20MCA243 - MOBILE APPLICATION DEVELOPMENT LAB

Lab Report Submitted By

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Reg. No.: AJC21MCA-2001

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 bonafide work of **ABHIJITH S BABU (AJC21MCA-2001)** 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 ComputerApplications 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-skilledprofessionals with ethical values.

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

COURSE OUTCOME

CO	Outcome	Target
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 usingEmulator	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 applyingthemes	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

CONTENT

15	Develop an application that implements Spinner component and perform event handling	25/10/2022	CO4	**63**
16	Develop application using Fragments	01/11/2022	CO4	**66**
17	Implement Navigation drawer	01/11/2022	CO4	**73**
18	Create database using SQLite and perform INSERT and SELECT	08/11/2022	CO5	**77**
19	Perform UPDATE and DELETE on SQLite database	08/11/2022	CO5	**85**

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: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"
    android:background="#CFB1FA"
    tools:context=".MainActivity">
    <TextView
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:id="@+id/signin"
        android:text="Sign in"
        android:textColor="@color/white"
        android:textSize="35dp"
        android:textStyle="bold"
        android:layout_marginLeft="100dp"
        android:layout_margin="70dp"
        android:gravity="center"/>
```

```
  <EditText
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
      android:id="@+id/username"
      android:layout_below="@id/signin"
      android:layout_marginLeft="100dp"
      android:background="#80ffffff"
      android:hint="user name"
      android:textColorHint="@color/black"
      android:textColor="@color/black"
      android:layout_margin="10dp"
      android:padding="20dp"
      android:drawableLeft="@drawable/ic_baseline_emoji_emotions_24"
      android:drawablePadding="20dp"/>
  <EditText
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
      android:id="@+id/password"
      android:layout_below="@id/username"
      android:background="#80ffffff"
      android:hint="password"
      android:layout_marginLeft="100dp"
      android:textColorHint="@color/black"
      android:textColor="@color/black"
 android:layout_margin="10dp"
      android:padding="20dp"
      android:drawableLeft="@drawable/ic_baseline_admin_panel_settings_24"
      android:drawablePadding="20dp"/>
  <android.support.v7.widget.AppCompatButton
```

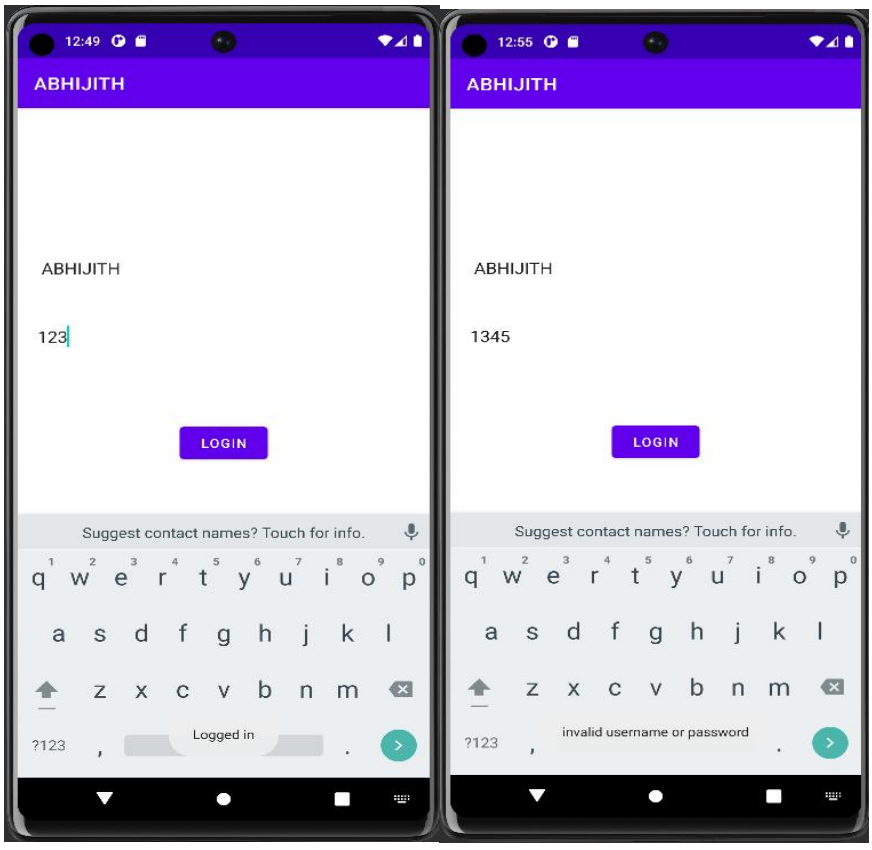
```
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:id="@+id/submit"
        android:layout_below="@+id/password"
        android:text="LOGIN"
        android:backgroundTint="@color/white"
        android:layout_centerHorizontal="true"
        android:layout_marginLeft="150dp"/>
</LinearLayout>
```

MainActivity.java

```
package com.example.login;
import android.support.v7.app.AppCompatActivity;
import android.os.Bundle;
import android.util.Log;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;
import java.util.logging.Logger;
public class MainActivity extends AppCompatActivity
 {@Override
   protected void onCreate(Bundle savedInstanceState)
super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        EditText et1 = (EditText) findViewById(R.id.username);
        EditText et2 = (EditText) findViewById(R.id.password);
        Button btn = (Button) findViewById(R.id.submit);
        btn.setOnClickListener(view -> {
            String uname =et1.getText().toString();
             String pswd =et2.getText().toString();
```

```
        if(uname.equals("ajcemca") && pswd.equals("ajcemca"))
        {
            Toast.makeText(this,"Logged in",Toast.LENGTH_SHORT).show();
        }
        else
        {
            Toast.makeText(this,"invalid username or
password",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 componentsand application structure using Emulator

Procedure

Activity_main.xml

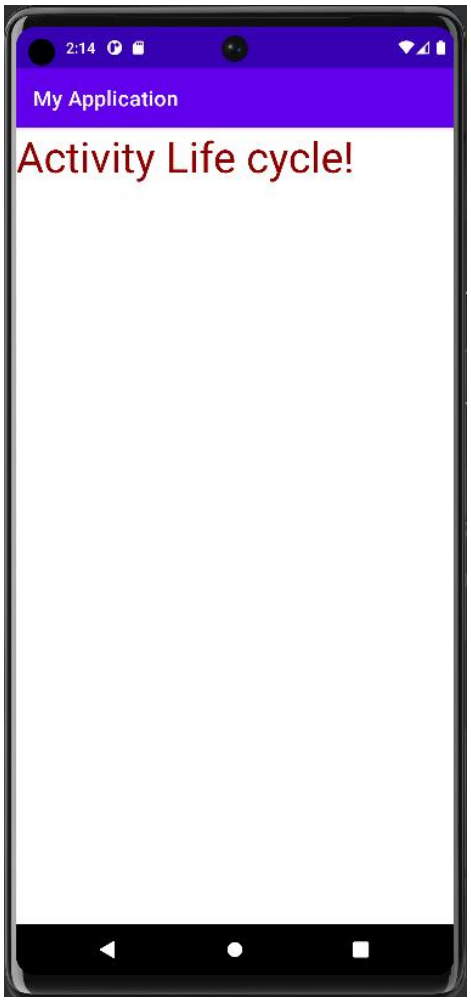
```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity">
    <TextView
        android:id="@+id/t1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Activity Life cycle!"
        android:textColor="#910000"
        android:textSize="40dp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />
</LinearLayout>
```

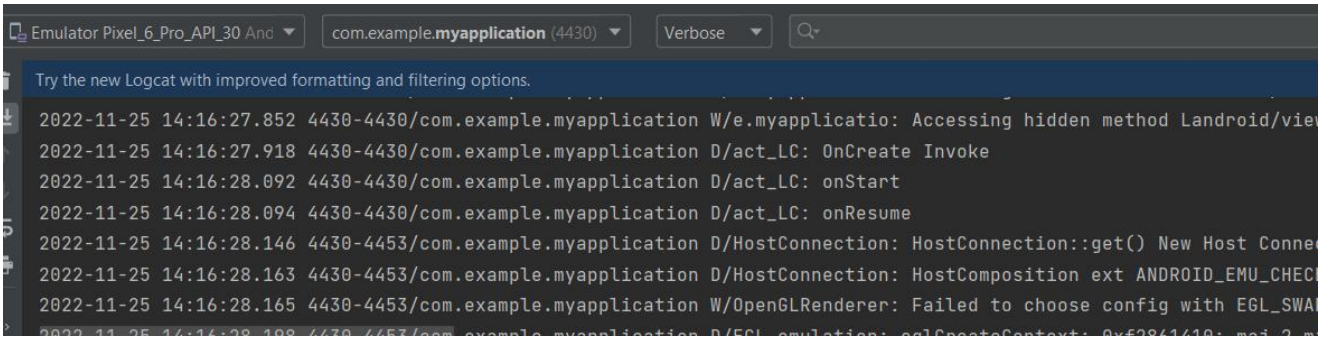
MainActivity.java

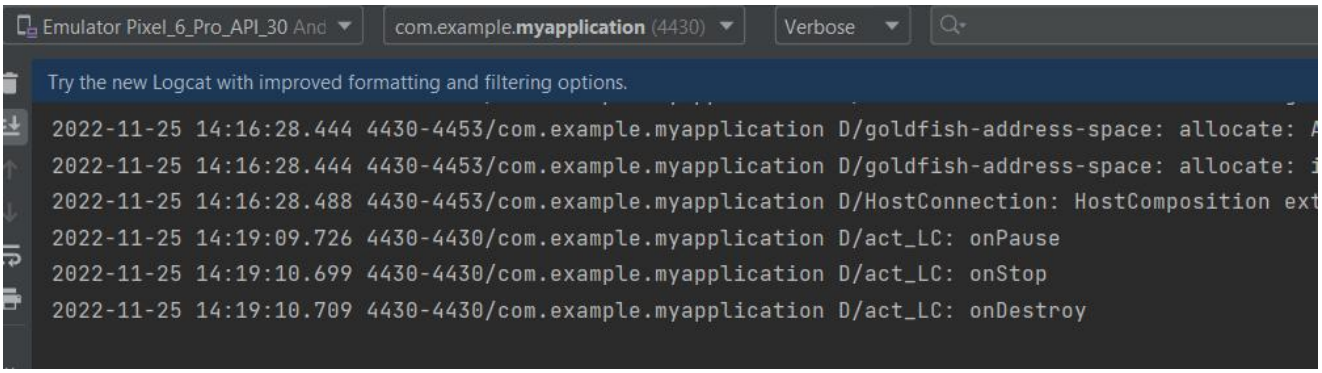
```
public class MainActivity extends AppCompatActivity {

    @Override
    protected void onCreate(Bundle savedInstanceState)
        {super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        Log.d("act_LC","OnCreate Invoke");
    }
    @Override
    protected void
        onStart(){ super.onStart();
        Log.d("act_LC","onStart");
    }
    @Override
    protected void
        onResume(){ super.onResume();
        Log.d("act_LC","onResume");
    }
    @Override
    protected void
        onPause(){ super.onPause();
        Log.d("act_LC","onPause");
    }
  @Override
    protected void
        onStop(){ super.onStop();
        Log.d("act_LC","onStop");
    }
    @Override
```

```
    protected void
        onRestart(){ super.onRestart();
        Log.d("act_LC","onRestart");
    }
    @Override
    protected void
        onDestroy(){ super.onDestroy();
        Log.d("act_LC","onDestroy");
    }
}
```

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 componentsand 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"
   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="#D8D8D8"
   tools:context=".MainActivity">
   <TextView
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
      android:id="@+id/text"
      android:text="Arithmetic_Sol"
      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:hint="Enter first value"/>
  <EditText
    android:id="@+id/secondval"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_below="@id/firstval”
    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: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:gravity="center"/>
</RelativeLayout>
```

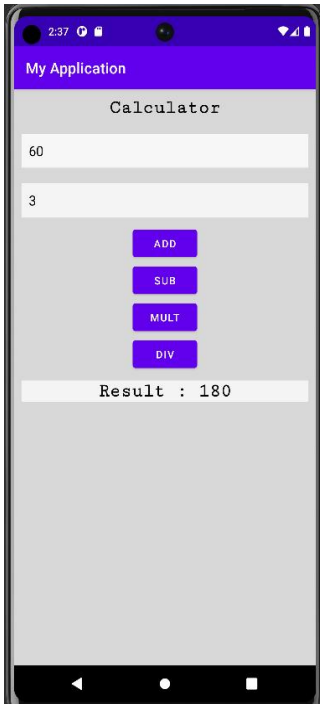
MainActivity.java

```
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:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:padding="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: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:hint="Email"
        android:inputType="text"
        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”/>
    <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>
```

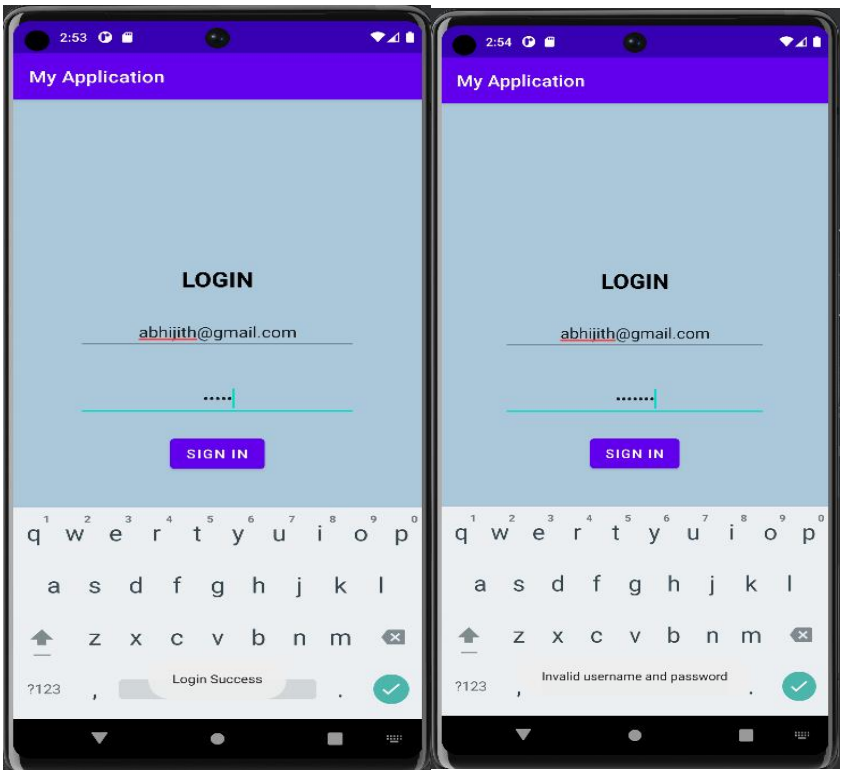
MainActivity.java

```
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.se
            tError(" 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))){
```

```
        else
        {
           if (uname.equals("ajcemca@gmail.com") && pswd.equals("Ajcemca@2022"))
              {Toast.makeText(this, "Login Success", Toast.LENGTH_SHORT).show();
           } else if (uname != ("ajcemca@gmail.com") && pswd.equals("Ajcemca@2022"))
              {Toast.makeText(this, "Invalid username", Toast.LENGTH_SHORT).show();
           } else if (uname.equals("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 Shared Preferences

CO2

Write simple programs and develop small applications using the concepts of UI design, layouts and preferences

Procedure

activity_main.xml

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

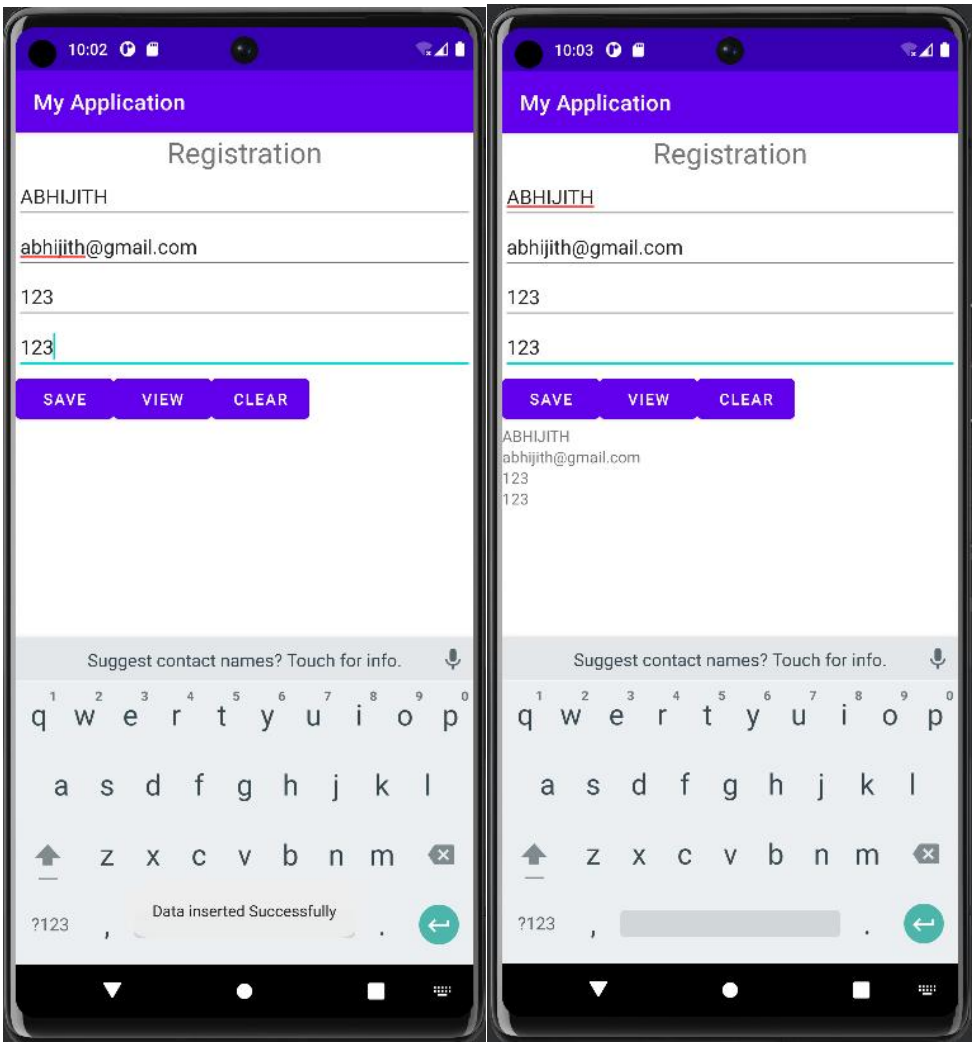
MainActivity.java

```
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

Write simple programs and develop small applications using the concepts of UI design, layouts and preferences

Procedure

```
<?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">
    <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:inputType="textPersonName"
            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 Relative Layout; set properties using .xml file

CO2

Write simple programs and develop small applications using the concepts of UI design, layouts and preferences

Procedure

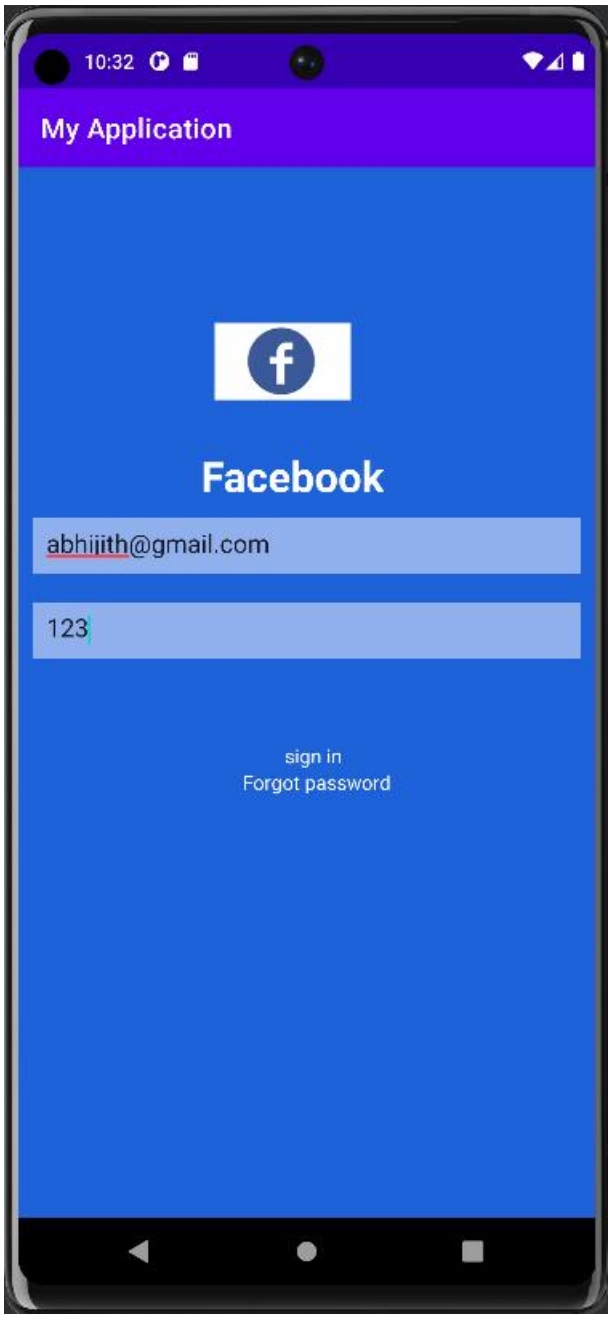
activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:background="#1E62DA"
    tools:context=".MainActivity">
  <TextView
        android:id="@+id/fb"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginLeft="130dp"
        android:layout_marginTop="200dp"
        android:text="Facebook”/>
    <EditText
        android:id="@+id/uname"
        android:layout_width="match_parent"
        android:layout_height="40dp"
        android:layout_below="@id/fb"
```

```
    android:text="Email or Phone"
    android:padding="10dp"/>
  <EditText
    android:id="@+id/pswd"
    android:layout_width="match_parent"
    android:layout_height="40dp"
    android:layout_below="@id/uname"
    android:text="Password"
    android:padding="10dp"/>
  <TextView
    android:id="@+id/signin"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_below="@+id/pswd"
    android:text="sign in"/>
  <TextView
    android:id="@+id/frgt"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_below="@+id/signin"
    android:layout_marginLeft="160dp"
    android:text="Forgot password"/>
  <ImageView
    android:id="@+id/imageView"
    android:layout_width="97dp"
    android:layout_height="97dp"
    android:layout_marginTop="90dp"
    android:layout_marginLeft="140dp"
    app:srcCompat="@drawable/fb" />
```

</RelativeLayout>

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 Frame Layout

CO2

Write simple programs and develop small applications using the concepts of UI design, layouts and preferences

Procedure

Activity_main.xml

```
<FrameLayout xmlns: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/a"
      android:layout_width="match_parent"
      android:layout_height="match_parent"
      android:scaleType="fitXY" />
   <ImageView
      android:id="@+id/second_image"
      android:src = "@drawable/b"
      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 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)
        { 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

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

Procedure

activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout
    xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical"
    tools:context=".MainActivity">
    <EditText
        android:id="@+id/first"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:ems="10"
        android:hint="enter first value"
        />
    <EditText
        android:id="@+id/second"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
```

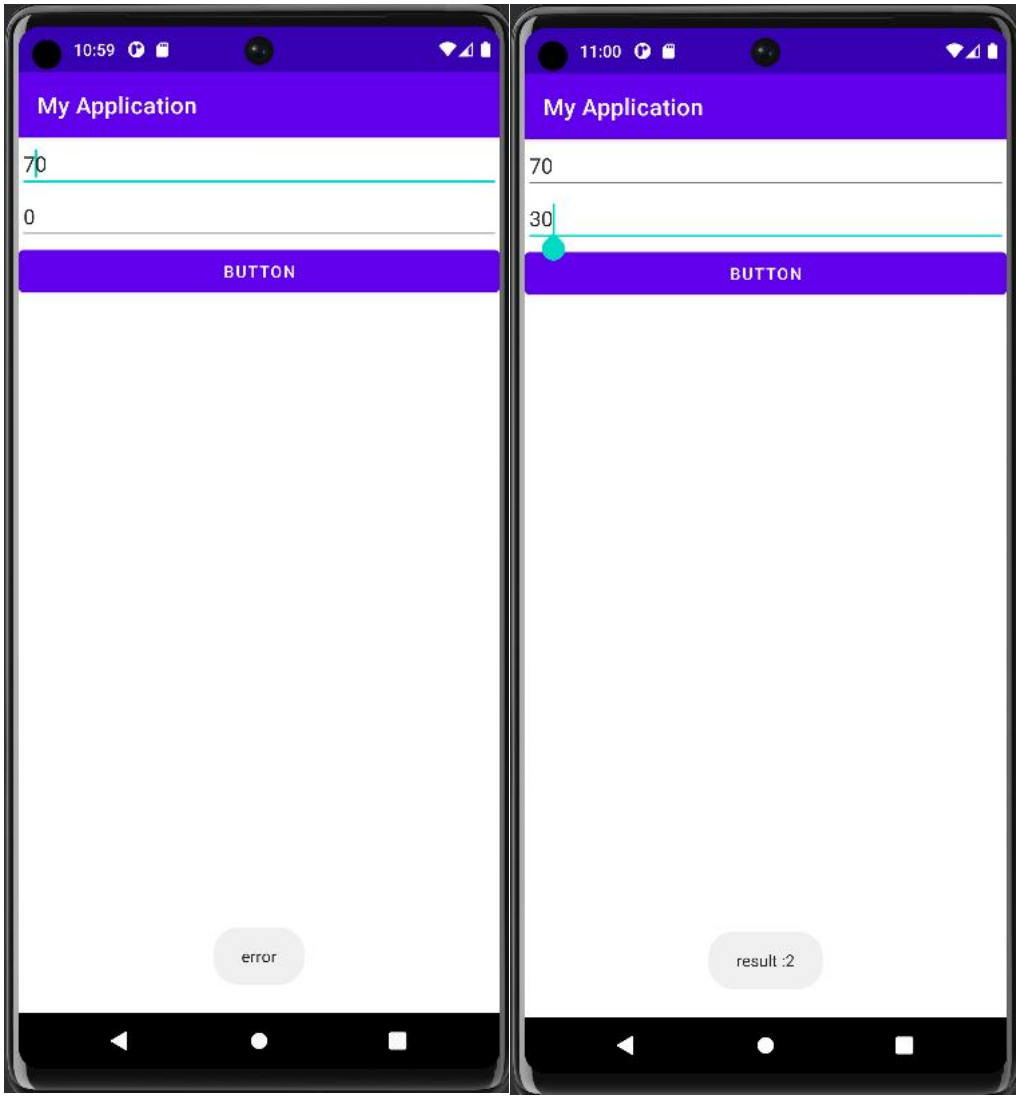
```
    android:ems="10"
    android:hint="enter second value" />
  <Button
    android:id="@+id/btn"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:text="Button" />
</LinearLayout>
```

MainActivity.java

```
package com.example.myapplication;
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
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 et1 = (EditText)findViewById(R.id.first);
    EditText et2 = (EditText)findViewById(R.id.second);
    Button butt = (Button) findViewById(R.id.btn);
    butt.setOnClickListener(view -> {
      int x = Integer.parseInt(et1.getText().toString());
      int y = Integer.parseInt(et2.getText().toString());
      try{
        int c = x / y;
        Toast.makeText(getApplicationContext(), "result :"+c,
Toast.LENGTH_SHORT).show();
```

```
        }catch (Exception e){
            Toast.makeText(getApplicationContext(), "error", Toast.LENGTH_SHORT).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

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

Procedure

activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:padding="50sp"
    android:background="#E886F162"
    android:orientation="vertical"
    android:gravity="top|center"
    tools:context=".MainActivity">
    <Button
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:id="@+id/btn_click"
        android:text="Click"
        android:textSize="15sp"
        android:textAlignment="center"/>
    <TextView
        android:id="@+id/tvid"
```

```
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:color="#4799E8"
        android:text="first page"
        android:textColor="@color/black"
        android:background="@color/teal_200"/>
</LinearLayout>
```

activity2.xml

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:padding="50sp"
    android:background="#E886F162"
    android:orientation="vertical"
    android:gravity="top|center"
    tools:context=".MainActivity">
    <Button
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:id="@+id/btn_click1"
        android:text="Click"
        android:textSize="15sp"
        android:textAlignment="center"/>
    <TextView
        android:id="@+id/tvid1"
        android:layout_width="match_parent"
```

```
    android:layout_height="match_parent"
    android:color="#4799E8"
    android:text="second page"
    android:textColor="@color/black"
    android:background="@color/teal_200"/>
</LinearLayout>
```

MainActivity.java

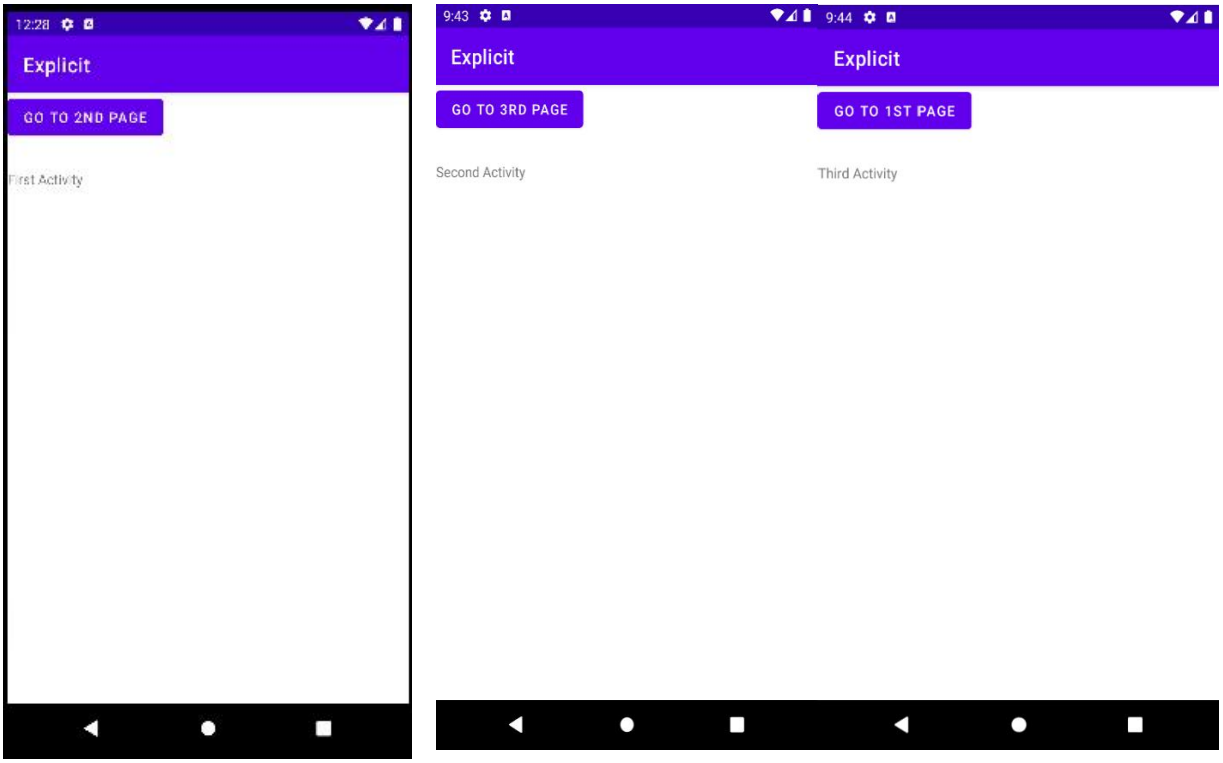
```
package com.example.explicit_intent;
import androidx.appcompat.app.AppCompatActivity;
import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.TextView;
public class MainActivity extends AppCompatActivity
  {@Override
  protected void onCreate(Bundle savedInstanceState)
    {super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_main);
    Button btn = (Button) findViewById(R.id.btn_click);
    TextView tv = (TextView) findViewById(R.id.tvid);
    btn.setOnClickListener(new View.OnClickListener() {
      @Override
      public void onClick(View view) {
        Intent i = new Intent(getApplicationContext(),Activity2.class);
        startActivity(i);
      }
    });
  }
```

```
}
```

Activity2.java

```
package com.example.explicit_intent;
import androidx.appcompat.app.AppCompatActivity;
import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.TextView;
public class Activity2 extends AppCompatActivity
   {@Override
   protected void onCreate(Bundle savedInstanceState)
      {super.onCreate(savedInstanceState);
      setContentView(R.layout.activity2);
      Button btn = (Button) findViewById(R.id.btn_click1);
      TextView tv = (TextView) findViewById(R.id.tvid1);
      btn.setOnClickListener(new View.OnClickListener() {
         @Override
         public void onClick(View view) {
            Intent i = new Intent(getApplicationContext(), MainActivity.class);
            startActivity(i);
         }
      });
   }
}
```

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 implicit intents

CO3

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

Procedure

activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:padding="50sp"
    android:background="#B2C6CBCF"
    android:orientation="vertical"
    android:gravity="top|center"
    tools:context=".MainActivity">
    <EditText
        android:id="@+id/et_text"
        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"
```

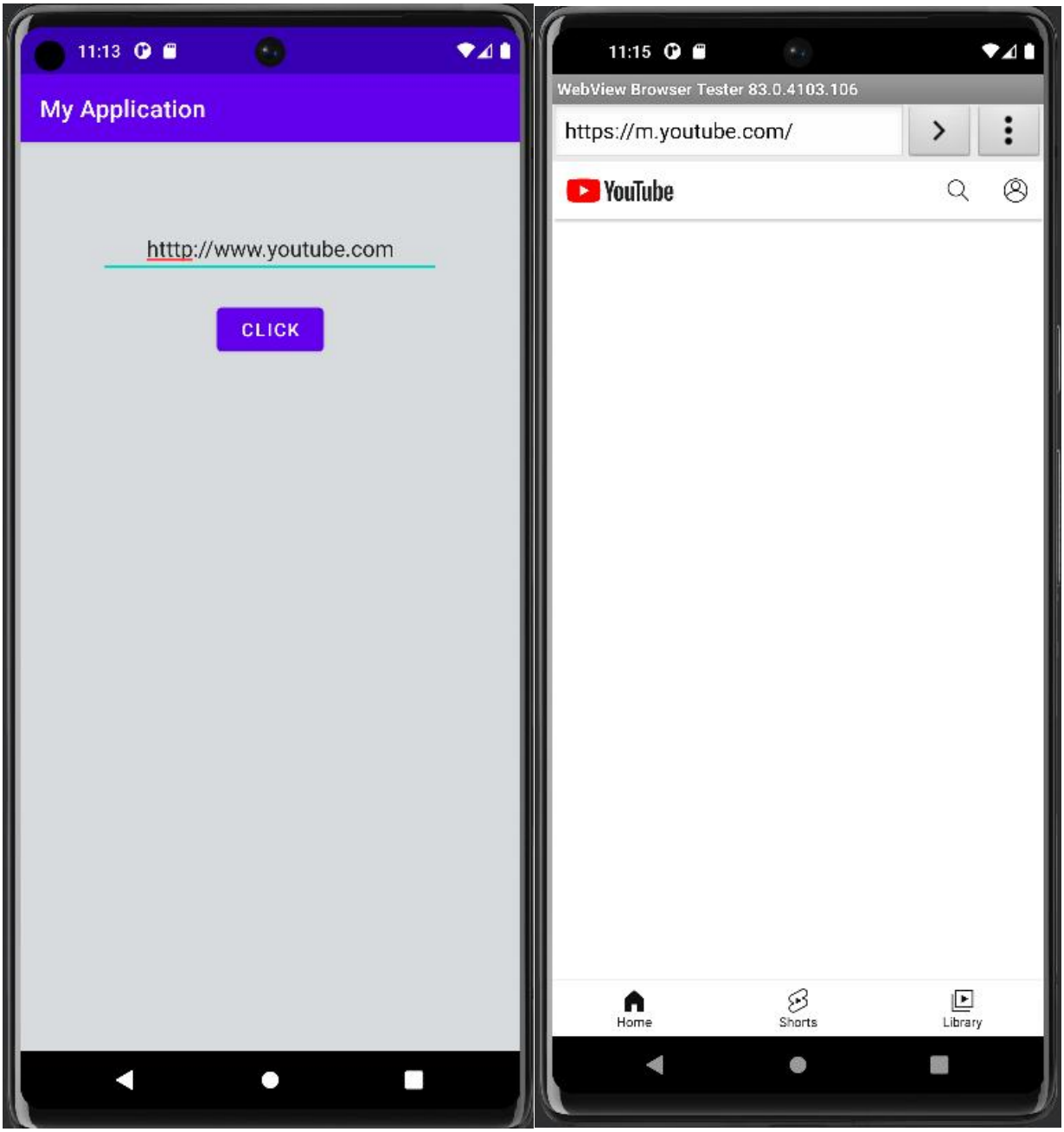
```
        android:ellipsize="start"
        android:gravity="center"
        android:hint="url here"
        android:inputType="text"
        android:thickness="0dp"
        android:shape="rectangle"
        android:width="3dp"
        android:color="#4799E8"
        android:startColor="#C8C8C8"
        android:endColor="#FFFFFF"
        android:type="linear"
        android:angle="270"/>
    <Button
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:id="@+id/btn_click"
        android:text="Click"
        android:textSize="15sp"
        android:textAlignment="center"/>
</LinearLayout>
```

MainActivity.java

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

```
public class MainActivity extends AppCompatActivity
   {@Override
   protected void onCreate(Bundle savedInstanceState)
      {super.onCreate(savedInstanceState);
      setContentView(R.layout.activity_main);
      EditText et = (EditText) findViewById(R.id.et_text);
      Button btn = (Button) findViewById(R.id.btn_click);
      btn.setOnClickListener(new View.OnClickListener() {
         @Override
         public void onClick(View view)
            { String url =
            et.getText().toString();
            Intent intent = new Intent(Intent.ACTION_VIEW, Uri.parse(url));
            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_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="ajce"
        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.optionmenu;
import androidx.appcompat.app.AppCompatActivity;
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.mainmenu,
      menu);return true;
   }
   @Override
   public boolean onOptionsItemSelected(MenuItem item) {
      Toast.makeText(this, "Selected Item: " +item.getTitle(), Toast.LENGTH_SHORT).show();
      switch (item.getItemId()) {
         case R.id.search_item:
            return true;
         case R.id.upload_item:
            return true;
         case R.id.copy_item:
            return true;
```

```
            case R.id.print_item:
                return true;
            case R.id.share_item:
                return true;
            case R.id.bookmark_item:
                return true;
            default:
                return super.onOptionsItemSelected(item);
        }
    }
}
```

Mainmenu.xml

```
<?xml version="1.0" encoding="utf-8"?>
<menu xmlns:android="http://schemas.android.com/apk/res/android">
    <item android:id="@+id/search_item"
        android:title="Search" />
    <item android:id="@+id/upload_item"
        android:title="Upload" />
    <item android:id="@+id/copy_item"
        android:title="Copy" />
    <item android:id="@+id/print_item"
        android:title="Print" />
    <item android:id="@+id/share_item"
        android:title="Share" />
    <item android:id="@+id/bookmark_item"
        android:title="BookMark" />
        app:showAsAction="withText"/>
</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 Array Adapter with List View.

CO3

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

Procedure

Activity_main.xml

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

listfile.xml

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

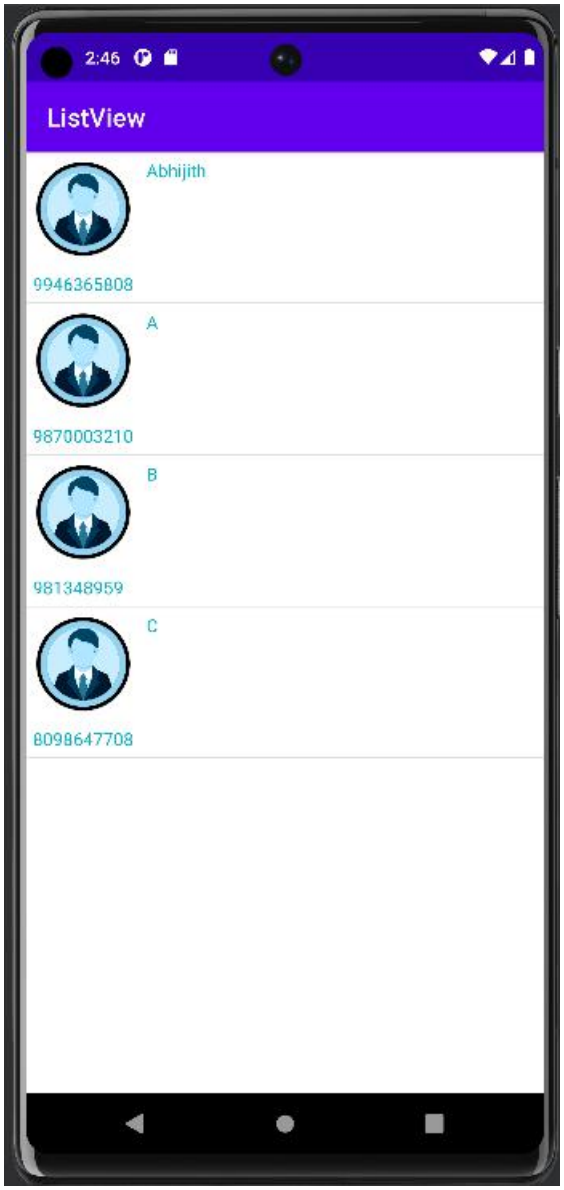
```
   android:layout_height="match_parent">
<LinearLayout
   android:layout_width="wrap_content"
   android:layout_height="wrap_content">
   <ImageView
      android:id="@+id/img"
      android:layout_width="80dp"
      android:layout_height="80dp"
      android:layout_margin="5dp"/>
   <TextView
      android:id="@+id/tv1"
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
      android:layout_margin="5dp"
      android:textColor="#01B0C1"/>
</LinearLayout>
   <TextView
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:id="@+id/phn"
      android:layout_margin="5dp"
      android:textColor="#01B0C1"/>
</LinearLayout>
```

MainActivity.java

```
package com.example.listview;
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.widget.ListView;
```

```
import android.widget.SimpleAdapter;
import java.util.ArrayList;
import java.util.HashMap;
public class MainActivity extends AppCompatActivity
   {String[] StudName = {"alan","arun","amal","anton"};
   int[] studicon = {R.drawable.propic,R.drawable.propic,R.drawable.propic,R.drawable.propic};
   String[] phnno = {"9946440708","9876543210","9846948959","8078747708"};
   String[] email =
{"alan@gmail.com","arun@gmail.com","amal@gmail.com","anton@gmail.com"};
   @Override
   protected void onCreate(Bundle savedInstanceState)
      {super.onCreate(savedInstanceState);
      setContentView(R.layout.activity_main);
      ListView lv = (ListView) findViewById(R.id.listview);
      ArrayList<HashMap<String,Object>>arrayList = new ArrayList<>();
      for(int i = 0; i<StudName.length;i++){
         HashMap<String,Object> map = new HashMap<>();
         map.put("contactName",StudName[i]);
         map.put("profile",studicon[i]);
         map.put("contactno",phnno[i]); arrayList.add((map));
      }
      String[] from = {"profile","contactName","contactno"};
      int[] to = {R.id.img,R.id.tv1,R.id.phn};
      SimpleAdapter adaptor= new SimpleAdapter(this,arrayList,R.layout.listfile,from,to);
      lv.setAdapter(adaptor);
   }}
```

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 Grid View with images and display Alert box on selection

CO4

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

Procedure

```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity">
 <GridView
     android:id="@+id/gv1"
     android:verticalSpacing="1dp"
     android:horizontalSpacing="1dp"
     android:numColumns="2"
     android:layout_width="match_parent"
     android:layout_height="wrap_content">
 </GridView>
</RelativeLayout
```

Row_data.xml

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

```
        android:id="@+id/gv12"
        android:layout_width="190dp"
        android:layout_height="180dp"
        android:background ="#fff"        >
        <TextView
            android:id="@+id/tvid"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_centerHorizontal="true"
            android:text="Apple"
            android:textSize="25dp" />
        <ImageView
            android:id="@+id/imgview"
            android:layout_width="90dp"
            android:layout_height="90dp"
            android:layout_alignParentStart="true"
            android:layout_alignParentTop="true"
            android:layout_alignParentEnd="true"
            android:layout_alignParentBottom="true"
            android:layout_marginStart="50dp"
            android:layout_marginTop="45dp"
            android:layout_marginEnd="50dp"
            android:layout_marginBottom="45dp"
            android:src="@drawable/d" />
    </RelativeLayout>
</RelativeLayout>
```

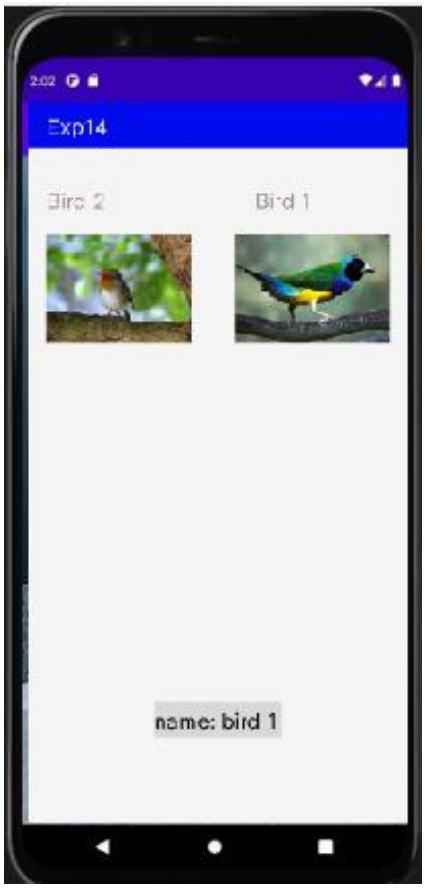
MainActivity.java

```
package com.example.a8prgm;
```

```
import androidx.appcompat.app.AppCompatActivity;
import android.media.Image;
import  android.os.Bundle;
import android.view.View;
import android.view.ViewGroup;
import android.widget.AdapterView;
import android.widget.BaseAdapter;
import android.widget.CursorAdapter;
import android.widget.GridView;
import android.widget.ImageView;
import android.widget.TextView;
import android.widget.Toast;

public class MainActivity extends AppCompatActivity
   {GridView gridView;
   String[] frtname={"apple","orange"};
   int[] frtimg={R.drawable.c,R.drawable.d};
   @Override
   protected void onCreate(Bundle savedInstanceState)
      {super.onCreate(savedInstanceState);
      setContentView(R.layout.activity_main);
      gridView= findViewById(R.id.gv1);
      CustomAdaptor customadaptor = new CustomAdaptor();
      gridView.setAdapter(customadaptor);
      gridView.setOnItemClickListener(new AdapterView.OnItemClickListener()
         {@Override
         public void onItemClick(AdapterView<?> adapterView, View view, int i, long l) {
            Toast.makeText(MainActivity.this, "name :"+frtname[i],
Toast.LENGTH_SHORT).show();
         }
```

```
        });
    }
    private class CustomAdaptor extends BaseAdapter
        {@Override
        public int getCount()
            {return
            frtimg.length;
        }
        @Override
        public Object getItem(int i)
            {return null;
        }
        @Override
        public long getItemId(int i)
            {return 0;
        }
        @Override
        public View getView(int i, View view, ViewGroup viewGroup)
            { View view1
            =getLayoutInflater().inflate(R.layout.row_data,null);TextView
            name=view1.findViewById(R.id.tvid);
            ImageView img = view1.findViewById(R.id.imgview);
            name.setText(frtname[i]);
            img.setImageResource(frtimg[i]);
            return view1;
        }
    }
}
```

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

Procedure

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">
    <Spinner
        android:id="@+id/spinner"
        android:layout_width="360dp"
        android:layout_height="36dp"
        android:layout_marginStart="4dp"
        android:layout_marginTop="20dp"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/textView2" />
    <TextView
        android:id="@+id/textView2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginStart="160dp"
        android:layout_marginTop="100dp"
```

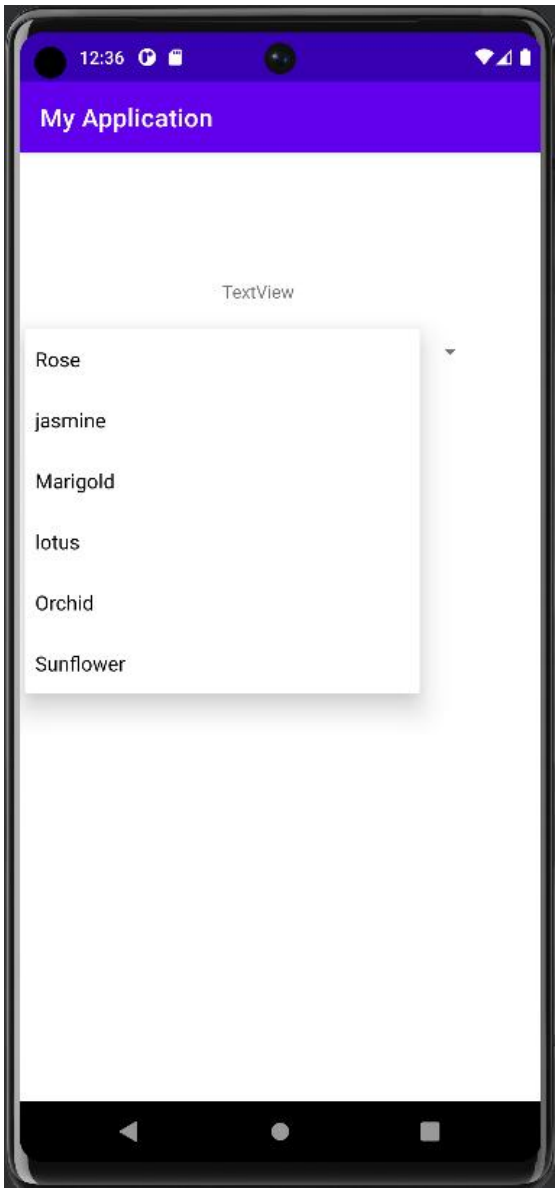
```
    android:text="TextView"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

MainActivity.java

```
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[] pets={"cats","dogs","parrots"};
  @Override
  protected void onCreate(Bundle savedInstanceState)
    {super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_main);
    Spinner spin = (Spinner) findViewById(R.id.spinner);
    spin.setOnItemSelectedListener(this);
    ArrayAdapter aa = new ArrayAdapter(this, android.R.layout.simple_spinner_item,pets);
    aa.setDropDownViewResource(android.R.layout.simple_spinner_dropdown_item);
    spin.setAdapter(aa);}
  @Override
  public void onItemSelected(AdapterView<?> parent, View view, int i, long l)
    { Toast.makeText(getApplicationContext(),pets[i],
    Toast.LENGTH_SHORT).show();}
```

```
@Override
public void onNothingSelected(AdapterView<?> parent) {
    Toast.makeText(this, "nothing Selected", Toast.LENGTH_SHORT).show();}}
```

Output Screenshot



Result

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

Experiment No.: 16

Aim

Develop application using Fragments

CO4

Procedure

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"
    android:background="@color/purple_700"
    tools:context=".MainActivity">
    <Button
        android:id="@+id/btn2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginTop="40dp"
        android:layout_marginEnd="40dp"
        android:text="Fragment-two"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.5"
        app:layout_constraintStart_toEndOf="@+id/btn1"
        app:layout_constraintTop_toTopOf="parent" />
    <Button
        android:id="@+id/btn1"
```

```
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginTop="40dp"
        android:layout_marginEnd="16dp"
        android:text="Fragment-one"
        app:layout_constraintEnd_toStartOf="@+id/btn2"
        app:layout_constraintHorizontal_bias="0.5"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />
    <FrameLayout
        android:id="@+id/frid"
        android:layout_width="409dp"
        android:layout_height="629dp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/btn2">
    </FrameLayout>
</androidx.constraintlayout.widget.ConstraintLayout>
```

fragment_first.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=".FirstFragment">
    <TextView
        android:id="@+id/tvfrag"
```

```
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="First fragment"
    android:textColor="#5E0000"
    android:textSize="36dp"
    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" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

fragment_second.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=".SecondFragment">
  <TextView
    android:id="@+id/secondtv"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Second Fragment"
    android:textColor="#001165"
    android:textSize="36dp"
    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" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

MainActivity.java

```
package com.example.fragment;
import androidx.appcompat.app.AppCompatActivity;
import androidx.fragment.app.Fragment;
import androidx.fragment.app.FragmentManager;
import androidx.fragment.app.FragmentTransaction;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
public class MainActivity extends AppCompatActivity
  {@Override
  protected void onCreate(Bundle savedInstanceState)
    {super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_main);
    Button btn1= (Button) findViewById(R.id.btn1);
    Button btn2= (Button) findViewById(R.id.btn2);
    btn1.setOnClickListener(new View.OnClickListener() {
      @Override
      public void onClick(View view)
        { loadFragment(new
        FirstFragment());
      }
    });
    btn2.setOnClickListener(new View.OnClickListener()
      {@Override
```

```
        public void onClick(View view)
            { loadFragment(new
            SecondFragment());
        }
    });
  }
  private void loadFragment(Fragment f)
    { FragmentManager fm =
    getSupportFragmentManager();FragmentTransaction ft
    = fm.beginTransaction(); ft.replace(R.id.frid,f);
    ft.commit();
  }
}
```

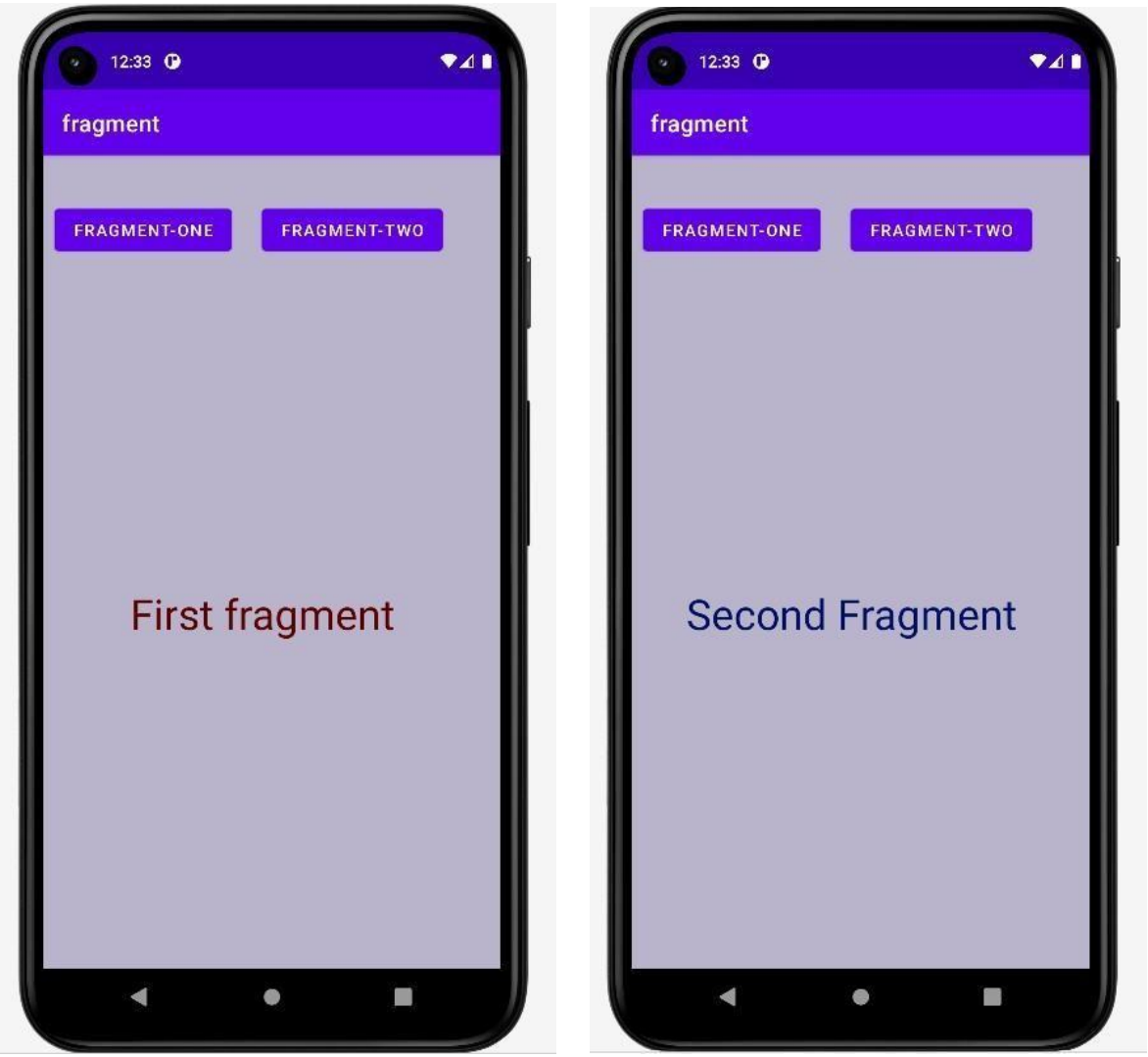
FirstFragment.java

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

SecondFragment.java

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

Output Screenshot



Result

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

Experiment No.: 17

Aim

Implement Navigation drawer

CO4

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

Procedure

```
<?xml version="1.0" encoding="utf-8"?>
<!-- the root view must be the DrawerLayout -->
<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:id="@+id/my_drawer_layout"
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        tools:context=".MainActivity"
        tools:ignore="HardcodedText">
        <LinearLayout
                android:layout_width="match_parent"
                android:layout_height="match_parent">
                <TextView
                        android:layout_width="match_parent"
                        android:layout_height="wrap_content"
                        android:layout_marginTop="128dp"
                        android:gravity="center"
                        android:text="Welcome to ajce"
                        android:textSize="18sp" />
        </LinearLayout>
```

```
        <!-- this the navigation view which draws and shows the navigation drawer -->
        <!-- include the menu created in the menu folder -->
        <com.google.android.material.navigation.NavigationView
                android:layout_width="wrap_content"
                android:layout_height="match_parent"
                android:layout_gravity="start"
                app:menu="@menu/navigation_menu" />

</androidx.drawerlayout.widget.DrawerLayout>
```

Navigation_menu.xml

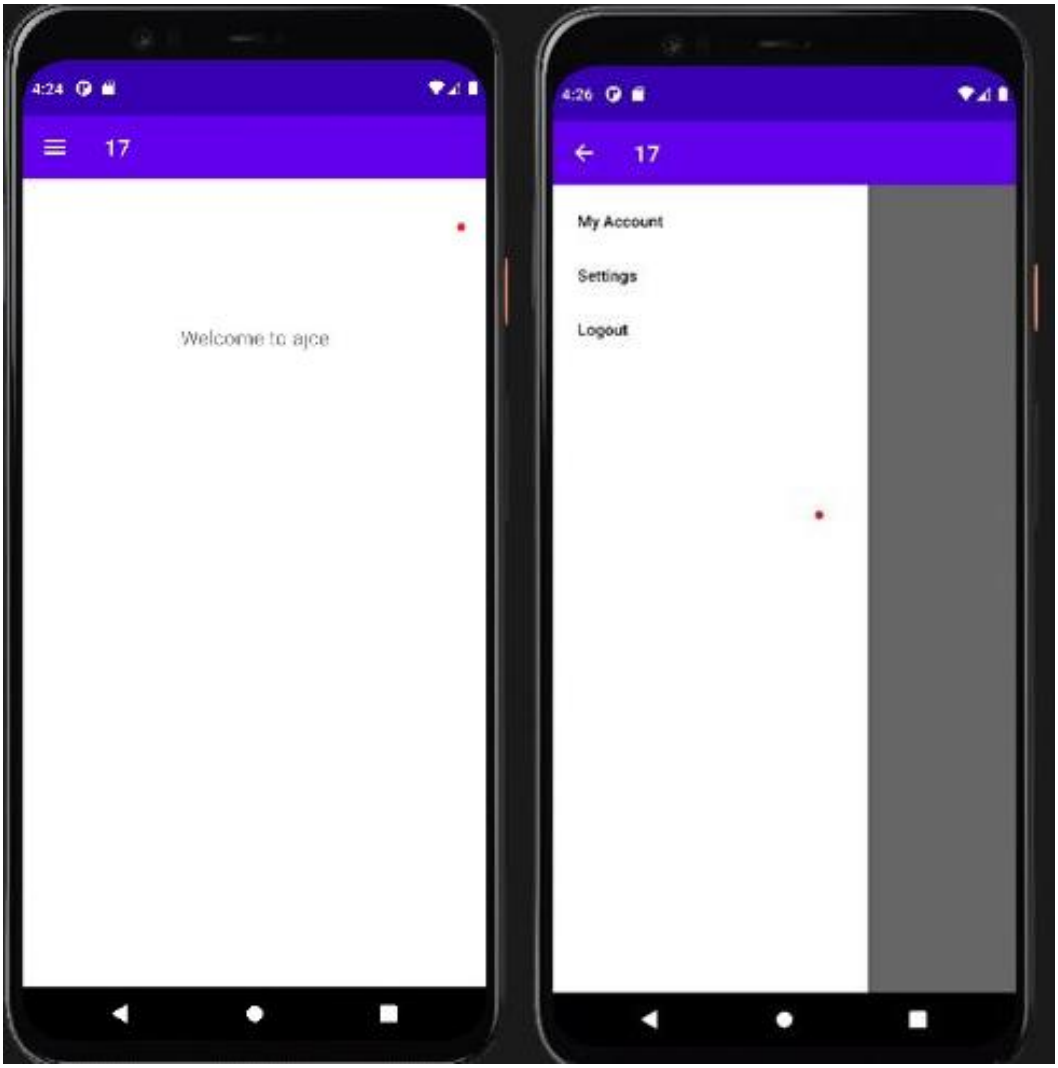
```
<?xml version="1.0" encoding="utf-8"?>
<menu xmlns:android="http://schemas.android.com/apk/res/android"
        xmlns:tools="http://schemas.android.com/tools"
        tools:ignore="HardcodedText">
        <item
                android:id="@+id/nav_account"
                android:title="My Account" />
        <item
                android:id="@+id/nav_settings"
                android:title="Settings" />
        <item
                android:id="@+id/nav_logout"
                android:title="Logout" />
</menu>
```

MainActivity.java

```
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;
public  class  MainActivity  extends  AppCompatActivity
        {public DrawerLayout drawerLayout;
        public ActionBarDrawerToggle actionBarDrawerToggle;
        @Override
        protected void onCreate(Bundle savedInstanceState)
                {super.onCreate(savedInstanceState);
                setContentView(R.layout.activity_main);
                drawerLayout = findViewById(R.id.my_drawer_layout);
                actionBarDrawerToggle = new ActionBarDrawerToggle(this, drawerLayout,
R.string.nav_open, R.string.nav_close);
                drawerLayout.addDrawerListener(actionBarDrawerToggle);
                actionBarDrawerToggle.syncState();
                getSupportActionBar().setDisplayHomeAsUpEnabled(true);
        }
        @Override
        public boolean onOptionsItemSelected(@NonNull MenuItem item)
                {if (actionBarDrawerToggle.onOptionsItemSelected(item)) {
                        return true;
                }
                return super.onOptionsItemSelected(item);
        }
}
```

Output Screenshot



Result

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

Experiment No.: 18

Aim

Create database using SQLite and perform INSERT and SELECT

CO5

Develop mobile applications using SQLite.

Procedure

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="wrap_content"
        android:layout_height="wrap_content"
        android:text="Enter the Details Below!"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.108" />
    <EditText
        android:id="@+id/editTextTextPersonName"
        android:layout_width="wrap_content"
```

```
    android:layout_height="wrap_content"
    android:layout_marginStart="116dp"
    android:layout_marginTop="24dp"
    android:ems="10"
    android:inputType="textPersonName"
    android:hint="Enter Name Here"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/textView" />
  <EditText
    android:id="@+id/editTextTextPersonName4"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginStart="116dp"
    android:layout_marginTop="36dp"
    android:ems="10"
    android:inputType="textPersonName"
    android:hint="Enter contact Here"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/editTextTextPersonName" />
  <EditText
    android:id="@+id/editTextTextPersonName5"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginStart="116dp"
    android:layout_marginTop="40dp"
    android:ems="10"
    android:inputType="textPersonName"
    android:hint="Enter DOB"
    app:layout_constraintStart_toStartOf="parent"
```

```
        app:layout_constraintTop_toBottomOf="@+id/editTextTextPersonName4" />
    <Button
        android:id="@+id/button5"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginStart="76dp"
        android:layout_marginTop="64dp"
        android:hint="Insert data"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/editTextTextPersonName5" />
    <Button
        android:id="@+id/button7"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginStart="8dp"
        android:layout_marginTop="64dp"
        android:text="View Details"
        app:layout_constraintStart_toEndOf="@+id/button5"
        app:layout_constraintTop_toBottomOf="@+id/editTextTextPersonName5" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

MainActivity.java

```
package com.fb.insertview;
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,age,contact;
   Button create1;
   DBHelper DB;
   @Override
   protected void onCreate(Bundle savedInstanceState)
      {super.onCreate(savedInstanceState);
      setContentView(R.layout.activity_main);
      name = (EditText) findViewById(R.id.editTextTextPersonName);
      age =(EditText) findViewById(R.id.editTextTextPersonName4);
      contact = (EditText) findViewById(R.id.editTextTextPersonName5);
      create1 = (Button) findViewById(R.id.button5);
      Button read = (Button)findViewById(R.id.button7);
      DB=new DBHelper(this);
      create1.setOnClickListener(new View.OnClickListener()
         {@Override
         public void onClick(View v) {
            String nameTXT=name.getText().toString();
            String ageTXT=age.getText().toString();
            String contactTXT=contact.getText().toString();
            Boolean checkinsertdata = DB.insertuserdatas(nameTXT,ageTXT,contactTXT);
            if(checkinsertdata == true)
            {
       Toast.makeText(MainActivity.this, "data inserted", Toast.LENGTH_SHORT).show();
            }
            else
            {
```

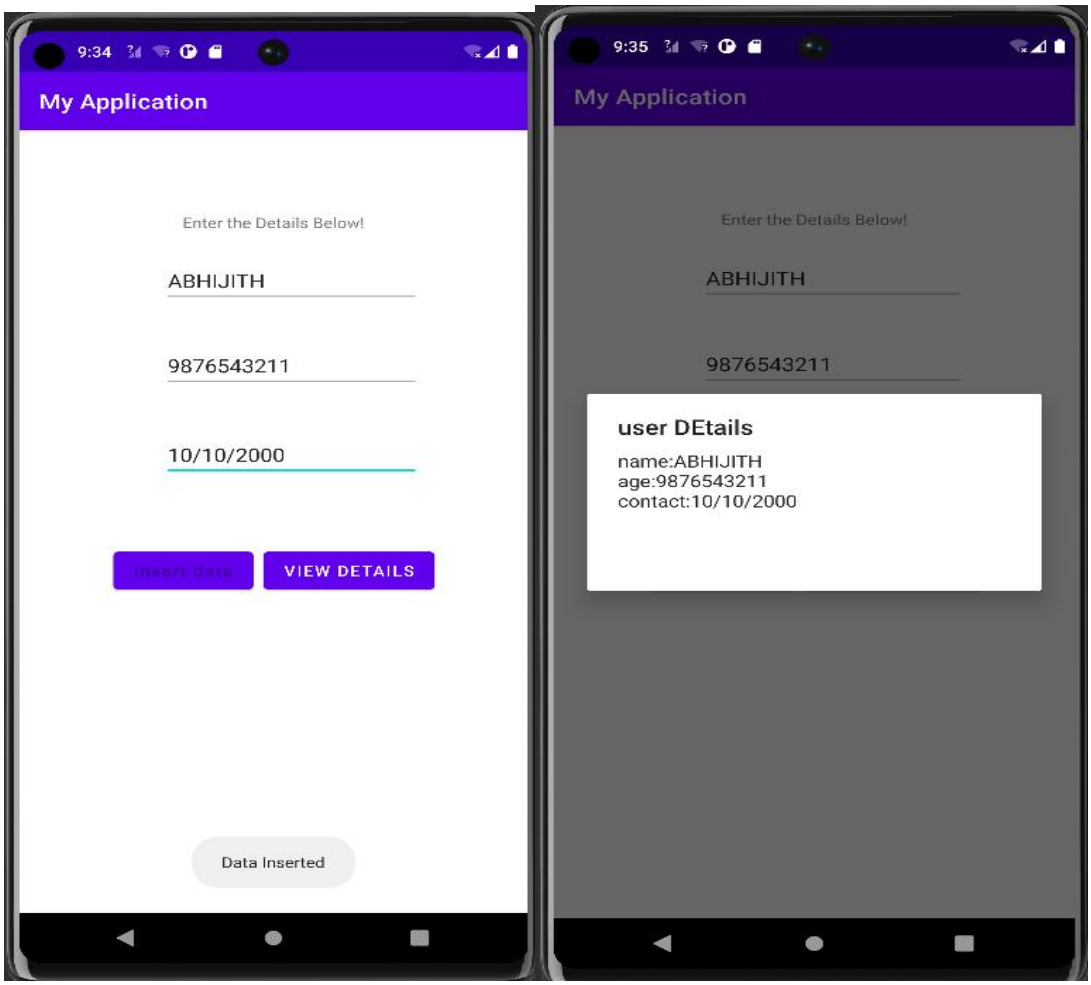
```
            Toast.makeText(MainActivity.this, "failed to insert", Toast.LENGTH_SHORT).show();
                }
            }
        });
        read.setOnClickListener(new View.OnClickListener()
            {@Override
            public void onClick(View v)
                {Cursor res = DB.getdata();
                if(res.getCount()==0)
                {
             Toast.makeText(MainActivity.this, "no datas found", Toast.LENGTH_SHORT).show();
                    return;
                }
                StringBuffer buffer = new StringBuffer();
                while(res.moveToNext())
                {
                    buffer.append("name:"+res.getString(0)+"\n");
                    buffer.append("age:"+res.getString(1)+"\n");
                    buffer.append("contact:"+res.getString(2)+"\n\n\n");
                }
                AlertDialog.Builder builder = new AlertDialog.Builder(MainActivity.this);
                builder.setCancelable(true);
                builder.setTitle("user DEtails");
                builder.setMessage(buffer.toString());
                builder.show();
            }
        });
    }
}
```

DBHelper.java

```
package com.fb.insertview;
import android.content.ContentValues;
import  android.content.Context;
import android.database.Cursor;
import android.database.sqlite.SQLiteDatabase;
import android.database.sqlite.SQLiteOpenHelper;
import androidx.annotation.Nullable;
public class DBHelper extends SQLiteOpenHelper
   {public DBHelper(Context context) {
      super(context, "ABHIJITH.db",null, 1);
   }
   @Override
   public void onCreate(SQLiteDatabase db) {
      db.execSQL("create table studdetails (name TEXT primary key, age TEXT, contact
TEXT)");
   }
   @Override
   public void onUpgrade(SQLiteDatabase db, int oldVersion, int newVersion)
      {db.execSQL("drop table if exists studdetails");
   }
   public Boolean insertuserdatas (String name, String age,String contact)
      {SQLiteDatabase DB = this.getWritableDatabase();
      ContentValues contentvalues = new ContentValues();
      contentvalues.put("name", name);
      contentvalues.put("age", age);
      contentvalues.put("contact", contact);
      long result = DB.insert("studdetails", null, contentvalues);
      if (result==-1) {
```

```
            return false;
        } else {
            return true;
        }
    }
    public Cursor getdata()
    {
        SQLiteDatabase DB = this.getWritableDatabase();
        Cursor cursor = DB.rawQuery("select * from studdetails",null);
        return cursor;
    }
}
```

Output Screenshot



Result

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

Experiment No.: 19

Aim

Perform UPDATE and DELETE on SQLite database

CO5

Develop mobile applications using SQLite.

Procedure

Main_activity.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="wrap_content"
        android:layout_height="wrap_content"
        android:text="Enter the Details Below!"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.108" />
    <EditText
        android:id="@+id/editTextTextPersonName"
        android:layout_width="wrap_content"
```

```
    android:layout_height="wrap_content"
    android:layout_marginStart="116dp"
    android:layout_marginTop="24dp"
    android:ems="10"
    android:inputType="textPersonName"
    android:hint="Enter Name Here"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/textView" />
  <EditText
    android:id="@+id/editTextTextPersonName4"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginStart="116dp"
    android:layout_marginTop="36dp"
    android:ems="10"
    android:inputType="textPersonName"
    android:hint="Enter contact Here"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/editTextTextPersonName" />
  <EditText
    android:id="@+id/editTextTextPersonName5"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginStart="116dp"
    android:layout_marginTop="40dp"
    android:ems="10"
    android:inputType="textPersonName"
    android:hint="Enter DOB"
    app:layout_constraintStart_toStartOf="parent"
```

```
    app:layout_constraintTop_toBottomOf="@+id/editTextTextPersonName4" />
  <Button
    android:id="@+id/button5"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginStart="4dp"
    android:layout_marginTop="48dp"
    android:hint="Create"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/editTextTextPersonName5" />
  <Button
    android:id="@+id/button6"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginStart="8dp"
    android:layout_marginTop="48dp"
    android:text="Update"
app:layout_constraintStart_toEndOf="@+id/button5"
    app:layout_constraintTop_toBottomOf="@+id/editTextTextPersonName5" />
  <Button
    android:id="@+id/button7"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginStart="8dp"
    android:layout_marginTop="48dp"
    android:text="Read"
    app:layout_constraintStart_toEndOf="@+id/button6"
    app:layout_constraintTop_toBottomOf="@+id/editTextTextPersonName5" />
  <Button
```

```
        android:id="@+id/button8"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginStart="4dp"
        android:layout_marginTop="48dp"
        android:text="Delete"
        app:layout_constraintStart_toEndOf="@+id/button7"
        app:layout_constraintTop_toBottomOf="@+id/editTextTextPersonName5" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

MainActivity.java

```
package com.example.curdoperation;
import androidx.appcompat.app.AlertDialog;
import androidx.appcompat.app.AppCompatActivity;
import android.database.Cursor;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;
public class MainActivity extends AppCompatActivity
   {EditText name,contact,dob;
   Button create1;
   DBHelper DB;
   @Override
   protected void onCreate(Bundle savedInstanceState)
      {super.onCreate(savedInstanceState);
      setContentView(R.layout.activity_main);
      name = (EditText) findViewById(R.id.editTextTextPersonName);
```

```
contact =(EditText) findViewById(R.id.editTextTextPersonName4);
dob = (EditText) findViewById(R.id.editTextTextPersonName5);
create1 = (Button) findViewById(R.id.button5);
Button update = (Button)findViewById(R.id.button6);
Button delete = (Button)findViewById(R.id.button8);
Button read = (Button)findViewById(R.id.button7);
DB=new DBHelper(this);
create1.setOnClickListener(new View.OnClickListener()
   {@Override
   public void onClick(View v) {
      String nameTXT=name.getText().toString();
      String contactTXT=contact.getText().toString();
      String dobTXT=dob.getText().toString();
      Boolean checkinsertdata = DB.insertuserdatas(nameTXT,contactTXT,dobTXT);
      if(checkinsertdata == true)
      {
         Toast.makeText(MainActivity.this, "data inserted",
Toast.LENGTH_SHORT).show();
      }
      else
      {
         Toast.makeText(MainActivity.this, "failed to insert",
Toast.LENGTH_SHORT).show();
      }}});
   update.setOnClickListener(new View.OnClickListener()
   {@Override
   public void onClick(View v) {
      String nameTXT=name.getText().toString();
      String contactTXT=contact.getText().toString();
      String dobTXT=dob.getText().toString();
```

```
            Boolean checkupdatedata = DB.updateuserdatas(nameTXT,contactTXT,dobTXT);
            if(checkupdatedata == true)
            {
               Toast.makeText(MainActivity.this, "data updated",
Toast.LENGTH_SHORT).show();
            }
            else
            {
               Toast.makeText(MainActivity.this, "failed to update",
Toast.LENGTH_SHORT).show();
            }}});
      delete.setOnClickListener(new View.OnClickListener()
         {@Override
         public void onClick(View v) {
            String nameTXT=name.getText().toString();
            Boolean checkdeletedata = DB.deleteuserdatas(nameTXT);
            if(checkdeletedata == true)
            {
               Toast.makeText(MainActivity.this, "row deleted",
Toast.LENGTH_SHORT).show();
            }
            else
            {
               Toast.makeText(MainActivity.this, "failed to delete row",
Toast.LENGTH_SHORT).show();
            }}});
read.setOnClickListener(new View.OnClickListener()
         {@Override
         public void onClick(View v)
            {Cursor res = DB.getdata();
            if(res.getCount()==0)
```

```
            {
                Toast.makeText(MainActivity.this, "no datas found",
Toast.LENGTH_SHORT).show();
                return;
            }
            StringBuffer buffer = new StringBuffer();
            while(res.moveToNext())
            {
                buffer.append("name:"+res.getString(0)+"\n");
                buffer.append("contact:"+res.getString(1)+"\n");
                buffer.append("dob:"+res.getString(2)+"\n\n\n");
            }
            AlertDialog.Builder builder = new AlertDialog.Builder(MainActivity.this);
            builder.setCancelable(true);
            builder.setTitle("user DEtails");
            builder.setMessage(buffer.toString());
            builder.show();
        }
    }); }}
```

DBHelper.java

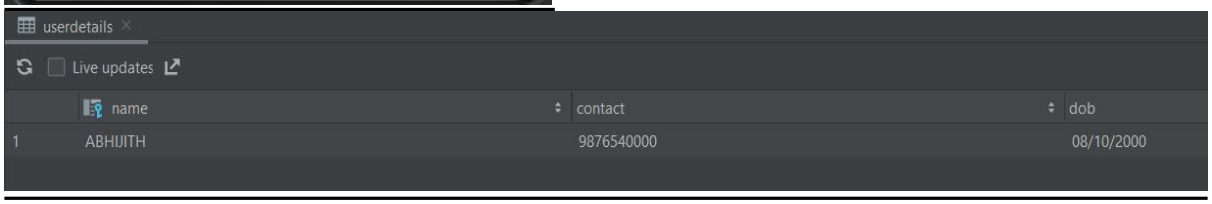
```
package com.example.curdoperation;
import android.content.ContentValues;
import  android.content.Context;
import android.database.Cursor;
import android.database.sqlite.SQLiteDatabase;
import android.database.sqlite.SQLiteOpenHelper;
import androidx.annotation.Nullable;
public class DBHelper extends SQLiteOpenHelper
   {public DBHelper(Context context) {
```

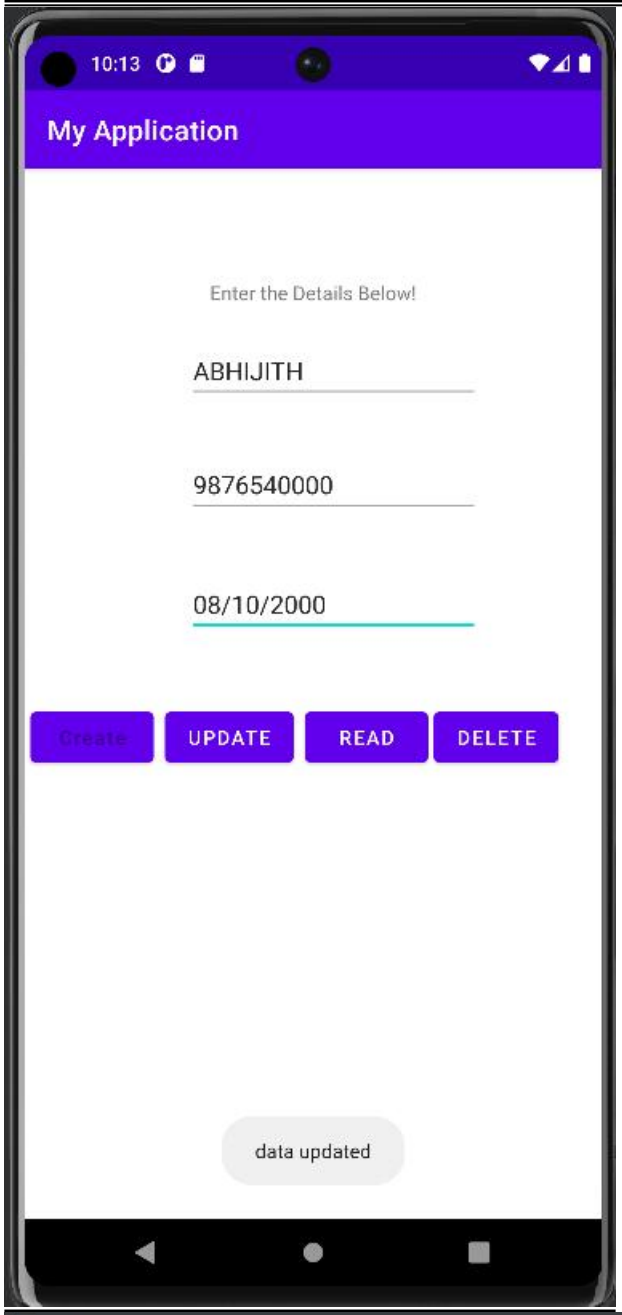
```
        super(context, "ABHIJITH.db", null, 1);
    }
    @Override
    public void onCreate(SQLiteDatabase db) {
        db.execSQL("create table userdetails (name TEXT primary key, contact TEXT , dob
TEXT)");
    }
@Override
    public void onUpgrade(SQLiteDatabase db, int oldVersion, int newVersion)
        {db.execSQL("drop table if exists userdetails");
    }
    public Boolean insertuserdatas (String name,String contact, String dob)
        {SQLiteDatabase DB = this.getWritableDatabase();
        ContentValues contentvalues = new ContentValues();
        contentvalues.put("name", name);
        contentvalues.put("contact", contact);
        contentvalues.put("dob", dob);
        long result = DB.insert("userdetails", null, contentvalues);
        if (result==-1) {
            return false;
        } else {
            return true;
        }
    }
    public Boolean updateuserdatas (String name,String contact, String dob)
        {SQLiteDatabase DB = this.getWritableDatabase();
        ContentValues contentvalues = new ContentValues();
        contentvalues.put("contact", contact);
        contentvalues.put("dob", dob);
```

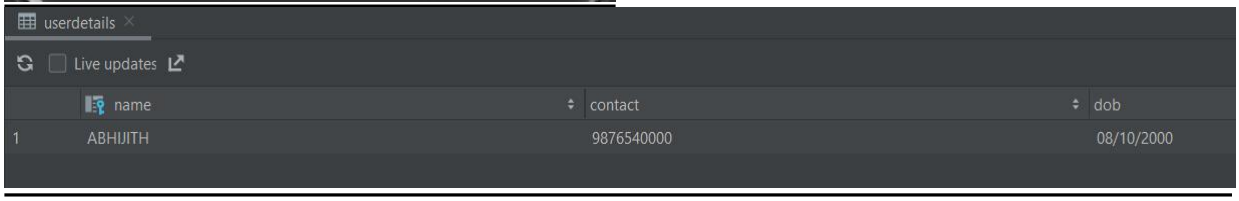
```
    Cursor cursor = DB.rawQuery("select * from userdetails where name= ?",new
String[]{name});
    if(cursor.getCount()>0)
    {
    long result = DB.update("userdetails", contentvalues,"name=?", new String[]{name});
    if (result==-1) {
       return false;
    } else {
       return true;
   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

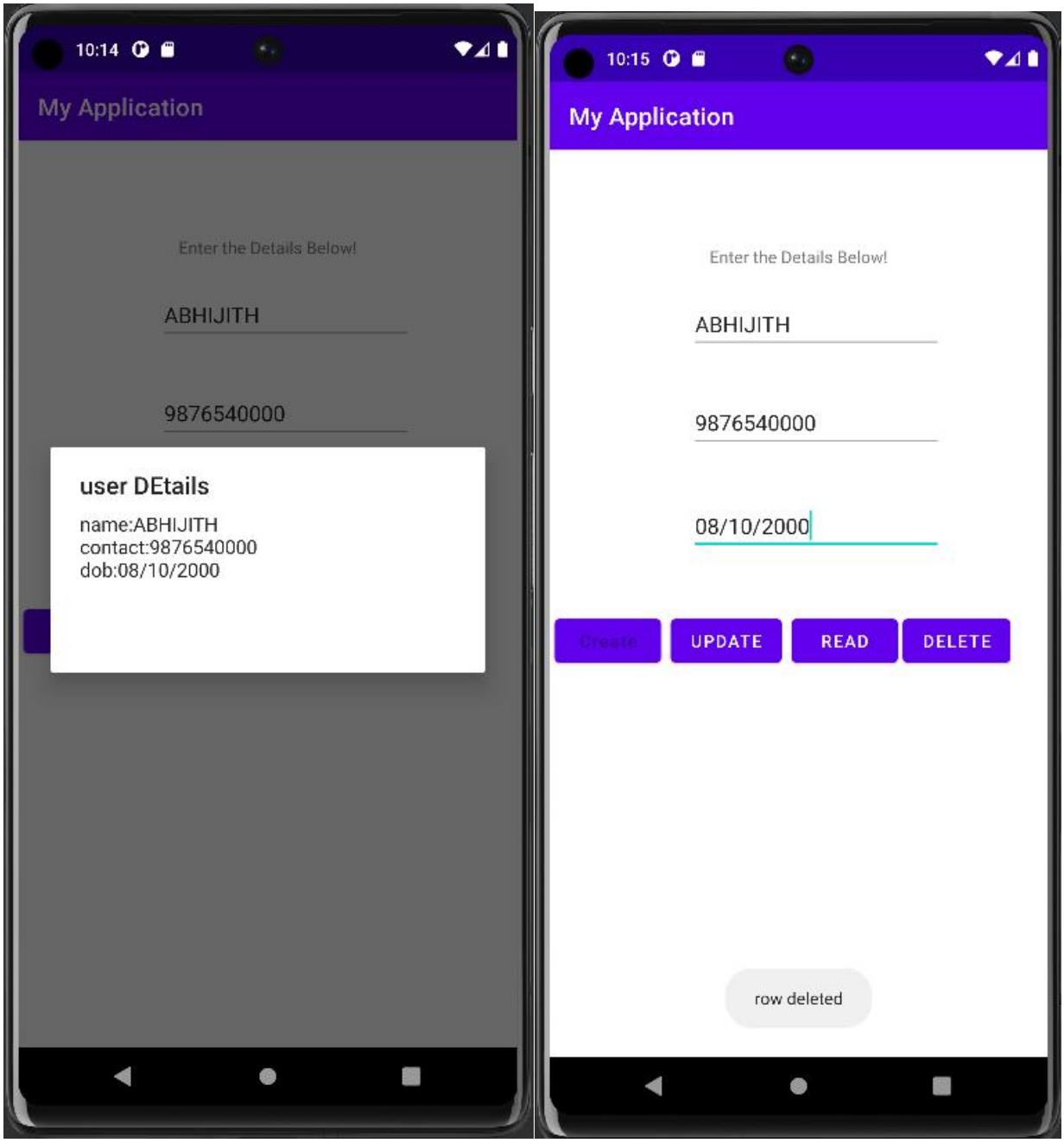
```
    }}
public Cursor getdata()
{
   SQLiteDatabase DB = this.getWritableDatabase();
   Cursor cursor = DB.rawQuery("select * from userdetails",null);
   return cursor;
}}
```

Output Screenshot




10:13
My Application
Enter the Details Below!
ABHIJITH
9876540000
08/10/2000
Create
UPDATE
READ
DELETE
data updated


userdetails
Live updates
name
contact
dob
1
ABHIJITH
9876540000
08/10/2000



Result

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