**Android Lab Cycle-CO1**

Course Outcome 1 (CO1):

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

Xml code:

<**LinearLayout android:layout\_height="match\_parent"**

**android:layout\_width="match\_parent"**

**android:orientation="vertical"**

**xmlns:android="http://schemas.android.com/apk/res/android"**>

<**EditText**

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

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

**android:id="@+id/uname"**

**android:hint="Enter name..."**

/>

<**EditText**

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

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

**android:id="@+id/passwd"**

**android:hint="Password..."**

**android:inputType="textPassword"**

/>

<**Button**

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

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

**android:text="Login"**

**android:id="@+id/login"**

/>

<**Button**

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

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

**android:text="Cancel"**

**android:id="@+id/Cancel"**/>

</**LinearLayout**>

Java code:

**package** com.example.sjcet.login;

**import** android.support.v7.app.AppCompatActivity;

**import** android.os.Bundle;

**import** android.view.View;

**import** android.widget.Button;

**import** android.widget.EditText;

**import** android.widget.Button;

**import** android.widget.Toast;

**public class** MainActivity **extends** AppCompatActivity {

Button **b1**,**b2**;

EditText **e1**,**e2**;

@Override

**protected void** onCreate(Bundle savedInstanceState) {

**super**.onCreate(savedInstanceState);

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

**e1** = (EditText)findViewById(R.id.***uname***);

**e2** = (EditText)findViewById(R.id.***passwd***);

**b1** = (Button)findViewById(R.id.***login***);

**b2** = (Button)findViewById(R.id.***Cancel***);

**b1**.setOnClickListener(**new** View.OnClickListener() {

@Override

**public void** onClick(View v) {

**if**(**e1**.getText().toString().equals(**"admin"**) && **e2**.getText().toString().equals(**"admin"**)){

Toast.*makeText*(getApplicationContext(),**"Redirecting..."**,Toast.***LENGTH\_SHORT***).show();

}

**else**{

Toast.*makeText*(getApplicationContext(),**"Wrong Credentials..."**,Toast.***LENGTH\_SHORT***).show();

}

}

});

**b2**.setOnClickListener(**new** View.OnClickListener() {

@Override

**public void** onClick(View v) {

finish();

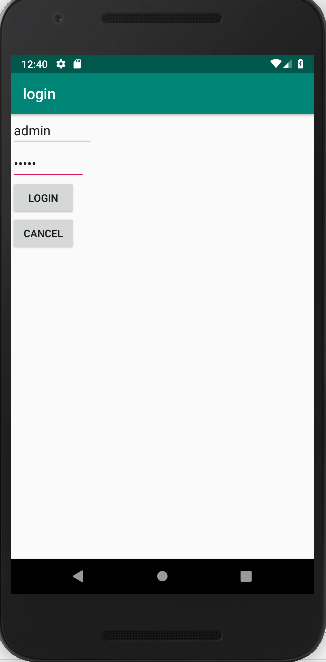
}

});

}

}

Output:



2. Write a program that demonstrates Activity Lifecycle.

Xml code:

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

<**android.support.constraint.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\_constraintLeft\_toLeftOf="parent"**

**app:layout\_constraintRight\_toRightOf="parent"**

**app:layout\_constraintTop\_toTopOf="parent"** />

</**android.support.constraint.ConstraintLayout**>

Java code:

**package** com.example.sjcet.lifecycle2;

**import** android.support.v7.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 invoked"**, Toast.***LENGTH\_SHORT***).show();

}

**protected void** onStart() {

**super**.onStart();

*// Log.d("lifecycle","onStart invoked");*

Toast.*makeText*(**this**, **"onStart invoked"**, Toast.***LENGTH\_SHORT***).show();

}

**protected void** onResume() {

**super**.onResume();

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

Toast.*makeText*(**this**, **"onResume invoked"**, Toast.***LENGTH\_SHORT***).show();

}

**protected void** onPause() {

**super**.onPause();

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

Toast.*makeText*(**this**, **"onPause invoked"**, Toast.***LENGTH\_SHORT***).show();

}

**protected void** onStop() {

**super**.onStop();

*//Log.d("lifecycle","onStop invoked");*

Toast.*makeText*(**this**, **"oStop invoked"**, Toast.***LENGTH\_SHORT***).show();

}

**protected void** onRestart() {

**super**.onRestart();

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

Toast.*makeText*(**this**, **"onRestart invoked"**, Toast.***LENGTH\_SHORT***).show();

}

**protected void** onDestroy() {

**super**.onDestroy();

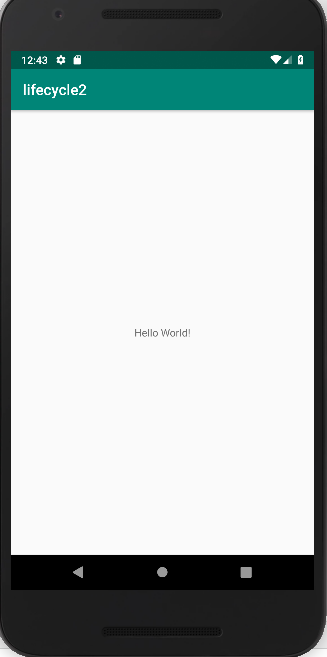
*//Log.d("lifecycle","onDestroy invoked");*

Toast.*makeText*(**this**, **"onDestroy invoked"**, Toast.***LENGTH\_SHORT***).show();

}

}

Output:



3. Implementing basic arithmetic operations of a simple calculator

Xml code:

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

<**android.support.constraint.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/n1"**

**android:layout\_width="0dp"**

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

**android:layout\_marginTop="32dp"**

**android:ems="10"**

**android:hint="number"**

**android:inputType="textPersonName"**

**app:layout\_constraintEnd\_toEndOf="parent"**

**app:layout\_constraintStart\_toStartOf="parent"**

**app:layout\_constraintTop\_toTopOf="parent"** />

<**EditText**

**android:id="@+id/num2"**

**android:layout\_width="0dp"**

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

**android:layout\_marginTop="32dp"**

**android:ems="10"**

**android:hint="number"**

**android:inputType="textPersonName"**

**app:layout\_constraintEnd\_toEndOf="parent"**

**app:layout\_constraintStart\_toStartOf="parent"**

**app:layout\_constraintTop\_toBottomOf="@+id/n1"** />

<**Button**

**android:id="@+id/b1"**

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

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

**android:layout\_marginTop="16dp"**

**android:text="add"**

**android:onClick="sum"**

**app:layout\_constraintEnd\_toEndOf="parent"**

**app:layout\_constraintStart\_toStartOf="parent"**

**app:layout\_constraintTop\_toBottomOf="@+id/num2"** />

<**Button**

**android:id="@+id/b2"**

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

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

**android:layout\_marginTop="16dp"**

**android:text="diff"**

**android:onClick="diff"**

**app:layout\_constraintEnd\_toEndOf="parent"**

**app:layout\_constraintStart\_toStartOf="parent"**

**app:layout\_constraintTop\_toBottomOf="@+id/b1"** />

<**Button**

**android:id="@+id/b3"**

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

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

**android:layout\_marginTop="16dp"**

**android:text="mul"**

**android:onClick="mul"**

**app:layout\_constraintEnd\_toEndOf="parent"**

**app:layout\_constraintStart\_toStartOf="parent"**

**app:layout\_constraintTop\_toBottomOf="@+id/b2"** />

<**Button**

**android:id="@+id/b4"**

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

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

**android:layout\_marginTop="16dp"**

**android:text="div"**

**android:onClick="div"**

**app:layout\_constraintEnd\_toEndOf="parent"**

**app:layout\_constraintStart\_toStartOf="parent"**

**app:layout\_constraintTop\_toBottomOf="@+id/b3"** />

<**TextView**

**android:id="@+id/t1"**

**android:layout\_width="0dp"**

**android:layout\_height="18dp"**

**android:layout\_marginTop="32dp"**

**android:text="result"**

**app:layout\_constraintEnd\_toEndOf="parent"**

**app:layout\_constraintStart\_toStartOf="parent"**

**app:layout\_constraintTop\_toBottomOf="@+id/b4"** />

</**android.support.constraint.ConstraintLayout**>

Java code:

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

<**android.support.constraint.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/n1"**

**android:layout\_width="0dp"**

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

**android:layout\_marginTop="32dp"**

**android:ems="10"**

**android:hint="number"**

**android:inputType="textPersonName"**

**app:layout\_constraintEnd\_toEndOf="parent"**

**app:layout\_constraintStart\_toStartOf="parent"**

**app:layout\_constraintTop\_toTopOf="parent"** />

<**EditText**

**android:id="@+id/num2"**

**android:layout\_width="0dp"**

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

**android:layout\_marginTop="32dp"**

**android:ems="10"**

**android:hint="number"**

**android:inputType="textPersonName"**

**app:layout\_constraintEnd\_toEndOf="parent"**

**app:layout\_constraintStart\_toStartOf="parent"**

**app:layout\_constraintTop\_toBottomOf="@+id/n1"** />

<**Button**

**android:id="@+id/b1"**

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

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

**android:layout\_marginTop="16dp"**

**android:text="add"**

**android:onClick="sum"**

**app:layout\_constraintEnd\_toEndOf="parent"**

**app:layout\_constraintStart\_toStartOf="parent"**

**app:layout\_constraintTop\_toBottomOf="@+id/num2"** />

<**Button**

**android:id="@+id/b2"**

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

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

**android:layout\_marginTop="16dp"**

**android:text="diff"**

**android:onClick="diff"**

**app:layout\_constraintEnd\_toEndOf="parent"**

**app:layout\_constraintStart\_toStartOf="parent"**

**app:layout\_constraintTop\_toBottomOf="@+id/b1"** />

<**Button**

**android:id="@+id/b3"**

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

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

**android:layout\_marginTop="16dp"**

**android:text="mul"**

**android:onClick="mul"**

**app:layout\_constraintEnd\_toEndOf="parent"**

**app:layout\_constraintStart\_toStartOf="parent"**

**app:layout\_constraintTop\_toBottomOf="@+id/b2"** />

<**Button**

**android:id="@+id/b4"**

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

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

**android:layout\_marginTop="16dp"**

**android:text="div"**

**android:onClick="div"**

**app:layout\_constraintEnd\_toEndOf="parent"**

**app:layout\_constraintStart\_toStartOf="parent"**

**app:layout\_constraintTop\_toBottomOf="@+id/b3"** />

<**TextView**

**android:id="@+id/t1"**

**android:layout\_width="0dp"**

**android:layout\_height="18dp"**

**android:layout\_marginTop="32dp"**

**android:text="result"**

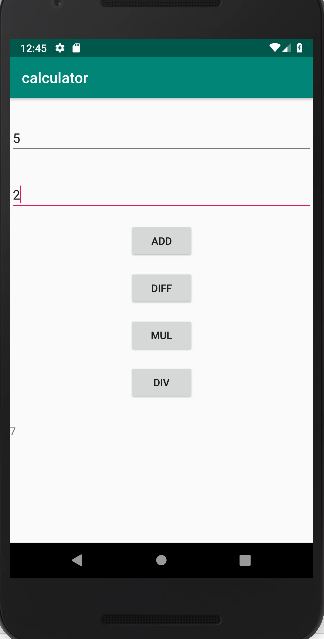
**app:layout\_constraintEnd\_toEndOf="parent"**

**app:layout\_constraintStart\_toStartOf="parent"**

**app:layout\_constraintTop\_toBottomOf="@+id/b4"** />

</**android.support.constraint.ConstraintLayout**>

Output:



4. Implement validations on various UI controls

Xml code:

<**RelativeLayout android:layout\_width="match\_parent"**

**xmlns:android="http://schemas.android.com/apk/res/android"**

**android:layout\_height="match\_parent"**>

<**EditText**

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

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

**android:hint="name"**

**android:id="@+id/et1"**/>

<**EditText**

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

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

**android:hint="email"**

**android:id="@+id/et2"**

**android:layout\_below="@+id/et1"**/>

<**EditText**

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

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

**android:hint="password"**

**android:id="@+id/et3"**

**android:layout\_below="@+id/et2"**

**android:inputType="textPassword"**/>

<**LinearLayout**

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

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

**android:orientation="vertical"**

**android:layout\_margin="10dp"**

**android:layout\_below="@+id/et3"**

**android:id="@+id/l1"**>

<**CheckBox**

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

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

**android:text="hindi"**

**android:id="@+id/ck1"**/>

<**CheckBox**

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

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

**android:text="english"**

**android:id="@+id/ck2"**/>

<**CheckBox**

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

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

**android:text="other"**

**android:id="@+id/ck3"**/>

<**RadioGroup**

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

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

**android:orientation="vertical"**

**android:id="@+id/rg1"**>

<**RadioButton**

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

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

**android:id="@+id/r1"**

**android:text="male"**/>

<**RadioButton**

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

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

**android:id="@+id/r2"**

**android:text="female"**/>

</**RadioGroup**>

</**LinearLayout**>

<**Button**

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

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

**android:id="@+id/b1"**

**android:text="Register"**

**android:onClick="register"**

**android:layout\_below="@+id/l1"**/>

<**Button**

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

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

**android:text="cancel"**

**android:layout\_below="@+id/l1"**

**android:layout\_marginLeft="100dp"**/>

</**RelativeLayout**>

Acicvity 2 xml:

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

<**android.support.constraint.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=".Main2Activity"**>

</**android.support.constraint.ConstraintLayout**>

Java code:

**package** com.example.sjcet.registrationval;

**import** android.content.Intent;

**import** android.support.v7.app.AppCompatActivity;

**import** android.os.Bundle;

**import** android.view.View;

**import** android.widget.CheckBox;

**import** android.widget.EditText;

**import** android.widget.RadioGroup;

**import** android.widget.Toast;

**public class** MainActivity **extends** AppCompatActivity {

EditText **nameedt**;

EditText **emailedt**;

EditText **passedt**;

RadioGroup **rg1**;

CheckBox **ck1**,**ck2**,**ck3**;

**protected void** onCreate(Bundle savedInstanceState) {

**super**.onCreate(savedInstanceState);

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

}

**public void** register(View view) {

**nameedt**=(EditText)findViewById(R.id.***et1***);

**emailedt**=(EditText)findViewById(R.id.***et2***);

**passedt**=(EditText)findViewById(R.id.***et3***);

**rg1**=(RadioGroup)findViewById(R.id.***rg1***) ;

**ck1**=(CheckBox)findViewById(R.id.***ck1***);

**ck2**=(CheckBox)findViewById(R.id.***ck2***);

**ck3**=(CheckBox)findViewById(R.id.***ck3***);

String userName = **nameedt**.getText().toString();

String password = **emailedt**.getText().toString();

**if**(checkAll()){

Intent i= **new** Intent(getApplicationContext(),Main2Activity.**class**);

*//Intent.putString(“value1”,nameedt;*

i.putExtra(**"name"**,userName);

startActivity(i);

}

**else**{

Toast.*makeText*(**this**, **"all fields are required!!"**, Toast.***LENGTH\_SHORT***).show();

}

}

**private boolean** checkAll(){

**if** (**nameedt**.length() == 0){

**nameedt**.setError(**"This field is required"**);

**return false**;

}

**if**(**emailedt**.length() == 0 ){

**emailedt**.setError(**"This field required"**);

**return false**;

}

**if**(**passedt**.length() == 0 ){

**passedt**.setError(**"This field required"**);

**return false**;

}

**if** (**rg1**.getCheckedRadioButtonId() == -1)

{

*//rg1.setError("this field reqiired");*

**return false**;

}

**if**(!(**ck1**.isChecked()||**ck2**.isChecked()||**ck3**.isChecked())){

**return false**;

}

**return true**;

}

}

Activity 2 java code:

**package** com.example.sjcet.registrationval;

**import** android.support.v7.app.AppCompatActivity;

**import** android.os.Bundle;

**public class** Main2Activity **extends** AppCompatActivity {

@Override

**protected void** onCreate(Bundle savedInstanceState) {

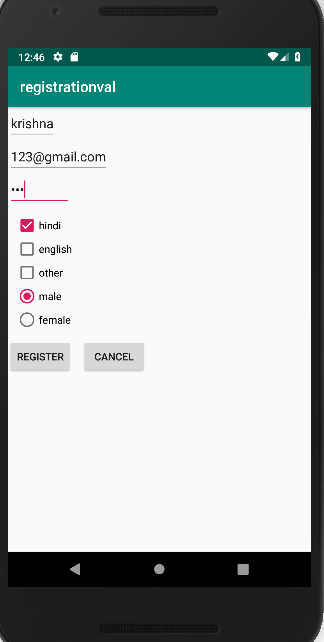
**super**.onCreate(savedInstanceState);

setContentView(R.layout.***activity\_main2***);

}

}

Output:



**Course Outcome 2 (CO2)**

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

2. Design a simple Calculator using GridLayout and Cascaded LinearLayout

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

4. Develop an application that toggles image using FrameLayout.

Xml code:

<**FrameLayout android:layout\_height="match\_parent"**

**xmlns:android="http://schemas.android.com/apk/res/android"**

**android:layout\_width="match\_parent"**

**android:id="@+id/framelayout"**>

<**ImageView**

**android:layout\_width="match\_parent"**

**android:layout\_height="match\_parent"**

**android:id="@+id/imageview"**

**android:scaleType="fitCenter"**

**android:src="@drawable/ones"** />

<**Button**

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

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

**android:id="@+id/b1"**

**android:onClick="click"**

**android:text="toggle image"**/>

</**FrameLayout**>

Java code:

**package** com.example.sjcet.toggleimage;

**import** android.support.v7.app.AppCompatActivity;

**import** android.os.Bundle;

**import** android.view.View;

**import** android.widget.ImageView;

**public class** MainActivity **extends** AppCompatActivity {

ImageView **img**;

**boolean onclick**=**false**;

@Override

**protected void** onCreate(Bundle savedInstanceState) {

**super**.onCreate(savedInstanceState);

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

}

**public void** click(View view){

ImageView img=(ImageView)findViewById(R.id.***imageview***);

**if**(!**onclick**){

img.setImageResource(R.drawable.***ones***);

**onclick**=**true**;

}

**else if**(**onclick**){

img.setImageResource(R.drawable.***two***);

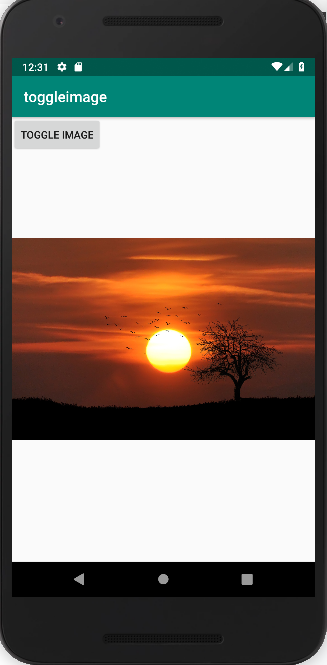
**onclick**=**false**;

}

}

}

Output:

****