20MCA243 MOBILE APPLICATION DEVELOPMENT LAB

Lab Report Submitted By

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AMAL JYOTHI COLLEGE OF ENGINEERING
KANJIRAPPALLY

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DEPARTMENT OF COMPUTER APPLICATIONS

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CERTIFICATE

This is to certify that the lab report, "**20MCA243 MOBILE APPLICATION DEVELOPMENT LAB"** is the bonafide work of **AKSHAY MURALI (Reg.No:AJC20MCA-2007)** 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"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
xmlns:tools="http://schemas.android.com/tools"
android:layout_width="match_parent"
android:layout_height="match_parent"  tools:context=".MainActivity"
android:orientation="vertical">
<TextView
 android:id="@+id/l"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:ems="10"
android:gravity="center"
android:text="Login"
android:textColor="#630DFB"
android:textSize="50dp"
tools:layout_editor_absoluteX="31dp"
tools:layout_editor_absoluteY="39dp" />
<EditText
android:id="@+id/e1"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:ems="10"
```

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

Java Code:

```
package com.example.login; import
androidx.appcompat.app.AppCompatActivity; import
android.os.Bundle; import android.widget.Button;
import android.widget.EditText;
```

```
import android.widget.TextView; public class
MainActivity extends AppCompatActivity {  private
TextView l;  private EditText e1;  private EditText e2;
private Button b1;  @Override  protected void
onCreate(Bundle savedInstanceState) {
super.onCreate(savedInstanceState);
setContentView(R.layout.activity_main);
b1=findViewById(R.id.b1);
e1=findViewById(R.id.e1);  e2=findViewById(R.id.e2);
}
}
```

Output:

9:16
Akshay
Login
User Name
Password
LOGIN

Program no:2

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

XML Code:

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
xmlns:app="http://schemas.android.com/apk/res-auto"
xmlns:tools="http://schemas.android.com/tools"
android:layout_width="match_parent"
android:layout_height="match_parent"  tools:context=".MainActivity"
android:orientation="vertical"
android:background="#DFF6C4">
<EditText
 android:id="@+id/text1"
android:layout_width="261dp"
android:layout_height="78dp"
android:background="@color/teal_700"
android:hint="Write here!"
android:textSize="25dp"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintLeft_toLeftOf="parent"
app:layout_constraintRight_toRightOf="parent"
app:layout_constraintTop_toTopOf="parent" />
<Button
android:id="@+id/button"
android:layout_width="match_parent"
android:layout_height="71dp"
```

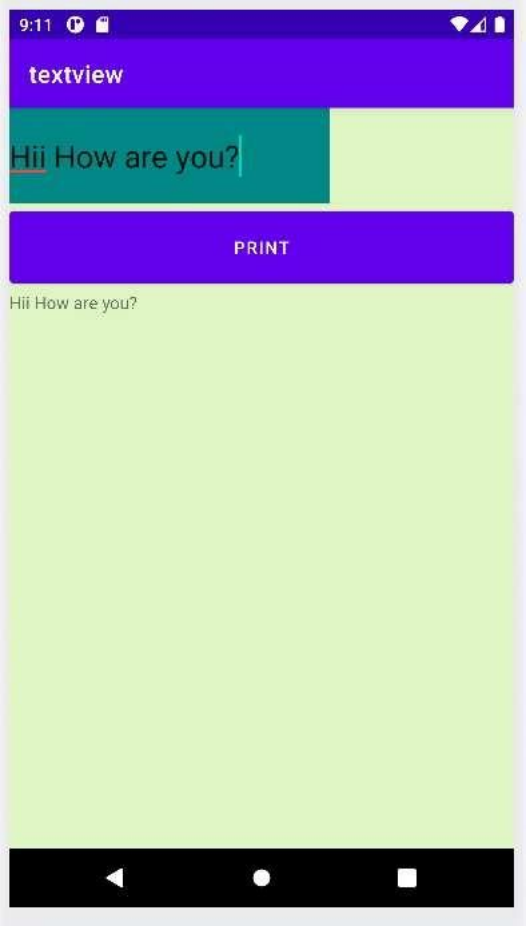
```
android:gravity="center"
android:text="Print" />
<TextView
android:id="@+id/textView2"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
app:layout_constraintBottom_toBotto
mOf="parent"
app:layout_constraintLeft_toLeftOf="
parent"
app:layout_constraintRight_toRightOf
="parent"
app:layout_constraintTop_toTopOf="
parent" />
</LinearLayout>
```

Java Code:

```
package com.example.textview; import
androidx.appcompat.app.AppCompatActivity; import
android.os.Bundle; import android.view.View; import
android.widget.Button; import android.widget.EditText;
import android.widget.TextView; public class
MainActivity extends AppCompatActivity {
private EditText t1;  private TextView t2;  private
Button b1;  @Override  protected void
```

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



t1=findViewById(R.id.text1);
t2=findViewById(R.id.textView2);
b1=findViewById(R.id.button);
b1.setOnClickListener(new View.OnClickListener() {
@Override  public void
onClick(View v) {  String value =
t1.getText().toString();
t2.setText(String.valueOf(value));
}
});
}
}
```

Output:



Program no:3

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

XML Code:

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

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

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

android:layout_width="match_parent"

android:layout_height="match_parent"

xmlns:card_view="http://schemas.android.com/apk/res-auto"

tools:context=".MainActivity"     android:orientation="vertical"

android:background="#000">


<androidx.cardview.widget.CardView

android:layout_margin="64dp"

android:layout_width="match_parent"

android:layout_height="wrap_content"

card_view:cardCornerRadius="8dp"

card_view:cardElevation="8dp"

android:background="#fff">


<LinearLayout

android:layout_width="match_parent"

android:layout_height="wrap_content"

android:orientation="vertical"

android:padding="24dp">
```

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

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

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

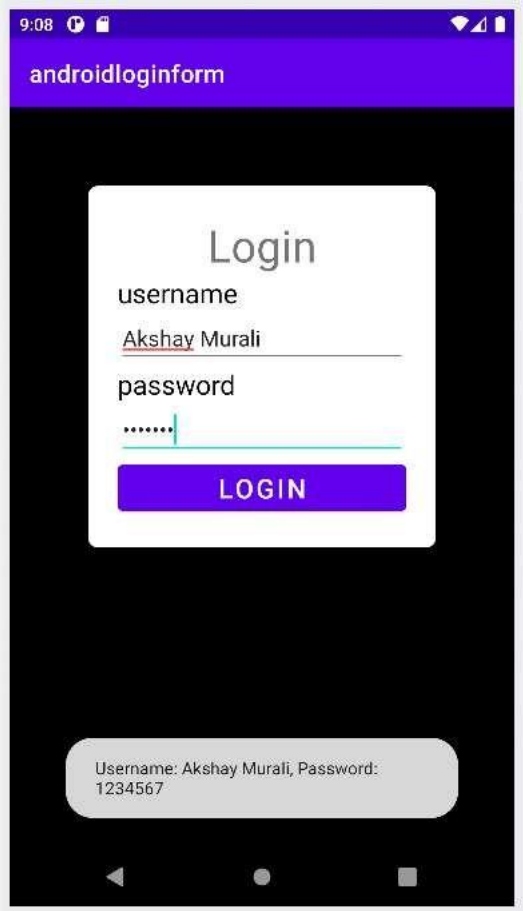
```
<TextView
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:textSize="22sp"
android:text="password"
android:textColor="@color/black"/>

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

<Button
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:id="@+id/activity_main_loginButton"
android:text="login"
android:textSize="22sp"/>
</LinearLayout>
</androidx.cardview.widget.CardView>
</LinearLayout>
```

Java Code:

```
package com.example.androidloginform; import
androidx.appcompat.app.AppCompatActivity; import
android.os.Bundle; import android.view.View;
import android.widget.Button; import
android.widget.EditText;

import android.widget.Toast;


public class MainActivity extends AppCompatActivity {
private EditText usernameEditText;     private EditText
passwordEditText;     private Button loginButton;


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


usernameEditText = findViewById(R.id.activity_main_usernameEditText);
passwordEditText = findViewById(R.id.activity_main_passwordEditText);
loginButton = findViewById(R.id.activity_main_loginButton);
loginButton.setOnClickListener(new View.OnClickListener() {
@Override public void onClick(View
v) {
if (usernameEditText.getText().length() > 0 &&
passwordEditText.getText().length() > 0) {
```

```
String toastMessage = "Username: " + usernameEditText.getText().toString() + ", Password:
" + passwordEditText.getText().toString();

Toast.makeText(getApplicationContext(), toastMessage, Toast.LENGTH_SHORT).show();

} else {

String toastMessage = "Username or Password are not populated";
Toast.makeText(getApplicationContext(), toastMessage, Toast.LENGTH_SHORT).show();

}

}

});

}
```

Output:



Program no:4

Aim: Implementing basic arithmetic operations of a simple calculator

XML Code:

```
<?xml version="1.0" encoding="utf-
8"?>
<LinearLayout
xmlns:android="http://schemas.android.com/apk/res/android"
xmlns:app="http://schemas.android.com/apk/res-auto"
xmlns:tools="http://schemas.android.com/tools"
android:layout_width="match_parent"
android:layout_height="match_parent" tools:context=".MainActivity"
android:padding="20dp" android:orientation="vertical"
android:background="@color/pastel">

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

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

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

<EditText
android:id="@+id/second_no"
android:layout_width="102dp"
```

```
android:layout_height="59dp"
android:ems="10"
android:hint="Enter" />

</LinearLayout>

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

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

</LinearLayout>

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

<Button android:id="@+id/sub"
android:layout_width="wrap_conten
t"
android:layout_height="wrap_conte
nt" android:text="-"
android:textSize="25sp"
android:layout_marginBottom="16dp"
/>

<Button android:id="@+id/add"
android:layout_width="wrap_conten
t"
android:layout_height="wrap_conte
nt"
android:layout_marginBottom="16d
p" android:text="+"
```

```
android:textSize="25sp"
tools:ignore="OnClick" />

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

<Button android:id="@+id/mul"
android:layout_width="wrap_conten
t"
android:layout_height="wrap_conte
nt"
android:layout_marginBottom="16d
p"
android:text="X"
android:textSize="25sp"/>

<Button android:id="@+id/equals"
android:layout_width="wrap_conten
t"
android:layout_height="wrap_conte
nt"
android:layout_marginBottom="16d
p"
android:text="="
android:textSize="35sp"/>
</LinearLayout>


</LinearLayout>
```

Java Code:

```
package com.example.calculator;

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

 import android.view.View;

import android.widget.Button;

import android.widget.EditText;

import android.widget.TextView;

import android.widget.Toast;

public class MainActivity extends AppCompatActivity {
EditText no1 , no2;
Button add ,mul ,div , sub,equal;
 TextView answer;     double ans = 0;
 @Override     protected void onCreate(Bundle
savedInstanceState) {
super.onCreate(savedInstanceState);
setContentView(R.layout.activity_main);
// for text views
no1 = findViewById(R.id.first_no);
 no2 = findViewById(R.id.second_no);

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

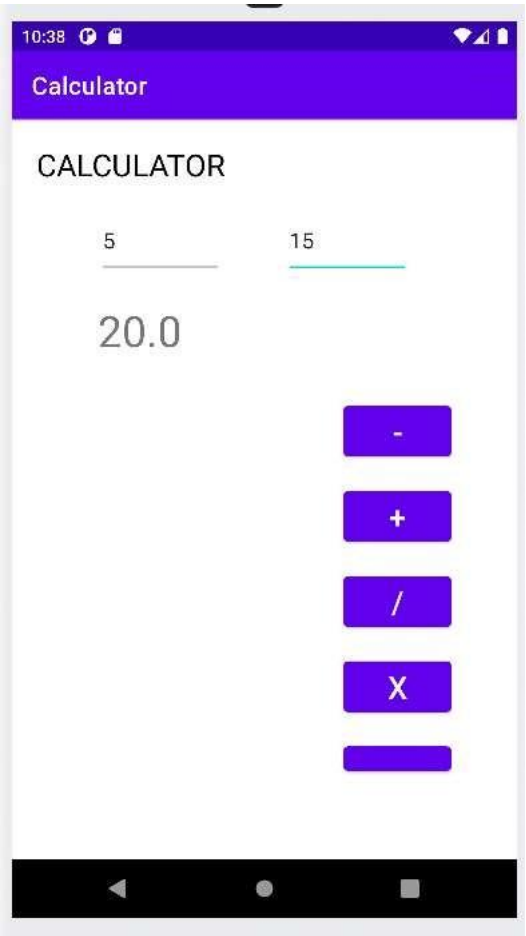
```
div = findViewById(R.id.div);
sub = findViewById(R.id.sub);
// for equal to button
equal = findViewById(R.id.equals);
// for answer field
answer = findViewById(R.id.answer);
add.setOnClickListener(new View.OnClickListener() {
@Override            public void
onClick(View v) {
String num1 = no1.getText().toString();
String num2 = no2.getText().toString();
if (num1.isEmpty() || num2.isEmpty()) {
Toast.makeText(getApplicationContext()"EnterNumbers",Toast.LENGTH_SHORT).show();
}                else
{
double a = Double.parseDouble(no1.getText().toString());
 double b = Double.parseDouble(no2.getText().toString());
ans = a + b;
}
}
});
sub.setOnClickListener(new View.OnClickListener() {
@Override  public void
onClick(View v) {
String num1 = no1.getText().toString();
String num2 = no2.getText().toString();                if
(num1.isEmpty() || num2.isEmpty()) {
```

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

}

else {


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

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

ans = a - b;

}

}

});

mul.setOnClickListener(new View.OnClickListener() {
@Override  public void

onClick(View v) {

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

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


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

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

}              else

{

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

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

ans = a * b;

}

}

});
```

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

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

equal.setOnClickListener(new View.OnClickListener() {
@Override            public void
onClick(View v) {
String ans1 = String.valueOf(ans);
answer.setText(ans1);
ans= 0;
}
```

```
});


}
}
```

Output:



Program no:5

Aim Implement validations on various UI controls

XML Code:

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

<EditText
android:id="@+id/firstName"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:layout_marginStart="16dp"
android:layout_marginTop="16dp"
android:layout_marginEnd="16dp"
android:hint="First Name"
android:inputType="text" />

<EditText
android:id="@+id/lastName"
android:layout_width="match_parent"
```

```
android:layout_height="wrap_content"
android:layout_marginStart="16dp"
android:layout_marginTop="16dp"
android:layout_marginEnd="16dp"
android:hint="Last Name"
android:inputType="text" />

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

<EditText
android:id="@+id/password"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:layout_marginStart="16dp"
android:layout_marginTop="16dp"
android:layout_marginEnd="16dp"
android:hint="Password"
android:inputType="textPassword" />
```

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

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

<Button
android:id="@+id/proceedButton"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_marginEnd="16dp"
android:backgroundTint="@color/black"
android:text="PROCEED"
android:textColor="@android:color/white"
tools:ignore="ButtonStyle" />

</LinearLayout>
```

```
</LinearLayout>
```

Java Code:

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

public class MainActivity extends AppCompatActivity {

// two buttons
Button bCancel, bProceed;

// four text fields
EditText etFirstName, etLastName, etEmail, etPassword;

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

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

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


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


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


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


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

```
startActivity(i);
}
}
});

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

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

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

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

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

Output:

validation
First Name
This field is required
Last Name
Email
Password
PROCEED

Program no:6

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

XML Code:

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

<TextView
 android:id="@+id/textView3"
android:layout_width="60dp"
android:layout_height="17dp"
android:text="Name"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.091"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.222" />
```

```
<EditText
android:id="@+id/name"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:ems="10"
android:inputType="textPersonName"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.756"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.215" />

<TextView
 android:id="@+id/textView4"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:text="Email ID"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.096"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.325" />
```

```
<EditText
 android:id="@+id/em"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:ems="10"
android:inputType="textPersonName"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.761"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.319" />

<TextView
android:id="@+id/textView5"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:text="Phone No."
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.09"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.435" />
```

```
<EditText
android:id="@+id/ph"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:ems="10"
android:inputType="number"
app:layout_constraintBottom_toBottomOf=
"parent"
app:layout_constraintEnd_toEndOf="paren
t"
app:layout_constraintHorizontal_bias="0.761"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.431" />

<Button
android:id="@+id/sav"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:text="SAVE"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.413"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.562" />
```

```
<TextView
android:id="@+id/textView6"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:text="Enter Your Details"
android:textSize="25sp"
android:textStyle="bold"
app:layout_constraintBottom_toBottomOf="
parent"
app:layout_constraintEnd_toEndOf="parent
"
app:layout_constraintHorizontal_bias="0.46
4"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.133" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

Display

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

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

<TextView
android:id="@+id/dis"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:textStyle="italic"
android:textSize="15sp"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.498"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.233" />
```

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

<TextView
android:id="@+id/dis1"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:textSize="15sp"
android:textStyle="italic"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.527"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.571" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

Java Code:

```
package com.example.sharedpreference;


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

import android.content.SharedPreferences;
import android.os.Bundle;

import android.view.View;

 import android.widget.Button;

import android.widget.EditText;
import android.widget.TextView;
public class MainActivity extends AppCompatActivity {
@Override     protected void onCreate(Bundle
savedInstanceState) {
super.onCreate(savedInstanceState);
setContentView(R.layout.activity_main);
 ActionBar a=getSupportActionBar();
a.setTitle("Welcome");
Button sub=findViewById(R.id.sav);
EditText nam=findViewById(R.id.name);
EditText email=findViewById(R.id.em);
EditText phone=findViewById(R.id.ph);
sub.setOnClickListener(new View.OnClickListener() {
```

```
@Override            public void

onClick(View view) {

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

 String user= nam.getText().toString();i.putExtra("Name",user);

String
E_mail=email.getText().toString();i.putExtra("Email",E
_mail);

String
Phones=phone.getText().toString();i.putExtra("Phone",P
hones);

startActivity(i);

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

SharedPreferences.Editor myEdit = sharedPreferences.edit();

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

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

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

myEdit.apply();




}

});


}

}
```

Display package

com.example.sharedpreference;

import androidx.appcompat.app.ActionBar;

import androidx.appcompat.app.AppCompatActivity;

import android.content.Intent;

import android.content.SharedPreferences;

import android.os.Bundle;

import android.widget.TextView;

public class display extends AppCompatActivity

{

@Override protected void onCreate(Bundle

savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity_display);

ActionBar a=getSupportActionBar();

a.setTitle("Display");

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

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

Intent i=getIntent();

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

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

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

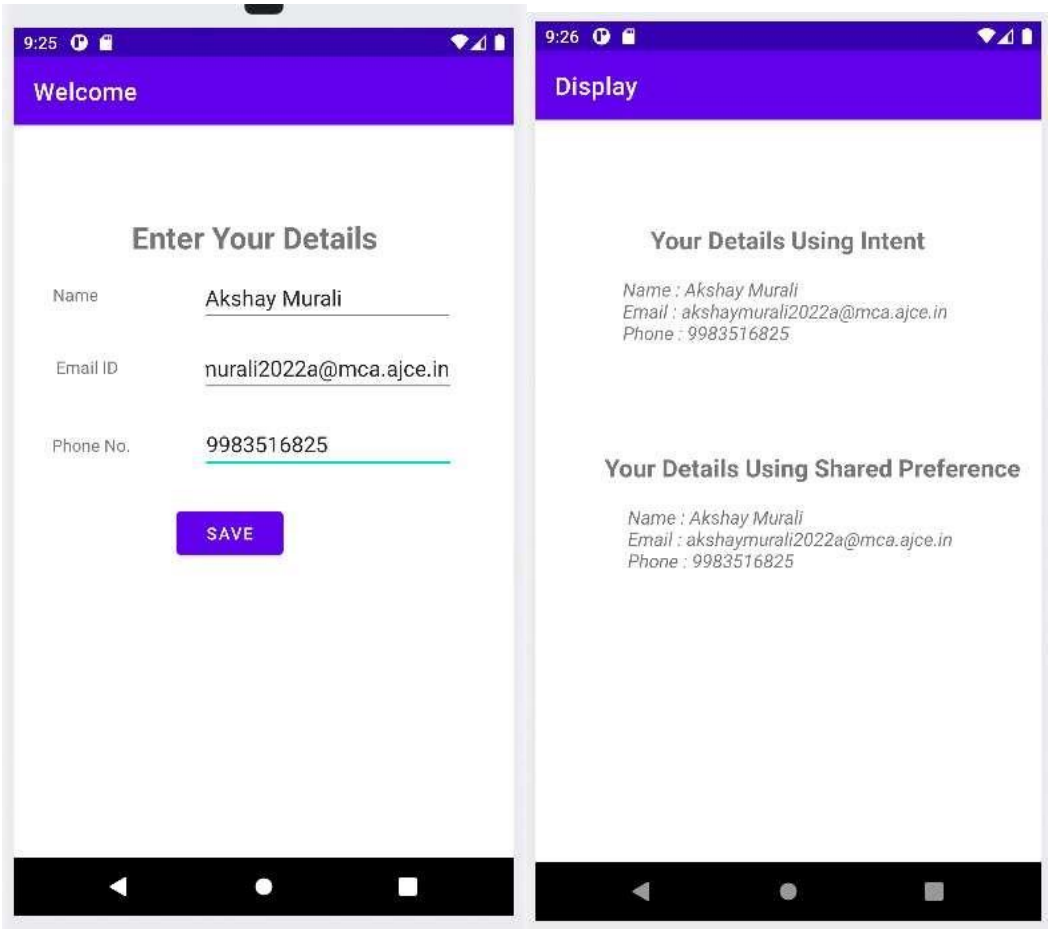
diss.setText("Name : "+name+"\nEmail : "+email+"\nPhone : "+phone);

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

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

```
String Email=sharedPreferences.getString("email","");
String Phone=sharedPreferences.getString("phone","");
diss1.setText("Name : "+Name+"\nEmail : "+Email+"\nPhone : "+Phone);


}
}
```

Output:


9:25
Welcome
Enter Your Details
Name
Akshay Murali
Email ID
nurali2022a@mca.ajce.in
Phone No.
9983516825
SAVE
9:26
Display
Your Details Using Intent
Name : Akshay Murali
Email : akshaymurali2022a@mca.ajce.in
Phone : 9983516825
Your Details Using Shared Preference
Name : Akshay Murali
Email : akshaymurali2022a@mca.ajce.in
Phone : 9983516825

Program no: 7

Aim: Design a simple Calculator using GridLayout and Cascaded LinearLayout

XML Code:

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

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



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

android:orientation="vertical">
```

```
<TextView
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:layout_marginEnd="20dp"
android:text="9+10"
android:textAlignment="textEnd"
android:textColor="@color/white"
android:textSize="40dp" />

<TextView
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:layout_marginEnd="20dp"
android:text="=19"
android:textAlignment="textEnd"
android:textColor="@color/white"
android:textSize="40dp" />
</LinearLayout>


<GridLayout
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_margin="10dp"
android:layout_weight="1"
android:columnCount="4"
```

```
android:gravity="bottom"
android:rowCount="4">

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


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

```
<Button

android:id="@+id/b7"

android:layout_width="wrap_content"

android:layout_height="wrap_content"

android:layout_margin="10dp"

android:background="@drawable/bg_button"

android:text="7"

android:textColor="@color/white"

android:textSize="25dp" />


<Button

android:id="@+id/bmult"

android:layout_width="wrap_content"

android:layout_height="wrap_content"

android:layout_margin="10dp"

android:background="#F86605"

android:text="x"

android:textColor="@color/white"

android:textSize="18dp" />



<Button

 android:id="@+id/b6"

android:layout_width="wrap_content"

android:layout_height="wrap_content"

android:layout_margin="10dp"
```

```
android:background="@drawable/bg_button"
android:text="6"
android:textColor="@color/white"
android:textSize="25dp" />

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

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

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

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

<Button
android:id="@+id/b2"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_margin="10dp"
android:background="@drawable/bg_button"
```

```
android:text="2"
android:textColor="@color/white"
android:textSize="25dp" />

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

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

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

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

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

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

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


</GridLayout>
</LinearLayout>


</LinearLayout>
```

Java Code:

```
package com.example.grid_layout; import
androidx.appcompat.app.AppCompatActivity; import
android.os.Bundle; public class MainActivity extends
AppCompatActivity {
@Override     protected void onCreate(Bundle
savedInstanceState) {
```

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

Output:

Program no: 8

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

XML Code:

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
xmlns:app="http://schemas.android.com/apk/res-auto"
xmlns:tools="http://schemas.android.com/tools"
android:layout_width="match_parent"
android:layout_height="match_parent"
android:background="@color/white"     tools:context=".MainActivity">
<LinearLayout
android:layout_width="match_parent"
android:layout_height="match_parent"
android:background="#29487D"
android:gravity="center|top"
android:orientation="vertical">

<LinearLayout
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_marginTop="70dp"
android:layout_marginBottom="100dp"
android:orientation="vertical">         <TextView
android:layout_width="wrap_content"
android:layout_height="wrap_content"
```

```
android:fontFamily="@font/fb"
android:text="facebook"
android:textSize="36dp"
android:padding="10dp"
android:textColor="@color/white" />

</LinearLayout>     <LinearLayout
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:padding="15dp"
android:orientation="vertical"
android:layout_margin="20dp">
<EditText
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:hint="Email or Phone"
android:layout_marginBottom="30dp"
android:textColorHint="#594F4F"
android:background="@drawable/bg_box"/>

<EditText
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:layout_marginBottom="30dp"
android:background="@drawable/bg_box"
android:hint="password"
android:textColorHint="#594F4F"/>
```

```
<Button
 android:layout_width="match_parent"
android:layout_height="wrap_content"
 android:text="Log In"
android:background="@color/design_default_color_primary"
android:textAllCaps="false"/>

</LinearLayout>
<LinearLayout
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:orientation="horizontal"
android:layout_marginTop="180dp"
android:layout_gravity="bottom"
android:gravity="center">
<TextView
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:gravity="end"
android:textStyle="bold"
android:textColor="@color/white"
android:layout_marginRight="75dp"
android:layout_weight="50"
android:text="SignUp for Facebook"/>
```

```
<TextView
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:gravity="end"
android:textColor="@color/white"
android:layout_marginEnd="50dp"
android:layout_weight="1"
android:textStyle="bold"
android:text="?"/>     </LinearLayout>
</LinearLayout>
</LinearLayout>
```

Java Code:

```
package com.example.facebook; import
androidx.appcompat.app.AppCompatActivity; import
android.os.Bundle; public class MainActivity extends
AppCompatActivity {
@Override     protected void onCreate(Bundle
savedInstanceState) {
super.onCreate(savedInstanceState);
setContentView(R.layout.activity_main);
getSupportActionBar().hide();
}
}
```

Output:

10:55
facebook
facebook
Email or Phone
password
Log In

Program no: 9

Aim: Develop an application that toggles image using FrameLayout

XML Code:

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

Java Code:

```
 package com.example.frame_layout;
 import androidx.appcompat.app.AppCompatActivity;
 import android.os.Bundle;
import android.view.View;
import android.widget.ImageView;
public class MainActivity extends AppCompatActivity
implements View.OnClickListener {     ImageView img1,img2;
@Override     protected void onCreate(Bundle
savedInstanceState) {
super.onCreate(savedInstanceState);
setContentView(R.layout.activity_main);
 img1 =findViewById(R.id.image1);
 img2 =findViewById(R.id.image2);
img1.setOnClickListener(this);
img2.setOnClickListener(this);
}

public void onClick(View v)
{
int id=v.getId();
switch (id){            case
R.id.image1:
img1.setVisibility(View.GONE);
img2.setVisibility(View.VISIBLE);
break;
```

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

Output:

Program no: 10

Aim: Implement Adapters and perform exception handling

XML Code:

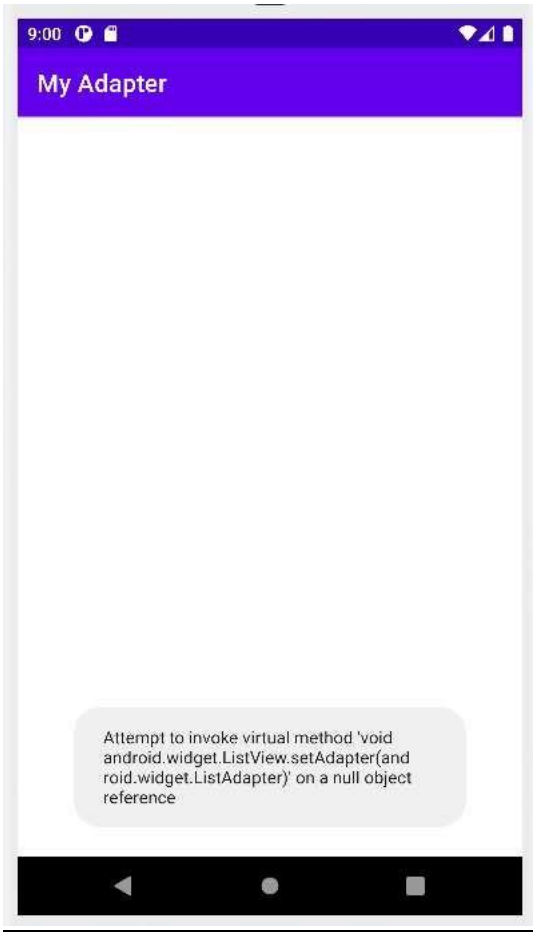
```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
xmlns:app="http://schemas.android.com/apk/res-auto"
xmlns:tools="http://schemas.android.com/tools"
android:layout_width="match_parent"
android:layout_height="match_parent"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

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

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

Java Code:

```
package com.example.myadapter;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle; import
android.view.View; import
android.widget.AdapterView; import
android.widget.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:


9:00
My Adapter
Attempt to invoke virtual method 'void android.widget.ListView.setAdapter(android.widget.ListAdapter)' on a null object reference

Program no: 11

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

XML Code:

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

<EditText

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

 android:hint="Name"
android:inputType="textPersonName"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.437"
app:layout_constraintStart_toStartOf="parent"
```

```
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.148" />

<EditText
android:id="@+id/address"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:ems="10"
android:hint="Address"
android:inputType="textPersonName"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.437"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.313" />

<EditText
 android:id="@+id/email"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:ems="10"
  android:hint="Email"
android:inputType="textPersonName"
android:onClick="callActivity"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
```

```
app:layout_constraintHorizontal_bias="0.437"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.475" />

<Button
android:id="@+id/button"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:text="Submit"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.454"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.609" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

Activity2

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

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

<TextView
 android:id="@+id/view1"
android:layout_width="189dp"
android:layout_height="36dp"
android:textAlignment="center"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.459"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.22" />
```

```
<TextView
android:id="@+id/view2"
android:layout_width="189dp"
android:layout_height="36dp"
android:textAlignment="center"
app:layout_constraintBottom_toBottom
Of="parent"
app:layout_constraintEnd_toEndOf="pa
rent"
app:layout_constraintHorizontal_bias="
0.459"
app:layout_constraintStart_toStartOf="p
arent"
app:layout_constraintTop_toTopOf="pa
rent"
app:layout_constraintVertical_bias="0.3
06" />

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

Java Code:

```
package com.example.co_q3; import
androidx.appcompat.app.AppCompatActivity;
import android.content.Intent;
import android.os.Bundle; import
```

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

public class MainActivity extends AppCompatActivity {
Button b1;

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

b1 = findViewById(R.id.button);        b1.setOnClickListener(new
View.OnClickListener() {
@Override            public void
onClick(View view) {
callActivity(view);
}
});
}
public void callActivity(View view) {
Intent i = new Intent(MainActivity.this, MainActivity2.class);
final EditText editText1 = (EditText)findViewById(R.id.name);
String msg = editText1.getText().toString();        final EditText
editText2 = (EditText)findViewById(R.id.address);        String add =
editText2.getText().toString();        final EditText editText3 =
(EditText)findViewById(R.id.email);
```

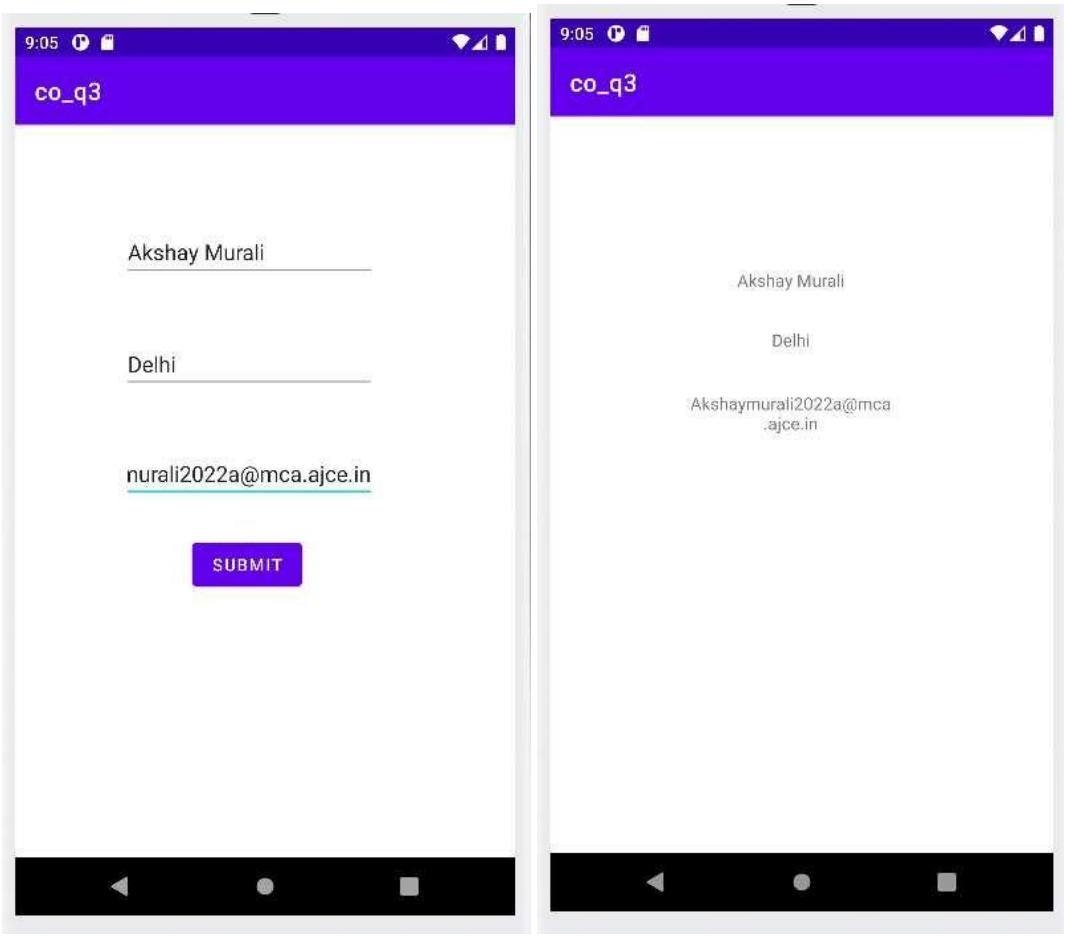
```
 String em = editText3.getText().toString();
i.putExtra("Value1", msg);
i.putExtra("Value2", add);
i.putExtra("Value3", em);
startActivity(i);
}
}
```

Activity 2

```
package com.example.co_q3;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle; import
android.widget.TextView; public class MainActivity2
extends AppCompatActivity {
TextView view1;
TextView view2;
TextView view3;
@Override     protected void onCreate(Bundle
savedInstanceState) {
super.onCreate(savedInstanceState);
setContentView(R.layout.activity_main2);
view1 = (TextView) findViewById(R.id.view1);
view2 = (TextView) findViewById(R.id.view2);
view3 = (TextView) findViewById(R.id.view3);
Bundle extras = getIntent().getExtras();
String value1 = extras.getString("Value1");
```

```
String value2 = extras.getString("Value2");
String value3 = extras.getString("Value3");
view1.setText(value1);
view2.setText(value2);
view3.setText(value3);
}

}
```

Output:


9:05
co_q3
Akshay Murali
Delhi
nurali2022a@mca.ajce.in
SUBMIT
9:05
co_q3
Akshay Murali
Delhi
Akshaymurali2022a@mca
.ajce.in

Program no: 12

Aim: Develop an application that works with Implicit intents

XML Code:

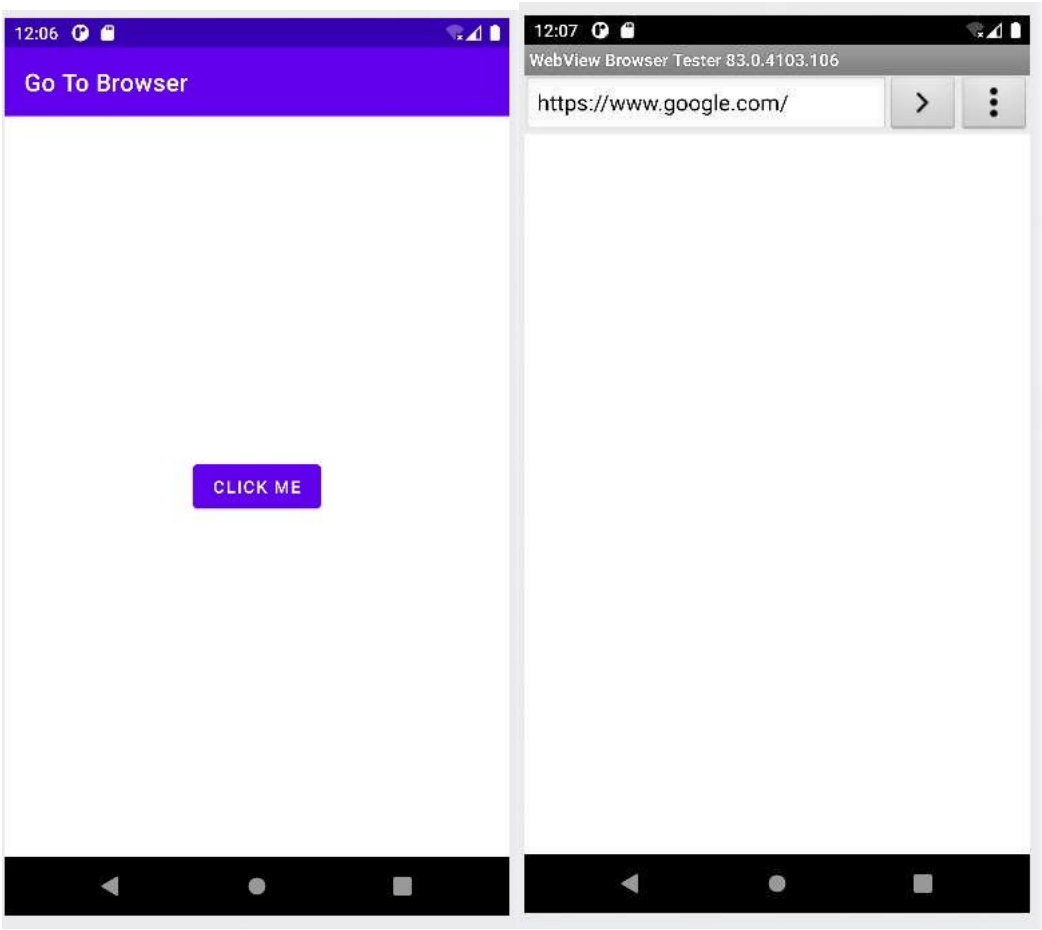
```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
xmlns:app="http://schemas.android.com/apk/res-auto"
xmlns:tools="http://schemas.android.com/tools"
android:layout_width="match_parent"
android:layout_height="match_parent"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

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

Java Code:

```
package com.example.myapplication; import
androidx.appcompat.app.ActionBar; import
androidx.appcompat.app.AppCompatActivit
y;

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


public class MainActivity extends AppCompatActivity {


@Override     protected void onCreate(Bundle
savedInstanceState) {
super.onCreate(savedInstanceState);
setContentView(R.layout.activity_main);
ActionBar b=getSupportActionBar();
b.setTitle("Go To Browser");        Button
click=findViewById(R.id.cm);
click.setOnClickListener(new View.OnClickListener() {
@Override            public void
onClick(View view) {
Intent j=new Intent(Intent.ACTION_VIEW,
Uri.parse("https://www.google.com/"));
startActivity(j);
```

```
}
});
}
}
```

Output:


12:06
Go To Browser
CLICK ME
12:07
WebView Browser Tester 83.0.4103.106
https://www.google.com/

Program no: 13

Aim: Implement Options Menu to navigate to activities

XML Code:

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

Activitymain.xml

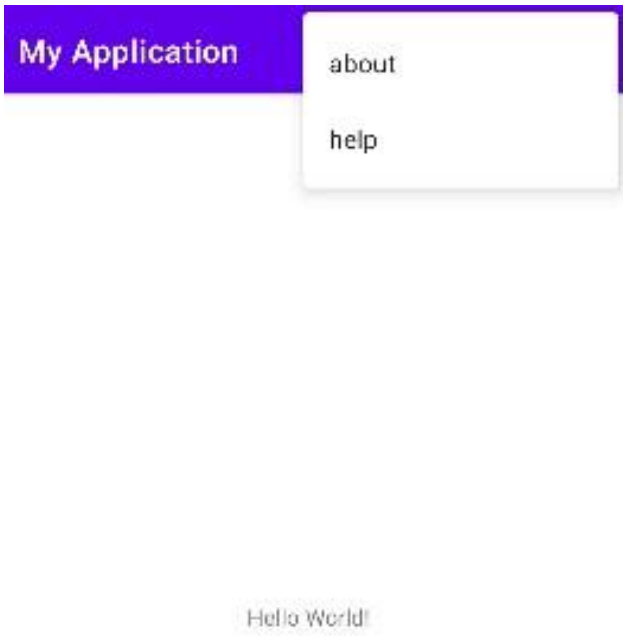
```
<?xml version="1.0" encoding="utf-8"?>

<androidx.constraintlayout.widget.ConstraintLayout

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

xmlns:app="http://schemas.android.com/apk/res-auto"

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

android:layout_width="match_parent"

android:layout_height="match_parent"     tools:context=".MainActivity">


<TextView

android:layout_width="wrap_content"

android:layout_height="wrap_content"

android:text="Hello World!"

app:layout_constraintBottom_toBottomOf="parent"

app:layout_constraintLeft_toLeftOf="parent"

app:layout_constraintRight_toRightOf="parent"

app:layout_constraintTop_toTopOf="parent" />

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

Java Code:

```
package com.example.myapplication;
import androidx.appcompat.app.AppCompatActivity;
import android.annotation.SuppressLint;
import android.os.Bundle;
import android.view.Menu;
import android.view.MenuItem;
import android.widget.Toast;

public class MainActivity extends AppCompatActivity {

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

@Override     public boolean
onCreateOptionsMenu(Menu menu) {
getMenuInflater().inflate(R.menu.menuu, menu);
return true;

}
@Override     public boolean
onOptionsItemSelected(MenuItem item){
switch (item.getItemId()){
case R.id.item1:
```

```
Toast.makeText(getApplicationContext(), "about", Toast.LENGTH_SHORT).show();


return true;      case
R.id.item2:
Toast.makeText(getApplicationContext(), "help", Toast.LENGTH_SHORT).show();
return true;


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

Output:



Program no: 14

Aim: Develop an application that uses ArrayAdapter with ListView

XML Code:

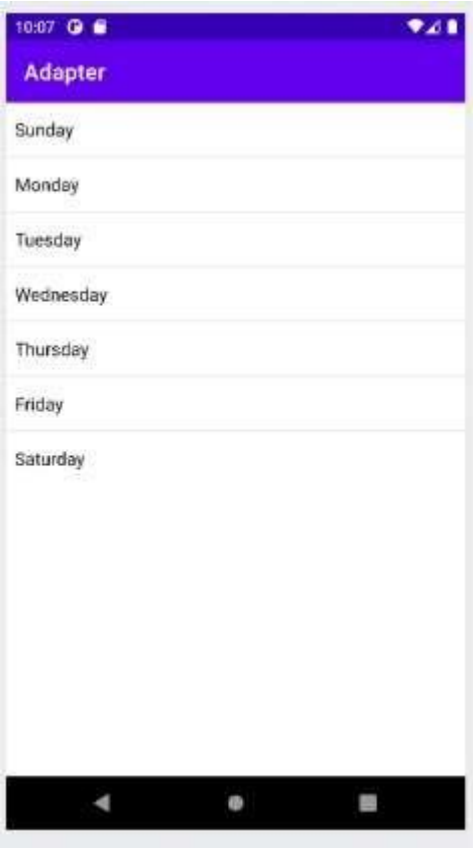
```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
xmlns:tools="http://schemas.android.com/tools"
xmlns:app="http://schemas.android.com/apk/res-auto"
android:layout_width="match_parent"
android:layout_height="match_parent"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

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

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

Java Code:

```
package com.example.adapter;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle; import

android.view.View; import

android.widget.AdapterView; import

android.widget.ArrayAdapter; import

android.widget.ListView; import

android.widget.TextView; import

android.widget.Toast;


public class MainActivity extends AppCompatActivity implements
AdapterView.OnItemClickListener {

ListView l;

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

@Override     protected void onCreate(Bundle

savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity_main);

l=findViewById(R.id.mobile_list);

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

l.setAdapter(adapter);

l.setOnItemClickListener(this);


}
```

```
@Override     public void onItemClick(AdapterView<?> adapterView, View view,
int i, long l) {         TextView temp=(TextView) view;

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

Output:



Program no: 15

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

XML Code:

```
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
xmlns:tools="http://schemas.android.com/tools"
android:layout_width="match_parent"
android:layout_height="match_parent"     tools:context=".MainActivity" >

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


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

```
android:layout_width="wrap_content"
android:layout_height="wrap_content"     android:padding="5dp" >

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

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

Java Code:

```
package com.example.gridview_image_text_example;
import android.content.Context; import
android.view.LayoutInflater; import
android.view.View; import android.view.ViewGroup;
```

```
import android.widget.BaseAdapter;
import android.widget.ImageView; import
android.widget.TextView;

public class CustomGrid extends BaseAdapter{
private Context mContext;
private final String[] web;
 private final int[] Imageid;

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

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

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

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

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

if (convertView == null) {

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

return grid;
}
```

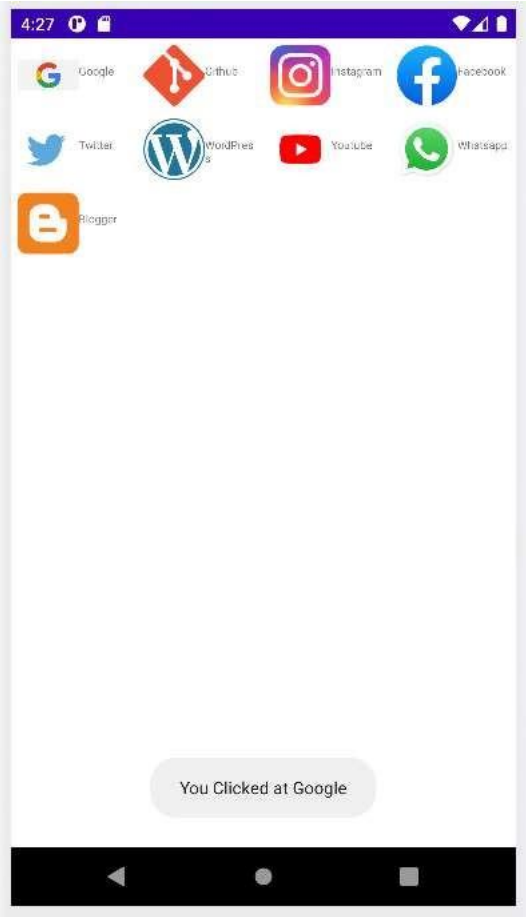
```
}
package com.example.gridview_image_text_example;

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

public class MainActivity extends Activity {
GridView grid;
String[] web = {
"Google",
"Github",
"Instagram",
"Facebook",
"Twitter",
"WordPress",
"Youtube",
"Whatsapp",
"Blogger"

} ;
int[] imageId = {
R.drawable.image1,
R.drawable.image2,
```

```
R.drawable.image3,

R.drawable.image4,

R.drawable.image5,

R.drawable.image6,

R.drawable.image7,

R.drawable.image8,

R.drawable.image9,



};


@Override     protected void onCreate(Bundle

savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity_main);


CustomGrid adapter = new CustomGrid(MainActivity.this, web, imageId);

grid=(GridView)findViewById(R.id.grid);         grid.setAdapter(adapter);

grid.setOnItemClickListener(new AdapterView.OnItemClickListener() {


@Override

public void onItemClick(AdapterView<?> parent, View view,

int position, long id) {

Toast.makeText(MainActivity.this, "You Clicked at " +web[+ position],
Toast.LENGTH_SHORT).show();


}

});
```

}

}

Output:


4:27
Google
Github
Instagram
Facebook
Twitter
WordPres
s
Youtube
Whatsapp
Blogger
You Clicked at Google

Program no:16

Aim: Develop an application that implements Spinner component and perform event handling

XML Code:

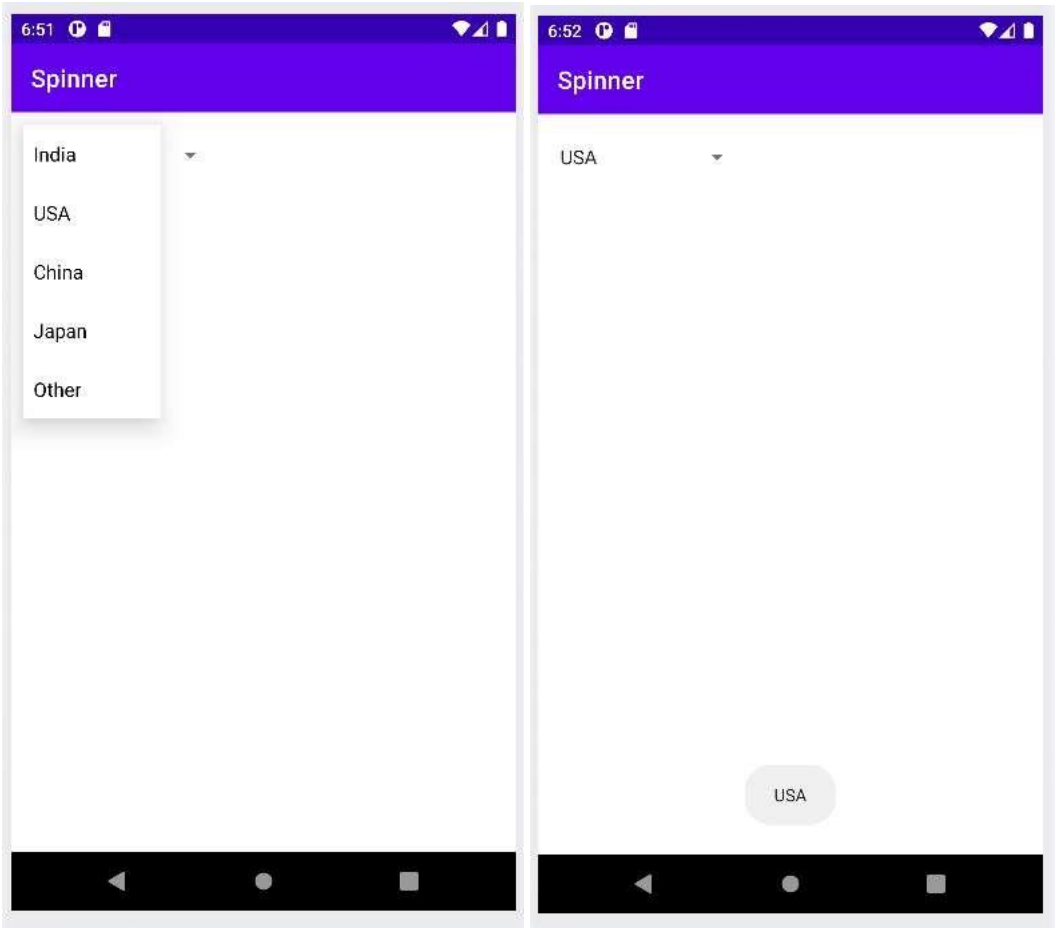
```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
xmlns:app="http://schemas.android.com/apk/res-auto"
xmlns:tools="http://schemas.android.com/tools"
android:layout_width="match_parent"
android:layout_height="match_parent"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

<Spinner        android:id="@+id/spinner"
android:layout_height="50dp"
android:layout_width="160dp"
android:layout_marginEnd="10dp"
android:layout_marginStart="10dp"
android:layout_marginBottom="10dp"
android:layout_marginTop="10dp"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"/>

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

Java Code:

```
package com.example.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.OnItemSelectedListener {
String[] country = { "India", "USA", "China", "Japan", "Other"};

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

//Creating the ArrayAdapter instance having the country list
ArrayAdapter aa = new
ArrayAdapter(this,android.R.layout.simple_spinner_item,country);
aa.setDropDownViewResource(android.R.layout.simple_spinner_dropdown_item);
//Setting the ArrayAdapter data on the Spinner
spin.setAdapter(aa);
```

```
}

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

Output:


6:51
Spinner
India
USA
China
Japan
Other
6:52
Spinner
USA
USA

Program no:17

Aim: Apply themes via code and manifest file

XML Code:

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

<EditText
android:id="@+id/editTextTextPersonName"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:ems="10"
android:inputType="textPersonName"
android:text="Name"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintTop_toTopOf="parent"
tools:layout_editor_absoluteX="100dp" />
</androidx.constraintlayout.widget.ConstraintLayout>
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
package="com.example.themes">

<application        android:allowBackup="true"
android:icon="@mipmap/ic_launcher"
```

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

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

</manifest>
```

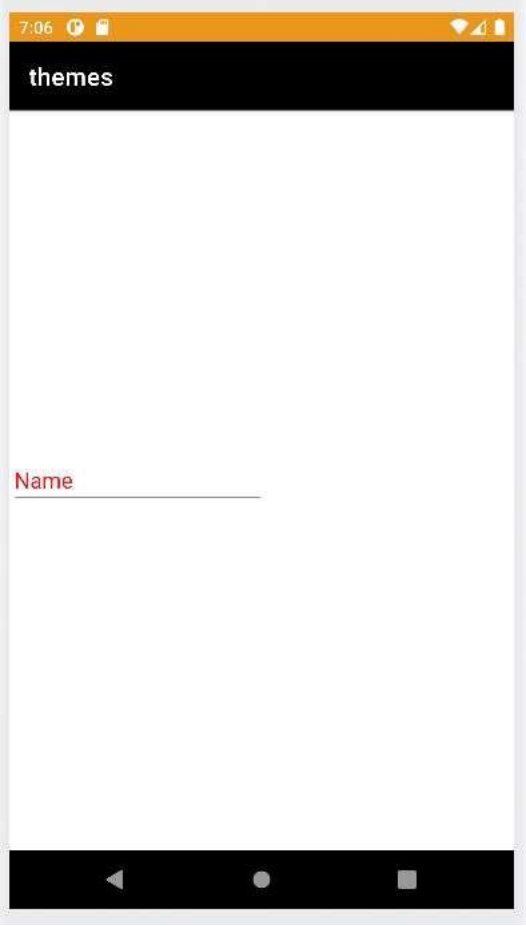
```
<?xml version="1.0" encoding="utf-8"?>
<resources>

<color name="teal">#FF018786</color>
<color name="black">#FF000000</color>
<color name="yellow">#EC971B</color>
<color name="red">#F80F0F</color>
</resources>
```

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

Java Code:

```
package com.example.themes;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle; public class MainActivity
extends AppCompatActivity {
@Override     protected void onCreate(Bundle
savedInstanceState) {
super.onCreate(savedInstanceState);
setContentView(R.layout.activity_main);
}
}
```

Output:


7:06
themes
Name

Program no:18

Aim: Develop application using Fragments

XML Code:

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

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

<Button

  android:id="@+id/b1"
android:layout_width="160dp"
android:layout_height="50dp"
android:layout_alignParentBottom="true"
android:layout_marginStart="30dp"
android:layout_marginBottom="30dp"
android:backgroundTint="#2196F3"
android:text="Fragment1" />
```

```
<Button
android:id="@+id/b2"
android:layout_width="160dp"
android:layout_height="50dp"
android:layout_alignParentRight="true"
android:layout_alignParentBottom="true"
android:layout_marginStart="30dp"
android:layout_marginBottom="30dp"
android:backgroundTint="#FFC107"
android:text="Fragment2" />

</RelativeLayout>

<FrameLayout
android:id="@+id/frameLayout"
android:layout_width="match_parent"
android:layout_height="0dp"
android:layout_weight="4"
android:background="@color/purple_200"/>




</LinearLayout>

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

```
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
xmlns:tools="http://schemas.android.com/tools"     android:layout_width="match_parent"
android:layout_height="match_parent"     android:background="@color/teal_200"
tools:context=".Fragment1">

<!-- TODO: Update blank fragment layout -->
<TextView
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_centerInParent="true"
android:background="#FFEB3B"
android:text="Fragment1"
android:textSize="30dp" />

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

<!-- TODO: Update blank fragment layout -->
<TextView
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_centerInParent="true"
```

```
android:background="#FAA3C1"
android:text="Fragment2"
android:textSize="30dp" />

</RelativeLayout>
```

Java Code:

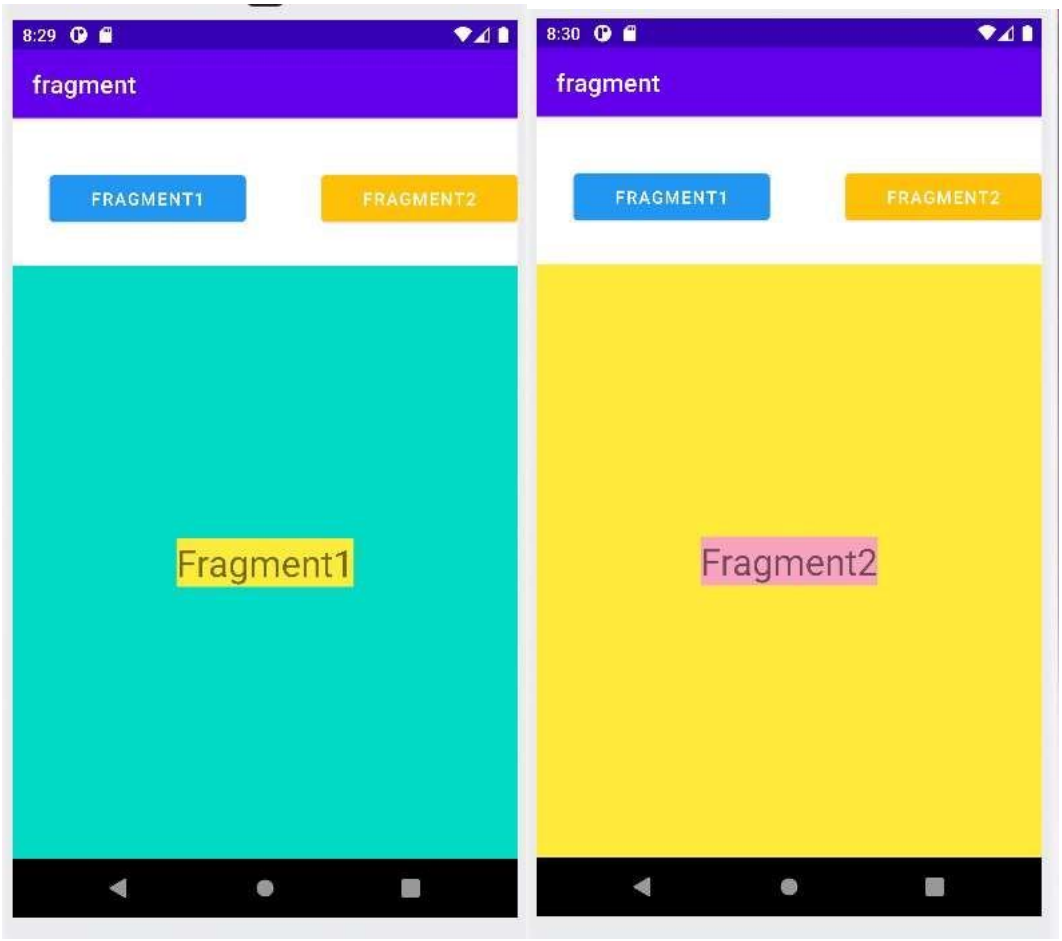
```
package com.example.fragment;

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

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

public class MainActivity extends AppCompatActivity {
Button b1,b2;

@Override     protected void onCreate(Bundle
savedInstanceState) {
super.onCreate(savedInstanceState);
setContentView(R.layout.activity_main);
b1=findViewById(R.id.b1);
b2=findViewById(R.id.b2);
```

```
b1.setOnClickListener(new View.OnClickListener() {
@Override            public void onClick(View
v) {                 replaceFragment(new
Fragment1());
}
});
b2.setOnClickListener(new View.OnClickListener() {
@Override            public void onClick(View
v) {                 replaceFragment(new
Fragment2());
}
});
}

private void replaceFragment(Fragment fragment) {
FragmentManager fragmentManager=getSupportFragmentManager();
FragmentTransaction fragmentTransaction=fragmentManager.beginTransaction();
fragmentTransaction.replace(R.id.frameLayout,fragment);
fragmentTransaction.commit();
}
}

package com.example.fragment;
import android.os.Bundle;
```

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

public class Fragment1 extends Fragment {


@Override     public View onCreateView(LayoutInflater inflater,
ViewGroup container,
Bundle savedInstanceState) {         // Inflate the layout for this
fragment         return inflater.inflate(R.layout.fragment_1,
container, false);
}
}

package com.example.fragment;

import android.os.Bundle;

import androidx.fragment.app.Fragment;

import android.view.LayoutInflater;
import android.view.View;

import android.view.ViewGroup;
public class Fragment2 extends
Fragment {
```

```
@Override     public View onCreateView(LayoutInflater inflater,
ViewGroup container,
Bundle savedInstanceState) {         // Inflate the layout for this
fragment         return inflater.inflate(R.layout.fragment_2,
container, false);
}
}
```

Output:



Program no:19

Aim: Implement Navigation drawer

XML Code:

```
<?xml version="1.0" encoding="utf-8"?>
<androidx.drawerlayout.widget.DrawerLayout
xmlns:android="http://schemas.android.com/apk/res/android"
xmlns:app="http://schemas.android.com/apk/res-auto"
xmlns:tools="http://schemas.android.com/tools"
android:layout_width="match_parent"
android:layout_height="match_parent"
tools:context=".MainActivity"     android:id="@+id/drawer">
<LinearLayout         android:layout_width="match_parent"
android:layout_height="match_parent">
<TextView
android:layout_width="match_parent"
android:layout_height="match_parent"
android:text="Welcome"
android:textSize="30dp">
</TextView>
</LinearLayout>
<com.google.android.material.navigation.NavigationView
android:layout_width="match_parent"
android:layout_height="match_parent"
app:menu="@menu/menu"
```

```
 android:id="@+id/navigation_view"
android:layout_gravity="start">
</com.google.android.material.navigation.NavigationView>
</androidx.drawerlayout.widget.DrawerLayout>

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

Java

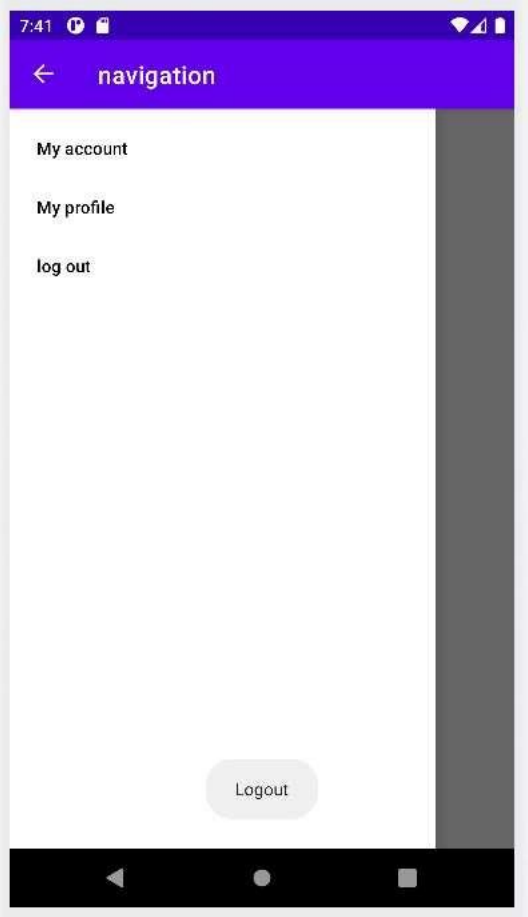
Code:

```
package com.example.navigation;

import androidx.annotation.NonNull; import
androidx.appcompat.app.ActionBarDrawerToggle; import
androidx.appcompat.app.AppCompatActivity; import
androidx.drawerlayout.widget.DrawerLayout; import
android.os.Bundle; import android.view.MenuItem;
import android.widget.Toast;
```

```
import com.google.android.material.navigation.NavigationView;
public class MainActivity extends AppCompatActivity implements
NavigationView.OnNavigationItemSelectedListener {     public
DrawerLayout drawerLayout;     public ActionBarDrawerToggle
actionBarDrawerToggle;
@Override     protected void onCreate(Bundle
savedInstanceState) {
super.onCreate(savedInstanceState);
setContentView(R.layout.activity_main);
drawerLayout = findViewById(R.id.drawer);
actionBarDrawerToggle = new ActionBarDrawerToggle(this,drawerLayout,
R.string.nav_open, R.string.nav_close);
drawerLayout.addDrawerListener(actionBarDrawerToggle);
actionBarDrawerToggle.syncState();
getSupportActionBar().setDisplayHomeAsUpEnabled(true);
NavigationView navigationView = findViewById(R.id.navigation_view);
navigationView.setNavigationItemSelectedListener(this);
}
@Override     public boolean onOptionsItemSelected(@NonNull
MenuItem item) {         if
(actionBarDrawerToggle.onOptionsItemSelected(item)){
return true;
}
return super.onOptionsItemSelected(item);
}
```

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

Output:



Program no:20

Aim: Program to implement Activity Lifecycle.

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"
android:textSize="24sp"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintLeft_toLeftOf="parent"
app:layout_constraintRight_toRightOf="parent"
app:layout_constraintTop_toTopOf="parent" />
```

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

MainActivity.Java:

```
package com.example.activitylifecycle;
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 –

```
2022-03-03 09:55:16.288 3023-3023/com.example.activitylifecycle I/State: onCreate
2022-03-03 09:55:18.009 3023-3023/com.example.activitylifecycle I/State: onStop
2022-03-03 09:55:20.245 3023-3023/com.example.activitylifecycle I/State: onRestart
2022-03-03 09:55:20.248 3023-3023/com.example.activitylifecycle I/State: onStart
2022-03-03 09:55:20.249 3023-3023/com.example.activitylifecycle I/State: onResume
2022-03-03 09:55:23.146 3023-3023/com.example.activitylifecycle I/State: onCreate
2022-03-03 09:55:24.126 3023-3023/com.example.activitylifecycle I/State: onStop
2022-03-03 09:55:24.128 3023-3023/com.example.activitylifecycle I/State: onDestroy
2022-03-03 09:55:38.870 3023-3023/com.example.activitylifecycle I/State: onCreate
2022-03-03 09:55:38.879 3023-3023/com.example.activitylifecycle I/State: onStart
2022-03-03 09:55:38.880 3023-3023/com.example.activitylifecycle I/State: onResume
2022-03-03 09:55:42.330 3023-3023/com.example.activitylifecycle I/State: onCreate
2022-03-03 09:55:43.249 3023-3023/com.example.activitylifecycle I/State: onStop
2022-03-03 09:55:43.252 3023-3023/com.example.activitylifecycle I/State: onDestroy
```

Program no:21

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

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:id="@+id/textView"
android:layout_width="162dp"
android:layout_height="40dp"
android:text="DB Operations"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintLeft_toLeftOf="parent"
app:layout_constraintRight_toRightOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.082" />
<EditText
```

```
 android:hint="Name"
 android:id="@+id/name"
android:layout_width="278dp"
android:layout_height="56dp"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.496"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.254" />

<EditText
android:hint="Place"        android:id="@+id/place"
android:layout_width="278dp"
android:layout_height="56dp"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.496"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.357" />

<EditText
android:hint="Email" android:id="@+id/email"
android:layout_width="278dp"
android:layout_height="56dp"
```

```
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.496"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.46" />

<EditText
android:hint="Mobile"        android:id="@+id/mobile"
android:layout_width="278dp"
android:layout_height="56dp"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.496"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.568" />

<Button
android:id="@+id/btnins"
android:layout_width="267dp"
android:layout_height="46dp"
android:text="Insert"
app:layout_constraintBottom_toBot
tomOf="parent"
app:layout_constraintEnd_toEndOf=
```

```
"parent"
app:layout_constraintStart_toStartO
f="parent"
app:layout_constraintTop_toTopOf=
"parent"
app:layout_constraintVertical_bias=
"0.705" />

<Button
 android:id="@+id/btnupdt"
android:layout_width="267dp"
android:layout_height="46dp"
android:text="Update"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.772" />

<Button
android:id="@+id/btnview"
android:layout_width="267dp"
android:layout_height="46dp"
android:text="View"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
```

```
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.839" />

<Button
android:id="@+id/btndel"
android:layout_width="267dp"
android:layout_height="46dp"
android:text="Delete"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.906" />

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

MainActivity.Java:

```
package com.example.databaseoperations;

import androidx.appcompat.app.AlertDialog; import
androidx.appcompat.app.AppCompatActivity;
```

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

public class MainActivity extends AppCompatActivity {
EditText name,place,email,mobile;
Button btnins,btnupdt,btnview,btndel;
operations op;

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

name = findViewById(R.id.name);
place = findViewById(R.id.place);
email = findViewById(R.id.email);
mobile = findViewById(R.id.mobile);

btnins = findViewById(R.id.btnins);

btnupdt = findViewById(R.id.btnupdt);
btnview = findViewById(R.id.btnview);
btndel = findViewById(R.id.btndel);
```

```
op=new operations(this);
btnins.setOnClickListener(new
View.OnClickListener() {

@Override          public void
onClick(View v) {
String Name = name.getText().toString();
String Place = place.getText().toString();
String Email = email.getText().toString();
String Mobile = mobile.getText().toString();

boolean insertion = op.onInsert(Name, Place, Email, Mobile);
if (insertion == true) {
Toast.makeText(MainActivity.this,"InsertionSucessfull", Toast.LENGTH_SHORT).show();
} else {
Toast.makeText(MainActivity.this,"InsertionFailed", Toast.LENGTH_SHORT).show();
}
}
});

btnupdt.setOnClickListener(new View.OnClickListener() {
@Override          public void
onClick(View v) {
String Name = name.getText().toString();
String Place = place.getText().toString();
String Email = email.getText().toString();
```

```
String Mobile = mobile.getText().toString();


boolean updation = op.onUpdate(Name, Place, Email, Mobile);
if (updation == true) {
Toast.makeText(MainActivity.this,"UpdatedSucessfully", Toast.LENGTH_SHORT).show();
} else {
Toast.makeText(MainActivity.this,"UpdationFailed", Toast.LENGTH_SHORT).show();
}
}
});


btnview.setOnClickListener(new View.OnClickListener() {
@Override           public void
onClick(View v) {              Cursor
res=op.onView();
if(res.getCount()==0){
Toast.makeText(MainActivity.this,"Noentryexists", Toast.LENGTH_SHORT).show();
return;
}
StringBuffer buffer=new StringBuffer();              while(res.moveToNext()){
buffer.append("Name:"+res.getString(0)+"\n");
buffer.append("Place:"+res.getString(1)+"\n");
buffer.append("Email:"+res.getString(2)+"\n");
buffer.append("Mobile:"+res.getString(3)+"\n");

}
```

```
AlertDialog.Builder builder=new AlertDialog.Builder(MainActivity.this);
builder.setCancelable(true);            builder.setTitle("User Entries");
builder.setMessage(buffer.toString());            builder.show();
}
});

btndel.setOnClickListener(new View.OnClickListener() {
@Override          public void
onClick(View v) {
String Name = name.getText().toString();            boolean
deletion = op.onDelete(Name);
if (deletion == true) {
Toast.makeText(MainActivity.this,"DeletionSucessfully", Toast.LENGTH_SHORT).show();
} else {
Toast.makeText(MainActivity.this,"DeletionFailed", Toast.LENGTH_SHORT).show();
}
}
});
}
}
```

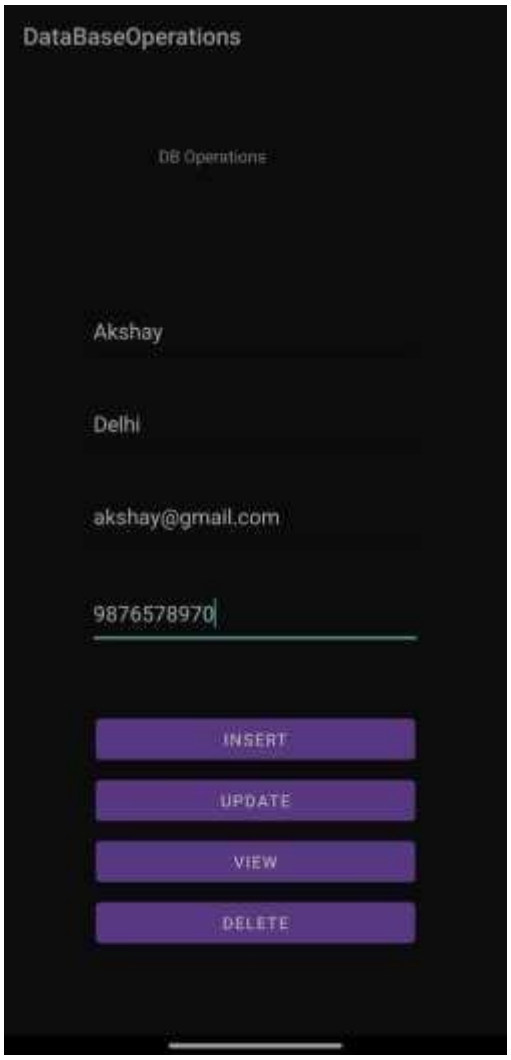
operations.java:

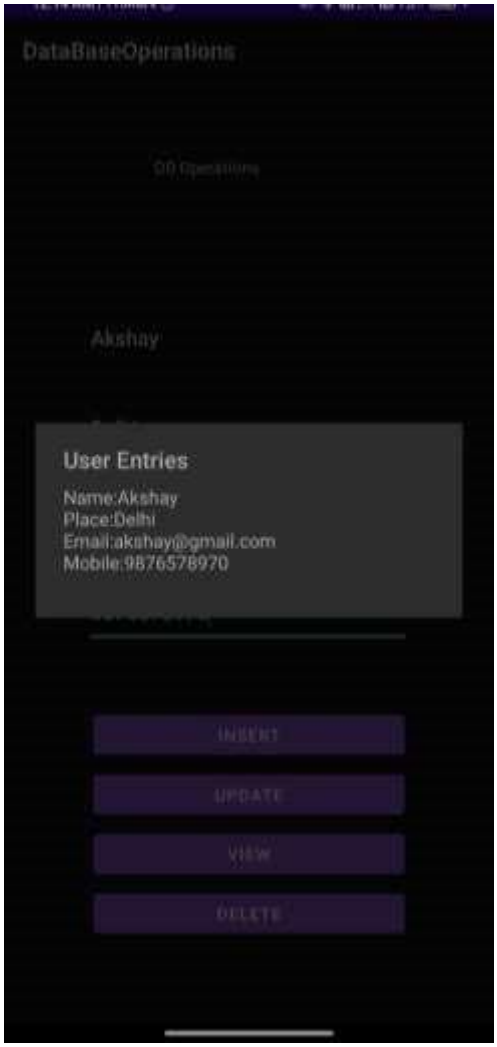
```
package com.example.databaseoperations;

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 operations extends SQLiteOpenHelper {
public operations(Context context) {
super(context, "DBpersons", null, 1);
}

@Override     public void
onCreate(SQLiteDatabase db) {
db.execSQL("create table tblpersons (Name varchar(20) primary key,Place varchar(30),Email
varchar(20),Mobile varchar(10))");

}

@Override     public void onUpgrade(SQLiteDatabase db, int oldVersion, int
newVersion) {        db.execSQL("drop table if exists tblpersons");
```

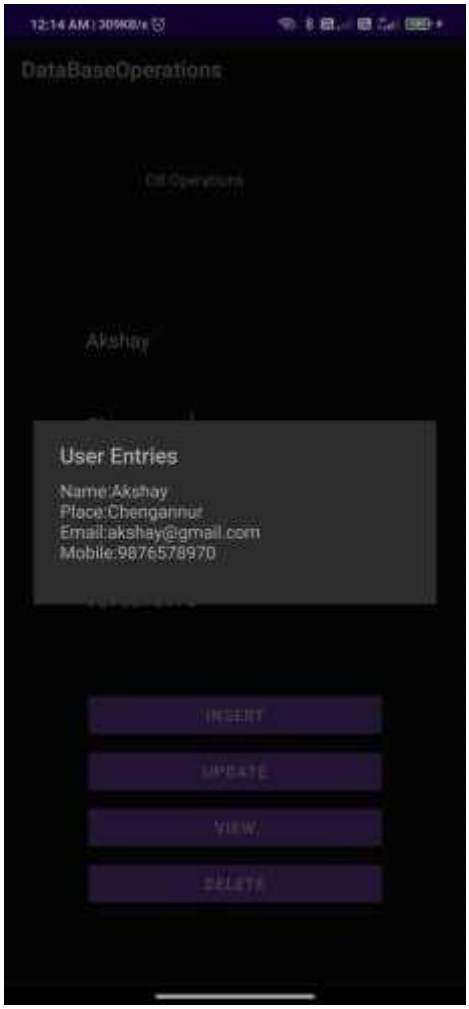
```
}

public boolean onInsert(String Name,String Place,String Email,String Mobile){
SQLiteDatabase sdb=this.getWritableDatabase();
ContentValues cv=new ContentValues();
cv.put("Name",Name);        cv.put("Place",Place);
cv.put("Email",Email);        cv.put("Mobile",Mobile);
long result = sdb.insert("tblpersons",null,cv);
if(result==-1){           return false;
}       else{
return true;
}
}

public boolean onUpdate(String Name,String Place,String Email,String Mobile){
SQLiteDatabase sdb=this.getWritableDatabase();
ContentValues cv=new ContentValues();
cv.put("Place",Place);        cv.put("Email",Email);
cv.put("Mobile",Mobile);

Cursor cr =sdb.rawQuery("select * from tblpersons where Name=?",new String[]{Name});
if(cr.getCount()>0){           long result = sdb.delete("tblpersons","Name=?", new
String[]{Name});
if(result==-1){
return false;
}          else{
return true;
```

```
}       }       else{
return false;
}
}

public Cursor onView(){
SQLiteDatabase sdb=this.getWritableDatabase();
Cursor cursor=sdb.rawQuery("Select * from tblpersons",null);        return
cursor;
}

public boolean onDelete(String Name){
SQLiteDatabase sdb=this.getWritableDatabase();
Cursor cr =sdb.rawQuery("select * from tblpersons where Name=?",new String[]{Name});
if(cr.getCount()>0){
long result = sdb.delete("tblpersons","Name=?", new String[]{Name});
if(result==-1){
return false;
}           else{
return true;
}       }       else{
return false;
}
}
}
```

OUTPUT –


DataBaseOperations
DB Operations
Akshay
Delhi
akshay@gmail.com
9876578970
INSERT
UPDATE
VIEW
DELETE


DataBaseOperations
Akshay
User Entries
Name:Akshay
Place:Delhi
Email:akshay@gmail.com
Mobile:9876578970
INSERT
UPDATE
VIEW
DELETE


DataBaseOperations
Akshay
User Entries
Name:Akshay
Place:Chengannur
Email:akshay@gmail.com
Mobile:9876578970
INSERT
UPDATE
VIEW
DELETE