Experiment No.1

Aim:

Design a Login Form with username and password using LinearLayout 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:

MainActivity.java

```
package com.example.login;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;

import android.view.View;

import android.widget.Button;

import android.widget.EditText;

import android.widget.TextView;

public class MainActivity extends AppCompatActivity {

   Button B1;

   EditText E1,E2;

   TextView T1;

   @Override

   protected void onCreate(Bundle savedInstanceState) {

      super.onCreate(savedInstanceState);

      setContentView(R.layout.activity_main);
```

```
        E1=findViewById(R.id.ed1);
        E2=findViewById(R.id.ed2);
        T1=findViewById(R.id.tx1);
        B1=findViewById(R.id.bt1);
        B1.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                String username=E1.getText().toString();
                String password=E2.getText().toString();
                if (username.equals("vishal") && password.equals("vishal123") ){
                    T1.setText("Login Successful");
                } else {
                    T1.setText("Login failed");
                }
            }
        });
    }
}
```

activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<TableLayout 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="@drawable/img"
tools:context=".MainActivity">
<TableRow
    android:layout_height="wrap_content"
    android:layout_width="wrap_content"
    android:background="@color/white">

    <TextView
    android:background="@color/white"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:textAlignment="center"
    android:text="LOGIN"
    />
</TableRow>
<TableRow
    android:layout_height="wrap_content"
    android:layout_width="wrap_content">
    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="@string/nameone"
        />
    <EditText
        android:id="@+id/ed1"
        android:layout_width="200px"
        android:layout_height="wrap_content"
```

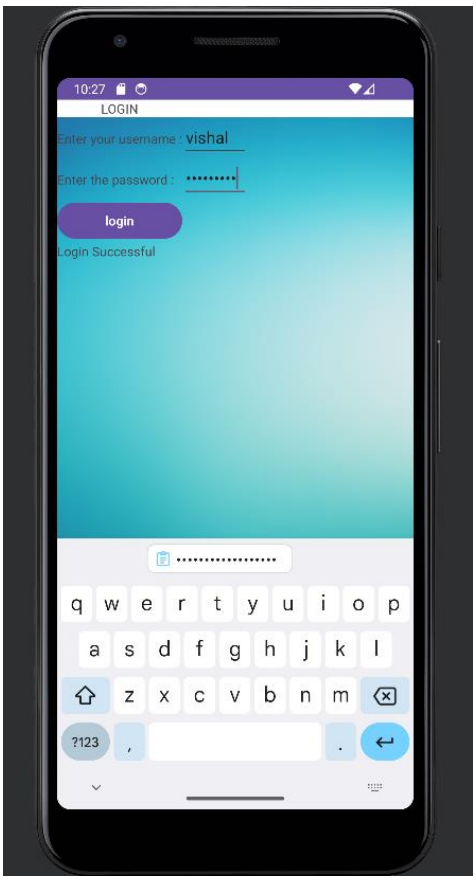
```
        android:inputType="text"
        />
    </TableRow>

    <TableRow
        android:layout_height="wrap_content"
        android:layout_width="wrap_content">
        <TextView
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="@string/nametwo"
            />
        <EditText
            android:id="@+id/ed2"
            android:layout_width="200px"
            android:layout_height="wrap_content"
            android:password="true"
            />
    </TableRow>
    <TableRow
        android:layout_width="match_parent"
        android:layout_height="match_parent">
        <Button
            android:id="@+id/bt1"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="login"
            />
    </TableRow>
```

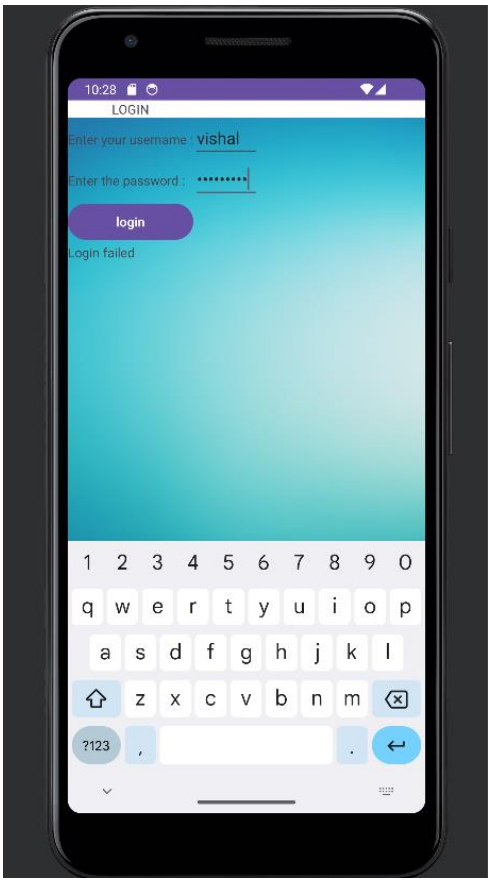
```
    <TableRow
        android:layout_width="wrap_content"
        android:layout_height="wrap_content">
        <TextView
            android:id="@+id/tx1"
            android:layout_height="wrap_content"
            android:layout_width="wrap_content"
            android:inputType="text"/>
    </TableRow>
</TableLayout>
```

Strings.xml

```
<resources>
    <string name="app_name">Login</string>
    <string name="nameone">Enter your username :</string>
    <string name="nametwo">Enter the password :</string>
</resources>
```

Output





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:app="http://schemas.android.com/apk/res-auto"
   xmlns:tools="http://schemas.android.com/tools"
   android:layout_width="match_parent"
   android:layout_height="match_parent"
   tools:context=".MainActivity">
   <TextView
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:text="Hello World!"
      app:layout_constraintBottom_toBottomOf="parent"
      app:layout_constraintEnd_toEndOf="parent"
      app:layout_constraintStart_toStartOf="parent"
      app:layout_constraintTop_toTopOf="parent" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

MainActivity.java

```
package com.example.activity;
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");
    }
    @Override
    protected void onStop() {
        super.onStop();
        Log.d("Lifecycle","onStop");
    }
    @Override
    protected void onRestart() {
        super.onRestart();
        Log.d("Lifecycle","onRestart");
    }
    @Override
    protected void onDestroy() {
        super.onDestroy();
        Log.d("Lifecycle","onDestroy");
    }
}
```

Output

```
2023-10-21 09:32:39.483  3728-3728  Lifecycle           com.example.activity  D  onCreate invoked
2023-10-21 09:32:39.491  3728-3728  Lifecycle           com.example.activity  D  onStart invoked
2023-10-21 09:32:39.493  3728-3728  Lifecycle           com.example.activity  D  onResume invoked
```

```
2023-10-21 09:33:08.595  3728-3728  Lifecycle           com.example.activity  D  onPause
2023-10-21 09:33:09.181  3728-3728  Lifecycle           com.example.activity  D  onStop
2023-10-21 09:33:09.182  3728-3728  Lifecycle           com.example.activity  D  onDestroy
```

```
--------------------------- PROCESS STARTED (3728) for package com.example.activity ---------------------------
--------- beginning of kernel
--------- beginning of main
--------- beginning of system
--------- beginning of crash
2023-10-21 09:29:36.157  3728-3728  xample.activit          com.example.activity  I  Late-enabling -Xcheck:jni
2023-10-21 09:29:36.167  3728-3728  xample.activit          com.example.activity  I  Unquickening 12 vdex files!
2023-10-21 09:29:36.167  3728-3728  xample.activit          com.example.activity  W  Unexpected CPU variant for X86 using defaults: x86
2023-10-21 09:29:36.380  3728-3728  NetworkSecurityConfig   com.example.activity  D  No Network Security Config specified, using platform default
2023-10-21 09:29:36.380  3728-3728  NetworkSecurityConfig   com.example.activity  D  No Network Security Config specified, using platform default
2023-10-21 09:29:36.450  3728-3752  libEGL                  com.example.activity  D  loaded /vendor/lib/egl/libEGL_emulation.so
2023-10-21 09:29:36.452  3728-3752  libEGL                  com.example.activity  D  loaded /vendor/lib/egl/libGLESv1_CM_emulation.so
2023-10-21 09:29:36.466  3728-3752  libEGL                  com.example.activity  D  loaded /vendor/lib/egl/libGLESv2_emulation.so
2023-10-21 09:29:36.487  3728-3728  AppCompatDelegate       com.example.activity  D  Checking for metadata for AppLocalesMetadataHolderService : !
2023-10-21 09:29:36.576  3728-3728  xample.activit          com.example.activity  W  Accessing hidden method Landroid/view/View;->computeFitSyste
2023-10-21 09:29:36.576  3728-3728  xample.activit          com.example.activity  W  Accessing hidden method Landroid/view/ViewGroup;->makeOption
2023-10-21 09:29:36.645  3728-3728  Lifecycle               com.example.activity  D  onCreate invoked
2023-10-21 09:29:36.700  3728-3728  Lifecycle               com.example.activity  D  onStart invoked
2023-10-21 09:29:36.702  3728-3728  Lifecycle               com.example.activity  D  onResume invoked
```

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:

MainActivity.java

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

import android.widget.EditText;
import android.widget.TextView;

public class MainActivity extends AppCompatActivity {
   Button B1,B2,B3,B4;
   EditText E1,E2;
   TextView TX1;
   @Override
   protected void onCreate(Bundle savedInstanceState) {
      super.onCreate(savedInstanceState);
      setContentView(R.layout.activity_main);
      E1 = findViewById(R.id.ed1);
      E2 = findViewById(R.id.ed2);
      B1 = findViewById(R.id.bt1);
      B2 = findViewById(R.id.bt2);
      B3 = findViewById(R.id.bt3);
      B4 = findViewById(R.id.bt4);
      TX1= findViewById(R.id.tx1);
      B1.setOnClickListener(new View.OnClickListener() {
         @Override
         public void onClick(View v) {
            calculate("+");
         }
```

```
        });
        B2.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                calculate("-");
            }
        });
        B3.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                calculate("*");
            }
        });
        B4.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {

                calculate("/");
            }
        });
    }
    private void calculate(String operator) {
        double num1 = Double.parseDouble(E1.getText().toString());
        double num2 = Double.parseDouble(E2.getText().toString());
        double result = 0;
        switch (operator) {
            case "+":
                result = num1 + num2;
                break;
            case "-":
                result = num1 - num2;
                break;
            case "*":
                result = num1 * num2;
                break;
            case "/":
                if (num2 != 0) {
                    result = num1 / num2;
                } else {
                    TX1.setText("DIVISION BY ZERO IS NOT ALLOWED");
                    return;
                }
                break;
        }
        TX1.setText(String.valueOf(result));
    }
```

```
}
```

activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<TableLayout 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="@drawable/imgnew2"
    tools:context=".MainActivity">
    <TableRow
        android:layout_height="wrap_content"
        android:layout_width="wrap_content">
        <TextView
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="@string/nameone"
            />
        <EditText
            android:id="@+id/ed1"
            android:layout_width="200px"
            android:layout_height="wrap_content"
            android:inputType="text"
            />
    </TableRow>
    <TableRow
        android:layout_height="wrap_content"
        android:layout_width="wrap_content">
```

```
    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="@string/nametwo"
        />
    <EditText
        android:id="@+id/ed2"
        android:layout_width="200px"
        android:layout_height="wrap_content"
        android:inputType="text"
        />
  </TableRow>
  <TableRow
    android:layout_width="match_parent"
    android:layout_height="match_parent">
    <Button
        android:id="@+id/bt1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="add"/>
    <Button
        android:id="@+id/bt2"
        android:layout_width="200dp"
        android:layout_height="wrap_content"
        android:text="subtract"
        />
  </TableRow>
  <TableRow
    android:layout_width="match_parent"
```

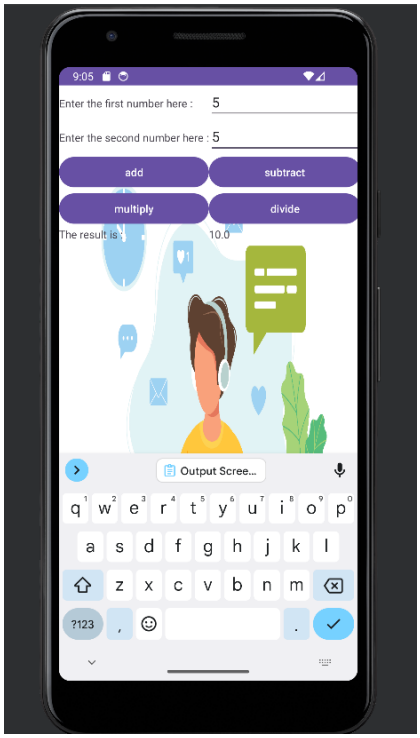
```
    android:layout_height="match_parent">
    <Button
        android:id="@+id/bt3"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="multiply"
        />
    <Button
        android:id="@+id/bt4"
        android:layout_width="200dp"
        android:layout_height="wrap_content"
        android:text="divide"
        />
  </TableRow>
  <TableRow
    android:layout_width="wrap_content"
    android:layout_height="wrap_content">

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="match_parent"
        android:text="@string/namethree" />

    <TextView
        android:id="@+id/tx1"
        android:layout_height="wrap_content"
        android:layout_width="wrap_content"
        android:inputType="text"/>
  </TableRow>
```

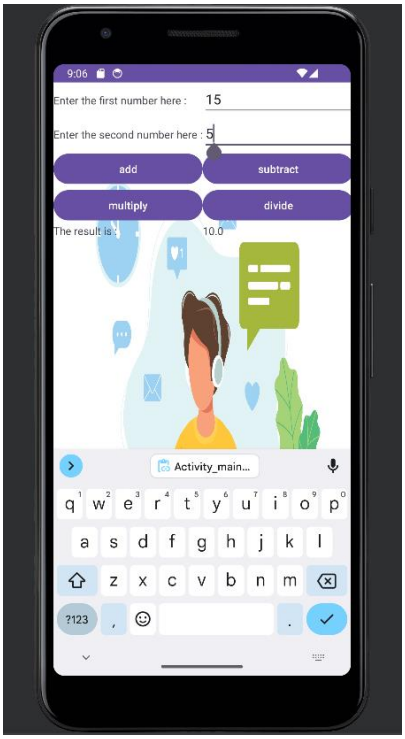
```
</TableLayout>
```

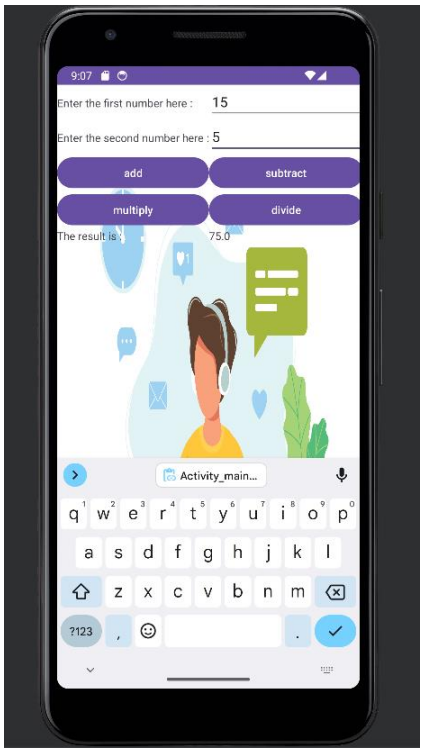
string.xml

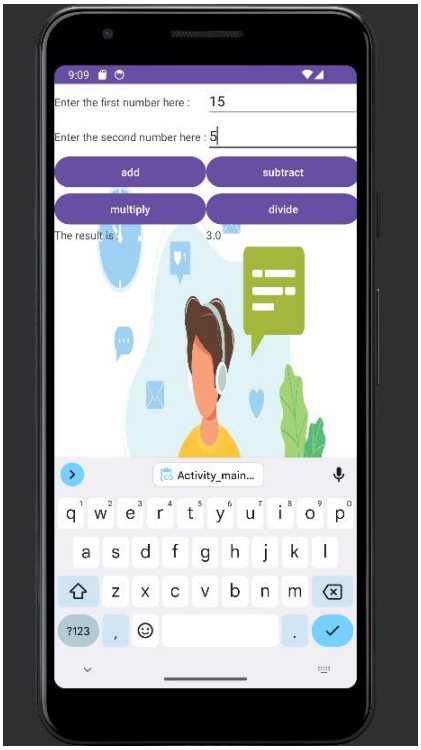
```
<resources>
    <string name="app_name">Calculator</string>
    <string name="nameone">Enter the first number here :</string>
    <string name="nametwo">Enter the second number here :</string>
    <string name="namethree">The result is :</string>
</resources>
```

Output









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:

MainActivity.java

```
package com.example.registration;
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import com.google.android.material.textfield.TextInputLayout; import java.util.regex.Pattern;
public class MainActivity extends AppCompatActivity {
 TextInputLayout Username,Email,Mobile,Password;
 private static final Pattern PASSWORD_PATTERN =
 Pattern.compile("^" +
 "(?=.*[0-9])" + //at least 1 digit  "(?=.*[a-z])" + //at least 1 lower case letter  "(?=.*[A-Z])" + //at
least 1 upper case letter  "(?=.*[a-zA-Z])" + //any letter
 "(?=.*[@#$%^&+=])" + //at least 1 special character  "(?=S+$)" + //no white spaces
 ".{4,}" + //at least 4 characters  "$");
// Pattern.compile("^" +
// "(?=.*[@#$%^&+=])" + // at least 1 special  character
// "(?=\\S+$)" + // no white spaces // ".{4,}" + // at least 4 characters // "$");
 @Override
protected void onCreate(Bundle savedInstanceState) {
super.onCreate(savedInstanceState);
setContentView(R.layout.activity_main);
Username=findViewById(R.id.inputLayout_username);
Mobile=findViewById(R.id.inputLayout_mobile);
Password=findViewById(R.id.inputLayout_password);  }

        public void Validate(View view){

        if (!validatePhoneNumber() | !validateUsername() | !validateEmail()  | !validatePassword())
        {

        return;  }
```

```
        }
 private boolean validateUsername() {
 String val = Username.getEditText().getText().toString().trim();  String checkspaces = "^[A-Za-
z][A-Za-z0-9_]{1,20}$";
 if (val.isEmpty()) {
 Username.setError("Field can not be empty");
 return false;
 } else if (val.length() > 20) {
 Username.setError("Username is too large!");
 return false;
 } else if (!val.matches(checkspaces)) {
 Username.setError("No White spaces are allowed!");  return false;
 } else {
 Username.setError(null);
 Username.setErrorEnabled(false);
 return true;
 }
 }
 private boolean validateEmail() {
 String val = Email.getEditText().getText().toString().trim();  String checkEmail = "[a-zA-Z0-9._-
]+@[a-z]+.+[a-z]+";
 if (val.isEmpty()) {
 Email.setError("Field can not be empty");
 return false;
 } else if (!val.matches(checkEmail)) {
 Email.setError("Invalid Email");
 return false;
 } else {
 Email.setError(null);
 Email.setErrorEnabled(false);
 return true;
  }
 }
 private boolean validatePhoneNumber() {
  String val = Mobile.getEditText().getText().toString().trim();  String MobilePattern = "[0-
9]{10}";
  if (val.isEmpty()) {
  Mobile.setError("Must be 10 digits");  return false;
  } else if (!val.matches(MobilePattern)) {
  Mobile.setError("No White spaces are allowed!");  return false;
  } else {
  Mobile.setError(null);
  Mobile.setErrorEnabled(false);
  return true;
  }
  }
```

```
 private boolean validatePassword() {
 String passwordInput =
Password.getEditText().getText().toString().trim();


if (passwordInput.isEmpty()) {
 Password.setError("Field can not be empty");  return false;
 }
 // if password does not matches to the pattern
 // it will display an error message "Password is too weak"
else if (!PASSWORD_PATTERN.matcher(passwordInput).matches()) {
Password.setError("Password is too weak");
 return false;
 } else {
 Password.setError(null);  return true;
 }
 }
}
```

activity_main.xml

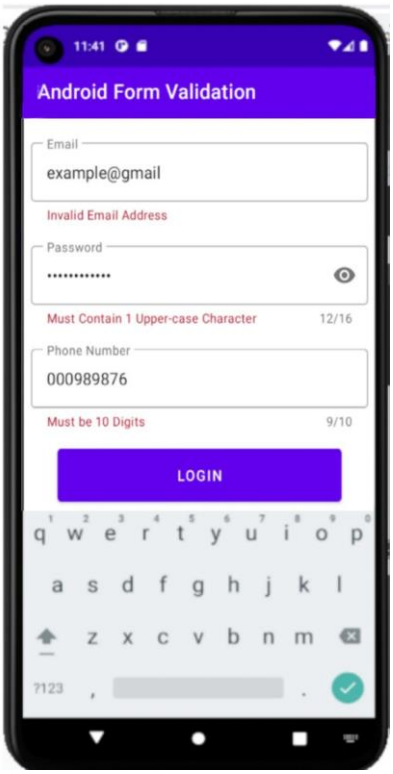
```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
xmlns:app="http://schemas.android.com/apk/res-auto"
xmlns:tools="http://schemas.android.com/tools"
android:layout_height="match_parent"
 tools:context=".MainActivity">
 <androidx.constraintlayout.widget.Guideline
 android:id="@+id/guideline"
 android:layout_width="wrap_content"
 android:layout_height="wrap_content"
 android:orientation="horizontal"
 app:layout_constraintGuide_percent=".15" />
 <com.google.android.material.textview.MaterialTextView
android:id="@+id/textView_loginTitle"
 style="@style/TextAppearance.MaterialComponents.Headline4"
android:layout_width="wrap_content"
 android:layout_height="wrap_content"
 android:fontFamily="@font/dancing_script_bold"
 android:text="@string/text_login"
 app:fontFamily="@font/dancing_script_bold"
 app:layout_constraintEnd_toEndOf="parent"
```

```
 app:layout_constraintStart_toStartOf="parent"
 app:layout_constraintTop_toTopOf="@+id/guideline" />
 <com.google.android.material.textfield.TextInputLayout
android:id="@+id/inputLayout_username"
style="@style/Widget.MaterialComponents.TextInputLayout.OutlinedBox"
android:layout_width="match_parent"
 android:layout_height="wrap_content"
 android:layout_margin="32dp"
 app:endIconMode="clear_text"
 app:layout_constraintEnd_toEndOf="parent"
 app:layout_constraintStart_toStartOf="parent"
 app:layout_constraintTop_toBottomOf="@+id/textView_loginTitle"
app:startIconDrawable="@drawable/ic_baseline_supervised_user_circle_24">
 <com.google.android.material.textfield.TextInputEditText
android:id="@+id/inputEditText_username"
 android:layout_width="match_parent"
 android:layout_height="wrap_content"
 android:inputType="text"
 android:hint="@string/text_username"
 android:nextFocusForward="@id/inputEditText_mobile"  android:singleLine="true" />
 </com.google.android.material.textfield.TextInputLayout>
 <com.google.android.material.textfield.TextInputLayout
android:id="@+id/inputLayout_OutlinedBox"
 android:layout_width="match_parent"
 android:layout_height="wrap_content"
 android:layout_margin="32dp"
 app:endIconMode="clear_text"
 app:layout_constraintEnd_toEndOf="parent"
 app:layout_constraintStart_toStartOf="parent"
 app:layout_constraintTop_toBottomOf="@+id/inputLayout_username"
app:startIconDrawable="@drawable/ic_baseline_phone_android_24">
 <com.google.android.material.textfield.TextInputEditText
android:id="@+id/inputEditText_mobile"
 android:layout_width="match_parent"
 android:layout_height="wrap_content"
 android:inputType="number"
 android:hint="@string/text_Contact"
 android:nextFocusForward="@id/inputLayout_email"  android:singleLine="true" />
 </com.google.android.material.textfield.TextInputLayout>
 <com.google.android.material.textfield.TextInputLayout  android:id="@+id/inputLayout_email"
```

```
style="@style/Widget.MaterialComponents.TextInputLayout.OutlinedBox"
android:layout_width="match_parent"
 android:layout_height="wrap_content"
 android:layout_margin="32dp"
 app:endIconMode="clear_text"
 app:layout_constraintEnd_toEndOf="parent"
 app:layout_constraintStart_toStartOf="parent"
 app:layout_constraintTop_toBottomOf="@+id/inputLayout_mobile"
app:startIconDrawable="@drawable/ic_baseline_email_24">
 <com.google.android.material.textfield.TextInputEditText
android:id="@+id/inputEditText_email"
 android:layout_width="match_parent"
 android:layout_height="wrap_content"
 android:hint="@string/text_email"
 android:inputType="textEmailAddress"
 android:nextFocusForward="@id/inputLayout_password"  android:singleLine="true" />
 </com.google.android.material.textfield.TextInputLayout>
 <com.google.android.material.textfield.TextInputLayout
android:id="@+id/inputLayout_password"

style="@style/Widget.MaterialComponents.TextInputLayout.OutlinedBox"
android:layout_width="match_parent"
 android:layout_height="wrap_content" android:layout_margin="32dp"

  app:layout_constraintEnd_toEndOf="parent"
 app:layout_constraintStart_toStartOf="parent"
 app:layout_constraintTop_toBottomOf="@+id/inputLayout_email"
app:startIconDrawable="@drawable/ic_baseline_lock_24">
 <com.google.android.material.textfield.TextInputEditText
android:id="@+id/inputEditText_password"
 android:layout_width="match_parent"
 android:layout_height="wrap_content"
 android:hint="@string/text_password"
 android:imeOptions="actionDone"
 android:inputType="textPassword"
 android:singleLine="true" />
 </com.google.android.material.textfield.TextInputLayout>
 <com.google.android.material.button.MaterialButton
 android:id="@+id/button_login"
 android:layout_width="match_parent"
```

```
 android:layout_height="wrap_content"
 android:layout_margin="32dp"
 android:insetTop="0dp"
 android:insetBottom="0dp"
 android:text="@string/text_button_login"
 android:textAllCaps="false"
 android:onClick="Validate"
 app:layout_constraintEnd_toEndOf="parent"
 app:layout_constraintStart_toStartOf="parent"
 app:layout_constraintTop_toBottomOf="@+id/inputLayout_password" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

Output



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:

MainActivity.java

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

public class MainActivity extends AppCompatActivity {
   EditText username, pass;
   Button Login_Button;
   SharedPreferences Shared_pref;
   Intent intent;
   @Override
   protected void onCreate(Bundle savedInstanceState)
   {
      super.onCreate(savedInstanceState);
```

```
    setContentView(R.layout.activity_main);
    username = findViewById(R.id.Name);
    pass = findViewById(R.id.password);
    Login_Button = findViewById(R.id.Login);
    Shared_pref = getSharedPreferences("user_details", MODE_PRIVATE);
    intent = new Intent(MainActivity.this, SecondActivity.class);
    if (Shared_pref.contains("username") && Shared_pref.contains("password")) {
       startActivity(intent);
    }
    Login_Button.setOnClickListener(new View.OnClickListener() {
       @Override
    public void onClick(View view) {
          String username =
          MainActivity.this.username.getText().toString();
       String password = pass.getText().toString();
       if (username.equals("vishal") && password.equals("vishal123")) {
          SharedPreferences.Editor editor = Shared_pref.edit();
          editor.putString("username", username);
          editor.putString("password", password);
          editor.commit(); Toast.makeText(getApplicationContext(), "Logged in",
             Toast.LENGTH_SHORT).show();
          startActivity(intent);
       }else {
          Toast.makeText(getApplicationContext(), "Enter Right Credentials",
Toast.LENGTH_SHORT).show();
       }
    }
    });
  }
```

```
}
```

activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical">
    <TextView
        android:id="@+id/textView"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_centerHorizontal="true"
        android:layout_marginLeft="90dp"
        android:layout_marginTop="30dp"
        android:text="Login Here!!"
        android:textColor="#00574B"
        android:textSize="30sp"
        android:textStyle="bold" />
    <TextView
        android:id="@+id/text"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginLeft="100dp"
        android:layout_marginTop="80dp"
        android:text="Enter your UserName" />
    <EditText
```

```
    android:id="@+id/Name"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginLeft="100dp"
    android:ems="10" />
  <TextView
    android:id="@+id/text2"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginLeft="100dp"
    android:text="Enter your Password" />
  <EditText
    android:id="@+id/password"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginLeft="100dp"
    android:ems="10"
    android:inputType="textPassword" />

  <Button
    android:id="@+id/Login"
    android:layout_width="196dp"
    android:layout_height="wrap_content"
    android:layout_marginLeft="100dp"
    android:text="Login" />
</LinearLayout>
```

Activity_second.xml

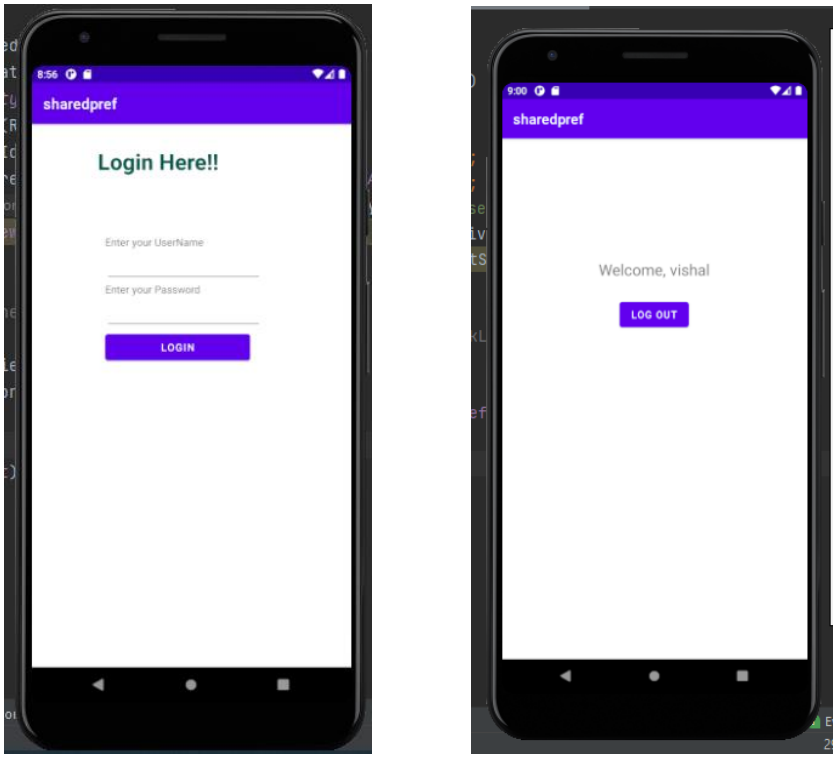
```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical">
    <TextView
        android:id="@+id/res_text"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_gravity="center"
        android:layout_marginTop="170dp"
        android:textSize="22dp" />
    <Button
        android:id="@+id/LogOut"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_gravity="center"
        android:layout_marginTop="25dp"
        android:text="Log Out" />
</LinearLayout>
```

SecondActivity.java

```
package com.example.sharedpref;
import androidx.appcompat.app.AppCompatActivity;
import android.content.Intent;
```

```
import android.content.SharedPreferences; import android.os.Bundle;
import android.view.View; import android.widget.Button; import android.widget.TextView;

public class SecondActivity extends AppCompatActivity {
    SharedPreferences newPreference;
    Intent newIntent;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_second);
        TextView result = findViewById(R.id.res_text);
        Button LogOut_btn = findViewById(R.id.LogOut);
        newPreference = getSharedPreferences("user_details", MODE_PRIVATE);
        newIntent = new Intent(SecondActivity.this, MainActivity.class);
        result.setText("Welcome, " + newPreference.getString("username", null));
        LogOut_btn.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                SharedPreferences.Editor edit = newPreference.edit();
                edit.clear();
                edit.commit();
                startActivity(newIntent);
            }
        });
    }}
```

Output



Result

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

Experiment No.6

Aim:

Create a Facebook page using RelativeLayout; 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"
   android:paddingLeft="16dp"
   android:paddingTop="16dp"
   android:paddingRight="16dp"
   android:paddingBottom="16dp"
   android:background="#1877f2"
   tools:context=".MainActivity">
<ImageView
   android:id="@+id/profileImage"
   android:layout_width="100dp"
   android:layout_height="100dp"
   android:src="@drawable/fb"
   android:layout_centerHorizontal="true"
   android:layout_marginTop="16dp"/>
<TextView
   android:id="@+id/username"
   android:layout_width="wrap_content"
   android:layout_height="wrap_content"
   android:text="Amal Thomson"
   android:textColor="#ffffff"
   android:textSize="18sp"
```

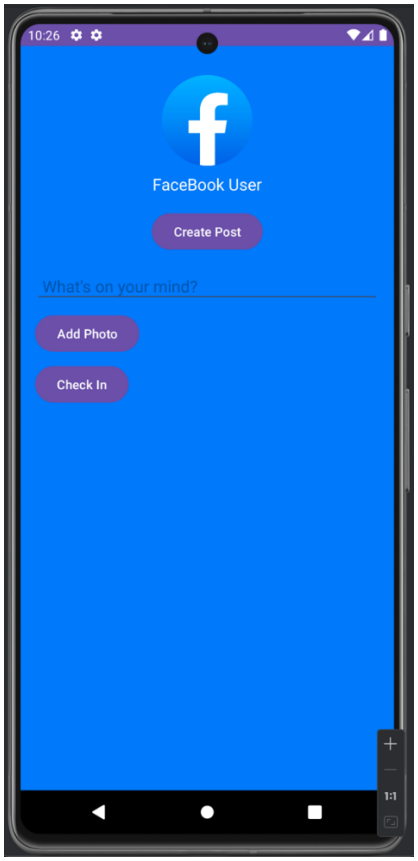
```
    android:layout_below="@id/profileImage"
    android:layout_centerHorizontal="true"
    android:layout_marginTop="8dp"/>
<Button
    android:id="@+id/postButton"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Create Post"
    android:textColor="#ffffff"
    android:layout_below="@id/username"
    android:layout_centerHorizontal="true"
    android:layout_marginTop="16dp"/>
<EditText
    android:id="@+id/postEditText"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_below="@id/postButton"
    android:hint="What's on your mind?"
    android:textColor="#ffffff"
    android:layout_marginTop="16dp"
    android:padding="8dp"/>
<Button
    android:id="@+id/photoButton"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Add Photo"
    android:textColor="#ffffff"
    android:layout_below="@id/postEditText"
    android:layout_marginTop="8dp"/>
<Button
    android:id="@+id/checkInButton"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Check In"
    android:textColor="#ffffff"
    android:layout_below="@id/photoButton"
    android:layout_marginTop="8dp"/>
</RelativeLayout>
```

MainActivity.java

```
package com.example.facebookui;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;
import androidx.appcompat.app.AppCompatActivity;
public class MainActivity extends AppCompatActivity {
   private EditText postEditText;
   @Override
   protected void onCreate(Bundle savedInstanceState) {
      super.onCreate(savedInstanceState);
      setContentView(R.layout.activity_main);
      Button postButton = findViewById(R.id.postButton);
      Button photoButton = findViewById(R.id.photoButton);
      Button checkInButton = findViewById(R.id.checkInButton);
      postEditText = findViewById(R.id.postEditText);
      postButton.setOnClickListener(new View.OnClickListener() {
         @Override
         public void onClick(View v) {
            createPost();
         }
      });
      photoButton.setOnClickListener(new View.OnClickListener() {
         @Override
         public void onClick(View v) {
            addPhoto();
         }
      });
      checkInButton.setOnClickListener(new View.OnClickListener() {
         @Override
         public void onClick(View v) {
            checkIn();
         }
      });
   }
   private void createPost() {
      String postText = postEditText.getText().toString().trim();
      if (!postText.isEmpty()) {
```

```
            Toast.makeText(this, "Post created: " + postText, Toast.LENGTH_SHORT).show();
            postEditText.getText().clear();
        } else {
            Toast.makeText(this, "Please enter something to post.", Toast.LENGTH_SHORT).show();
        }
    }
    private void addPhoto() {
        Toast.makeText(this, "Adding a photo", Toast.LENGTH_SHORT).show();
    }
    private void checkIn() {
        Toast.makeText(this, "Checked In", Toast.LENGTH_SHORT).show();
    }
}
```

Output



Result

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

Experiment No.7

Aim:

Develop an application that toggles image using FrameLayout.

CO2:

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

Procedure:

MainActivity.java

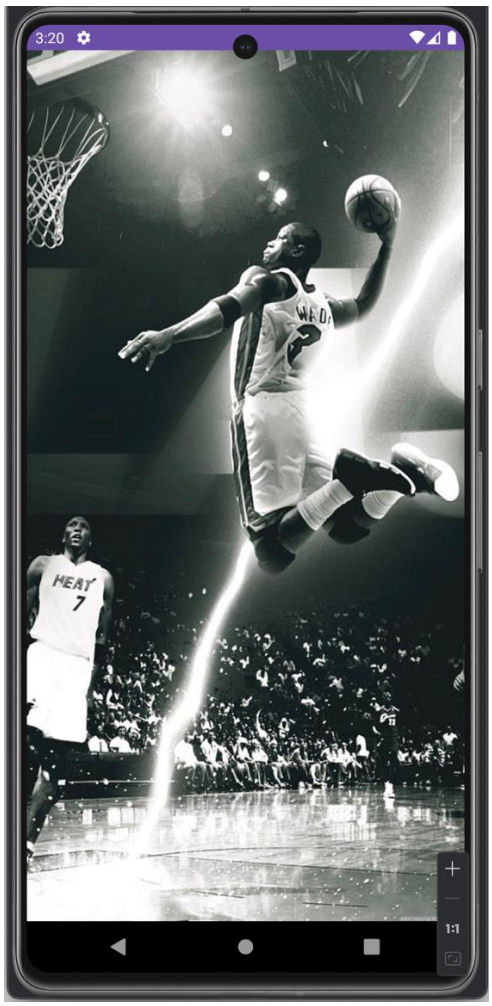
```
package com.example.framelayout;
import
androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.widget.ImageView;
public class MainActivity extends AppCompatActivity {
   ImageView img1,
   img2;@Override
   protected void onCreate(Bundle
      savedInstanceState) {
      super.onCreate(savedInstanceState);
      setContentView(R.layout.activity_main);
      img1 =
      findViewById(R.id.img1);img2
      = findViewById(R.id.img2);
      img1.setOnClickListener(new
         View.OnClickListener() {@Override
         public void onClick(View v) {
            img2.setVisibility(View.VISIBL
            E);
            img1.setVisibility(View.GONE);
      }
   });
      img2.setOnClickListener(new
         View.OnClickListener() {@Override
```

```
        public void onClick(View v) {
            img1.setVisibility(View.VISIBL
            E);
            img2.setVisibility(View.GONE);
        }
    });
    }
}
```

activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<FrameLayout
    xmlns:android="http://schemas.android.com/apk/res/androi
    d" 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">
    <ImageView
        android:id="@+id/img1"
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:src="@drawable/img2"
        android:scaleType="fitXY" />
    <ImageView
        android:id="@+id/img2"
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:src="@drawable/img1"
        android:scaleType="fitXY" />
</FrameLayout>
```

Output



Result

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

Experiment No. 8

Aim:

Implement Adapters and perform exception handling.

CO3:

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

Procedure:

MainActivity.java

```
package com.example.atry;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;
import androidx.appcompat.app.AppCompatActivity;
public class MainActivity extends AppCompatActivity {
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        final EditText dividendEditText = findViewById(R.id.dividendEditText);
        final EditText divisorEditText = findViewById(R.id.divisorEditText); Button
        divideButton = findViewById(R.id.divideButton);
        divideButton.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                try {
                    double dividend = Double.parseDouble(dividendEditText.getText().toString());
                    double divisor = Double.parseDouble(divisorEditText.getText().toString()); double
                    result = divideNumbers(dividend, divisor);
                    showToast("Result: " + result);
                } catch (NumberFormatException e) {
                    showToast("Please enter valid numbers");
                } catch (ArithmeticException e) {
                    showToast("Error: " + e.getMessage());
                } catch (Exception e) {
                    showToast("An unexpected error occurred");
```

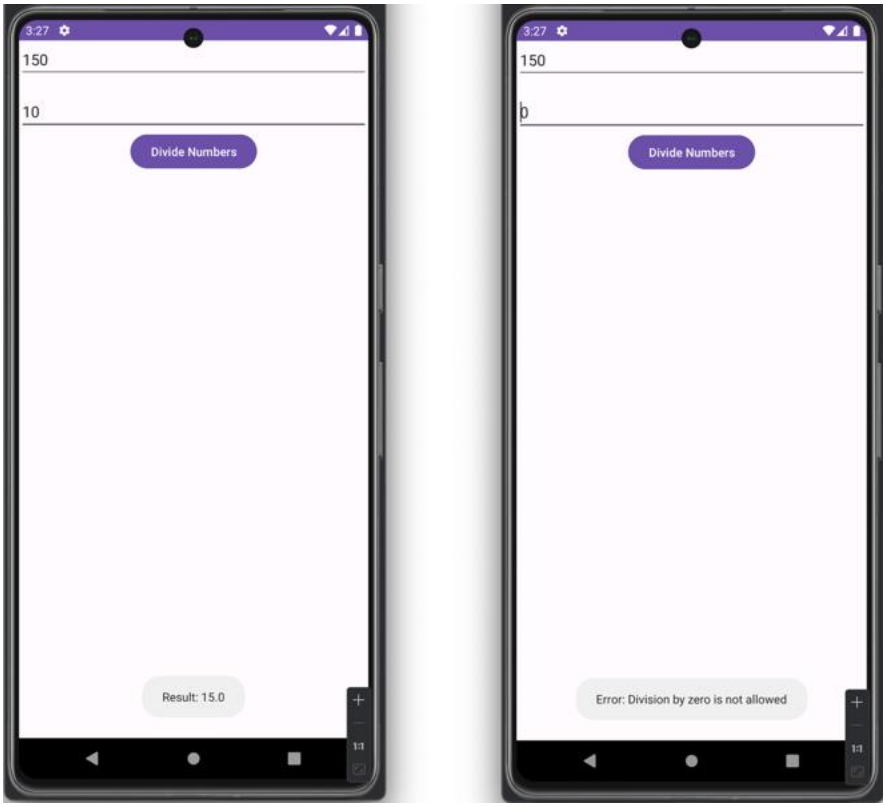
```
            }
        }
    });
    }
    private double divideNumbers(double dividend, double divisor) {if
        (divisor == 0) {
            throw new ArithmeticException("Division by zero is not allowed");
        }
        return dividend / divisor;
    }
    private void showToast(String message) {
        Toast.makeText(this, message, Toast.LENGTH_SHORT).show();
    }
}
```

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">
    <EditText
        android:id="@+id/dividendEditText"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="Enter Dividend"
        android:inputType="numberDecimal"
        android:layout_marginBottom="16dp"/
        >
    <EditText
        android:id="@+id/divisorEditText"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="Enter Divisor"
        android:inputType="numberDecimal"
        android:layout_below="@id/dividendEditText"/>
    <Button
```

```
    android:id="@+id/divideButton"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Divide Numbers"
    android:layout_below="@id/divisorEditText"
    android:layout_centerInParent="true"/>
</RelativeLayout>
```

Output



Result

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

Experiment No. 9

Aim:

Implement Intent to navigate between multiple activities.

CO3:

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

Procedure:

MainActivity.java

```
package com.example.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;
import android.widget.Toast;

public class MainActivity extends AppCompatActivity {
   Button b;
   EditText var,email,password,phone;
   @Override
   protected void onCreate(Bundle savedInstanceState) {
      super.onCreate(savedInstanceState);
      setContentView(R.layout.activity_main);
      var=findViewById(R.id.name);
      email=findViewById(R.id.Email);
      password=findViewById(R.id.Password);
      phone=findViewById(R.id.Phone);
      b=findViewById(R.id.button);
      b.setOnClickListener(new View.OnClickListener() {
         @Override
         public void onClick(View view) {
            String display=var.getText().toString();
            String mail=email.getText().toString();
```

```
            String pass=password.getText().toString();
            String ph=phone.getText().toString();
           // Toast.makeText(MainActivity.this, "name is"+display,
Toast.LENGTH_SHORT).show();
            Intent i=new Intent(MainActivity.this,MainActivitytwo.class);
            i.putExtra("name",display);
            i.putExtra("em",mail);
            i.putExtra("ps",pass);
            i.putExtra("ph",ph);
            startActivity(i);

           // Intent i=new Intent(Intent.ACTION_VIEW,
Uri.parse("https://www.facebook.com/"));
           // startActivity(i);            implicit intend
         }
      });
   }
}
```

SecondActivity.java

```
package com.example.intent;
import androidx.appcompat.app.AppCompatActivity;
import android.content.Intent;
import android.os.Bundle;
import android.widget.TextView;
public class MainActivitytwo extends AppCompatActivity {
   TextView show,email,passw,phon;

   @Override
   protected void onCreate(Bundle savedInstanceState) {
      super.onCreate(savedInstanceState);
      setContentView(R.layout.activity_main_activitytwo);
      show=findViewById(R.id.textView);
      email=findViewById(R.id.textView2);
      passw=findViewById(R.id.textView3);
      phon=findViewById(R.id.textView4);
      Intent i=getIntent();
      String displayText=i.getStringExtra("name");
      show.setText(displayText);
      String mail=i.getStringExtra("em");
      String password=i.getStringExtra("ps");
      String phone=i.getStringExtra("ph");
```

```
        email.setText(mail);
        passw.setText(password);
        phon.setText(phone);

    }
}
```

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">

    <EditText
        android:id="@+id/name"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:ems="10"
        android:inputType="textPersonName"
        android:hint="enter your name"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.363"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.091" />

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

```
    app:layout_constraintHorizontal_bias="0.363"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/name"
    app:layout_constraintVertical_bias="0.052" />

  <EditText
    android:id="@+id/Password"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:ems="10"
    android:hint="password"
    android:inputType="textPassword"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.363"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/Email"
    app:layout_constraintVertical_bias="0.089" />

  <EditText
    android:id="@+id/Phone"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:ems="10"
    android:inputType="phone"
    android:hint="phone"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.363"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/Password"
    app:layout_constraintVertical_bias="0.099" />

  <Button
    android:id="@+id/button"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="submit"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
```

```
    app:layout_constraintHorizontal_bias="0.416"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintVertical_bias="0.255" />

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

Activity_seccond.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=".MainActivitytwo">

  <TextView
    android:id="@+id/textView"
    android:layout_width="155dp"
    android:layout_height="37dp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.452"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.208" />

  <TextView
    android:id="@+id/textView2"
    android:layout_width="156dp"
    android:layout_height="34dp"
    android:text="TextView"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.439"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/textView"
    app:layout_constraintVertical_bias="0.075" />

  <TextView
```

```
    android:id="@+id/textView3"
    android:layout_width="159dp"
    android:layout_height="36dp"
    android:text="TextView"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.429"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/textView2"
    app:layout_constraintVertical_bias="0.076" />

  <TextView
    android:id="@+id/textView4"
    android:layout_width="165dp"
    android:layout_height="31dp"
    android:text="TextView"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.439"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/textView3"
    app:layout_constraintVertical_bias="0.108" />

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

Output

Result

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

Experiment No.10

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

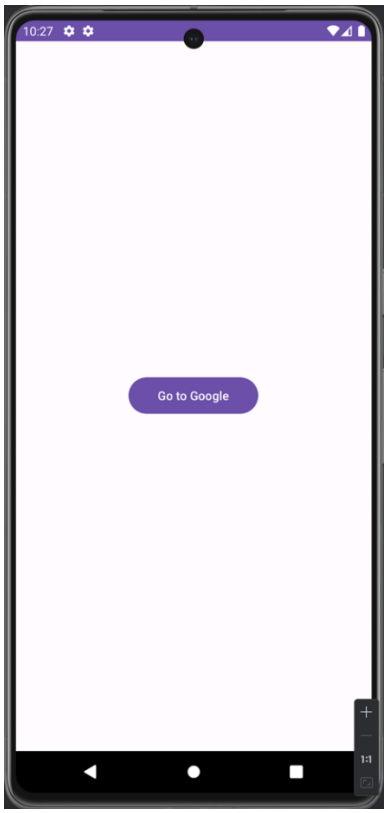
```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
   xmlns:app="http://schemas.android.com/apk/res-auto"
   xmlns:tools="http://schemas.android.com/tools"
   android:layout_width="match_parent"
   android:layout_height="match_parent"
   tools:context=".MainActivity">
   <Button
      android:id="@+id/btn"
      android:layout_width="150dp"
      android:layout_height="50dp"
      android:text="Go to Google"
      app:layout_constraintBottom_toBottomOf="parent"
      app:layout_constraintEnd_toEndOf="parent"
      app:layout_constraintHorizontal_bias="0.498"
      app:layout_constraintStart_toStartOf="parent"
      app:layout_constraintTop_toTopOf="parent"
      app:layout_constraintVertical_bias="0.499" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

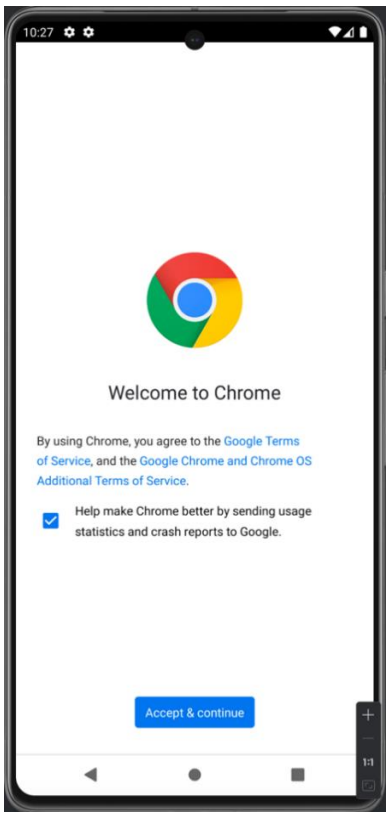
MainActivity.java

```
package com.example.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;
public class MainActivity extends AppCompatActivity {
   @Override
   protected void onCreate(Bundle savedInstanceState) {
      super.onCreate(savedInstanceState);
      setContentView(R.layout.activity_main);
      Button btn = findViewById(R.id.btn);
      btn.setOnClickListener(new View.OnClickListener() {
         @Override
         public void onClick(View v) {
            Intent i = new Intent(Intent.ACTION_VIEW, Uri.parse("https://www.google.com"));
            startActivity(i);
         }
      });
   }
}
```

Output





Result

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

Experiment No. 11

Aim:

Implement Options Menu to navigate to activities.

CO3:

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

Procedure:

MainActivity.java

```
package com.example.androidmenu;
import androidx.annotation.NonNull;
import androidx.appcompat.app.AppCompatActivity;
import androidx.appcompat.view.menu.MenuBuilder;
import android.annotation.SuppressLint;
import android.os.Bundle;
import android.view.Menu;
import android.view.MenuInflater;
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);
   }

   @SuppressLint("RestrictedApi")
   @Override
   public boolean onCreateOptionsMenu(Menu menu) {
      MenuInflater inflater = getMenuInflater();
      inflater.inflate(R.menu.option_menu, menu);
      if (menu instanceof MenuBuilder) {
         MenuBuilder m = (MenuBuilder)  menu;
         m.setOptionalIconsVisible(true);
      }
      return super.onCreateOptionsMenu(menu);
   }

   @Override
   public boolean onOptionsItemSelected(@NonNull MenuItem item) {
      Toast.makeText(this, "Selected item: " + item.getTitle(), Toast.LENGTH_SHORT).show();
```

```
    switch (item.getItemId()){
        case R.id.search_item:
            //do ur code
            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;
        default:
            return super.onOptionsItemSelected(item);
    } }}
```

Activity_main.xml

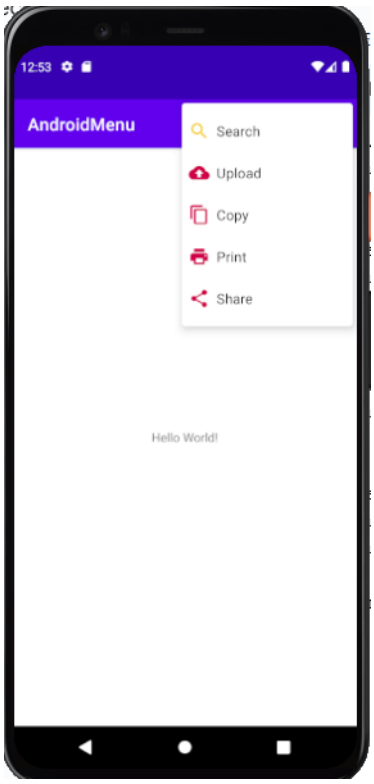
```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
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

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Hello World!"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />

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

Option_menu.xml

```
<?xml version="1.0" encoding="utf-8"?>
<menu 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"
    tools:context=".MainActivity">

    <item android:id="@+id/search_item"
        android:title="Search"
```

```
        android:icon="@drawable/search_icon"/>

    <item android:id="@+id/upload_item"
        android:title="Upload"
        android:icon="@drawable/ic_baseline_cloud_upload_24"/>

    <item android:id="@+id/copy_item"
        android:title="Copy"
        android:icon="@drawable/ic_baseline_content_copy_24"/>

    <item android:id="@+id/print_item"
        android:title="Print"
        android:icon="@drawable/print"/>


    <item android:id="@+id/share_item"
        android:title="Share"
        android:icon="@drawable/ic_baseline_share_24"/>

</menu>
```

Output



Result

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

Experiment No.12

Aim:

Develop an application that uses ArrayAdapter with ListView.

CO3:

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

Procedure:

activity_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">
   <ListView
      android:id="@+id/id1"
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
      android:divider="#000"
      android:dividerHeight="1dp"
   />
</RelativeLayout>
```

activity_list_items.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=".list_items">
   <TextView
      android:id="@+id/list1"
      android:layout_width="fill_parent"
```

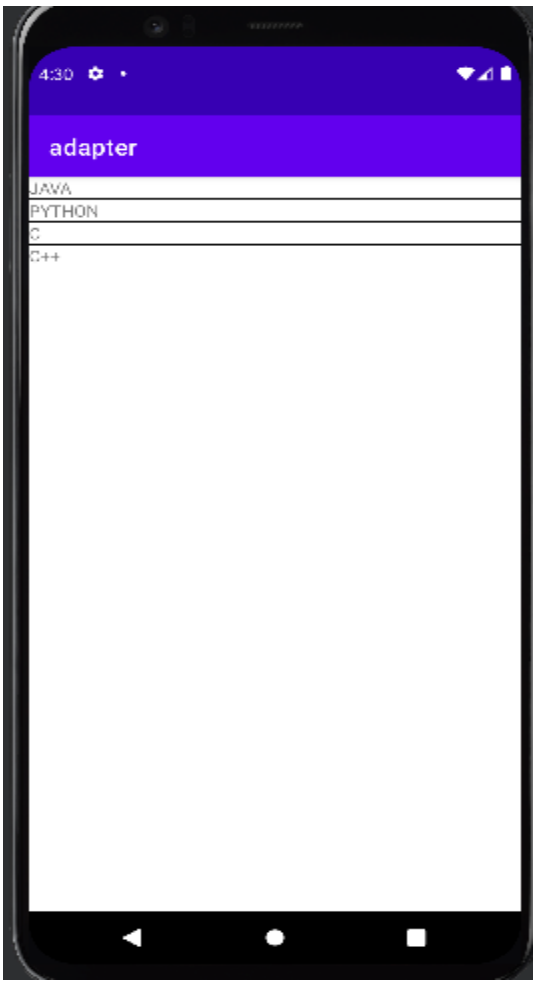
```
    android:layout_height="wrap_content"
    android:layout_gravity="center"
    />
</RelativeLayout>
```

MainActivity.java

```
package com.example.adapter;
import androidx.appcompat.app.AppCompatActivity;
import android.hardware.lights.LightState;
import android.os.Bundle;
import android.view.View;
import android.widget.AdapterView;
import android.widget.ArrayAdapter;
import android.widget.ListView;
import android.widget.Toast;
public class MainActivity extends AppCompatActivity {
ListView simplelist;
String course[]={
    "JAVA",
    "PYTHON",
    "C",
    "C++"
};
  @Override
  protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_main);
    simplelist=(ListView) findViewById(R.id.id1);
    ArrayAdapter<String> ad=new
ArrayAdapter<String>(this,R.layout.activity_list_items,R.id.list1,course);
    simplelist.setAdapter(ad);
    simplelist.setOnItemClickListener(new AdapterView.OnItemClickListener() {
      @Override
      public void onItemClick(AdapterView<?> adapterView, View view, int i, long l) {
        String item=(String)simplelist.getItemAtPosition(i);
        Toast.makeText(getApplicationContext(), "YOUR SELECTED ITEMS ARE:",
Toast.LENGTH_SHORT).show();
      }
    });
  }
```

}

Output



Result

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

Experiment No. 13

Aim:

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

CO4:

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

Procedure:

MainActivity.java

```
package
com.example.gridlayoutimage;import
android.os.Bundle;
import android.view.View;
import
android.view.ViewGroup;
import
android.widget.BaseAdapter;
import android.widget.GridView;
import
android.widget.ImageView;
import android.widget.TextView;
import android.widget.Toast;
import androidx.appcompat.app.AppCompatActivity;
public class MainActivity extends
AppCompatActivity {
   String[] fruitNames = {"Apple", "Banana", "Orange",
   "Grapes"};int[] fruitImages = {R.drawable.apple,
   R.drawable.banana,
         R.drawable.orange,
   R.drawable.grapes};@Override
   protected void onCreate(Bundle
      savedInstanceState) {
      super.onCreate(savedInstanceState);
      setContentView(R.layout.activity_main);
      GridView gridView = findViewById(R.id.gridview);
      CustomAdapter customAdapter = new
```

```
        CustomAdapter();
        gridView.setAdapter(customAdapter);
    }
    private class CustomAdapter extends
        BaseAdapter {@Override
        public int getCount() {
            return
            fruitNames.length;
        }
        @Override
        public Object getItem(int
            position) {return null;
        }
        @Override
        public long getItemId(int
            position) {return 0;
        }
        @Override
        public View getView(int position, View convertView, ViewGroup
            parent) {View view = getLayoutInflater().inflate(R.layout.grid_view,
            null); TextView fruitName = view.findViewById(R.id.fruit_name);
            ImageView fruitImage = view.findViewById(R.id.fruit_image);
            fruitName.setText(fruitNames[position]);
            fruitImage.setImageResource(fruitImages[position]);
            fruitImage.setOnClickListener(new View.OnClickListener() {
                @Override
                public void onClick(View v) {
                    Toast.makeText(MainActivity.this,
                    fruitNames[position],
                            Toast.LENGTH_SHORT).show();
                }
            });
            return view;
        }
    }
}
```

Second_activity.xml

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

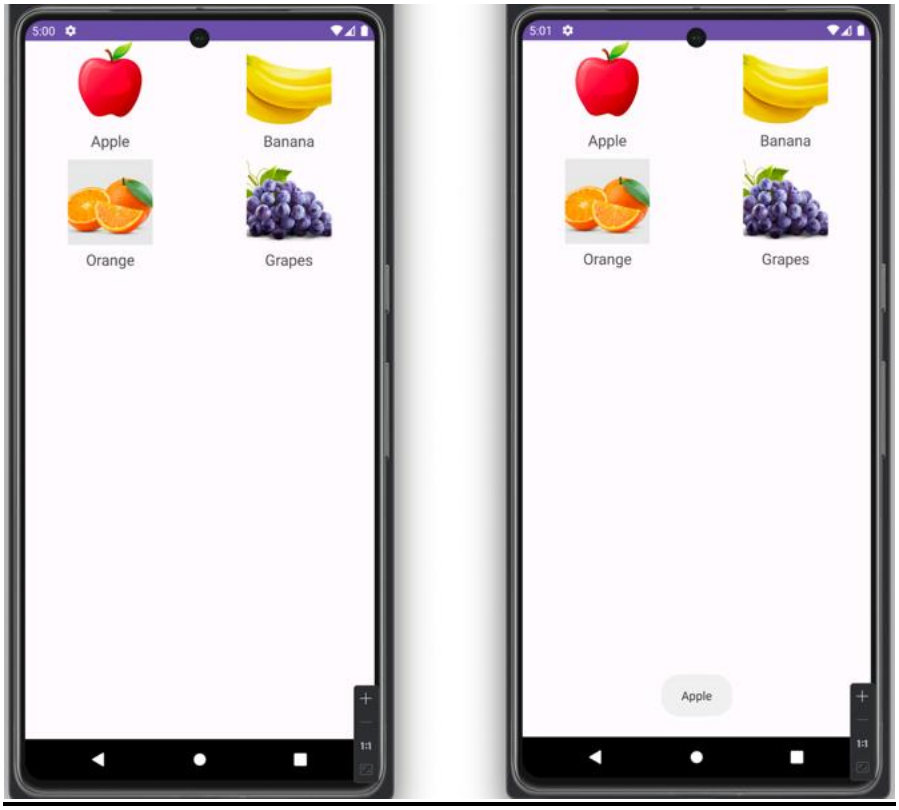
```
<LinearLayout
    xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:orientation="vertical"
    android:gravity="center">
    <ImageView
        android:id="@+id/fruit_imag
        e"
        android:layout_width="100d
        p"
        android:layout_height="100d
        p"
        android:scaleType="centerCrop" />
    <TextView
        android:id="@+id/fruit_name"
        android:layout_width="wrap_conten
        t"
        android:layout_height="wrap_conten
        t"android:textSize="18sp"
        android:layout_marginTop="5dp" />
</LinearLayout>
```

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">
    <GridView
        android:id="@+id/gridview"
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:columnWidth="100dp"
        android:gravity="center"
        android:numColumns="2"
```

```
        android:verticalSpacing="10dp"
        android:horizontalSpacing="10dp"
        android:divider="#000"
        android:dividerHeight="10dp" />
 </RelativeLayout>
```

Output



Result

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

Experiment No.14

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:

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 {
   Spinner spinner;
   String[] select={"select one","apple","orange","mango","lemon","grapes","watermelon"};
   @Override
   protected void onCreate(Bundle savedInstanceState) {
      super.onCreate(savedInstanceState);
      setContentView(R.layout.activity_main);
      spinner=findViewById(R.id.spinner);
      ArrayAdapter<String> aa=new
ArrayAdapter<>(this,android.R.layout.simple_list_item_1,select);
      aa.setDropDownViewResource(android.R.layout.simple_spinner_dropdown_item);
      spinner.setAdapter(aa);
      spinner.setOnItemSelectedListener(new AdapterView.OnItemSelectedListener() {
```

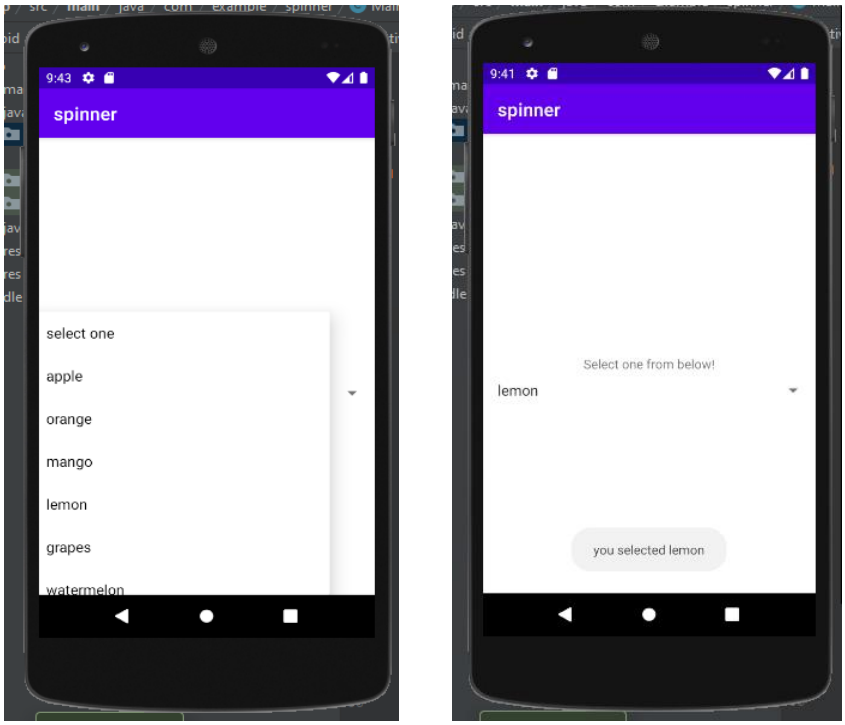
```
        @Override
        public void onItemSelected(AdapterView<?> adapterView, View view, int i, long l) {
           if(i !=0)
           {
              Toast.makeText(getApplicationContext(),"you selected "+select[i],
Toast.LENGTH_SHORT).show();
           }}
        @Override
        public void onNothingSelected(AdapterView<?> adapterView) {
        }});
   }}
```

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="Select one from below!"
      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="match_parent"
    android:layout_height="wrap_content"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.564"
    tools:ignore="MissingConstraints"
    tools:layout_editor_absoluteX="0dp" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

Output



Result

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

Experiment No. 15

Aim:

Develop application using Fragments.

CO4:

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

Procedure:

MainActivity.java

```
package com.example.fragmemtandroid;
import androidx.appcompat.app.AppCompatActivity;
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 FragmentOne = findViewById(R.id.FragmentOne);
      Button FragmentTwo = findViewById(R.id.FragmentTwo);
      FragmentOne.setOnClickListener(new View.OnClickListener() {
         @Override
         public void onClick(View v) {
            loadFragment(new FragmentOne());
         }
      });
      FragmentTwo.setOnClickListener(new View.OnClickListener() {
         @Override
         public void onClick(View v) {
            loadFragment(new FragmentTwo());
         }
      });
   }
   private void loadFragment(androidx.fragment.app.Fragment fragment) {
      getSupportFragmentManager().beginTransaction()
            .replace(R.id.fragment, fragment)
```

```
            .commit();
    }
}
```

FragmentOne.java

```
package com.example.fragmemtandroid;
import android.os.Bundle;
import android.view.LayoutInflater;
import android.view.View;
import android.view.ViewGroup;
import androidx.fragment.app.Fragment;
public class FragmentOne extends Fragment {
    public FragmentOne() {
    }
    @Override
    public View onCreateView(LayoutInflater inflater, ViewGroup container,
                             Bundle savedInstanceState) {
        return inflater.inflate(R.layout.fragment_one, container, false);
    }
          }
```

FragmentTwo.java

```
package com.example.fragmemtandroid;
import android.os.Bundle;
import android.view.LayoutInflater;
import android.view.View;
import android.view.ViewGroup;
import androidx.fragment.app.Fragment;
public class FragmentTwo extends Fragment {
    public FragmentTwo() {
    }
    @Override
    public View onCreateView(LayoutInflater inflater, ViewGroup container,
                             Bundle savedInstanceState) {
        return inflater.inflate(R.layout.fragment_two, container, false);
    }
}
```

activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
   android:layout_width="match_parent"
   android:layout_height="match_parent"
   android:padding="16dp">
   <LinearLayout
      android:layout_width="match_parent"
      android:layout_height="0dp"
      android:orientation="vertical"
      android:gravity="center">
      <Button
         android:id="@+id/FragmentOne"
         android:layout_width="match_parent"
         android:layout_height="wrap_content"
         android:text="Fragment One" />
      <Button
         android:id="@+id/FragmentTwo"
         android:layout_width="match_parent"
         android:layout_height="wrap_content"
         android:text="Fragment Two" />
   </LinearLayout>
   <FrameLayout
      android:id="@+id/fragment"
      android:layout_width="match_parent"
      android:layout_height="0dp"/>
</LinearLayout>
```

fragment_one.xml

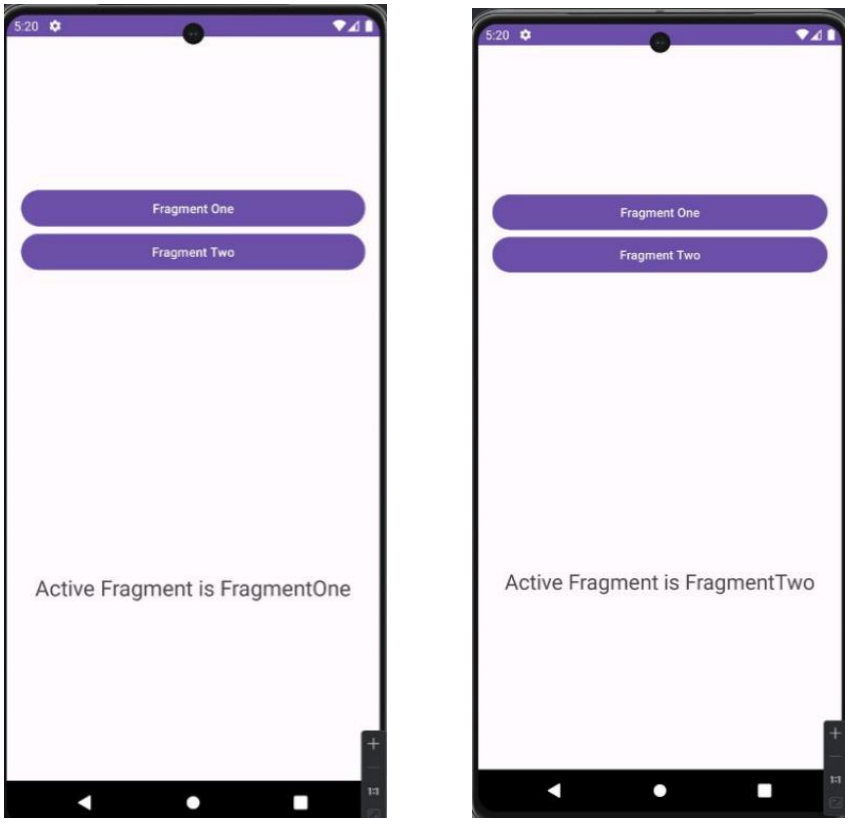
```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
   android:layout_width="match_parent"
   android:layout_height="match_parent"
   android:gravity="center">
   <TextView
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:text="Active Fragment is FragmentOne"
      android:textSize="24sp"/>
```

```
</LinearLayout>
```

fragment_two.xml

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:gravity="center">
    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Active Fragment is FragmentTwo"
        android:textSize="24sp"/>
</LinearLayout>
```

Output



Result

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

Experiment No. 16

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"?>
<androidx.drawerlayout.widget.DrawerLayout
xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:id="@+id/drawerLayout"
    tools:context=".MainActivity">
    <androidx.appcompat.widget.Toolbar
        android:id="@+id/toolbar"
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        app:popupTheme="@style/ThemeOverlay.AppCompat.Light"  />
   <LinearLayout
       android:layout_width="wrap_content"
       android:layout_height="wrap_content"
       android:orientation="horizontal"/>
   </LinearLayout>
    <com.google.android.material.navigation.NavigationView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
       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">
   <item
      android:id="@+id/ac"
      android:title="My Account"
      android:icon="@drawable/ic_baseline_account_circle_24"/>
   <item
      android:id="@+id/lc"
      android:title="Location"
      android:icon="@drawable/ic_baseline_location_on_24" />
</menu>
```

Strings.xml

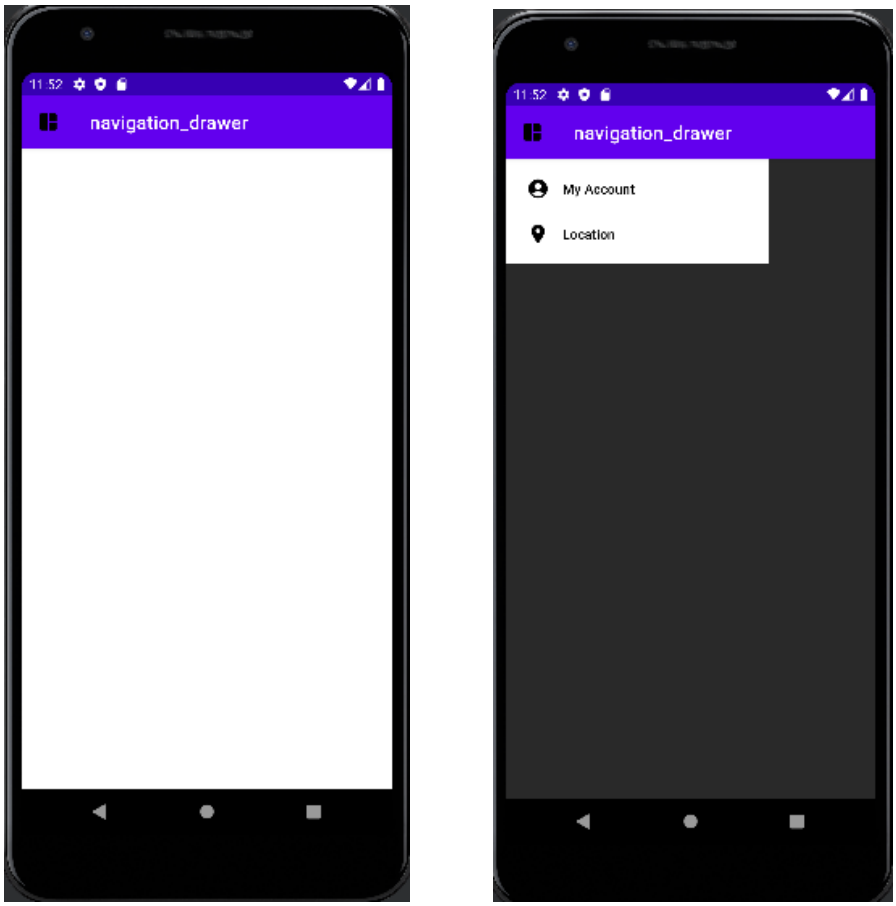
```
<resources>
   <string name="app_name">navigation_drawer</string>
   <string name="nav_open">Open</string>
   <string name="nav_close">Close</string>
</resources>
```

MainActivity.java

```
package com.example.navigation_drawer;
import androidx.annotation.NonNull;
import androidx.appcompat.app.ActionBarDrawerToggle;
import androidx.appcompat.app.AppCompatActivity;
import androidx.appcompat.widget.Toolbar;
import androidx.drawerlayout.widget.DrawerLayout;
import android.os.Bundle;
import android.view.MenuItem;
public class MainActivity extends AppCompatActivity {
DrawerLayout dd;
ActionBarDrawerToggle tt;
   @Override
   protected void onCreate(Bundle savedInstanceState) {
      super.onCreate(savedInstanceState);
      setContentView(R.layout.activity_main);
      dd=findViewById(R.id.drawerLayout);
```

```
        tt=new ActionBarDrawerToggle(this,dd,R.string.nav_open,R.string.nav_open);
        dd.addDrawerListener(tt);
        tt.syncState();
        getSupportActionBar().setDisplayHomeAsUpEnabled(true);
        getSupportActionBar().setHomeAsUpIndicator(R.drawable.ic_baseline_auto_awesome_mo
saic_24);}
    @Override
    public boolean onOptionsItemSelected(@NonNull MenuItem item) {
        if(tt.onOptionsItemSelected(item))
        {
            return true;}
        return super.onOptionsItemSelected(item);
    }}
```

Output



Result

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

Experiment No.17

Aim:

Create database using SQLite and perform INSERT and SELECT.

CO5:

Develop mobile applications using SQLite.

Procedure:

Dbhelper.java

```
package com.example.database;

import android.content.Context;

import android.database.sqlite.SQLiteDatabase;

import android.database.sqlite.SQLiteOpenHelper;

import androidx.annotation.Nullable;

public class DBHelper extends SQLiteOpenHelper {

   public DBHelper(@Nullable Context context) {

      super(context,"student.db", null, 1);

   }

   @Override

   public void onCreate(SQLiteDatabase sqLiteDatabase) {

      sqLiteDatabase.execSQL("create table tbl_std(id int,name varchar(10),address
varchar(10))");

   }

   @Override

   public void onUpgrade(SQLiteDatabase sqLiteDatabase, int i, int i1) {

   }

}
```

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:orientation="vertical"
    android:background="@drawable/all"
    tools:context=".MainActivity">
    <TextView
        android:id="@+id/textView"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Registration!"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.434"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.125" />
    <EditText
        android:id="@+id/id"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:ems="10"
```

```
    android:inputType="text"
    android:hint="Id"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.417"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.204" />
  <EditText
    android:id="@+id/name"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:ems="10"
    android:inputType="text"
    android:hint="Name"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.417"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.317" />
  <EditText
    android:id="@+id/addr"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:ems="10"
    android:inputType="text"
```

```
    android:hint="Address"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.417"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.434" />
  <Button
    android:id="@+id/b1"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Insert"
    android:onClick="insert"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.107"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.549"
    />
  <Button
    android:id="@+id/b2"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Update"
    android:onClick="update"
    app:layout_constraintBottom_toBottomOf="parent"
```

```
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.848"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.549" />

  <Button
    android:id="@+id/b3"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Delete"
    android:onClick="delete"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.107"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.682" />
  <Button
    android:id="@+id/b4"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="View"
    android:onClick="view"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.848"
```

```
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.682" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

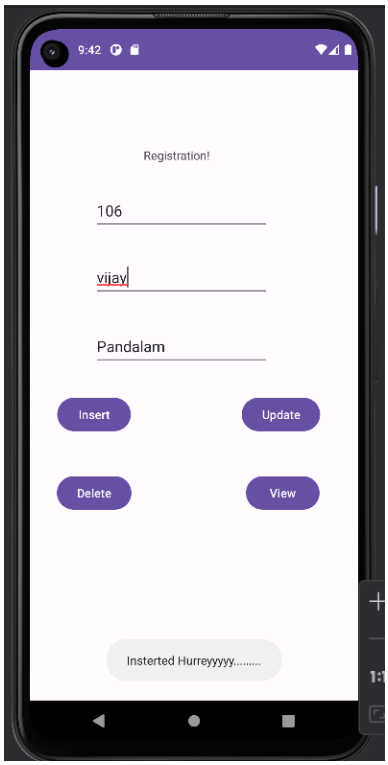
MainActivityjava

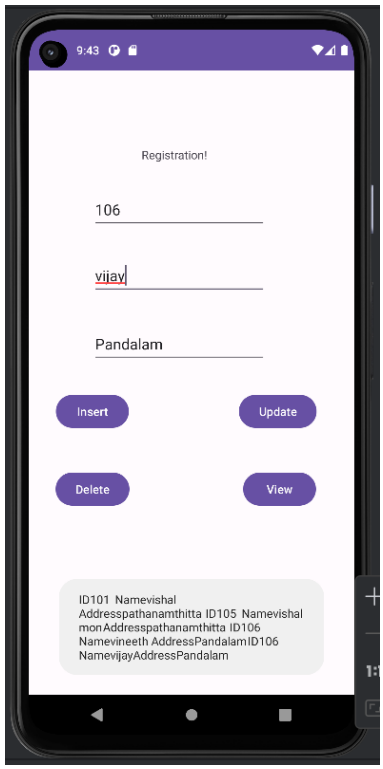
```
package com.example.database;
import androidx.appcompat.app.AppCompatActivity;
import android.content.ContentValues;
import android.database.Cursor;
import android.database.sqlite.SQLiteDatabase;
import android.os.Bundle;
import android.view.View;
import android.widget.EditText;
import android.widget.Toast;
public class MainActivity extends AppCompatActivity {
   EditText ed1,ed2,ed3;
   DBHelper helper=new DBHelper(this);
   SQLiteDatabase db;
   @Override
   protected void onCreate(Bundle savedInstanceState) {
      super.onCreate(savedInstanceState);
      setContentView(R.layout.activity_main);
      db=helper.getReadableDatabase();
      ed1=findViewById(R.id.id);
      ed2=findViewById(R.id.name);
      ed3=findViewById(R.id.addr);
```

```
}
public void insert(View view) {
    String id=ed1.getText().toString();
    String name=ed2.getText().toString();
    String add=ed3.getText().toString();
    ContentValues data1=new ContentValues();
    data1.put("id",id);
    data1.put("name",name);
    data1.put("address",add);
    db.insert("tbl_std",null,data1);
    Toast.makeText(this, "Insterted Hurreyyyyy.....", Toast.LENGTH_SHORT).show();
}
public void update(View view) {
    String id=ed1.getText().toString();
    String name=ed2.getText().toString();
    String add=ed3.getText().toString();
    ContentValues data1=new ContentValues();
    data1.put("id",id);
    data1.put("name",name);
    data1.put("address",add);
    db.update("tbl_std",data1,"id="+id,null);
    Toast.makeText(this, "Updated Hurreyyyyy.....", Toast.LENGTH_SHORT).show();
}
public void view(View view) {
    StringBuffer buffer=new StringBuffer();
    Cursor c=db.rawQuery("select * from tbl_std",null);
    while(c.moveToNext())
```

```
    {
        buffer.append("ID"+c.getString(0)+"\t");
        buffer.append("Name"+c.getString(1)+"\t");
        buffer.append("Address"+c.getString(2)+"\t");}
    Toast.makeText(this, buffer.toString(), Toast.LENGTH_LONG).show();}
  public void delete(View view) {
    String id=ed1.getText().toString();
    db.delete("tbl_std","id="+id,null);
    Toast.makeText(this, "Deleted Hurreyyyyy.....", Toast.LENGTH_SHORT).show();
  }}
```

Output





Result

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

Experiment No. 18

Aim:

Perform UPDATE and DELETE on SQLite database.

CO5:

Develop mobile applications using SQLite.

Procedure:

Dbhelper.java

```
package com.example.database;

import android.content.Context;

import android.database.sqlite.SQLiteDatabase;

import android.database.sqlite.SQLiteOpenHelper;

import androidx.annotation.Nullable;

public class DBHelper extends SQLiteOpenHelper {

    public DBHelper(@Nullable Context context) {

        super(context,"student.db", null, 1);

    }

    @Override

    public void onCreate(SQLiteDatabase sqLiteDatabase) {

        sqLiteDatabase.execSQL("create table tbl_std(id int,name varchar(10),address
varchar(10))");

    }

    @Override

    public void onUpgrade(SQLiteDatabase sqLiteDatabase, int i, int i1) {

    }

}
```

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:orientation="vertical"
    android:background="@drawable/all"
    tools:context=".MainActivity">
    <TextView
        android:id="@+id/textView"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Registration!"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.434"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.125" />
    <EditText
        android:id="@+id/id"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:ems="10"
```

```
    android:inputType="text"
    android:hint="Id"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.417"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.204" />
  <EditText
    android:id="@+id/name"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:ems="10"
    android:inputType="text"
    android:hint="Name"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.417"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.317" />
  <EditText
    android:id="@+id/addr"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:ems="10"
    android:inputType="text"
```

```
    android:hint="Address"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.417"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.434" />
  <Button
    android:id="@+id/b1"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Insert"
    android:onClick="insert"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.107"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.549"
    />
  <Button
    android:id="@+id/b2"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Update"
    android:onClick="update"
    app:layout_constraintBottom_toBottomOf="parent"
```

```
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.848"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.549" />

  <Button
    android:id="@+id/b3"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Delete"
    android:onClick="delete"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.107"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.682" />
  <Button
    android:id="@+id/b4"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="View"
    android:onClick="view"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.848"
```

```
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.682" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

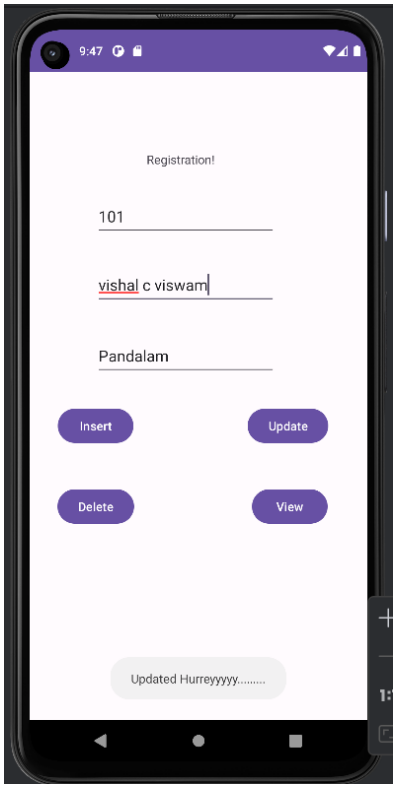
MainActivityjava

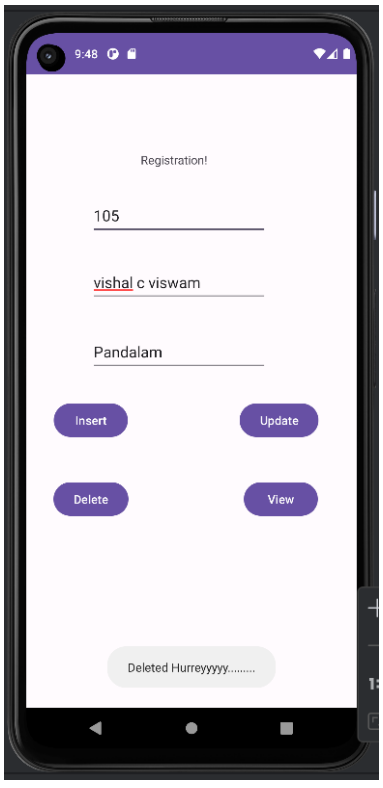
```
package com.example.database;
import androidx.appcompat.app.AppCompatActivity;
import android.content.ContentValues;
import android.database.Cursor;
import android.database.sqlite.SQLiteDatabase;
import android.os.Bundle;
import android.view.View;
import android.widget.EditText;
import android.widget.Toast;

public class MainActivity extends AppCompatActivity {
   EditText ed1,ed2,ed3;
   DBHelper helper=new DBHelper(this);
   SQLiteDatabase db;
   @Override
   protected void onCreate(Bundle savedInstanceState) {
      super.onCreate(savedInstanceState);
      setContentView(R.layout.activity_main);
      db=helper.getReadableDatabase();
      ed1=findViewById(R.id.id);
      ed2=findViewById(R.id.name);
```

```
    ed3=findViewById(R.id.addr);
  }
  public void insert(View view) {
    String id=ed1.getText().toString();
    String name=ed2.getText().toString();
    String add=ed3.getText().toString();
    ContentValues data1=new ContentValues();
    data1.put("id",id);
    data1.put("name",name);
    data1.put("address",add);
    db.insert("tbl_std",null,data1);
    Toast.makeText(this, "Insterted Hurreyyyyy.....", Toast.LENGTH_SHORT).show();
  }
  public void update(View view) {
    String id=ed1.getText().toString();
    String name=ed2.getText().toString();
    String add=ed3.getText().toString();
    ContentValues data1=new ContentValues();
    data1.put("id",id);
    data1.put("name",name);
    data1.put("address",add);
    db.update("tbl_std",data1,"id="+id,null);
    Toast.makeText(this, "Updated Hurreyyyyy.....", Toast.LENGTH_SHORT).show();
  }
  public void view(View view) {
    StringBuffer buffer=new StringBuffer();
    Cursor c=db.rawQuery("select * from tbl_std",null);
```

```
    while(c.moveToNext())
    {
       buffer.append("ID"+c.getString(0)+"\t");
       buffer.append("Name"+c.getString(1)+"\t");
       buffer.append("Address"+c.getString(2)+"\t"); }
    Toast.makeText(this, buffer.toString(), Toast.LENGTH_LONG).show}
  public void delete(View view) {
    String id=ed1.getText().toString();
    db.delete("tbl_std","id="+id,null);
    Toast.makeText(this, "Deleted Hurreyyyyy.....", Toast.LENGTH_SHORT).show();
  }}
```

Output





Result

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