CO1

CO1- 1. Design a Login Form with username and password using RelativeLayout and toast valid credentials

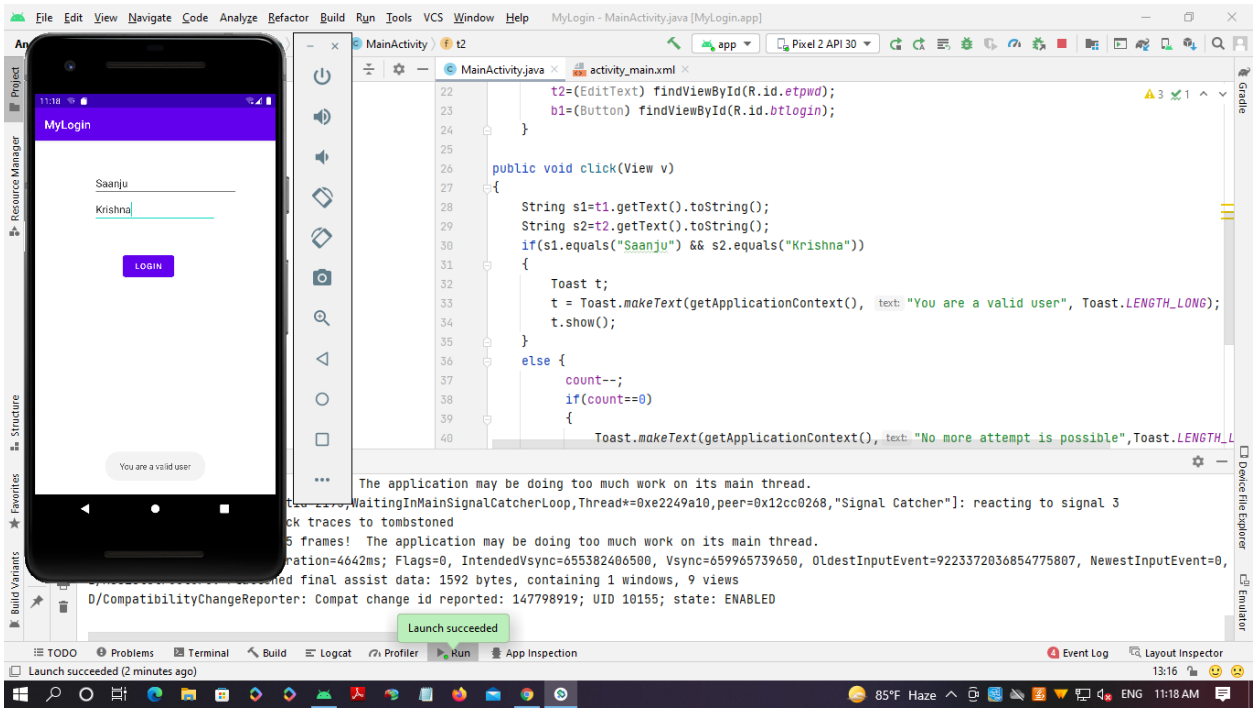
XML

```
<?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">


   <EditText
       android:id="@+id/etuser"
       android:layout_width="247dp"
       android:layout_height="wrap_content"
       android:layout_marginTop="50dp"
       android:ems="10"
       android:hint="enter user name"
       android:inputType="textPersonName"
       android:text=""
       android:layout_marginLeft="100dp"
       />

   <EditText
       android:id="@+id/etpwd"
       android:layout_width="wrap_content"
       android:layout_height="wrap_content"
       android:ems="10"
       android:hint="Enter Password"
       android:inputType="textPersonName"
       android:text=""
       android:layout_below="@id/etuser"
       android:layout_marginLeft="100dp"
     />

   <Button
       android:id="@+id/btlogin"
       android:layout_width="wrap_content"
       android:layout_height="wrap_content"
       android:text="LOGIN"
       android:layout_below="@id/etpwd"
       android:layout_marginTop="50dp"
       android:layout_marginLeft="150dp"
       android:onClick="click"
       />



</RelativeLayout>
```

MAIN ACTIVITY

```
package com.example.mylogin;

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 t1,t2;
Button b1;
int count=4;
   @Override
   protected void onCreate(Bundle savedInstanceState)
   {
       super.onCreate(savedInstanceState);
       setContentView(R.layout.activity_main);
       t1=(EditText) findViewById(R.id.etuser);
       t2=(EditText) findViewById(R.id.etpwd);
       b1=(Button) findViewById(R.id.btlogin);
   }

public void click(View v)
{
   String s1=t1.getText().toString();
   String s2=t2.getText().toString();
   if(s1.equals("Saanju") && s2.equals("Krishna"))
   {
       Toast t;
       t = Toast.makeText(getApplicationContext(), "You are a valid user",
Toast.LENGTH_LONG);
       t.show();
   }
   else {
         count--;
         if(count==0)
         {
             Toast.makeText(getApplicationContext(),"No more attempt is
possible",Toast.LENGTH_LONG).show();
             b1.setEnabled(false);

         }
         else
             Toast.makeText(getApplicationContext(),"Not a valid
user",Toast.LENGTH_LONG).show();

   }
}
}
```

OUTPUT



CO1 - 2. Write a program that demonstrates Activity Lifecycle.

MAIN ACTIVITY

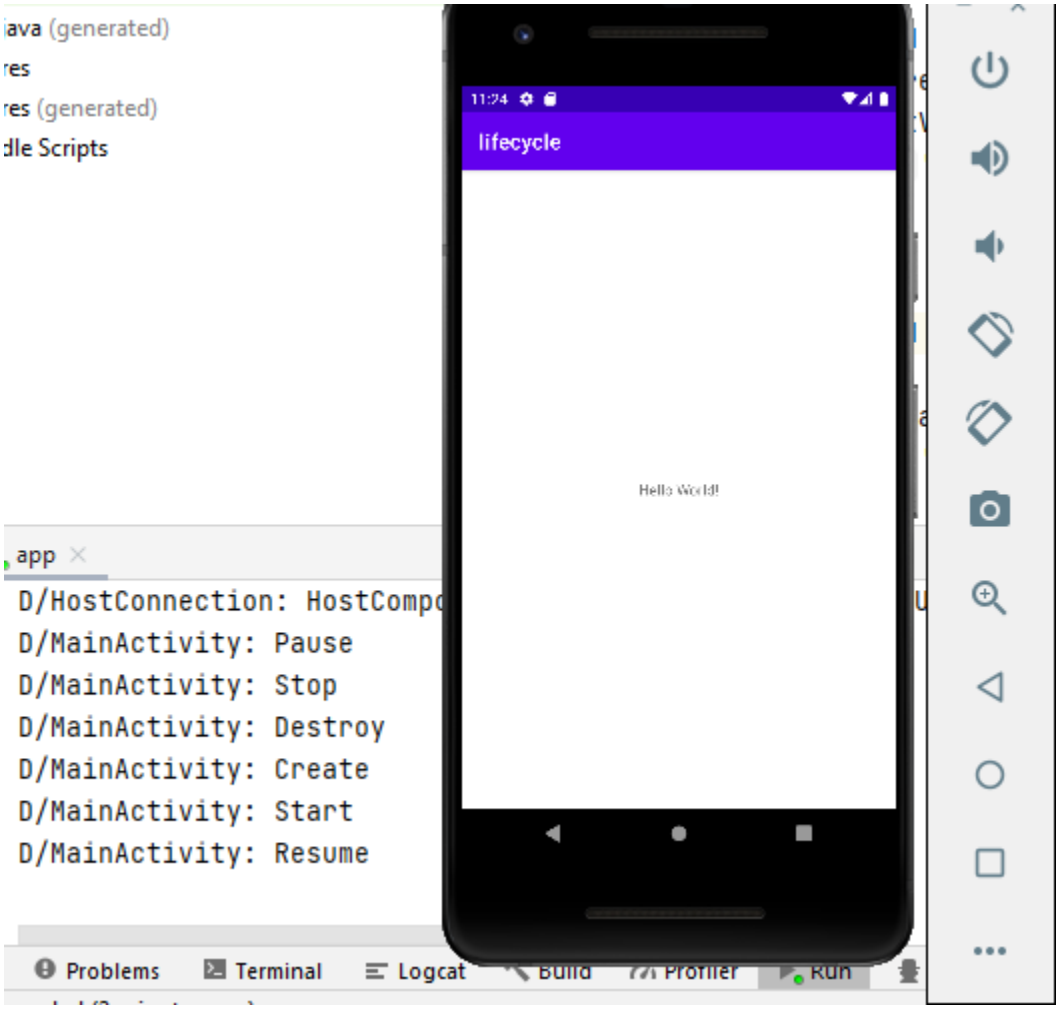
```
package com.example.lifecycle;

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("MainActivity","Create");

    }
    @Override
    protected void onStart()
    {
        super.onStart();
        Log.d("MainActivity","Start");
    }
    @Override
```

```
    protected void onResume()
    {
        super.onResume();
        Log.d("MainActivity","Resume");
    }
    @Override
    protected void onPause()
    {
        super.onPause();
        Log.d("MainActivity","Pause");
    }
    @Override
    protected void onStop()
    {
        super.onStop();
        Log.d("MainActivity","Stop");
    }
    @Override
    protected void onDestroy()
    {
        super.onDestroy();
        Log.d("MainActivity","Destroy");
 }
    @Override
    protected void onRestart()
    {
        super.onRestart();
        Log.d("MainActivity","Restart");
    }
}
```

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_constraintLeft_toLeftOf="parent"
        app:layout_constraintRight_toRightOf="parent"
        app:layout_constraintTop_toTopOf="parent" />

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

OUTPUT



CO1-3. Implementing basic arithmetic operations of a simple calculator

MAIN ACTIVITY

```
package com.example.mycalculator;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;

import com.example.mycalculator.R;

public class MainActivity extends AppCompatActivity
{ EditText e1,e2,e3;
   Button add,sub,mult,div;
   @Override
   public void onCreate(Bundle savedInstanceState) {
       super.onCreate(savedInstanceState);
       setContentView(R.layout.activity_main);
       e1=(EditText) findViewById(R.id.etn1);
       e2=(EditText) findViewById(R.id.etn2);
```

```
        e3=(EditText) findViewById(R.id.etres);
        add=(Button) findViewById(R.id.btadd);
        sub=(Button) findViewById(R.id.btsub);
        mult=(Button) findViewById(R.id.btmult);
        div=(Button) findViewById(R.id.btdiv);
        add.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                float f1=Float.parseFloat(e1.getText().toString());
                float f2=Float.parseFloat((e2.getText().toString()));
                e3.setText(f1+f2+"");
            }
        });
        sub.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                float f1=Float.parseFloat(e1.getText().toString());
                float f2=Float.parseFloat((e2.getText().toString()));
                e3.setText(f1-f2+"");
            }

        });
        mult.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                float f1=Float.parseFloat(e1.getText().toString());
                float f2=Float.parseFloat((e2.getText().toString()));
                e3.setText(f1*f2+"");
            }
        });
        div.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                float f1=Float.parseFloat(e1.getText().toString());
                float f2=Float.parseFloat((e2.getText().toString()));
                e3.setText(f1/f2+"");
            }
        });
    }

}
```

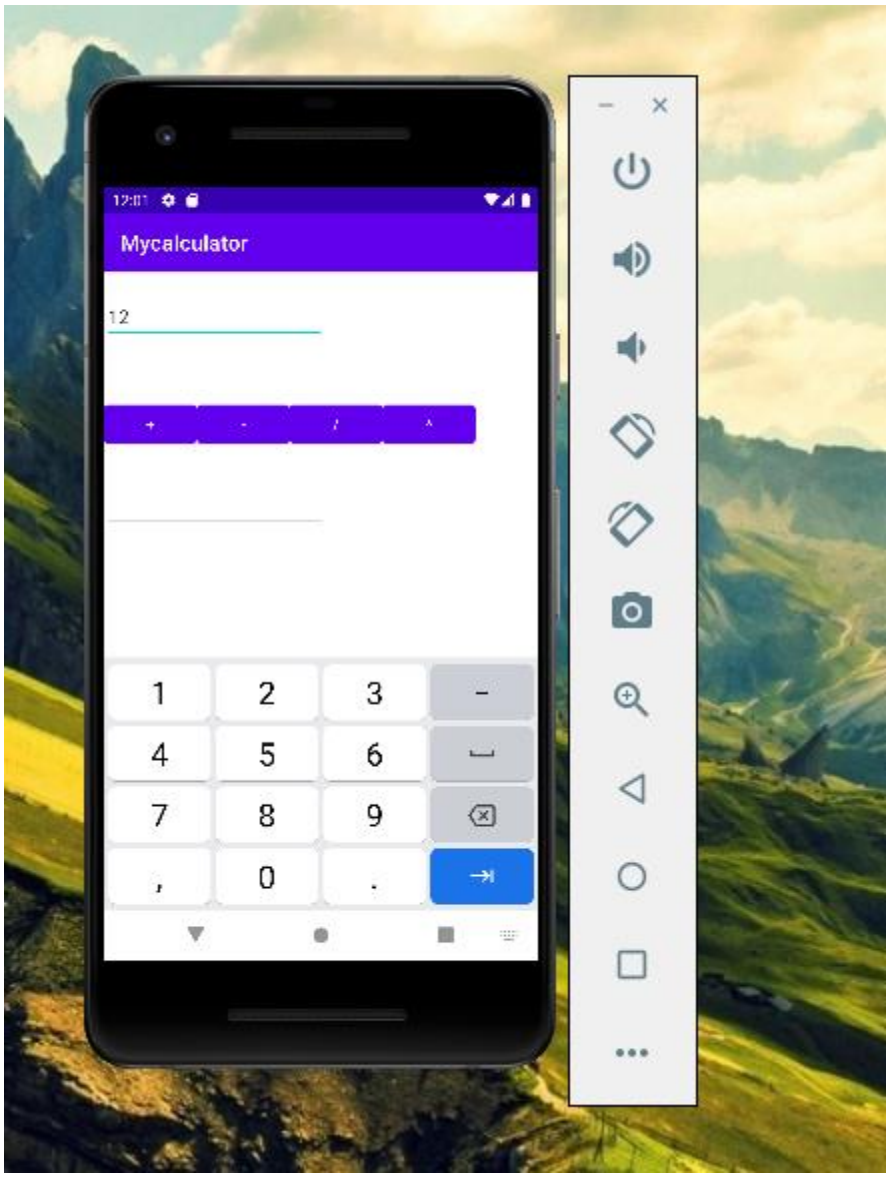
XML

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


    <EditText
        android:id="@+id/etn1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
```

```
        android:ems="10"
        android:inputType="number"
        android:layout_marginTop="20dp"
        android:text=""

        />
    <EditText
        android:id="@+id/etn2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:ems="10"
        android:inputType="number"
        android:layout_below="@id/etn1"

        android:text=""
        />
    <RelativeLayout
        android:id="@+id/rl"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_below="@id/etn2"
        >
        <Button
            android:id="@+id/btadd"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"

            android:layout_marginTop="10dp"

            android:text="+" />

        <Button
            android:id="@+id/btsub"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"

            android:layout_toRightOf="@id/btadd"
            android:layout_marginTop="10dp"
            android:text="-" />

        <Button
            android:id="@+id/btdiv"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"

            android:layout_toRightOf="@id/btsub"
            android:layout_marginTop="10dp"

            android:text="/" />

        <Button
            android:id="@+id/btmult"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"

            android:layout_marginTop="10dp"
            android:layout_toRightOf="@id/btdiv"
            android:text="*" />
    </RelativeLayout>
```

```
    <EditText
        android:id="@+id/etres"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:ems="10"
        android:inputType="textPersonName"
        android:layout_below="@id/rl"
        android:layout_marginTop="30dp"

        android:text="" />


</LinearLayout>
```

OUTPUT



CO1-4. Implement validations on various UI controls

XML

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

    <CheckBox
        android:id="@+id/chekapple"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Apple"
        tools:layout_editor_absoluteX="16dp"
        tools:layout_editor_absoluteY="157dp" />

    <CheckBox
        android:id="@+id/chkorange"
        android:layout_width="match_parent"
        android:layout height="wrap content"
        android:text="Orange" />

    <CheckBox
        android:id="@+id/chkgrapes"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="Grapes" />

    <TextView
        android:id="@+id/tvres"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="" />

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

    <RadioButton
        android:id="@+id/rdmale"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Male" />

    <RadioButton
        android:id="@+id/rdfemale"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Female" />

    </RadioGroup>
```

```
    <ToggleButton
        android:id="@+id/tgonoff"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:textOn="ON"
        android:textOff="OFF"/>

    <Switch
        android:id="@+id/swone"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:textOn="ON"
        android:textOff="OFF"
        android:text="Are You Indian" />
    <Spinner
        android:id="@+id/country"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:entries="@array/list"

    />

    <Button
        android:id="@+id/click"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:src="@drawable/n2"
        android:text="Display" />

    <ImageView
        android:id="@+id/img"
        android:layout_width="match_parent"
        android:layout_height="100dp"
        android:src="@drawable/nature"
        android:contentDescription="nature" />



</LinearLayout>
```

MAIN ACTIVITY

```
package com.example.box;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.CheckBox;
import android.widget.ImageView;
import android.widget.RadioButton;
import android.widget.Spinner;
import android.widget.Switch;
import android.widget.TextView;
import android.widget.Toast;
import android.widget.ToggleButton;
```

```
public class MainActivity extends AppCompatActivity {
CheckBox apple,orange,grapes;
String chkstr="",chkstr1="",chkstr2="";
RadioButton male,female;
ToggleButton tg;
Switch sw;
Spinner sp;
Button btclick;
ImageView img;
TextView res;
   @Override
   protected void onCreate(Bundle savedInstanceState) {
       super.onCreate(savedInstanceState);
       setContentView(R.layout.activity_main);
       apple=(CheckBox) findViewById(R.id.chekapple);
       orange=(CheckBox) findViewById(R.id.chkorange);
       grapes=(CheckBox)findViewById(R.id.chkgrapes);
       res=(TextView) findViewById(R.id.tvres);
       male=(RadioButton)findViewById(R.id.rdmale) ;
       female=(RadioButton)findViewById(R.id.rdfemale);
       tg=(ToggleButton)findViewById(R.id.tgonoff);
       sw=(Switch)findViewById(R.id.swone);
       sp=(Spinner)findViewById(R.id.country);
       btclick=(Button)findViewById(R.id.click) ;
       img=(ImageView)findViewById(R.id.img) ;
       apple.setOnClickListener(new View.OnClickListener() {
           @Override
           public void onClick(View v) {
               if(apple.isChecked())

                   chkstr=apple.getText().toString();
               else
                   chkstr="";
               res.setText(chkstr+chkstr1+chkstr2);
           }
       });
       orange.setOnClickListener(new View.OnClickListener() {
           @Override
           public void onClick(View v) {
               if(orange.isChecked())
                   chkstr1=orange.getText().toString();
               else
                   chkstr1="";
               res.setText(chkstr+chkstr1+chkstr2);
           }
       });
       grapes.setOnClickListener(new View.OnClickListener() {
           @Override
           public void onClick(View v) {

               if(grapes.isChecked())
                   chkstr2=grapes.getText().toString();
               else
                   chkstr2="";
               res.setText(chkstr+chkstr1+chkstr2);
           }
       });
       male.setOnClickListener(new View.OnClickListener() {
           @Override
```

```
            public void onClick(View v) {
                Toast t=
Toast.makeText(getApplicationContext(),"male",Toast.LENGTH_SHORT);
                t.show();
            }
        });
      female.setOnClickListener(new View.OnClickListener() {
          @Override
          public void onClick(View v) {
              Toast
t=Toast.makeText(getApplicationContext(),"female",Toast.LENGTH_SHORT);
              t.show();
          }
      });
    tg.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View v) {
            if (tg.isChecked()) {
                Toast t = Toast.makeText(getApplicationContext(),
tg.getTextOn(), Toast.LENGTH_SHORT);
                t.show();
            } else
                Toast.makeText(getApplicationContext(), tg.getTextOff(),
Toast.LENGTH_SHORT).show();
        }
      });
    sw.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View v) {
            if(sw.isChecked()) {
                Toast
t=Toast.makeText(getApplicationContext(),sw.getTextOn(),Toast.LENGTH_SHORT)
;
                t.show();
            }
            else
                Toast.makeText(getApplicationContext(),sw.getTextOff(),Toast
.LENGTH_SHORT).show();
        }
    });

   btclick.setOnClickListener(new View.OnClickListener() {
       @Override
       public void onClick(View v) {
           Toast.makeText(getApplicationContext(),sp.getSelectedItem().toStr
ing(),Toast.LENGTH_SHORT).show();
           img.setImageResource(R.drawable.n2);
       }
   });


    }

}
```

```
<resources>
    <string name="app_name">Box</string>
    <string-array name="list">
        <item>INDIA</item>
        <item>USA</item>
        <item>UK</item>
    </string-array>
</resources>
```

OUTPUT