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"
       />
```

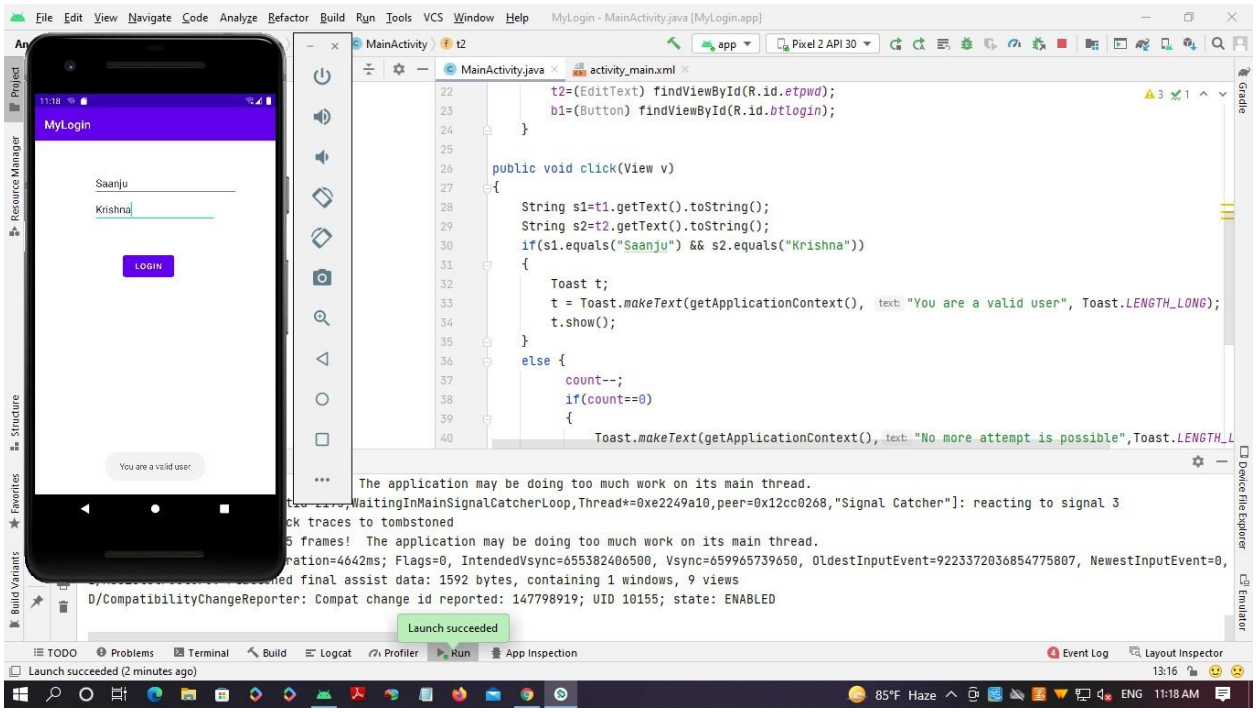
```
</RelativeLayout>
```

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



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()
```

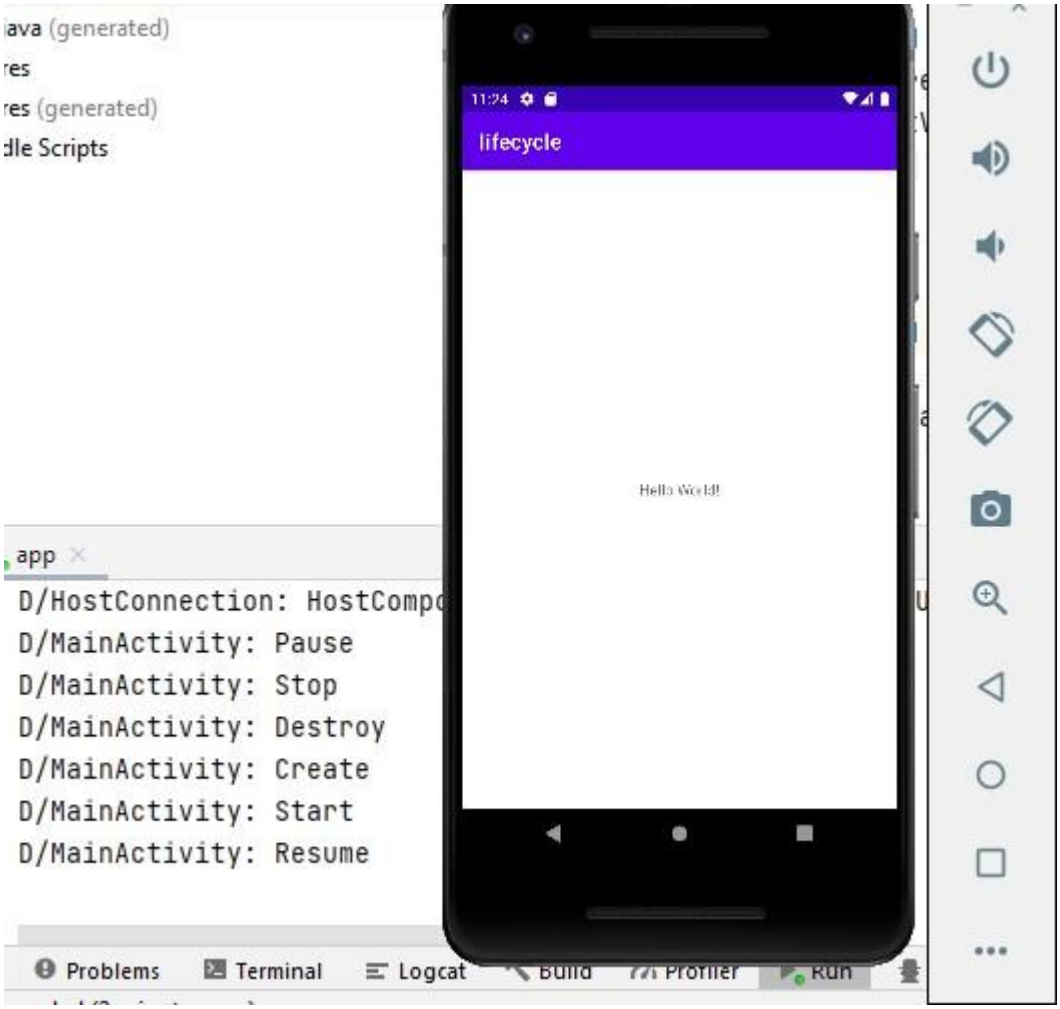
```
    {
        super.onStart();
        Log.d("MainActivity","Start");
    }
    @Override
    protected void onResume()
    {
        super.onResume();
        Log.d("MainActivity","Resume");
    }
@Override
    protected void onPause()
    {
        super.onPause();
        Log.d("MainActivity","Pause");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



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+"");
           }
       });
}

}
```

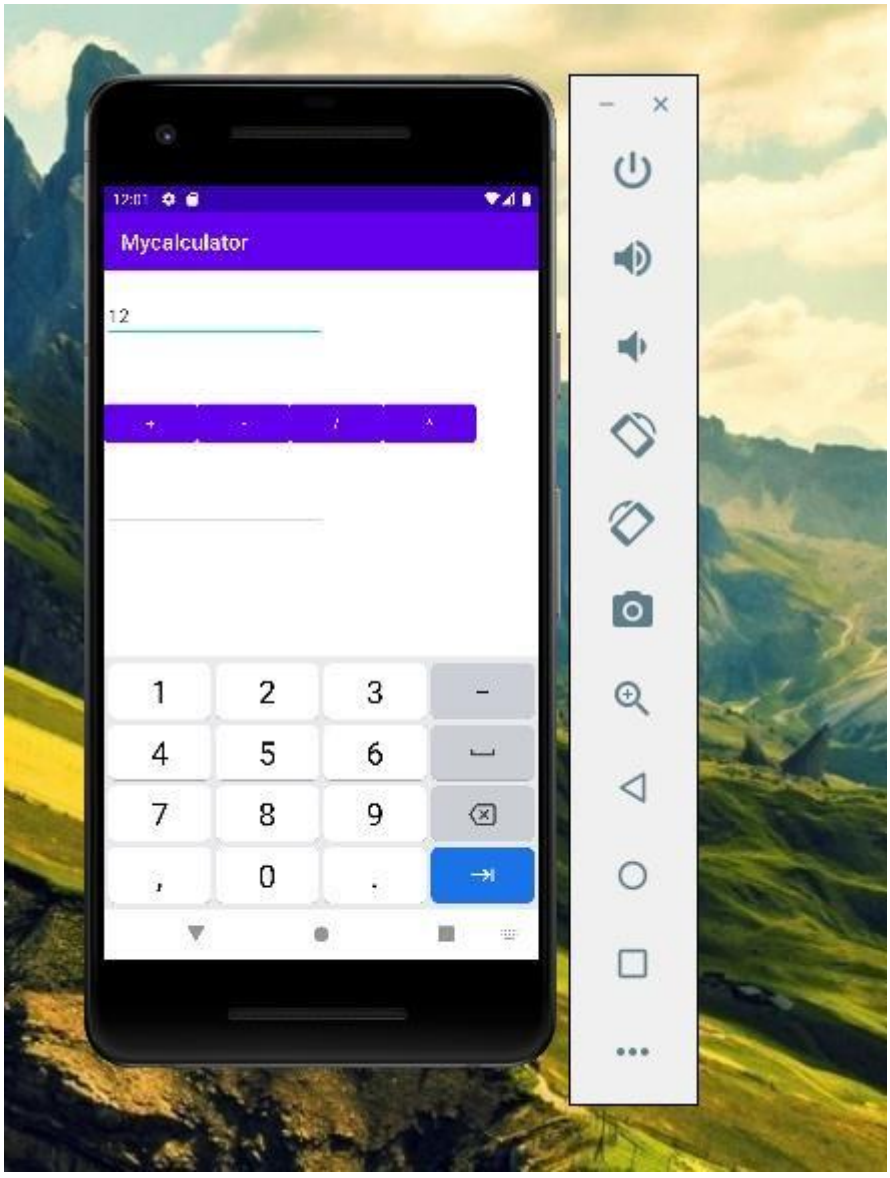
XML

```
<?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



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