20MCA243 - MOBILE APPLICATION DEVELOPMENT LAB

*Lab Report Submitted By*

**MERLIN MONCY**

**Reg. No.: AJC21MCA-2079**

*In Partial fulfilment 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**

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

**2022-2023**

**DEPARTMENT OF COMPUTER APPLICATIONS**

**AMAL JYOTHI COLLEGE OF ENGINEERING KANJIRAPPALLY**



**CERTIFICATE**

This is to certify that the Lab report, “**20MCA243 MOBILE APPLICATION DEVELOPMENT LAB”** is the bona fide work of **MERLIN MONCY (Regno: AJC21MCA-2079)** in partial fulfilment of the requirements for the award of the Degree of Master of Computer Applications under APJ Abdul Kalam Technological University during the year 2022-23.

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|  |  |  |  |
| --- | --- | --- | --- |
| **Course Code** | **Course Name** | **Syllabus Year** | **L-T-P-C** |
| 20MCA243 | Mobile Application Development Lab | 2020 | 0-1-3-2 |

### VISION

To promote an academic and research environment conducive for innovation centric technical education.

### MISSION

MS1 - Provide foundations and advanced technical education in both theoretical and applied Computer Applications in-line with Industry demands.

MS2 - Create highly skilled computer professionals capable of designing and innovating real life solutions.

MS3 - Sustain an academic environment conducive to research and teaching focused to generate up-skilled professionals with ethical values.

MS4 - Promote entrepreneurial initiatives and innovations capable of bridging and contributing with sustainable, socially relevant technology solutions.

### COURSE OUTCOME

|  |  |  |
| --- | --- | --- |
| **CO** | **Outcome** | **Targe t** |
| CO1 | Design and develop user interfaces for mobile apps using basic building blocks, UI components and application structure using Emulator | 60 |
| CO2 | Write simple programs and develop small applications using the concepts of UI design, layouts and preferences | 60 |
| CO3 | Develop applications with multiple activities using intents, array adapter, exceptions and options menu. | 60 |
| CO4 | Implement activities with dialogs, spinner, fragments and navigation drawer by applying themes | 60 |
| CO5 | Develop mobile applications using SQLite. | 60 |

**COURSE END SURVEY**

|  |  |  |
| --- | --- | --- |
| **CO** | **Survey Question** | **Answer Format** |
| CO1 | To what extent you are able to design and develop UI using Emulator | Excellent/Very Good/Good Satisfactory/Needs improvement |

|  |  |  |
| --- | --- | --- |
| CO2 | To what extent you understood concepts of layouts | Excellent/Very Good/Good  Satisfactory/Needs improvement |
| CO3 | To what extent you understood intents, exceptions and menus | Excellent/Very Good/Good Satisfactory/Needs improvement |
| CO4 | To what extent you are able to implement activities applying themes | Excellent/Very Good/Good Satisfactory/Needs improvement |
| CO5 | To what extent you understood to create applications with SQLite | Excellent/Very Good/Good Satisfactory/Needs improvement |

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# Experiment No.: 1

**Aim**

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

# CO1

Design and develop user interfaces for mobile apps using basic building blocks, UI components and application structure using Emulator.

# Procedure

**activity\_main.xml**

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

<LinearLayout xmlns:andr[oid="htt](http://schemas.android.com/apk/res/android)p:/[/sc](http://schemas.android.com/apk/res/android)he[mas.android.com/apk/res/android"](http://schemas.android.com/apk/res/android) xmlns:t[ools="ht](http://schemas.android.com/tools)tp:/[/schemas.android.com/tool](http://schemas.android.com/tools)s" android:layout\_width="match\_parent" android:layout\_height="match\_parent" xmlns:card\_view=["http://schemas.android.com/](http://schemas.android.com/apk/res-auto)a[pk/res-auto"](http://schemas.android.com/apk/res-auto) tools:context=".MainActivity" android:gravity="center" android:orientation="vertical" >

<androidx.cardview.widget.CardView android:layout\_width="match\_parent" android:layout\_height="wrap\_content" android:layout\_margin="70dp" android:background="#fff" card\_view:cardCornerRadius="10dp" android:layout\_gravity="center" card\_view:cardElevation="8dp">

<LinearLayout android:layout\_width="match\_parent" android:layout\_height="wrap\_content" android:orientation="vertical"

android:layout\_gravity="center" android:padding="24dp">

<TextView android:layout\_width="match\_parent" android:layout\_height="wrap\_content" android:layout\_gravity="center\_horizontal" android:text="LOGIN"

android:textAlignment="center" android:textSize="36sp" />

<TextView android:layout\_width="wrap\_content" android:layout\_height="wrap\_content" android:hint="Username"

android:textSize="22sp" />

<EditText android:id="@+id/activity\_main\_usernameEditText" android:layout\_width="match\_parent" android:layout\_height="wrap\_content" android:inputType="text" />

<TextView android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content" android:hint="Password" android:textSize="22sp" />

<EditText android:id="@+id/activity\_main\_passwordEditText" android:layout\_width="match\_parent"

android:layout\_height="wrap\_content" android:inputType="textPassword" />

<Button android:id="@+id/activity\_main\_loginButton" android:layout\_width="match\_parent" android:layout\_height="wrap\_content" android:text="Login" android:textSize="22sp"

/>

</LinearLayout>

</androidx.cardview.widget.CardView>

</LinearLayout>

**Main\_Activity.java**

package com.example.loginlab2;

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();

}

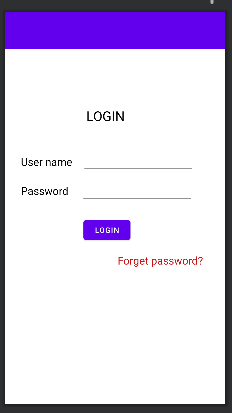
}

});

}

}

# Output Screenshot



**Result**

The program was executed and the result was successfully obtained. Thus CO1 was obtained.

# Experiment No.: 2

**Aim**

Write a program that demonstrates Activity Lifecycle.

# CO1

Design and develop user interfaces for mobile apps using basic building blocks, UI components and application structure using Emulator.

# Procedure

**activity\_main.xml**

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

<androidx.constraintlayout.widget.ConstraintLayout xmlns:android=["http://schemas.android.com/](http://schemas.android.com/apk/res/android)a[pk/res/android"](http://schemas.android.com/apk/res/android) xmlns:app=["http://sche](http://schemas.android.com/apk/res-auto)m[as.android.com/apk/res-auto"](http://schemas.android.com/apk/res-auto) xmlns:t[ools="ht](http://schemas.android.com/tools)tp:/[/schemas.android.com/tool](http://schemas.android.com/tools)s" 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\_constraintEnd\_toEndOf="parent" app:layout\_constraintStart\_toStartOf="parent" app:layout\_constraintTop\_toTopOf="parent" />

</androidx.constraintlayout.widget.ConstraintLayout>

### 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.d("lifecycle","onCreate invoked");

}

@Override protected void onStart() { super.onStart();

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

onResume() { super.onResume();

Log.d("lifecycle","onResume invoked");

}

@Override protected void onPause() { super.onPause();

Log.d("lifecycle","onPause invoked");

}

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

}

@Override protected void onRestart() { super.onRestart();

Log.d("lifecycle","onRestart invoked");

}

@Override protected void onDestroy() { super.onDestroy();

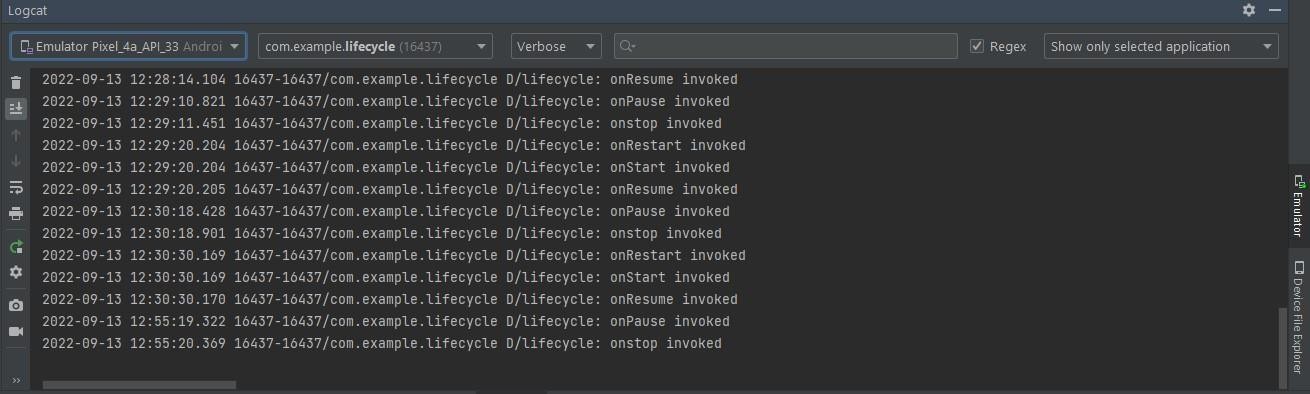
Log.d("lifecycle","onDestroy invoked");

}

}

# Output Screenshot





**Result**

The program was executed and the result was successfully obtained. Thus CO1 was obtained.

# Experiment No.: 3

**Aim**

Implementing basic arithmetic operations of a simple calculator.

# CO1

Design and develop user interfaces for mobile apps using basic building blocks, UI components and application structure using Emulator.

# Procedure

### activity\_main.xml

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

<RelativeLayout xmlns:android=["http://schemas.android.com/apk/res/android"](http://schemas.android.com/apk/res/android)

xmlns:app=["http://sche](http://schemas.android.com/apk/res-auto)m[as.android.com/apk/res-auto"](http://schemas.android.com/apk/res-auto) xmlns:t[ools="ht](http://schemas.android.com/tools)tp:/[/schemas.android.com/tool](http://schemas.android.com/tools)s" android:layout\_width="match\_parent" android:layout\_height="match\_parent" android:background="#D8D8D8" tools:context=".MainActivity">

<TextView android:layout\_width="match\_parent"

android:layout\_height="wrap\_content" android:id="@+id/text" android:text="Arithmetic\_Sol" android:textColor="@color/white" android:textSize="25dp" android:textStyle="bold" android:fontFamily="serif-monospace" android:layout\_margin="10dp"

android:gravity="center"/> <EditText android:id="@+id/firstval"

android:layout\_width="match\_parent" android:layout\_height="wrap\_content" android:layout\_below="@id/text" android:layout\_marginStart="2dp" android:layout\_marginTop="1dp" android:layout\_marginEnd="2dp" android:layout\_marginBottom="2dp" android:background="#C9FFFFFF" android:drawablePadding="20dp" android:layout\_margin="10dp" android:hint="Enter first value" android:padding="10dp" android:textColor="@color/black" android:textColorHint="@color/black" />

<EditText android:id="@+id/secondval" android:layout\_width="match\_parent" android:layout\_height="wrap\_content" android:layout\_below="@id/firstval" android:layout\_marginBottom="2dp" android:background="#B7FFFFFF" android:drawablePadding="20dp" android:layout\_margin="10dp" android:hint="Enter second value" android:padding="10dp" android:textColor="@color/black" android:textColorHint="@color/black" />

<Button

android:layout\_width="wrap\_content" android:layout\_height="wrap\_content"

android:id="@+id/add" android:layout\_below="@+id/secondval" android:text="ADD" android:backgroundTint="@color/white" android:layout\_centerHorizontal="true" />

<Button

android:layout\_width="wrap\_content" android:layout\_height="wrap\_content" android:id="@+id/sub" android:layout\_below="@+id/add" android:text="SUB" android:backgroundTint="@color/white" android:layout\_centerHorizontal="true" />

<Button

android:layout\_width="wrap\_content" android:layout\_height="wrap\_content" android:id="@+id/mult" android:layout\_below="@+id/sub" android:text="MULT" android:backgroundTint="@color/white" android:layout\_centerHorizontal="true" />

<Button

android:layout\_width="wrap\_content" android:layout\_height="wrap\_content" android:id="@+id/div" android:layout\_below="@+id/mult" android:text="DIV" android:backgroundTint="@color/white" android:layout\_centerHorizontal="true" />

<TextView

android:layout\_width="match\_parent" android:layout\_height="wrap\_content" android:id="@+id/viewcntnt" android:hint="result shows here" android:layout\_below="@id/div" android:textColorHint="@color/black" android:textColor="@color/black" android:textSize="25dp" android:background="#B7FFFFFF" android:textStyle="bold" android:fontFamily="serif-monospace" android:layout\_margin="10dp" android:gravity="center"/>

</RelativeLayout>

**MainActivity.java**

package com.example.basic\_arithmetic\_solution; import android.support.v7.app.AppCompatActivity; import android.os.Bundle; import android.widget.Button; import android.widget.EditText; import android.widget.TextView;

public class MainActivity extends AppCompatActivity { @Override

protected void onCreate(Bundle savedInstanceState) { super.onCreate(savedInstanceState); setContentView(R.layout.activity\_main);

EditText first =(EditText) findViewById(R.id.firstval); EditText second = (EditText) findViewById(R.id.secondval); Button add = (Button) findViewById(R.id.add);

Button sub = (Button) findViewById(R.id.sub); Button mult = (Button) findViewById(R.id.mult); Button div = (Button) findViewById(R.id.div);

TextView ans = (TextView) findViewById(R.id.viewcntnt); add.setOnClickListener(view -> {

int x = Integer.parseInt(first.getText().toString()); int y = Integer.parseInt(second.getText().toString());

int z = x + y;

TextView tv\_data = (TextView) findViewById(R.id.viewcntnt); tv\_data.setText("Result : " + z);

});

sub.setOnClickListener(view -> {

int x = Integer.parseInt(first.getText().toString()); int y = Integer.parseInt(second.getText().toString());

int z = x - y;

TextView tv\_data = (TextView) findViewById(R.id.viewcntnt); tv\_data.setText("Result : " + z);

});

mult.setOnClickListener(view -> {

int x = Integer.parseInt(first.getText().toString()); int y = Integer.parseInt(second.getText().toString());

int z = x \* y;

TextView tv\_data = (TextView) findViewById(R.id.viewcntnt); tv\_data.setText("Result : " + z);

});

div.setOnClickListener(view -> {

int x = Integer.parseInt(first.getText().toString()); int y = Integer.parseInt(second.getText().toString());

int z = x / y;

TextView tv\_data = (TextView) findViewById(R.id.viewcntnt); tv\_data.setText("Result : " + z);

});}}

# Output Screenshot



**Result**

The program was executed and the result was successfully obtained. Thus CO1 was obtained.

# Experiment No.: 4 Aim

Implement validations on various UI controls

# CO1

Design and develop user interfaces for mobile apps using basic building blocks, UI components and application structure using Emulator.

# Procedure

## activity\_main.xml

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

<LinearLayout xmlns:andr[oid="htt](http://schemas.android.com/apk/res/android)p:/[/sc](http://schemas.android.com/apk/res/android)he[mas.android.com/apk/res/android"](http://schemas.android.com/apk/res/android) xmlns:app=["http://sche](http://schemas.android.com/apk/res-auto)m[as.android.com/apk/res-auto"](http://schemas.android.com/apk/res-auto) xmlns:t[ools="ht](http://schemas.android.com/tools)tp:/[/schemas.android.com/tool](http://schemas.android.com/tools)s" android:layout\_width="match\_parent" android:layout\_height="match\_parent" android:padding="50sp" android:background="#B287AFCA" android:orientation="vertical" android:gravity="top|center" tools:context=".MainActivity">

<TextView android:layout\_width="match\_parent"

android:layout\_height="wrap\_content" android:text="LOGIN" android:textAlignment="center" android:textColor="@color/black" android:textSize="25sp" android:textStyle="bold" android:layout\_marginTop="150dp"/>

<EditText android:id="@+id/et\_username"

android:layout\_marginLeft="15dp" android:layout\_marginTop="25dp" android:layout\_marginBottom="20dp" android:layout\_marginRight="15dp" android:layout\_centerVertical="true" android:layout\_width="match\_parent" android:layout\_height="wrap\_content" android:ellipsize="start" android:gravity="center" android:hint="Email" android:inputType="text" android:thickness="0dp" android:shape="rectangle" android:width="3dp" android:color="#4799E8" android:startColor="#C8C8C8" android:endColor="#FFFFFF" android:type="linear" android:angle="270"/>

<EditText android:id="@+id/et\_password" android:layout\_marginLeft="15dp" android:layout\_marginTop="15dp" android:layout\_marginBottom="20dp" android:layout\_marginRight="15dp" android:layout\_centerVertical="true" android:layout\_width="match\_parent" android:layout\_height="wrap\_content" android:ellipsize="start"

android:gravity="center" android:hint="password" android:inputType="textPassword" android:thickness="0dp" android:shape="rectangle" android:width="3dp" android:color="#4799E8" android:startColor="#C8C8C8" android:endColor="#FFFFFF" android:type="linear" android:angle="270"/>

<Button

android:layout\_width="wrap\_content" android:layout\_height="wrap\_content" android:id="@+id/btn\_login" android:text="Sign in" android:textSize="15sp" android:textAlignment="center"/>

</LinearLayout>

**MainActivity.java** package com.example.validation; import androidx.appcompat.app.AppCompatActivity; import android.os.Bundle; import android.util.Log; import android.widget.Button; import android.widget.EditText; import android.widget.Toast;

public class MainActivity extends AppCompatActivity {

@Override

protected void onCreate(Bundle savedInstanceState) { super.onCreate(savedInstanceState); setContentView(R.layout.activity\_main);

EditText un = (EditText) findViewById(R.id.et\_username); EditText ps = (EditText) findViewById(R.id.et\_password); Button btn = (Button) findViewById(R.id.btn\_login);

btn.setOnClickListener(view -> {

String uname = un.getText().toString(); String pswd = ps.getText().toString();

String specialCharRegex= ".\*[@#!$%^&+=].\*"; String UpperCaseRegex= ".\*[A-Z].\*";

String NumberRegex= ".\*[0-9].\*";

String emailPattern = "[a-zA-Z0-9.\_-]+@[a-z]+\\.+[a-z]+"; if (uname.length()==0)

{

un.setError("user name not to be null");

}

else if(!uname.matches(emailPattern)){ un.setError(" provided email is invalid");

}

else if(pswd.length() == 0) { ps.setError("password not to be null");

}

else if((!pswd.matches(specialCharRegex)) && (!pswd.matches(UpperCaseRegex))&& (!pswd.matches(NumberRegex))){

ps.setError("include Special character and uppercase");

}else

{ if (uname.equal[s("a](mailto:ajcemca@gmail.com)jce[mca@gmail.com")](mailto:ajcemca@gmail.com) && pswd.equals("Ajcemca@2022")) { Toast.makeText(this, "Login Success", Toast.LENGTH\_SHORT).show();

} else if (uname != ("[ajcemca@gmail.com"](mailto:ajcemca@gmail.com)) && pswd.equals("Ajcemca@2022")) { Toast.makeText(this, "Invalid username", Toast.LENGTH\_SHORT).show();

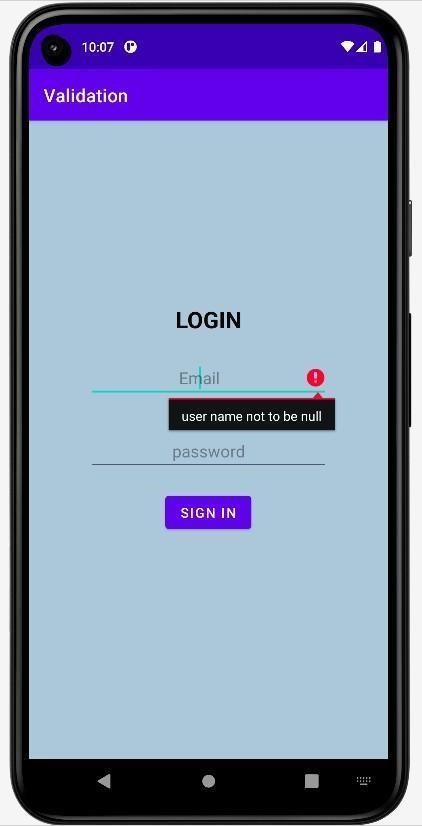
} else if (uname.equa[ls("aj](mailto:ajcemca@gmail.com)cemc[a@gmail.com")](mailto:ajcemca@gmail.com) && pswd != ("Ajcemca@2022")) { Toast.makeText(this, "Invalid password", Toast.LENGTH\_SHORT).show();

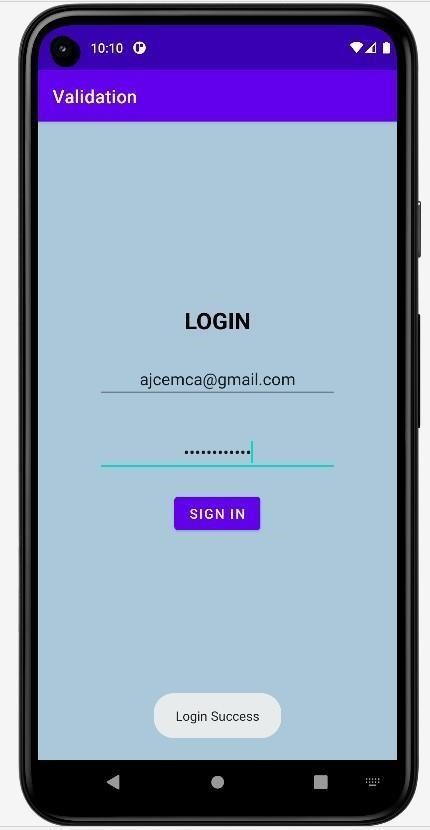
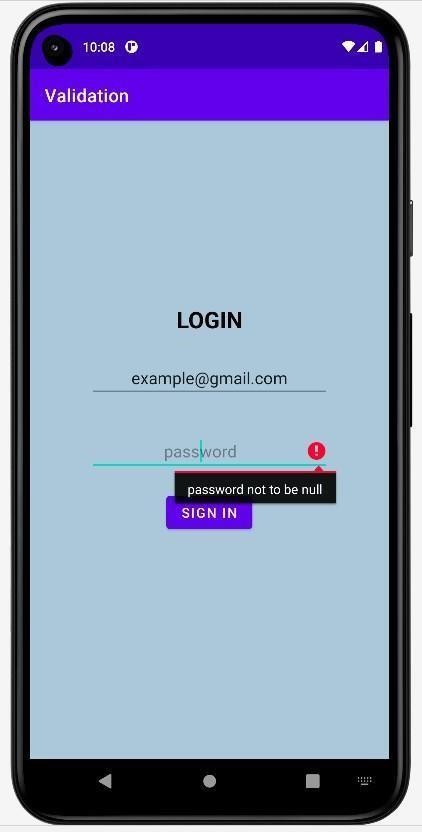
} else {

Toast.makeText(this, "Invalid username and password", Toast.LENGTH\_SHORT).show();

} } }); }}

# Output Screenshot





**Result**

The program was executed and the result was successfully obtained. Thus CO1 was obtained.

# Experiment No.: 5 Aim

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

# CO2

**Procedure**

## activity\_main.xml

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

<LinearLayout xmlns:andr[oid="htt](http://schemas.android.com/apk/res/android)p:/[/sc](http://schemas.android.com/apk/res/android)he[mas.android.com/apk/res/android"](http://schemas.android.com/apk/res/android) xmlns:app=["http://sche](http://schemas.android.com/apk/res-auto)m[as.android.com/apk/res-auto"](http://schemas.android.com/apk/res-auto) xmlns:t[ools="ht](http://schemas.android.com/tools)tp:/[/schemas.android.com/tool](http://schemas.android.com/tools)s" android:layout\_width="match\_parent" android:layout\_height="match\_parent" android:orientation="vertical" tools:context=".MainActivity">

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

android:layout\_width="match\_parent" android:layout\_height="wrap\_content" android:text="Registration" android:textSize="26dp"

app:layout\_constraintBottom\_toBottomOf="parent" app:layout\_constraintEnd\_toEndOf="parent" app:layout\_constraintStart\_toStartOf="parent" app:layout\_constraintTop\_toTopOf="parent" /> <EditText android:id="@+id/eD" android:layout\_width="match\_parent" android:layout\_height="wrap\_content" android:hint="enter name"/>

<EditText android:id="@+id/eD2" android:layout\_width="match\_parent" android:layout\_height="wrap\_content" android:hint="enter email"/>

<EditText android:id="@+id/eD3" android:layout\_width="match\_parent" android:layout\_height="wrap\_content" android:hint="enter password"/>

<EditText android:id="@+id/eD4" android:layout\_width="match\_parent" android:layout\_height="wrap\_content" android:hint="re-enter password"/>

<LinearLayout android:layout\_width="wrap\_content" android:layout\_height="wrap\_content">

<Button android:id="@+id/btn1" android:layout\_width="wrap\_content" android:layout\_height="wrap\_content" android:text="save"

/>

<Button android:id="@+id/btn2" android:layout\_width="wrap\_content" android:layout\_height="wrap\_content" android:text="view"

/> <Button android:id="@+id/btn3" android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content" android:text="clear"

/>

</LinearLayout>

<TextView android:id="@+id/textView1" android:layout\_width="match\_parent" android:layout\_height="wrap\_content" app:layout\_constraintBottom\_toBottomOf="parent" app:layout\_constraintEnd\_toEndOf="parent" app:layout\_constraintStart\_toStartOf="parent" app:layout\_constraintTop\_toTopOf="parent" />

<TextView android:id="@+id/textView2"

android:layout\_width="match\_parent" android:layout\_height="wrap\_content" app:layout\_constraintBottom\_toBottomOf="parent" app:layout\_constraintEnd\_toEndOf="parent" app:layout\_constraintStart\_toStartOf="parent" app:layout\_constraintTop\_toTopOf="parent" />

<TextView android:id="@+id/textView3" android:layout\_width="match\_parent" android:layout\_height="wrap\_content" app:layout\_constraintBottom\_toBottomOf="parent" app:layout\_constraintEnd\_toEndOf="parent" app:layout\_constraintStart\_toStartOf="parent" app:layout\_constraintTop\_toTopOf="parent" />

<TextView android:id="@+id/textView4" android:layout\_width="match\_parent" android:layout\_height="wrap\_content" app:layout\_constraintBottom\_toBottomOf="parent" app:layout\_constraintEnd\_toEndOf="parent" app:layout\_constraintStart\_toStartOf="parent" app:layout\_constraintTop\_toTopOf="parent" />

</LinearLayout>

**MainActivity.java** package com.example.sharedpreferance; import androidx.appcompat.app.AppCompatActivity; import android.content.Context;

import android.content.SharedPreferences; 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 { @Override

protected void onCreate(Bundle savedInstanceState) { super.onCreate(savedInstanceState); setContentView(R.layout.activity\_main);

Button btn = (Button) findViewById(R.id.btn1); Button btn2 = (Button) findViewById(R.id.btn2); Button btn3 = (Button) findViewById(R.id.btn3);

TextView tv = (TextView) findViewById(R.id.textView); EditText eD = (EditText) findViewById(R.id.eD); EditText eD2 = (EditText) findViewById(R.id.eD2); EditText eD3 = (EditText) findViewById(R.id.eD3); EditText eD4 = (EditText) findViewById(R.id.eD4);

TextView tv1 = (TextView) findViewById(R.id.textView1); TextView tv2 = (TextView) findViewById(R.id.textView2); TextView tv3 = (TextView) findViewById(R.id.textView3); TextView tv4 = (TextView) findViewById(R.id.textView4);

SharedPreferences pref =getApplicationContext().getSharedPreferences("storage", Context.MODE\_PRIVATE);

btn.setOnClickListener(new View.OnClickListener() { @Override

public void onClick(View view) {

SharedPreferences.Editor ed = pref.edit(); String a=eD.getText().toString();

String e=eD2.getText().toString(); String p=eD3.getText().toString(); String cp=eD4.getText().toString();

Toast.makeText(MainActivity.this, "Data inserted Successfully", Toast.LENGTH\_SHORT).show();

ed.putString("NameKey",a); ed.putString("email", e); ed.putString("password", p); ed.putString("cpswd", cp); ed.commit();

}

});

btn2.setOnClickListener(new View.OnClickListener() { @Override

public void onClick(View view) { tv1.setText(pref.getString("NameKey",null)); eD.setText(pref.getString("NameKey",null)); tv2.setText(pref.getString("email",null)); eD2.setText(pref.getString("email",null)); tv3.setText(pref.getString("password",null)); eD3.setText(pref.getString("password",null)); tv4.setText(pref.getString("cpswd",null)); eD4.setText(pref.getString("cpswd",null));

Toast.makeText(MainActivity.this, "DAta inserted Successfully", Toast.LENGTH\_SHORT).show();

}

});

btn3.setOnClickListener(new View.OnClickListener() { @Override

public void onClick(View view)

{ tv1.setText("");

tv2.setText("");

tv3.setText("");

tv4.setText(""); eD.setText(""); eD2.setText("");

eD3.setText("");

eD4.setText("");

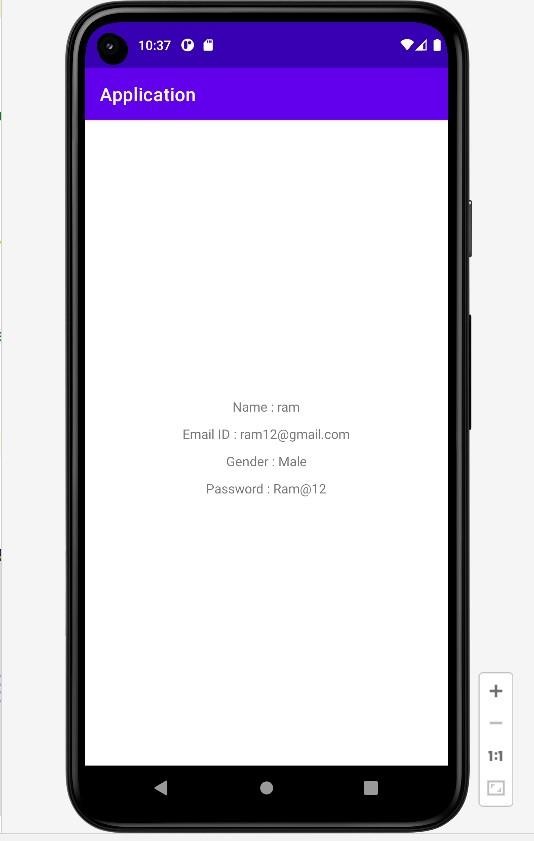
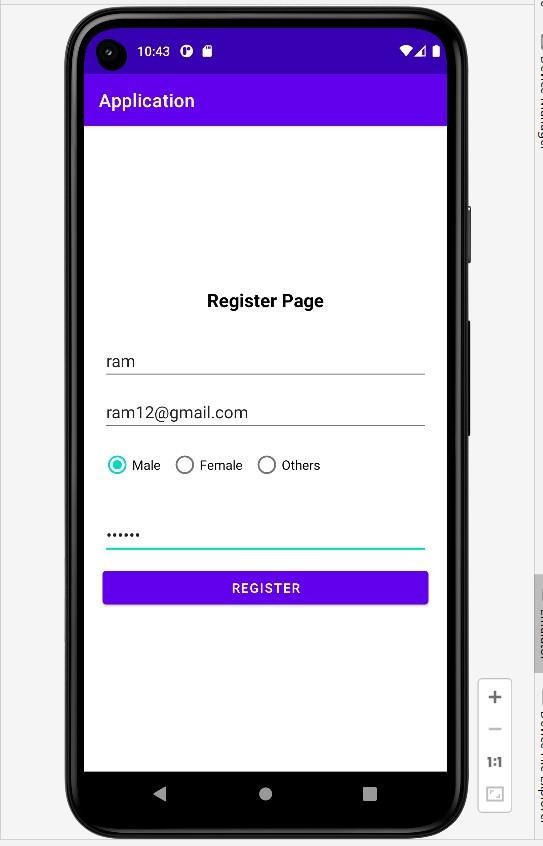
}

});

}

}

# Output Screenshot



**Result**

The program was executed and the result was successfully obtained. Thus CO2 was obtained.

# Experiment No.: 6 Aim

Design a simple Calculator using GridLayout and Cascaded LinearLayout

# CO2

**Procedure**

### activity\_main.xml

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

<LinearLayout xmlns:andr[oid="htt](http://schemas.android.com/apk/res/android)p:/[/sc](http://schemas.android.com/apk/res/android)he[mas.android.com/apk/res/android"](http://schemas.android.com/apk/res/android) xmlns:app=["http://sche](http://schemas.android.com/apk/res-auto)m[as.android.com/apk/res-auto"](http://schemas.android.com/apk/res-auto) xmlns:t[ools="ht](http://schemas.android.com/tools)tp:/[/schemas.android.com/tool](http://schemas.android.com/tools)s" android:layout\_width="match\_parent" android:layout\_height="match\_parent" android:orientation="vertical" tools:context=".MainActivity">

<LinearLayout android:layout\_width="match\_parent"

android:orientation="vertical" android:layout\_height="wrap\_content">

<EditText android:id="@+id/display"

android:layout\_width="402dp" android:layout\_height="85dp" android:layout\_weight="1" android:ems="10" android:inputType="textPersonName"

android:text="0" tools:ignore="MissingConstraints"

tools:layout\_editor\_absoluteX="0dp" tools:layout\_editor\_absoluteY="-1dp" />

</LinearLayout>

<LinearLayout android:layout\_width="match\_parent" android:layout\_height="wrap\_content" android:orientation="horizontal">

<Button android:id="@+id/btn7" android:layout\_width="0dp" android:layout\_height="wrap\_content" android:layout\_weight="0.25" android:text="7" tools:layout\_editor\_absoluteX="55dp" tools:layout\_editor\_absoluteY="84dp" />

<Button android:id="@+id/btn8" android:layout\_width="0dp" android:layout\_height="wrap\_content" android:layout\_weight="0.25" android:text="8" />

<Button

android:id="@+id/btn9" android:layout\_width="0dp" android:layout\_height="wrap\_content" android:layout\_weight="0.25"

android:text="9" />

<Button android:id="@+id/btndiv" android:layout\_width="0dp" android:layout\_height="wrap\_content" android:layout\_weight="0.25" android:text="/" />

</LinearLayout>

<LinearLayout android:layout\_width="match\_parent" android:layout\_height="wrap\_content" android:orientation="horizontal">

<Button android:id="@+id/btn4" android:layout\_width="0dp" android:layout\_weight="0.25" android:layout\_height="wrap\_content" android:text="4" />

<Button android:id="@+id/btn5" android:layout\_width="0dp" android:layout\_weight="0.25" android:layout\_height="wrap\_content " android:text="5" />

<Button android:id="@+id/btn6" android:layout\_width="0dp" android:layout\_weight="0.25"

android:layout\_height="wrap\_content" android:text="6" />

<Button android:id="@+id/btnmult" android:layout\_width="0dp" android:layout\_weight="0.25" android:layout\_height="wrap\_content" android:text="x" />

</LinearLayout> <LinearLayout android:layout\_width="match\_parent" android:layout\_height="wrap\_content" android:orientation="horizontal">

<Button android:id="@+id/btn3" android:layout\_width="0dp" android:layout\_weight="0.25" android:layout\_height="wrap\_content" android:text="3" />

<Button android:id="@+id/btn2" android:layout\_width="0dp" android:layout\_weight="0.25" android:layout\_height="wrap\_content" android:text="2" />

<Button android:id="@+id/btn1" android:layout\_width="0dp"

android:layout\_weight="0.25" android:layout\_height="wrap\_content" android:text="1" />

<Button android:id="@+id/btnminus" android:layout\_width="0dp" android:layout\_weight="0.25" android:layout\_height="wrap\_content" android:text="-" />

</LinearLayout> <LinearLayout android:layout\_width="match\_parent" android:layout\_height="wrap\_content" android:orientation="horizontal">

<Button

android:id="@+id/btn0" android:layout\_width="0dp"

android:layout\_weight="0.25" android:layout\_height="wrap\_content" android:text="0" /> <Button android:id="@+id/btndot" android:layout\_width="0dp" android:layout\_weight="0.25" android:layout\_height="wrap\_content" android:text="." /> <Button android:id="@+id/btnequ" android:layout\_width="0dp" android:layout\_weight="0.25"

android:layout\_height="wrap\_content" android:text="=" />

<Button android:id="@+id/btnplus" android:layout\_width="0dp" android:layout\_weight="0.25" android:layout\_height="wrap\_content" android:text="+" />

</LinearLayout>

</LinearLayout>

# Output Screenshot



**Result**

The program was executed and the result was successfully obtained. Thus CO2 was obtained.

# Experiment No.: 7 Aim

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

# CO2

**Procedure**

**activity\_main.xml**

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

<RelativeLayout xmlns:andr[oid="htt](http://schemas.android.com/apk/res/android)p:/[/sc](http://schemas.android.com/apk/res/android)he[mas.android.com/apk/res/android"](http://schemas.android.com/apk/res/android) xmlns:app=["http://sche](http://schemas.android.com/apk/res-auto)m[as.android.com/apk/res-auto"](http://schemas.android.com/apk/res-auto) xmlns:t[ools="ht](http://schemas.android.com/tools)tp:/[/schemas.android.com/tool](http://schemas.android.com/tools)s" android:id="@+id/activity\_main" android:layout\_width="match\_parent" android:layout\_height="match\_parent" android:background="#5F73F1">

<EditText android:id="@+id/text1" android:layout\_width="match\_parent" android:layout\_height="wrap\_content" android:layout\_alignParentTop="true" android:layout\_marginLeft="18dp" android:layout\_marginTop="245dp" android:layout\_marginRight="18dp" android:background="#fff" android:hint="Username" android:padding="8dp" />

<EditText android:id="@+id/text2" android:layout\_width="match\_parent" android:layout\_height="wrap\_content" android:layout\_below="@+id/text1"

android:layout\_marginLeft="18dp" android:layout\_marginTop="30dp" android:layout\_marginRight="18dp" android:background="#fff" android:hint="Password" android:padding="8dp" />

<Button android:id="@+id/b1" android:layout\_width="match\_parent" android:layout\_height="wrap\_content" android:layout\_below="@+id/text2" android:layout\_alignStart="@+id/text2" android:layout\_alignEnd="@+id/text2" android:layout\_marginStart="3dp" android:layout\_marginTop="25dp" android:layout\_marginEnd="-1dp" android:text="Login" android:textColor="#00CC99" />

<TextView android:id="@+id/text3" android:layout\_width="wrap\_content" android:layout\_height="wrap\_content" android:layout\_below="@+id/b1" android:layout\_alignParentEnd="true" android:layout\_alignParentRight="true" android:layout\_marginTop="79dp" android:layout\_marginEnd="112dp" android:layout\_marginRight="112dp" android:text="Not a member?Sign up now" android:textColor="#fff" />

<TextView android:id="@+id/textView4" android:layout\_width="359dp" android:layout\_height="171dp" android:fontFamily="sans-serif" android:gravity="center" android:text="facebook" android:textSize="48sp" />

</RelativeLayout>

**Main\_Activity.java** package com.example.fb; 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.text1); passwordEditText = findViewById(R.id.text2); loginButton = findViewById(R.id.b1); 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 {

}

});

}

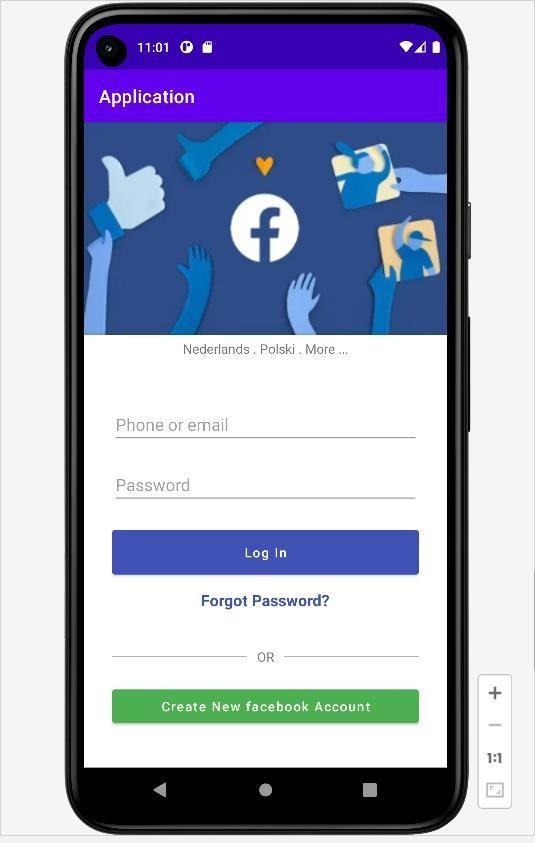
}

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

Toast.LENGTH\_SHORT).show();

}

# Output Screenshot



**Result**

The program was executed and the result was successfully obtained. Thus CO2 was obtained.

# Experiment No.: 8

**Aim**

Develop an application that toggles image using FrameLayout .

# CO2

**Procedure**

### activity\_main.xml

<FrameLayout xmlns:andr[oid="htt](http://schemas.android.com/apk/res/android)p:/[/sc](http://schemas.android.com/apk/res/android)he[mas.android.com/apk/res/android"](http://schemas.android.com/apk/res/android) android:orientation="vertical" android:layout\_width="match\_parent" android:layout\_height="match\_parent">

<ImageView android:id="@+id/first\_image"

android:src = "@drawable/e" android:layout\_width="match\_parent" android:layout\_height="match\_parent" android:scaleType="fitXY" />

<ImageView android:id="@+id/second\_image"

android:background="@color/white" android:layout\_width="match\_parent" android:layout\_height="match\_parent" android:scaleType="fitXY" />

<TextView

android:layout\_width="wrap\_content" android:layout\_height="wrap\_content" android:text="Click the image to switch" android:layout\_gravity="center\_horizontal|bottom" android:padding="5dip"

android:textColor="#ffffff" android:textStyle="bold" android:background="#333333" android:layout\_marginBottom="10dip" />

</FrameLayout>

**MainActivity.java** package com.example.a8prgm; import android.app.Activity; import android.os.Bundle; import android.widget.ImageView; import android.view.View.OnClickListener; import android.view.View; import android.widget.Toast;

import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity { @Override

public void onCreate(Bundle savedInstanceState) { super.onCreate(savedInstanceState); setContentView(R.layout.activity\_main);

final ImageView first\_image = (ImageView)this.findViewById(R.id.first\_image); final ImageView second\_image = (ImageView)this.findViewById(R.id.second\_image); first\_image.setOnClickListener(new OnClickListener(){

public void onClick(View view) {

Toast.makeText(MainActivity.this, "Button clicked.", Toast.LENGTH\_SHORT).show();

second\_image.setVisibility(View.VISIBLE); view.setVisibility(View.GONE);

}

});

second\_image.setOnClickListener(new OnClickListener(){ public void onClick(View view) { first\_image.setVisibility(View.VISIBLE); view.setVisibility(View.GONE);

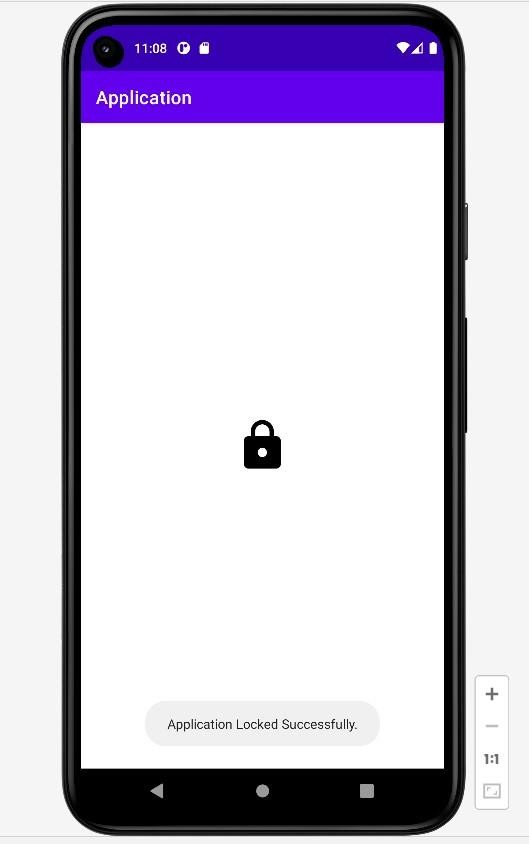
}

});

}

}

**Output Screenshot**



# Result

The program was executed and the result was successfully obtained. Thus CO2 was obtained.

# Experiment No.: 9 Aim

Implement Adapters and perform exception handling

# CO3

**Procedure**

### activity\_ques09.xml

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

<LinearLayout xmlns:android=["http://schemas.android.com/](http://schemas.android.com/apk/res/android)a[pk/res/android"](http://schemas.android.com/apk/res/android) xmlns:app=["http://sche](http://schemas.android.com/apk/res-auto)m[as.android.com/apk/res-auto"](http://schemas.android.com/apk/res-auto) xmlns:t[ools="ht](http://schemas.android.com/tools)tp:/[/schemas.android.com/tool](http://schemas.android.com/tools)s" android:layout\_width="match\_parent" android:layout\_height="match\_parent"

android:gravity="center" android:orientation="vertical"

tools:context=".Ques09Activity">

<TextView android:layout\_width="wrap\_content" android:layout\_height="wrap\_content"

android:text="Exception Activity"/>

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

android:layout\_width="wrap\_content" android:layout\_height="wrap\_content" android:layout\_marginTop="20dp"

android:text="Value of 0 / 0 : "/>

</LinearLayout>

### Ques09Activity.java

package com.example.application;

import androidx.appcompat.app.AppCompatActivity;

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

public class Ques09Activity extends AppCompatActivity { TextView textview;

@Override

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

setContentView(R.layout.*activity\_ques09*); textview= findViewById(R.id.*textview*);

try{

int n1=0, n2=0;

int a= n1/n2;

textview.setText("Value of 0 / 0 : "+a); Toast.*makeText*(getApplicationContext(), "The value is : "+a,

Toast.*LENGTH\_LONG*).show();

}

catch (Exception e){

Toast.*makeText*(getApplicationContext(), "The caught exception is : "+e.getMessage(), Toast.*LENGTH\_LONG*).show();

}

}

}

# Output Screenshot



**Result**

The program was executed and the result was successfully obtained. Thus CO3 was obtained.

# Experiment No.: 10 Aim

Implement Intent to navigate between multiple activities

CO3

# Procedure

## activity\_main.xml

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

<androidx.constraintlayout.widget.ConstraintLayout xmlns:android=["http://schemas.android.com/](http://schemas.android.com/apk/res/android)a[pk/res/android"](http://schemas.android.com/apk/res/android) xmlns:app=["http://sche](http://schemas.android.com/apk/res-auto)m[as.android.com/apk/res-auto"](http://schemas.android.com/apk/res-auto) xmlns:t[ools="ht](http://schemas.android.com/tools)tp:/[/schemas.android.com/tool](http://schemas.android.com/tools)s" android:layout\_width="match\_parent" android:layout\_height="match\_parent" tools:context=".MainActivity" tools:layout\_editor\_absoluteX="- 10dp" tools:layout\_editor\_absoluteY="-91dp">

<TextView android:id="@+id/textView" android:layout\_width="wrap\_content" android:layout\_height="wrap\_content" android:gravity="center" android:text="First Activity" android:textSize="50dp"

app:layout\_constraintBottom\_toBottomOf="parent" app:layout\_constraintEnd\_toEndOf="parent" app:layout\_constraintHorizontal\_bias="0.5" app:layout\_constraintStart\_toStartOf="parent"

app:layout\_constraintTop\_toTopOf="parent" app:layout\_constraintVertical\_bias="0.396"

/>

<Button

android:id="@+id/button1" android:layout\_width="225dp" android:layout\_height="65dp" android:text="Go To Second Activity" app:layout\_constraintBottom\_toBottomOf="parent" app:layout\_constraintEnd\_toEndOf="parent" app:layout\_constraintHorizontal\_bias="0.5" app:layout\_constraintStart\_toStartOf="parent" app:layout\_constraintTop\_toTopOf="parent" app:layout\_constraintVertical\_bias="0.585" />

</androidx.constraintlayout.widget.ConstraintLayout>

## activity\_main2.xml

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

<androidx.constraintlayout.widget.ConstraintLayout xmlns:andr[oid="htt](http://schemas.android.com/apk/res/android)p:/[/sc](http://schemas.android.com/apk/res/android)he[mas.android.com/apk/res/android"](http://schemas.android.com/apk/res/android) xmlns:app=["http://sche](http://schemas.android.com/apk/res-auto)m[as.android.com/apk/res-auto"](http://schemas.android.com/apk/res-auto) xmlns:t[ools="ht](http://schemas.android.com/tools)tp:/[/schemas.android.com/tool](http://schemas.android.com/tools)s" android:layout\_width="match\_parent" android:layout\_height="match\_parent" tools:context=".MainActivity2">

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

android:layout\_width="wrap\_content" android:layout\_height="wrap\_content" android:gravity="center"

android:text="Second Activity" android:textSize="50dp"

app:layout\_constraintBottom\_toBottomOf="parent" app:layout\_constraintEnd\_toEndOf="parent" app:layout\_constraintHorizontal\_bias="0.5" app:layout\_constraintStart\_toStartOf="parent" app:layout\_constraintTop\_toTopOf="parent" app:layout\_constraintVertical\_bias="0.396" />

<Button android:id="@+id/button2" android:layout\_width="225dp" android:layout\_height="65dp" android:text="Go To Third Activity" app:layout\_constraintBottom\_toBottomOf="parent" app:layout\_constraintEnd\_toEndOf="parent" app:layout\_constraintHorizontal\_bias="0.5" app:layout\_constraintStart\_toStartOf="parent" app:layout\_constraintTop\_toTopOf="parent" app:layout\_constraintVertical\_bias="0.585" />

</androidx.constraintlayout.widget.ConstraintLayout>

## activity\_main3.xml

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

<androidx.constraintlayout.widget.ConstraintLayout xmlns:andr[oid="htt](http://schemas.android.com/apk/res/android)p:/[/sc](http://schemas.android.com/apk/res/android)he[mas.android.com/apk/res/android"](http://schemas.android.com/apk/res/android) xmlns:app=["http://sche](http://schemas.android.com/apk/res-auto)m[as.android.com/apk/res-auto"](http://schemas.android.com/apk/res-auto) xmlns:t[ools="ht](http://schemas.android.com/tools)tp:/[/schemas.android.com/tool](http://schemas.android.com/tools)s"

android:layout\_width="match\_parent" android:layout\_height="match\_parent" tools:context=".MainActivity3">

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

android:layout\_width="wrap\_content" android:layout\_height="wrap\_content" android:gravity="center" android:text="Third Activity" android:textSize="50dp"

app:layout\_constraintBottom\_toBottomOf="parent" app:layout\_constraintEnd\_toEndOf="parent" app:layout\_constraintHorizontal\_bias="0.5" app:layout\_constraintStart\_toStartOf="parent" app:layout\_constraintTop\_toTopOf="parent" app:layout\_constraintVertical\_bias="0.396" />

# </androidx.constraintlayout.widget.ConstraintLayout>

**MainActivity.java** package com.example.multiple; import androidx.appcompat.app.AppC ompatActivity;

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

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.button1);

b1.setOnClickListener(new View.OnClickListener() { @Override

public void onClick(View v) {

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

}

});

}

}

**MainActivity2.java**

package com.example.multiple;

import androidx.appcompat.app.AppCompatActivity;

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

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

public class MainActivity2 extends AppCompatActivity { Button b2;

@Override

protected void onCreate(Bundle savedInstanceState) { super.onCreate(savedInstanceState); setContentView(R.layout.activity\_main2); b2=findViewById(R.id.button2);

b2.setOnClickListener(new View.OnClickListener() { @Override

public void onClick(View v) {

Intent i2=new Intent(MainActivity2.this,MainActivity3.class); startActivity(i2);

}

});

}

}

**MainActivity3.java** package com.example.multiple; import androidx.appcompat.app.AppCompatActivity; import android.content.Intent; import android.os.Bundle; import android.view.View; import android.widget.Button;

public class MainActivity3 extends AppCompatActivity {

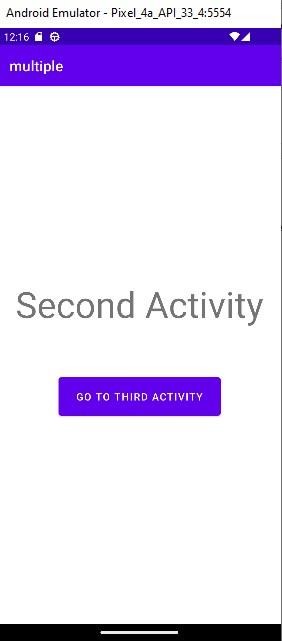
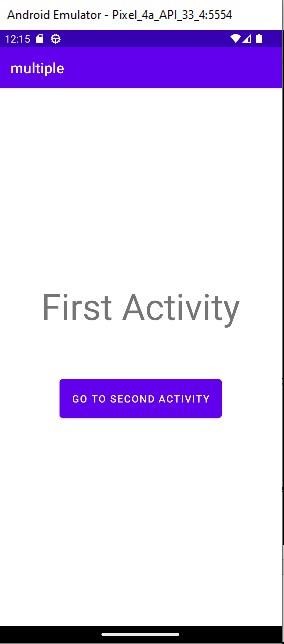
@Override

protected void onCreate(Bundle savedInstanceState) { super.onCreate(savedInstanceState); setContentView(R.layout.activity\_main3);

}

}

# Output Screenshot



**Result**

The program was executed and the result was successfully obtained. Thus CO3 was obtained.

# Experiment No.: 11 Aim

Develop application that works with explicit intents.

# CO3

**Procedure**

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

<LinearLayout xmlns:android=["http://schemas.android.com/](http://schemas.android.com/apk/res/android)a[pk/res/android"](http://schemas.android.com/apk/res/android) xmlns:app=["http://sche](http://schemas.android.com/apk/res-auto)m[as.android.com/apk/res-auto"](http://schemas.android.com/apk/res-auto) xmlns:t[ools="ht](http://schemas.android.com/tools)tp:/[/schemas.android.com/tool](http://schemas.android.com/tools)s" android:layout\_width="match\_parent" android:layout\_height="match\_parent"

android:gravity="center" android:orientation="vertical"

tools:context=".Ques11Activity">

<TextView android:layout\_width="wrap\_content" android:layout\_height="wrap\_content"

android:text="First Activity Page" />

<Button android:id="@+id/goto\_second\_btn" android:layout\_width="wrap\_content" android:layout\_height="wrap\_content" android:text="Go to Second Activity Page"

android:layout\_marginTop="10dp"/>

</LinearLayout>

### Ques11Activity.java

package com.example.application;

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

import android.os.Bundle;

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

public class Ques11Activity extends AppCompatActivity {

Button goto\_second\_btn;

@Override

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

setContentView(R.layout.*activity\_ques11*);

goto\_second\_btn= findViewById(R.id.*goto\_second\_btn*); goto\_second\_btn.setOnClickListener(new View.OnClickListener() {

@Override

public void onClick(View view) {

Intent intent= new Intent(getApplicationContext(), Ques11SecondActivity.class); startActivity(intent);

}

});

}

}

### activity\_ques11.xml

package com.example.application;

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

import android.os.Bundle;

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

public class Ques11Activity extends AppCompatActivity { Button goto\_second\_btn;

@Override

protected void onCreate(Bundle savedInstanceState) { super.onCreate(savedInstanceState); setContentView(R.layout.*activity\_ques11*);

goto\_second\_btn= findViewById(R.id.*goto\_second\_btn*); goto\_second\_btn.setOnClickListener(new View.OnClickListener() {

@Override

public void onClick(View view) {

Intent intent= new Intent(getApplicationContext(), Ques11SecondActivity.class); startActivity(intent);

}

});

}

}

### Ques11SecondActivity.java

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

<LinearLayout xmlns:android=["http://schemas.android.com/](http://schemas.android.com/apk/res/android)a[pk/res/android"](http://schemas.android.com/apk/res/android) xmlns:app=["http://sche](http://schemas.android.com/apk/res-auto)m[as.android.com/apk/res-auto"](http://schemas.android.com/apk/res-auto) xmlns:t[ools="ht](http://schemas.android.com/tools)tp:/[/schemas.android.com/tool](http://schemas.android.com/tools)s" android:layout\_width="match\_parent" android:layout\_height="match\_parent"

android:gravity="center" android:orientation="vertical"

tools:context=".Ques11SecondActivity">

<TextView android:layout\_width="wrap\_content" android:layout\_height="wrap\_content"

android:text="Second Activity Page" />

<Button

android:id="@+id/goto\_third\_btn" android:layout\_width="wrap\_content" android:layout\_height="wrap\_content" android:text="Go to Third Page"

android:layout\_marginTop="10dp"/>

</LinearLayout>

### activity\_ques11\_third.xml

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

<LinearLayout xmlns:android=["http://schemas.android.com/](http://schemas.android.com/apk/res/android)a[pk/res/android"](http://schemas.android.com/apk/res/android) xmlns:app=["http://sche](http://schemas.android.com/apk/res-auto)m[as.android.com/apk/res-auto"](http://schemas.android.com/apk/res-auto) xmlns:t[ools="ht](http://schemas.android.com/tools)tp:/[/schemas.android.com/tool](http://schemas.android.com/tools)s" android:layout\_width="match\_parent"

android:layout\_height="match\_parent" android:gravity="center"

android:orientation="vertical" tools:context=".Ques11ThirdActivity">

<TextView android:layout\_width="wrap\_content" android:layout\_height="wrap\_content"

android:text="Third Activity Page" />

<Button android:id="@+id/goto\_main\_btn" android:layout\_width="wrap\_content" android:layout\_height="wrap\_content" android:text="Go back to Main Activity Page"

android:layout\_marginTop="10dp"/>

</LinearLayout>

### Ques11ThirdActivity.java

package com.example.application;

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

import androidx.appcompat.app.AppCompatActivity;

public class Ques11ThirdActivity extends AppCompatActivity { Button goto\_main\_btn;

@Override

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

setContentView(R.layout.*activity\_ques11\_third*);

goto\_main\_btn= findViewById(R.id.*goto\_main\_btn*); goto\_main\_btn.setOnClickListener(new View.OnClickListener() {

@Override

public void onClick(View view) {

Intent intent= new Intent(getApplicationContext(), Ques11Activity.class); startActivity(intent);

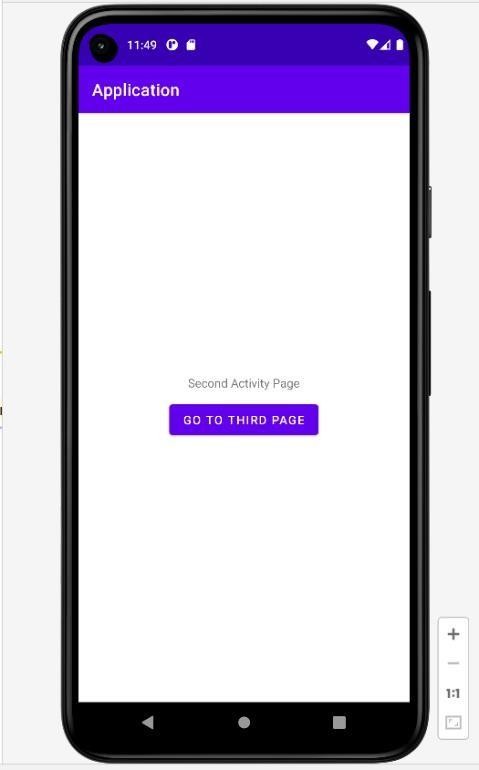
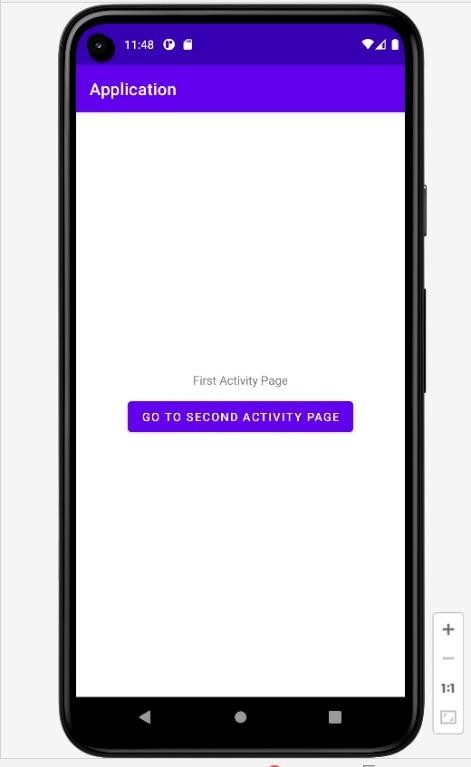
}

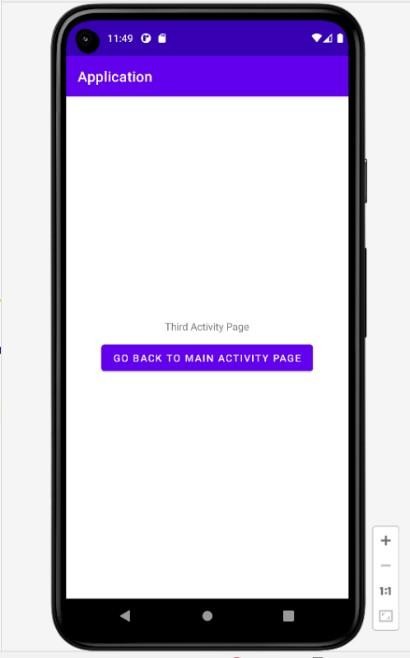
});

}

}

# Output Screenshot





**Result**

The program was executed and the result was successfully obtained. Thus CO3 was obtained.

# Experiment No.: 12 Aim

Implement Options Menu to navigate to activities

# CO3

Develop applications with multiple activities using intents, array adapter, exceptions and options menu.

# Procedure

### activity\_ques12.xml

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

<androidx.constraintlayout.widget.ConstraintLayout xmlns:andr[oid="htt](http://schemas.android.com/apk/res/android)p://s[chemas.android.com/apk/res/android"](http://schemas.android.com/apk/res/android) xmlns:app=["http://sche](http://schemas.android.com/apk/res-auto)m[as.android.com/apk/res-auto"](http://schemas.android.com/apk/res-auto) xmlns:t[ools="ht](http://schemas.android.com/tools)tp:/[/schemas.android.com/tool](http://schemas.android.com/tools)s" android:layout\_width="match\_parent" android:layout\_height="match\_parent"

tools:context=".Ques12Activity">

</androidx.constraintlayout.widget.ConstraintLayout>

### MainActivity.java

package com.example.application;

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

import android.content.Intent; import android.os.Bundle; import android.view.Menu; import android.view.MenuItem;

public class Ques12Activity extends AppCompatActivity { @Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState); setContentView(R.layout.*activity\_ques12*);

}

@Override

public boolean onOptionsItemSelected(@NonNull MenuItem item)

{ int menu\_id= item.getItemId(); switch (menu\_id){ case R.id.*second\_activity*:{

Intent intent= new Intent(getApplicationContext(), SecondActivity.class); startActivity(intent);

break;

}

case R.id.*third\_activity*:{

Intent intent= new Intent(getApplicationContext(), ThirdActivity.class); startActivity(intent);

break;

}

default:{

Intent intent= new Intent(getApplicationContext(), Ques12Activity.class);

startActivity(intent);

break;

}

}

return true;

}

@Override public boolean onCreateOptionsMenu(Menu menu) { getMenuInflater().inflate(R.menu.*menu\_items*,menu); return super.onCreateOptionsMenu(menu);

}

}

### menu\_items.xml

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

<menu xmlns:android="[http://schemas.android.com/apk/res/android"](http://schemas.android.com/apk/res/android) xmlns:app=["http://sche](http://schemas.android.com/apk/res-auto)m[as.android.com/apk/res-auto"](http://schemas.android.com/apk/res-auto)>

<group>

<item

android:id="@+id/second\_activity" android:title="Second Activity" app:showAsAction="never"

app:iconTint="@color/white"/>

<item

android:id="@+id/third\_activity" android:title="Third Activity" app:showAsAction="never" app:iconTint="@color/white"/>

</group>

</menu>

# Output Screenshot



**Result**

The program was executed and the result was successfully obtained. Thus CO3 was obtained.

# Experiment No.: 13 Aim

Develop an application that uses ArrayAdapter with ListView.

# CO3

Develop applications with multiple activities using intents, array adapter, exceptions and options menu.

# Procedure

### activity\_ques13.xml

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

<LinearLayout xmlns:andr[oid="htt](http://schemas.android.com/apk/res/android)p:/[/sc](http://schemas.android.com/apk/res/android)he[mas.android.com/apk/res/android"](http://schemas.android.com/apk/res/android) xmlns:app=["http://sche](http://schemas.android.com/apk/res-auto)m[as.android.com/apk/res-auto"](http://schemas.android.com/apk/res-auto) xmlns:t[ools="ht](http://schemas.android.com/tools)tp:/[/schemas.android.com/tool](http://schemas.android.com/tools)s" android:layout\_width="match\_parent" android:layout\_height="match\_parent" tools:context=".MainActivity">

<ListView android:id="@+id/listview"

android:layout\_width="match\_parent" android:layout\_height="match\_parent" />

</LinearLayout>

### Ques13Activity.java

package com.example.application;

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

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

public class Ques13Activity extends AppCompatActivity { @Override

protected void onCreate(Bundle savedInstanceState) { super.onCreate(savedInstanceState); setContentView(R.layout.*activity\_ques13*); ListView listview;

String[] person\_qualify = {"Front-End Developer", "Data Analyst", "Software Tester", "Software Developer", "Programming Analyst", "Web Developer", "Mobile App Developer",

"Business Analyst", "Database Analyst"}; listview = findViewById(R.id.*listview*);

listview.setAdapter(new ArrayAdapter(getApplicationContext(),android.R.layout.*simple\_expandable\_list\_item\_1*, person\_qualify));

listview.setOnItemClickListener((parent, view, position, id) -> { Toast.*makeText*(this, "The qualification selected is - " + person\_qualify[position],

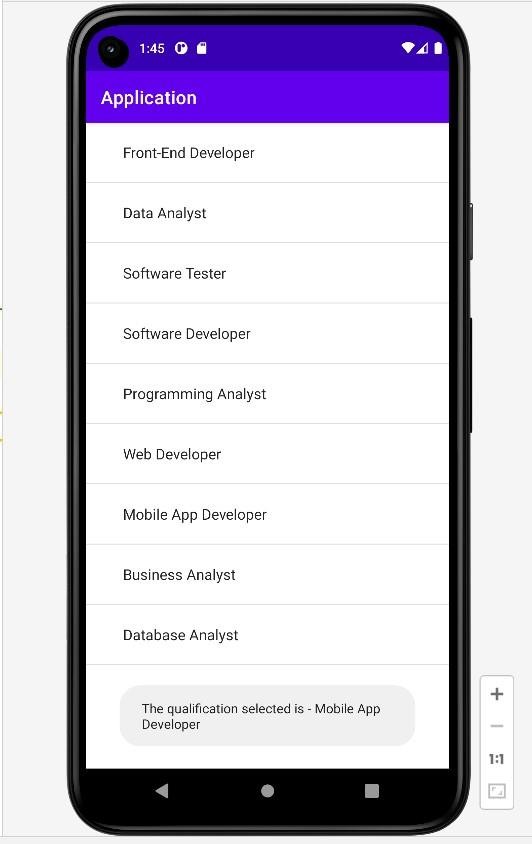
Toast.*LENGTH\_SHORT*).show();

});

}

}

# Output Screenshot



**Result**

The program was executed and the result was successfully obtained. Thus, CO3 was obtained.

# Experiment No.: 14 Aim

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

# CO4

Implement activities with dialogs, spinner, fragments and navigation drawer by applying themes

# Procedure

### activity\_ques14.xml

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

<LinearLayout xmlns:andr[oid="htt](http://schemas.android.com/apk/res/android)p:/[/schemas.android.com/](http://schemas.android.com/apk/res/android)a[pk/res/androi](http://schemas.android.com/apk/res/android)d" xmlns:app=["http://sche](http://schemas.android.com/apk/res-auto)m[as.android.com/apk/res-auto"](http://schemas.android.com/apk/res-auto) xmlns:t[ools="ht](http://schemas.android.com/tools)tp:/[/schemas.android.com/tool](http://schemas.android.com/tools)s" android:layout\_width="match\_parent" android:layout\_height="match\_parent"

android:gravity="center" android:orientation="vertical"

tools:context=".Ques14Activity">

<TextView android:layout\_width="wrap\_content" android:layout\_height="wrap\_content" android:text="Mobile Quick-Access Options" android:layout\_marginTop="30dp" android:textColor="@color/black" android:textSize="20sp"

android:textStyle="bold"/>

<GridLayout android:layout\_width="wrap\_content" android:layout\_height="wrap\_content" android:layout\_marginTop="30dp" android:columnCount="3" android:orientation="horizontal"

android:rowCount="3">

<ImageButton android:id="@+id/wifi\_btn"

android:layout\_width="80dp" android:layout\_height="80dp" android:padding="13dp" android:src="@drawable/ic\_wifi"

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

<ImageButton android:id="@+id/blutooth\_btn" android:layout\_width="80dp" android:layout\_height="80dp" android:layout\_marginStart="10dp" android:padding="13dp" android:src="@drawable/ic\_bluetooth"

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

<ImageButton android:id="@+id/volume\_btn" android:layout\_width="80dp" android:layout\_height="80dp" android:layout\_marginStart="10dp" android:padding="13dp" android:src="@drawable/ic\_volume"

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

</GridLayout>

</LinearLayout>

### Ques14Activity.java

package com.example.application;

import androidx.appcompat.app.AlertDialog;

import androidx.appcompat.app.AppCompatActivity;

import android.content.DialogInterface; import android.os.Bundle; import android.view.View; import android.widget.ImageButton; import android.widget.Toast;

public class Ques14Activity extends AppCompatActivity { ImageButton wifi\_btn, blutooth\_btn, volume\_btn;

@Override

protected void onCreate(Bundle savedInstanceState) { super.onCreate(savedInstanceState); setContentView(R.layout.*activity\_ques14*);

wifi\_btn= findViewById(R.id.*wifi\_btn*); blutooth\_btn= findViewById(R.id.*blutooth\_btn*); volume\_btn= findViewById(R.id.*volume\_btn*);

wifi\_btn.setOnClickListener(new View.OnClickListener() { @Override public void

onClick(View view) {

myAlertBox("Wifi Button");

}

});

blutooth\_btn.setOnClickListener(new View.OnClickListener() { @Override public void

onClick(View view) {

myAlertBox("Bluetooth Button");

}

});

volume\_btn.setOnClickListener(new View.OnClickListener() { @Override public void

onClick(View view) {

myAlertBox("Volume Button");

}

});

}

public void myAlertBox(String buttonname){

AlertDialog.Builder builder = new AlertDialog.Builder(Ques14Activity.this); builder.setMessage("Are you sure about the selection ?");

builder.setTitle("Alert !"); builder.setCancelable(false); builder.setPositiveButton("Yes", new DialogInterface.OnClickListener() {

@Override

public void onClick(DialogInterface dialogInterface, int i) { Toast.*makeText*(getApplicationContext(), buttonname+" is successfully selected.",

Toast.*LENGTH\_SHORT*).show();

}

});

builder.setNegativeButton("No", (DialogInterface.OnClickListener) (dialog, which) -> { dialog.cancel();

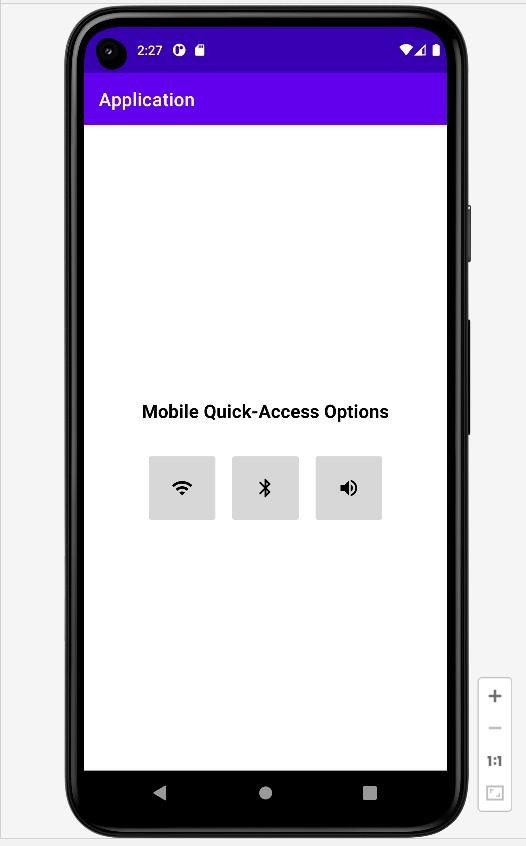
});

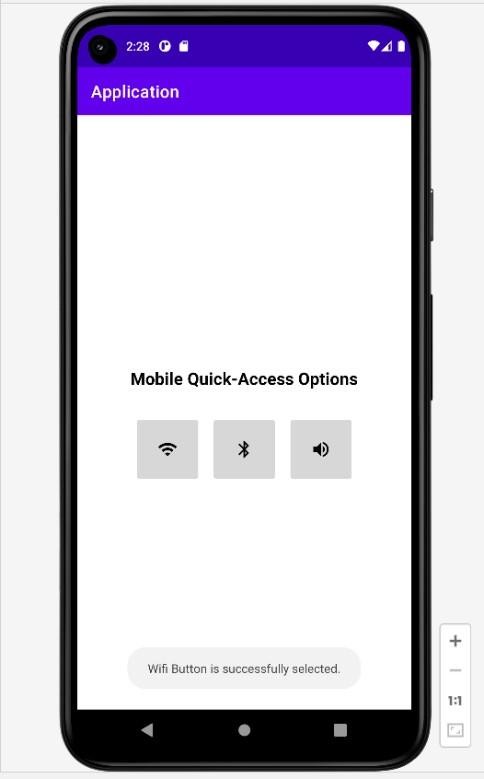
AlertDialog alertDialog = builder.create(); alertDialog.show();

}

}

# Output Screenshot





**Result**

The program was executed and the result was successfully obtained. Thus, CO4 was obtained.

# Experiment No.: 15

**Aim**

Develop an application that implements Spinner component and perform event handling

# CO4

Implement activities with dialogs, spinner, fragments and navigation drawer by applying themes

# Procedure

### activity\_main.xml

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

<LinearLayout xmlns:android=["http://schemas.android.com/](http://schemas.android.com/apk/res/android)a[pk/res/android"](http://schemas.android.com/apk/res/android) xmlns:app=["http://sche](http://schemas.android.com/apk/res-auto)m[as.android.com/apk/res-auto"](http://schemas.android.com/apk/res-auto) xmlns:t[ools="ht](http://schemas.android.com/tools)tp:/[/schemas.android.com/tool](http://schemas.android.com/tools)s" android:layout\_width="match\_parent" android:layout\_height="match\_parent"

android:gravity="center" android:orientation="vertical"

tools:context=".Ques15Activity">

<TextView android:layout\_width="wrap\_content" android:layout\_height="wrap\_content" android:text="Spinner &amp; Event Handling"

android:textStyle="bold" android:textSize="20sp"

android:textColor="@color/black"/>

<TextView android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content" android:text="Choose your desired designation" android:layout\_marginTop="30dp" />

<Spinner android:id="@+id/spinner"

android:layout\_width="wrap\_content" android:layout\_height="wrap\_content"

android:layout\_marginTop="10dp"/>

</LinearLayout>

### MainActivity.java

package com.example.application;

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 Ques15Activity extends AppCompatActivity { Spinner spinner;

String[] designations = {"Front-End Developer", "Data Analyst", "Software Tester",

"Software Developer", "Programming Analyst", "Web Developer", "Mobile App Developer", "Business Analyst", "Database Analyst"};

@Override

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

setContentView(R.layout.*activity\_ques15*);

spinner= findViewById(R.id.*spinner*);

ArrayAdapter adapter = new ArrayAdapter(this, android.R.layout.*simple\_spinner\_item*, designations);

adapter.setDropDownViewResource(android.R.layout.*simple\_spinner\_dropdown\_item*); spinner.setAdapter(adapter);

spinner.setOnItemSelectedListener(new AdapterView.OnItemSelectedListener() { @Override

public void onItemSelected(AdapterView<?> adapterView, View view, int i, long l) { Toast.*makeText*(getApplicationContext(), "Selected designation is : "+designations[i], Toast.*LENGTH\_LONG*).show();

}

@Override

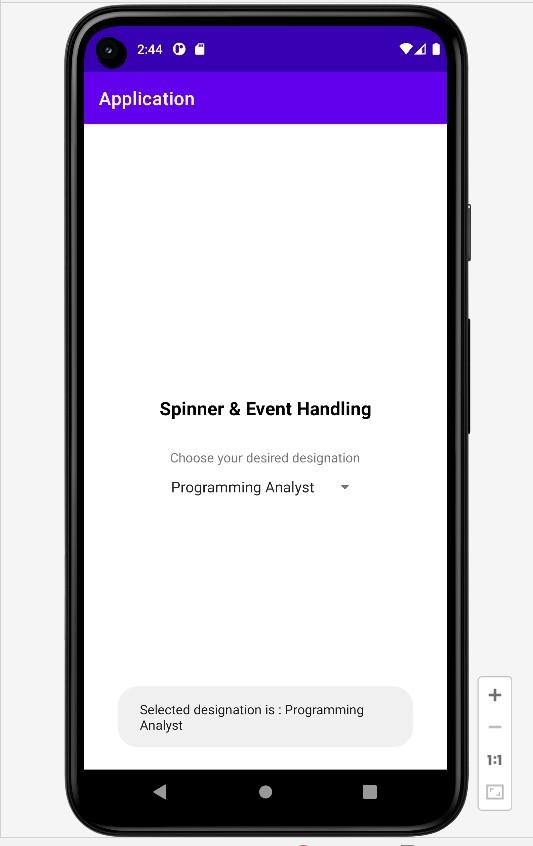
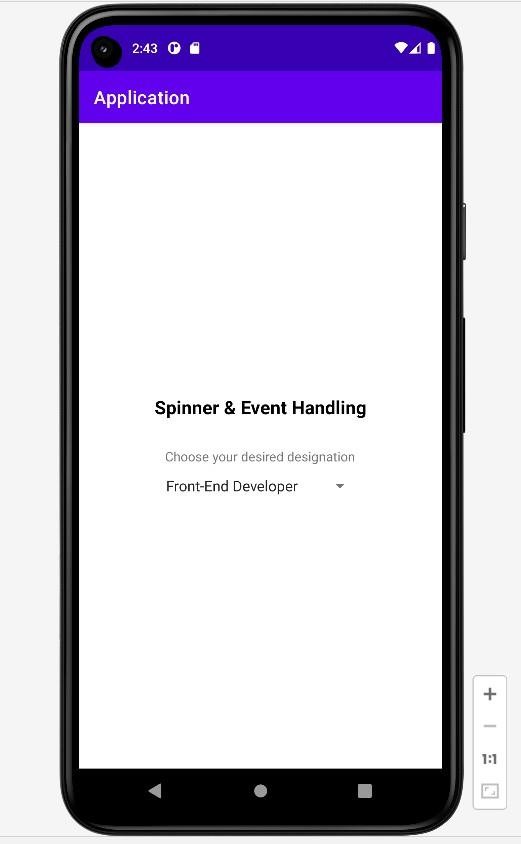
public void onNothingSelected(AdapterView<?> adapterView) { }

});

}

}

# Output Screenshot



**Result**

The program was executed and the result was successfully obtained. Thus CO4 was obtained.

# Experiment No.: 16 Aim

Create database using SQLite and perform INSERT and SELECT

# CO5

Develop mobile applications using SQLite.

# Procedure

### activity\_ques16.xml

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

<LinearLayout xmlns:android=["http://schemas.android.com/](http://schemas.android.com/apk/res/android)a[pk/res/android"](http://schemas.android.com/apk/res/android) xmlns:app=["http://sche](http://schemas.android.com/apk/res-auto)m[as.android.com/apk/res-auto"](http://schemas.android.com/apk/res-auto) xmlns:t[ools="ht](http://schemas.android.com/tools)tp:/[/schemas.android.com/tool](http://schemas.android.com/tools)s" android:layout\_width="match\_parent" android:layout\_height="match\_parent" android:orientation="vertical"

tools:context=".Ques15Activity">

<TextView android:layout\_width="wrap\_content" android:layout\_height="wrap\_content"

android:text="Insert Table" android:layout\_gravity="center" android:layout\_marginTop="50dp" android:textSize="25sp" android:textStyle="bold" android:textColor="@color/black"/>

<EditText android:id="@+id/rollno"

android:layout\_width="match\_parent" android:layout\_height="wrap\_content" android:hint="Enter your roll no" android:layout\_marginHorizontal="20dp"

android:layout\_marginTop="30dp"/>

<EditText

android:id="@+id/name" android:layout\_width="match\_parent"

android:layout\_height="wrap\_content" android:hint="Enter your name" android:layout\_marginHorizontal="20dp"

android:layout\_marginTop="10dp"/>

<EditText android:id="@+id/email" android:layout\_width="match\_parent" android:layout\_height="wrap\_content" android:hint="Enter your email id" android:layout\_marginHorizontal="20dp"

android:layout\_marginTop="10dp"/>

<Button android:id="@+id/insert\_btn" android:layout\_width="wrap\_content" android:layout\_height="wrap\_content" android:text="Insert" android:layout\_marginTop="30dp"

android:layout\_gravity="center"/>

<Button android:id="@+id/select\_btn" android:layout\_width="wrap\_content" android:layout\_height="wrap\_content" android:text="View" android:layout\_marginTop="30dp"

android:layout\_gravity="center"/>

</LinearLayout>

### MainActivity.java

package com.example.application;

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 Ques16Activity extends AppCompatActivity { EditText rollno, name, email; Button insert\_btn, select\_btn;

DBHelper db;

@Override

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

setContentView(R.layout.*activity\_ques16*);

rollno= findViewById(R.id.*rollno*); name= findViewById(R.id.*name*); email= findViewById(R.id.*email*); insert\_btn= findViewById(R.id.*insert\_btn*);

select\_btn= findViewById(R.id.*select\_btn*);

db= new DBHelper(getApplicationContext());

insert\_btn.setOnClickListener(new View.OnClickListener() { @Override

public void onClick(View view) {

int rollno\_num= Integer.*parseInt*(rollno.getText().toString()); String name\_txt= name.getText().toString();

String email\_txt= email.getText().toString();

boolean insert\_result= db.insertToDB(rollno\_num, name\_txt, email\_txt); if(insert\_result){

Toast.*makeText*(getApplicationContext(), "Inserted successfully.", Toast.*LENGTH\_LONG*).show();

}

else{

Toast.*makeText*(getApplicationContext(), "Insertion failed !!",

Toast.*LENGTH\_LONG*).show();

}

}

});

select\_btn.setOnClickListener(new View.OnClickListener() { @Override public void

onClick(View view) { Cursor res = db.selectFromDB(); if (res.getCount() == 0) {

Toast.*makeText*(getApplicationContext(), "No entry Exist", Toast.*LENGTH\_LONG*).show();

} else {

StringBuffer buffer = new StringBuffer();

while (res.moveToNext()) { buffer.append("id : "

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

" + res.getString(1) + "\n"); buffer.append("email : " + res.getString(2) + "\n"); }

AlertDialog.Builder builder = new AlertDialog.Builder(Ques16Activity.this); builder.setCancelable(true); builder.setTitle("User Entries"); builder.setMessage(buffer.toString());

builder.show();

}

}

});

}

}

### DBHelper.java

package com.example.application;

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

import android.database.sqlite.SQLiteOpenHelper; import androidx.annotation.Nullable;

public class DBHelper extends SQLiteOpenHelper {

public DBHelper(@Nullable Context context) { super(context, "MyDB", null, 1); } @Override

public void onCreate(SQLiteDatabase sqLiteDatabase) { sqLiteDatabase.execSQL("CREATE TABLE userdetails (rollno INTEGER PRIMARY

KEY, name TEXT, email TEXT)");

}

@Override

public void onUpgrade(SQLiteDatabase sqLiteDatabase, int i, int i1) { sqLiteDatabase.execSQL("DROP TABLE IF EXISTS userdetails");

}

public boolean insertToDB(int rollno, String name, String email){ SQLiteDatabase db= this.getWritableDatabase();

ContentValues values= new ContentValues(); values.put("rollno",rollno);

values.put("name",name); values.put("email",email);

long result= db.insert("userdetails",null,values); if(result>=0){ return true;

}

else {

return false;

}

}

public Cursor selectFromDB() {

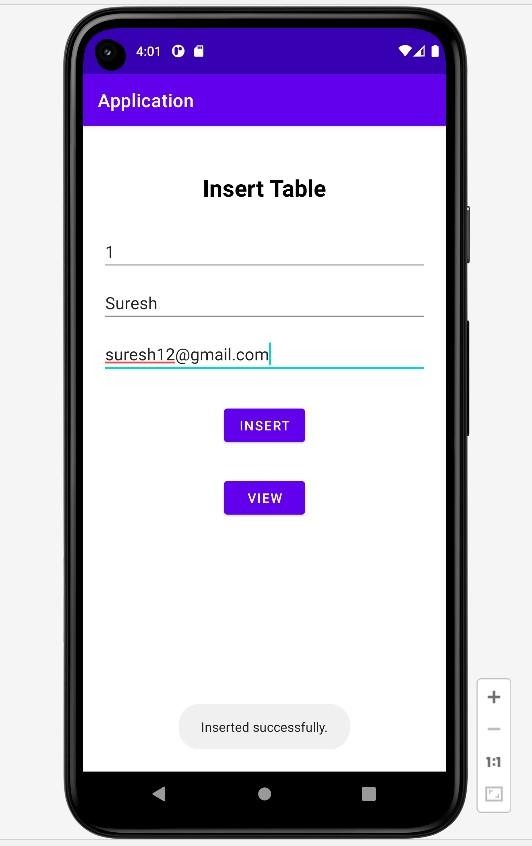
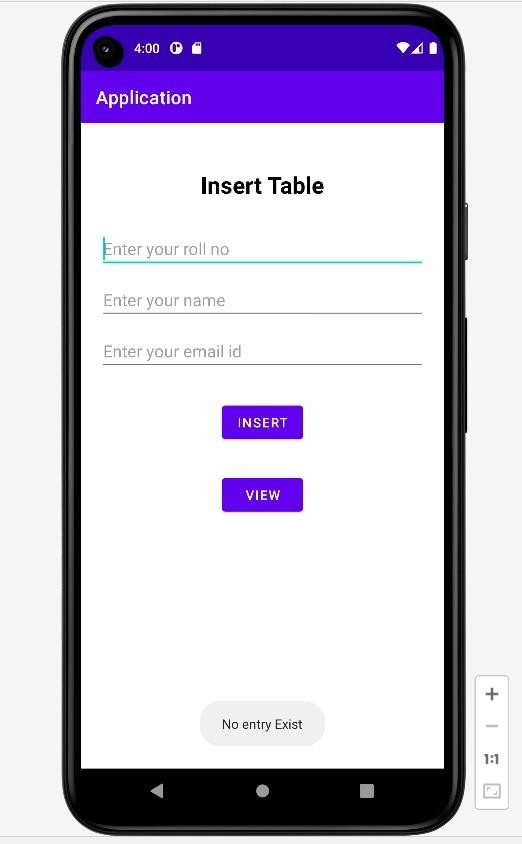
SQLiteDatabase DB = this.getWritableDatabase();

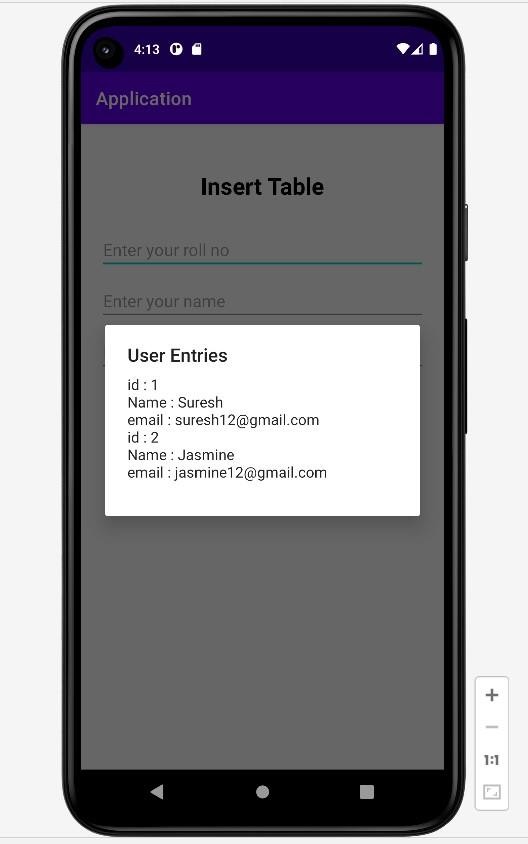
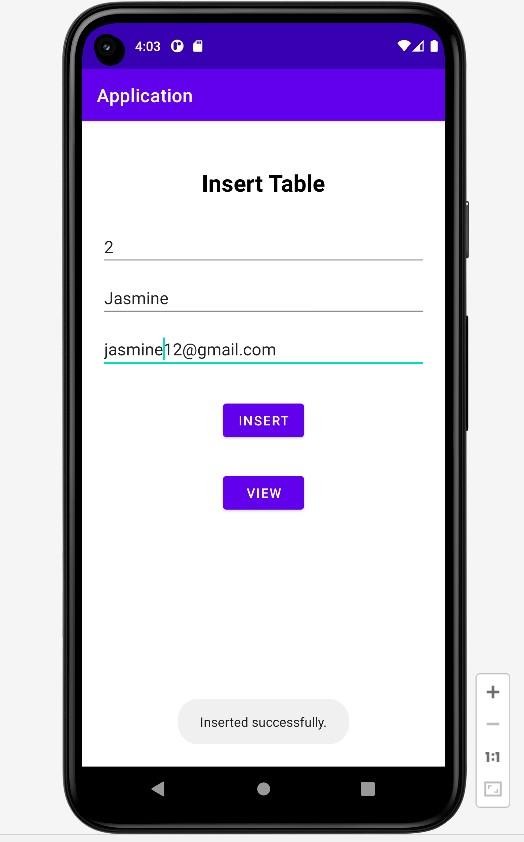
Cursor cursor = DB.rawQuery("Select \* from userdetails", null); return cursor;

}

}

# Output Screenshot





**Result**

The program was executed and the result was successfully obtained. Thus CO5 was obtained.

# Experiment No.: 17 Aim

Perform UPDATE and DELETE on SQLite database

# CO5

Develop mobile applications using SQLite.

# Procedure

### activity\_main.xml

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

<LinearLayout xmlns:andr[oid="htt](http://schemas.android.com/apk/res/android)p:/[/sc](http://schemas.android.com/apk/res/android)he[mas.android.com/apk/res/android"](http://schemas.android.com/apk/res/android) xmlns:app=["http://sche](http://schemas.android.com/apk/res-auto)m[as.android.com/apk/res-auto"](http://schemas.android.com/apk/res-auto) xmlns:t[ools="ht](http://schemas.android.com/tools)tp:/[/schemas.android.com/tool](http://schemas.android.com/tools)s" android:layout\_width="match\_parent" android:layout\_height="match\_parent" android:orientation="vertical"

tools:context=".Ques15Activity">

<TextView android:layout\_width="wrap\_content" android:layout\_height="wrap\_content"

android:text="Insert Table" android:layout\_gravity="center" android:layout\_marginTop="50dp" android:textSize="25sp" android:textStyle="bold" android:textColor="@color/black"/>

<EditText android:id="@+id/rollno"

android:layout\_width="match\_parent" android:layout\_height="wrap\_content" android:hint="Enter your roll no" android:layout\_marginHorizontal="20dp"

android:layout\_marginTop="30dp"/>

<EditText android:id="@+id/name"

android:layout\_width="match\_parent" android:layout\_height="wrap\_content" android:hint="Enter your name" android:layout\_marginHorizontal="20dp"

android:layout\_marginTop="10dp"/>

<EditText android:id="@+id/email" android:layout\_width="match\_parent" android:layout\_height="wrap\_content" android:hint="Enter your email id" android:layout\_marginHorizontal="20dp"

android:layout\_marginTop="10dp"/>

<Button android:id="@+id/update\_btn" android:layout\_width="wrap\_content" android:layout\_height="wrap\_content" android:text="Update Record" android:layout\_marginTop="30dp"

android:layout\_gravity="center"/>

<Button android:id="@+id/delete\_btn" android:layout\_width="wrap\_content" android:layout\_height="wrap\_content" android:text="Delete Record" android:layout\_marginTop="30dp"

android:layout\_gravity="center"/>

<Button android:id="@+id/select\_btn" android:layout\_width="wrap\_content" android:layout\_height="wrap\_content" android:text="View Record" android:layout\_marginTop="30dp"

android:layout\_gravity="center"/>

</LinearLayout>

### MainActivity.java

package com.example.application;

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 Ques17Activity extends AppCompatActivity { EditText rollno, name, email;

Button update\_btn, delete\_btn, select\_btn;

DBHelper db;

@Override

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

setContentView(R.layout.*activity\_ques17*);

rollno= findViewById(R.id.*rollno*); name= findViewById(R.id.*name*); email= findViewById(R.id.*email*); update\_btn=

findViewById(R.id.*update\_btn*); delete\_btn= findViewById(R.id.*delete\_btn*); select\_btn= findViewById(R.id.*select\_btn*);

db= new DBHelper(getApplicationContext());

update\_btn.setOnClickListener(new View.OnClickListener() { @Override

public void onClick(View view) {

int rollno\_num= Integer.*parseInt*(rollno.getText().toString()); String name\_txt= name.getText().toString();

String email\_txt= email.getText().toString();

DBHelper db= new DBHelper(getApplicationContext());

boolean update\_result= db.updateToDB(rollno\_num, name\_txt, email\_txt); if(update\_result){

Toast.*makeText*(getApplicationContext(), "Updated successfully.", Toast.*LENGTH\_LONG*).show();

}

else{

Toast.*makeText*(getApplicationContext(), "Updation failed !!", Toast.*LENGTH\_LONG*).show();

}

}

});

delete\_btn.setOnClickListener(new View.OnClickListener() { @Override

public void onClick(View view) { int rollno\_num= Integer.*parseInt*(rollno.getText().toString());

DBHelper db= new DBHelper(getApplicationContext());

boolean update\_result= db.deleteFromDB(rollno\_num); if(update\_result){

Toast.*makeText*(getApplicationContext(), "Deleted successfully.", Toast.*LENGTH\_LONG*).show();

}

else{

Toast.*makeText*(getApplicationContext(), "Deletion failed !!",

Toast.*LENGTH\_LONG*).show();

}

}

});

select\_btn.setOnClickListener(new View.OnClickListener() { @Override public void

onClick(View view) { Cursor res = db.selectFromDB(); if (res.getCount() == 0) {

Toast.*makeText*(getApplicationContext(), "No entry Exist", Toast.*LENGTH\_LONG*).show();

} else {

StringBuffer buffer = new StringBuffer(); while (res.moveToNext()) {

buffer.append("id : " + res.getString(0) + "\n"); buffer.append("Name : " + res.getString(1) + "\n"); buffer.append("email : " + res.getString(2) + "\n");

}

AlertDialog.Builder builder = new AlertDialog.Builder(Ques17Activity.this); builder.setCancelable(true); builder.setTitle("User Entries"); builder.setMessage(buffer.toString());

builder.show();

}

}

});

} }

### DBHelper.java

package com.example.application;

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

import android.database.sqlite.SQLiteOpenHelper; import androidx.annotation.Nullable;

public class DBHelper extends SQLiteOpenHelper {

public DBHelper(@Nullable Context context) { super(context, "MyDB", null, 1); } @Override

public void onCreate(SQLiteDatabase sqLiteDatabase) { sqLiteDatabase.execSQL("CREATE TABLE userdetails (rollno INTEGER PRIMARY

KEY, name TEXT, email TEXT)");

}

@Override public void onUpgrade(SQLiteDatabase sqLiteDatabase, int i, int i1) { sqLiteDatabase.execSQL("DROP TABLE IF EXISTS userdetails");

}

public boolean insertToDB(int rollno, String name, String email){ SQLiteDatabase db= this.getWritableDatabase();

ContentValues values= new ContentValues(); values.put("rollno",rollno);

values.put("name",name); values.put("email",email);

long result= db.insert("userdetails",null,values); if(result>=0){ return true;

}

else {

return false;

}

}

public Cursor selectFromDB() {

SQLiteDatabase DB = this.getWritableDatabase();

Cursor cursor = DB.rawQuery("Select \* from userdetails", null); return cursor;

}

public boolean updateToDB(int rollno, String name, String email){ SQLiteDatabase db= this.getWritableDatabase();

ContentValues values= new ContentValues(); values.put("name",name); values.put("email",email);

Cursor check\_user= db.rawQuery("SELECT \* from userdetails WHERE rollno=?",new String[]{String.*valueOf*(rollno)});

if(check\_user.getCount() > 0){

long update\_user\_query= db.update("userdetails",values,"rollno=?",new String[]{String.*valueOf*(rollno)});

if(update\_user\_query >= 0){ return true;

}

else{

}

else{

return false;

}

return false;

}

}

public boolean deleteFromDB(int rollno){ SQLiteDatabase db= this.getWritableDatabase();

Cursor check\_user= db.rawQuery("SELECT \* FROM userdetails WHERE rollno=?",new String[]{String.*valueOf*(rollno)});

if(check\_user.getCount() > 0){

long delete\_user\_query= db.delete("userdetails","rollno=?", new String[]{String.*valueOf*(rollno)});

if(delete\_user\_query >= 0){ return true;

else{

}

return false;

}

else{

}

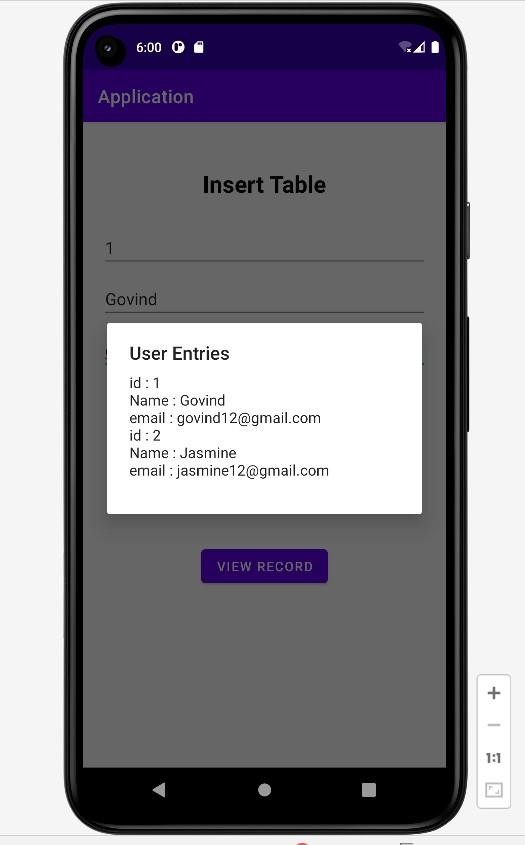
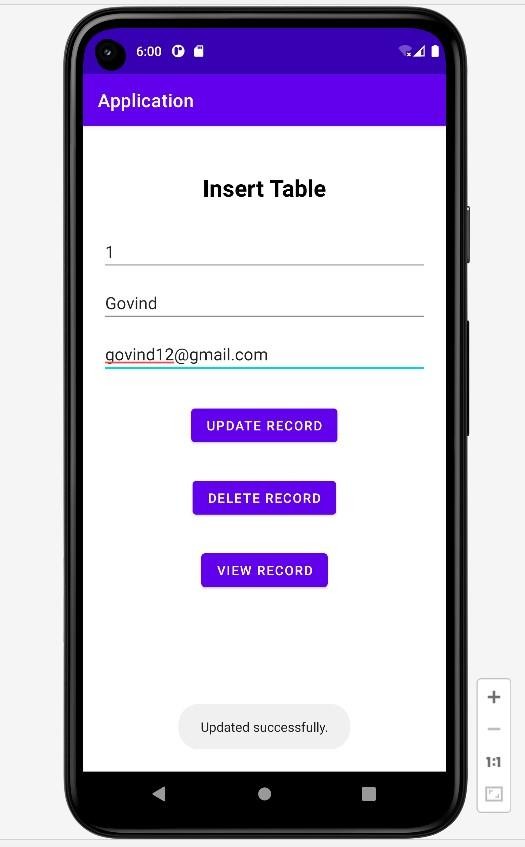
}

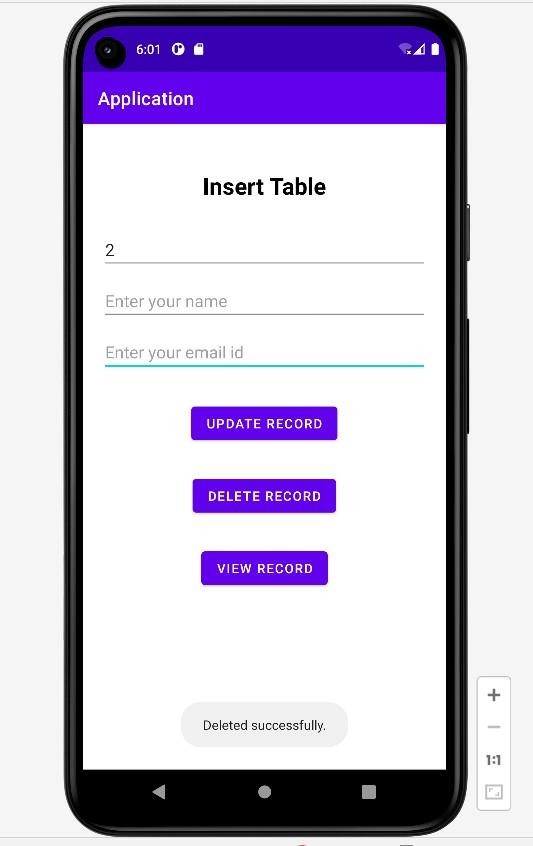
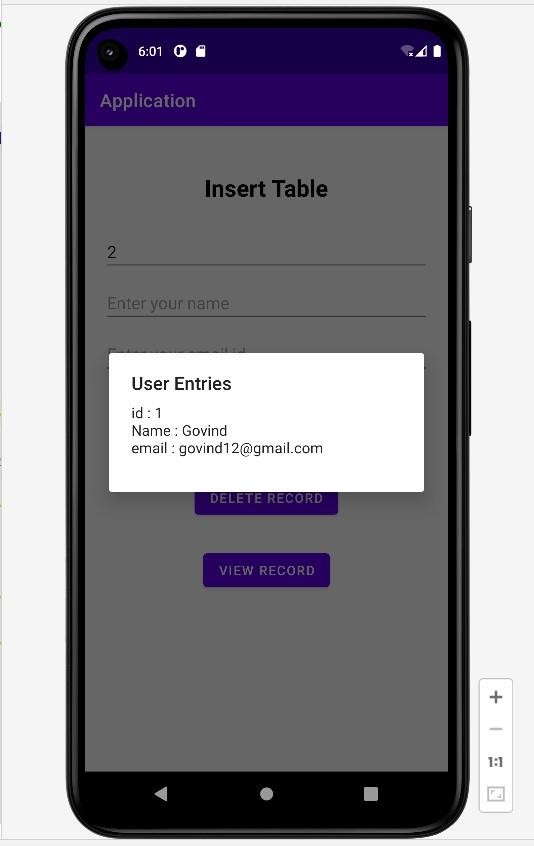
}

}

return false;

# Output Screenshot



# Result

The program was executed and the result was successfully obtained. Thus CO5 was obtained.