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"?>
<RelativeLayout
xmlns:android="http://schemas.android.com/apk/res/android"
xmlns:tools="http://schemas.android.com/tools"
android:layout_width="match_parent"
android:layout_height="match_parent"
tools:context=".MainActivity">
   <TextView        android:id="@+id/login"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:layout_marginTop="30dp"
android:gravity="center_horizontal"
android:padding="5dp"
android:text="Login Form"
android:textAlignment="center"
android:textColor="@color/purple_700"
android:textSize="18sp" />
```

```
 <TextView
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:text="Username"
android:layout_marginTop="90dp"
android:layout_marginLeft="13dp"/>

 <EditText
 android:id="@+id/username"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:layout_below="@id/login"
android:layout_marginStart="10dp"
android:layout_marginTop="50dp"
android:layout_marginEnd="10dp"
android:hint="Enter UserName"
android:inputType="textEmailAddress" />

 <TextView
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:text="Password"
android:layout_marginTop="165dp"
android:layout_marginLeft="13dp"/>

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

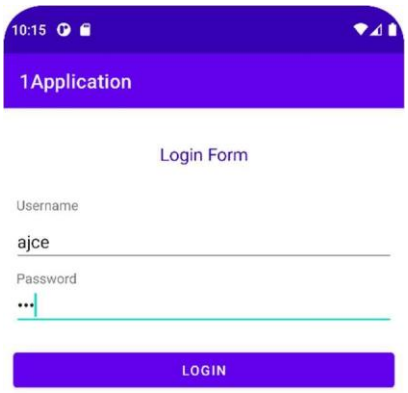
```
android:layout_below="@id/username"
android:layout_marginStart="10dp"
android:layout_marginTop="20dp"
android:layout_marginEnd="10dp"
android:hint="Enter Password"
android:inputType="textPassword" />
 <Button
android:id="@+id/idBtnLogin"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:layout_below="@id/password"
android:layout_marginStart="10dp"
android:layout_marginTop="20dp"
android:layout_marginEnd="10dp"
android:text="Login" />
</RelativeLayout>
```

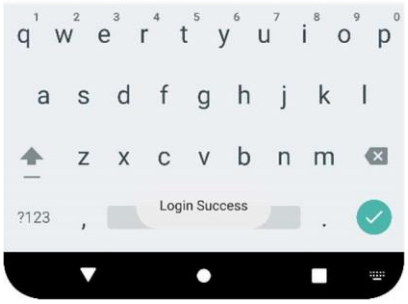
MainActivity.java

```
package com.example.a1; import
androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle; import android.util.Log;
import android.view.View; 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.username);
 EditText pw =(EditText) findViewById(R.id.password);
Button btn =(Button) findViewById(R.id.idBtnLogin);
btn.setOnClickListener(view -> {
 String uname = un.getText().toString();
String passwd = pw.getText().toString();
if(uname.equals("ajce") && passwd.equals("123")){
            Toast.makeText(this,"Login Success",Toast.LENGTH_SHORT).show();
        }else{
            Toast.makeText(this,"invalid username/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 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/apk/res/android"
xmlns:tools="http://schemas.android.com/tools"
xmlns:app="http://schemas.android.com/apk/res-auto"
android:layout_width="match_parent"
android:layout_height="match_parent"
tools:context=".MainActivity">
 <TextView
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:text="hi friends"
android:textColor="@color/teal_200"
android:textSize="30dp"
app:layout_constraintBottom_toBottomOf="paren
t”
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintTop_toTopOf="parent" />
```

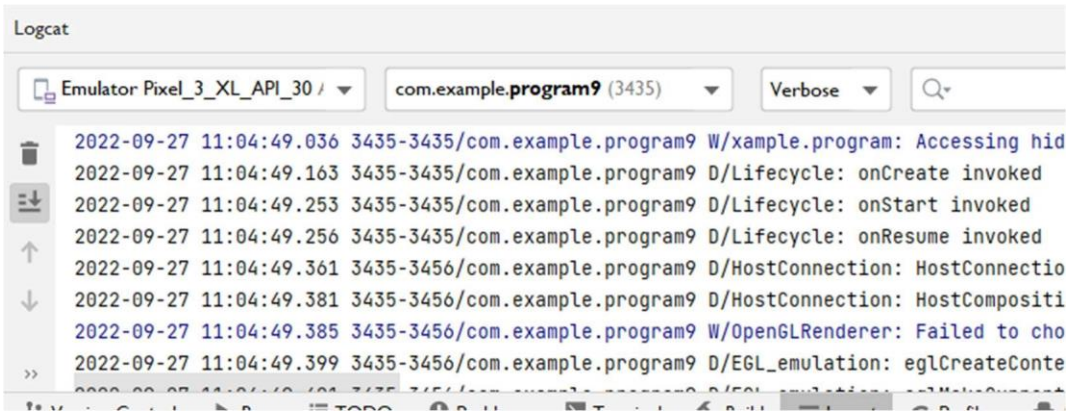
```
</androidx.constraintlayout.widget.ConstraintLayo
ut>
```

MainActivity.java

```
package com.example.program9; 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 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"?>
<LinearLayout
xmlns:android="http://schemas.android.com/apk/res/android"
xmlns:tools="http://schemas.android.com/tools"
android:id="@+id/activity_main"     android:layout_width="match_parent"
android:layout_height="match_parent"     android:orientation="vertical"
android:textAlignment="center"     android:weightSum="1">

 <TextView   android:text="calculator"
android:layout_width="match_parent"
android:id="@+id/textView"
android:layout_height="30dp"
android:gravity="center_horizontal"
android:textColorLink="?android:attr/editTextColor"
android:textSize="40sp"
android:layout_weight="0.07" />

<EditText
android:layout_width="match_parent"
```

```
android:layout_height="wrap_content"
android:inputType="number"
android:ems="10"
android:id="@+id/editOp1"
android:textSize="18sp"
android:gravity="center_horizontal"
android:layout_marginBottom="5dp"
android:visibility="visible"
android:hint="first number"
android:layout_marginLeft="30dp"
android:layout_marginRight="30dp"/>

 <EditText
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:inputType="number"
android:ems="10"
android:id="@+id/editOp2"
android:textSize="18sp"
android:gravity="center_horizontal"
android:elevation="1dp"
android:hint="second number"
android:layout_marginLeft="30dp"
android:layout_marginRight="30dp"/>
 <LinearLayout
android:orientation="horizontal"
android:layout_width="match_parent"
 android:layout_height="wrap_content">
```

```
        <Button
android:text="+"
android:layout_width="78dp"
android:layout_height="wrap_content"
android:id="@+id/btnadd"
android:layout_weight="0.01"
android:layout_marginLeft="30dp"
android:layout_marginRight="30dp"/>

 <Button
 android:text="-"
android:layout_width="78dp"
android:layout_height="wrap_content"
android:id="@+id/btnsub"
android:layout_weight="0.01"
android:layout_marginLeft="30dp"
android:layout_marginRight="30dp"/>

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

   <Button
         android:text="*"
android:layout_width="78dp"
android:layout_height="wrap_content"
android:id="@+id/btnmul"
android:layout_weight="0.01"
```

```
android:layout_marginLeft="30dp"
android:layout_marginRight="30dp"/>

<Button          android:text="/"
android:layout_height="wrap_content"
android:id="@+id/btndiv"
android:layout_width="78dp"
android:layout_weight="0.01"
android:layout_marginLeft="30dp"
android:layout_marginRight="30dp"/>

   </LinearLayout>    <LinearLayout
android:orientation="horizontal"
android:layout_width="match_parent"
android:layout_height="wrap_content">
       <Button
 android:text="Clear"
android:layout_width="80dp"
android:layout_height="wrap_content"
android:id="@+id/btnclr"
android:layout_weight="0.03"
android:layout_marginLeft="30dp"
android:layout_marginRight="30dp" />
   </LinearLayout>

<EditText
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:inputType="number"
```

```
android:ems="10"
android:id="@+id/result"
android:textSize="18sp"
android:text="answer"
android:gravity="center_horizontal"
android:layout_marginLeft="30dp"
android:layout_marginRight="30dp"/>
</LinearLayout>
```

MainActivity.java

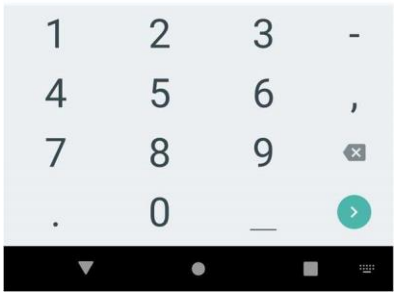
```
package com.example.program1; import
androidx.appcompat.app.AppCompatActivity; import
android.os.Bundle; import android.view.View; import
android.widget.Button; import android.widget.EditText;
import android.widget.TextView; import
android.widget.Toast; public class MainActivity
extends AppCompatActivity {     private EditText opr1;
private EditText opr2;     private Button btnadd;

   private     Button   btnsub;
private       Button    btnmul;
private      Button      btndiv;
private       Button       btnclr;
private TextView txtresult;
   @Override     protected void onCreate(Bundle
savedInstanceState) {
super.onCreate(savedInstanceState);
setContentView(R.layout.activity_main);
 opr1 = (EditText) findViewById(R.id.editOp1);
  opr2 = (EditText) findViewById(R.id.editOp2);
```

```
 btnadd = (Button) findViewById(R.id.btnadd);
 btnsub = (Button) findViewById(R.id.btnsub);
 btnmul = (Button) findViewById(R.id.btnmul);
 btndiv = (Button) findViewById(R.id.btndiv);
btnclr = (Button) findViewById(R.id.btnclr);
 txtresult= (TextView) findViewById(R.id.result);
btnadd.setOnClickListener(new View.OnClickListener() {
        @Override           public void onClick(View v) {
if((opr1.getText().length()>0) && (opr2.getText().length()>0)) {
double oper1 = Double.parseDouble(opr1.getText().toString());
double oper2 = Double.parseDouble(opr2.getText().toString());
double result = oper1 + oper2;
txtresult.setText(Double.toString(result));
            }
else{
               Toast toast= Toast.makeText(MainActivity.this,"Enter The Required
Numbers",Toast.LENGTH_LONG);
               toast.show();
            }
         }
      });
      btnsub.setOnClickListener(new View.OnClickListener() {
         @Override           public void onClick(View v) {
if((opr1.getText().length()>0) && (opr2.getText().length()>0)) {
double oper1 = Double.parseDouble(opr1.getText().toString());
double oper2 = Double.parseDouble(opr2.getText().toString());
double result = oper1 - oper2;
txtresult.setText(Double.toString(result));
            }
else{
```

```
                Toast toast= Toast.makeText(MainActivity.this,"Enter The Required
Numbers",Toast.LENGTH_LONG);
                    toast.show();
                }
            }
        });
        btnmul.setOnClickListener(new View.OnClickListener() {
  @Override            public void onClick(View v) {
if((opr1.getText().length()>0) && (opr2.getText().length()>0)) {
double oper1 = Double.parseDouble(opr1.getText().toString());
double oper2 = Double.parseDouble(opr2.getText().toString());
double result = oper1 * oper2;
txtresult.setText(Double.toString(result));
                }
else{
Toast toast=
Toast.makeText
(MainActivity.t
his,"Enter The
Required
Numbers",Toast.LENGTH_LONG);
                    toast.show();
                }
            }
        });
        btndiv.setOnClickListener(new View.OnClickListener() {
            @Override            public void onClick(View v) {
if((opr1.getText().length()>0) && (opr2.getText().length()>0)) {
double oper1 = Double.parseDouble(opr1.getText().toString());
double oper2 = Double.parseDouble(opr2.getText().toString());
```

```
double result = oper1 / oper2;
txtresult.setText(Double.toString(result));
            }
else{
                Toast toast= Toast.makeText(MainActivity.this,"Enter The Required
Numbers",Toast.LENGTH_LONG);
                toast.show();
            }
        }
    });
    btnclr.setOnClickListener(new View.OnClickListener() {
        @Override           public
void onClick(View v) {
opr1.setText("");
opr2.setText("");
txtresult.setText("0.00");
opr1.requestFocus();
        }
    });
  }
}
```

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:tools="http://schemas.android.com/tools"
android:layout_width="match_parent"
android:layout_height="match_parent"
android:orientation="vertical"     tools:context=".MainActivity"
tools:ignore="HardcodedText">
   <TextView
      android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_gravity="center"
android:textSize="20dp"
android:layout_marginTop="20dp"
android:text="Form Validation"/>
   <EditText
      android:id="@+id/firstName"
android:layout_width="match_parent"
android:layout_height="wrap_content"
```

```
android:layout_marginStart="16dp"
android:layout_marginTop="16dp"
android:layout_marginEnd="16dp"        android:hint="First
Name"        android:inputType="text" />
   <EditText
android:id="@+id/lastName"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:layout_marginStart="16dp"
android:layout_marginTop="16dp"
android:layout_marginEnd="16dp"
android:hint="Last Name"
android:inputType="text" />
   <EditText        android:id="@+id/email"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:layout_marginStart="16dp"
android:layout_marginTop="16dp"
android:layout_marginEnd="16dp"
android:hint="Email"
android:inputType="textEmailAddress" />
   <EditText
android:id="@+id/password"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:layout_marginStart="16dp"
android:layout_marginTop="16dp"
android:layout_marginEnd="16dp"
android:hint="Password"
android:inputType="textPassword" />
   <LinearLayout        android:layout_width="match_parent"
android:layout_height="wrap_content"
```

```
android:layout_marginTop="8dp"        android:gravity="end"
android:orientation="horizontal">
      <Button
         android:id="@+id/cancelButton"
style="@style/Widget.AppCompat.Button.Borderless"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_marginEnd="180dp"
android:text="CANCEL"
android:textColor="@color/black" />
      <Button
         android:id="@+id/proceedButton"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_marginEnd="20dp"
android:backgroundTint="@color/black"
android:text="PROCEED"
android:textColor="@android:color/white"/>
   </LinearLayout>
</LinearLayout>
```

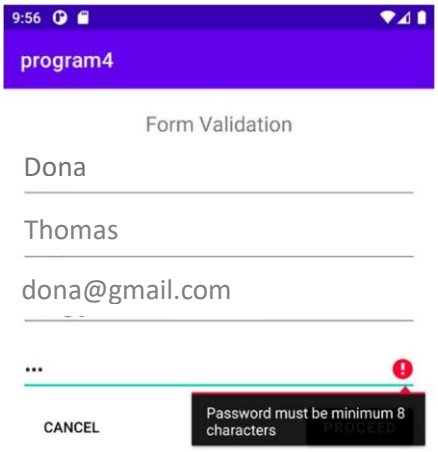
MainActivity.java

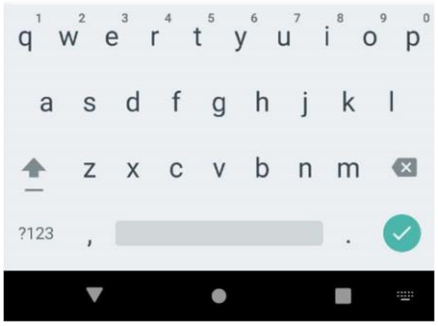
```
package com.example.program4; import
androidx.appcompat.app.AppCompatActivity;
import android.content.Intent; import
android.os.Bundle; import android.view.View;
import android.widget.Button;
import android.widget.EditText; public class
MainActivity extends AppCompatActivity {
   Button bCancel, bProceed;
```

```
   EditText etFirstName, etLastName, etEmail, etPassword;
boolean isAllFieldsChecked = false;
   @Override     protected void onCreate(Bundle
savedInstanceState) {         super.onCreate(savedInstanceState);
setContentView(R.layout.activity_main);
 bProceed = findViewById(R.id.proceedButton);
  bCancel = findViewById(R.id.cancelButton);
 etFirstName = findViewById(R.id.firstName);
etLastName = findViewById(R.id.lastName);
 etEmail = findViewById(R.id.email);
 etPassword = findViewById(R.id.password);
bProceed.setOnClickListener(new View.OnClickListener() {
 @Override            public void onClick(View v)
{               isAllFieldsChecked =
CheckAllFields();               if
(isAllFieldsChecked) {
                Intent i = new Intent(MainActivity.this, MainActivity.class);
startActivity(i);
             }
          }
       });
       bCancel.setOnClickListener(new View.OnClickListener() {
          @Override            public
void onClick(View v) {
MainActivity.this.finish();
System.exit(0);
          }
       });
   }
```

```
   private boolean CheckAllFields() {        if
(etFirstName.length() == 0) {
etFirstName.setError("This field is required");
return false;
      }
      if (etLastName.length() == 0) {
etLastName.setError("This field is required");
return false;
      }
      if (etEmail.length() == 0) {
etEmail.setError("Email is required");
return false;
      }
      if (etPassword.length() == 0) {
etPassword.setError("Password is required");
         return false;
      } else if (etPassword.length() < 8) {
etPassword.setError("Password must be minimum 8 characters");
         return false;
      }
return true;
   }
}
```

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:orientation="vertical"     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="prgm4 shared preference "
android:id="@+id/textView"
android:layout_alignParentTop="true"
android:layout_centerHorizontal="true"
android:textSize="29dp" />
   <EditText
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:id="@+id/editText"
```

```
android:layout_below="@+id/textView2"
android:layout_marginTop="67dp"
android:hint="Name"
android:layout_alignParentLeft="true"
android:layout_alignParentStart="true"
android:layout_alignParentRight="true"
android:layout_alignParentEnd="true" />
   <EditText
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:id="@+id/editText3"
android:layout_below="@+id/editText2"
android:layout_alignParentLeft="true"
android:layout_alignParentStart="true"
android:layout_alignParentRight="true"
android:layout_alignParentEnd="true"
android:hint="Email" />     <EditText
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:id="@+id/editText2"
android:layout_below="@+id/editText"
android:layout_alignParentLeft="true"
android:layout_alignParentStart="true"
android:layout_alignParentRight="true"
android:layout_alignParentEnd="true"
android:hint="Pass" />
   <Button         android:layout_width="wrap_content"
android:layout_height="wrap_content"         android:text="Save"
```

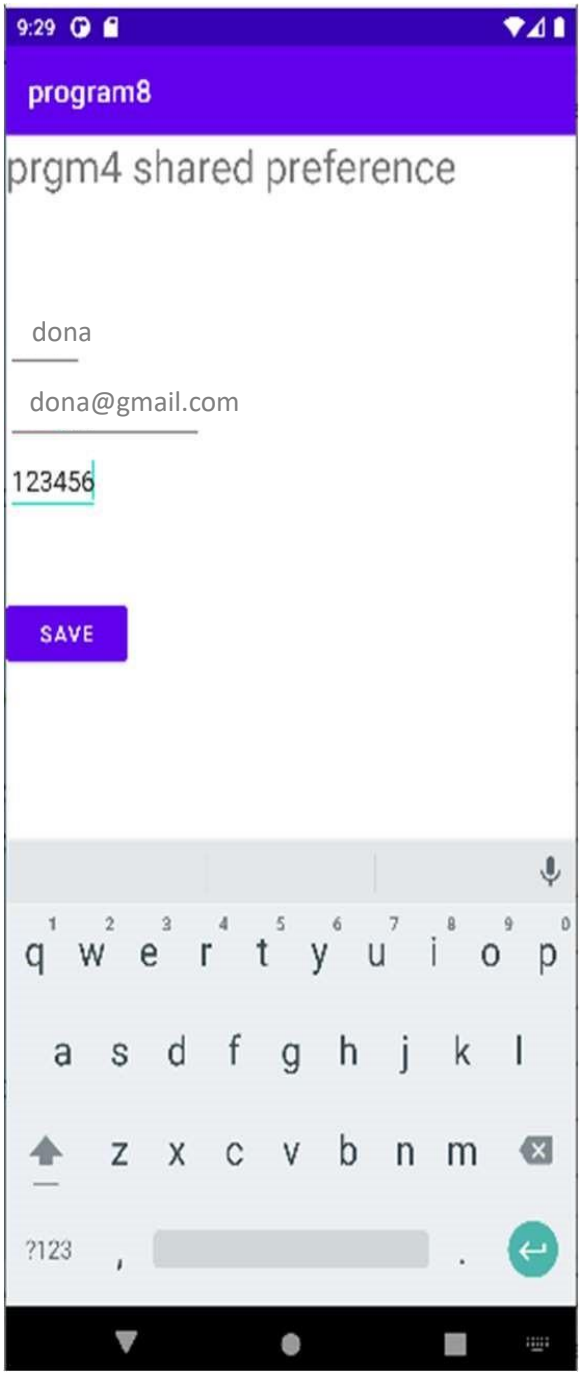
```
android:id="@+id/button"
android:layout_below="@+id/editText3"
android:layout_centerHorizontal="true"
android:layout_marginTop="50dp" />
</LinearLayout>
```

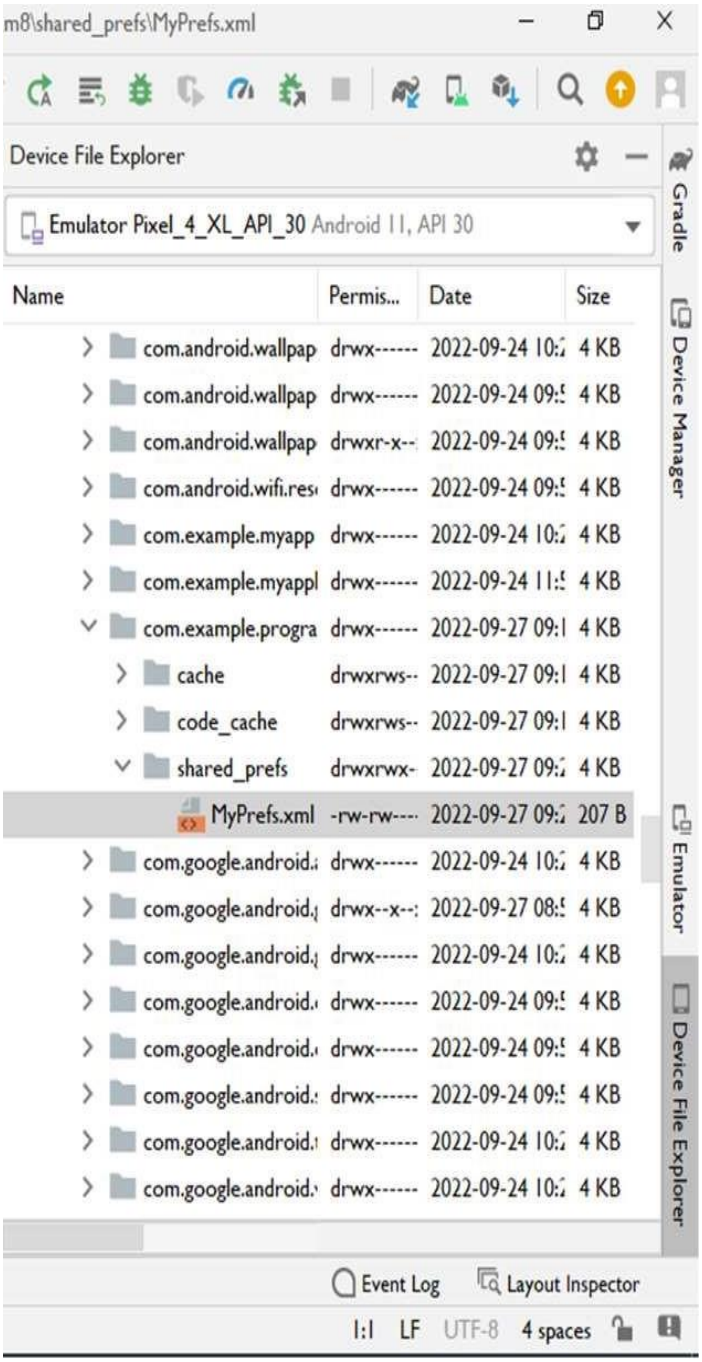
MainActivity.java

```
package com.example.program8;
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.Toast; public class MainActivity extends
AppCompatActivity {
   EditText ed1,ed2,ed3;     Button b1;     public static final
String MyPREFERENCES = "MyPrefs" ;     public static
final String Name = "nameKey";     public static final String
Phone = "phoneKey";     public static final String Email =
"emailKey";
   SharedPreferences sharedpreferences;
   @Override     protected void onCreate(Bundle
savedInstanceState) {
super.onCreate(savedInstanceState);
setContentView(R.layout.activity_main);
ed1=(EditText)findViewById(R.id.editText);
ed2=(EditText)findViewById(R.id.editText2);
```

```
ed3=(EditText)findViewById(R.id.editText3);
b1=(Button)findViewById(R.id.button);

sharedpreferences = getSharedPreferences(MyPREFERENCES, Context.MODE_PRIVATE);
      b1.setOnClickListener(new View.OnClickListener() {
         @Override           public
void onClick(View v) {
            String n  = ed1.getText().toString();
            String ph  = ed2.getText().toString();
            String e  = ed3.getText().toString();
            SharedPreferences.Editor editor =
sharedpreferences.edit();              editor.putString(Name, n);
editor.putString(Phone, ph);              editor.putString(Email, e);
editor.commit();
            Toast.makeText(MainActivity.this,"Thanks",Toast.LENGTH_LONG).show();
         }
      });
   }
}
```

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

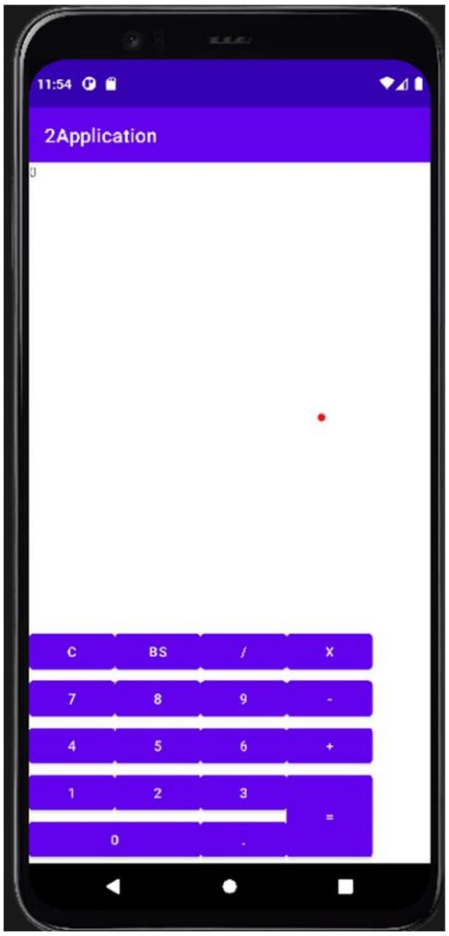
Activity_main.xml

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

 <TextView
android:layout_height="match_parent"
android:layout_width="match_parent"
android:text="0"
android:layout_above="@+id/gridLayout" />

 <GridLayout
android:id="@+id/gridLayout"
android:layout_width="fill_parent"
android:layout_height="wrap_content"
```

```
android:layout_gravity="center"
android:layout_alignParentBottom="true"
android:columnCount="4"
android:rowCount="5"
android:orientation="horizontal"
android:useDefaultMargins="false">

  <Button
android:text="C" />
<Button
android:text="BS" />
<Button
android:text="/" />
<Button
android:text="x" />
<Button
android:text="7" />
<Button
android:text="8" />
<Button
android:text="9" />
<Button
android:text="-" />
<Button
android:text="4" />
<Button
android:text="5" />
<Button
android:text="6" />
<Button
```

```
android:text="+" />
<Button
android:text="1" />
<Button
android:text="2" />
<Button
android:text="3" />
<Button
android:layout_gravity="
fill_vertical"
android:layout_rowSpan
="2"
android:text="=" />
<Button
android:layout_gravity="
fill_horizontal"
android:layout_columnS
pan="2"
android:text="0" />
<Button
android:text="." />
 </GridLayout>
</RelativeLayout>
```

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: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="FACEBOOK"
android:textColor="#4267B2"
android:textSize="30dp"
android:textStyle="bold"
android:layout_marginLeft="125dp"
android:layout_marginTop="60dp"/>
   <TextView        android:text="Log in to
Facebook"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:layout_marginTop="140dp"
```

```
android:textSize="30dp"
android:textStyle="bold"
android:gravity="center_horizontal"/>
   <EditText
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:inputType="number"
android:ems="10"        android:textSize="18sp"
android:gravity="center_horizontal"
android:elevation="1dp"        android:hint="Email
address or phone number"
android:layout_marginLeft="30dp"
android:layout_marginRight="30dp"
android:layout_marginTop="200dp"/>
   <EditText
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:inputType="number"
android:textSize="18sp"
android:gravity="center_horizontal"
android:hint="password"
android:layout_marginLeft="30dp"
android:layout_marginRight="30dp"
android:layout_marginTop="260dp"/>
   <Button        android:text="Log In"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_marginLeft="150dp"
android:layout_marginRight="150dp"
```

```
android:layout_marginTop="330dp"
android:backgroundTint="#4267B2"/>
   <TextView        android:text="Forgotten account? · Sign
up for Facebook"        android:layout_width="match_parent"
android:layout_height="wrap_content"
android:textSize="17dp"        android:textStyle="italic"
android:gravity="center_horizontal"
android:layout_marginTop="400dp"
android:textColor="#4267B2 />
</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"
```

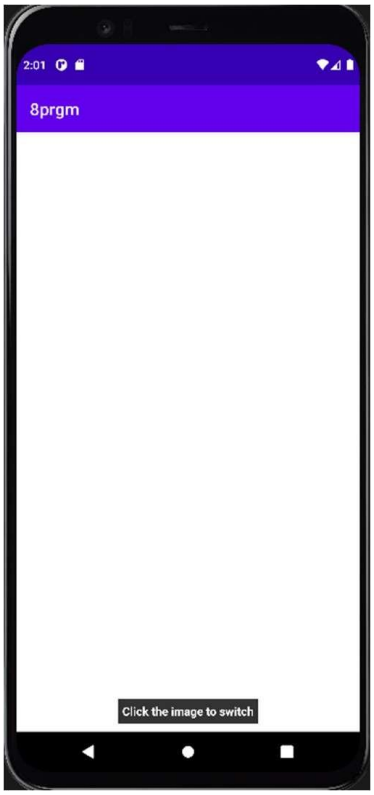
```
android:text="Click the image to switch"
android:layout_gravity="center_horizontal|bottom"
android:padding="5dip"
android:textColor="#ffffff"
android:textStyle="bold"
android:background="#333333"
android:layout_marginBottom="10dip" />
</FrameLayout>
```

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"
```

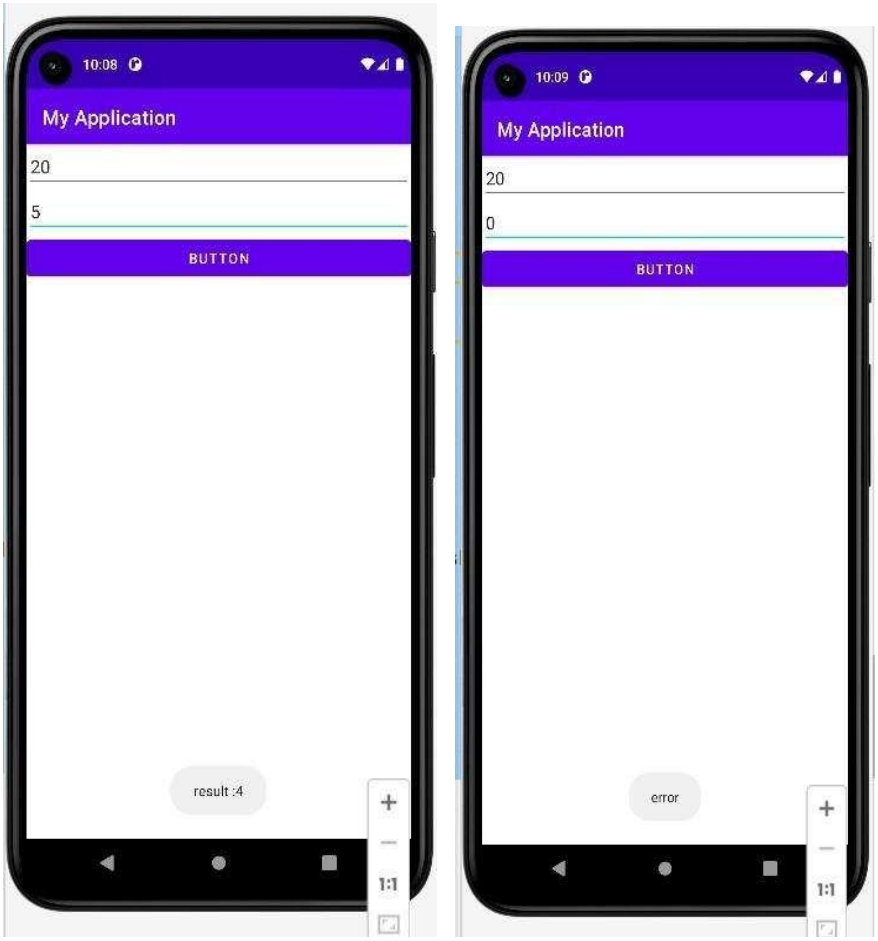
```
android:ems="10"
android:hint="enter second value" />
   <Button        android:id="@+id/btn"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:text="Button" />
</LinearLayout>
```

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:tools="http://schemas.android.com/tools"
android:layout_width="match_parent"
android:layout_height="match_parent"
android:orientation="vertical"
tools:context=".MainActivity"
tools:ignore="HardcodedText">
   <EditText        android:id="@+id/fn"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:layout_marginStart="16dp"
android:layout_marginTop="16dp"
android:layout_marginEnd="16dp"
android:hint="type a url"
android:inputType="text" />
   <Button
```

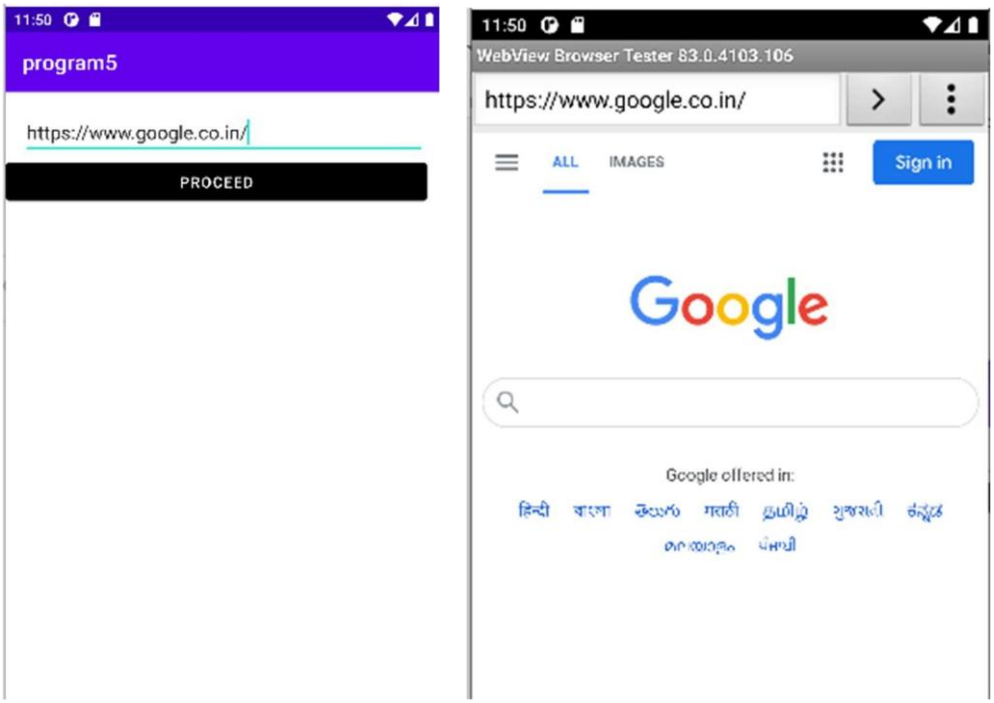
```
android:id="@+id/proceed"
android:layout_width="397dp"
android:layout_height="wrap_content"
android:layout_marginEnd="16dp"
android:backgroundTint="@color/black"
android:text="PROCEED"
android:textColor="@android:color/white"
tools:ignore="ButtonStyle" />
</LinearLayout>
```

MainActivity.java

```
package com.example.program5; 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 fn=(EditText)findViewById(R.id.fn);
Button proceed=(Button)findViewById(R.id.proceed);
proceed.setOnClickListener(new View.OnClickListener() {
         @Override           public
void onClick(View v) {
String url=fn.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.: 11

Aim

Develop application that works with explicit intents

CO3

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

Procedure

Activity_main1.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/editText"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:text="good morning"
android:textAlignment="center"
android:textSize="28sp"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.0"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent" />
```

```
<Button
 android:id="@+id/btn1"
 android:text="next Screen"
android:onClick="newsScreen"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toBottomOf="@+id/editText" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

Activity_main2.xml

```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
xmlns:app="http://schemas.android.com/apk/res-auto"
xmlns:tools="http://schemas.android.com/tools"
android:layout_width="match_parent"
android:layout_height="match_parent"
tools:context=".MainActivity2">
   <TextView
android:id="@+id/editText"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:text="good evening"
android:textAlignment="center"
android:textSize="28sp"
app:layout_constraintBottom_toBottomOf
```

```
="parent"
app:layout_constraintEnd_toEndOf="pare
nt"
app:layout_constraintHorizontal_bias="0.0
"
app:layout_constraintStart_toStartOf="par
ent"
app:layout_constraintTop_toTopOf="pare
nt" />
   <Button        android:id="@+id/btn2"
android:text="next Screen"        android:onClick="next
Screen"        android:layout_width="wrap_content"
android:layout_height="wrap_content"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toBottomOf="@+id/editText" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

MainActivity1.java

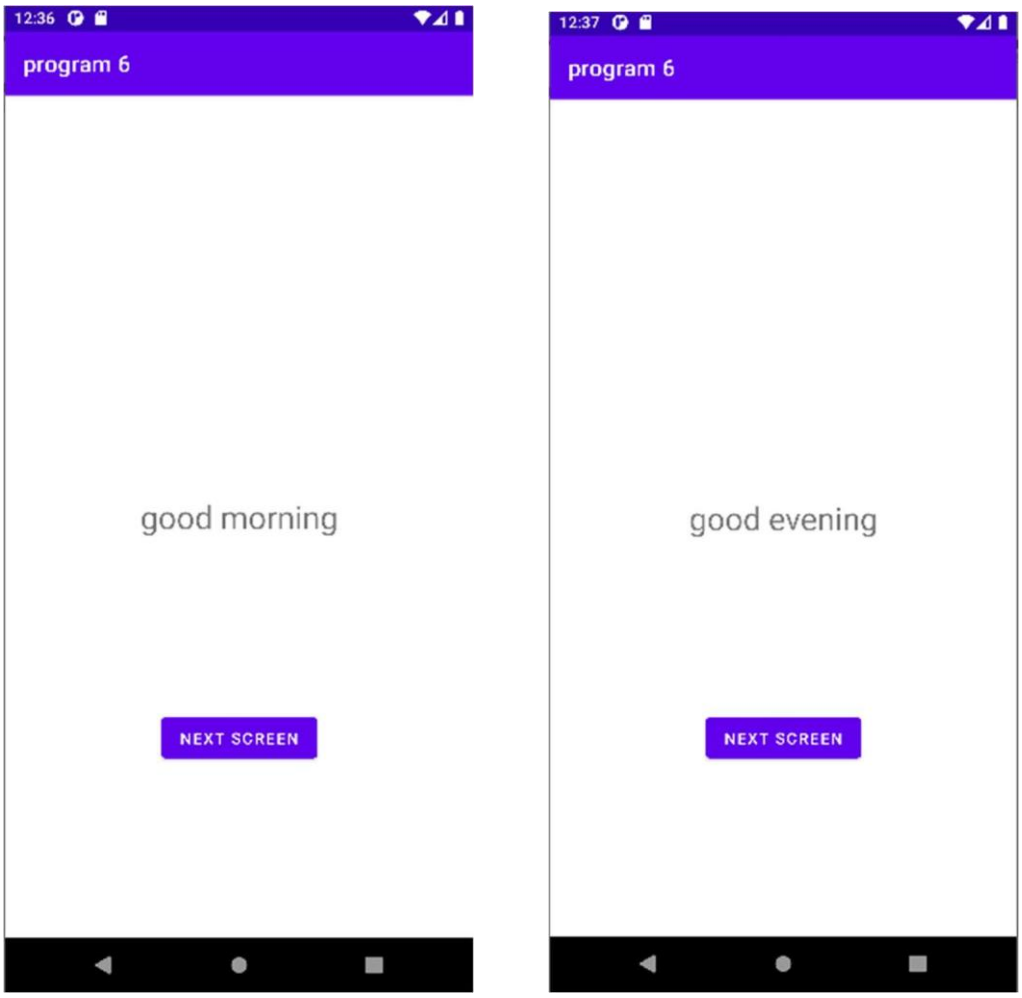
```
 package com.example.program6; import
androidx.appcompat.app.AppCompatActivity; import
android.content.Intent; import android.os.Bundle;
import android.view.View; public class MainActivity
extends AppCompatActivity {
   @Override     protected void onCreate(Bundle
savedInstanceState) {
super.onCreate(savedInstanceState);
setContentView(R.layout.activity_main);
   }
```

```
   public void newsScreen(View view) {
      Intent i = new Intent(getApplicationContext(), MainActivity2.class);
startActivity(i);
   }
}
```

MainActivity2.java

```
package com.example.program6; import
androidx.appcompat.app.AppCompatActivity; import
android.content.Intent; import android.os.Bundle; import
android.view.View; public class MainActivity2 extends
AppCompatActivity {
   @Override     protected void onCreate(Bundle
savedInstanceState) {
super.onCreate(savedInstanceState);
setContentView(R.layout.activity_main2);
   }
   public void newsScreen(View view) {
      Intent i = new Intent(getApplicationContext(), MainActivity2.class);
startActivity(i);
   }
}
```

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"?>
<FrameLayout
xmlns:android="http://schemas.android.com/apk/res/android"
xmlns:app="http://schemas.android.com/apk/res-auto"
xmlns:tools="http://schemas.android.com/tools"
android:layout_width="match_parent"
android:layout_height="match_parent"     tools:context=".MainActivity">
  <ListView
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:id="@+id/studlist"/>
</FrameLayout>
<?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:orientation="horizontal"     android:layout_width="match_parent"
android:layout_height="match_parent">
```

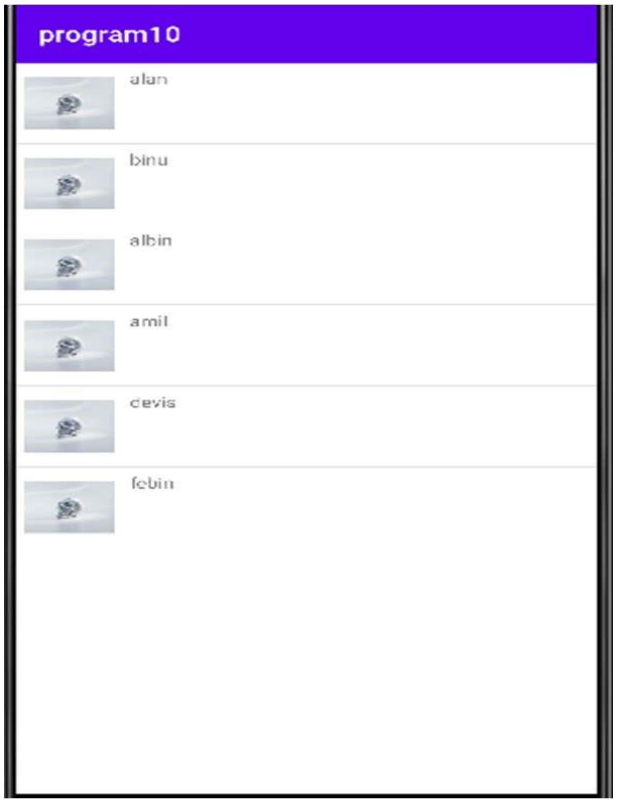
```
<ImageView
android:id="@+id/list_icon"
android:layout_width="65dp"
android:layout_height="65dp"
android:layout_margin="5dp" />
   <TextView
android:id="@+id/list_title"
android:layout_width="match_parent"
android:layout_height="65dp"
android:layout_margin="5dp" />
</LinearLayout>
```

MainActivity.java

```
package com.example.program10; 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 {
   ListView studlist;
   String[] studnames = {"alan","binu","albin","amil","devis","febin"};
   int[] studicons =
{R.drawable.img1,R.drawable.img2,R.drawable.img3,R.drawable.img4,R.drawable.img5,R.dr
a wable.img6};    @Override    protected void onCreate(Bundle savedInstanceState) {
super.onCreate(savedInstanceState);        setContentView(R.layout.activity_main);
      studlist = findViewById(R.id.studlist);
      ArrayList<HashMap<String, Object>> arrayList= new ArrayList<>();
for (int i=0; i < studnames.length; i++){
```

```
HashMap<String,Object> map = new HashMap<>();
map.put("studnames",studnames[i]);
map.put("studicons",studicons[i]);
arrayList.add(map);
        }
        String[] from ={"studnames","studicons"};
int to[] ={R.id.list_title,R.id.list_icon};
        SimpleAdapter adapter= new SimpleAdapter(this,arrayList, R.layout.listitem,from, to);
studlist.setAdapter(adapter);
    }
}
```

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

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"     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>
```

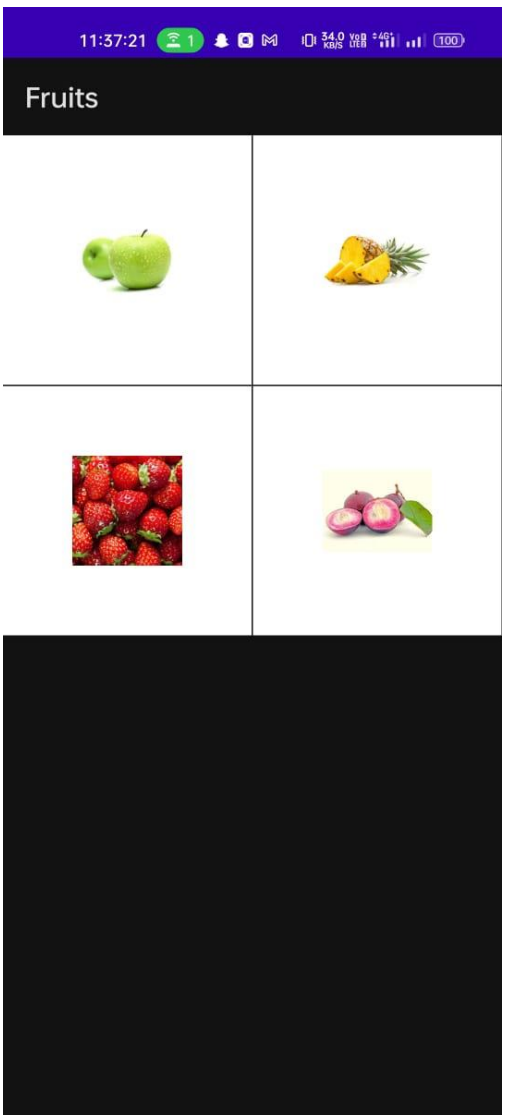
MainActivity.java

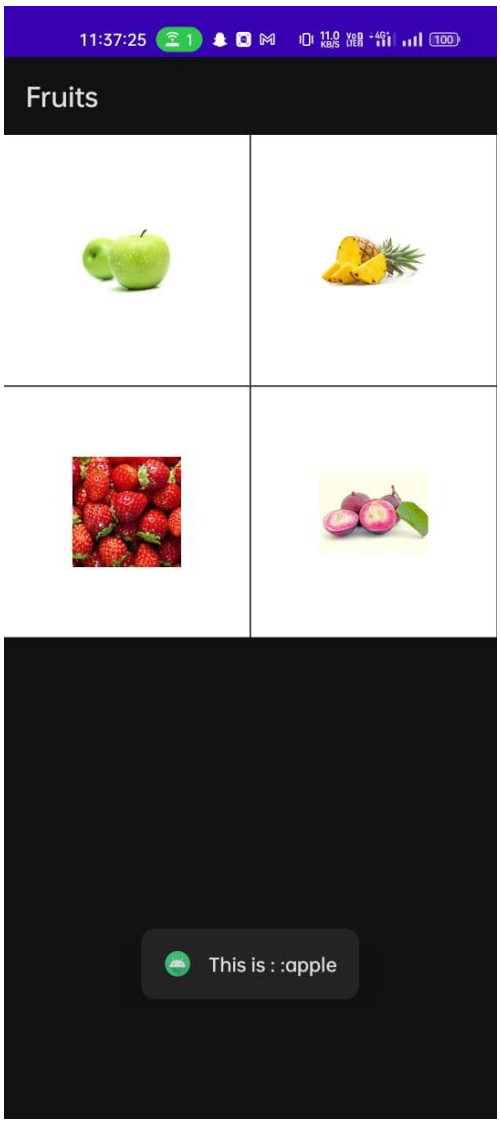
```
 package com.example.a8prgm; import
androidx.appcompat.app.AppCompatActivity;
import android.media.Image; import
android.os.Bundle; import android.view.View;
import android.view.ViewGroup; import
android.widget.AdapterView; import
android.widget.BaseAdapter; import
android.widget.CursorAdapter; import
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

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/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:layout_width="wrap_content"
android:layout_height="wrap_content"
android:text="cars"
android:textColor="@color/black"
android:textSize="30dp"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent" />
```

```
<Spinner        android:id="@+id/spinner"
android:layout_width="300dp"
android:layout_height="70dp" />
</LinearLayout>
```

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[] cars = { "city", "tiago", "civic", "nano", "mustang"};
   @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,cars);
aa.setDropDownViewResource(android.R.layout.simple_spinner_dropdown_item);
      spin.setAdapter(aa);
   }
```

```
   @Override     public void onItemSelected(AdapterView<?> arg0, View arg1, int
position, long id) {         Toast.makeText(getApplicationContext(),cars[position] ,
Toast.LENGTH_LONG).show();

   }
   @Override     public void
onNothingSelected(AdapterView<?> arg0) {
      // TODO Auto-generated method stub
   }
}
```

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

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

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="pare
nt"
app:layout_constraintHorizontal_bias="0.5
"
app:layout_constraintStart_toStartOf="par
ent"
app:layout_constraintTop_toTopOf="pare
nt" />
</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

Activity_main.xml

```
<?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>
```

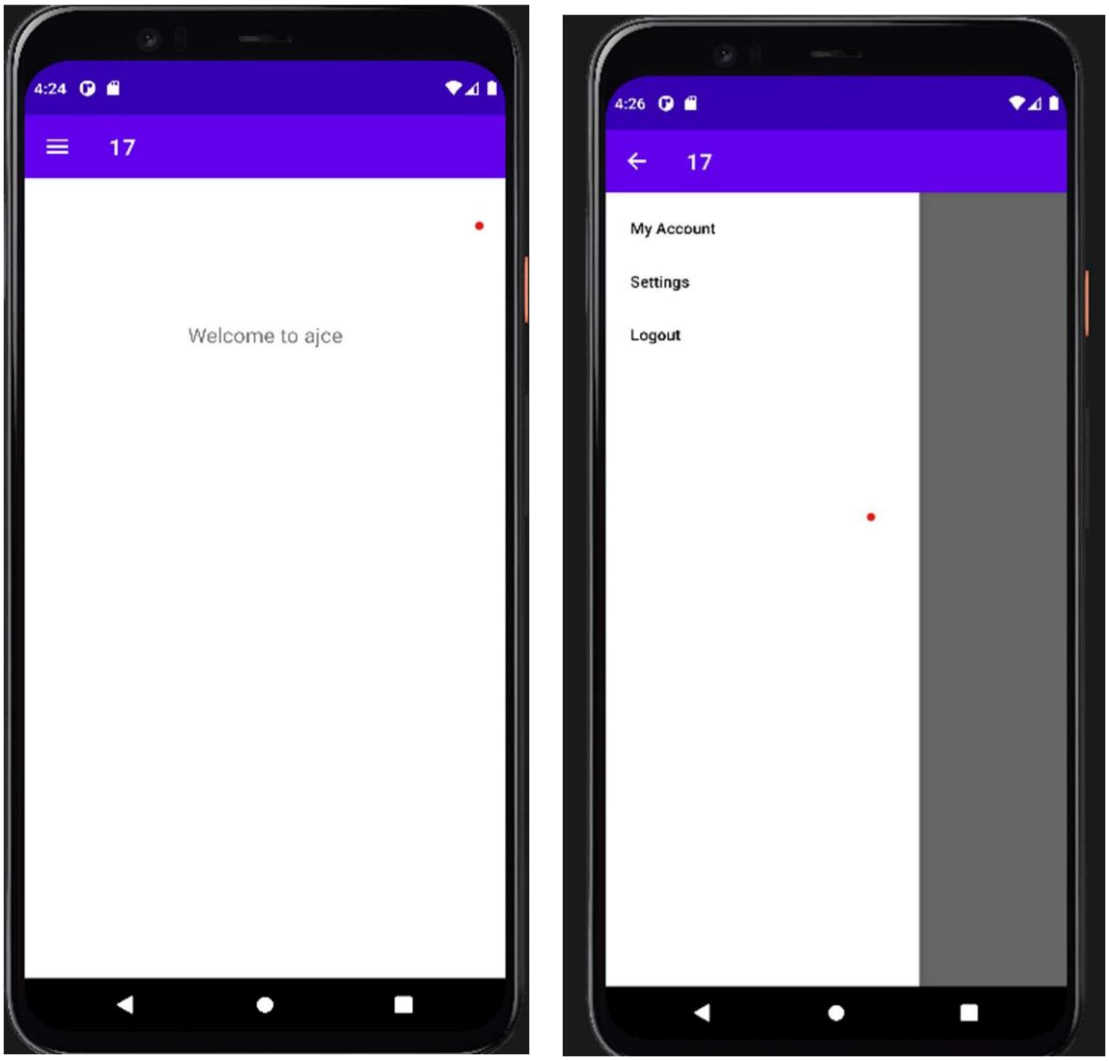
Navigation_menu.xml

```
<?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"?>
<RelativeLayout
xmlns:android="http://schemas.android.com/apk/res/android"
xmlns:app="http://schemas.android.com/apk/res-auto"
xmlns:tools="http://schemas.android.com/tools"
android:layout_width="match_parent"
android:layout_height="match_parent"     android:padding="10dp"
tools:context=".MainActivity">
   <TextView        android:id="@+id/texttitle"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:text="Please enter the details below"
android:textSize="24dp"
android:layout_marginTop="20dp"/>
   <EditText
android:id="@+id/name"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:hint="Name"
```

```
android:textSize="24dp"
android:layout_below="@+id/texttitle"
android:inputType="textPersonName"/>
   <EditText
android:id="@+id/contact"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:hint="Contact"
android:textSize="24dp"
android:layout_below="@+id/name"
android:inputType="number"/>
   <EditText        android:id="@+id/dob"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:hint="Date of Birth"
android:textSize="24dp"
android:layout_below="@+id/contact"
android:inputType="number"/>
   <Button
android:id="@+id/btnInsert"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:textSize="24dp"
android:text="Insert New Data"
android:layout_marginTop="30dp"
android:layout_below="@id/dob"/>
   <Button
android:id="@+id/btnUpdate"
android:layout_width="match_parent"
android:layout_height="wrap_content"
```

```
android:textSize="24dp"
android:text="Update Data"
android:layout_below="@id/btnInsert"/
>
   <Button        android:id="@+id/btnDelete"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:textSize="24dp"
android:text="Delete Existing Data"
android:layout_below="@id/btnUpdate"/>
   <Button        android:id="@+id/btnView"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:textSize="24dp"
android:text="View Data"
android:layout_below="@id/btnDelete"/>
</RelativeLayout>
```

MainActivity.java

```
package com.example.database; import
androidx.appcompat.app.AlertDialog; import
androidx.appcompat.app.AppCompatActivity;
import android.database.Cursor; import
android.os.Bundle; import android.view.View;
import android.widget.Button;

import android.widget.EditText; import
android.widget.Toast; public class MainActivity
extends AppCompatActivity {
   EditText name, contact, dob;
```

```
   Button insert, update, delete, view;
   DBHelper DB;

   @Override     protected void onCreate(Bundle
savedInstanceState) {
super.onCreate(savedInstanceState);
setContentView(R.layout.activity_main);        name =
findViewById(R.id.name);        contact =
findViewById(R.id.contact);        dob =
findViewById(R.id.dob);        insert =
findViewById(R.id.btnInsert);        update =
findViewById(R.id.btnUpdate);        delete =
findViewById(R.id.btnDelete);        view =
findViewById(R.id.btnView);        DB = new
DBHelper(this);        insert.setOnClickListener(new
View.OnClickListener() {
        @Override            public void
onClick(View view) {
            String nameTXT = name.getText().toString();
            String contactTXT = contact.getText().toString();
            String dobTXT = dob.getText().toString();

            Boolean checkinsertdata = DB.insertuserdata(nameTXT, contactTXT, dobTXT);
if(checkinsertdata==true)
                Toast.makeText(MainActivity.this, "New Entry Inserted",
Toast.LENGTH_SHORT).show();
            else
                Toast.makeText(MainActivity.this, "New Entry Not Inserted",
Toast.LENGTH_SHORT).show();
        }       });
```

```
    update.setOnClickListener(new View.OnClickListener() {
        @Override           public void
onClick(View view) {
            String nameTXT = name.getText().toString();
            String contactTXT = contact.getText().toString();
            String dobTXT = dob.getText().toString();
            Boolean checkupdatedata = DB.updateuserdata(nameTXT, contactTXT, dobTXT);
if(checkupdatedata==true)
                Toast.makeText(MainActivity.this, "Entry Updated",
Toast.LENGTH_SHORT).show();
            else
                Toast.makeText(MainActivity.this, "New Entry Not Updated",
Toast.LENGTH_SHORT).show();
        }       });
    delete.setOnClickListener(new View.OnClickListener() {
        @Override           public void
onClick(View view) {
            String nameTXT = name.getText().toString();
            Boolean checkudeletedata = DB.deletedata(nameTXT);
if(checkudeletedata==true)
                Toast.makeText(MainActivity.this, "Entry Deleted",
Toast.LENGTH_SHORT).show();
            else
                Toast.makeText(MainActivity.this, "Entry Not Deleted",
Toast.LENGTH_SHORT).show();
        }       });

    view.setOnClickListener(new View.OnClickListener() {
        @Override           public void
onClick(View view) {                Cursor
```

```
res = DB.getdata();
if(res.getCount()==0){
            Toast.makeText(MainActivity.this, "No Entry Exists",
Toast.LENGTH_SHORT).show();
            return;
          }
          StringBuffer buffer = new StringBuffer();
while(res.moveToNext()){              buffer.append("Name
:"+res.getString(0)+"\n");            buffer.append("Contact
:"+res.getString(1)+"\n");            buffer.append("Date of Birth
:"+res.getString(2)+"\n\n");
          }

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

DBhelper.java

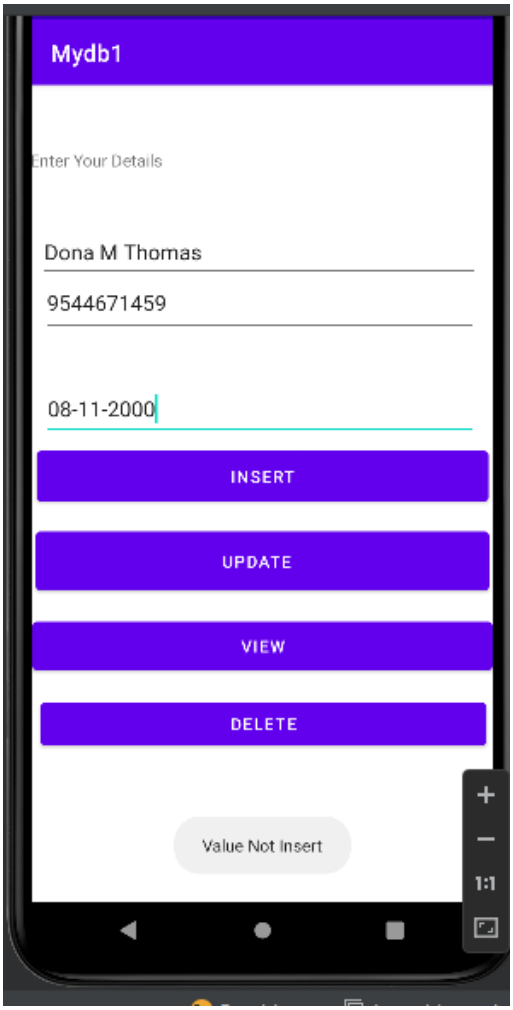
```
package com.example.database; import
android.content.ContentValues; import
android.content.Context; import
android.database.Cursor; import
android.database.sqlite.SQLiteDatabase;
import
android.database.sqlite.SQLiteOpenHelper;
import androidx.annotation.Nullable;
```

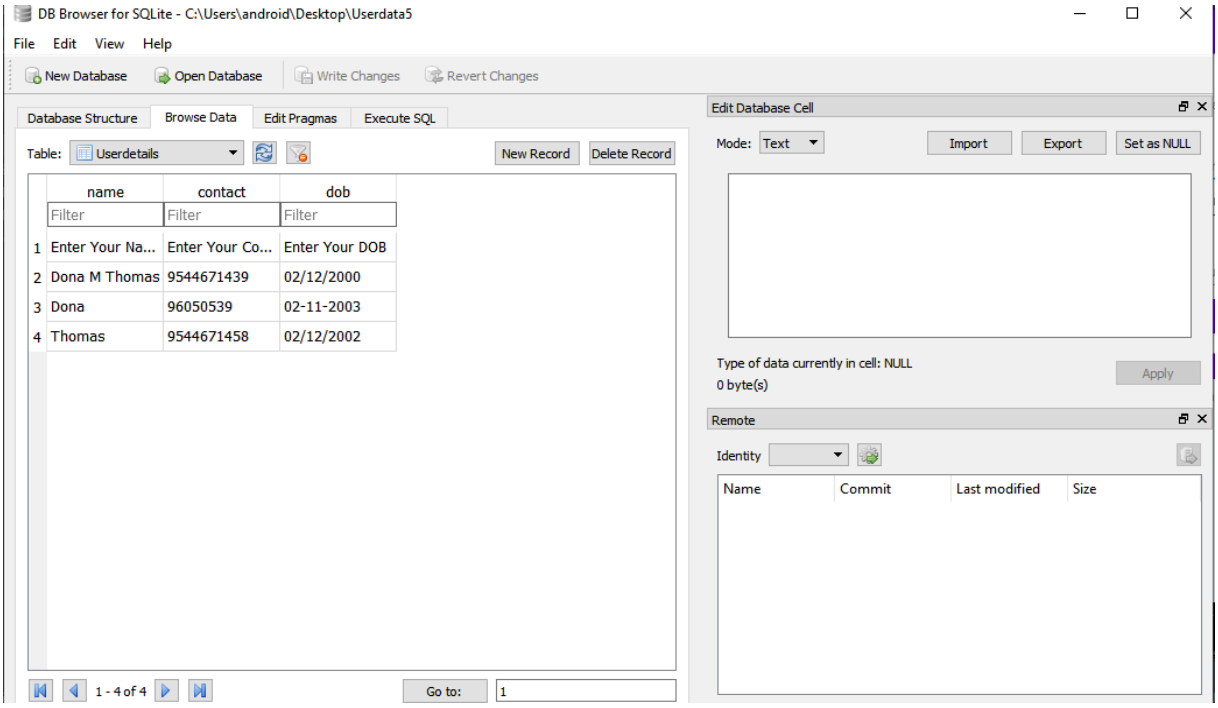
```
public class DBHelper extends SQLiteOpenHelper {
public DBHelper(Context context) {
super(context, "Userdata.db", null, 1);
   }
   @Override     public void
onCreate(SQLiteDatabase DB) {
      DB.execSQL("create Table Userdetails(name TEXT primary key, contact TEXT, dob
TEXT)");
   }
   @Override     public void onUpgrade(SQLiteDatabase
DB, int i, int ii) {
      DB.execSQL("drop Table if exists Userdetails");
   }
   public Boolean insertuserdata(String name, String contact, String dob)
   {
      SQLiteDatabase DB = this.getWritableDatabase();
ContentValues contentValues = new ContentValues();
contentValues.put("name", name);
contentValues.put("contact", contact);
contentValues.put("dob", dob);        long
result=DB.insert("Userdetails", null, contentValues);
if(result==-1){           return false;        }else{           return
true;
      }
   }
   public Boolean updateuserdata(String name, String contact, String dob)
   {
      SQLiteDatabase DB = this.getWritableDatabase();
ContentValues contentValues = new ContentValues();
```

```
contentValues.put("contact", contact);
contentValues.put("dob", dob);
      Cursor cursor = DB.rawQuery("Select * from Userdetails where name = ?", new
String[]{name});        if (cursor.getCount() > 0) {            long result =
DB.update("Userdetails", contentValues, "name=?", new String[]{name});
          if (result == -1)
{               return false;
} else {                return
true;
          }
      } else {
return false;
      }
   }
   public Boolean deletedata (String name)
   {
      SQLiteDatabase DB = this.getWritableDatabase();
      Cursor cursor = DB.rawQuery("Select * from Userdetails where name = ?",
new String[]{name});        if (cursor.getCount() > 0) {            long result =
DB.delete("Userdetails", "name=?", new String[]{name});
          if (result == -1)
{               return false;
} else {                return
true;
          }
      } else {
return false;
      }
   }
   public Cursor getdata ()
```

```
    {
        SQLiteDatabase DB = this.getWritableDatabase();
        Cursor cursor = DB.rawQuery("Select * from Userdetails", null);
return cursor;
    }
}
```

Output 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

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:padding="10dp"
tools:context=".MainActivity">
   <TextView        android:id="@+id/texttitle"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:text="Please enter the details below"
android:textSize="24dp"
android:layout_marginTop="20dp"/>
   <EditText
android:id="@+id/name"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:hint="Name"
android:textSize="24dp"
```

```
android:layout_below="@+id/texttitle"
android:inputType="textPersonName"/>
   <EditText
android:id="@+id/contact"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:hint="Contact"
android:textSize="24dp"
android:layout_below="@+id/name"
android:inputType="number"/>
   <EditText        android:id="@+id/dob"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:hint="Date of Birth"
android:textSize="24dp"
android:layout_below="@+id/contact"
android:inputType="number"/>
   <Button
android:id="@+id/btnInsert"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:textSize="24dp"
android:text="Insert New Data"
android:layout_marginTop="30dp"
android:layout_below="@id/dob"/>
   <Button
android:id="@+id/btnUpdate"
android:layout_width="match_parent"
android:layout_height="wrap_content"
```

```
android:textSize="24dp"
android:text="Update Data"
android:layout_below="@id/btnInsert"/
>
   <Button        android:id="@+id/btnDelete"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:textSize="24dp"
android:text="Delete Existing Data"
android:layout_below="@id/btnUpdate"/>
   <Button        android:id="@+id/btnView"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:textSize="24dp"
android:text="View Data"
android:layout_below="@id/btnDelete"/>
</RelativeLayout>
```

MainActivity.java

```
package com.example.database;
import androidx.appcompat.app.AlertDialog; import
androidx.appcompat.app.AppCompatActivity;
import android.database.Cursor; import
android.os.Bundle; import android.view.View;
import android.widget.Button;
import android.widget.EditText; import
android.widget.Toast; public class MainActivity
extends AppCompatActivity {
   EditText name, contact, dob;
```

```
 Button insert, update, delete, view;
   DBHelper DB;


   @Override     protected void onCreate(Bundle
savedInstanceState) {
super.onCreate(savedInstanceState);
setContentView(R.layout.activity_main);        name =
findViewById(R.id.name);        contact =
findViewById(R.id.contact);        dob =
findViewById(R.id.dob);        insert =
findViewById(R.id.btnInsert);        update =
findViewById(R.id.btnUpdate);        delete =
findViewById(R.id.btnDelete);        view =
findViewById(R.id.btnView);        DB = new
DBHelper(this);        insert.setOnClickListener(new
View.OnClickListener() {
          @Override            public void
onClick(View view) {
              String nameTXT = name.getText().toString();
              String contactTXT = contact.getText().toString();
              String dobTXT = dob.getText().toString();


              Boolean checkinsertdata = DB.insertuserdata(nameTXT, contactTXT, dobTXT);
if(checkinsertdata==true)
                  Toast.makeText(MainActivity.this, "New Entry Inserted",
Toast.LENGTH_SHORT).show();
              else
                  Toast.makeText(MainActivity.this, "New Entry Not Inserted",
Toast.LENGTH_SHORT).show();
```

```
  }       });
      update.setOnClickListener(new View.OnClickListener() {
         @Override           public void
onClick(View view) {
            String nameTXT = name.getText().toString();
            String contactTXT = contact.getText().toString();
            String dobTXT = dob.getText().toString();
            Boolean checkupdatedata = DB.updateuserdata(nameTXT, contactTXT, dobTXT);
if(checkupdatedata==true)
               Toast.makeText(MainActivity.this, "Entry Updated",
Toast.LENGTH_SHORT).show();
            else
               Toast.makeText(MainActivity.this, "New Entry Not Updated",
Toast.LENGTH_SHORT).show();
         }       });
      delete.setOnClickListener(new View.OnClickListener() {
         @Override           public void
onClick(View view) {
            String nameTXT = name.getText().toString();
            Boolean checkudeletedata = DB.deletedata(nameTXT);
if(checkudeletedata==true)
               Toast.makeText(MainActivity.this, "Entry Deleted",
Toast.LENGTH_SHORT).show();
            else
               Toast.makeText(MainActivity.this, "Entry Not Deleted",
Toast.LENGTH_SHORT).show();
         }       });

      view.setOnClickListener(new View.OnClickListener() {
```

```
 @Override           public void
onClick(View view) {              Cursor
res = DB.getdata();
if(res.getCount()==0){
                Toast.makeText(MainActivity.this, "No Entry Exists",
Toast.LENGTH_SHORT).show();
                return;
            }
            StringBuffer buffer = new StringBuffer();
while(res.moveToNext()){                 buffer.append("Name
:"+res.getString(0)+"\n");               buffer.append("Contact
:"+res.getString(1)+"\n");               buffer.append("Date of Birth
:"+res.getString(2)+"\n\n");
            }

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

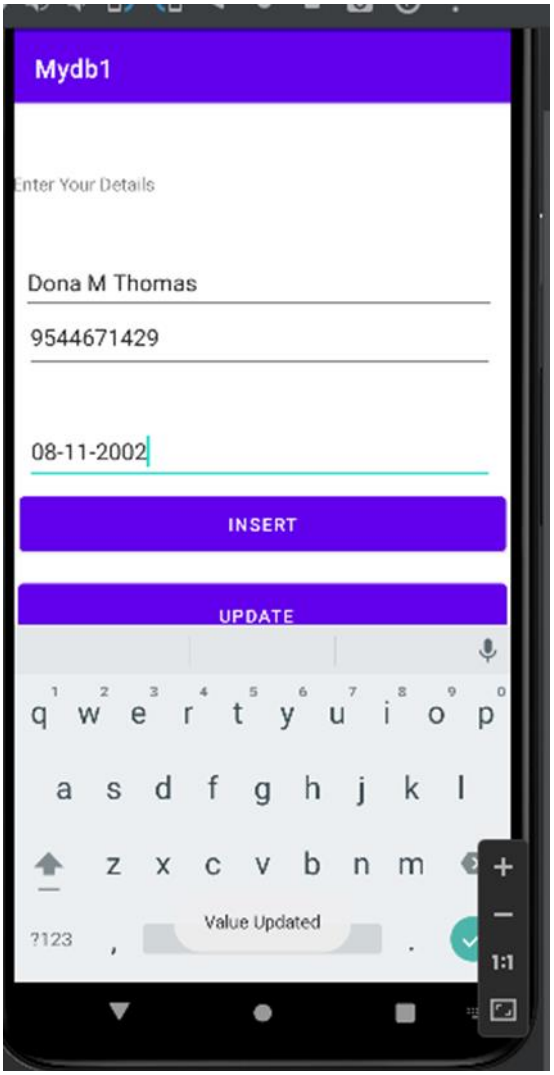
DBhelper.java package
com.example.database; import
android.content.ContentValues; import
android.content.Context; import
android.database.Cursor; import
android.database.sqlite.SQLiteDatabase;
import

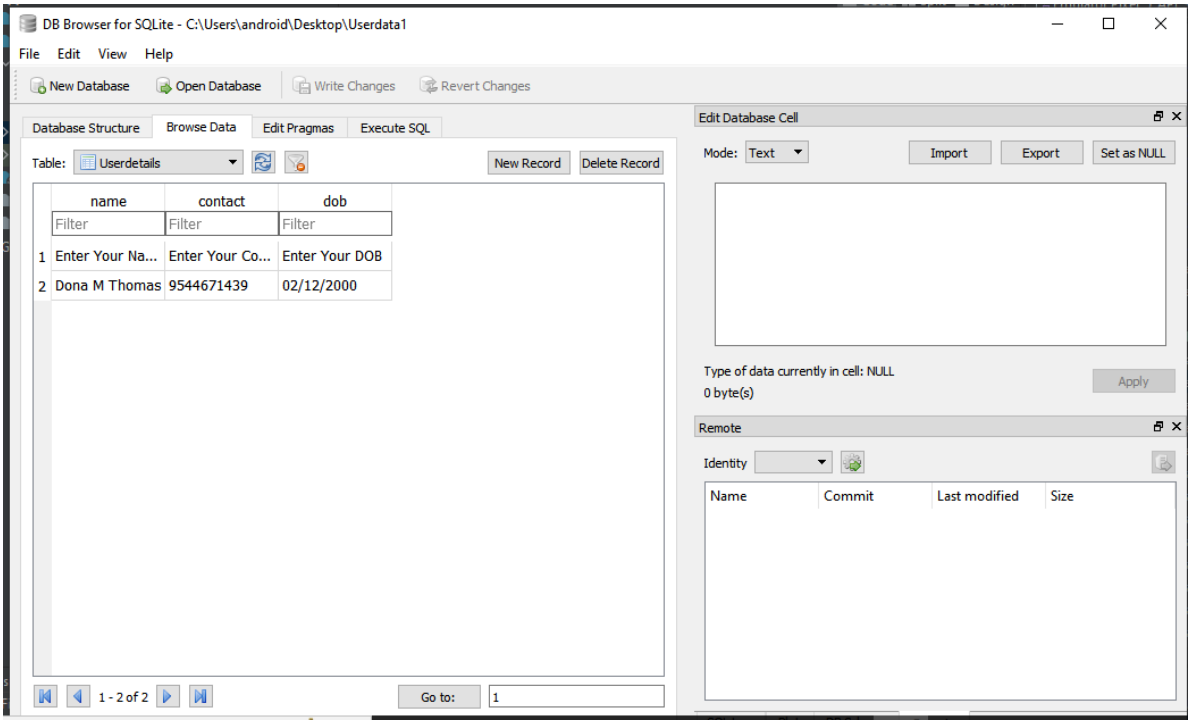
```
android.database.sqlite.SQLiteOpenHelper;
import androidx.annotation.Nullable;



public class DBHelper extends SQLiteOpenHelper {
public DBHelper(Context context) {
super(context, "Userdata.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 i, int ii) {
      DB.execSQL("drop Table if exists Userdetails");
   }
   public Boolean insertuserdata(String name, String contact, String dob)
   {
      SQLiteDatabase DB = this.getWritableDatabase();
ContentValues contentValues = new ContentValues();
contentValues.put("name", name);
contentValues.put("contact", contact);
contentValues.put("dob", dob);        long
result=DB.insert("Userdetails", null, contentValues);
if(result==-1){           return false;        }else{           return
true;
      }
   }
   public Boolean updateuserdata(String name, String contact, String dob)
```

```
   {
      SQLiteDatabase DB = this.getWritableDatabase();
ContentValues contentValues = new ContentValues();

contentValues.put("contact", contact);
contentValues.put("dob", dob);
      Cursor cursor = DB.rawQuery("Select * from Userdetails where name = ?", new
String[]{name});        if (cursor.getCount() > 0) {            long result =
DB.update("Userdetails", contentValues, "name=?", new String[]{name});
          if (result == -1)
{               return false;
} else {               return
true;
          }
      } else {
return false;
      }
   }
   public Boolean deletedata (String name)
   {
      SQLiteDatabase DB = this.getWritableDatabase();
      Cursor cursor = DB.rawQuery("Select * from Userdetails where name = ?",
new String[]{name});        if (cursor.getCount() > 0) {            long result =
DB.delete("Userdetails", "name=?", new String[]{name});
          if (result == -1)
{               return false;
} else {               return
true;
          }  } else {           return false;
      }
```

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

Output Screenshot





Result

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