

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;

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);

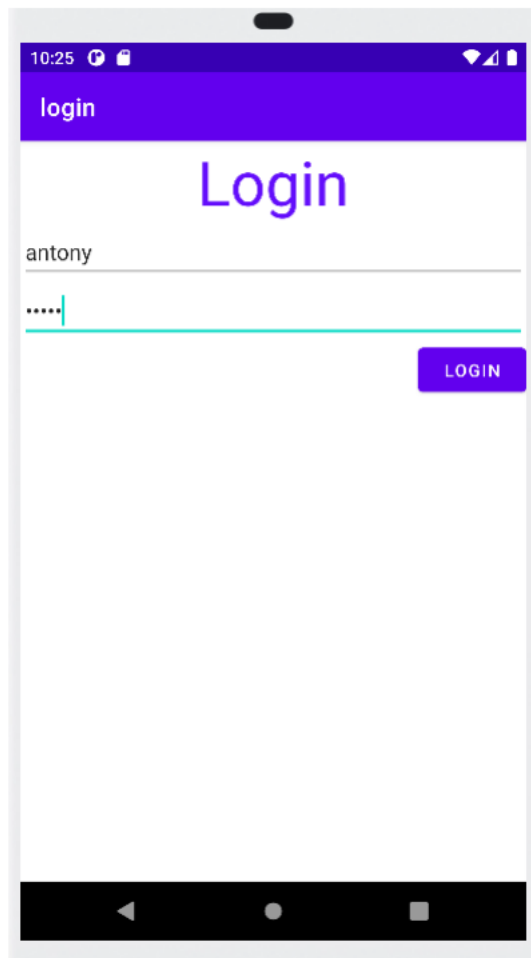
        b1=findViewById(R.id.b1);

        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:background="@color/teal_700"
        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.textview;

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) {

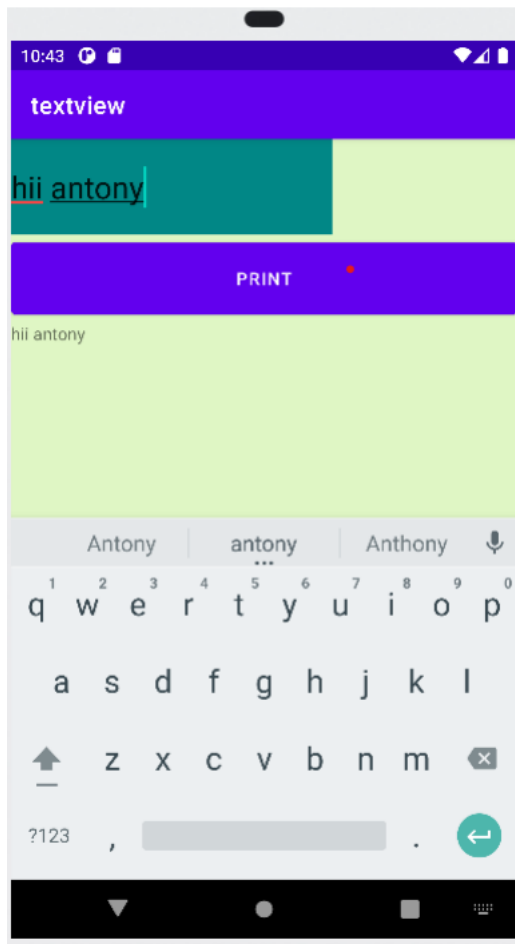
            String value = t1.getText().toString();

            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.androidloginform;

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);

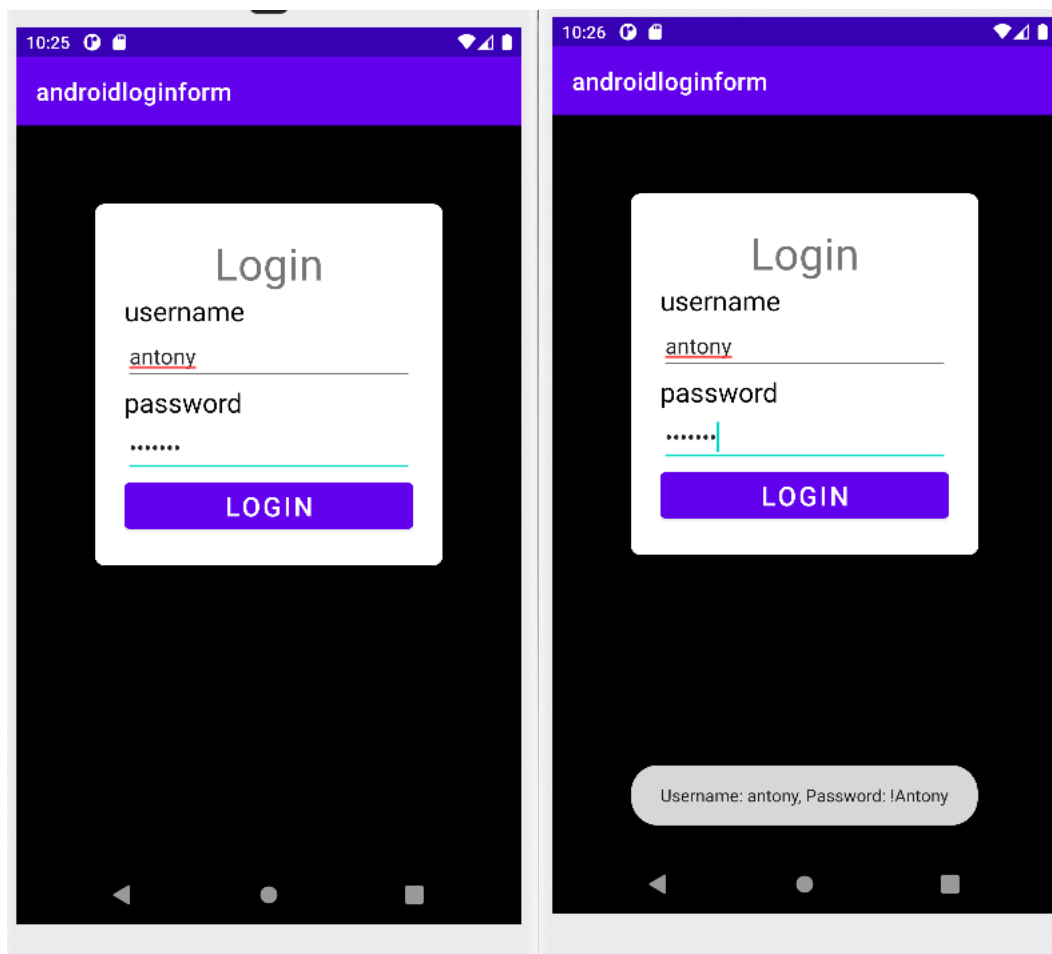
        setContentView(R.layout.activity_main);


        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.calculator;

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);

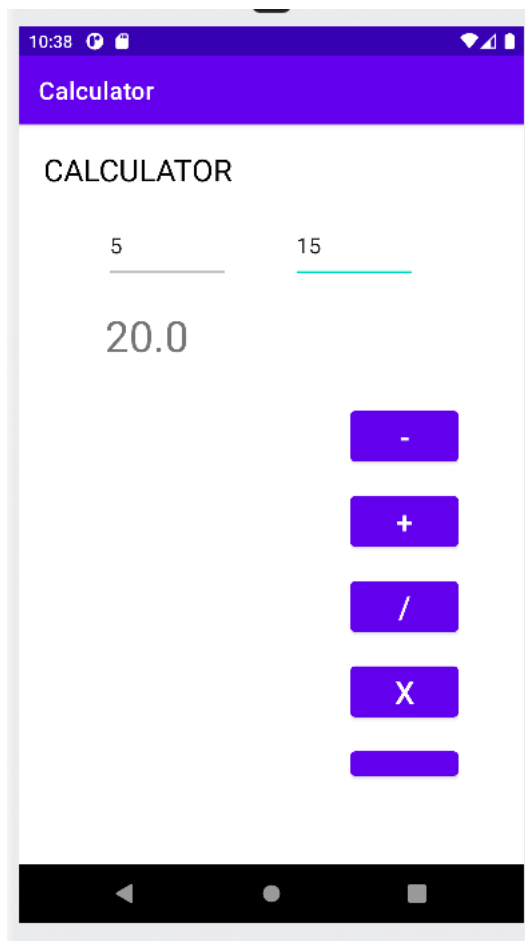
        ans= 0;

    }

});

}

}
```

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.validation;

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;
    }
}
```

```

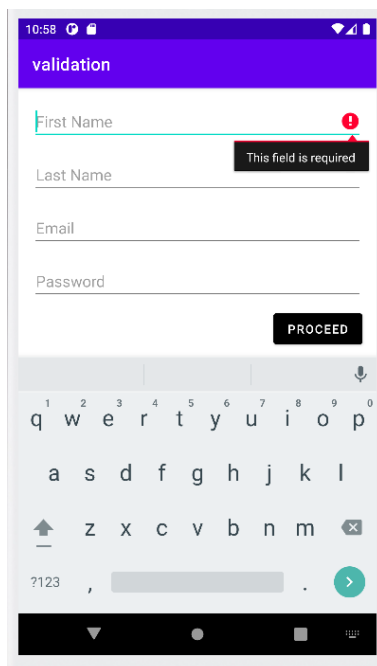
if (etPassword.length() == 0) {
    etPassword.setError("Password is required");
    return false;
} else if (etPassword.length() < 8) {
    etPassword.setError("Password must be minimum 8 characters");
    return false;
}

// 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=".explicit_intent">

    <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>
```

Display

```
<?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=".display">
```

```
<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.sharedpreference;

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,display.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();

    }

});

}

}

```

Display

```

package com.example.sharedpreference;

import androidx.appcompat.app.ActionBar;
import androidx.appcompat.app.AppCompatActivity;
import android.content.Intent;
import android.content.SharedPreferences;
import android.os.Bundle;
import android.widget.TextView;

public class display extends AppCompatActivity {

    @Override

    protected void onCreate(Bundle savedInstanceState) {

        super.onCreate(savedInstanceState);

        setContentView(R.layout.activity_display);

        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);

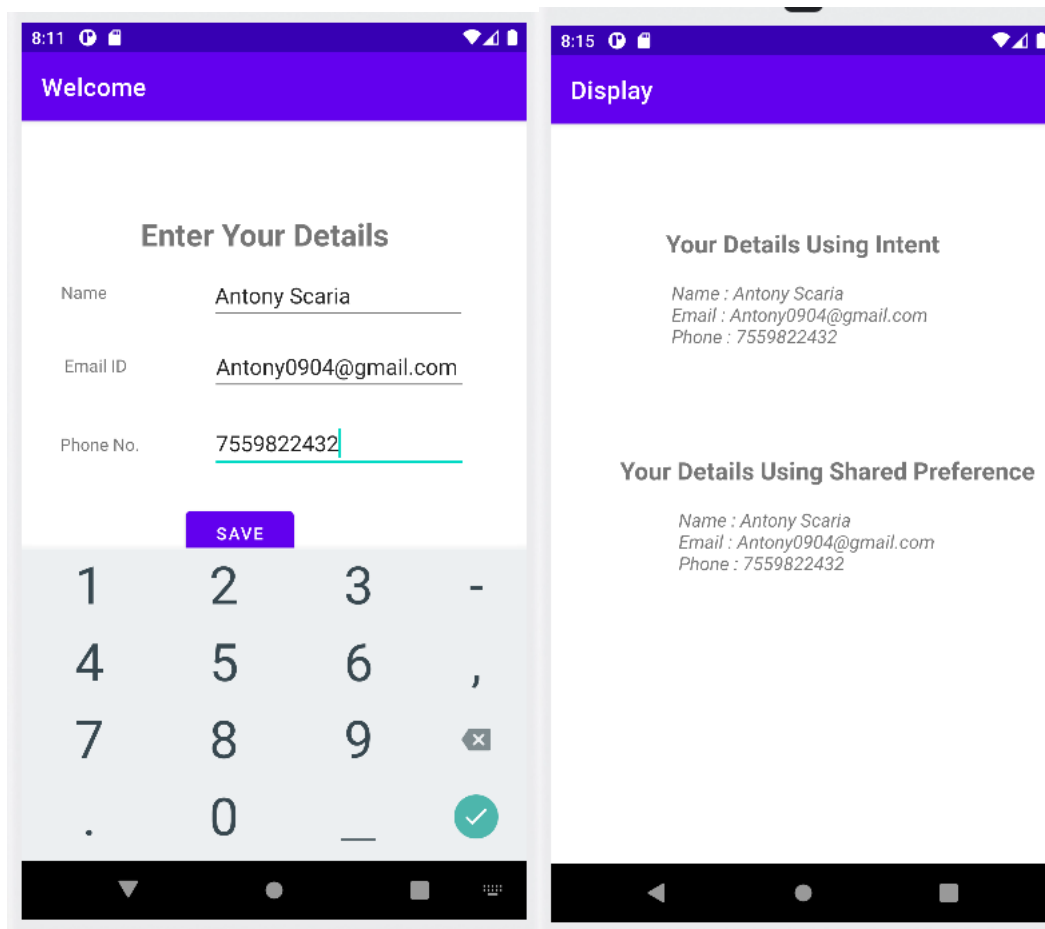
SharedPreferences sharedPreferences =
getSharedPreferences("MySharedPref",MODE_PRIVATE);

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.grid_layout;

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: 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="?"/>
```

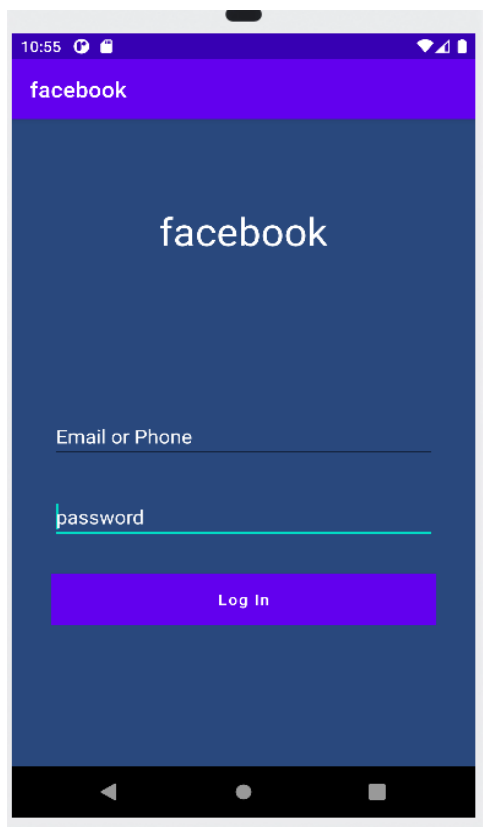
```
</LinearLayout>
```

```
</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.frame_layout;

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);

    }

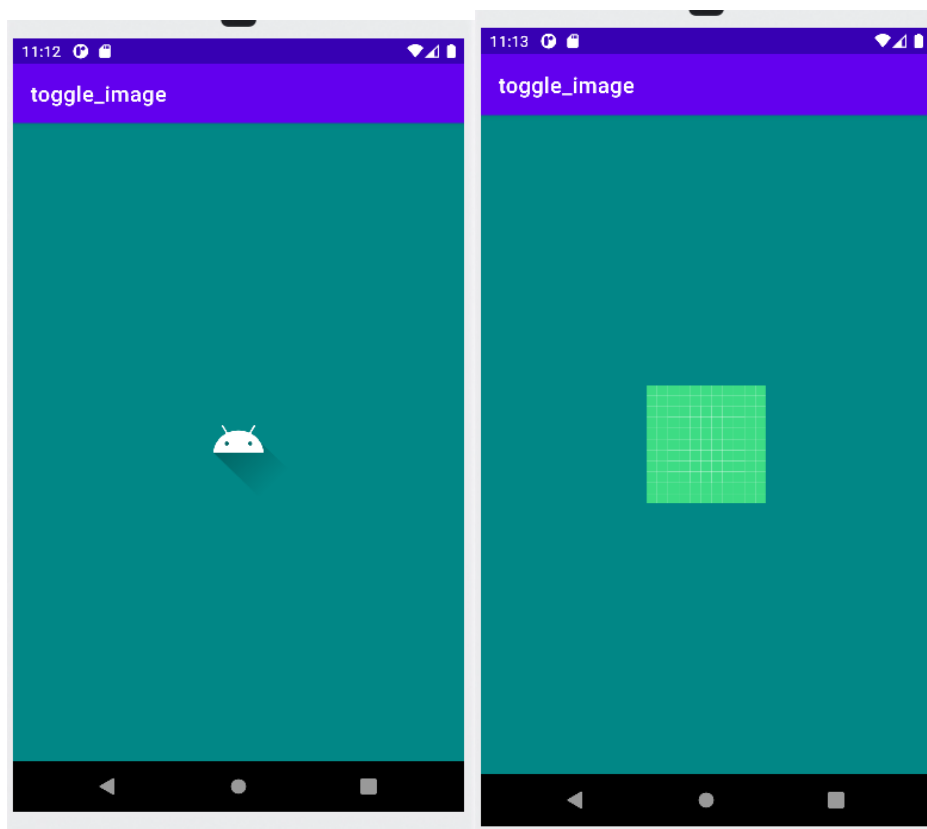

    public void onClick(View v)

    {

        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) {

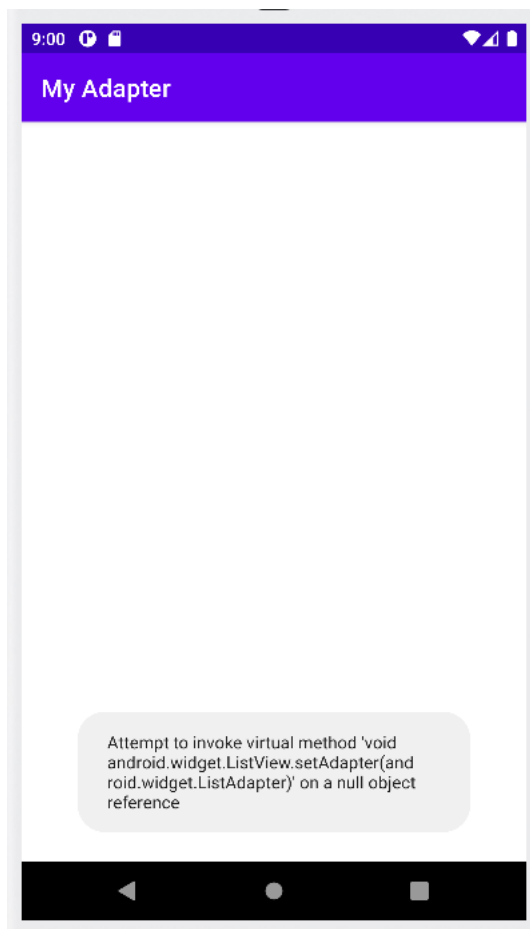
        TextView tem=(TextView) view;

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

    }

}

```

Output:

Program no: 11

Aim: Implement Intent to navigate between multiple activities (Explicit Intent)

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.co_q3;

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.co_q3;

import androidx.appcompat.app.AppCompatActivity;

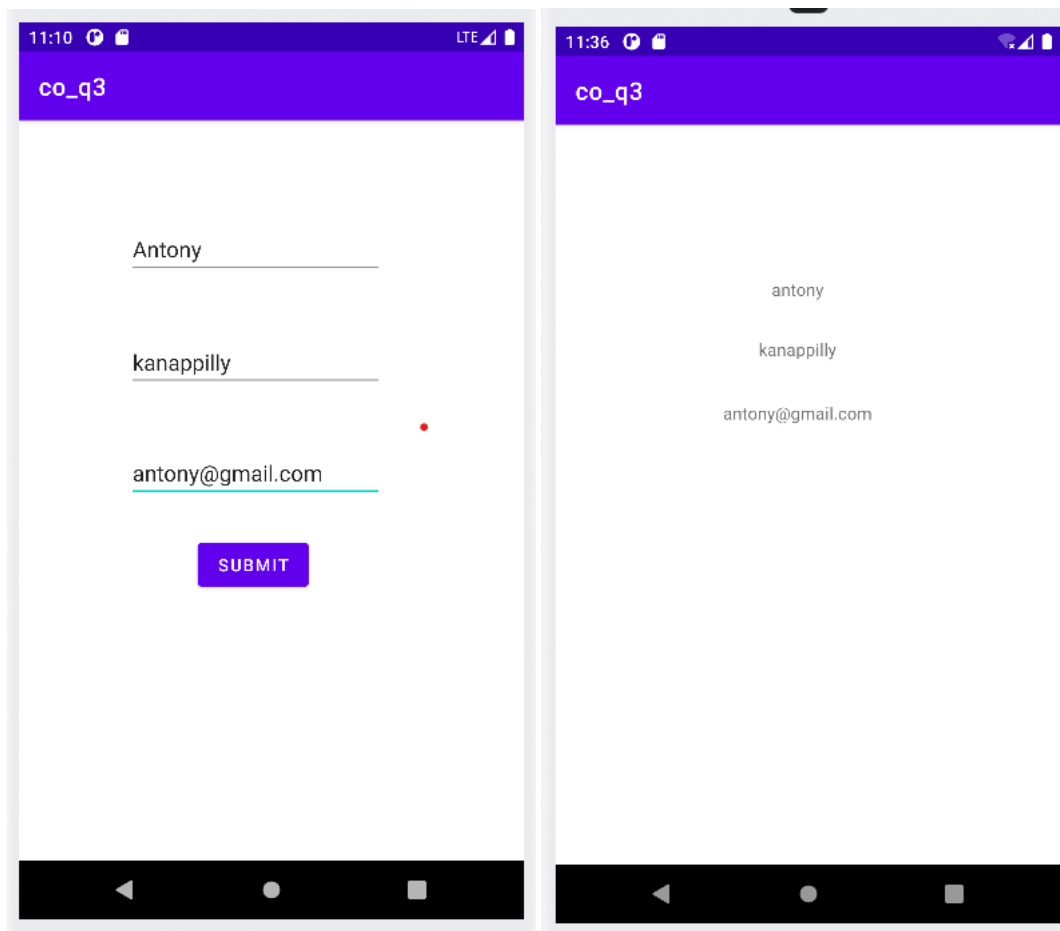
import android.os.Bundle;

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 Implicit intents

XML Code:

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

<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"

    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".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;

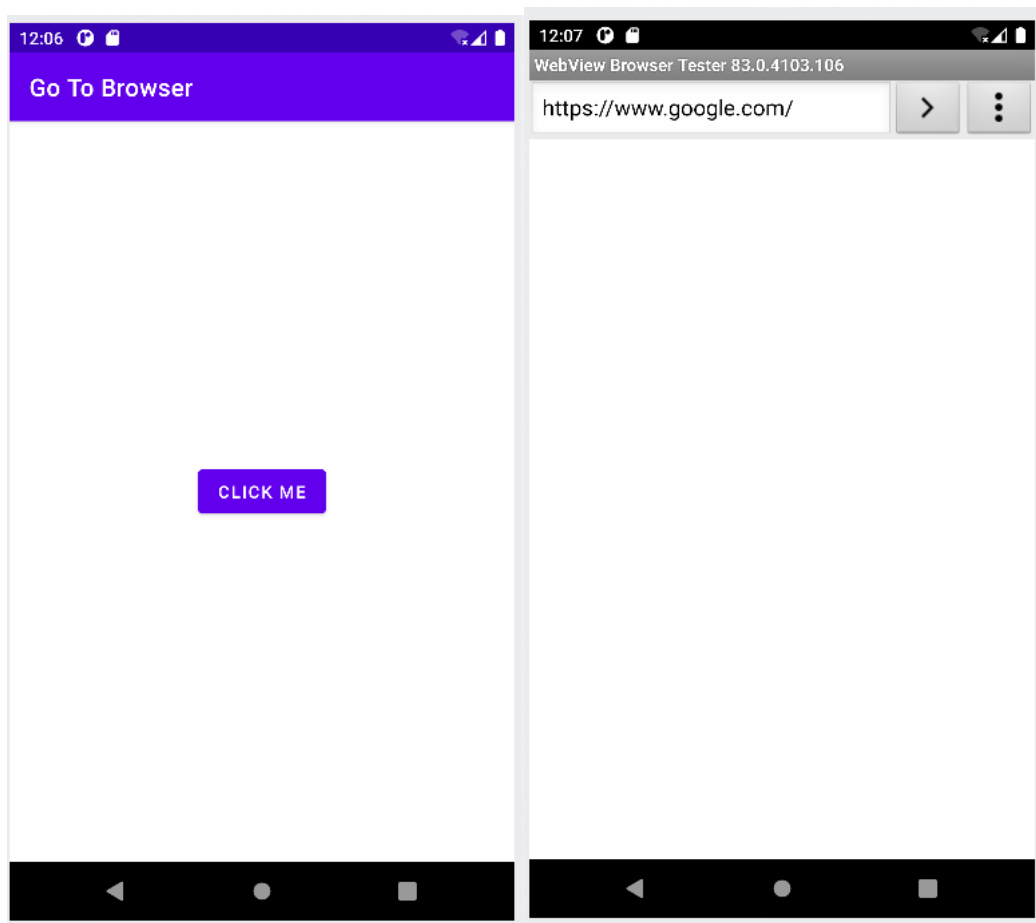
import androidx.appcompat.app.ActionBar;
import androidx.appcompat.app.AppCompatActivity;
import android.content.Intent;
import android.net.Uri;
import android.net.UriQuerySanitizer;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;

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.menuuu, 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;

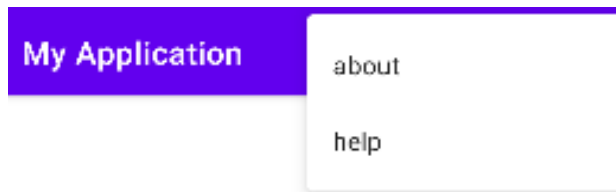
            default:

                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

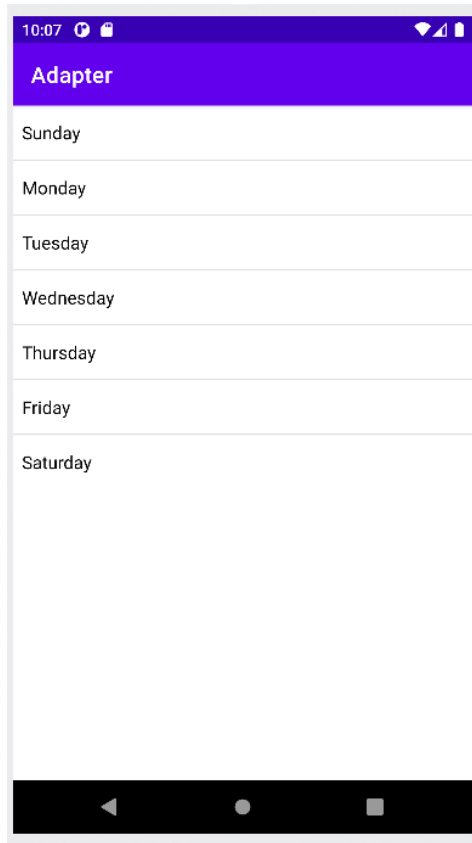
public void onItemClick(AdapterView<?> adapterView, View view, int i,
long l) {

    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:

```
<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>
```

```
<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:

```
package com.example.gridview_image_text_example;

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;

}

}

package com.example.gridview_image_text_example;

import android.os.Bundle;
import android.app.Activity;
import android.view.View;
import android.widget.AdapterView;
import android.widget.AdapterView;
import android.widget.GridView;
import android.widget.Toast;

public class MainActivity extends Activity {

    GridView grid;

```

```
String[] web = {  
    "Toyota",  
        "Benz",  
        "BMW",  
        "volkswagen",  
        "MINI",  
        "Jaguar",  
        "Bently",  
        "Porsche",  
        "Lamborghini"  
};  
  
int[] imageId = {  
    R.drawable.image1,  
    R.drawable.image2,  
    R.drawable.image3,  
    R.drawable.image4,  
    R.drawable.image5,  
    R.drawable.image6,  
    R.drawable.image7,  
    R.drawable.image8,  
    R.drawable.image9,  
  
};
```

```
@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();
```

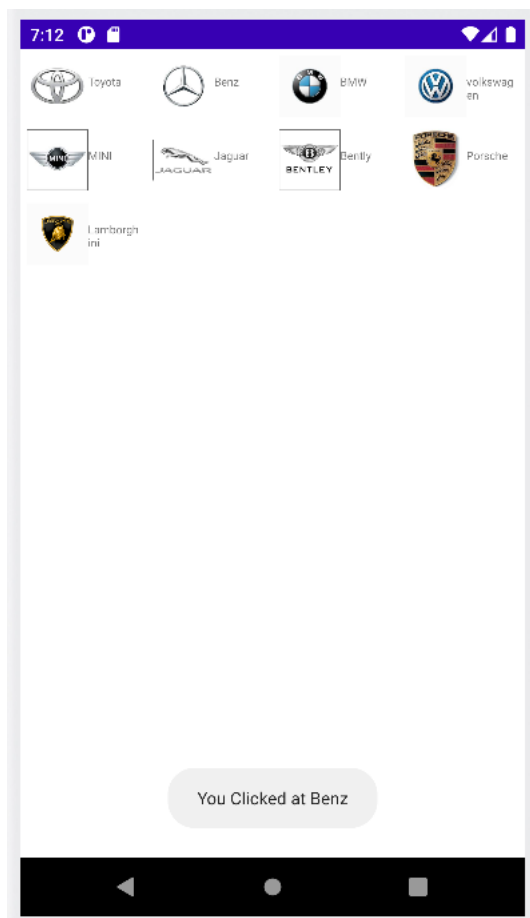
```
        }
```

```
    });
```

```
}
```

```
}
```

Output:



Program no:16

Aim: Program to 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.spinner;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;

import android.view.View;

import android.widget.AdapterView;

import android.widget.AdapterView.OnItemClickListener;
import android.widget.ArrayAdapter;

import android.widget.Spinner;

import android.widget.Toast;


public class MainActivity extends AppCompatActivity implements
    AdapterView.OnItemClickListener {

    String[] country = { "India", "USA", "China", "Japan", "Other" };

    @Override

    protected void onCreate(Bundle savedInstanceState) {

        super.onCreate(savedInstanceState);

        setContentView(R.layout.activity_main);

        //Getting the instance of Spinner and applying OnItemClickListener on
it

        Spinner spin = (Spinner) findViewById(R.id.spinner);

        spin.setOnItemClickListener(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_ite
m);

        //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();

    }

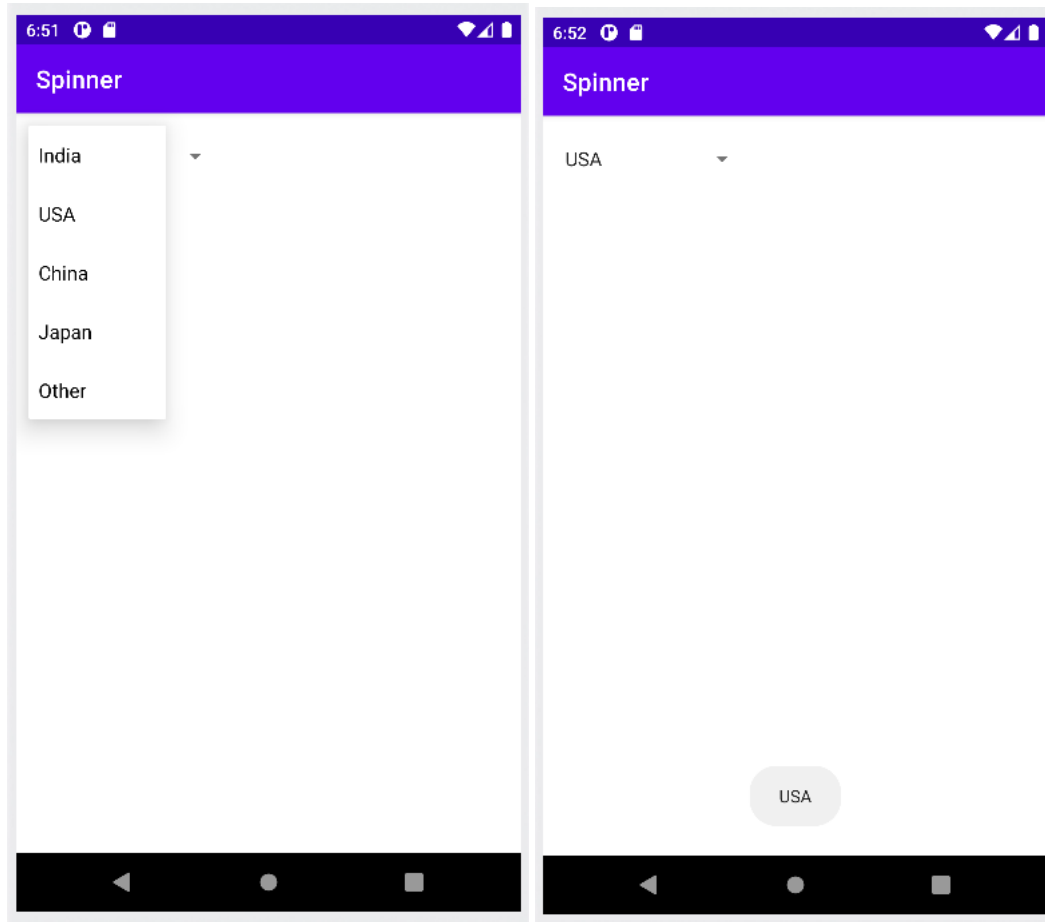
    @Override
    public void onNothingSelected(AdapterView<?> arg0) {

        // 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="Name"

        app:layout_constraintBottom_toBottomOf="parent"

        app:layout_constraintTop_toTopOf="parent"

        tools:layout_editor_absoluteX="100dp" />

    </androidx.constraintlayout.widget.ConstraintLayout>

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

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

```

```

package="com.example.themes">

<application
    android:allowBackup="true"
    android:icon="@mipmap/ic_launcher"
    android:label="@string/app_name"
    android:roundIcon="@mipmap/ic_launcher_round"
    android:supportRtl="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>

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

```

```

    <color name="teal">#FF018786</color>

    <color name="black">#FF000000</color>

    <color name="yellow">#EC971B</color>

    <color name="red">#F80F0F</color>

</resources>

<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>

```

Java Code:

```

package com.example.themes;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;

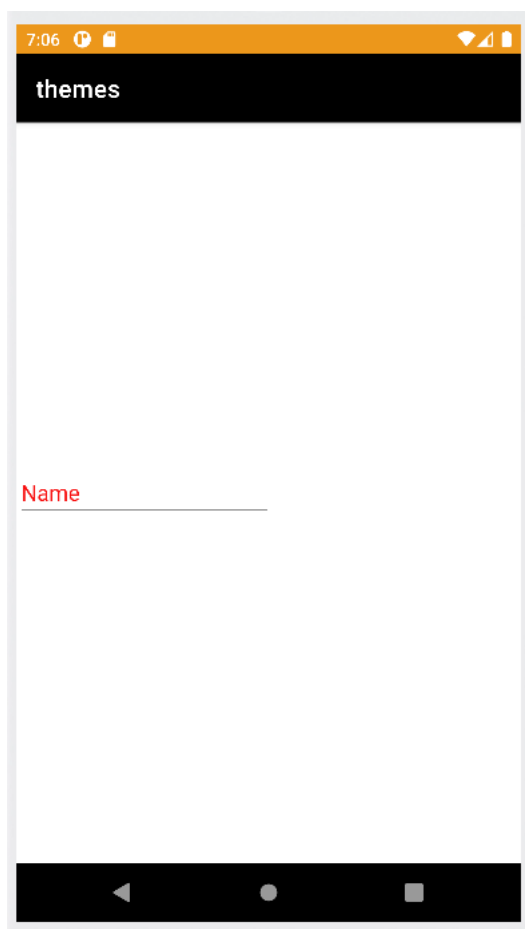
public class MainActivity extends AppCompatActivity {

    @Override

    protected void onCreate(Bundle savedInstanceState) {

```

```
super.onCreate(savedInstanceState);  
setContentView(R.layout.activity_main);  
}  
}
```

Output:

Program no:18

Aim: Develop application using Fragments

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: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="#2196F3"  
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="#FFC107"  
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/purple_200"/>
```

```
</LinearLayout>
```

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

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

```
    xmlns:tools="http://schemas.android.com/tools"
```

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

```
    android:layout_height="match_parent"
```

```
    android:background="@color/teal_200"
```

```
    tools:context=".Fragment1">
```

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

```
<TextView
```

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

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

```
    android:layout_centerInParent="true"
```

```
    android:background="#FFEB3B"
```

```
    android:text="Fragment1"
```

```
    android:textSize="30dp" />
```

```
</RelativeLayout>
```

```
<?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="#FFEB3B"
    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="#FAA3C1"
    android:text="Fragment2"
    android:textSize="30dp" />

```

```
</RelativeLayout>
```

Java Code:

```

package com.example.fragment;

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();

}

}

```

```

package com.example.fragment;

import android.os.Bundle;

import androidx.fragment.app.Fragment;

import android.view.LayoutInflater;

import android.view.View;

import android.view.ViewGroup;

public class Fragment1 extends Fragment {

```

```

    @Override

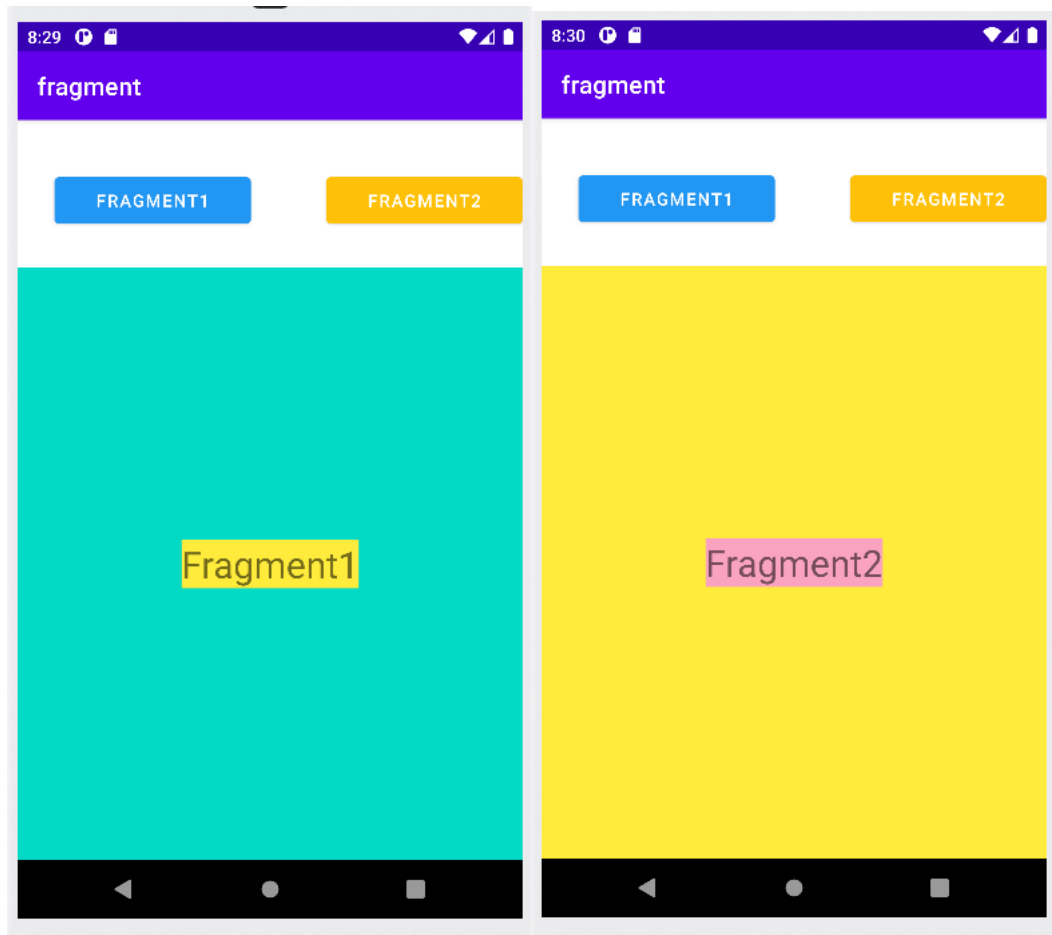
```

```

    public View onCreateView(LayoutInflater inflater, ViewGroup container,

```

```
        Bundle savedInstanceState) {  
    // Inflate the layout for this fragment  
    return inflater.inflate(R.layout.fragment_1, container, false);  
}  
}  
  
package com.example.fragment;  
  
import android.os.Bundle;  
  
import androidx.fragment.app.Fragment;  
  
import android.view.LayoutInflater;  
import android.view.View;  
import android.view.ViewGroup;  
public class Fragment2 extends Fragment {  
  
    @Override  
    public View onCreateView(LayoutInflater inflater, ViewGroup container,  
        Bundle savedInstanceState) {  
        // Inflate the layout for this fragment  
        return inflater.inflate(R.layout.fragment_2, 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>

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

```

Java Code:

```

package com.example.navigation;

import androidx.annotation.NonNull;
import androidx.appcompat.app.ActionBarDrawerToggle;

```

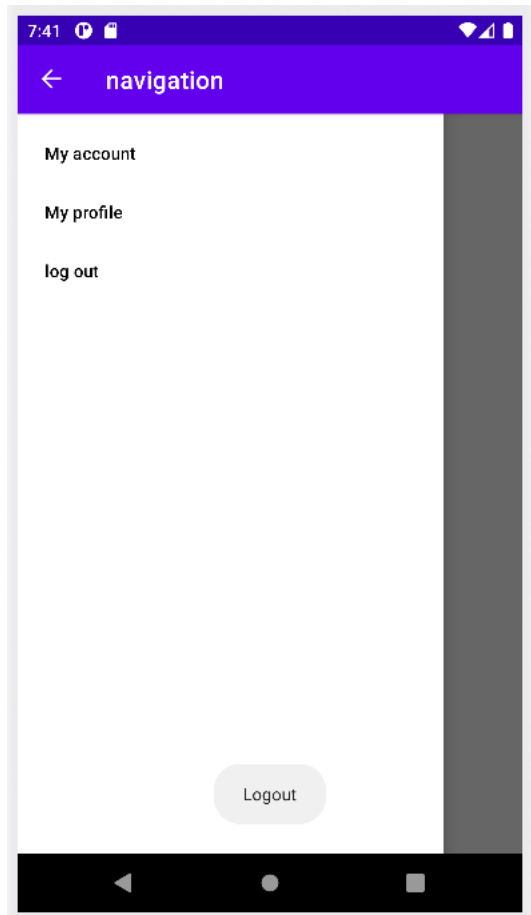
```

import androidx.appcompat.app.AppCompatActivity;
import androidx.drawerlayout.widget.DrawerLayout;
import android.os.Bundle;
import android.view.MenuItem;
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.account){  
        Toast.makeText(this, "Home Page", Toast.LENGTH_SHORT).show();  
    }  
    if(id == R.id.profile){  
        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:20**Aim:** Program to implement activity lifecycle**XML Code:**

```

<?xml version="1.0" encoding="utf-8"?>
<android.support.constraint.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="example.javatpoint.com.activitylifecycle.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" />

</android.support.constraint.ConstraintLayout>

```

Java Code:

```
package example.javatpoint.com.activitylifecycle;

import android.app.Activity;
import android.os.Bundle;
import android.util.Log;

public class MainActivity extends Activity {

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        Log.d("lifecycle","onCreate invoked");
    }

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

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

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

```

@Override
protected void onStop() {
    super.onStop();
    Log.d("lifecycle","onStop invoked");
}

@Override
protected void onRestart() {
    super.onRestart();
    Log.d("lifecycle","onRestart invoked");
}

@Override
protected void onDestroy() {
    super.onDestroy();
    Log.d("lifecycle","onDestroy invoked");
}
}

```

Output:

```

2022-02-24 10:46:25.818 8920-8943/com.example.lifecycle D/libEGL: loaded /vendor/lib/egl/libEGL_emulation.so
2022-02-24 10:46:25.854 8920-8943/com.example.lifecycle D/libEGL: loaded /vendor/lib/egl/libGLESv1_CM_emulation.so
2022-02-24 10:46:25.884 8920-8943/com.example.lifecycle D/libEGL: loaded /vendor/lib/egl/libGLESv2_emulation.so
2022-02-24 10:46:25.968 8920-8920/com.example.lifecycle D/lifecycle: onCreate invoked
2022-02-24 10:46:25.977 8920-8920/com.example.lifecycle D/lifecycle: onStart invoked
2022-02-24 10:46:25.985 8920-8920/com.example.lifecycle D/lifecycle: onResume invoked
2022-02-24 10:46:26.078 8920-8941/com.example.lifecycle D/HostConnection: HostConnection::get() New Host Connection established 0xe87df960, tid 8941
2022-02-24 10:46:26.084 8920-8941/com.example.lifecycle D/HostConnection: HostComposition ext ANDROID_EMU_CHECKSUM_HELPER_v1 ANDROID_EMU_native_sync_v2 ANDROID_
2022-02-24 10:46:26.094 8920-8941/com.example.lifecycle W/OpenGLRenderer: Failed to choose config with EGL_SWAP_BEHAVIOR_PRESERVED, retrying without...
2022-02-24 10:46:26.295 8920-8941/com.example.lifecycle D/EGL_emulation: eglCreateContext: 0xe87dff10: maj 2 min 0 rcv 2
2022-02-24 10:46:26.304 8920-8941/com.example.lifecycle D/EGL_emulation: eglMakeCurrent: 0xe87dff10: ver 2 0 (tinfo 0xe8b18f50) (first time)
2022-02-24 10:46:26.317 8920-8941/com.example.lifecycle I/Gralloc4: mapper 4.x is not supported
2022-02-24 10:46:26.318 8920-8941/com.example.lifecycle D/HostConnection: createUnique: call
2022-02-24 10:46:26.320 8920-8941/com.example.lifecycle D/HostConnection: HostConnection::get() New Host Connection established 0xe87df030, tid 8941
2022-02-24 10:46:26.331 8920-8941/com.example.lifecycle D/goldfish-address-space: allocate: Ask for block of size 0x100
2022-02-24 10:46:26.332 8920-8941/com.example.lifecycle D/goldfish-address-space: allocate: ioctl allocate returned offset 0x3f3ffe000 size 0x2000
2022-02-24 10:46:26.343 8920-8941/com.example.lifecycle D/HostConnection: HostComposition ext ANDROID_EMU_CHECKSUM_HELPER_v1 ANDROID_EMU_native_sync_v2 ANDROID_
2022-02-24 10:46:26.651 8920-8932/com.example.lifecycle I/amp.lifecycle: Background young concurrent copying GC freed 19135(1233KB) AllocSpace objects, 0(0B) l
2022-02-24 10:46:26.652 8920-8934/com.example.lifecycle W/System: A resource failed to call close.
2022-02-24 10:46:58.113 8920-8920/com.example.lifecycle D/lifecycle: onPause invoked
2022-02-24 10:46:59.121 8920-8920/com.example.lifecycle D/lifecycle: onStop invoked
2022-02-24 10:46:59.132 8920-8920/com.example.lifecycle D/lifecycle: onDestroy invoked
2022-02-24 10:47:03.281 8920-8934/com.example.lifecycle W/System: failed to call release.

```

Program no:21

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

XML Code:

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

```

package com.example.sqlite_app;

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;
    DBHelper 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 DBHelper(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();

}

});

}
}

```

```
package com.example.sqlite_app;

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 DBHelper extends SQLiteOpenHelper {
    public DBHelper(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: