

# **20MCA243 MOBILE APPLICATION DEVELOPMENT LAB**

*Lab Report Submitted By*

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*In Partial fulfillment for the Award of the Degree Of*

**MASTER OF COMPUTER APPLICATIONS (2 Year)  
(MCA)**

**APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY**



**AMAL JYOTHI COLLEGE OF ENGINEERING  
KANJIRAPPALLY**

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**2021-2022**

**DEPARTMENT OF COMPUTER APPLICATIONS  
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KANJIRAPPALLY**



**CERTIFICATE**

This is to certify that the lab report, “**20MCA243 MOBILE APPLICATION DEVELOPMENT LAB**” is the bonafide work of **ASHISH WILSON(Reg.No:AJC20MCA-2028)** in partial fulfillment of the requirements for the award of the Degree of Master of Computer Applications under APJ Abdul Kalam Technological University during the year 2021-22.

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**Program 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"?>

<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
xmlns:app="http://schemas.android.com/apk/res-auto"
xmlns:tools="http://schemas.android.com/tools"
android:layout_width="match_parent"
android:layout_height="match_parent"
tools:context=".MainActivity">

<TextView android:id="@+id/textView"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:text="LOGIN "
android:textAppearance="@style/TextAppearance.AppCompat.Medium"
android:textColor="@color/black"
android:textSize="24sp"
app:layout_constraintBottom_toTopOf="@+id/name"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent" />

<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="0.497"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.281" />
<EditText android:id="@+id/password"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:ems="10"
    android:hint="password"
    android:inputType="textPassword"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.497"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.406" />
<Button android:id="@+id/login"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="login"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.467"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.553" />
</androidx.constraintlayout.widget.ConstraintLayout>

```

**Java Code:**

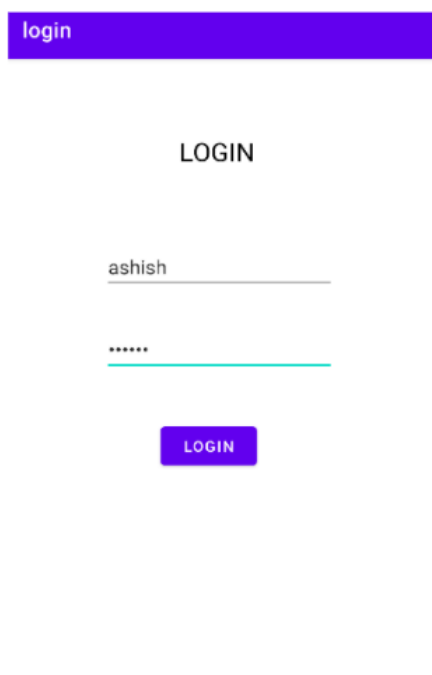
```
package com.example.login;

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;
import java.util.Objects;

public class MainActivity extends AppCompatActivity {

    @Override

    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
    }
}
```

**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"?>
<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
xmlns:app="http://schemas.android.com/apk/res-auto"
xmlns:tools="http://schemas.android.com/tools"
android:layout_width="match_parent"
android:layout_height="match_parent"
tools:context=".MainActivity">
<TextView android:id="@+id/tv"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:textSize="24sp"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintHorizontal_bias="0.525"
app:layout_constraintLeft_toLeftOf="parent"
app:layout_constraintRight_toRightOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.36" />
<EditText android:id="@+id/tb"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:ems="10"
android:inputType="textPersonName"
android:text="Name"
app:layout_constraintBottom_toBottomOf="parent"
```



```

app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.557"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toBottomOf="@+id/tv"
app:layout_constraintVertical_bias="0.115" />
<Button android:id="@+id/btn"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:text="ADD"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toBottomOf="@+id/tb" />
</androidx.constraintlayout.widget.ConstraintLayout>

```

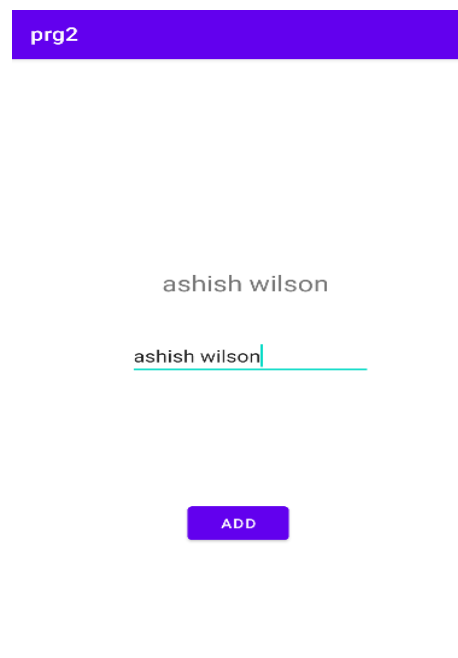
### Java code:

```

package com.example.prg2;
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 {
    TextView tv;
    Button btn;
    EditText et;
    @Override
    protected void onCreate(Bundle savedInstanceState) {

```

```
super.onCreate(savedInstanceState);
setContentView(R.layout.activity_main);
tv=findViewById(R.id.tv);
btn=findViewById(R.id.btn);
et=findViewById(R.id.tb);
btn.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        String val=et.getText().toString();
        tv.setText(val);
    }
});
}
```

**Output:**

**Program no:3**

**Aim :** Program to design a Login Form with username and password using Linear Layout and toast valid credentials.

**XML Code:**

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

<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
xmlns:app="http://schemas.android.com/apk/res-auto"
xmlns:tools="http://schemas.android.com/tools"
android:layout_width="match_parent"
android:layout_height="match_parent"
tools:context=".MainActivity">

<TextView android:id="@+id/textView"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:text="LOGIN "
android:textAppearance="@style/TextAppearance.AppCompat.Medium"
android:textColor="@color/black"
android:textSize="24sp"
app:layout_constraintBottom_toTopOf="@+id/name"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent" />

<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="0.497"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.281" />
<EditText android:id="@+id/password"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:ems="10"
    android:hint="password"
    android:inputType="textPassword"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.497"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.406" />
<Button android:id="@+id/login"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="login"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.467"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.553" />
</androidx.constraintlayout.widget.ConstraintLayout>

```

**Java Code:**

```

package com.example.login;

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;
import java.util.Objects;

public class MainActivity extends AppCompatActivity {

    EditText username,password;

    Button login;

    @Override

    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        username=findViewById(R.id.name);
        password=findViewById(R.id.password);
        login=findViewById(R.id.login);
        login.setOnClickListener(new View.OnClickListener() {
            public void onClick(View view) {
                if(Objects.equals(username.getText().toString(),
                "ashish")&&Objects.equals(password.getText().toString(),"ashish")){
                    Toast.makeText(MainActivity.this,"You have Authenticated
                    Successfully",Toast.LENGTH_LONG).show();
                }else{
                    Toast.makeText(MainActivity.this,"AuthenticationFailed",
                    Toast.LENGTH_LONG).show();
                }
            }
        });
    }
}

```

```
}  
});  
}
```

**Output:**

The image displays two side-by-side screenshots of a mobile application's login screen. Both screens have a purple header bar with the text 'login' in white. The main content area is white and contains the following elements:

- A title 'LOGIN' in black, centered at the top.
- A text input field containing the username 'ashish'.
- A password input field with five dots (.....) representing masked characters.
- A purple button labeled 'LOGIN' in white, centered below the password field.
- A feedback message at the bottom in a light gray rounded rectangle:

On the left screenshot, the feedback message is 'You have Authenticated Successfully'. On the right screenshot, the feedback message is 'Authentication Failed'.

**Program no:4**

**Aim :** Program to implementing basic arithmetic operations of a simple calculator.

**XML Code:**

```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
xmlns:app="http://schemas.android.com/apk/res-auto"
xmlns:tools="http://schemas.android.com/tools"
android:layout_width="match_parent"
android:layout_height="match_parent"
tools:context=".MainActivity">
<EditText android:id="@+id/i1"
android:layout_width="124dp"
android:layout_height="55dp"
android:layout_marginStart="44dp"
android:ems="10"
android:inputType="textPersonName"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.235" />
<EditText android:id="@+id/i2"
android:layout_width="126dp"
android:layout_height="57dp"
android:ems="10"
android:inputType="textPersonName"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
```

```

app:layout_constraintHorizontal_bias="0.674"
app:layout_constraintStart_toEndOf="@+id/i1"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.232" />
<TextView android:id="@+id/textView3"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Ans:"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toStartOf="@+id/res"
    app:layout_constraintHorizontal_bias="0.551"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/i1"
    app:layout_constraintVertical_bias="0.116" />
<TextView android:id="@+id/res"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.498"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/i1"
    app:layout_constraintVertical_bias="0.116" />
<TextView android:id="@+id/textView4"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginStart="88dp"
    android:text="Input 1"
    app:layout_constraintBottom_toTopOf="@+id/i1"

```



```

app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.764" />
<TextView android:id="@+id/textView5"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Input 2"
    app:layout_constraintBottom_toTopOf="@+id/i2"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.69"
    app:layout_constraintStart_toEndOf="@+id/textView4"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.775" />
<LinearLayout android:layout_width="130dp"
    android:layout_height="255dp"
    android:layout_marginTop="56dp"
    android:orientation="vertical"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/res">
    <Button android:id="@+id/add"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginStart="4dp"
        android:text="ADD" />
    <Button android:id="@+id/mul"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"

```

```

android:text="MUL" />
<Button android:id="@+id/div"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_marginBottom="16dp"
android:text="DIV" />
<Button android:id="@+id/sub"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:text="SUB" />
</LinearLayout>
</androidx.constraintlayout.widget.ConstraintLayout>

```

### Java Code:

```

package com.example.myapplication;

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

public class MainActivity extends AppCompatActivity {
    EditText i1,i2;
    TextView res;
    Button b1,b2,b3,b4;

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

```

```

i1=findViewById(R.id.i1);
i2=findViewById(R.id.i2);
res=findViewById(R.id.res);
b1=findViewById(R.id.add);
b2=findViewById(R.id.sub);
b3=findViewById(R.id.mul);
b4=findViewById(R.id.div);
b1.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View view) {
        int n1=Integer.parseInt(i1.getText().toString());
        int n2=Integer.parseInt(i1.getText().toString());
        int add=n1+n2;
        res.setText(String.valueOf(add));
    }
});
b2.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View view) {
        int n1=Integer.parseInt(i1.getText().toString());
        int n2=Integer.parseInt(i1.getText().toString());
        int add=n1-n2;
        res.setText(String.valueOf(add));
    }
});
b3.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View view) {
        int n1=Integer.parseInt(i1.getText().toString());

```

```

int n2=Integer.parseInt(i1.getText().toString());
int add=n1*n2;
res.setText(String.valueOf(add));
}
});
b4.setOnClickListener(new View.OnClickListener() {
@Override
public void onClick(View view) {
int n1=Integer.parseInt(i1.getText().toString());
int n2=Integer.parseInt(i1.getText().toString());
int add=n1/n2;
res.setText(String.valueOf(add));
}
});
}

```

### Output:

The screenshot shows a mobile application interface with a white background. At the top, there are two input fields labeled "Input 1" and "Input 2". The "Input 1" field contains the number "2" and has a blue cursor. The "Input 2" field contains the number "2". Below these fields, there is a label "Ans:" followed by the number "4". At the bottom of the interface, there are four blue buttons with white text, stacked vertically: "ADD", "MUL", "DIV", and "SUB".

**Program no:5**

**Aim :** Program to implement validations on various UI controls.

**XML Code:**

```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
xmlns:app="http://schemas.android.com/apk/res-auto"
xmlns:tools="http://schemas.android.com/tools"
android:layout_width="match_parent"
android:layout_height="match_parent"
android:textAlignment="center"
tools:context=".MainActivity">
<TextView android:id="@+id/textView"
android:layout_width="236dp"
android:layout_height="53dp"
android:text="User Registration"
android:textAlignment="center"
android:textAppearance="@style/TextAppearance.AppCompat.Large"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintLeft_toLeftOf="parent"
app:layout_constraintRight_toRightOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.073" />
<EditText android:id="@+id/name"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:ems="10" android:hint="Name"
android:inputType="textPersonName"
```

```

android:textColorHighlight="#D25454"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.497"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.205" />
<EditText android:id="@+id/phone"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:ems="10" android:hint="Phone Number"
android:inputType="number"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.507"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.393" />
<EditText android:id="@+id/email"
android:layout_width="208dp"
android:layout_height="43dp"
android:ems="10" android:hint="Email"
android:inputType="textEmailAddress"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.502"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.297" />

```

```

<EditText android:id="@+id/pswd"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:ems="10" android:hint="Password"
android:inputType="textPassword"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent" />
<Button android:id="@+id/submit"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:onClick="onSubmit"
android:text="Submit"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.613" />
</androidx.constraintlayout.widget.ConstraintLayout>

```

### Java Code:

```

package com.example.validation;

import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.os.Trace;
import android.view.View;
import android.widget.EditText;
import android.widget.Toast;

```

```
public class MainActivity extends AppCompatActivity {  
    @Override  
    protected void onCreate(Bundle savedInstanceState) {  
        super.onCreate(savedInstanceState);  
        setContentView(R.layout.activity_main);  
    }  
    public Boolean validateName(){  
        EditText ed1 = (EditText) findViewById(R.id.name);  
        String name = ed1.getText().toString();  
        if (name.isEmpty()){  
            ed1.setError("Name Cannot be Empty");  
            return false;  
        }else {  
            return true;  
        }  
    }  
    public Boolean validateEmail(){  
        EditText ed2 = (EditText) findViewById(R.id.email);  
        String email = ed2.getText().toString();  
        String emailPattern = "[a-zA-Z0-9._-]+@[a-z]+\\.[a-z]+";  
        if (email.isEmpty()){  
            ed2.setError("Email Cannot be Empty");  
            return false;  
        }  
        else if (!email.matches(emailPattern)){  
            ed2.setError("Invalid email address");  
            return false;  
        }else{  
            return true;  
        }  
    }  
}
```



```

}
}

public Boolean validateNumber(){
    EditText ed3 = (EditText) findViewById(R.id.phone);
    String num = ed3.getText().toString();
    if (num.isEmpty()){
        ed3.setError("Phone Number Cannot be Empty");
        return false;
    }else{
        return true;
    }
}

public Boolean validatePassword(){
    EditText ed4 = (EditText) findViewById(R.id.pswd);
    String pswd = ed4.getText().toString();
    String passwordVal = "^" +
        //"(?=.*[0-9])" +      //at least 1 digit
        //"(?=.*[a-z])" +      //at least 1 lower case letter
        //"(?=.*[A-Z])" +      //at least 1 upper case letter
        "(?=.*[a-zA-Z])" +    //any letter
        "(?=.*[@#$%^&+=])" +  //at least 1 special character
        "(?=\s+$)" +          //no white spaces
        ".{4,}" +              //at least 4 characters
        "$";
    if (pswd.isEmpty()){
        ed4.setError("Password Cannot be Empty");
        return false;
    }
    else if (!pswd.matches(passwordVal)) {

```

```

ed4.setError("Password is too weak");

return false;

}else{

return true;

}

}

public void onSubmit(View view){

if(validateName() && validateEmail() && validateNumber() && validatePassword()){

Toast t = Toast.makeText(getApplicationContext(),"Sucess",Toast.LENGTH_LONG);

t.show();

}

}

}

```

### Output:

User Registration

ashish

as@aw.com

9447663948

...

Password is too weak

SUBMIT

User Registration

ashish

asaw.com

Invalid email address

9447663948

...

SUBMIT

**Program no:6**

**Aim :** Program to design a registration activity and store registration details in local memory of phone using Intents and SharedPreferences.

**XML Code:**

Mainactivity.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"
android:background="#FFEB3B"
tools:context=".MainActivity">

<EditText android:id="@+id/add"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:ems="10" android:hint="Address"
android:inputType="textPostalAddress"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="1.0"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.412" />

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

```

android:ems="10" android:hint="Email"
android:inputType="textWebEmailAddress"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="1.0"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.661" />
<EditText android:id="@+id/phone"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:ems="10" android:hint="Phone"
android:inputType="phone"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="1.0"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.529" />
<TextView android:id="@+id/t1"
android:layout_width="132dp"
android:layout_height="30dp"
android:text="Name" android:textAlignment="center"
android:textStyle="bold"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.093"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"

```

```

app:layout_constraintVertical_bias="0.313" />
<TextView android:id="@+id/t4"
android:layout_width="132dp"
android:layout_height="30dp"
android:text="Email"
android:textAlignment="center"
android:textStyle="bold"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.093"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.659" />
<TextView android:id="@+id/t2"
android:layout_width="132dp"
android:layout_height="30dp"
android:text="Address"
android:textAlignment="center"
android:textStyle="bold"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.093"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.413" />
<TextView android:layout_width="230dp"
android:layout_height="37dp"
android:text="REGISTER"
android:textAlignment="center"

```

```

android:textSize="24sp"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintHorizontal_bias="0.497"
app:layout_constraintLeft_toLeftOf="parent"
app:layout_constraintRight_toRightOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.023" />
<TextView android:id="@+id/t3"
android:layout_width="132dp"
android:layout_height="30dp"
android:text="Phone"
android:textAlignment="center"
android:textStyle="bold"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.093"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.517" />
<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="1.0"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"

```

```

app:layout_constraintVertical_bias="0.307" />
<Button android:id="@+id/button"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_marginStart="144dp"
android:layout_marginTop="51dp"
android:layout_marginEnd="177dp"
android:layout_marginBottom="133dp"
android:onClick="onSubmit"
android:text="Login"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="1.0"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toBottomOf="@+id/email"
app:layout_constraintVertical_bias="1.0" />
</androidx.constraintlayout.widget.ConstraintLayout>

```

#### Mainactivity2.xml

```

<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
xmlns:app="http://schemas.android.com/apk/res-auto"
xmlns:tools="http://schemas.android.com/tools"
android:layout_width="match_parent"
android:layout_height="match_parent"
tools:context=".MainActivity2">
<TextView android:id="@+id/name2"
android:layout_width="239dp"

```

```

android:layout_height="26dp"
android:text="TextView"
android:textAlignment="center"
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="0.128" />
<TextView android:id="@+id/email2"
android:layout_width="239dp"
android:layout_height="26dp"
android:text="TextView"
android:textAlignment="center"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.401" />
<TextView android:id="@+id/add2"
android:layout_width="239dp"
android:layout_height="26dp"
android:text="TextView"
android:textAlignment="center"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.205" />

```



```

<TextView android:id="@+id/phone2"
android:layout_width="239dp"
android:layout_height="26dp"
android:text="TextView"
android:textAlignment="center"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.297" />
</androidx.constraintlayout.widget.ConstraintLayout>

```

### Java Code:

Mainactivity.java

```

package com.example.myapplication;

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

public class MainActivity extends AppCompatActivity {

    String Name;

    String Address;

    String Phone;

    String Email;

    @Override

    protected void onCreate(Bundle savedInstanceState) {

```

```

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

public void onSubmit(View view){
    EditText name = (EditText) findViewById(R.id.name);
    EditText add = (EditText) findViewById(R.id.add);
    EditText phone = (EditText) findViewById(R.id.phone);
    EditText email = (EditText) findViewById(R.id.email);
    Intent i = new Intent(getApplicationContext(),MainActivity2.class);
    Name= name.getText().toString();
    Address = add.getText().toString();
    Phone = phone.getText().toString();
    Email = email.getText().toString();
    SharedPreferences sharedPreferences = getSharedPreferences("MySharedPref",
    MODE_PRIVATE);
    SharedPreferences.Editor myEdit = sharedPreferences.edit();
    myEdit.putString("name", name.getText().toString());
    myEdit.putString("add", add.getText().toString());
    myEdit.putString("phone", phone.getText().toString());
    myEdit.putString("email", email.getText().toString());
    myEdit.apply();
    i.putExtra("Name",Name);
    i.putExtra("Address",Address);
    i.putExtra("Phone",Phone);
    i.putExtra("Email",Email);
    startActivity(i);
}

@Override
protected void onResume() {

```

```

super.onResume();

EditText name = (EditText) findViewById(R.id.name);
EditText add = (EditText) findViewById(R.id.add);
EditText phone = (EditText) findViewById(R.id.phone);
EditText email = (EditText) findViewById(R.id.email);

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

name.setText(sh.getString("name", ""));
add.setText(sh.getString("add", ""));
phone.setText(sh.getString("phone", ""));
email.setText(sh.getString("email", ""));

}

}

```

Mainactivity2.java

```

package com.example.myapplication;

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

public class MainActivity2 extends AppCompatActivity {

    @Override

    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main2);

        TextView t1 = (TextView) findViewById(R.id.name2);
        TextView t2 = (TextView) findViewById(R.id.add2);
        TextView t3 = (TextView) findViewById(R.id.phone2);
        TextView t4 = (TextView) findViewById(R.id.email2);

        Bundle extras = getIntent().getExtras();

        String name2 = extras.getString("Name");
    }
}

```

```
String add2 = extras.getString("Address");  
String phone2 = extras.getString("Phone");  
String email2 = extras.getString("Email");  
t1.setText(name2);  
t2.setText(add2);  
t3.setText(phone2);  
t4.setText(email2);  
}  
}
```

**Output:**

The image displays two side-by-side screenshots of an Android application. The left screenshot shows a yellow background with the title 'REGISTER' at the top. Below the title, there are four input fields: 'Name' with the value 'Ashish', 'Address' with the value 'kannur', 'Phone' with the value '94478837', and 'Email' with the value 'ashish@gmail.com'. At the bottom of the form is a purple button labeled 'LOGIN'. The right screenshot shows a white background with the same data displayed as text: 'Ashish', 'kannur', '94478837', and 'ashish@gmail.com'.

**Program no:7**

**Aim:** Program to Design a simple Calculator using GridLayout and Cascaded LinearLayout.

**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:background="#CBE9F6"
android:textAlignment="center"
tools:context=".MainActivity"
tools:ignore="MissingClass">
<TextView android:id="@+id/opp"
android:layout_width="337dp"
android:layout_height="120dp"
android:layout_marginTop="30dp"
android:layout_marginBottom="10dp"
android:background="#E4E2E2"
android:textAlignment="textEnd"
android:textAllCaps="true"
android:textSize="38sp"
android:textColor="@color/purple_700"
android:text="9+8\n 17"
app:layout_constraintBottom_toTopOf="@+id/gridlayout"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.495"
```

```

app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent" />
<androidx.gridlayout.widget.GridLayout
    android:id="@+id/gridlayout"
    android:layout_width="343dp"
    android:layout_height="500dp"
    android:layout_marginBottom="10dp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent">
    <Button android:id="@+id/ac"
        android:layout_width="110dp"
        android:layout_height="80dp"
        android:layout_margin="2dp"
        android:padding="4dp"
        android:textSize="22sp"
        android:text="AC"
        app:layout_column="0"
        app:layout_row="5"
        tools:text="AC" />
    <Button android:id="@+id/clear"
        android:layout_width="110dp"
        android:layout_height="80dp"
        android:layout_margin="2dp"
        android:padding="4dp"
        android:textSize="22sp"
        android:text="C"
        app:layout_column="2"
        app:layout_row="5" tools:text="C" />

```

```

<Button android:id="@+id/n9"
android:layout_width="110dp"
android:layout_height="80dp"
android:layout_margin="2dp"
android:padding="4dp"
android:textSize="22sp"
android:text="9"
app:layout_column="0"
app:layout_row="0" />
<Button android:id="@+id/equal"
android:layout_width="110dp"
android:layout_height="80dp"
android:layout_margin="2dp"
android:padding="4dp"
android:textSize="22sp"
android:text="="
app:layout_column="1"
app:layout_row="5" />
<Button android:id="@+id/per"
android:layout_width="110dp"
android:layout_height="80dp"
android:layout_margin="2dp"
android:padding="4dp"
android:textSize="22sp"
android:text="%"
app:layout_column="2"
app:layout_row="4" />
<Button android:id="@+id/div"
android:layout_width="110dp"

```

```

android:layout_height="80dp"
android:layout_margin="2dp"
android:padding="4dp"
android:textSize="22sp"
android:text="÷"
app:layout_column="1"
app:layout_row="4" />
<Button android:id="@+id/sub"
android:layout_width="110dp"
android:layout_height="80dp"
android:layout_margin="2dp"
android:padding="4dp"
android:textSize="22sp"
android:text="-"
app:layout_column="2"
app:layout_row="3" />
<Button android:id="@+id/mul"
android:layout_width="110dp"
android:layout_height="80dp"
android:layout_margin="2dp"
android:padding="4dp"
android:textSize="22sp"
android:text="×"
app:layout_column="0"
app:layout_row="4" />
<Button android:id="@+id/sum"
android:layout_width="110dp"
android:layout_height="80dp"
android:layout_margin="2dp"

```



```

android:padding="4dp"
android:textSize="22sp"
android:text="+"
app:layout_column="0"
app:layout_row="3" />
<Button android:id="@+id/n0"
android:layout_width="110dp"
android:layout_height="80dp"
android:layout_margin="2dp"
android:padding="4dp"
android:textSize="22sp"
android:text="0"
app:layout_column="1"
app:layout_row="3" />
<Button android:id="@+id/n1"
android:layout_width="110dp"
android:layout_height="80dp"
android:layout_margin="2dp"
android:padding="4dp"
android:textSize="22sp"
android:text="1"
app:layout_column="2"
app:layout_row="2" />
<Button android:id="@+id/n2"
android:layout_width="110dp"
android:layout_height="80dp"
android:layout_margin="2dp"
android:padding="4dp"
android:textSize="22sp"

```

```

android:text="2"
app:layout_column="1"
app:layout_row="2" />
<Button android:id="@+id/n3"
android:layout_width="110dp"
android:layout_height="80dp"
android:layout_margin="2dp"
android:padding="4dp"
android:textSize="22sp"
android:text="3"
app:layout_column="0"
app:layout_row="2" />
<Button android:id="@+id/n4"
android:layout_width="110dp"
android:layout_height="80dp"
android:layout_margin="2dp"
android:padding="4dp"
android:textSize="22sp"
android:text="4"
app:layout_column="2"
app:layout_row="1" />
<Button android:id="@+id/n5"
android:layout_width="110dp"
android:layout_height="80dp"
android:layout_margin="2dp"
android:padding="4dp"
android:textSize="22sp"
android:text="5"
app:layout_column="1"

```

```

app:layout_row="1" />
<Button android:id="@+id/n6"
android:layout_width="110dp"
android:layout_height="80dp"
android:layout_margin="2dp"
android:padding="4dp"
android:textSize="22sp"
android:text="6"
app:layout_column="0"
app:layout_row="1" />
<Button android:id="@+id/n7"
android:layout_width="110dp"
android:layout_height="80dp"
android:layout_margin="2dp"
android:padding="4dp"
android:textSize="22sp"
android:text="7"
app:layout_column="2"
app:layout_row="0" />
<Button android:id="@+id/n8"
android:layout_width="110dp"
android:layout_height="80dp"
android:layout_margin="2dp"
android:padding="4dp"
android:textSize="22sp"
android:text="8"
app:layout_column="1"
app:layout_row="0" />
</androidx.gridlayout.widget.GridLayout>

```

</androidx.constraintlayout.widget.ConstraintLayout>

### Java Code:

```
package com.example.myapplication;

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

public class MainActivity extends AppCompatActivity {

    @Override

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

### Output:



**Program no:8**

**Aim:** Program to create a Facebook page using RelativeLayout; set properties using .xml 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"
android:background="#1b74f1"
tools:context=".MainActivity">

<RelativeLayout android:id="@+id/relativeLayout"
android:layout_width="412dp" android:layout_height="142dp"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.0"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.004">

<ImageView android:id="@+id/imageView"
android:layout_width="229dp" android:layout_height="100dp"
android:layout_alignParentEnd="true" android:layout_alignParentRight="true"
android:layout_marginEnd="117dp" android:layout_marginRight="117dp"
app:srcCompat="@drawable/fblogo" />

</RelativeLayout>

<RelativeLayout android:id="@+id/relativeLayout2"
```

```

android:layout_width="114dp" android:layout_height="80dp"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.025"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.341">
<ImageView android:id="@+id/imageView2"
android:layout_width="84dp"
android:layout_height="72dp"
app:srcCompat="@drawable/prof_pic" />
</RelativeLayout>
<TextView android:id="@+id/textView2"
android:layout_width="197dp"
android:layout_height="57dp"
android:textColor="@color/black"
android:text="Ashish Wilson "
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.64"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.351" />
<CheckBox android:id="@+id/checkBox"
android:layout_width="242dp"
android:layout_height="39dp"
android:text="Log Into Another Account"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"

```

```

app:layout_constraintHorizontal_bias="0.112"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.469" />
<CheckBox android:id="@+id/checkBox2"
android:layout_width="262dp"
android:layout_height="45dp"
android:text="Find Your Account"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.107"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.553" />
<EditText android:id="@+id/editTextTextPersonName"
android:layout_width="310dp"
android:layout_height="52dp"
android:ems="10"
android:inputType="textPersonName"
android:text="CREATE NEW FACEBOOK ACCOUNT"
android:textColor="@android:color/white"
android:textColorLink="#1b74f1"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.497"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.838" />
</androidx.constraintlayout.widget.ConstraintLayout>

```

**Java Code:**

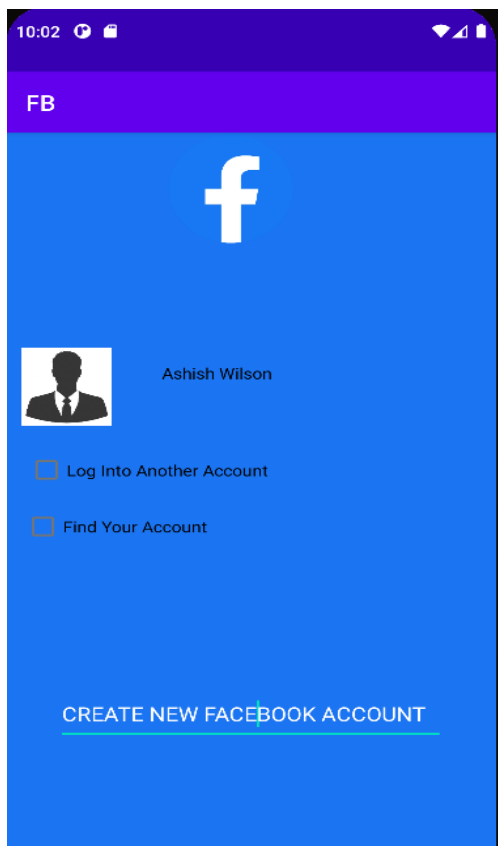
```
package com.example.myapplication;

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

public class MainActivity extends AppCompatActivity {

    @Override

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

**Output:**



**Program no:9**

**Aim :** Program to 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: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="#BDBABA"
tools:context=".MainActivity">
<ImageView android:id="@+id/imageView1"
android:layout_width="427dp"
android:layout_height="wrap_content"
android:layout_gravity="left|top"
android:background="#CACAC8"
app:srcCompat="@drawable/s1" />
<ImageView android:id="@+id/imageView2"
android:layout_width="396dp"
android:layout_height="wrap_content"
android:layout_gravity="left|top"
android:visibility="gone"
app:srcCompat="@drawable/b1" />
</FrameLayout>
```

**Java Code:**

```
package com.example.frame;
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 {

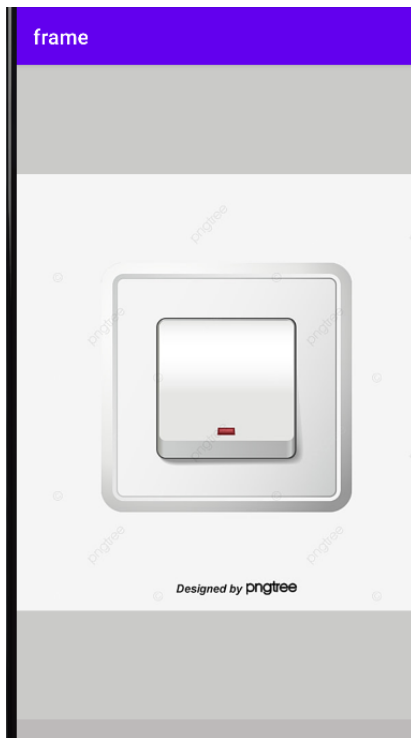
    ImageView i1,i2;

    @Override

    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        i1=(ImageView) findViewById(R.id.imageView1);
        i2=(ImageView) findViewById(R.id.imageView2);
        i1.setOnClickListener(this);
        i2.setOnClickListener(this);
    }

    @Override

    public void onClick(View v) {
        if(v.getId()==R.id.imageView1)
        {
            i1.setVisibility(v.GONE);
            i2.setVisibility(v.VISIBLE);
        }else{
            i2.setVisibility(v.GONE);
            i1.setVisibility(v.VISIBLE);
        }
    }
}
```

**Output:**

**Program no:10**

**Aim:** Program to 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.adapexception;
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);

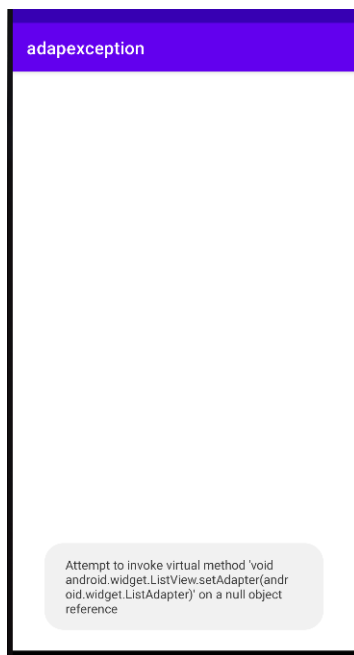
        String[] cars = {"BMW", "BENZ", "AUDI"};

        try {
            ArrayAdapter<String> adapter = new ArrayAdapter<String>(this,
            R.layout.support_simple_spinner_dropdown_item, cars);
            l1.setAdapter(adapter);
            l1.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 :** Program to implement Intent to navigate between multiple activities

**XML Code:**

activitmain.xml

```
<?xml version="1.0" encoding="UTF-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
tools:context=".MainActivity" android:onClick="callActivity"
android:layout_height="match_parent"
android:layout_width="match_parent"
xmlns:tools="http://schemas.android.com/tools"
xmlns:app="http://schemas.android.com/apk/res-auto"
xmlns:android="http://schemas.android.com/apk/res/android">
<EditText android:layout_height="wrap_content"
android:layout_width="wrap_content"
app:layout_constraintVertical_bias="0.148"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintHorizontal_bias="0.437"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintBottom_toBottomOf="parent"
android:inputType="textPersonName"
android:hint="Name"
android:ems="10"
android:id="@+id/name"/>
<EditText android:layout_height="wrap_content"
android:layout_width="wrap_content"
app:layout_constraintVertical_bias="0.313"
app:layout_constraintTop_toTopOf="parent"
```

```

app:layout_constraintStart_toStartOf="parent"
app:layout_constraintHorizontal_bias="0.437"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintBottom_toBottomOf="parent"
android:inputType="textPersonName"
android:hint="Address"
android:ems="10"
android:id="@+id/address"/>
<EditText android:onClick="callActivity"
android:layout_height="wrap_content"
android:layout_width="wrap_content"
app:layout_constraintVertical_bias="0.475"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintHorizontal_bias="0.437"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintBottom_toBottomOf="parent"
android:inputType="textPersonName"
android:hint="Email"
android:ems="10"
android:id="@+id/email"/>
<Button android:layout_height="wrap_content"
android:layout_width="wrap_content"
app:layout_constraintVertical_bias="0.609"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintHorizontal_bias="0.454"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintBottom_toBottomOf="parent"
android:id="@+id/button"

```



```

    android:text="Submit"/>
</androidx.constraintlayout.widget.ConstraintLayout>

```

activitmain2.xml

```

<?xml version="1.0" encoding="UTF-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
    tools:context=".MainActivity2" android:layout_height="match_parent"
    android:layout_width="match_parent"
    xmlns:tools="http://schemas.android.com/tools"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:android="http://schemas.android.com/apk/res/android">
    <TextView android:layout_height="36dp"
        android:layout_width="189dp"
        app:layout_constraintVertical_bias="0.398"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintHorizontal_bias="0.459"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintBottom_toBottomOf="parent"
        android:textAlignment="center"
        android:id="@+id/view3"/>
    <TextView android:layout_height="36dp"
        android:layout_width="189dp"
        app:layout_constraintVertical_bias="0.22"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintHorizontal_bias="0.459"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintBottom_toBottomOf="parent"

```

```

android:textAlignment="center"
android:id="@+id/view1"/>
<TextView android:layout_height="36dp"
android:layout_width="189dp"
app:layout_constraintVertical_bias="0.306"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintHorizontal_bias="0.459"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintBottom_toBottomOf="parent"
android:textAlignment="center" android:id="@+id/view2"/>
</androidx.constraintlayout.widget.ConstraintLayout>

```

### Java Code:

Mainactivity.java

```

package com.example.co3_q3;

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

public class MainActivity extends AppCompatActivity {

    @Override

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

    public void callActivity(View view) {

        Intent i = new Intent(getApplicationContext(), 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);
}
}

```

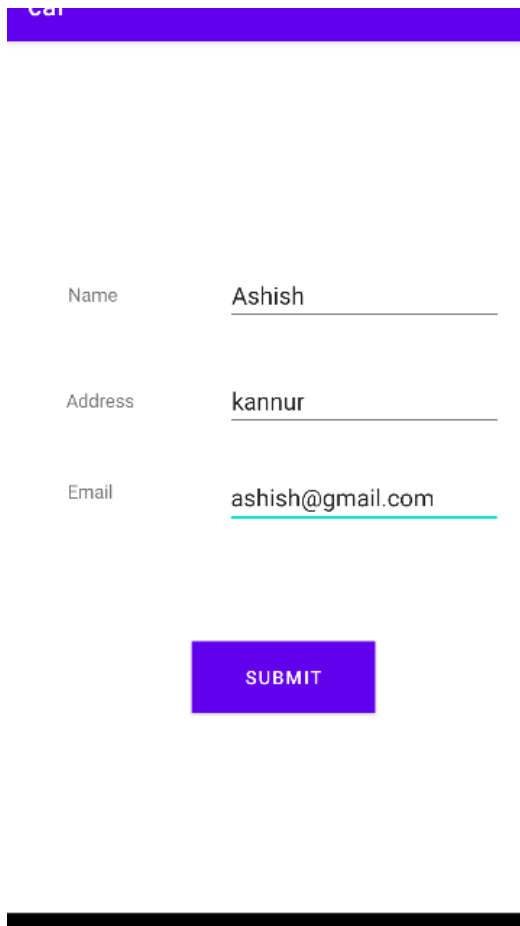
Mainactivity2.java

```

package com.example.co3_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:**

A screenshot of an Android application interface. At the top, there is a blue header bar with the text "Cat" partially visible. Below the header, there is a form with three input fields. The first field is labeled "Name" and contains the text "Ashish". The second field is labeled "Address" and contains the text "kannur". The third field is labeled "Email" and contains the text "ashish@gmail.com". Below these fields, there is a blue rectangular button with the text "SUBMIT" in white capital letters.



A screenshot of the same Android application interface after the form has been submitted. The input fields are now displayed as text labels. The "Name" field is followed by a colon and the text "Ashish". The "Address" field is followed by a colon and the text "kannur". The "Email" field is followed by a colon and the text "ashish@gmail.com". The blue "SUBMIT" button is no longer visible.

**Program no:12**

**Aim :** Program to 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="GMAIL"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent" />

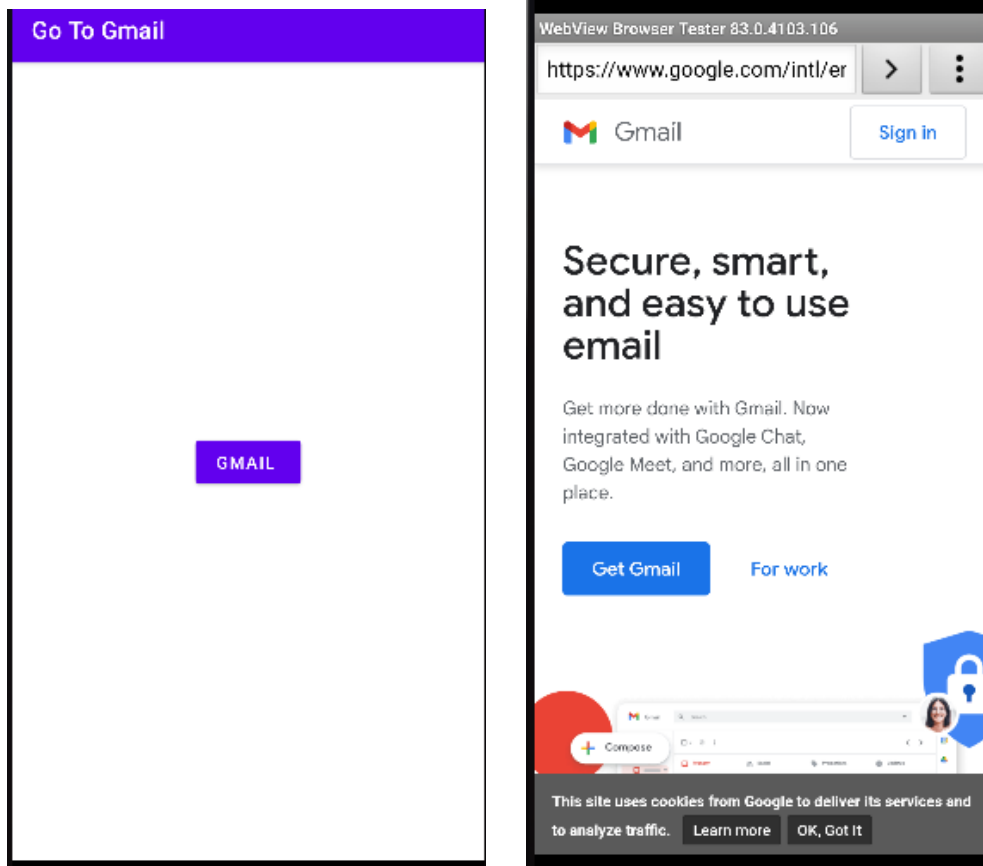
</androidx.constraintlayout.widget.ConstraintLayout>
```

**Java Code:**

```
package com.example.myapplication;

import androidx.appcompat.app.ActionBar;
import androidx.appcompat.app.AppCompatActivity;
import android.content.Intent;
import android.net.Uri;
import android.net.UrlQuerySanitizer;
```

```
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
public class MainActivity extends AppCompatActivity {
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        ActionBar b=getSupportActionBar();
        b.setTitle("Go ToGmail");
        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://mail.google.com/"));
                startActivity(j);
            }
        });
    }
}
```

**Output:**

**Program no:13**

**Aim :** Program to 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="Home"/>

<item android:id="@+id/item2" android:title="Settings"/>

<item android:id="@+id/item3" android:title="About"/>

<item android:id="@+id/item4" android:title="Help"/>

<item android:id="@+id/item5" android:title="LogOut"/>

</menu>

<?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=".menu_bar">

<TextView android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:text="Welcome Home..!"
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.option;

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 menu_bar extends AppCompatActivity
{
    @Override

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

    @Override

    public boolean onCreateOptionsMenu(Menu menu) {
        getMenuInflater().inflate(R.menu.menu_list, menu);
        return true;
    }

    @Override

    public boolean onOptionsItemSelected(MenuItem item) {
        switch (item.getItemId())
        {
            case R.id.item1:
                Toast.makeText(getApplicationContext(), "Home clicked",
                Toast.LENGTH_SHORT).show();
                return true;
            case R.id.item2:
                Toast.makeText(getApplicationContext(), "Settings clicked",
                Toast.LENGTH_SHORT).show();

```

```

return true;

case R.id.item3:

Toast.makeText(getApplicationContext(), "About clicked",
Toast.LENGTH_SHORT).show();

return true;

case R.id.item4:

Toast.makeText(getApplicationContext(), "Help clicked",
Toast.LENGTH_SHORT).show();

return true;

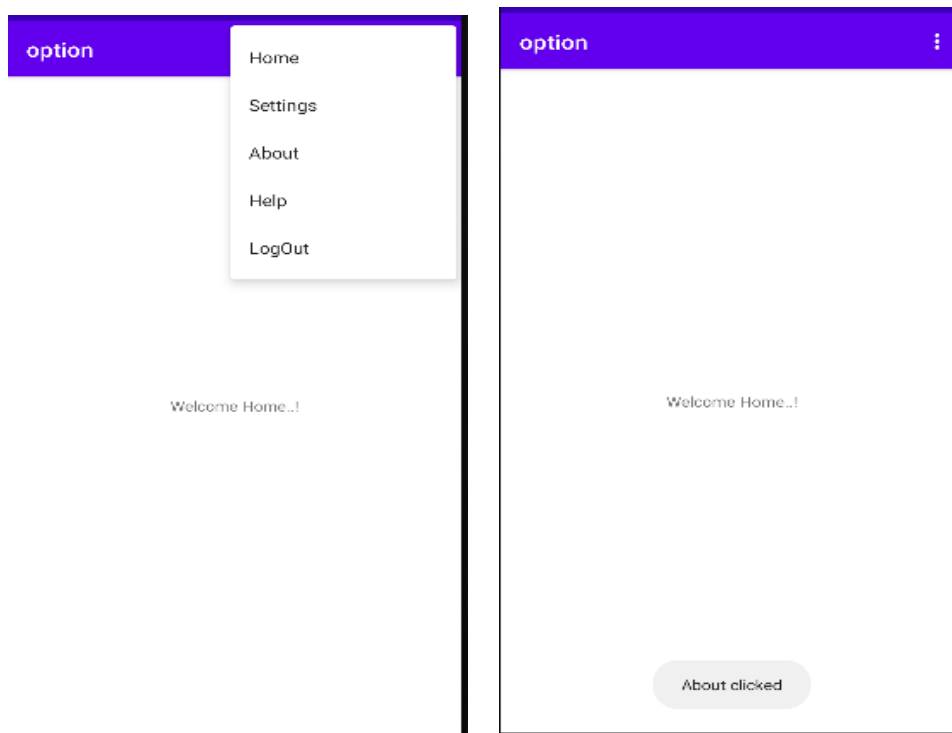
case R.id.item5: Toast.makeText(getApplicationContext(), "Logout clicked",
Toast.LENGTH_SHORT).show();

return true;

default: return super.onOptionsItemSelected(item);
}
}
}

```

### Output:



**Program no:14**

**Aim :** Program to develop an application that uses ArrayAdapter with ListView

**XML Code:**

```
<?xml version="1.0" encoding="UTF-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
tools:context=".MainActivity" android:layout_height="match_parent"
android:layout_width="match_parent"
xmlns:tools="http://schemas.android.com/tools"
xmlns:app="http://schemas.android.com/apk/res-auto"
xmlns:android="http://schemas.android.com/apk/res/android">
<ListView android:layout_height="729dp"
android:layout_width="409dp"
tools:layout_editor_absoluteY="1dp"
tools:layout_editor_absoluteX="1dp"
android:id="@+id/List1"/>
</androidx.constraintlayout.widget.ConstraintLayout>
```

**Java Code:**

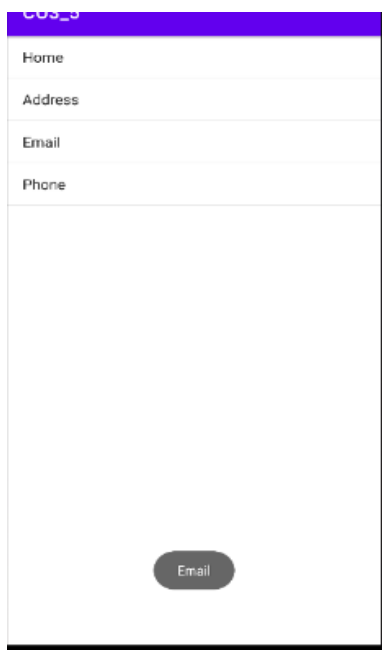
```
package com.example.co3_5;
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.widget.AdapterView;
import android.widget.AdapterView;
import android.widget.ArrayAdapter;
import android.widget.ListView;
import android.widget.Toast;
public class MainActivity extends AppCompatActivity {
    ListView l1;
```

```
String[] listItems = {"Home","Address","Email","Phone"};

@Override

protected void onCreate(Bundle savedInstanceState) {
super.onCreate(savedInstanceState);
setContentView(R.layout.activity_main);
l1 = (ListView) findViewById(R.id.List1);
ArrayAdapter<String> myAdapter=new ArrayAdapter<String>(MainActivity.this,
android.R.layout.simple_list_item_1,listItems);
l1.setAdapter(myAdapter);
l1.setOnItemClickListener(new AdapterView.OnItemClickListener() {
@Override
public void onItemClick(AdapterView<?> parent, View view, int position,
long id) {
String item_name=listItems[position];
Toast.makeText(MainActivity.this,item_name,Toast.LENGTH_SHORT).show();
}});}}
```

### Output:



**Program no:15**

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

**XML Code:**

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:background="#94999A"
    tools:context=".MainActivity">
    <GridView android:id="@+id/gridView"
        android:layout_width="fill_parent"
        android:layout_height="wrap_content"
        android:background="#DFB7E6"
        android:backgroundTint="#C59292"
        android:footerDividersEnabled="false"
        android:numColumns="3"
        android:padding="1dp" />
</LinearLayout>
```

**Java Code:**

```
package com.example.co4_q1gridalert;
import android.content.Context;
import android.view.View;
import android.view.ViewGroup;
import android.widget.BaseAdapter;
```

```
import android.widget.GridView;
import android.widget.ImageView;

public class ImageAdapter extends BaseAdapter {
    private Context mContext;

    public ImageAdapter(Context c) {
        mContext = c;
    }

    public int getCount() {
        return thumbImages.length;
    }

    public Object getItem(int position) {
        return null;
    }

    public long getItemId(int position) {
        return 0;
    }

    public View getView(int position, View convertView, ViewGroup parent) {
        ImageView imageView = new ImageView(mContext);
        imageView.setLayoutParams(new GridView.LayoutParams(200, 200));
        imageView.setScaleType(ImageView.ScaleType.CENTER_CROP);
        imageView.setPadding(8, 8, 8, 8);
        imageView.setImageResource(thumbImages[position]);
        return imageView;
    }

    public Integer[] thumbImages = {
        R.drawable.d1,
        R.drawable.d2,
        R.drawable.d3
    };
}
```

```

MainActivity.java

package com.example.co4_q1gridalert;

import androidx.appcompat.app.AlertDialog;
import androidx.appcompat.app.AppCompatActivity;
import android.content.Context;
import android.content.DialogInterface;
import android.os.Bundle;
import android.view.View;
import android.widget.AdapterView;
import android.widget.GridView;

public class MainActivity extends AppCompatActivity {

    GridView gd;

    int logos[] = {R.drawable.d1,R.drawable.d2, R.drawable.d3};

    String[] names={"AMAZON","Meesho","Nykaa"};

    final Context context = this;

    AlertDialog.Builder builder;

    @Override

    protected void onCreate(Bundle savedInstanceState) {

        super.onCreate(savedInstanceState);

        setContentView(R.layout.activity_main);

        GridView gv = (GridView) findViewById(R.id.gridView);

        gv.setAdapter(new ImageAdapter(this));

        builder = new AlertDialog.Builder(this);

        gv.setOnItemClickListener(new AdapterView.OnItemClickListener() {

            public void onItemClick(AdapterView<?> parent, View v, int position, long id) {

                builder.setMessage("Website Name : "+String.valueOf(names[position]))

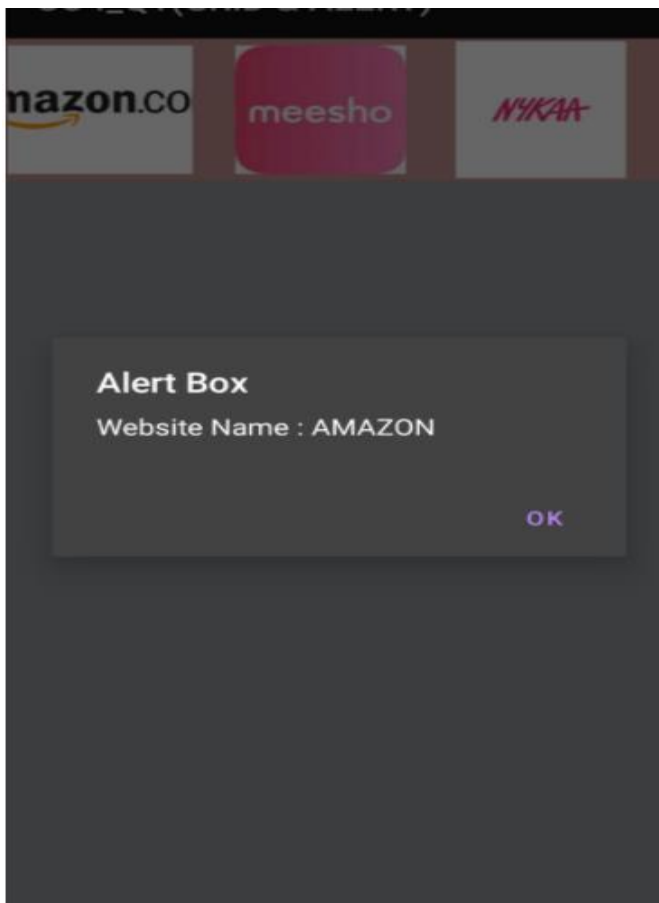
                .setCancelable(false)

                .setPositiveButton("Ok", new DialogInterface.OnClickListener() {

                    public void onClick(DialogInterface dialog, int id) {

```

```
}  
});  
AlertDialog alert = builder.create();  
alert.setTitle("Alert Box");  
alert.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_width="match_parent"
android:layout_height="wrap_content"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.0"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.352" />

</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.ArrayAdapter;

import android.widget.Spinner;

import android.widget.Toast;

public class MainActivity extends AppCompatActivity implements
    AdapterView.OnItemClickListener{

    String country[]={ "India","USA","UK","UAE","Others" };

    Spinner sp;

    @Override

    protected void onCreate(Bundle savedInstanceState) {

        super.onCreate(savedInstanceState);

        setContentView(R.layout.activity_main);

        sp = findViewById(R.id.spinner);

        sp.setOnItemClickListener(this);

        ArrayAdapter ad = new ArrayAdapter(this,android.R.layout.simple_spinner_dropdown_item,
            country);

        ad.setDropDownViewResource(android.R.layout.simple_spinner_dropdown_item);

        sp.setAdapter(ad);

    }

    @Override

    public void onItemClick(AdapterView<?> parent, View view, int position, long id) {

        Toast.makeText(getApplicationContext(),"You selected "+country[position],
            Toast.LENGTH_SHORT).show();

    }

    @Override

    public void onNothingSelected(AdapterView<?> parent) {

    }

}
```

**Output:**

The image displays two side-by-side spinner UI components. Both have a purple header bar with the text 'spinner' in white. The left spinner is open, showing a white dropdown menu with a shadow, containing the following options: India, USA, UK, UAE, and Others. The right spinner is closed, showing 'India' as the selected item. Below the right spinner is a light gray rounded rectangle containing the text 'You selected India'.

**Program no:17**

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

Themes:

```
<resources xmlns:tools="http://schemas.android.com/tools">
<!-- Base application theme. -->
<style name="Theme.new_style"
parent="Theme.MaterialComponents.DayNight.DarkActionBar">
<!-- Primary brand color. -->
```

```

<item name="colorPrimary">@color/primary</item>
<item name="colorPrimaryDark">@color/primary_dark</item>
<item name="colorAccent">@color/color_accent</item>
<item name="android:textColorPrimary">@color/color_text</item>
<item name="android:textSize">40dp</item>
</style>
</resources>

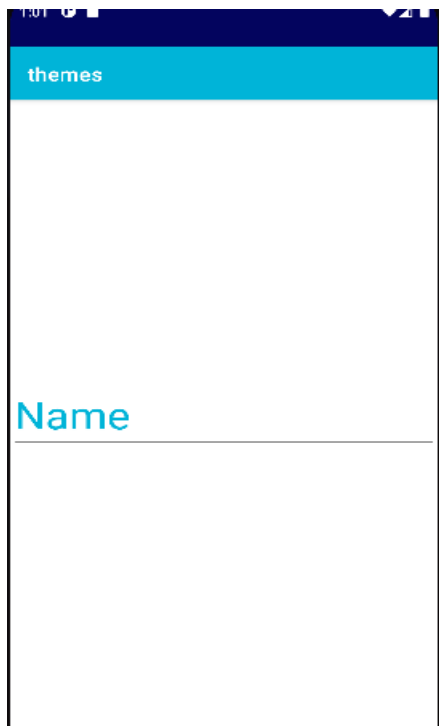
```

Manifest:

```

<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
package="com.example.themes" >
<application android:allowBackup="true"
android:icon="@mipmap/ic_launcher"
android:label="@string/app_name"
android:roundIcon="@mipmap/ic_launcher_round"
android:supportsRtl="true"
android:theme="@style/Theme.new_style" >
<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>

```

**Output:**

themes

Name

**Program no:18**

**Aim :** Program to 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"?>
    <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>

```

Firstfragment.xml:

```

<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
xmlns:tools="http://schemas.android.com/tools"
android:layout_width="match_parent"
android:layout_height="match_parent"
android:background="@color/teal_200"
tools:context=".Fragment1">
<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>

```

Secondfragment.xml:

```

<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:background="#FFEB3B"
    tools:context=".Fragment2">
    <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:

Mainactivity.java:

```

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) {

                loadfrag(new Fragment1());

            }

        });

        b2.setOnClickListener(new View.OnClickListener() {

            @Override

            public void onClick(View v) {

                loadfrag(new Fragment2());

            }

        });

        private void loadfrag(Fragment fragment) {

            FragmentManager fragmentManager=getSupportFragmentManager();

            FragmentTransaction fragmentTransaction=fragmentManager.beginTransaction();

            fragmentTransaction.replace(R.id.frameLayout,fragment);

            fragmentTransaction.commit();

        }

    }

```

Fragment1.java:

```
package com.example.fragment;

import android.os.Bundle;
import androidx.fragment.app.Fragment;
import android.view.LayoutInflater;
import android.view.View;
import android.view.ViewGroup;

public class Fragment1 extends Fragment {

    @Override

    public View onCreateView(LayoutInflater inflater, ViewGroup container,
        Bundle savedInstanceState) {

        return inflater.inflate(R.layout.fragment_1, container, false);

    }

}
```

Fragment2.java

```
package com.example.fragment;

import android.os.Bundle;
import androidx.fragment.app.Fragment;
import android.view.LayoutInflater;
import android.view.View;
import android.view.ViewGroup;

public class Fragment2 extends Fragment {

    @Override

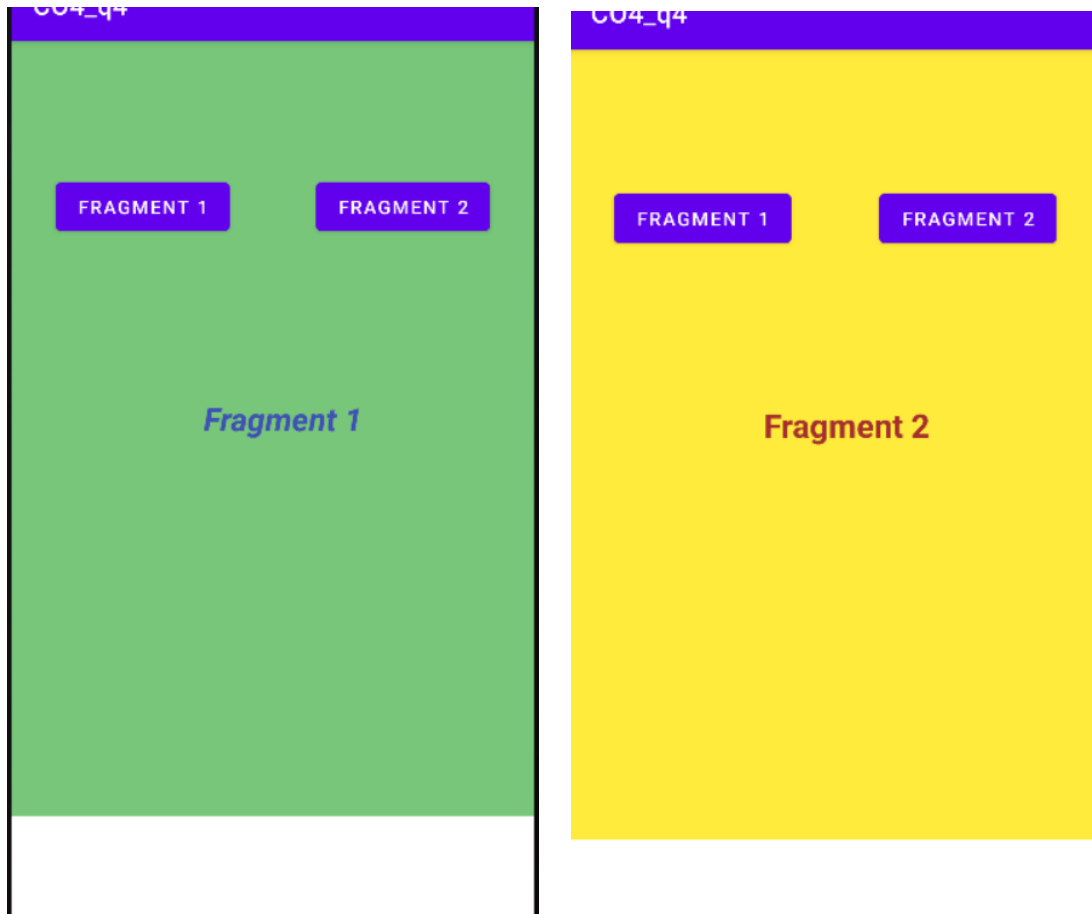
    public View onCreateView(LayoutInflater inflater, ViewGroup container,
        Bundle savedInstanceState) {

        return inflater.inflate(R.layout.fragment_2, container, false);

    }

}
```

```
}
```

**Output:**

**Program no:19**

**Aim :** Program to implement Navigation drawer.

**XML Code:**

```
<?xml version="1.0" encoding="utf-8"?>
<androidx.drawerlayout.widget.DrawerLayout
xmlns:tools="http://schemas.android.com/tools"
xmlns:android="http://schemas.android.com/apk/res/android"
xmlns:app="http://schemas.android.com/apk/res-auto"
android:id="@+id/drawer"
android:layout_width="match_parent"
android:layout_height="match_parent"
tools:context=".MainActivity"
layout_width="" layout_height=""
tools:ignore="InvalidId">
<LinearLayout android:layout_width="match_parent"
android:layout_height="match_parent"
android:orientation="vertical">
<TextView android:id="@+id/textView"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:text="Welcome" />
</LinearLayout>
<com.google.android.material.navigation.NavigationView
android:id="@+id/nav_view"
android:layout_height="match_parent"
android:layout_width="match_parent"
app:menu="@menu/nav_menu"
android:layout_gravity="start">
```

```
</com.google.android.material.navigation.NavigationView>
</androidx.drawerlayout.widget.DrawerLayout>
```

Nav\_menu.xml:

```
<?xml version="1.0" encoding="utf-8"?>
<menu xmlns:android="http://schemas.android.com/apk/res/android">
<item android:id="@+id/nav_account"
android:title="My Account">
</item>
<item android:title="setting"
android:id="@+id/set">
</item>
<item android:id="@+id/logout"
android:title="Logout">
</item>
</menu>
```

Strings.xml:

```
<resources>
<string name="app_name">navigationdraw</string>
<string name="nav_open">Open</string>
<string name="nav_close">Close</string>
</resources>
```

### Java code:

MainActivity.java:

```
package com.example.navigationdraw;
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 {
    DrawerLayout dr;
    ActionBarDrawerToggle at;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        dr=findViewById(R.id.drawer);
        at=new ActionBarDrawerToggle(this,dr,R.string.nav_open,R.string.nav_close);
        dr.addDrawerListener(at);
        at.syncState();
        getSupportActionBar().setDisplayHomeAsUpEnabled(true);
        NavigationView nv=findViewById(R.id.nav_view);
        nv.setNavigationItemSelectedListener(this);
    }
    @Override
    public boolean onOptionsItemSelected(@NonNull MenuItem item) {
        if (at.onOptionsItemSelected(item)){
            return true;
        }
        return super.onOptionsItemSelected(item);
    }
}

```



```

@Override

public boolean onNavigationItemSelected(@NonNull MenuItem item) {

    int id=item.getItemId();

    if(id==R.id.nav_account){

        Toast.makeText(this, "Home Page", Toast.LENGTH_SHORT).show();

    }

    if(id==R.id.set){

        Toast.makeText(this, "Setting page", Toast.LENGTH_SHORT).show();

    }

    if(id==R.id.logout){

        Toast.makeText(this, "Logout page", Toast.LENGTH_SHORT).show();

    }

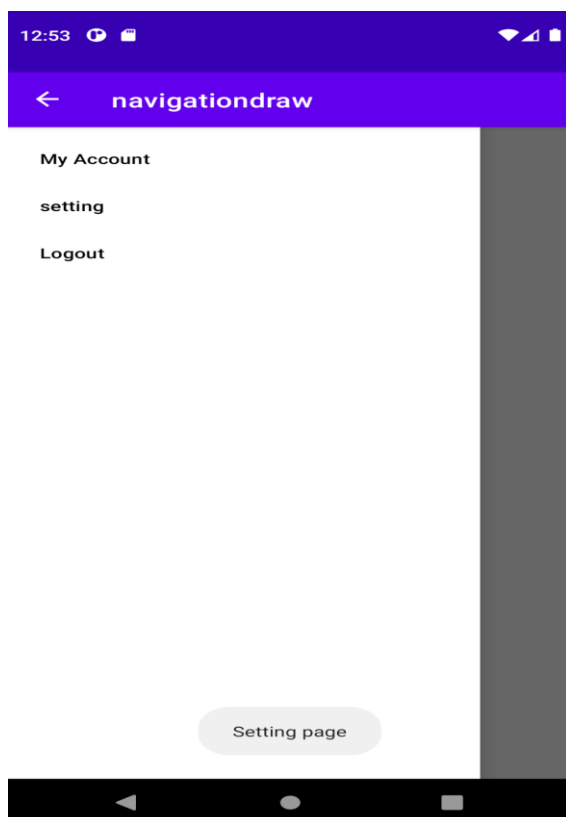
    return false;

}

}

```

### Output:



**Program no:20**

**Aim :** Program to implement activity life cycle.

**XML Code:**

Activity\_main.xml:

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

<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
xmlns:app="http://schemas.android.com/apk/res-auto"
xmlns:tools="http://schemas.android.com/tools"
android: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="Welcome"
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:**

MainActivity.Java:

```
package com.example.lifecycle;

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

public class MainActivity extends AppCompatActivity {
```

```
@Override  
protected void onCreate(Bundle savedInstanceState) {  
    super.onCreate(savedInstanceState);  
    setContentView(R.layout.activity_main);  
    Log.i("State", "onCreate");  
}
```

```
@Override  
protected void onStart() {  
    super.onStart();  
    Log.i("State", "onStart");  
}
```

```
@Override  
protected void onResume() {  
    super.onResume();  
    Log.i("State", "onResume");  
}
```

```
@Override  
protected void onPause() {  
    super.onPause();  
    Log.i("State", "onPause");  
}
```

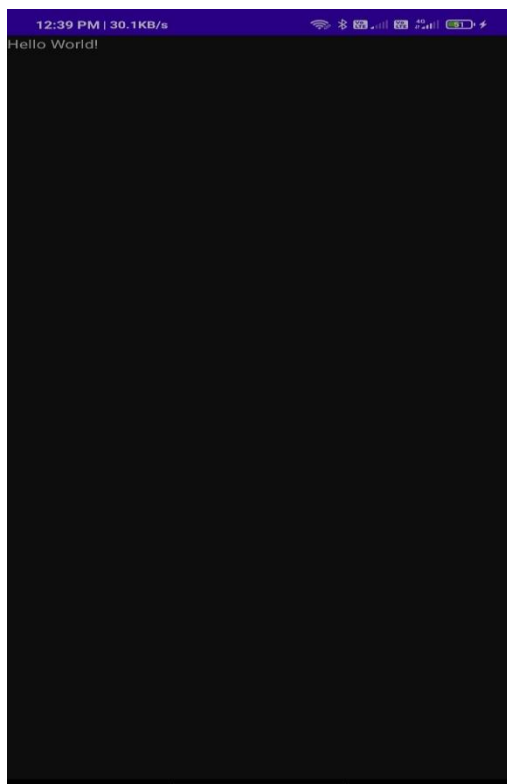
```
@Override  
protected void onRestart() {  
    super.onRestart();  
    Log.i("State", "onRestart");  
}
```

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

```
Log.i("State","onStop");  
}  
  
@Override  
protected void onDestroy() {  
    super.onDestroy();  
    Log.i("State","onDestroy");  
}  
}
```

### Output:

```
2022-02-26 12:38:19.502 13856-13856/com.example.lifecytle D/lifecytle: onRestart invoked  
2022-02-26 12:38:19.504 13856-13856/com.example.lifecytle D/lifecytle: onStart invoked  
2022-02-26 12:38:19.507 13856-13856/com.example.lifecytle D/lifecytle: onResume invoked  
2022-02-26 12:38:22.426 13856-13856/com.example.lifecytle W/ActivityThread: SCHED: com.example.  
2022-02-26 12:38:22.426 13856-13856/com.example.lifecytle D/lifecytle: onPause invoked  
2022-02-26 12:38:22.467 13856-13856/com.example.lifecytle D/lifecytle: onStop invoked  
2022-02-26 12:38:22.946 13856-13856/com.example.lifecytle D/lifecytle: onDestroy invoked
```



**Program no:21**

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

**XML Code:**

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

<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
xmlns:app="http://schemas.android.com/apk/res-auto"
xmlns:tools="http://schemas.android.com/tools"
android:layout_width="match_parent"
android:layout_height="match_parent"
tools:context=".MainActivity">

<LinearLayout android:layout_width="328dp"
android:layout_height="495dp"
android:orientation="vertical"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.493"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.542">

<EditText android:id="@+id/e1"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:ems="10" android:hint="Name"
android:inputType="textPersonName" />

<EditText
android:id="@+id/e2"
```

```

android:layout_width="match_parent"
android:layout_height="wrap_content"
android:ems="10" android:hint="DOB"
android:inputType="textPersonName" />
<EditText android:id="@+id/e3"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:ems="10" android:hint="Phone Number"
android:inputType="textPersonName" />
<EditText android:id="@+id/e4"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:ems="10" android:hint="email"
android:inputType="textPersonName" />
<Button android:id="@+id/btn"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:text="INSERT" />
<Button android:id="@+id/btn1"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:text="UPDATE" />
<Button android:id="@+id/btn2"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:text="DELETE" />
<Button android:id="@+id/btn3"
android:layout_width="match_parent"
android:layout_height="wrap_content"

```

```

android:text="VIEW" />
</LinearLayout>
</androidx.constraintlayout.widget.ConstraintLayout>

```

### Java code:

dbop.java

```

package com.example.dboper;

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 dbop extends SQLiteOpenHelper {

    public dbop(@Nullable Context context) {
        super(context, "userdata", null, 1);
    }

    @Override

    public void onCreate(SQLiteDatabase db) {
        db.execSQL("create table userdetails(name TEXT PRIMARY KEY,dob TEXT,phone
        TEXT,email TEXT)");
    }

    @Override

    public void onUpgrade(SQLiteDatabase db, int oldVersion, int newVersion) {
        db.execSQL("DROP table if exists userdetails");
    }

    public boolean Insertdata(String name,String dob,String phone,String email) {
        SQLiteDatabase DB = this.getWritableDatabase();
        ContentValues cv = new ContentValues();

```

```

cv.put("name", name);
cv.put("dob", dob);
cv.put("phone", phone);
cv.put("email", email);
long res= DB.insert("userdetails",null,cv);
if (res==-1){
return false;
}else{
return true;
}
}

public boolean Updatedata(String name,String dob,String phone,String email) {
SQLiteDatabase DB = this.getWritableDatabase();
ContentValues cv = new ContentValues();
cv.put("dob", dob);
cv.put("phone", phone);
cv.put("email", email);
Cursor cr=DB.rawQuery("select * from userdetails where name=?",new String[]{name});
if (cr.getCount(>0) {
long res = DB.update("userdetails", cv, "name=?", new String[]{name});
if (res == -1) {
return false;
} else {
return true;
}
}else{
return false;
}
}
}

```



```

public boolean Delete(String name) {
    SQLiteDatabase DB = this.getWritableDatabase();
    Cursor cr=DB.rawQuery("select * from userdetails where name=?",new String[]{name});
    if (cr.getCount(>0) {
        long res = DB.delete("userdetails", "name=?", new String[]{name});
        if (res == -1) {
            return false;
        } else {
            return true;
        }
    }else{
        return false;
    }
}

public Cursor getdata(){
    SQLiteDatabase DB = this.getWritableDatabase();
    Cursor cr=DB.rawQuery("Select * from userdetails",null);
    return cr;
}
}

```

MainActivity.java

```

package com.example.dboper;

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 e1,e2,e3,e4;

    Button b1,b2,b3,b4;

    dbop db;

    @Override

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

        e1=findViewById(R.id.e1);
        e2=findViewById(R.id.e2);
        e3=findViewById(R.id.e3);
        e4=findViewById(R.id.e4);
        b1=findViewById(R.id.btn);
        b2=findViewById(R.id.btn1);
        b3=findViewById(R.id.btn2);
        b4=findViewById(R.id.btn3);
        db=new dbop(this);
        b1.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                String name=e1.getText().toString();
                String dob=e2.getText().toString();
                String phone=e3.getText().toString();
                String email=e4.getText().toString();
                Boolean chkinsrt=db.Insertdata(name,dob,phone,email);
                if(chkinsrt==true){
                    Toast.makeText(MainActivity.this, "INSERTED into Table",

```

```

Toast.LENGTH_SHORT).show();

}else {

Toast.makeText(MainActivity.this, "Failed to insert", Toast.LENGTH_SHORT).show();

}

}

});

b2.setOnClickListener(new View.OnClickListener() {

@Override

public void onClick(View v) {

String name=e1.getText().toString();

String dob=e2.getText().toString();

String phone=e3.getText().toString();

String email=e4.getText().toString();

Boolean chkupdt=db.Updatedata(name,dob,phone,email);

if(chkupdt==true){

Toast.makeText(MainActivity.this, "UPDATED into Table",

Toast.LENGTH_SHORT).show();

}else {

Toast.makeText(MainActivity.this, "Failed to Update", Toast.LENGTH_SHORT).show();

}

}

});

b3.setOnClickListener(new View.OnClickListener() {

@Override

public void onClick(View v) {

String name=e1.getText().toString();

Boolean chkdel=db.Delete(name);

if(chkdel==true){

Toast.makeText(MainActivity.this, "Table Deleted", Toast.LENGTH_SHORT).show();

```

```

}else {

Toast.makeText(MainActivity.this, "Failed to delete", Toast.LENGTH_SHORT).show();

}

}

});

b4.setOnClickListener(new View.OnClickListener() {

@Override

public void onClick(View v) {

Cursor res=db.getdata();

if(res.getCount()==0){

Toast.makeText(MainActivity.this, "NO entry exist", Toast.LENGTH_SHORT).show();

return;

}

StringBuffer sb=new StringBuffer();

while (res.moveToNext()){

sb.append("Name: "+res.getString(0)+"\n");

sb.append("DOB: "+res.getString(1)+"\n");

sb.append("Phone Number: "+res.getString(2)+"\n");

sb.append("Email: "+res.getString(3)+"\n");

}

AlertDialog.Builder alrt=new AlertDialog.Builder(MainActivity.this);

alrt.setCancelable(true);

alrt.setTitle("User Entries");

alrt.setMessage(sb.toString());

alrt.show();

}

});

}

}

```

**Output:**

ashish

20/08/1999

9447883940

ashish@gmail.com

INSERT

UPDATE

DELETE

VIEW

ashish

20/08/1999

9447883940

User Entries

Name: ashish  
DOB: 20/08/1999  
Phone Number: 9447883940  
Email: ashish@gmail.com

DELETE

VIEW

ashish

20/08/1999

9447883214

ashish@gmail.com

INSERT

UPDATE

DELETE

VIEW

ashish

20/08/1999

9447883214

User Entries

Name: ashish  
DOB: 20/08/1999  
Phone Number: 9447883214  
Email: ashish@gmail.com

DELETE

VIEW

UPDATED into Table

<div>ashish</div> <div>20/08/1999</div> <div>9447883214</div> <div>ashish@gmail.com</div> <div>INSERT</div> <div>UPDATE</div> <div>DELETE</div> <div>VIEW</div> <div>Table Deleted</div>	<div>ashish</div> <div>20/08/1999</div> <div>9447883214</div> <div>ashish@gmail.com</div> <div>INSERT</div> <div>UPDATE</div> <div>DELETE</div> <div>VIEW</div> <div>NO entry exist</div>
--	---