

SREE NARAYANA GURUKULAM COLLEGE OF ENGINEERING KADAYIRUPPU, KOLENCHERY 682311

LABORATORY RECORD YEAR: 2022 **TO** 2023

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BRANCH: COMPUTER APPLICATIONS

Certified that this is a Bonafide Record of Practical work done in partial fulfillment of the requirements for the award of the Degree in Master of Computer Applications of Sree Narayana Gurukulam College of Engineering.

Kadayiruppu Date:

Head of the Department

Course Instructor

Submitted for University Practical Examination

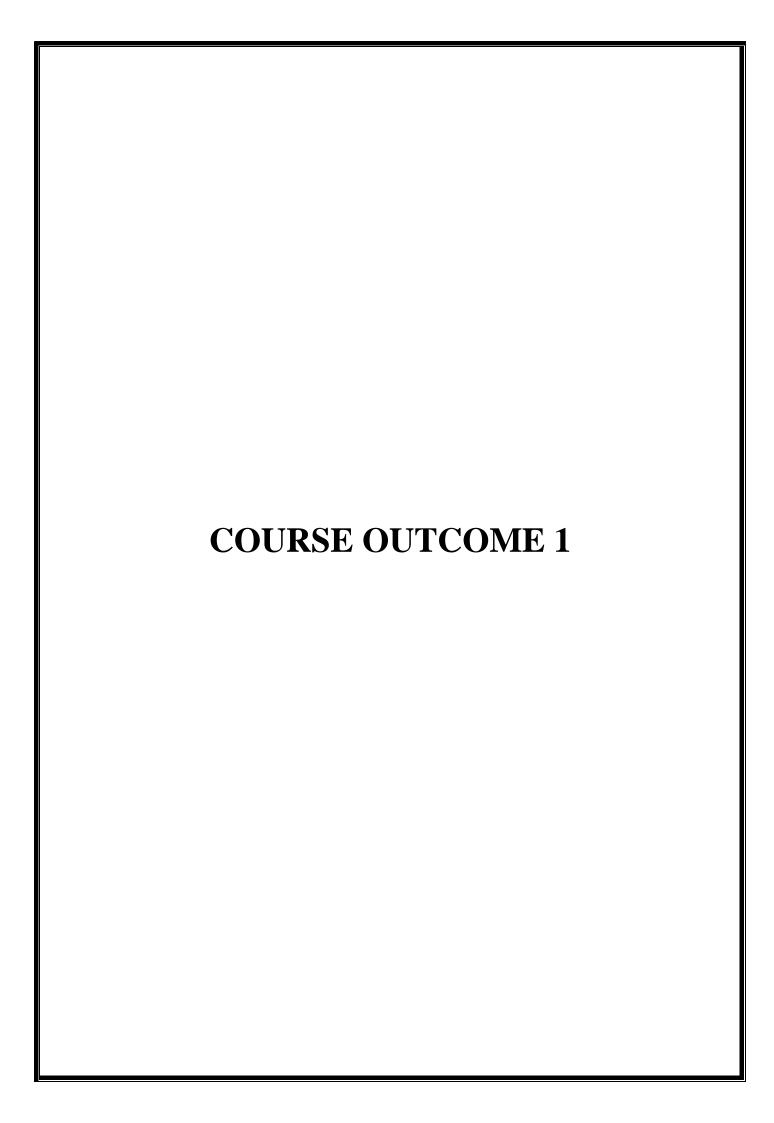
Reg. No: SNG21MCA-2024 on

External Examiner

Internal Examiner

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PROGRAM NO:1 **DATE:** 30/08/22

LOGIN FORM

AIM

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

```
<?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">
  <LinearLayout
    android:layout_width="409dp"
    android:layout_height="729dp"
    android:orientation="vertical"
    tools:layout_editor_absoluteX="1dp"
    tools:layout_editor_absoluteY="1dp"
    tools:ignore="MissingConstraints">
    <TextView
      android:id="@+id/textView5"
      android:layout_width="match_parent"
      android:layout_height="37dp"
      android:text="USERNAME"
      android:textSize="20dp"/>
    <EditText
      android:id="@+id/txt_uname"
      android:layout width="match parent"
      android:layout_height="wrap_content"
      android:ems="10"
      android:hint="user name"
      android:inputType="textPersonName" />
    <TextView
      android:id="@+id/textView6"
      android:layout_width="match_parent"
      android:layout_height="35dp"
      android:text="PASSWORD"
      android:textSize="20dp"/>
    <EditText
      android:id="@+id/txt_pwd"
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
      android:ems="10"
```

```
android:hint="password"
       android:inputType="textPassword" />
    <Button
       android:id="@+id/btn login"
       android:layout_width="match_parent"
       android:layout height="wrap content"
       android:background="#1B0000"
       android:onClick="login user"
       android:text="LOGIN" />
  </LinearLayout>
</androidx.constraintlayout.widget.ConstraintLayout>
JAVA CODE
package com.example.login_form;
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;
public class MainActivity extends AppCompatActivity {
  EditText EditUser, EditPass;
  Button BtnLogin;
  @Override
  protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_main);
    EditUser=findViewById(R.id.txt_uname);
    EditPass=findViewById(R.id.txt_pwd);
    BtnLogin=findViewById(R.id.btn_login);
  }
  public void login_user(View view) {
    String s1=EditUser.getText().toString();
    String s2=EditPass.getText().toString();
    if (s1.equals("Sreeragtv") && s2.equals("sreerag"))
       Toast.makeText(this, "LOGIN SUCCESS Sreerag", Toast.LENGTH_SHORT).show();
    }
    else
       Toast.makeText(this, "Invalid Username or Password",
Toast.LENGTH_SHORT).show();
```

```
}
```



PROGRAM NO:2 **DATE:** 03/09/22

ACTIVITY LIFECYCLE

AIM

Write a program that demonstrates Activity Lifecycle.

XML CODE

```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
  xmlns:app="http://schemas.android.com/apk/res-auto"
  xmlns:tools="http://schemas.android.com/tools"
  android:layout_width="match_parent"
  android:layout_height="match_parent"
  android:background="#020522"
  tools:context=".MainActivity">
  <TextView
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:background="#020522"
    android:text="Hello SreeraG!"
    android:textColor="#FFFFFF"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

JAVA CODE

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

```
setContentView(R.layout.activity_main);
  Toast.makeText(this,"onCreate", Toast.LENGTH_LONG).show();
@Override
protected void onStart() {
  super.onStart();
  Toast.makeText(this,"onStart",Toast.LENGTH_LONG).show();
@Override
protected void onResume() {
  super.onResume();
  Toast.makeText(this,"onResume",Toast.LENGTH_LONG).show();
@Override
protected void onPause() {
  super.onPause();
  Toast.makeText(this,"onPause",Toast.LENGTH_LONG).show();
@Override
protected void onStop() {
  super.onStop();
  Toast.makeText(this,"onStop",Toast.LENGTH_LONG).show();
@Override
protected void onDestroy() {
  super.onDestroy();
  Toast.makeText(this,"onDestroy",Toast.LENGTH_LONG).show();
}
```









PROGRAM NO:3 **DATE:** 10/09/22

SIMPLE CALCULATOR

AIM

Implementing basic arithmetic operations of a simple calculator.

```
<?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">
  <LinearLayout
    android:layout_width="409dp"
    android:layout_height="729dp"
    android:orientation="vertical"
    tools:layout_editor_absoluteX="1dp"
    tools:layout_editor_absoluteY="1dp"
    tools:ignore="MissingConstraints">
    <LinearLayout
       android:layout_width="match_parent"
       android:layout_height="77dp"
       android:orientation="horizontal">
       <TextView
         android:id="@+id/textView3"
         android:layout_width="97dp"
         android:layout_height="wrap_content"
         android:layout_weight="1"
         android:text="EnterNumber 1" />
       <EditText
         android:id="@+id/n1"
         android:layout_width="wrap_content"
         android:layout_height="wrap_content"
         android:layout_weight="1"
         android:ems="10"
         android:inputType="textPersonName" />
    </LinearLayout>
```

```
<LinearLayout
  android:layout_width="match_parent"
  android:layout height="65dp"
  android:orientation="horizontal">
  <TextView
    android:id="@+id/textView7"
    android:layout width="wrap content"
    android:layout_height="wrap_content"
    android:layout_weight="1"
    android:text="Enter Number 2" />
  <EditText
    android:id="@+id/n2"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_weight="1"
    android:ems="10"
    android:inputType="textPersonName" />
</LinearLayout>
<LinearLayout
  android:layout_width="match_parent"
  android:layout_height="91dp"
  android:orientation="horizontal">
  <Button
    android:id="@+id/submit_btn"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout weight="1"
    android:onClick="sum"
    android:text="Sum" />
</LinearLayout>
<LinearLayout
  android:layout_width="match_parent"
  android:layout_height="78dp"
  android:orientation="horizontal">
  <TextView
    android:id="@+id/textView8"
    android:layout_width="98dp"
    android:layout_height="wrap_content"
    android:layout weight="1"
    android:text="Result" />
  <EditText
    android:id="@+id/result"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_weight="1"
```

```
android:ems="10"
android:inputType="textPersonName" />
</LinearLayout>
</LinearLayout>
</androidx.constraintlayout.widget.ConstraintLayout>
```

JAVA CODE

```
package com.example.calculator;
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
public class MainActivity extends AppCompatActivity {
  EditText et_first,et_second,et_result;
  Button et_submit;
  @Override
  protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_main);
    et_first=findViewById(R.id.n1);
    et_second=findViewById(R.id.n2);
    et_result=findViewById(R.id.result);
    et_submit=findViewById(R.id.submit_btn);
  public void sum(View view){
    int num1 = Integer.parseInt(et_first.getText().toString());
    int num2 = Integer.parseInt(et_second.getText().toString());
    int sum = num1 + num2;
    et_result.setText(sum+"");
  }
```



FORM VALIDATION

AIM

Implement validations on various UI controls.

```
<?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="#030303"
  tools:context=".MainActivity">
  <LinearLayout
    android:layout_width="409dp"
    android:layout height="729dp"
    android:orientation="vertical"
    tools:layout_editor_absoluteX="1dp"
    tools:layout_editor_absoluteY="1dp"
    tools:ignore="MissingConstraints">
    <TextView
       android:id="@+id/textView"
       android:layout_width="match_parent"
       android:layout_height="45dp"
       android:background="#080"
       android:lineSpacingExtra="10sp"
       android:text="Enter the details for registration"
       android:textAlignment="center"
       android:textColor="#fff"
       android:textSize="27sp"
       android:textStyle="bold|italic" />
    <LinearLayout
       android:layout_width="match_parent"
       android:layout height="73dp"
       android:orientation="horizontal">
       <EditText
         android:id="@+id/first"
         android:layout_width="wrap_content"
```

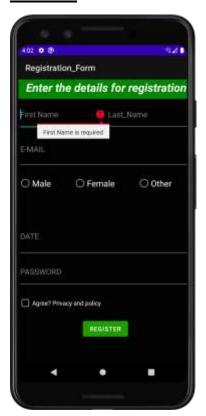
```
android:layout_height="match_parent"
    android:layout_weight="1"
    android:ems="10"
    android:hint="First Name"
    android:inputType="textPersonName"
    android:textColor="#fff" />
  <EditText
    android:id="@+id/last"
    android:layout_width="wrap_content"
    android:layout_height="73dp"
    android:layout_weight="1"
    android:ems="10"
    android:hint="Last Name"
    android:inputType="textPersonName" />
</LinearLayout>
<EditText
  android:id="@+id/email"
  android:layout_width="match_parent"
  android:layout_height="88dp"
  android:ems="10"
  android:hint="E-MAIL"
  android:inputType="textEmailAddress" />
<LinearLayout
  android:layout_width="match_parent"
  android:layout_height="113dp"
  android:orientation="horizontal">
  <RadioGroup
    android:id="@+id/rd"
    android:layout_width="match_parent"
    android:layout_height="106dp"
    android:orientation="horizontal">
    < Radio Button
      android:id="@+id/male"
      android:layout_width="wrap_content"
      android:layout_height="69dp"
      android:layout_weight="1"
      android:text="Male"
      android:textSize="20sp" />
    <RadioButton
      android:id="@+id/female"
      android:layout_width="wrap_content"
      android:layout_height="71dp"
      android:layout_weight="1"
      android:text="Female"
```

```
android:textSize="20sp" />
         <RadioButton
           android:id="@+id/other"
           android:layout_width="wrap_content"
           android:layout_height="68dp"
           android:layout_weight="1"
           android:text="Other"
           android:textSize="20sp" />
      </RadioGroup>
    </LinearLayout>
    <EditText
      android:id="@+id/date"
      android:layout_width="match_parent"
      android:layout_height="92dp"
      android:ems="10"
      android:hint="DATE"
      android:inputType="date" />
    <EditText
      android:id="@+id/password"
      android:layout_width="match_parent"
      android:layout height="73dp"
      android:ems="10"
      android:hint="PASSWORD"
      android:inputType="textPassword" />
    <CheckBox
      android:id="@+id/checkBox"
      android:layout_width="match_parent"
      android:layout_height="72dp"
      android:text="Agree? Privacy and policy" />
    <Button
      android:id="@+id/register"
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:backgroundTint="#1F9F02"
      android:insetLeft="150dp"
      android:onClick="submit"
      android:text="REGISTER"
      android:textColor="@color/white"/>
  </LinearLayout>
</androidx.constraintlayout.widget.ConstraintLayout>
```

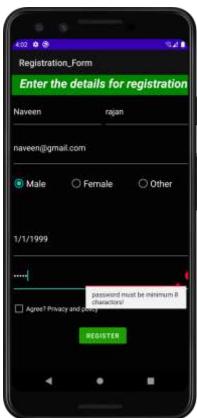
JAVA CODE

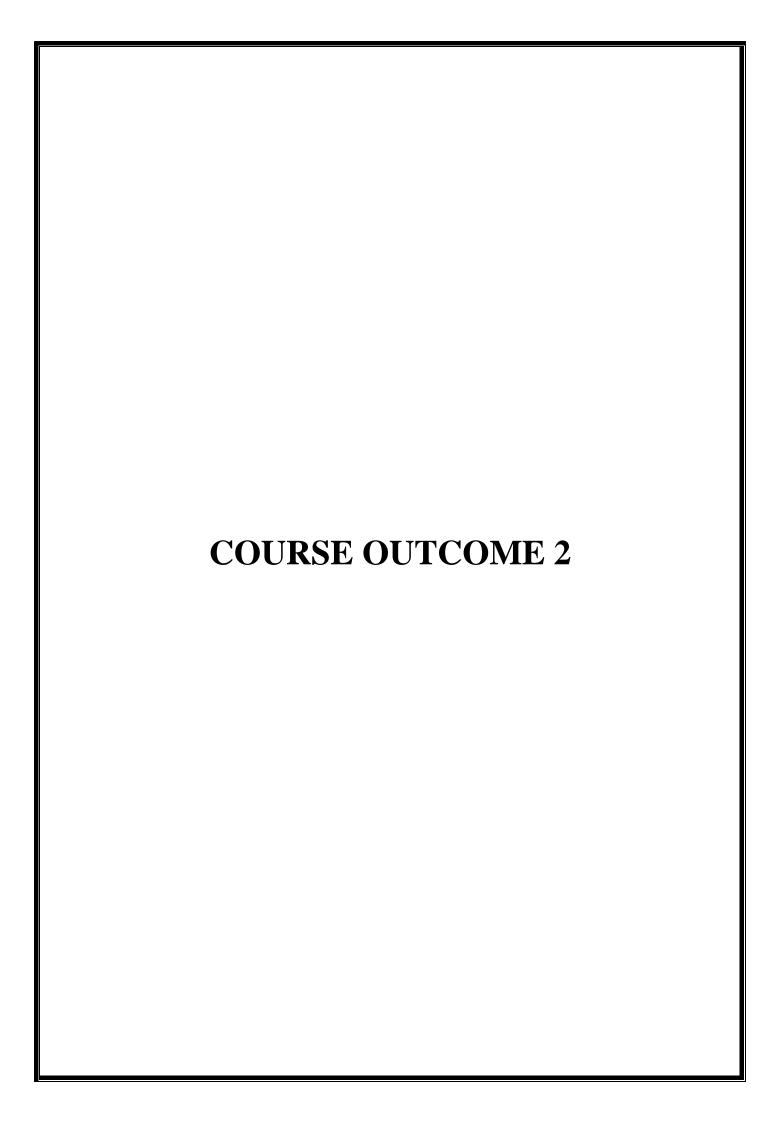
```
package com.example.registration_form;
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.RadioButton;
import android.widget.RadioGroup;
import android.widget.Toast;
public class MainActivity extends AppCompatActivity {
  EditText first1, date1, last1, email1, password1;
  Button register1;
  RadioButton male1, female1, other1;
  boolean is All Field Checked = false;
  RadioGroup rp;
  @Override
  protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity main);
    first1 = findViewById(R.id.first);
    last1 = findViewById(R.id.last);
    date1 = findViewById(R.id.date);
    email1 = findViewById(R.id.email);
    password1 = findViewById(R.id.password);
    male1 = findViewById(R.id.male);
    female1 = findViewById(R.id.female);
    other1 = findViewById(R.id.other);
    rp = findViewById(R.id.rd);
  }
  public void submit(View view) {
    isAllFieldChecked = CheckAllFields();
    if (isAllFieldChecked){
       Toast.makeText(this, "Successfully Registered", Toast.LENGTH_SHORT).show();
    }
  }
  private boolean CheckAllFields() {
    if (first1.length()==0) {
       first1.setError("First Name is required");
       return false;
    if (last1.length()==0) {
```

```
last1.setError("Last Name is required");
       return false;
    if (email1.length()==0){
       email1.setError("Email is required");
       return false;
     }
    else{
       String s_mail=email1.getText().toString();
       String checkEmail = [a-zA-Z0-9._-]+@[a-z]+[.]+[a-z]+";
       if(!s_mail.matches(checkEmail)){
         email1.setError("Invalid Email!!");
         return false;
       }
    if (date1.length()==0) {
       date1.setError("Date is requied");
       return false;
    if (password1.length()==0) {
       password1.setError("password is requied");
       return false;
    else if(password1.length()<8) {
       password1.setError("password must be minimum 8 charactors!");
       return false;
    if (rp.getCheckedRadioButtonId() == -1) {
       other1.setError("Select gender");
       other1.requestFocus();
       return false;
    return true;
  }
}
```









PROGRAM NO:5 DATE:25/09/22

INTENTS AND SHARED PREFERENCES

AIM

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

PAGE 1

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"</p>
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="match_parent"
    android:layout_height="wrap_content"
    android:gravity="center"
    android:background="@color/black"
    android:textColor="@color/white"
    android:text="ENTER THE DETAILS"
    android:layout_marginTop="30px"
    android:textSize="25sp"
    />
  <EditText
    android:id="@+id/fullname"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:ems="10"
    android:layout_marginTop="30sp"
    android:inputType="textPersonName"
    android:hint="FULL NAME" />
  <EditText
    android:id="@+id/email"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:ems="10"
    android:layout_marginTop="30sp"
    android:hint="EMAIL"
    android:inputType="textPersonName" />
  <EditText
    android:id="@+id/location"
    android:layout width="match parent"
    android:layout_height="wrap_content"
    android:ems="10"
```

```
android:layout_marginTop="30sp"
    android:inputType="textPersonName"
    android:hint="LOCATION" />
  <Button
    android:id="@+id/button"
    android:layout_width="match_parent"
    android:layout height="wrap content"
    android:layout_marginTop="30sp"
    android:backgroundTint="#0A5302"
    android:onClick="reg"
    android:text="REGISTER" />
</LinearLayout>
JAVA CODE
package com.example.shared_preferences;
import androidx.appcompat.app.AppCompatActivity;
import android.content.Intent;
import android.content.SharedPreferences;
import android.os.Bundle;
import android.view.View;
import android.widget.EditText;
import android.widget.Toast;
public class MainActivity extends AppCompatActivity {
  EditText name, email, location;
  SharedPreferences sp;
  @Override
  protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_main);
    name=findViewById(R.id.fullname);
    email=findViewById(R.id.email);
    location=findViewById(R.id.location);
    sp=getSharedPreferences("register",MODE_PRIVATE);
  public void reg(View view) {
    Toast.makeText(this,"REGISTERED
SUCCESSFULLY", Toast. LENGTH_SHORT). show();
    Intent i=new Intent(MainActivity.this,MainActivity2.class);
    String val1=name.getText().toString();
    String val2=email.getText().toString();
    i.putExtra("name",val1);
    i.putExtra("email",val2);
    SharedPreferences.Editor ed=sp.edit();
    ed.putString("location",location.getText().toString());
```

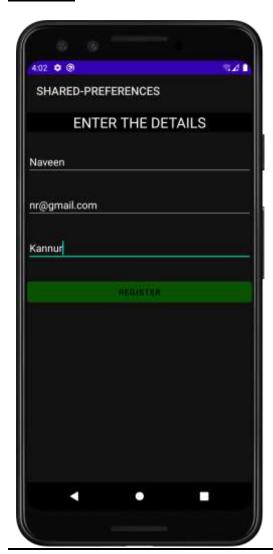
```
ed.commit();
startActivity(i);
}
```

PAGE 2

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"</p>
  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=".MainActivity2">
  <TextView
    android:id="@+id/det"
    android:layout_width="match_parent"
    android:layout_marginTop="30px"
    android:fontFamily="serif"
    android:textStyle="bold"
    android:textColor="@color/white"
    android:gravity="center"
    android:background="@color/black"
    android:textSize="25sp"
    android:layout_height="wrap_content"
    android:text="REGISTRATION DETAILS" />
  <TextView
    android:id="@+id/name"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_marginTop="30px"
    android:fontFamily="serif"
    android:gravity="center"
    android:text="NAME"
    android:textColor="#23ECD4"
    android:textSize="25sp"
    android:textStyle="bold" />
  <TextView
    android:id="@+id/email"
    android:textColor="#23ECD4"
    android:fontFamily="serif"
    android:layout_marginTop="30px"
    android:textSize="25sp"
    android:textStyle="bold"
```

```
android:gravity="center"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:text="EMAIL" />
  <TextView
    android:id="@+id/location"
    android:textColor="#23ECD4"
    android:fontFamily="serif"
    android:layout_marginTop="30px"
    android:textSize="25sp"
    android:textStyle="bold"
    android:gravity="center"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:text="LOCATION" />
</LinearLayout>
JAVA CODE
package com.example.shared_preferences;
import androidx.appcompat.app.AppCompatActivity;
import android.content.Intent;
import android.content.SharedPreferences;
import android.os.Bundle;
import android.widget.TextView;
public class MainActivity2 extends AppCompatActivity {
  TextView t1,t2,t3;
  SharedPreferences sp;
  @Override
  protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity main2);
    t1=findViewById(R.id.name);
    t2=findViewById(R.id.email);
    t3=findViewById(R.id.location);
    sp=getSharedPreferences("register",MODE_PRIVATE);
    Intent intent=getIntent();
    String val1=intent.getStringExtra("name");
    String val2=intent.getStringExtra("email");
    String val3=sp.getString("location","");
    t1.setText("NAME: "+val1);
    t2.setText("EMAIL: "+val2);
    t3.setText("LOCATION: "+val3);
```

```
}
```





GRID CALCULATOR

AIM

Design a simple Calculator using GridLayout and Cascaded LinearLayout

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"</p>
  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/display"
    android:layout_width="390dp"
    android:layout_height="80dp"
    android:layout_gravity="center"
    android:layout_marginTop="30dp"
    android:background="#393131"
    android:gravity="center"
    android:inputType="textPersonName"
    android:textSize="48sp" />
  <androidx.gridlayout.widget.GridLayout
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout marginTop="30dp"
    android:layout_gravity="center">
    <Button
       android:id="@+id/b7"
       android:layout_width="wrap_content"
       android:layout_height="54dp"
       android:backgroundTint="#6e7778"
       android:text="7"
       app:layout column="0"
       app:layout_row="0" />
    <Button
       android:id="@+id/b8"
       android:layout_width="wrap_content"
       android:layout_height="54dp"
       android:layout_marginLeft="10dp"
       android:backgroundTint="#6e7778"
```

```
android:text="8"
  app:layout_column="1"
  app:layout row="0" />
<Button
  android:id="@+id/b9"
  android:layout width="wrap content"
  android:layout_height="54dp"
  android:layout_marginLeft="10dp"
  android:backgroundTint="#6e7778"
  android:text="9"
  app:layout_column="2"
  app:layout_row="0" />
<Button
  android:id="@+id/div"
  android:layout_width="wrap_content"
  android:layout_height="54dp"
  android:layout_marginLeft="10dp"
  android:backgroundTint="#3C393B"
  android:text="/"
  app:layout_column="3"
  app:layout_row="0" />
<Button
  android:id="@+id/b4"
  android:layout_width="wrap_content"
  android:layout height="54dp"
  android:backgroundTint="#6e7778"
  android:text="4"
  app:layout_column="0"
  app:layout_row="1" />
<Button
  android:id="@+id/b5"
  android:layout_width="wrap_content"
  android:layout height="54dp"
  android:layout_marginLeft="10dp"
  android:backgroundTint="#6e7778"
  android:text="5"
  app:layout_column="1"
  app:layout_row="1" />
<Button
  android:id="@+id/b6"
  android:layout_width="wrap_content"
  android:layout_height="54dp"
  android:layout_marginLeft="10dp"
  android:backgroundTint="#6e7778"
  android:text="6"
  app:layout_column="2"
  app:layout_row="1" />
<Button
  android:id="@+id/mul"
  android:layout_width="wrap_content"
```

```
android:layout_height="54dp"
  android:layout_marginLeft="10dp"
  android:backgroundTint="#3C393B"
  android:text="x"
  app:layout_column="3"
  app:layout row="1"/>
<Button
  android:id="@+id/b1"
  android:layout_width="wrap_content"
  android:layout_height="54dp"
  android:backgroundTint="#6e7778"
  android:text="1"
  app:layout_column="0"
  app:layout_row="2" />
<Button
  android:id="@+id/b2"
  android:layout_width="wrap_content"
  android:layout_height="54dp"
  android:layout_marginLeft="10dp"
  android:backgroundTint="#6e7778"
  android:text="2"
  app:layout_column="1"
  app:layout_row="2" />
<Button
  android:id="@+id/b3"
  android:layout_width="wrap_content"
  android:layout_height="54dp"
  android:layout_marginLeft="10dp"
  android:backgroundTint="#6e7778"
  android:text="3"
  app:layout_column="2"
  app:layout_row="2" />
<Button
  android:id="@+id/sub"
  android:layout_width="wrap_content"
  android:layout_height="54dp"
  android:layout_marginLeft="10dp"
  android:backgroundTint="#3C393B"
  android:text="-"
  app:layout_column="3"
  app:layout_row="2" />
<Button
  android:id="@+id/clr"
  android:layout_width="wrap_content"
  android:layout height="54dp"
  android:backgroundTint="#3C393B"
  android:text="clr"
  app:layout column="0"
  app:layout_row="3" />
<Button
```

```
android:id="@+id/b0"
      android:layout_width="wrap_content"
      android:layout height="54dp"
      android:layout_marginLeft="10dp"
      android:backgroundTint="#6e7778"
      android:text="0"
      app:layout_column="1"
      app:layout row="3"/>
    <Button
      android:id="@+id/equal"
      android:layout width="wrap content"
      android:layout_height="54dp"
      android:layout_marginLeft="10dp"
      android:backgroundTint="#3C393B"
      android:text="="
      app:layout_column="2"
      app:layout_row="3" />
    <Button
      android:id="@+id/add"
      android:layout_width="wrap_content"
      android:layout_height="54dp"
      android:layout_marginLeft="10dp"
      android:backgroundTint="#3C393B"
      android:text="+"
      app:layout column="3"
      app:layout row="3"/>
  </androidx.gridlayout.widget.GridLayout>
</LinearLayout>
JAVA CODE
package com.example.calculator;
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
public class MainActivity extends AppCompatActivity implements View.OnClickListener {
  EditText number;
  double num1=0;
  double num2=0;
  String op="";
  Button b1, b2, b3, b4, b5, b6, b7, b8, b9, b0, sum, sub, mul, div, equal, clear;
  @Override
  protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
```

```
setContentView(R.layout.activity_main);
  number = findViewById(R.id.display);
  b0 = findViewById(R.id.b0);
  b1 = findViewById(R.id.b1);
  b2 = findViewById(R.id.b2);
  b3 = findViewById(R.id.b3);
  b4 = findViewById(R.id.b4);
  b5 = findViewById(R.id.b5);
  b6 = findViewById(R.id.b6);
  b7 = findViewById(R.id.b7);
  b8 = findViewById(R.id.b8);
  b9 = findViewById(R.id.b9);
  sum = findViewById(R.id.add);
  sub = findViewById(R.id.sub);
  mul = findViewById(R.id.mul);
  div = findViewById(R.id.div);
  equal = findViewById(R.id.equal);
  clear = findViewById(R.id.clr);
  b0.setOnClickListener(this);
  b1.setOnClickListener(this);
  b2.setOnClickListener(this);
  b3.setOnClickListener(this);
  b4.setOnClickListener(this);
  b5.setOnClickListener(this);
  b6.setOnClickListener(this);
  b7.setOnClickListener(this):
  b8.setOnClickListener(this);
  b9.setOnClickListener(this);
  mul.setOnClickListener(this);
  div.setOnClickListener(this);
  sub.setOnClickListener(this);
  sum.setOnClickListener(this);
  clear.setOnClickListener(this);
  equal.setOnClickListener(this);
@Override
public void onClick(View view) {
  Button b = (Button) view;
  if (view == clear) {
    number.setText("");
  } else if (view == sub || view == sum || view == mul || view == div) {
    num1 = Integer.parseInt(number.getText().toString());
    op = b.getText().toString();
    number.setText("");
```

}

```
} else if (view == equal) {
    num2 = Integer.parseInt(number.getText().toString());
    if (op.equals("+")) {
        number.setText(num1 + num2 + "");
    } else if (op.equals("-")) {
        number.setText(num1 - num2 + "");
    } else if (op.equals("x")) {
        number.setText(num1 * num2 + "");
    } else if (op.equals("/")) {
        number.setText(num1 / num2 + "");
    }
} else {
    String s = number.getText().toString();
    number.setText(s + b.getText().toString());
}
```



FACEBOOK PAGE

AIM

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

```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"</pre>
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="#3e52ab"
  tools:context=".MainActivity">
  <ImageView
    android:id="@+id/imageView"
    android:layout_width="match_parent"
    android:layout_height="100dp"
    android:layout_gravity="center"
    android:layout marginTop="40dp"
    app:srcCompat="@drawable/fb2" />
  <EditText
    android:id="@+id/username"
    android:layout width="match parent"
    android:layout_height="50dp"
    android:layout_below="@+id/imageView"
    android:layout marginLeft="10dp"
    android:layout_marginRight="10dp"
    android:layout_marginTop="60dp"
    android:background="@xml/back"
    android:ems="10"
    android:hint="Email or Phone Number"
    android:inputType="textPersonName"
    android:paddingLeft="30dp"
    android:textColor="@color/white"
    android:textColorHint="@color/white"
    android:textSize="19sp" />
  <EditText
    android:id="@+id/password"
    android:layout_width="match_parent"
    android:layout height="50dp"
    android:layout_below="@+id/username"
    android:layout_marginLeft="10dp"
```

android:layout_marginTop="10dp" android:layout_marginRight="10dp" android:background="@xml/back" android:ems="10" android:hint="password" android:inputType="textPersonName" android:paddingLeft="30dp" android:textColor="@color/white" android:textColorHint="@color/white" android:textSize="19sp" />

<Button

android:id="@+id/button"
android:layout_width="260dp"
android:layout_height="55dp"
android:layout_below="@+id/password"
android:layout_centerHorizontal="true"
android:layout_marginTop="40dp"
android:backgroundTint="#46b082"
android:text="Login"
android:textColor="#FFFFF"
android:textSize="18sp" />

<TextView

android:id="@+id/textView"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_below="@id/button"
android:layout_centerHorizontal="true"
android:layout_marginTop="15dp"
android:text="Forgot account?"
android:textColor="@color/white"
android:textSize="22dp"/>

<View

android:layout_width="match_parent" android:layout_height="2dp" android:layout_below="@+id/textView" android:layout_marginTop="20dp" android:background="#94918e" />

<Button

android:id="@+id/button2"
android:layout_width="260dp"
android:layout_height="55dp"
android:layout_below="@+id/textView"
android:layout_centerHorizontal="true"
android:layout_marginTop="70dp"
android:backgroundTint="#46b082"
android:text="Create New Account"

```
android:textColor="#FFFFFF" />
</RelativeLayout>
<?xml version="1.0" encoding="utf-8"?>
<shape xmlns:android="http://schemas.android.com/apk/res/android"</pre>
android:shape="rectangle" >
<!-- View background color -->
<solid
  android:color="#3e52ab" >
</solid>
<!-- View border color and width -->
<stroke
  android:width="1dp"
  android:color="@color/white">
</stroke>
<!-- The radius makes the corners rounded -->
<corners
  android:radius="4dp" >
</corners>
</shape>
```



TOGGLE IMAGE

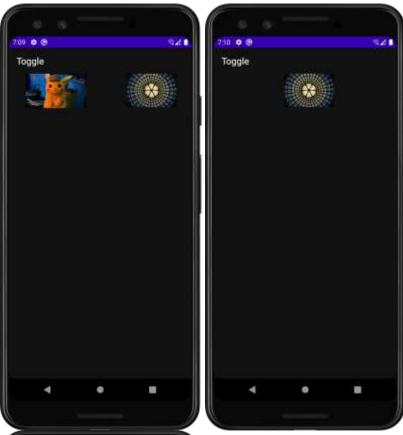
AIM

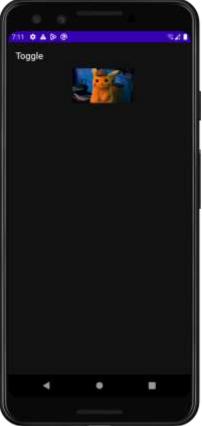
Develop an application that toggles image using FrameLayout

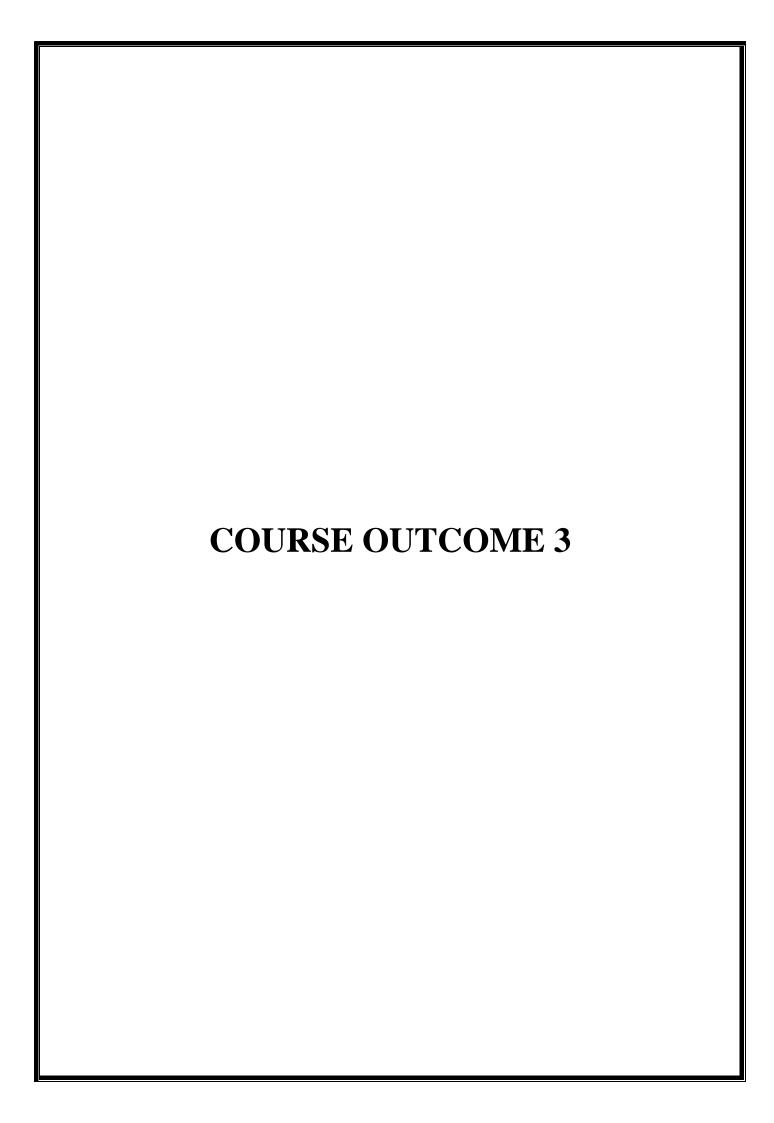
```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
  xmlns:app="http://schemas.android.com/apk/res-auto"
  xmlns:tools="http://schemas.android.com/tools"
  android:layout_width="match_parent"
  android:layout_height="match_parent"
  tools:context=".MainActivity">
  <LinearLayout
    android:layout_width="409dp"
    android:layout_height="729dp"
    android:orientation="horizontal"
    tools:layout_editor_absoluteX="1dp"
    tools:layout editor absoluteY="1dp"
    tools:ignore="MissingConstraints">
    <ImageView
      android:id="@+id/img1"
      android:layout_width="wrap_content"
      android:layout_height="74dp"
      android:layout_weight="1"
      android:src="@drawable/pikachu"
      app:srcCompat="@android:drawable/btn_star_big_on"/>
    <ImageView
      android:id="@+id/img2"
      android:layout_width="wrap_content"
      android:layout_height="72dp"
      android:layout_weight="1"
      android:src="@drawable/a"
      app:srcCompat="@android:drawable/checkbox_on_background"/>
  </LinearLayout>
</androidx.constraintlayout.widget.ConstraintLayout>
```

JAVA CODE

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







PROGRAM NO:9 **DATE:**30/10/22

INTENT

AIM

Implement Intent to navigate between multiple activities

PAGE 1

```
<?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/button"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:onClick="click"
    android:text="NEXT PAGE"
    tools:ignore="MissingConstraints"
    tools:layout_editor_absoluteX="147dp"
    tools:layout editor absoluteY="41dp" />
</androidx.constraintlayout.widget.ConstraintLayout>
JAVA CODE
package com.example.intent;
```

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

public class MainActivity extends AppCompatActivity {
   Button b1;
   @Override
   protected void onCreate(Bundle savedInstanceState) {
      super.onCreate(savedInstanceState);
      setContentView(R.layout.activity_main);
      b1=findViewById(R.id.button);
   }
```

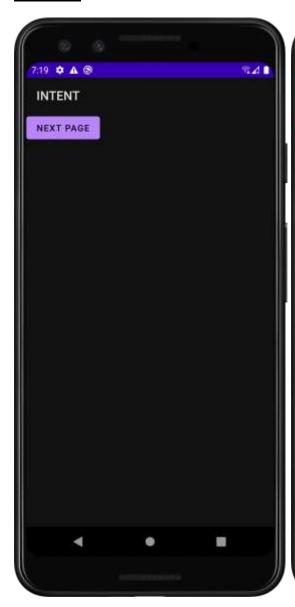
```
public void click(View view) {
    Intent i=new Intent(MainActivity.this,MainActivity2.class);
    startActivity(i);
  }
}
```

PAGE 2

```
<?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">
  <Button
    android:id="@+id/button2"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:onClick="click"
    android:text="PREVIOUS PAGE"
    tools:layout_editor_absoluteX="129dp"
    tools:layout_editor_absoluteY="54dp"
    tools:ignore="MissingConstraints" />
</androidx.constraintlayout.widget.ConstraintLayout>
JAVA CODE
```

```
package com.example.intent;
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 click(View view) {
    Intent i=new Intent(MainActivity2.this,MainActivity.class);
```

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





PROGRAM NO:10 **DATE:**10/11/22

MENU

AIM

Implement Options Menu to navigate to activities

MENU

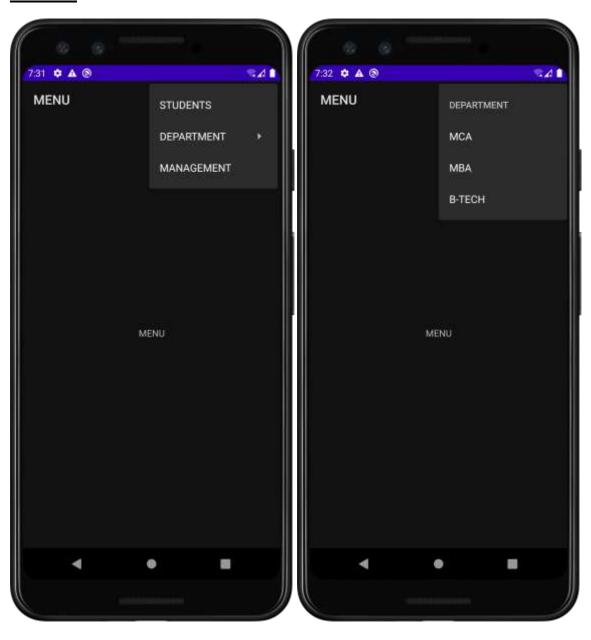
```
<?xml version="1.0" encoding="utf-8"?>
<menu xmlns:app="http://schemas.android.com/apk/res-auto"</pre>
  xmlns:android="http://schemas.android.com/apk/res/android">
  <item
    android:id="@+id/i1"
    android:title="STUDENTS" />
  <item
    android:id="@+id/i2"
    android:title="DEPARTMENT">
  <menu>
  <item
    android:id="@+id/s1"
    android:title="MCA" />
  <item
      android:id="@+id/s2"
      android:title="MBA" />
  <item
      android:id="@+id/s3"
      android:title="B-TECH" />
  </menu>
  </item>
  <item
    android:id="@+id/i3"
    android:title="MANAGEMENT" />
</menu>
```

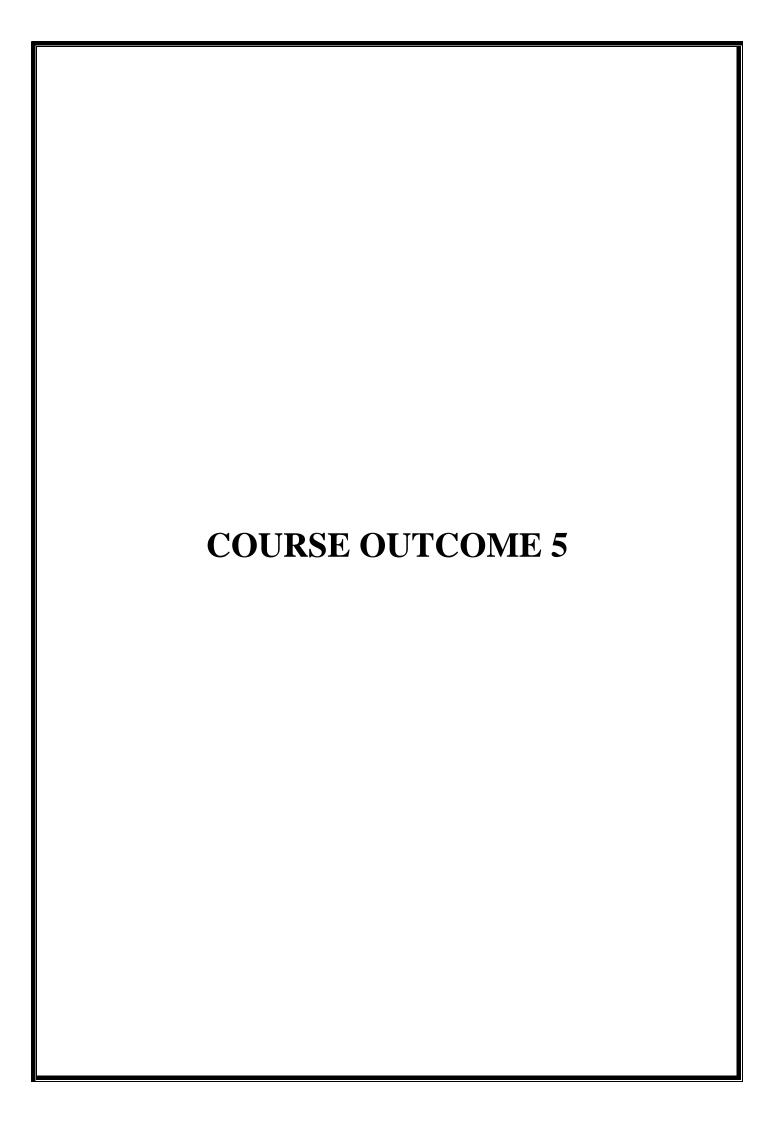
```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
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

<TextView
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"</pre>
```

```
android:text="MENU"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout constraintEnd toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent" />
</androidx.constraintlayout.widget.ConstraintLayout>
JAVA CODE
package com.example.menu;
import androidx.appcompat.app.AppCompatActivity;
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);
  public boolean onCreateOptionsMenu(Menu menu)
    MenuInflater inflater = getMenuInflater();
    inflater.inflate(R.menu.samplemenu,menu);
    return true;
  public boolean onOptionsItemSelected(MenuItem item){
    switch(item.getItemId()){
      case R.id.i1:
         Toast.makeText(this, "STUDENTS", Toast.LENGTH_LONG).show();
        // Intent i=new Intent(this, MainActivity2.class);
        // startActivity(i);
         break;
      case R.id.i2:
         Toast.makeText(this,"DEPARTMENT",Toast.LENGTH_LONG).show();
         break:
      case R.id.s1:
         Toast.makeText(this,"MCA",Toast.LENGTH_LONG).show();
         break:
      case R.id.s2:
         Toast.makeText(this,"MBA",Toast.LENGTH_LONG).show();
         break;
      case R.id.s3:
```

```
Toast.makeText(this,"B-TECH",Toast.LENGTH_LONG).show();
break;
case R.id.i3:
Toast.makeText(this,"MANAGEMENT",Toast.LENGTH_LONG).show();
break;
}
return false;
}
```





DATABASE MANAGEMENT

AIM

Create database using SQLite and perform INSERT, SELECT, UPDATE AND DELETE

```
<?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">
  <LinearLayout
    android:layout_width="407dp"
    android:layout_height="739dp"
    android:orientation="vertical"
    tools:layout_editor_absoluteX="2dp"
    tools:layout_editor_absoluteY="-4dp">
    <TextView
       android:id="@+id/textView"
       android:layout_width="match_parent"
       android:layout height="47dp"
       android:text="ID" />
    <EditText
       android:id="@+id/id"
       android:layout_width="match_parent"
       android:layout_height="wrap_content"
       android:ems="10"
       android:hint="Enter id"
       android:inputType="textPersonName" />
    <TextView
       android:id="@+id/textView2"
       android:layout_width="match_parent"
       android:layout_height="40dp"
       android:text="NAME" />
    <EditText
       android:id="@+id/name"
       android:layout_width="match_parent"
       android:layout_height="wrap_content"
```

```
android:ems="10"
      android:hint="Enter name"
      android:inputType="textPersonName" />
    <TextView
      android:id="@+id/textView3"
      android:layout_width="match_parent"
      android:layout height="50dp"
      android:text="PLACE" />
    <EditText
      android:id="@+id/place"
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
      android:ems="10"
      android:hint="Enter your place"
      android:inputType="textPersonName" />
    <Button
      android:id="@+id/insert"
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
      android:text="INSERT" />
    <Button
      android:id="@+id/select"
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
      android:text="SELECT" />
    <Button
      android:id="@+id/update"
      android:layout width="match parent"
      android:layout_height="wrap_content"
      android:text="UPDATE" />
    <Button
      android:id="@+id/delete"
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
      android:text="DELETE" />
    <Button
      android:id="@+id/clear"
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
      android:text="CLEAR" />
  </LinearLayout>
</androidx.constraintlayout.widget.ConstraintLayout>
```

JAVA CODE

```
package com.example.co_5_database;
import androidx.annotation.RequiresApi;
import androidx.appcompat.app.AppCompatActivity;
import android.app.AlertDialog;
import android.database.Cursor;
import android.database.sqlite.SQLiteDatabase;
import android.os.Build;
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 eid,ename,eplace;
  Button bins, bsel, bup, bdel, bclr;
  AlertDialog.Builder builder;
  SOLiteDatabase db;
  @RequiresApi(api = Build.VERSION CODES.ICE CREAM SANDWICH MR1)
  @Override
  protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_main);
    eid = findViewById(R.id.id);
    ename = findViewById(R.id.name);
    eplace = findViewById(R.id.place);
    bins = findViewById(R.id.insert);
    bsel = findViewById(R.id.select);
    bup = findViewById(R.id.update);
    bdel = findViewById(R.id.delete);
    bclr = findViewById(R.id.clear);
    builder = new AlertDialog.Builder(this);
    try{
       db = openOrCreateDatabase("empdb",MODE_PRIVATE,null);
       db.execSQL("create table employee(id integer primary key,name Text,place Text)");
       Toast.makeText(getApplicationContext(),"Created
Successffully", Toast. LENGTH_SHORT). show();
    catch(Exception e){
    }
    bins.setOnClickListener(new View.OnClickListener() {
       @Override
       public void onClick(View view) {
```

```
try{
           db.execSQL("insert into employee
values("+eid.getText().toString()+","+ename.getText().toString()+","+eplace.getText().toStr
ing()+"')");
           Toast.makeText(getApplicationContext(),"Record Inserted
Successfully", Toast. LENGTH SHORT). show();
         catch(Exception e){
           Toast.makeText(getApplicationContext(), "Error in Data",
Toast.LENGTH_SHORT).show();
    });
    bclr.callOnClick();
    bsel.setOnClickListener(new View.OnClickListener() {
       @Override
       public void onClick(View view) {
         Cursor c = db.rawQuery("select * from employee", null);
         if(c.getCount()==0){
           Toast.makeText(getApplicationContext(), "No such Record!",
Toast.LENGTH_SHORT).show();
         else{
           StringBuffer b = new StringBuffer();
           while(c.moveToNext()){
              b.append("ID: " + c.getString(0) + "\n");
              b.append("NAME: " + c.getString(1) + "\n");
              b.append("PLCE: " + c.getString(2) + "\n");
            }
Toast.makeText(getApplicationContext(),b.toString(),Toast.LENGTH_LONG).show();
           builder.setMessage(b.toString());
           AlertDialog alert = builder.create();
           alert.setTitle("---EMPLOYEE DATA---");
           alert.show();
    });
    bup.setOnClickListener(new View.OnClickListener() {
       @Override
       public void onClick(View view) {
         db.execSQL("update employee set
name=""+ename.getText().toString()+"",place=""+eplace.getText().toString()+"" where
id="+eid.getText().toString()+"");
         Toast.makeText(getApplicationContext(), "---Updated---",
Toast.LENGTH_SHORT).show();
```

```
});
    bdel.setOnClickListener(new View.OnClickListener() {
       @Override
       public void onClick(View view) {
         db.execSQL("delete from employee where id="+eid.getText().toString());
         Toast.makeText(getApplicationContext(), "---Item Deleted---",
Toast.LENGTH_SHORT).show();
    });
    bclr.setOnClickListener(new View.OnClickListener() {
       @Override
       public void onClick(View view) {
         eid.setText("");
         ename.setText("");
         eplace.setText("");
    });
    bclr.callOnClick();
  }
}
```

