

**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"
    android:background="#DFF6C4">

    <EditText
        android:id="@+id/text1"
        android:layout_width="261dp"
        android:layout_height="78dp"
        android:hint="Write here!"
        android:textSize="25dp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintLeft_toLeftOf="parent"
        app:layout_constraintRight_toRightOf="parent"
        app:layout_constraintTop_toTopOf="parent" />

    <Button
```

```

    android:id="@+id/button"
    android:layout_width="match_parent"
    android:layout_height="71dp"
    android:gravity="center"
    android:text="Print" />
<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" />
</LinearLayout>

```

### **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 MainActivity extends AppCompatActivity {

    private EditText t1;

```

```
private TextView t2;

private Button b1;

@Override

protected void onCreate(Bundle savedInstanceState) {

    super.onCreate(savedInstanceState);

    setContentView(R.layout.activity_main);

    t1=findViewById(R.id.text1);

    t2=findViewById(R.id.textView2);

    b1=findViewById(R.id.button);

    b1.setOnClickListener(new View.OnClickListener() {

        @Override

        public void onClick(View v) {

            String value = t1.getText().toString();

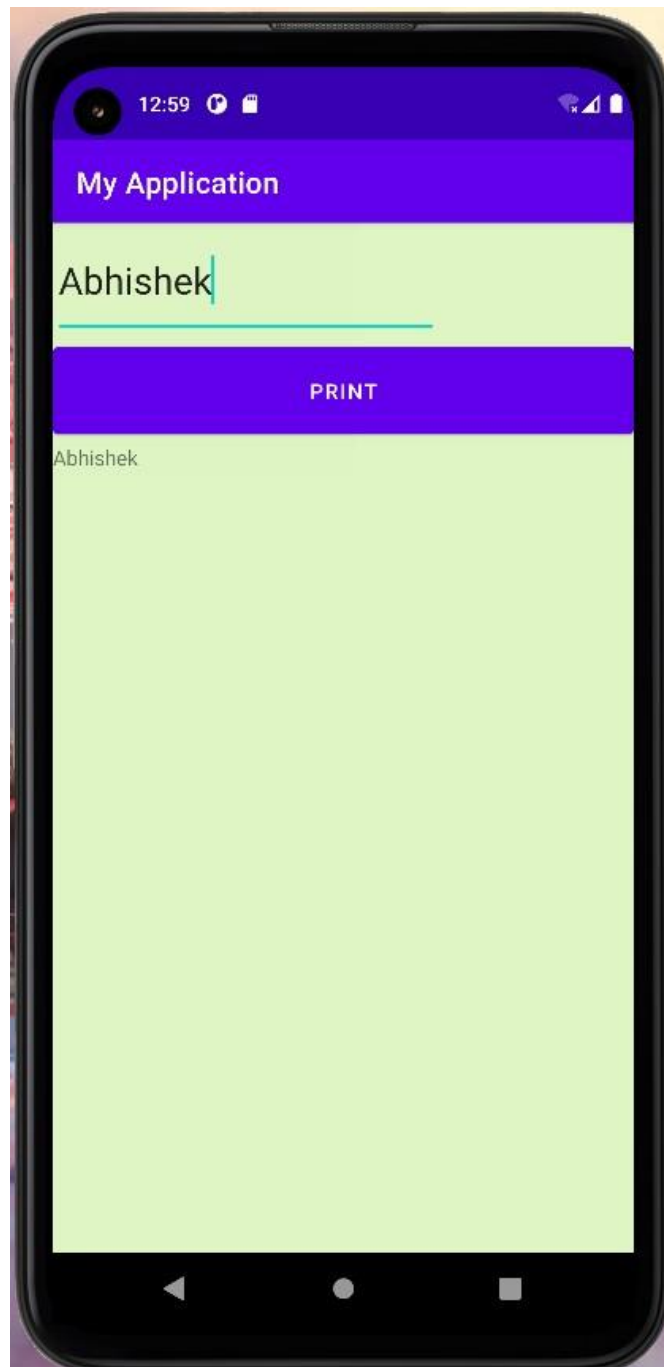
            t2.setText(String.valueOf(value));

        }

    });

}
```

**Output:**



**Program no:3**

**Aim:** Design a Login Form with username and password using LinearLayout and toast valid credentials

**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"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    xmlns:card_view="http://schemas.android.com/apk/res-auto"
    tools:context=".MainActivity"
    android:orientation="vertical"
    android:background="#000">

    <androidx.cardview.widget.CardView
        android:layout_margin="64dp"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        card_view:cardCornerRadius="8dp"
        card_view:cardElevation="8dp"
        android:background="#fff">

        <LinearLayout
            android:layout_width="match_parent"
```

```
android:layout_height="wrap_content"  
android:orientation="vertical"  
android:padding="24dp">
```

```
<TextView  
    android:layout_width="match_parent"  
    android:layout_height="wrap_content"  
    android:text="Login"  
    android:textSize="36sp"  
    android:textAlignment="center"  
    android:layout_gravity="center_horizontal" />
```

```
<TextView  
    android:layout_width="wrap_content"  
    android:layout_height="wrap_content"  
    android:textSize="22sp"  
    android:text="username"  
    android:textColor="@color/black"/>
```

```
<EditText  
    android:layout_width="match_parent"  
    android:layout_height="wrap_content"  
    android:inputType="text"  
    android:id="@+id/activity_main_usernameEditText" />
```

```
<TextView  
    android:layout_width="wrap_content"  
    android:layout_height="wrap_content"  
    android:textSize="22sp"  
    android:text="password"  
    android:textColor="@color/black"/>
```

```
<EditText  
    android:layout_width="match_parent"  
    android:layout_height="wrap_content"  
    android:inputType="textPassword"  
    android:id="@+id/activity_main_passwordEditText" />
```

```
<Button  
    android:layout_width="match_parent"  
    android:layout_height="wrap_content"  
    android:id="@+id/activity_main_loginButton"  
    android:text="login"  
    android:textSize="22sp"/>
```

```
</LinearLayout>
```

```
</androidx.cardview.widget.CardView>
```

```
</LinearLayout>
```

**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.Toast;

public class MainActivity extends AppCompatActivity {

    private EditText usernameEditText;

    private EditText passwordEditText;

    private Button loginButton;

    @Override

    protected void onCreate(Bundle savedInstanceState) {

        super.onCreate(savedInstanceState);

        setContentView(R.layout.activity_main);

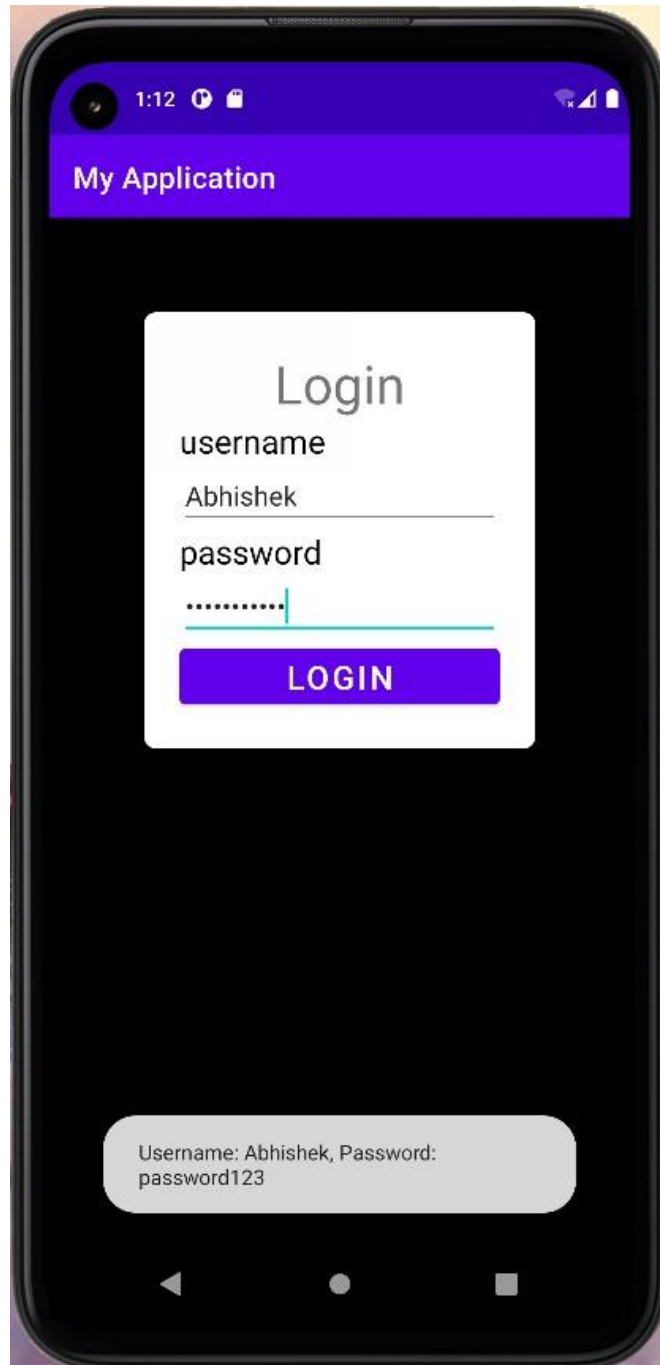
        usernameEditText =
findViewById(R.id.activity_main_usernameEditText);

        passwordEditText =
findViewById(R.id.activity_main_passwordEditText);

        loginButton = findViewById(R.id.activity_main_loginButton);
```



```
loginButton.setOnClickListener(new View.OnClickListener() {  
    @Override  
    public void onClick(View v) {  
        if (usernameEditText.getText().length() > 0 &&  
passwordEditText.getText().length() > 0) {  
            String toastMessage = "Username: " +  
usernameEditText.getText().toString() + ", Password: " +  
passwordEditText.getText().toString();  
            Toast.makeText(getApplicationContext(), toastMessage,  
Toast.LENGTH_SHORT).show();  
        } else {  
            String toastMessage = "Username or Password are not populated";  
            Toast.makeText(getApplicationContext(), toastMessage,  
Toast.LENGTH_SHORT).show();  
        }  
    }  
});  
}
```

**Output:**

## Program no:4

**Aim:** Implementing basic arithmetic operations of a simple calculator

### 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:padding="20dp"
    android:orientation="vertical"
    android:background="@color/pastel">
```

```
<TextView
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="CALCULATOR"
    android:textSize="25sp"
    android:layout_marginBottom="16dp"
    android:textColor="@android:color/black" />
```

```
<LinearLayout
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:orientation="horizontal"
    android:layout_marginBottom="20dp">
```

```
<EditText
    android:id="@+id/first_no"
    android:layout_width="102dp"
    android:layout_height="59dp"
    android:ems="10"
    android:layout_marginHorizontal="50dp"
    android:hint="Enter" />
```

```
<EditText  
    android:id="@+id/second_no"  
    android:layout_width="102dp"  
    android:layout_height="59dp"  
    android:ems="10"  
    android:hint="Enter" />
```

```
</LinearLayout>
```

```
<LinearLayout  
    android:layout_width="wrap_content"  
    android:layout_height="wrap_content"  
    android:orientation="horizontal"  
    android:layout_marginBottom="20dp">
```

```
<TextView  
    android:textSize="35sp"  
    android:id="@+id/answer"  
    android:layout_width="102dp"  
    android:layout_height="59dp"  
    android:layout_marginHorizontal="50dp"  
    android:hint="ans" />
```

```
</LinearLayout>
```

```
<LinearLayout  
    android:orientation="vertical"  
    android:layout_marginLeft="250dp"  
    android:layout_width="wrap_content"  
    android:layout_height="wrap_content"  
    android:layout_marginBottom="30dp">
```

```
<Button  
    android:id="@+id/sub"  
    android:layout_width="wrap_content"  
    android:layout_height="wrap_content"
```

```

android:text="-"
android:textSize="25sp"
android:layout_marginBottom="16dp" />

```

```

<Button
android:id="@+id/add"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_marginBottom="16dp"
android:text="+"
android:textSize="25sp"
tools:ignore="OnClick" />

```

```

<Button
android:id="@+id/div"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:text="/"
android:textSize="25sp"
android:layout_marginBottom="16dp" />

```

```

<Button
android:id="@+id/mul"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_marginBottom="16dp"
android:text="X"
android:textSize="25sp"/>

```

```

<Button
android:id="@+id/equals"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_marginBottom="16dp"
android:text="="
android:textSize="35sp"/>
</LinearLayout>

```

```
</LinearLayout>
```

### 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;
import android.widget.Toast;

public class MainActivity extends AppCompatActivity {

    EditText no1 , no2;

    Button add ,mul ,div , sub,equal;

    TextView answer;

    double ans = 0;

    @Override

    protected void onCreate(Bundle savedInstanceState) {

        super.onCreate(savedInstanceState);

        setContentView(R.layout.activity_main);

        // for text views

        no1 = findViewById(R.id.first_no);

        no2 = findViewById(R.id.second_no);
```

```

// for button with operations
add = findViewById(R.id.add);
mul = findViewById(R.id.mul);
div = findViewById(R.id.div);
sub = findViewById(R.id.sub);

// for equal to button
equal = findViewById(R.id.equals);

// for answer field
answer = findViewById(R.id.answer);

add.setOnClickListener(new View.OnClickListener() {

    @Override

    public void onClick(View v) {

        String num1 = no1.getText().toString();

        String num2 = no2.getText().toString();

        if (num1.isEmpty() || num2.isEmpty()) {

            Toast.makeText(getApplicationContext(),"Enter
Numbers",Toast.LENGTH_SHORT).show();

        }

        else {

            double a = Double.parseDouble(no1.getText().toString());

            double b = Double.parseDouble(no2.getText().toString());

            ans = a + b;

        }

    }

});

```

```

sub.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        String num1 = no1.getText().toString();
        String num2 = no2.getText().toString();
        if (num1.isEmpty() || num2.isEmpty()) {
            Toast.makeText(getApplicationContext(),"Enter
Numbers",Toast.LENGTH_SHORT).show();
        }
        else {
            double a = Double.parseDouble(no1.getText().toString());
            double b = Double.parseDouble(no2.getText().toString());
            ans = a - b;
        }
    }
});

```

```

mul.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        String num1 = no1.getText().toString();
        String num2 = no2.getText().toString();

        if (num1.isEmpty() || num2.isEmpty()) {

```



```

        Toast.makeText(getApplicationContext(),"Enter
Numbers",Toast.LENGTH_SHORT).show();
    }
    else {
        double a = Double.parseDouble(no1.getText().toString());
        double b = Double.parseDouble(no2.getText().toString());
        ans = a * b;
    }
}
});

div.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        String num1 = no1.getText().toString();
        String num2 = no2.getText().toString();

        if (num1.isEmpty() || num2.isEmpty()) {
            Toast.makeText(getApplicationContext(), "Enter Numbers",
Toast.LENGTH_SHORT).show();
        } else {
            double a = Double.parseDouble(no1.getText().toString());
            double b = Double.parseDouble(no2.getText().toString());
            if (b != 0)
                ans = a / b;
        }
    }
});

```

```
        else

            Toast.makeText(getApplicationContext(), "Enter Valid
Numbers", Toast.LENGTH_SHORT).show();

        }

    }

});

equal.setOnClickListener(new View.OnClickListener() {

    @Override

    public void onClick(View v) {

        String ans1 = String.valueOf(ans);

        answer.setText(ans1);

        ans= 0;

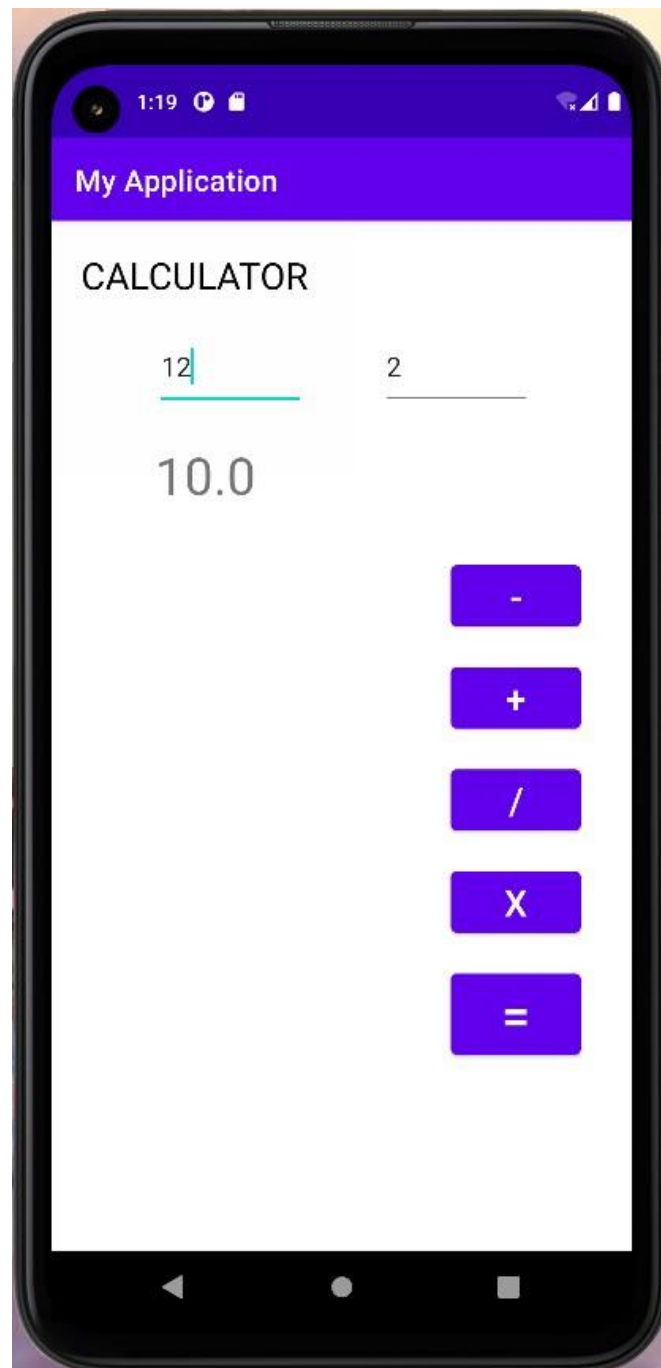
    }

});

}

}
```

**Output:**



**Program no:5**

**Aim** Implement validations on various UI controls

**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"

    android:layout_width="match_parent"

    android:layout_height="match_parent"

    android:orientation="vertical"

    tools:context=".MainActivity"

    tools:ignore="HardcodedText">

    <EditText

        android:id="@+id/firstName"

        android:layout_width="match_parent"

        android:layout_height="wrap_content"

        android:layout_marginStart="16dp"

        android:layout_marginTop="16dp"

        android:layout_marginEnd="16dp"

        android:hint="First Name"

        android:inputType="text" />

    <EditText
```

```
android:id="@+id/lastName"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:layout_marginStart="16dp"
android:layout_marginTop="16dp"
android:layout_marginEnd="16dp"
android:hint="Last Name"
android:inputType="text" />
```

<EditText

```
android:id="@+id/email"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:layout_marginStart="16dp"
android:layout_marginTop="16dp"
android:layout_marginEnd="16dp"
android:hint="Email"
android:inputType="textEmailAddress" />
```

<EditText

```
android:id="@+id/password"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:layout_marginStart="16dp"
```

```
android:layout_marginTop="16dp"  
android:layout_marginEnd="16dp"  
android:hint="Password"  
android:inputType="textPassword" />
```

<LinearLayout

```
android:layout_width="match_parent"  
android:layout_height="wrap_content"  
android:layout_marginTop="8dp"  
android:gravity="end"  
android:orientation="horizontal">
```

<Button

```
android:id="@+id/cancelButton"  
style="@style/Widget.AppCompat.Button.Borderless"  
android:layout_width="wrap_content"  
android:layout_height="wrap_content"  
android:layout_marginEnd="4dp"  
android:text="CANCEL"  
android:textColor="@color/white" />
```

<Button

```
android:id="@+id/proceedButton"  
android:layout_width="wrap_content"
```

```

        android:layout_height="wrap_content"
        android:layout_marginEnd="16dp"
        android:backgroundTint="@color/black"
        android:text="PROCEED"
        android:textColor="@android:color/white"
        tools:ignore="ButtonStyle" />

```

```

</LinearLayout>

```

```

</LinearLayout>

```

### **Java Code:**

```

package com.example.myapplication;

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

public class MainActivity extends AppCompatActivity {

    // two buttons
    Button bCancel, bProceed;

    // four text fields

```

```

EditText etFirstName, etLastName, etEmail, etPassword;

// one boolean variable to check whether all the text fields
// are filled by the user, properly or not.
boolean isAllFieldsChecked = false;

@Override

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

    // register buttons with their proper IDs.
    bProceed = findViewById(R.id.proceedButton);
    bCancel = findViewById(R.id.cancelButton);

    // register all the EditText fields with their IDs.
    etFirstName = findViewById(R.id.firstName);
    etLastName = findViewById(R.id.lastName);
    etEmail = findViewById(R.id.email);
    etPassword = findViewById(R.id.password);

    // handle the PROCEED button
    bProceed.setOnClickListener(new View.OnClickListener() {
        @Override

```



```

public void onClick(View v) {

    // store the returned value of the dedicated function which checks
    // whether the entered data is valid or if any fields are left blank.
    isAllFieldsChecked = CheckAllFields();

    // the boolean variable turns to be true then
    // only the user must be proceed to the activity2
    if (isAllFieldsChecked) {
        Intent i = new Intent(MainActivity.this, MainActivity2.class);
        startActivity(i);
    }
}

});

// if user presses the cancel button then close the
// application or the particular activity.
bCancel.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        MainActivity.this.finish();
        System.exit(0);
    }
});

```

```
}

// function which checks all the text fields
// are filled or not by the user.
// when user clicks on the PROCEED button
// this function is triggered.
private boolean CheckAllFields() {
    if (etFirstName.length() == 0) {
        etFirstName.setError("This field is required");
        return false;
    }

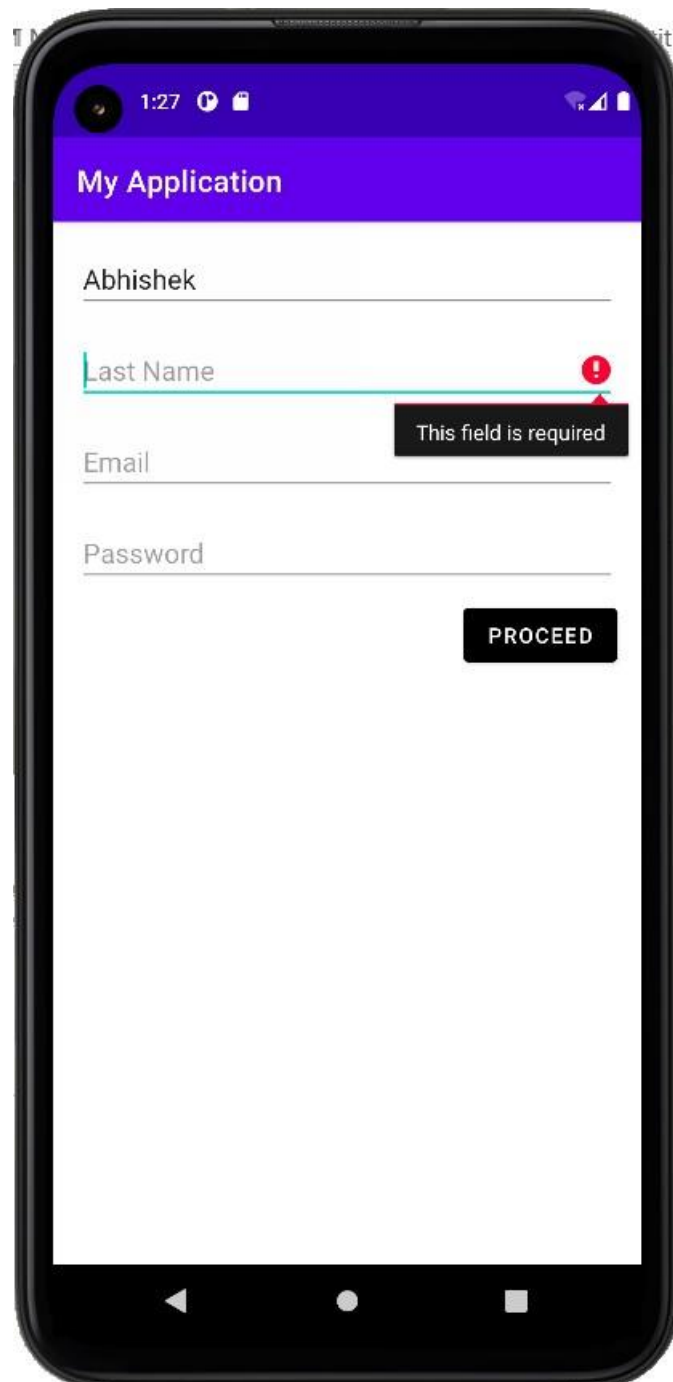
    if (etLastName.length() == 0) {
        etLastName.setError("This field is required");
        return false;
    }

    if (etEmail.length() == 0) {
        etEmail.setError("Email is required");
        return false;
    }

    if (etPassword.length() == 0) {
        etPassword.setError("Password is required");
```

```
        return false;
    } else if (etPassword.length() < 8) {
        etPassword.setError("Password must be minimum 8 characters");
        return false;
    }

    // after all validation return true.
    return true;
}
}
```

**Output:**

## Program no:6

**Aim** Design a registration activity and store registration details in local memory of phone using Intents and SharedPreferences

### 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/textView3"

        android:layout_width="60dp"

        android:layout_height="17dp"

        android:text="Name"

        app:layout_constraintBottom_toBottomOf="parent"

        app:layout_constraintEnd_toEndOf="parent"

        app:layout_constraintHorizontal_bias="0.091"

        app:layout_constraintStart_toStartOf="parent"

        app:layout_constraintTop_toTopOf="parent"

        app:layout_constraintVertical_bias="0.222" />
```

<EditText

```
    android:id="@+id/name"
    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="0.756"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.215" />
```

<TextView

```
    android:id="@+id/textView4"
    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="0.096"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.325" />
```

<EditText

```
    android:id="@+id/em"
    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="0.761"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.319" />
```

<TextView

```
    android:id="@+id/textView5"
    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="0.09"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.435" />
```

<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="0.761"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.431" />
```

<Button

```
    android:id="@+id/sav"
    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="0.413"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
```



```

        app:layout_constraintVertical_bias="0.562" />

<TextView
    android:id="@+id/textView6"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Enter Your Details"
    android:textSize="25sp"
    android:textStyle="bold"
    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="0.133" />
</androidx.constraintlayout.widget.ConstraintLayout>

```

## MainActivity2

```

<?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/textView2"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Your Details Using Intent"
    android:textStyle="bold"
    android:textSize="20sp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.498"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.146" />
```

```
<TextView
```

```
    android:id="@+id/dis"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:textStyle="italic"
    android:textSize="15sp"
    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="0.233" />
```

<TextView

```
android:id="@+id/textView3"  
android:layout_width="wrap_content"  
android:layout_height="wrap_content"  
android:text="Your Details Using Shared Preference"  
android:textSize="20sp"  
android:textStyle="bold"  
app:layout_constraintBottom_toBottomOf="parent"  
app:layout_constraintEnd_toEndOf="parent"  
app:layout_constraintHorizontal_bias="0.771"  
app:layout_constraintStart_toStartOf="parent"  
app:layout_constraintTop_toTopOf="parent"  
app:layout_constraintVertical_bias="0.467" />
```

<TextView

```
android:id="@+id/dis1"  
android:layout_width="wrap_content"  
android:layout_height="wrap_content"  
android:textSize="15sp"
```

```

        android:textStyle="italic"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.527"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.571" />
</androidx.constraintlayout.widget.ConstraintLayout>

```

### Java Code:

```

package com.example.myapplication;

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;
import android.widget.TextView;

public class MainActivity extends AppCompatActivity {
    @Override
    protected void onCreate(Bundle savedInstanceState) {

```

```

super.onCreate(savedInstanceState);

setContentView(R.layout.activity_main);

ActionBar a=getSupportActionBar();

a.setTitle("Welcome");

Button sub=findViewById(R.id.sav);

EditText nam=findViewById(R.id.name);

EditText email=findViewById(R.id.em);

EditText phone=findViewById(R.id.ph);

sub.setOnClickListener(new View.OnClickListener() {

    @Override

    public void onClick(View view) {

        Intent i=new Intent(MainActivity.this,MainActivity2.class);

        String user= nam.getText().toString();

        i.putExtra("Name",user);

        String E_mail=email.getText().toString();

        i.putExtra("Email",E_mail);

        String Phones=phone.getText().toString();

        i.putExtra("Phone",Phones);

        startActivity(i);

        SharedPreferences sharedPreferences =
getSharedPreferences("MySharedPref",MODE_PRIVATE);

        SharedPreferences.Editor myEdit = sharedPreferences.edit();

        myEdit.putString("name", nam.getText().toString());

        myEdit.putString("email", email.getText().toString());

        myEdit.putString("phone", phone.getText().toString());

```

```
myEdit.apply();
```

```
}
```

```
});
```

```
}
```

```
}
```

### MainActivity2

```
package com.example.myapplication;
```

```
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;
```

```
import com.example.myapplication.R;
```

```
public class MainActivity2 extends AppCompatActivity {
```

```
    @Override
```

```
    protected void onCreate(Bundle savedInstanceState) {
```

```
        super.onCreate(savedInstanceState);
```

```
setContentView(R.layout.activity_main2);

ActionBar a=getSupportActionBar();

a.setTitle("Display");

TextView diss=findViewById(R.id.dis);

TextView diss1=findViewById(R.id.dis1);

Intent i=getIntent();

String name=i.getStringExtra("Name");

String email=i.getStringExtra("Email");

String phone=i.getStringExtra("Phone");

diss.setText("Name : "+name+"\nEmail : "+email+"\nPhone : "+phone);

SharedPreferences sharedPreferences =
getSharedPreferences("MySharedPref",MODE_PRIVATE);

String Name=sharedPreferences.getString("name","");

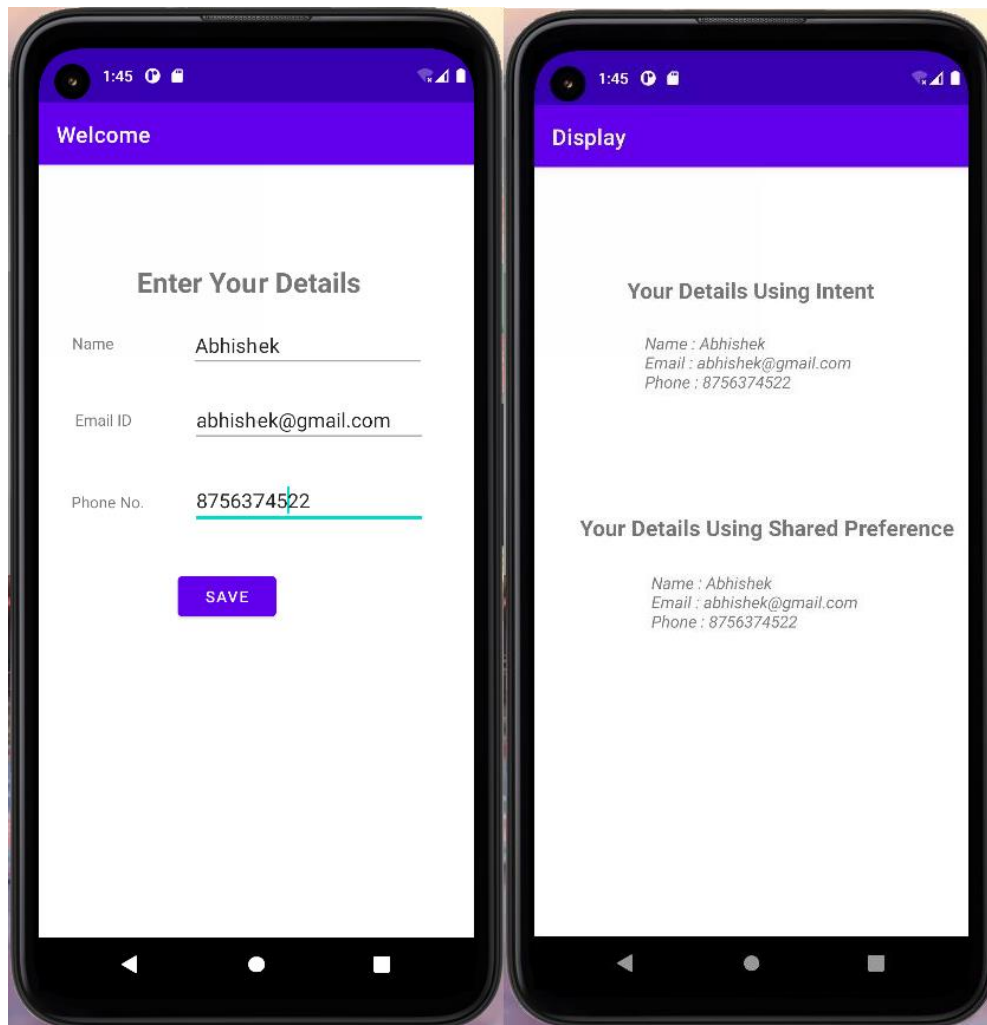
String Email=sharedPreferences.getString("email","");

String Phone=sharedPreferences.getString("phone","");

diss1.setText("Name : "+Name+"\nEmail : "+Email+"\nPhone : "+Phone);

}

}
```

**Output:**



**Program no: 7****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=".MainActivity">

    <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="9+10"  
    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="=19"  
    android:textAlignment="textEnd"  
    android:textColor="@color/white"  
    android:textSize="40dp" />
```

```
</LinearLayout>
```

<GridLayout

```
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_margin="10dp"
    android:layout_weight="1"
    android:columnCount="4"
    android:gravity="bottom"
    android:rowCount="4">
```

<Button

```
    android:id="@+id/b9"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_margin="10dp"
    android:background="@drawable/bg_button"
    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:background="@drawable/bg_button"  
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:background="@drawable/bg_button"  
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:background="@drawable/bg_button"
```

```
    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:background="@drawable/bg_button"
```

```
    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:background="@drawable/bg_button"
    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:background="@drawable/bg_button"
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:background="@drawable/bg_button"
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:background="@drawable/bg_button"
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:background="@drawable/bg_button"  
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:background="@drawable/bg_button"  
    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:background="@drawable/bg_button"  
    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.myapplication;

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); } }

```

### bg\_button.xml:

```

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

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

```

```
<corners android:radius="100dp"/>  
</shape>
```

**Output:**

**Program no: 8**

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

**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="@color/white"
    tools:context=".MainActivity">

    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:background="#29487D"
        android:gravity="center|top"
        android:orientation="vertical">

        <LinearLayout
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_marginTop="70dp"
            android:layout_marginBottom="100dp"
```

```
android:orientation="vertical">
```

```
<TextView
```

```
    android:layout_width="wrap_content"
```

```
    android:layout_height="wrap_content"
```

```
    android:fontFamily="@font/fb"
```

```
    android:text="facebook"
```

```
    android:textSize="36dp"
```

```
    android:padding="10dp"
```

```
    android:textColor="@color/white" />
```

```
</LinearLayout>
```

```
<LinearLayout
```

```
    android:layout_width="match_parent"
```

```
    android:layout_height="wrap_content"
```

```
    android:padding="15dp"
```

```
    android:orientation="vertical"
```

```
    android:layout_margin="20dp">
```

```
<EditText
```

```
    android:layout_width="match_parent"
```

```
    android:layout_height="wrap_content"
```

```
    android:hint="Email or Phone"
```

```
    android:layout_marginBottom="30dp"
```

```
    android:textColorHint="#594F4F"
```

```
android:background="@drawable/bg_box"/>
```

```
<EditText
```

```
    android:layout_width="match_parent"
```

```
    android:layout_height="wrap_content"
```

```
    android:layout_marginBottom="30dp"
```

```
    android:background="@drawable/bg_box"
```

```
    android:hint="password"
```

```
    android:textColorHint="#594F4F"/>
```

```
<Button
```

```
    android:layout_width="match_parent"
```

```
    android:layout_height="wrap_content"
```

```
    android:text="Log In"
```

```
    android:background="@color/design_default_color_primary"
```

```
    android:textAllCaps="false"/>
```

```
</LinearLayout>
```

```
<LinearLayout
```

```
    android:layout_width="match_parent"
```

```
    android:layout_height="wrap_content"
```

```
    android:orientation="horizontal"
```

```
    android:layout_marginTop="180dp"
```

```
    android:layout_gravity="bottom"
```

```
android:gravity="center">
```

```
<TextView
```

```
    android:layout_width="wrap_content"
```

```
    android:layout_height="wrap_content"
```

```
    android:gravity="end"
```

```
    android:textStyle="bold"
```

```
    android:textColor="@color/white"
```

```
    android:layout_marginRight="75dp"
```

```
    android:layout_weight="50"
```

```
    android:text="SignUp for Facebook"/>
```

```
<TextView
```

```
    android:layout_width="wrap_content"
```

```
    android:layout_height="wrap_content"
```

```
    android:gravity="end"
```

```
    android:textColor="@color/white"
```

```
    android:layout_marginEnd="50dp"
```

```
    android:layout_weight="1"
```

```
    android:textStyle="bold"
```

```
    android:text="?"/>
```

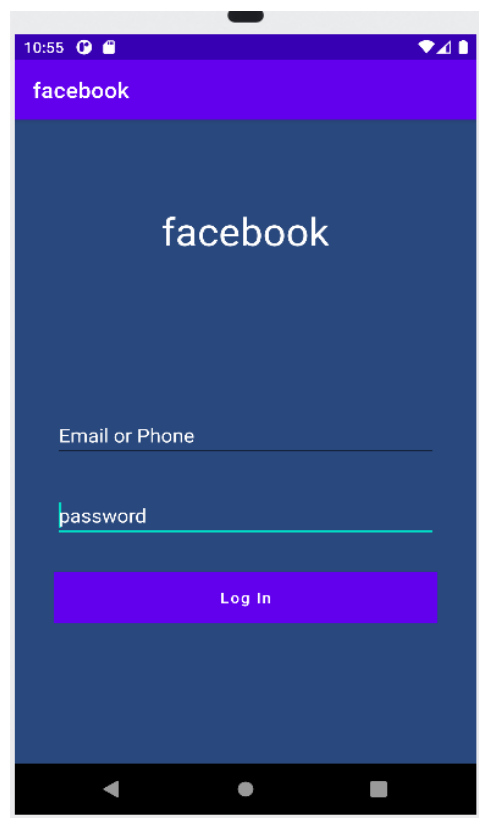
```
</LinearLayout>
```

```
</LinearLayout>
```

```
</LinearLayout>
```

**Java Code:**

```
package com.example.facebook;  
  
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);  
        getSupportActionBar().hide();  
    }  
}
```

**Output:**



**Program no: 9**

**Aim:** Develop an application that toggles image using FrameLayout

**XML Code:**

```
<?xml version="1.0" encoding="utf-8"?>
<FrameLayout 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:layout_gravity="center"
    android:background="@color/teal_700"
    tools:context=".MainActivity">
    <ImageView
        android:id="@+id/image2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_gravity="center"
        android:src="@drawable/image2"
        android:visibility="gone"/>
    <ImageView
        android:id="@+id/image1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_gravity="center"
```

```

        android:src="@drawable/image1"/>
</FrameLayout>

```

### Java Code:

```

package com.example.myapplication;

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

public class MainActivity extends AppCompatActivity implements
View.OnClickListener {

    ImageView img1,img2;

    @Override

    protected void onCreate(Bundle savedInstanceState) {

        super.onCreate(savedInstanceState);

        setContentView(R.layout.activity_main);

        img1 =findViewById(R.id.image1);
        img2 =findViewById(R.id.image2);
        img1.setOnClickListener(this);
        img2.setOnClickListener(this);
    }

    public void onClick(View v)
    {

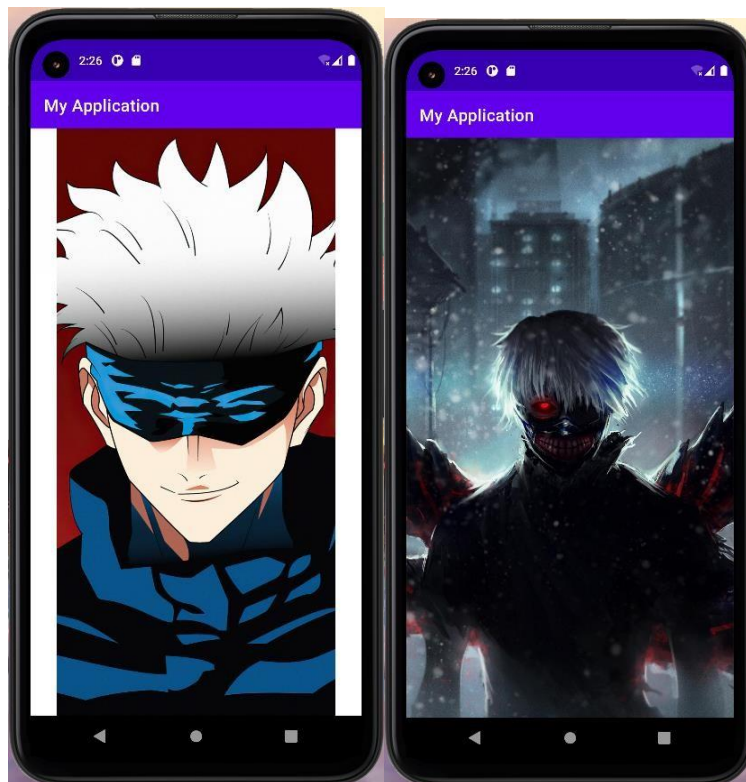
        int id=v.getId();

        switch (id){

```

```
case R.id.image1:
    img1.setVisibility(View.GONE);
    img2.setVisibility(View.VISIBLE);
    break;
case R.id.image2:
    img1.setVisibility(View.VISIBLE);
    img2.setVisibility(View.GONE);
    break;
}
}
}
```

**Output:**



**Program no: 10**

**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:layout_width="409dp"
        android:layout_height="354dp"
        tools:layout_editor_absoluteX="1dp"
        tools:layout_editor_absoluteY="1dp"
        android:id="@+id/list1"/>

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

**Java Code:**

```
package com.example.myadapter;

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.ListView;
import android.widget.TextView;
import android.widget.Toast;

public class MainActivity extends AppCompatActivity implements
    AdapterView.OnItemClickListener {

    ListView l1;

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

        String[] cars = {"BMW", "BENZ", "AUDI"};

        try {
```

```

        ArrayAdapter<String> adapter = new ArrayAdapter<String>(this,
R.layout.support_simple_spinner_dropdown_item, cars);

        ll.setAdapter(adapter);

        ll.setOnItemClickListener(this);
    }
    catch (Exception e)
    {

        Toast.makeText(this,e.getMessage(),Toast.LENGTH_SHORT).show();

    }
}

```

@Override

```

public void onItemClick(AdapterView<?> adapterView, View view, int i,
long l) {

    TextView tem=(TextView) view;

    Toast.makeText(this, tem.getText(), Toast.LENGTH_LONG).show();

}

}

```

**Output:**

**Program no: 11**

**Aim:** Implement Intent to navigate between multiple activities

**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"
    android:onClick="callActivity"
    tools:context=".MainActivity">

    <EditText

        android:id="@+id/name"
        android:layout_width="wrap_content"
        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="0.437"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.148" />

```

<EditText

```

    android:id="@+id/address"
    android:layout_width="wrap_content"
    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="0.437"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.313" />

```

<EditText

```

    android:id="@+id/email"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:ems="10"

```

```

    android:hint="Email"
    android:inputType="textPersonName"
    android:onClick="callActivity"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.437"
    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="0.454"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.609" />

```

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

## Activity2

```
<?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/view3"
    android:layout_width="189dp"
    android:layout_height="36dp"
    android:textAlignment="center"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.459"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.398" />
```

```
<TextView

    android:id="@+id/view1"
    android:layout_width="189dp"
```

```
android:layout_height="36dp"
android:textAlignment="center"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.459"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.22" />
```

<TextView

```
android:id="@+id/view2"
android:layout_width="189dp"
android:layout_height="36dp"
android:textAlignment="center"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.459"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.306" />
```

</androidx.constraintlayout.widget.ConstraintLayout>

**Java Code:**

```
package com.example.myapplication;

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

public class MainActivity extends AppCompatActivity {

    Button b1;

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

        b1 = findViewById(R.id.button);
        b1.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                callActivity(view);
            }
        });
    }
}
```

```

    }

    public void callActivity(View view) {

        Intent i = new Intent(MainActivity.this, MainActivity2.class);

        final EditText editText1 = (EditText)findViewById(R.id.name);

        String msg = editText1.getText().toString();

        final EditText editText2 = (EditText)findViewById(R.id.address);

        String add = editText2.getText().toString();

        final EditText editText3 = (EditText)findViewById(R.id.email);

        String em = editText3.getText().toString();

        i.putExtra("Value1", msg);

        i.putExtra("Value2", add);

        i.putExtra("Value3", em);

        startActivity(i);

    }

}

```

## Activity 2

```

package com.example.myapplication;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;

import android.widget.TextView;

public class MainActivity2 extends AppCompatActivity {

    TextView view1;

```

```
TextView view2;

TextView view3;

@Override

protected void onCreate(Bundle savedInstanceState) {

    super.onCreate(savedInstanceState);

    setContentView(R.layout.activity_main2);

    view1 = (TextView) findViewById(R.id.view1);

    view2 = (TextView) findViewById(R.id.view2);

    view3 = (TextView) findViewById(R.id.view3);

    Bundle extras = getIntent().getExtras();

    String value1 = extras.getString("Value1");

    String value2 = extras.getString("Value2");

    String value3 = extras.getString("Value3");

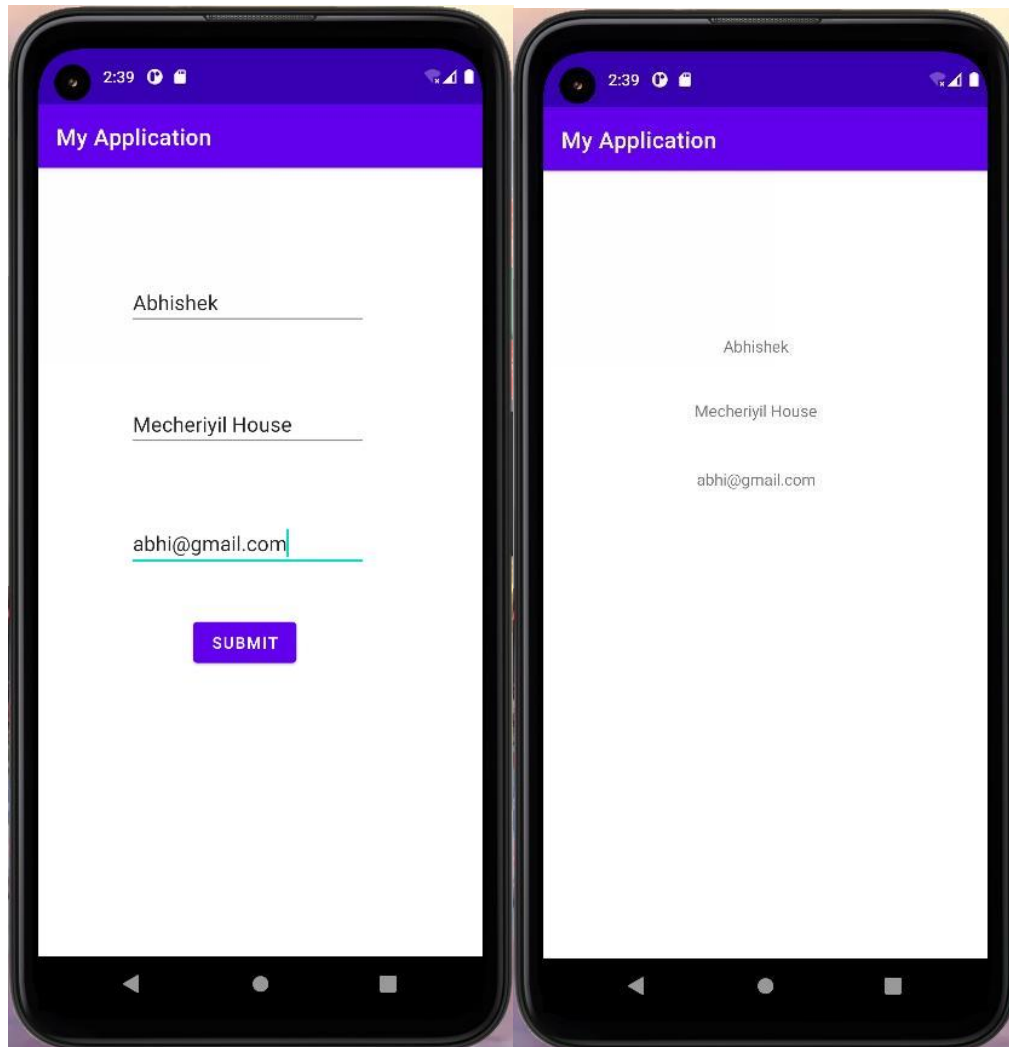
    view1.setText(value1);

    view2.setText(value2);

    view3.setText(value3);

}

}
```

**Output:**



**Program no: 12**

**Aim:** Develop an application that works with 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">

    <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>
```

**Java Code:**

```

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 MainActivity extends AppCompatActivity {

    @Override

    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        ActionBar b=getSupportActionBar();
        b.setTitle("Go To Browser");
        Button click=findViewById(R.id.cm);
        click.setOnClickListener(new View.OnClickListener() {

            @Override

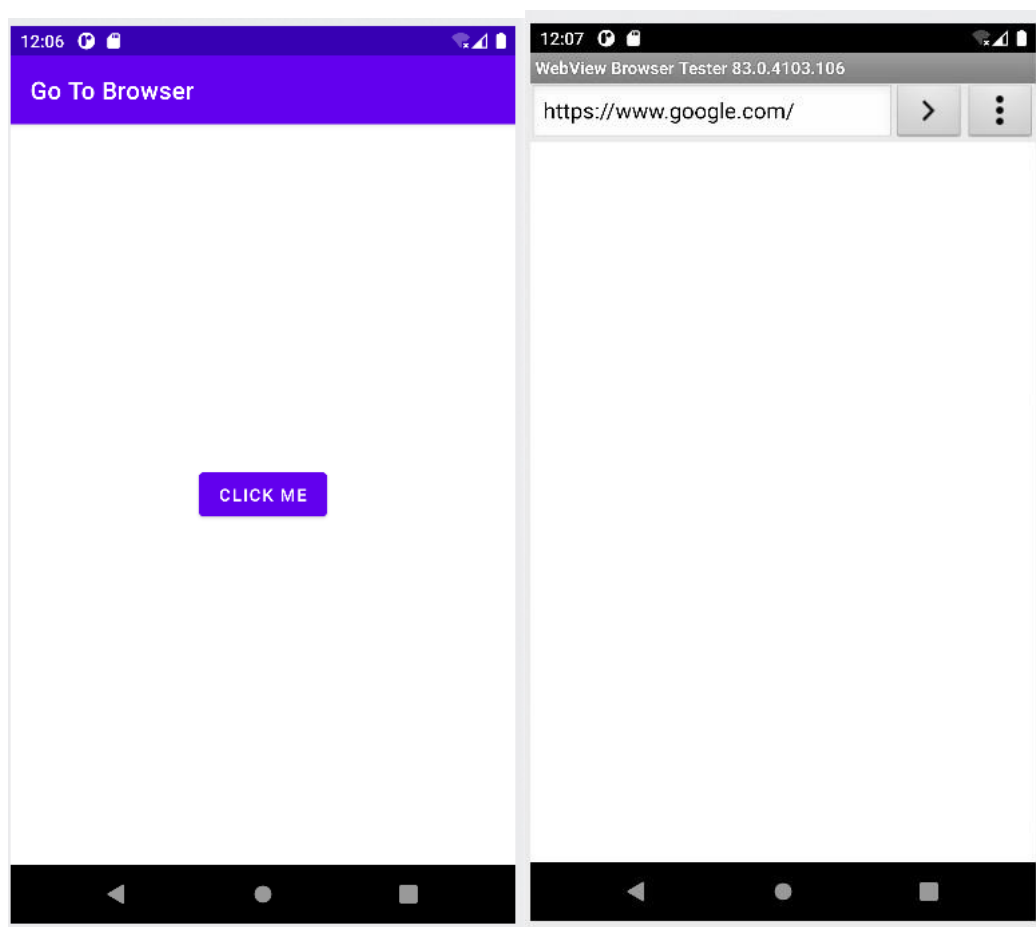
            public void onClick(View view) {

                Intent j=new Intent(Intent.ACTION_VIEW,
Uri.parse("https://www.google.com/"));

```

```
        startActivity(j);  
    }  
});  
}  
}
```

### Output:



**Program no: 13****Aim:** Implement Options Menu to navigate to activities**XML Code:**

```
<?xml version="1.0" encoding="utf-8"?>
<menu xmlns:android="http://schemas.android.com/apk/res/android">
    <item android:id="@+id/item1" android:title="about"
android:icon="@drawable/download"/>
    <item android:id="@+id/item2" android:title="help"/>
</menu>
```

**Activitymain.xml**

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

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

import androidx.appcompat.app.AppCompatActivity;
import android.annotation.SuppressLint;
import android.os.Bundle;
import android.view.Menu;
import android.view.MenuItem;
import android.widget.Toast;

public class MainActivity extends AppCompatActivity {

    @Override

    protected void onCreate(Bundle savedInstanceState) {

        super.onCreate(savedInstanceState);

        setContentView(R.layout.activity_main);

    }

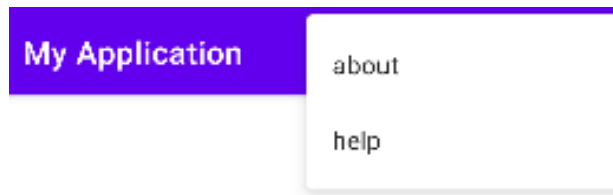
    @Override

    public boolean onCreateOptionsMenu(Menu menu) {

        getMenuInflater().inflate(R.menu.menuu, menu);

        return true;
    }
}
```

```
}  
  
@Override  
  
public boolean onOptionsItemSelected(MenuItem item){  
    switch (item.getItemId()){  
        case R.id.item1:  
            Toast.makeText(getApplicationContext(), "about",  
Toast.LENGTH_SHORT).show();  
  
            return true;  
        case R.id.item2:  
            Toast.makeText(getApplicationContext(), "help",  
Toast.LENGTH_SHORT).show();  
  
            return true;  
  
        default:  
            return super.onOptionsItemSelected(item);  
    }  
}  
}
```

**Output:**

Hello World!

**Program no: 14**

**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: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"
    tools:context=".MainActivity">

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

    </ListView>

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



**Java Code:**

```

package com.example.adapter;

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.ListView;

import android.widget.TextView;

import android.widget.Toast;


public class MainActivity extends AppCompatActivity implements
AdapterView.OnItemClickListener {

    ListView l;

    String[]
    days={"Sunday","Monday","Tuesday","Wednesday","Thursday","Friday","Satu
rday"};

    @Override

    protected void onCreate(Bundle savedInstanceState) {

        super.onCreate(savedInstanceState);

        setContentView(R.layout.activity_main);

        l=findViewById(R.id.mobile_list);

        ArrayAdapter<String> adapter= new
ArrayAdapter<String>(this,R.layout.support_simple_spinner_dropdown_item,d
ays);

        l.setAdapter(adapter);

```

```
l.setOnItemClickListener(this);

}

@Override

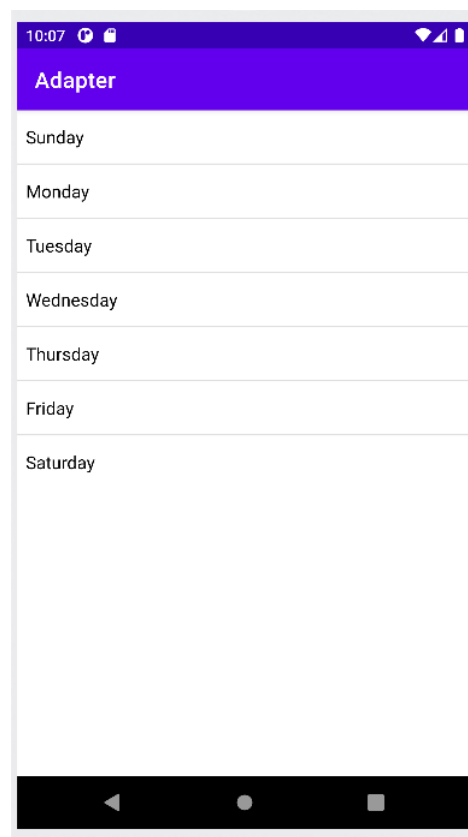
public void onItemClick(AdapterView<?> adapterView, View view, int i,
long l) {

    TextView temp=(TextView) view;

    Toast.makeText(this,"You
clicked"+temp.getText()+"at"+i,Toast.LENGTH_LONG).show();

}

}
```

**Output:**

**Program no: 15**

**Aim:** Program to develop an application that use GridView with images and display Alert box on selection

**XML Code:**activity\_main.xml

```
<LinearLayout 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"
    tools:context=".MainActivity" >

    <GridView
        android:numColumns="auto_fit"
        android:gravity="center"
        android:columnWidth="100dp"
        android:stretchMode="columnWidth"
        android:layout_width="fill_parent"
        android:layout_height="fill_parent"
        android:id="@+id/grid"
    />
</LinearLayout>
```

grid\_single.xml

```
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:padding="5dp" >

    <ImageView
        android:id="@+id/grid_image"
        android:layout_width="50dp"
        android:layout_height="50dp">
    </ImageView>
```

```

<TextView
    android:id="@+id/grid_text"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginTop="15dp"
    android:textSize="9sp" >
</TextView>
</LinearLayout>

```

## Java Code:

### MainActivity.java

```

package com.example.myapp;

import android.content.Context;
import android.os.Bundle;
import android.app.Activity;
import android.view.LayoutInflater;
import android.view.View;
import android.view.ViewGroup;
import android.widget.AdapterView;
import android.widget.BaseAdapter;
import android.widget.GridView;
import android.widget.ImageView;
import android.widget.TextView;
import android.widget.Toast;

import com.example.myapp.CustomGrid;
import com.example.myapp.R;

public class MainActivity extends Activity {
    GridView grid;
    String[] web = {
        "pinterest",
        "facebook",
        "dialer",
        "penguin",
        "spear",
        "target",
        "potato",
    }

```

```

        "snapchat",
        "spotify"

    } ;
    int[] imageId = {
        R.drawable.a,
        R.drawable.b,
        R.drawable.c,
        R.drawable.d,
        R.drawable.e,
        R.drawable.f,
        R.drawable.g,
        R.drawable.h,
        R.drawable.i,

    };

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

        CustomGrid adapter = new CustomGrid(MainActivity.this, web, imageId);
        grid=(GridView)findViewById(R.id.grid);
        grid.setAdapter(adapter);
        grid.setOnItemClickListener(new AdapterView.OnItemClickListener() {

            @Override
            public void onItemClick(AdapterView<?> parent, View view,
                                    int position, long id) {
                Toast.makeText(MainActivity.this, "You Clicked at " +web[+ position],
                Toast.LENGTH_SHORT).show();

            }
        });

    }
}

```

CustomGrid.java

```

package com.example.myapp;
    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 CustomGrid extends BaseAdapter {
    private Context mContext;
    private final String[] web;
    private final int[] Imageid;

    public CustomGrid(Context c,String[] web,int[] Imageid ) {
        mContext = c;
        this.Imageid = Imageid;
        this.web = web;
    }

    @Override
    public int getCount() {
        // TODO Auto-generated method stub
        return web.length;
    }

    @Override
    public Object getItem(int position) {
        // TODO Auto-generated method stub
        return null;
    }

    @Override
    public long getItemId(int position) {
        // TODO Auto-generated method stub
        return 0;
    }
}

```

```

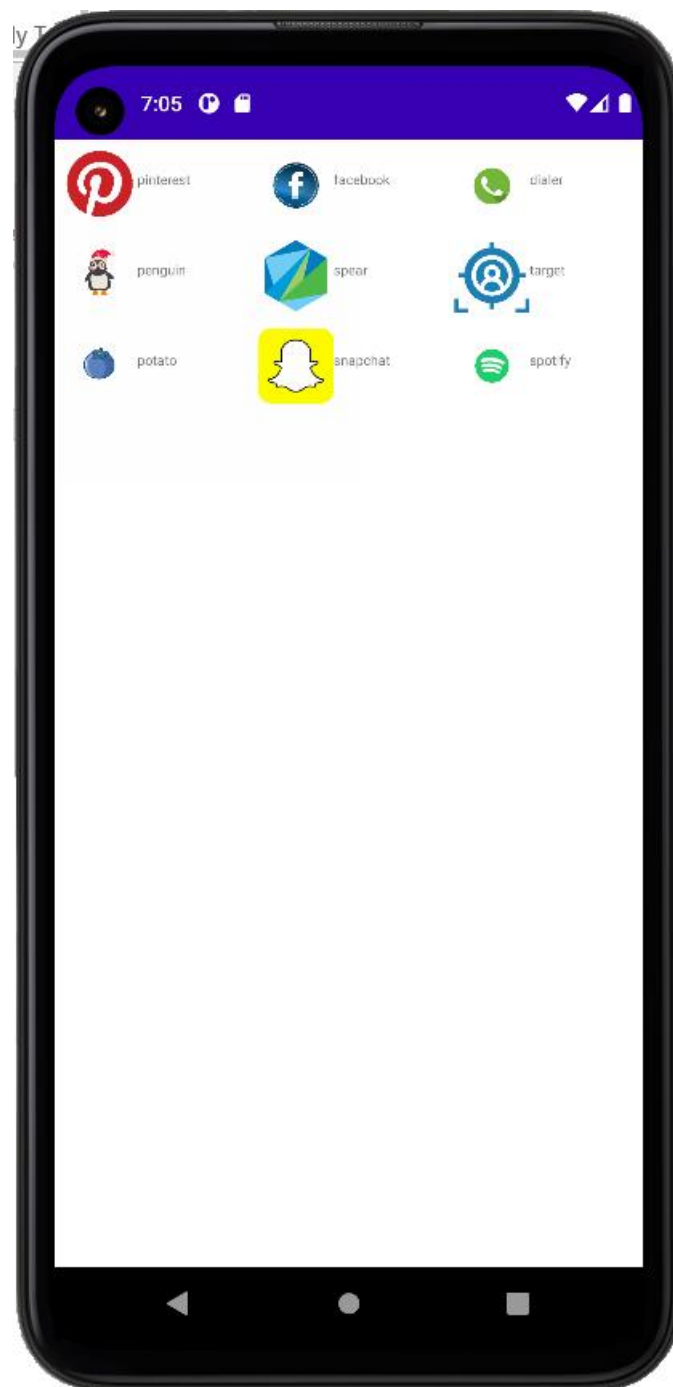
@Override
public View getView(int position, View convertView, ViewGroup parent) {
    // TODO Auto-generated method stub
    View grid;
    LayoutInflater inflater = (LayoutInflater) mContext
        .getSystemService(Context.LAYOUT_INFLATER_SERVICE);

    if (convertView == null) {

        grid = new View(mContext);
        grid = inflater.inflate(R.layout.grid_single, null);
        TextView textView = (TextView) grid.findViewById(R.id.grid_text);
        ImageView imageView =
            (ImageView) grid.findViewById(R.id.grid_image);
        textView.setText(web[position]);
        imageView.setImageResource(Imageid[position]);
    } else {
        grid = (View) convertView;
    }

    return grid;
}
}

```

**Output:**



**Program no: 16**

**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_height="50dp"
        android:layout_width="160dp"
        android:layout_marginEnd="10dp"
        android:layout_marginStart="10dp"
        android:layout_marginBottom="10dp"
        android:layout_marginTop="10dp"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"/>

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

**Java Code:**

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

```

public class MainActivity extends AppCompatActivity implements
    AdapterView.OnItemClickListener {
    String[] country = { "Parasyte", "Jujutsu Kaisen", "Code Geass", "Death Note",
        "Others"};

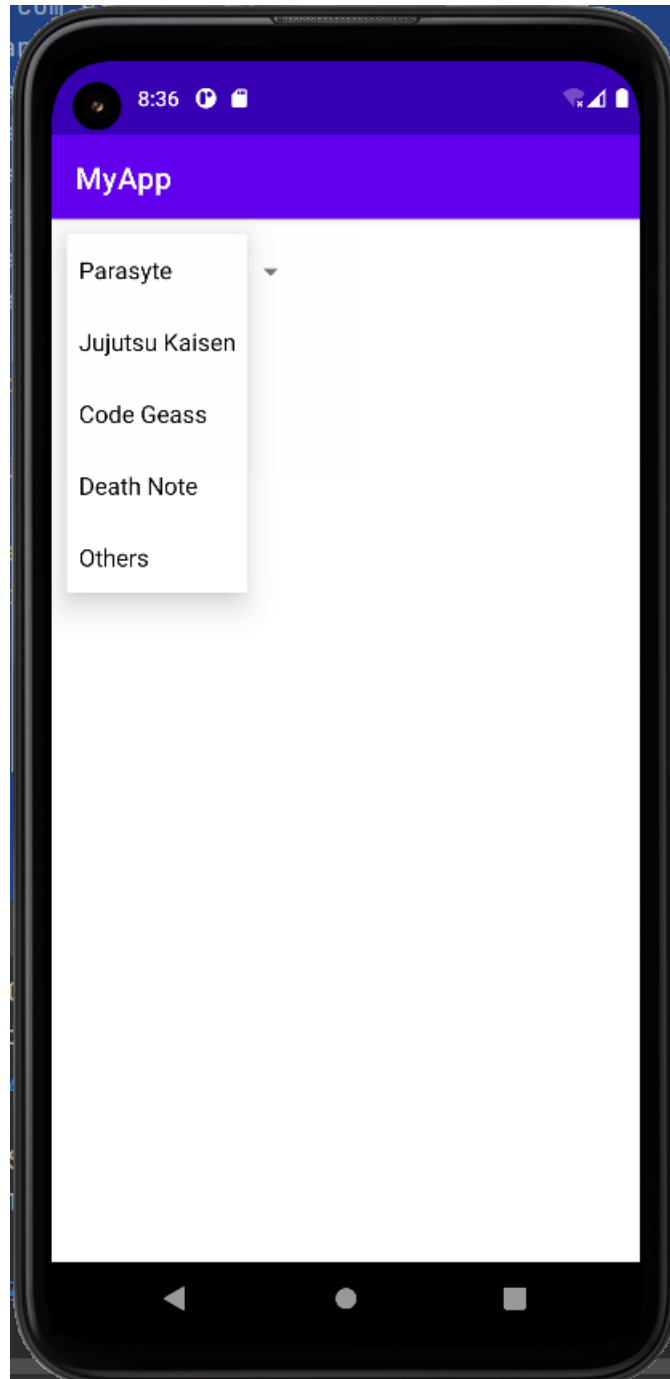
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        //Getting the instance of Spinner and applying OnItemSelectedListener on it
        Spinner spin = (Spinner) findViewById(R.id.spinner);
        spin.setOnItemSelectedListener(this);

        //Creating the ArrayAdapter instance having the country list
        ArrayAdapter aa = new
        ArrayAdapter(this,android.R.layout.simple_spinner_item,country);

        aa.setDropDownViewResource(android.R.layout.simple_spinner_dropdown_item
        );
        //Setting the ArrayAdapter data on the Spinner
        spin.setAdapter(aa);
    }

    //Performing action onItemSelected and onNothing selected
    @Override
    public void onItemSelected(AdapterView<?> arg0, View arg1, int position,
        long id) {
        Toast.makeText(getApplicationContext(),country[position] ,
        Toast.LENGTH_LONG).show();
    }
    @Override
    public void onNothingSelected(AdapterView<?> arg0) {
        // TODO Auto-generated method stub
    }
}

```

**Output:**

**Program no: 17****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=""
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        tools:layout_editor_absoluteX="100dp" />
</androidx.constraintlayout.widget.ConstraintLayout>

```

**AndroidManifest.xml**

```

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

    <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.newstyle">
    <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>

```

### themes.xml

```

<resources xmlns:tools="http://schemas.android.com/tools">
    <!-- Base application theme. -->
    <style name="Theme.newstyle"
        parent="Theme.MaterialComponents.DayNight.DarkActionBar">
        <item name="colorPrimary">@color/black</item>
        <item name="colorPrimaryDark">@color/yellow</item>
        <item name="colorAccent">@color/teal</item>
        <item name="android:textColorPrimary">@color/red</item>
    </style>
</resources>

```

### colors.xml

```

<?xml version="1.0" encoding="utf-8"?>
<resources>
    <color name="purple_200">#FFBB86FC</color>
    <color name="purple_500">#FF6200EE</color>
    <color name="purple_700">#FF3700B3</color>
    <color name="teal_200">#FF03DAC5</color>
    <color name="teal_700">#FF018786</color>
    <color name="black">#B30707</color>
    <color name="white">#FFFFFF</color>
    <color name="teal">#FF018786</color>

```

```
<color name="yellow">#6377E4</color>
<color name="red">#F80F0F</color>
```

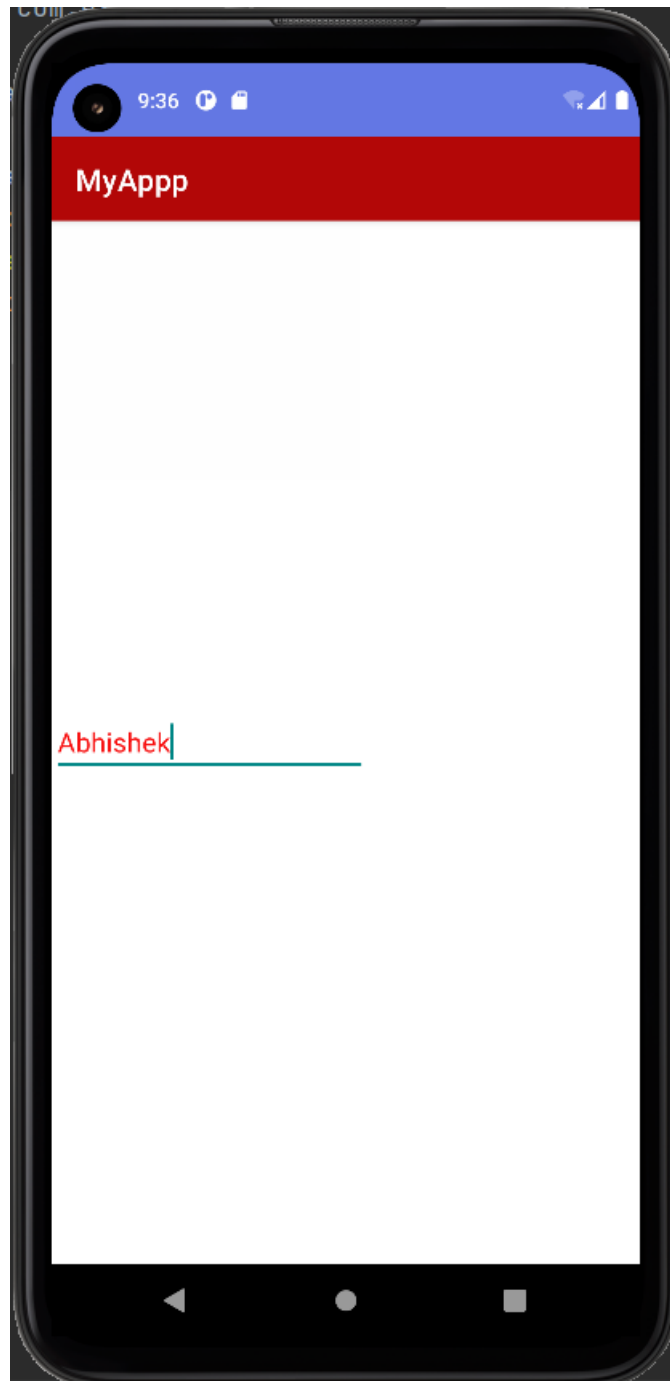
```
</resources>
```

### Java Code:

```
package com.example.myapp;

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);
    }
}
```

**Output:**

**Program no: 18****Aim:** Develop application using Fragments**XML Code:**Activity\_main.xml

```

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

    <RelativeLayout
        android:layout_width="match_parent"
        android:layout_height="0dp"
        android:layout_weight="1">

        <Button
            android:id="@+id/b1"
            android:layout_width="160dp"
            android:layout_height="50dp"
            android:layout_alignParentBottom="true"
            android:layout_marginStart="30dp"
            android:layout_marginBottom="30dp"
            android:backgroundTint="#FF0000"
            android:text="Fragment1" />

        <Button
            android:id="@+id/b2"
            android:layout_width="160dp"
            android:layout_height="50dp"
            android:layout_alignParentRight="true"
            android:layout_alignParentBottom="true"
            android:layout_marginStart="30dp"
            android:layout_marginBottom="30dp"

```



```

        android:backgroundTint="#2B02E8"
        android:text="Fragment2" />

```

```

</RelativeLayout>

```

```

<FrameLayout
    android:id="@+id/frameLayout"
    android:layout_width="match_parent"
    android:layout_height="0dp"
    android:layout_weight="4"
    android:background="@color/teal_700"/>

```

```

</LinearLayout>

```

### Activity\_fragment1.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="#58CC7F"
    tools:context=".Fragment1">

```

```

    <!-- TODO: Update blank fragment layout -->

```

```

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_centerInParent="true"
        android:background="#884A9E"
        android:text="Fragment1"
        android:textSize="50dp" />

```

```

</RelativeLayout>

```

### Activity\_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="#55AF59"
tools:context=".Fragment2">

<!-- TODO: Update blank fragment layout -->
<TextView
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_centerInParent="true"
    android:background="#C155E8"
    android:text="Fragment2"
    android:textSize="50dp" />

</RelativeLayout>

```

### Java Code:

#### MainActivity.java

```

package com.example.fragments;

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 {
    Button b1,b2;

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

        b1=findViewById(R.id.b1);
        b2=findViewById(R.id.b2);
    }
}

```

```

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();
}
}

```

### Fragment1.java

```

package com.example.fragments;
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.activity_fragment1, container, false);
    }
}

```

Fragment2.java

```
package com.example.fragments;

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.activity_fragment2, container, false);
    }
}
```

**Output:**

**Program no: 19****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/drawer">
    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="match_parent">
        <TextView
            android:layout_width="match_parent"
            android:layout_height="match_parent"
            android:text="Welcome"
            android:textSize="30dp">
        </TextView>
    </LinearLayout>
    <com.google.android.material.navigation.NavigationView
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        app:menu="@menu/menu"
        android:id="@+id/navigation_view"
        android:layout_gravity="start">
    </com.google.android.material.navigation.NavigationView>
</androidx.drawerlayout.widget.DrawerLayout>

```

menu.xml

```

<?xml version="1.0" encoding="utf-8"?>
<menu xmlns:android="http://schemas.android.com/apk/res/android">
    <item
        android:id="@+id/profile"
        android:title="Profile"/>
    <item
        android:id="@+id/chats"
        android:title="Chats"/>
    <item
        android:id="@+id/logout"
        android:title="log out"/>
</menu>

```

**Java Code:**

```

package com.example.myapplication;

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;
import android.widget.Toast;
import com.google.android.material.navigation.NavigationView;
public class MainActivity extends AppCompatActivity implements
    NavigationView.OnNavigationItemSelectedListener {
    public DrawerLayout drawerLayout;
    public ActionBarDrawerToggle actionBarDrawerToggle;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        drawerLayout = findViewById(R.id.drawer);
        actionBarDrawerToggle = new ActionBarDrawerToggle(this,drawerLayout,
R.string.nav_open, R.string.nav_close);

```

```

drawerLayout.addDrawerListener(actionBarDrawerToggle);
actionBarDrawerToggle.syncState();
getSupportActionBar().setDisplayHomeAsUpEnabled(true);
NavigationView navigationView = findViewById(R.id.navigation_view);
navigationView.setNavigationItemSelectedListener(this);
}
@Override
public boolean onOptionsItemSelected(@NonNull MenuItem item) {
    if (actionBarDrawerToggle.onOptionsItemSelected(item)){
        return true;
    }
    return super.onOptionsItemSelected(item);
}

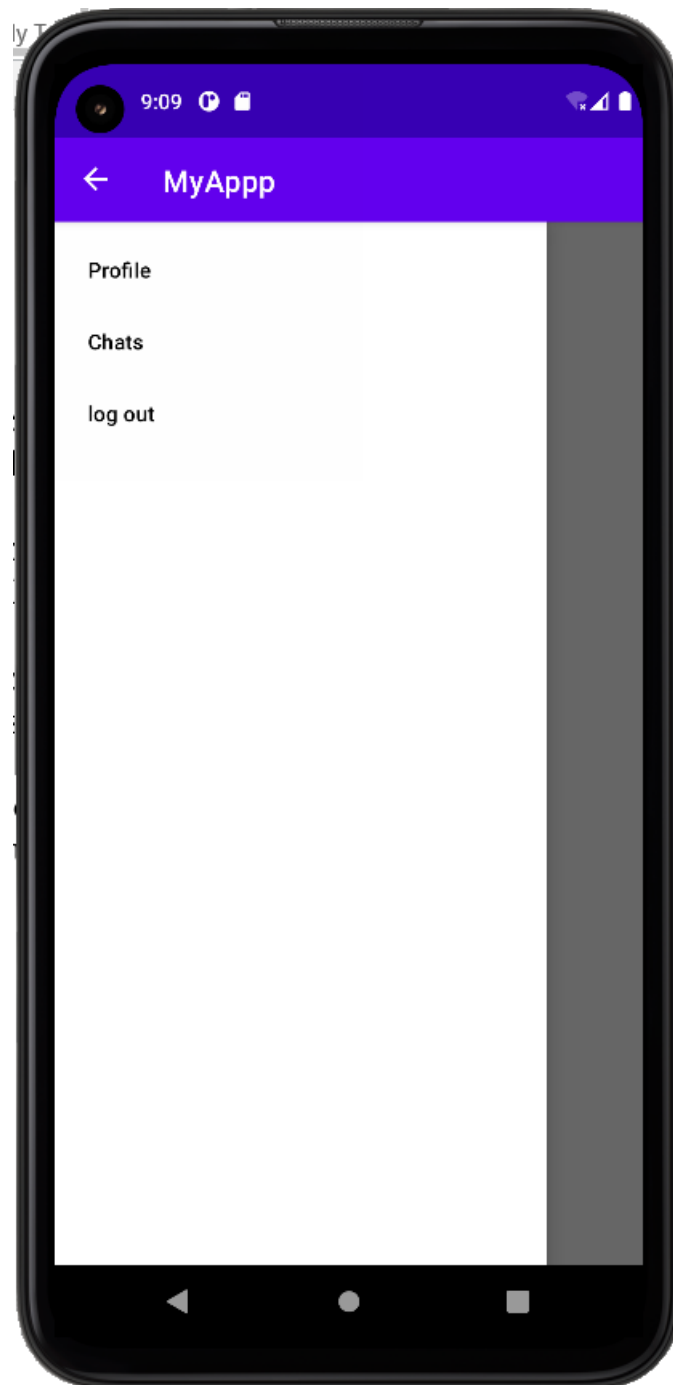
```

```

@Override
public boolean onNavigationItemSelected(@NonNull MenuItem item) {
    int id=item.getItemId();
    if(id == R.id.profile){
        Toast.makeText(this, "Home Page", Toast.LENGTH_SHORT).show();
    }
    if(id == R.id.chats){
        Toast.makeText(this, "Settings Page",
            Toast.LENGTH_SHORT).show();
    }
    if(id == R.id.logout){
        Toast.makeText(this, "Logout", Toast.LENGTH_SHORT).show();
    }
    return false;
}
}

```



**Output:**

**Program no:21****Aim:****XML Code:**Activity\_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:padding="10dp"
    tools:context=".MainActivity">

    <TextView
        android:id="@+id/texttitle"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginTop="20dp"
        android:text="Please enter the details below"
        android:textSize="24dp" />

    <EditText
        android:id="@+id/name"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="Name"
        android:textSize="24dp"
        android:layout_below="@+id/texttitle"
        android:inputType="textPersonName"
    />
```

```

<EditText
    android:id="@+id/contact"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:hint="Contact"
    android:textSize="24dp"
    android:layout_below="@+id/name"
    android:inputType="number"
/>

```

```

<EditText
    android:id="@+id/dob"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:hint="Date of birth"
    android:textSize="24dp"
    android:layout_below="@+id/contact"
    android:inputType="number"
/>

```

```

<Button
    android:id="@+id/buttonInsert"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:textSize="24dp"
    android:text="Insert new Data"
    android:layout_marginTop="30dp"
    android:layout_below="@+id/dob"
/>

```

```

<Button
    android:id="@+id/buttonUpdate"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:textSize="24dp"
    android:text="Update Data"

```

```

        android:layout_below="@+id/buttonInsert"
    />
<Button
    android:id="@+id/buttondelete"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:textSize="24dp"
    android:text="Delete existing data"
    android:layout_below="@+id/buttonUpdate"
    />
<Button
    android:id="@+id/buttonView"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:textSize="24dp"
    android:text="View data"
    android:layout_below="@+id/buttondelete"
    />

</RelativeLayout>

```

### Java Code:

#### MainActivity.java

```

package com.example.mydatabaseapp;

import androidx.appcompat.app.AlertDialog;
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 {
    EditText name, contact, dob;
    Button insert, update, delete, view;
    DBmain DB;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        name=findViewById(R.id.name);
        contact=findViewById(R.id.contact);
        dob=findViewById(R.id.dob);
        insert=findViewById(R.id.buttonInsert);
        update=findViewById(R.id.buttonUpdate);
        delete=findViewById(R.id.buttondelete);
        view=findViewById(R.id.buttonView);
        DB=new DBmain(this);

        insert.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                String nameTXT=name.getText().toString();
                String contactTXT=contact.getText().toString();
                String dobTXT=dob.getText().toString();

                Boolean
                checkinsertdata=DB.insertuserdata(nameTXT,contactTXT,dobTXT);
                if(checkinsertdata==true)
                    Toast.makeText(MainActivity.this, "New Entry Inserted",
                    Toast.LENGTH_SHORT).show();
                else
                    Toast.makeText(MainActivity.this, "unable to insert",
                    Toast.LENGTH_SHORT).show();
            }
        });
    }
}

```

```

    }
});
update.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        String nameTXT=name.getText().toString();
        String contactTXT=contact.getText().toString();
        String dobTXT=dob.getText().toString();

        Boolean
        checkupdatedata=DB.updateuserdata(nameTXT,contactTXT,dobTXT);
        if(checkupdatedata==true)
            Toast.makeText(MainActivity.this, "Entry updated",
Toast.LENGTH_SHORT).show();
        else
            Toast.makeText(MainActivity.this, "Not updated",
Toast.LENGTH_SHORT).show();
    }
});
delete.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        String nameTXT=name.getText().toString();

        Boolean checkdeletedata=DB.deletedata(nameTXT);
        if(checkdeletedata==true)
            Toast.makeText(MainActivity.this, "Entry deleted",
Toast.LENGTH_SHORT).show();
        else
            Toast.makeText(MainActivity.this, "Not deleted",
Toast.LENGTH_SHORT).show();
    }
});
view.setOnClickListener(new View.OnClickListener() {

```

```

@Override
public void onClick(View v) {
    Cursor res=DB.getdata();
    if(res.getCount()==0){
        Toast.makeText(MainActivity.this, "No entry exists",
Toast.LENGTH_SHORT).show();
        return;
    }
    StringBuffer buffer=new StringBuffer();
    while(res.moveToNext()){
        buffer.append("Name:"+res.getString(0)+"\n");
        buffer.append("Contact:"+res.getString(1)+"\n");
        buffer.append("Date of Birth:"+res.getString(2)+"\n");
    }
    AlertDialog.Builder builder=new
AlertDialog.Builder(MainActivity.this);
    builder.setCancelable(true);
    builder.setTitle("User Entries");
    builder.setMessage(buffer.toString());
    builder.show();

}
});

}
}

```

### DBmain.java

```

package com.example.mydatabaseapp;

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 DBmain extends SQLiteOpenHelper {
    public DBmain(Context context) {
        super(context, "Userdata", null, 1);
    }

    @Override
    public void onCreate(SQLiteDatabase DB) {
        DB.execSQL("create Table Userdetails(name TEXT primary key, contact TEXT, dob TEXT)");
    }

    @Override
    public void onUpgrade(SQLiteDatabase DB, int oldVersion, int newVersion)
    {
        DB.execSQL("drop Table if exists Userdetails");
    }
    public Boolean insertuserdata(String name, String contact, String dob){
        SQLiteDatabase DB=this.getWritableDatabase();
        ContentValues contentValues=new ContentValues();
        contentValues.put("name",name);
        contentValues.put("contact",contact);
        contentValues.put("dob",dob);
        long result=DB.insert("Userdetails", null, contentValues);
        if(result==-1){
            return false;
        }else{
            return true;
        }
    }
}

```



```

public Boolean updateuserdata(String name, String contact, String dob){
    SQLiteDatabase DB=this.getWritableDatabase();
    ContentValues contentValues=new ContentValues();
    contentValues.put("contact",contact);
    contentValues.put("dob",dob);
    Cursor cursor=DB.rawQuery("Select * from Userdetails where name=?",
new String[]{name});
    if(cursor.getCount()>0) {
        long result = DB.update("Userdetails", contentValues, "name=?", new
String[]{name});
        if (result == -1) {
            return false;
        } else {
            return true;
        }
    }else{
        return false;
    }
}

public Boolean deletedata(String name){
    SQLiteDatabase DB=this.getWritableDatabase();
    Cursor cursor=DB.rawQuery("Select * from Userdetails where name=?",
new String[]{name});
    if(cursor.getCount()>0) {
        long result = DB.delete("Userdetails", "name=?", new String[]{name});
        if (result == -1) {
            return false;
        } else {
            return true;
        }
    }else{
        return false;
    }
}

public Cursor getdata (){

```

```

        SQLiteDatabase DB=this.getWritableDatabase();
        Cursor cursor=DB.rawQuery("Select * from Userdetails",null);
        return cursor;
    }
}

```

### Output:

