

## Practical Assignment

### 6# Create a simple File Chooser in Android

#### activity\_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
xmlns:app="http://schemas.android.com/apk/res-auto"
xmlns:tools="http://schemas.android.com/tools"
android:layout_width="match_parent"
android:layout_height="match_parent"
android:paddingLeft="5sp"
android:paddingTop="5sp"
android:paddingRight="5sp"
android:paddingBottom="5sp"
android:text="Krishna Puyed"
tools:context=".MainActivity">
<fragment
android:id="@+id/fragment_fileChooser"
android:name="org.o7planning.filechooserexample.FileChooserFragment"
android:layout_width="0dp"
android:layout_height="45dp"
android:layout_marginStart="16dp"
android:layout_marginLeft="16dp"
android:layout_marginTop="16dp"
android:layout_marginEnd="16dp"
android:layout_marginRight="16dp"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent" />
<Button
android:id="@+id/button_showInfo"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_marginTop="16dp"
android:text="Show Info"
```

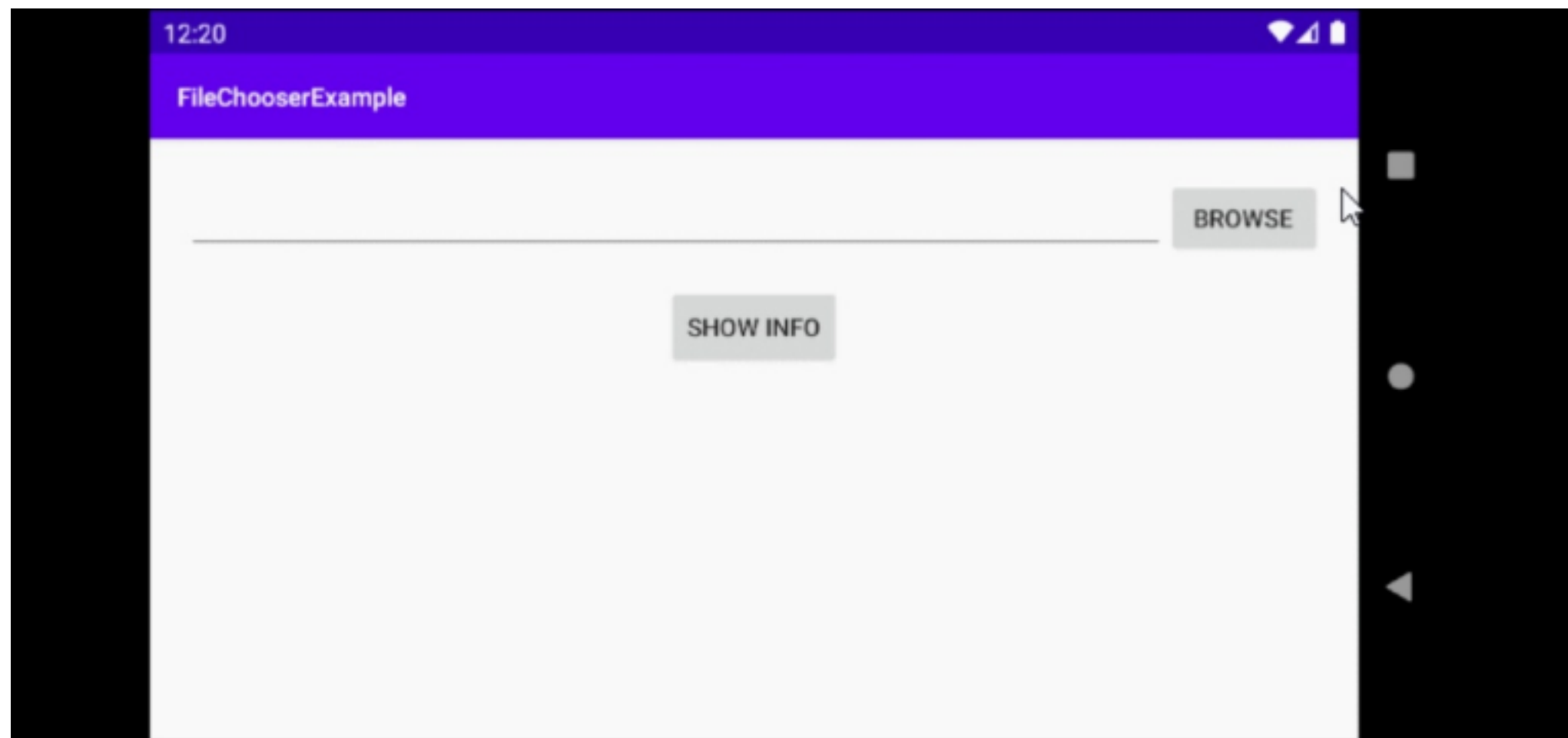
```
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toBottomOf="@+id/fragment_fileChooser" />
</androidx.constraintlayout.widget.ConstraintLayout
```

---

## MainActivity.java

```
package org.o7planning.filechooserexample;
import androidx.appcompat.app.AppCompatActivity;
import androidx.fragment.app.FragmentManager;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.Toast;
public class MainActivity extends AppCompatActivity {
    private FileChooserFragment fragment;
    private Button buttonShowInfo;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        FragmentManager fragmentManager = this.getSupportFragmentManager();
        this.fragment = (FileChooserFragment)
fragmentManager.findFragmentById(R.id.fragment_fileChooser);
        this.buttonShowInfo = this.findViewById(R.id.button_showInfo);
        this.buttonShowInfo.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                showInfo();
            }
        });
    }
    private void showInfo() {
        String path = this.fragment.getPath();
        Toast.makeText(this, "Path: " + path, Toast.LENGTH_LONG).show();
    }
}
```

## OUTPUT



## 7# Create a simple File Chooser in Android Android CheckBox activity\_main.xml

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

    <TextView
        android:id="@+id/textView"
        android:layout_width="0dp"
        android:layout_height="wrap_content"
        android:layout_marginStart="16dp"
        android:layout_marginLeft="16dp"
        android:layout_marginTop="35dp"
        android:layout_marginEnd="16dp"
        android:layout_marginRight="16dp"
        android:text="Krishna Puyed"
        android:textSize="18sp"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />

    <CheckBox
        android:id="@+id/checkBox_checkAll"
        android:layout_width="0dp"
        android:layout_height="wrap_content"
        android:layout_marginStart="16dp"
        android:layout_marginLeft="16dp"
        android:layout_marginTop="39dp"
        android:layout_marginEnd="16dp"
        android:layout_marginRight="16dp"
        android:text="(Check All)"
        app:layout_constraintEnd_toEndOf="parent"
```

```
app:layout_constraintStart_toStartOf="parent"  
app:layout_constraintTop_toBottomOf="@+id/textView" />
```

#### <CheckBox

```
android:id="@+id/checkBox_ccpp"  
android:layout_width="0dp"  
android:layout_height="wrap_content"  
android:layout_marginStart="16dp"  
android:layout_marginLeft="16dp"  
android:layout_marginTop="16dp"  
android:layout_marginEnd="16dp"  
android:layout_marginRight="16dp"  
android:text="C/C++"  
app:layout_constraintEnd_toEndOf="parent"  
app:layout_constraintStart_toStartOf="parent"  
app:layout_constraintTop_toBottomOf="@+id/checkBox_checkAll" />
```

#### <CheckBox

```
android:id="@+id/checkBox_csharp"  
android:layout_width="0dp"  
android:layout_height="wrap_content"  
android:layout_marginStart="16dp"  
android:layout_marginLeft="16dp"  
android:layout_marginTop="16dp"  
android:layout_marginEnd="16dp"  
android:layout_marginRight="16dp"  
android:text="CSharp"  
app:layout_constraintEnd_toEndOf="parent"  
app:layout_constraintStart_toStartOf="parent"  
app:layout_constraintTop_toBottomOf="@+id/checkBox_ccpp" />
```

#### <CheckBox

```
android:id="@+id/checkBox_java"  
android:layout_width="0dp"  
android:layout_height="wrap_content"  
android:layout_marginStart="16dp"  
android:layout_marginLeft="16dp"  
android:layout_marginTop="16dp"  
android:layout_marginEnd="16dp"
```

```

        android:layout_marginRight="16dp"
        android:text="Java"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/checkbox_csharp"/>

<Button
    android:id="@+id/button_showResult"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginTop="16dp"
    android:text="Show Result"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/checkbox_java"/>
</androidx.constraintlayout.widget.ConstraintLayout>

```

## MainActivity.java

```

package com.example.checkboxexample;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.CheckBox;
import android.widget.CompoundButton;
import android.widget.Toast;
public class MainActivity extends AppCompatActivity {
    private CheckBox checkBoxCheckAll;
    private CheckBox checkBoxCcpp;
    private CheckBox checkBoxCsharp;
    private CheckBox checkBoxJava;
    private Button buttonShowResult;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
    }
}

```



```

setContentView(R.layout.activity_main);

this.checkBoxCheckAll = (CheckBox) this.findViewById(R.id.checkBox_checkAll);
this.checkBoxCcpp = (CheckBox) this.findViewById(R.id.checkBox_ccpp);
this.checkBoxCsharp = (CheckBox) this.findViewById(R.id.checkBox_csharp);
this.checkBoxJava = (CheckBox) this.findViewById(R.id.checkBox_java);

this.buttonShowResult = (Button) this.findViewById(R.id.button_showResult);

this.buttonShowResult.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        showResult();
    }
});

this.checkBoxCheckAll.setOnCheckedChangeListener(new
CompoundButton.OnCheckedChangeListener() {
    @Override
    public void onCheckedChanged(CompoundButton buttonView, boolean isChecked) {
        checkAllCheckedChange(isChecked);
    }
});
}

private void showResult() {
    String message = null;
    if(this.checkBoxCcpp.isChecked()) {
        message = this.checkBoxCcpp.getText().toString();
    }
    if(this.checkBoxCsharp.isChecked()) {
        if(message == null) {
            message = this.checkBoxCsharp.getText().toString();
        } else {
            message += "," + this.checkBoxCsharp.getText().toString();
        }
    }
    if(this.checkBoxJava.isChecked()) {
        if(message == null) {
            message = this.checkBoxJava.getText().toString();
        } else {

```

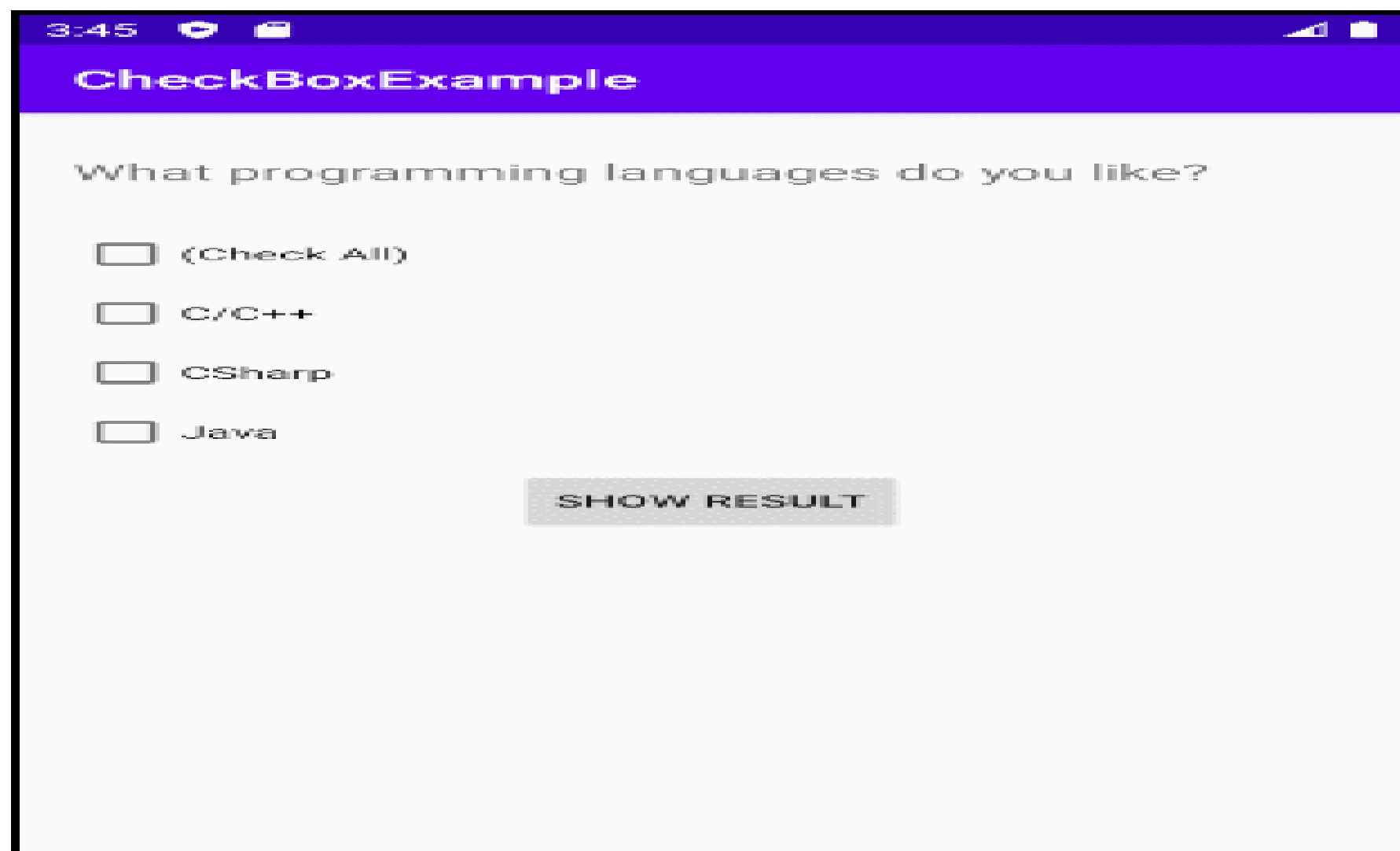
```

        message += "," + this.checkBoxJava.getText().toString();
    }
}
message = message == null ? "You select nothing": "You select:" + message;
Toast.makeText(this, message, Toast.LENGTH_LONG).show();
}

// When "Check All" change state.
private void checkAllCheckedChange(boolean isChecked) {
    this.checkBoxCsharp.setChecked(isChecked);
    this.checkBoxCcpp.setChecked(isChecked);
    this.checkBoxJava.setChecked(isChecked);
}
}

```

## OUTPUT





## 8#Write a programAndroidAlertDialog

### layout\_custom\_title.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">

    <ImageView
        android:id="@+id/imageView"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginTop="16dp"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:srcCompat="@drawable/icon_title" />

    <TextView
        android:id="@+id/textView"
        android:layout_width="0dp"
        android:layout_height="wrap_content"
        android:layout_marginStart="16dp"
        android:layout_marginLeft="16dp"
        android:layout_marginTop="8dp"
        android:layout_marginEnd="16dp"
        android:layout_marginRight="16dp"
        android:background="#E3DCC4"
        android:gravity="center"
        android:text="This is the Title"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/imageView" />
```

</androidx.constraintlayout.widget.ConstraintLayout>

---

### AlertDialogCustomTitleExample.java

```
package org.o7planning.alertdialogexample;
```

```
import android.app.Activity;
import android.content.Context;
import android.content.DialogInterface;
import android.graphics.drawable.Drawable;
import android.view.LayoutInflater;
import android.view.View;
import android.widget.Toast;
```

```
import androidx.appcompat.app.AlertDialog;
```

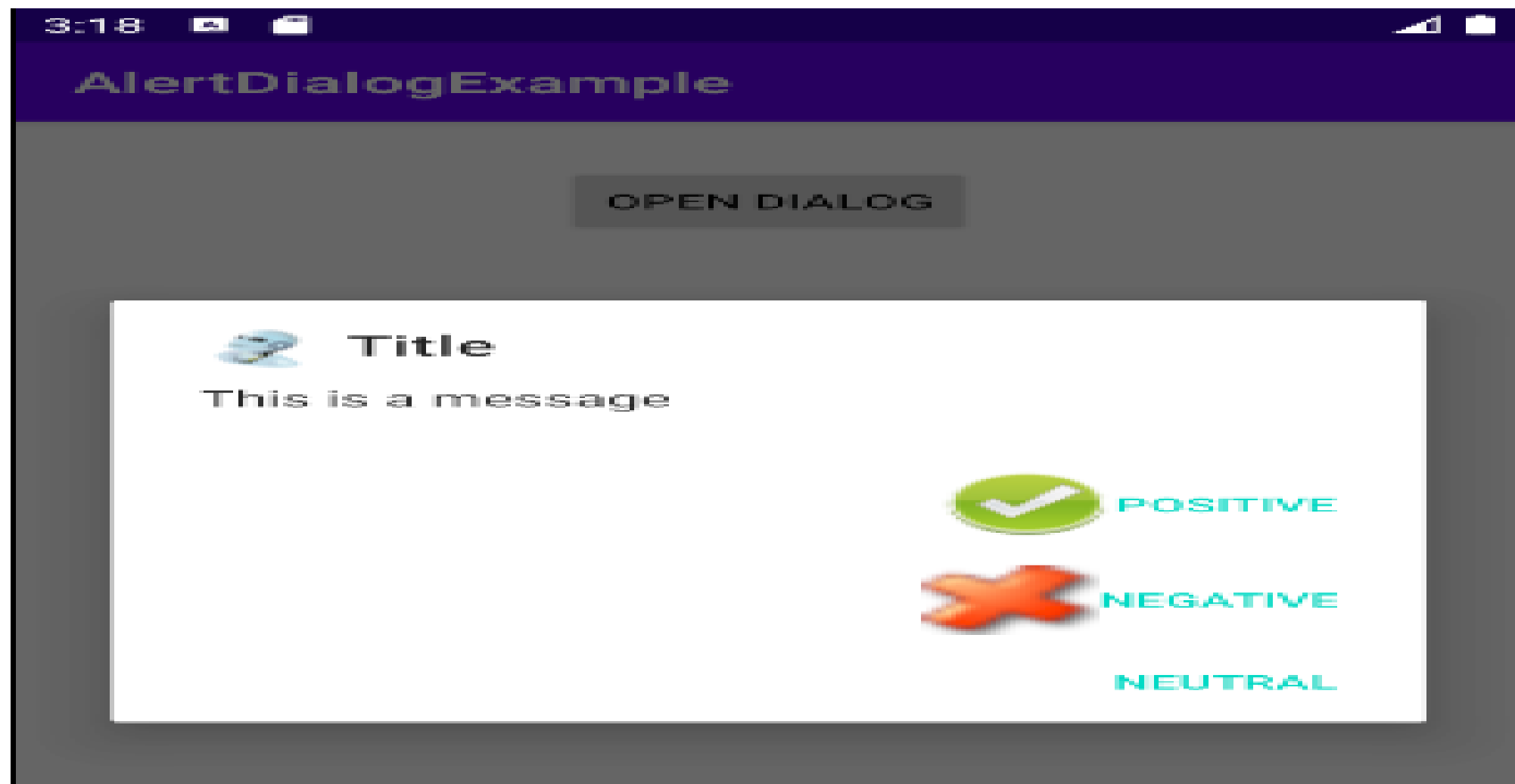
```
public class AlertDialogCustomTitleExample {
    public static void showAlertDialog(final Activity context) {
        final Drawable positiveIcon =
context.getResources().getDrawable(R.drawable.icon_positive);

        AlertDialog.Builder builder = new AlertDialog.Builder(context);
        // Custom Title Area.
        LayoutInflater inflater = context.getLayoutInflater();
        View view = inflater.inflate(R.layout.layout_custom_title, null);
        builder.setCustomTitle(view);
        builder.setMessage("This is AlertDialog with Custom Title Area");
        builder.setCancelable(true);
        builder.setIcon(R.drawable.icon_title);

        // Create "OK" button with OnClickListener.
        builder.setPositiveButton("OK", new DialogInterface.OnClickListener() {
            public void onClick(DialogInterface dialog, int id) {
            }
        });
        builder.setPositiveButtonIcon(positiveIcon);
        AlertDialog alert = builder.create();
```

```
        alert.show();  
    }  
}
```

## OUTPUT



## 9# Write a program Android Text to Speech

### activity\_main.xml

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

    <RadioGroup
        android:id="@+id/radioGroup"
        android:layout_width="0dp"
        android:layout_height="160dp"
        android:layout_marginStart="16dp"
        android:layout_marginLeft="16dp"
        android:layout_marginTop="16dp"
        android:layout_marginEnd="14dp"
        android:layout_marginRight="14dp"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent">

        <RadioButton
            android:id="@+id/radio_en"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:text="English" />

        <RadioButton
```

```
        android:id="@+id/radio_fr"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="France" />
</RadioGroup>

<EditText
    android:id="@+id/editText"
    android:layout_width="0dp"
    android:layout_height="49dp"
    android:layout_marginStart="18dp"
    android:layout_marginLeft="18dp"
    android:layout_marginTop="80dp"
    android:layout_marginEnd="17dp"
    android:layout_marginRight="17dp"
    android:ems="10"
    android:inputType="textPersonName"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/radioGroup" />

<Button
    android:id="@+id/button"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginTop="88dp"
    android:text="Speak"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/editText" />

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

---

---

## **MainActivity.java**

```
package org.o7planning.texttospeechdemo;
```

```
import android.app.Activity;
```

```
import android.os.Bundle;
```

```
import android.speech.tts.TextToSpeech;
```

```
import android.util.Log;
```

```
import android.view.View;
```

```
import android.widget.Button;
```

```
import android.widget.EditText;
```

```
import java.util.Locale;
```

```
import java.util.Set;
```

```
import java.util.UUID;
```

```
import android.widget.RadioButton;
```

```
import android.widget.RadioGroup;
```

```
import android.widget.Toast;
```

```
public class MainActivity extends Activity{
```

```
    private TextToSpeech textToSpeech;
```

```
    private EditText editText;
```

```
    private Button button;
```

```
    private RadioButton radio_en;
```

```
    private RadioButton radio_fr;
```

```
    RadioGroup radioGroup;
```

```
    private boolean ready;
```

```
@Override
```

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

```
    super.onCreate(savedInstanceState);
```

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

```
    editText = (EditText) findViewById(R.id.editText);
```

```
    button = (Button) findViewById(R.id.button);
```

```
    radio_en = (RadioButton) findViewById(R.id.radio_en);
```

```
    radio_fr = (RadioButton) findViewById(R.id.radio_fr);
```

```
    radioGroup = (RadioGroup) findViewById(R.id.radioGroup);
```

```

        textToSpeech = new TextToSpeech(getApplicationContext(), new
TextToSpeech.OnInitListener() {
    @Override
    public void onInit(int status) {
        Log.e("TTS", "TextToSpeech.OnInitListener.onInit...");
        printOutSupportedLanguages();
        setTextToSpeechLanguage();
    }
});

        radioGroup.setOnCheckedChangeListener(new
RadioGroup.OnCheckedChangeListener() {

    @Override
    public void onCheckedChanged(RadioGroup group, int checkedId) {
        setTextToSpeechLanguage();
    }
});
button.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        speakOut();
    }
});
}
private void printOutSupportedLanguages() {
    // Supported Languages
    Set<Locale> supportedLanguages = textToSpeech.getAvailableLanguages();
    if(supportedLanguages != null) {
        for(Locale lang : supportedLanguages) {
            Log.e("TTS", "Supported Language: " + lang);
        }
    }
}
@Override
public void onPause() {
    if(textToSpeech != null) {
        textToSpeech.stop();
        textToSpeech.shutdown();
    }
}

```



```

    super.onPause();
}

private void speakOut() {
    if(!ready) {
        Toast.makeText(this, "Text to Speech not ready", Toast.LENGTH_LONG).show();
        return;
    }
    //Text to Speak
    String toSpeak = editText.getText().toString();
    Toast.makeText(this, toSpeak, Toast.LENGTH_SHORT).show();
    //A random String (Unique ID).
    String utteranceId = UUID.randomUUID().toString();
    textToSpeech.speak(toSpeak, TextToSpeech.QUEUE_FLUSH, null, utteranceId);
}

private Locale getUserSelectedLanguage() {
    int checkedRadioid = this.radioGroup.getCheckedRadioButtonId();
    if(checkedRadioid == R.id.radio_en) {
        return Locale.ENGLISH;
    } elseif(checkedRadioid == R.id.radio_fr) {
        return Locale.FRANCE;
    }
    return null;
}

private void setTextToSpeechLanguage() {
    Locale language = this.getUserSelectedLanguage();
    if(language == null) {
        this.ready = false;
        Toast.makeText(this, "Not language selected", Toast.LENGTH_SHORT).show();
        return;
    }
    int result = textToSpeech.setLanguage(language);
    if(result == TextToSpeech.LANG_MISSING_DATA) {
        this.ready = false;
        Toast.makeText(this, "Missing language data", Toast.LENGTH_SHORT).show();
        return;
    } elseif(result == TextToSpeech.LANG_NOT_SUPPORTED) {
        this.ready = false;
    }
}

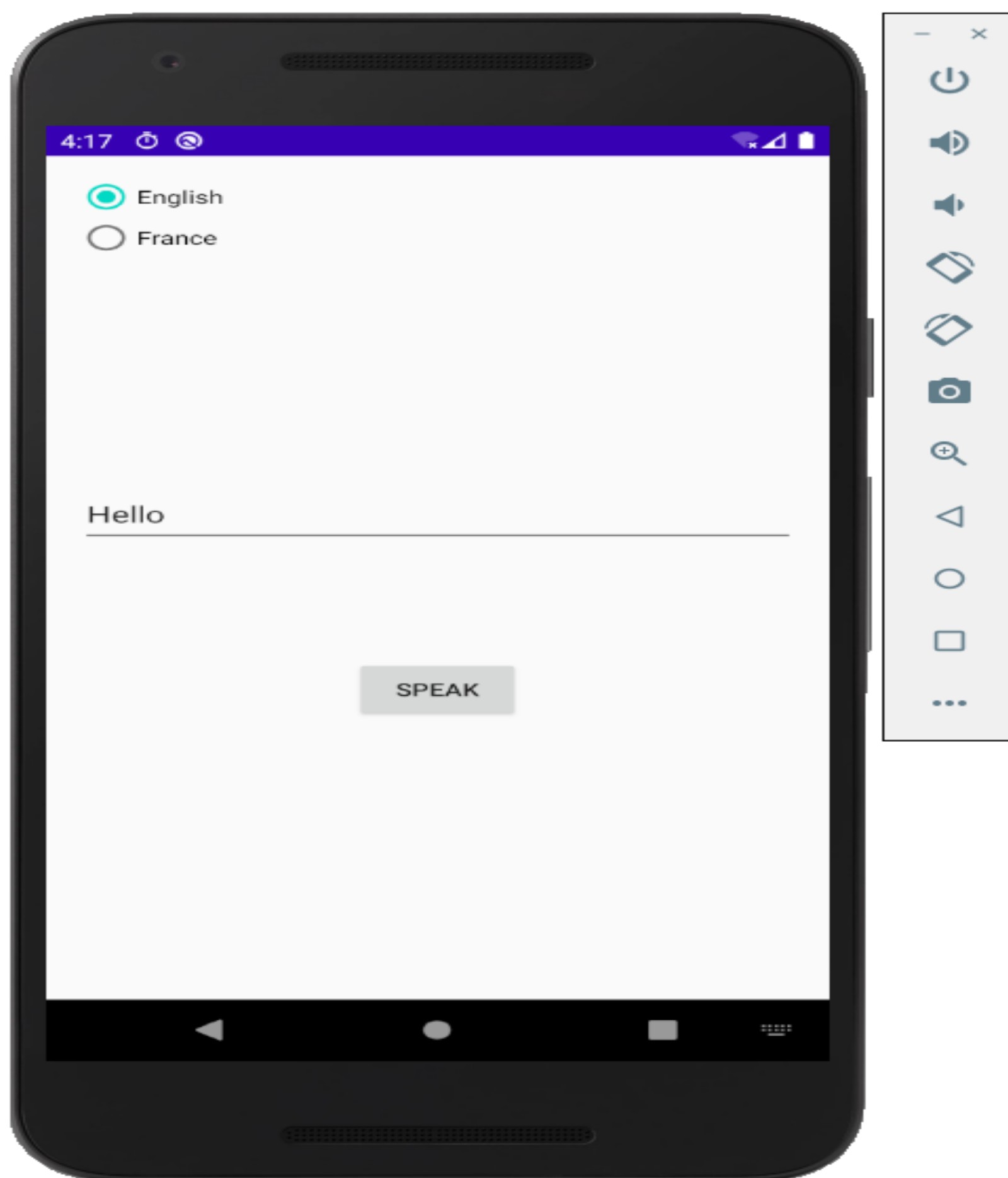
```

```

        Toast.makeText(this, "Language not supported", Toast.LENGTH_SHORT).show();
        return;
    } else {
        this.ready = true;
        Locale currentLanguage = textToSpeech.getVoice().getLocale();
        Toast.makeText(this, "Language " + currentLanguage,
            Toast.LENGTH_SHORT).show();
    }
}
}
}

```

## OUTPUT



## 10# Write a program Android ToggleButton

```
<ToggleButton
    android:id="@+id/toggleButton"
    android:drawableLeft="@drawable/icon_alarm"
    android:text="ToggleButton"
    .../>
```

```
<ToggleButton
    android:id="@+id/toggleButton2"
    android:drawableLeft="@drawable/icon_alarm"
    android:text="ToggleButton"
    android:textOff="DISABLED"
    android:textOn="ENABLED"
    .../>
```

```
ToggleButton toggleButton = (ToggleButton) findViewById(R.id.toggleButton);
```

```
toggleButton.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        boolean checked = ((ToggleButton) v).isChecked();
        if(checked){
            //Your code
        }
        else{
            //Your code
        }
    }
});
```



## 11#Write a programAndroid Switch

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

```
<androidx.constraintlayout.widget.ConstraintLayout
```

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

```
    xmlns:app="http://schemas.android.com/apk/res-auto"
```

```
    xmlns:tools="http://schemas.android.com/tools"
```

```
    android:layout_width="match_parent"
```

```
    android:layout_height="match_parent"
```

```
    tools:context=".MainActivity">
```

```
    <TextView
```

```
        android:id="@+id/textView61"
```

```
        android:layout_width="0dp"
```

```
        android:layout_height="wrap_content"
```

```
        android:layout_marginStart="16dp"
```

```
        android:layout_marginTop="16dp"
```

```
        android:layout_marginEnd="16dp"
```

```
        android:text="TextAppearance.AppCompat.Widget.Switch"
```

```
        app:layout_constraintEnd_toEndOf="parent"
```

```
        app:layout_constraintStart_toStartOf="parent"
```

```
        app:layout_constraintTop_toTopOf="parent" />
```

```
    <Switch
```

```
        android:id="@+id/switch61"
```

```
        style="@style/TextAppearance.AppCompat.Widget.Switch"
```

```
        android:layout_width="wrap_content"
```

```
        android:layout_height="wrap_content"
```

```
        android:layout_marginStart="16dp"
```

```
        android:layout_marginTop="8dp"
```

```
        android:showText="false"
```

```
        android:text="Alarm"
```

```
        app:layout_constraintStart_toStartOf="parent"
```

```
        app:layout_constraintTop_toBottomOf="@+id/textView61" />
```

```
    <TextView
```

```
        android:id="@+id/textView62"
```

```
        android:layout_width="0dp"
```

```
android:layout_height="wrap_content"
android:layout_marginStart="16dp"
android:layout_marginTop="16dp"
android:layout_marginEnd="16dp"
android:text="Widget.AppCompat.CompoundButton.Switch"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toBottomOf="@+id/switch61"/>
```

#### <Switch

```
android:id="@+id/switch62"
style="@style/Widget.AppCompat.CompoundButton.Switch"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_marginStart="16dp"
android:layout_marginTop="8dp"
android:showText="false"
android:text="Alarm"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toBottomOf="@+id/textView62"/>
```

#### <TextView

```
android:id="@+id/textView63"
android:layout_width="0dp"
android:layout_height="wrap_content"
android:layout_marginStart="16dp"
android:layout_marginTop="16dp"
android:layout_marginEnd="16dp"
android:text="Widget.Material.CompoundButton.Switch"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toBottomOf="@+id/switch62"/>
```

#### <Switch

```
android:id="@+id/switch63"
style="@android:style/Widget.Material.CompoundButton.Switch"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_marginStart="16dp"
```

```
android:layout_marginTop="8dp"
android:showText="false"
android:text="Alarm"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toBottomOf="@+id/textView63" />
```

#### <TextView

```
android:id="@+id/textView64"
android:layout_width="0dp"
android:layout_height="wrap_content"
android:layout_marginStart="16dp"
android:layout_marginTop="16dp"
android:layout_marginEnd="16dp"
android:text="Widget.Material.Light.CompoundButton.Switch"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toBottomOf="@+id/switch63" />
```

#### <Switch

```
android:id="@+id/switch64"
style="@android:style/Widget.Material.Light.CompoundButton.Switch"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_marginStart="16dp"
android:layout_marginTop="8dp"
android:showText="false"
android:text="Alarm"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toBottomOf="@+id/textView64" />
```

</androidx.constraintlayout.widget.ConstraintLayout>

---

---

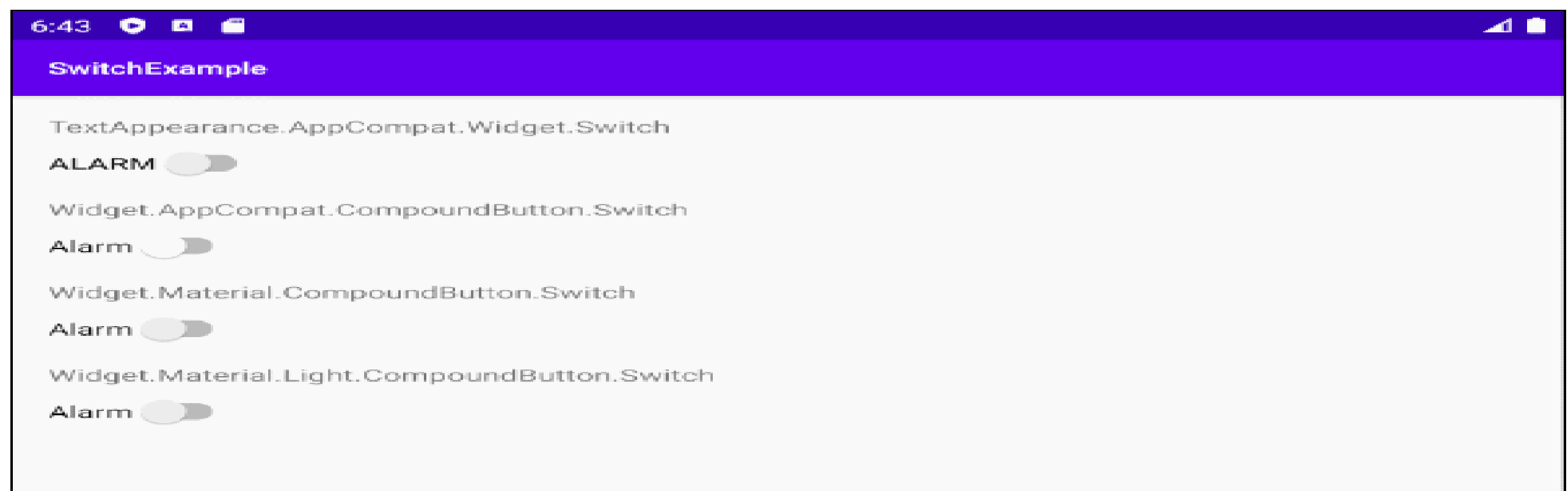
```
Switch switch1 = (Switch) findViewById(R.id.switch1);
```

```
switch1.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        boolean checked = ((Switch) v).isChecked();
```

```
        if (checked) {
            // Your code
        }
        else {
            // Your code
        }
    }
});
```

---

## OUTPUT





## 12# Write a program Android Button

### activity\_main.xml

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

#### <TextView

```
    android:id="@+id/textView"
    android:layout_width="0dp"
    android:layout_height="wrap_content"
    android:layout_marginStart="16dp"
    android:layout_marginLeft="16dp"
    android:layout_marginTop="16dp"
    android:layout_marginEnd="16dp"
    android:layout_marginRight="16dp"
    android:text="Number 1 "
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent" />
```

#### <EditText

```
    android:id="@+id/editText_number1"
    android:layout_width="0dp"
    android:layout_height="wrap_content"
    android:layout_marginStart="16dp"
    android:layout_marginLeft="16dp"
    android:layout_marginTop="16dp"
```

```
android:layout_marginEnd="16dp"
android:layout_marginRight="16dp"
android:ems="10"
android:inputType="number"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toBottomOf="@+id/textView" />
```

#### <TextView

```
android:id="@+id/textView2"
android:layout_width="0dp"
android:layout_height="wrap_content"
android:layout_marginStart="16dp"
android:layout_marginLeft="16dp"
android:layout_marginTop="16dp"
android:layout_marginEnd="16dp"
android:layout_marginRight="16dp"
android:text="Number 2"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toBottomOf="@+id/editText_number1" />
```

#### <EditText

```
android:id="@+id/editText_number2"
android:layout_width="0dp"
android:layout_height="wrap_content"
android:layout_marginStart="16dp"
android:layout_marginLeft="16dp"
android:layout_marginTop="16dp"
android:layout_marginEnd="16dp"
android:layout_marginRight="16dp"
android:ems="10"
android:inputType="number"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toBottomOf="@+id/textView2" />
```

#### <Button

```
android:id="@+id/button_add"
```

```
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginTop="16dp"
        android:text="Add"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/editText_number2" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

---

## MainActivity.java

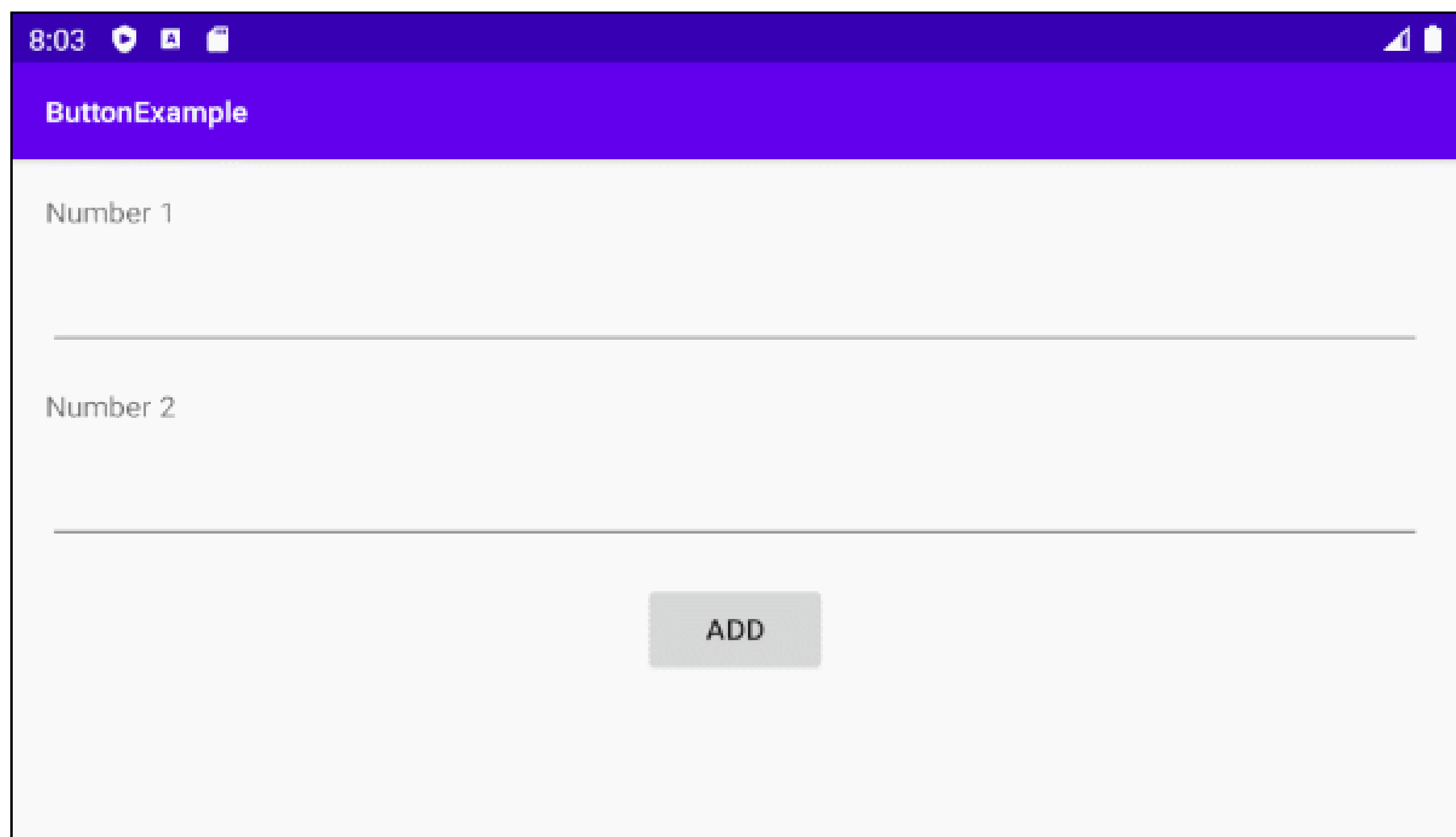
```
package org.o7planning.buttonexample;
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.view.ViewConfiguration;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;

public class MainActivity extends AppCompatActivity {
    private EditText editTextNumber1;
    private EditText editTextNumber2;
    private Button buttonAdd
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        this.editTextNumber1 = (EditText) this.findViewById(R.id.editText_number1);
        this.editTextNumber2 = (EditText) this.findViewById(R.id.editText_number2);
        this.buttonAdd = (Button) this.findViewById(R.id.button_add);

        this.buttonAdd.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                add2Number();
            }
        });
    }
    private void add2Number() {
```

```
String str1 = this.editTextNumber1.getText().toString();
String str2 = this.editTextNumber2.getText().toString();
try{
    double value1 = Double.parseDouble(str1);
    double value2 = Double.parseDouble(str2);
    double result = value1 + value2;
    Toast.makeText(this, "Result:" + result, Toast.LENGTH_SHORT).show();
} catch (Exception e) {
    Toast.makeText(this, "Error:" + e, Toast.LENGTH_SHORT).show();
}
}
```

## OUTPUT



## 13# Write a program Android ImageButton

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

```
<androidx.constraintlayout.widget.ConstraintLayout
```

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

```
    xmlns:app="http://schemas.android.com/apk/res-auto"
```

```
    xmlns:tools="http://schemas.android.com/tools"
```

```
    android:layout_width="match_parent"
```

```
    android:layout_height="match_parent"
```

```
    tools:context=".MainActivity">
```

```
    <TextView
```

```
        android:id="@+id/textView11"
```

```
        android:layout_width="0dp"
```

```
        android:layout_height="wrap_content"
```

```
        android:layout_marginStart="16dp"
```

```
        android:layout_marginLeft="16dp"
```

```
        android:layout_marginTop="16dp"
```

```
        android:layout_marginEnd="16dp"
```

```
        android:layout_marginRight="16dp"
```

```
        android:text="Widget.AppCompat.ImageButton (Default)"
```

```
        app:layout_constraintEnd_toEndOf="parent"
```

```
        app:layout_constraintStart_toStartOf="parent"
```

```
        app:layout_constraintTop_toTopOf="parent" />
```

```
    <ImageButton
```

```
        android:id="@+id/imageButton11"
```

```
        style="@style/Widget.AppCompat.ImageButton"
```

```
        android:layout_width="wrap_content"
```

```
        android:layout_height="wrap_content"
```

```
        android:layout_marginStart="16dp"
```

```
        android:layout_marginLeft="16dp"
```

```
        android:layout_marginTop="8dp"
```

```
        app:layout_constraintStart_toStartOf="parent"
```

```
        app:layout_constraintTop_toBottomOf="@+id/textView11"
```

```
        app:srcCompat="@drawable/icon_feel_good" />
```

### <TextView

```
android:id="@+id/textView12"
android:layout_width="0dp"
android:layout_height="wrap_content"
android:layout_marginStart="16dp"
android:layout_marginLeft="16dp"
android:layout_marginTop="16dp"
android:layout_marginEnd="16dp"
android:layout_marginRight="16dp"
android:text="Widget.Holo.ImageButton"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toBottomOf="@+id/imageButton11" />
```

### <ImageButton

```
android:id="@+id/imageButton12"
style="@android:style/Widget.Holo.ImageButton"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_marginStart="16dp"
android:layout_marginLeft="16dp"
android:layout_marginTop="8dp"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toBottomOf="@+id/textView12"
app:srcCompat="@drawable/icon_feel_good" />
```

### <TextView

```
android:id="@+id/textView13"
android:layout_width="0dp"
android:layout_height="wrap_content"
android:layout_marginStart="16dp"
android:layout_marginLeft="16dp"
android:layout_marginTop="16dp"
android:layout_marginEnd="16dp"
android:layout_marginRight="16dp"
android:text="Widget.ImageButton"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="1.0"
app:layout_constraintStart_toStartOf="parent"
```

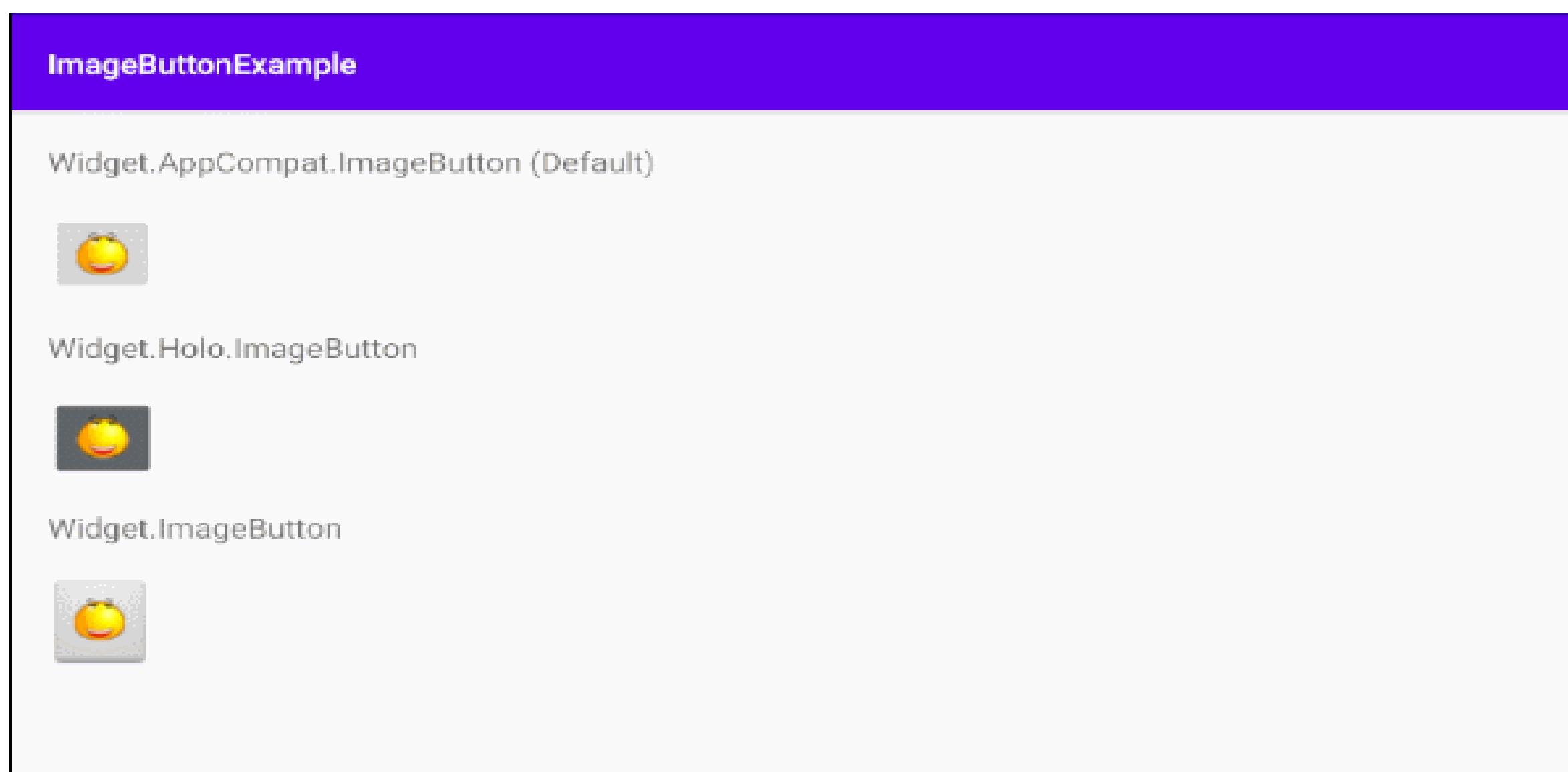
```
app:layout_constraintTop_toBottomOf="@+id/imageButton12" />
```

**<ImageButton**

```
    android:id="@+id/imageButton13"
    style="@android:style/Widget.ImageButton"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginStart="16dp"
    android:layout_marginLeft="16dp"
    android:layout_marginTop="8dp"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/textView13"
    app:srcCompat="@drawable/icon_feel_good" />
```

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

## OUTPUT





## 14# Write a program Android RadioGroup and RadioButton

### activity\_main.xml

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

#### <TextView

```
    android:id="@+id/textView"
    android:layout_width="0dp"
    android:layout_height="50dp"
    android:layout_marginStart="16dp"
    android:layout_marginLeft="16dp"
    android:layout_marginTop="19dp"
    android:layout_marginEnd="16dp"
    android:layout_marginRight="16dp"
    android:text="Game Settings"
    android:textSize="24sp"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"/>
```

#### <TextView

```
    android:id="@+id/textView2"
    android:layout_width="0dp"
    android:layout_height="30dp"
    android:layout_marginStart="16dp"
    android:layout_marginLeft="16dp"
```

```
android:layout_marginTop="19dp"
android:layout_marginEnd="16dp"
android:layout_marginRight="16dp"
android:text="Game character"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toBottomOf="@+id/textView" />
```

#### <RadioGroup

```
android:id="@+id/radioGroup_character"
android:layout_width="0dp"
android:layout_height="wrap_content"
android:layout_marginStart="16dp"
android:layout_marginLeft="16dp"
android:layout_marginTop="12dp"
android:layout_marginEnd="16dp"
android:layout_marginRight="16dp"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toBottomOf="@+id/textView2">
```

#### <RadioButton

```
android:id="@+id/radioButton_male"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:text="Male" />
```

#### <RadioButton

```
android:id="@+id/radioButton_female"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:text="Female" />
```

#### </RadioGroup>

#### <TextView

```
android:id="@+id/textView3"
android:layout_width="0dp"
android:layout_height="29dp"
android:layout_marginStart="16dp"
```

```
android:layout_marginLeft="16dp"
android:layout_marginTop="24dp"
android:layout_marginEnd="16dp"
android:layout_marginRight="16dp"
android:text="Difficulty Level"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toBottomOf="@+id/radioGroup_character" />
```

#### <RadioGroup

```
android:id="@+id/radioGroup_diffLevel"
android:layout_width="0dp"
android:layout_height="wrap_content"
android:layout_marginStart="16dp"
android:layout_marginLeft="16dp"
android:layout_marginTop="24dp"
android:layout_marginEnd="16dp"
android:layout_marginRight="16dp"
android:orientation="horizontal"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toBottomOf="@+id/textView3">
```

#### <RadioButton

```
android:id="@+id/radioButton_easy"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_weight="0"
android:text="Easy" />
```

#### <RadioButton

```
android:id="@+id/radioButton_medium"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_weight="0"
android:text="Medium" />
```

#### <RadioButton

```
android:id="@+id/radioButton_hard"
```

```
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_weight="0"
        android:text="Hard" />
</RadioGroup>

<Button
    android:id="@+id/button_save"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginTop="24dp"
    android:text="Save"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/radioGroup_diffLevel" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

---

## MainActivity.java

```
package org.o7planning.androidradiodemo;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;
import android.util.Log;
import android.view.View;
import android.widget.Button;
import android.widget.CompoundButton;
import android.widget.RadioButton;
import android.widget.RadioGroup;
import android.widget.Toast;

public class MainActivity extends AppCompatActivity {

    private RadioGroup radioGroupCharacter;
    private RadioButton radioButtonMale;
    private RadioButton radioButtonFemale;

    private RadioGroup radioGroupDiffLevel;
    private RadioButton radioButtonEasy;
```

```
private RadioButton radioButtonMedium;  
private RadioButton radioButtonHard;
```

```
private Button buttonSave;
```

```
private String LOGTAG = "AndroidRadioDemo";
```

```
@Override
```

```
protected void onCreate(Bundle savedInstanceState) {  
    super.onCreate(savedInstanceState);  
    setContentView(R.layout.activity_main);
```

```
    //
```

```
                                this.radioGroupCharacter= (RadioGroup)  
this.findViewById(R.id.radioGroup_character);  
    this.radioButtonMale = (RadioButton) this.findViewById(R.id.radioButton_male);  
    this.radioButtonFemale = (RadioButton) this.findViewById(R.id.radioButton_female);  
    this.radioButtonMale.setChecked(true);
```

```
    //
```

```
    this.radioGroupDiffLevel = (RadioGroup) this.findViewById(R.id.radioGroup_diffLevel);  
    this.radioButtonEasy = (RadioButton) this.findViewById(R.id.radioButton_easy);  
                                this.radioButtonMedium =  
(RadioButton) this.findViewById(R.id.radioButton_medium);  
    this.radioButtonHard = (RadioButton) this.findViewById(R.id.radioButton_hard);  
    this.radioButtonMedium.setChecked(true);
```

```
    this.buttonSave = (Button) this.findViewById(R.id.button_save);
```

```
    //When radio group "Difficulty Level" checked change.
```

```
                                this.radioGroupDiffLevel.setOnCheckedChangeListener(new  
RadioGroup.OnCheckedChangeListener() {  
        @Override  
        public void onCheckedChanged(RadioGroup group, int checkedId) {  
            doOnDifficultyLevelChanged(group, checkedId);  
        }  
    });
```

```
    //When radio button "Female" checked change.
```

```
        this.radioButtonMale.setOnCheckedChangeListener(new  
RadioButton.OnCheckedChangeListener() {
```

```
    @Override  
    public void onCheckedChanged(CompoundButton buttonView, boolean isChecked) {  
        doOnGameCharacterChanged(buttonView,isChecked);  
    }  
});
```

```
        this.radioButtonFemale.setOnCheckedChangeListener(new  
RadioButton.OnCheckedChangeListener() {
```

```
    @Override  
    public void onCheckedChanged(CompoundButton buttonView, boolean isChecked) {  
        doOnGameCharacterChanged(buttonView,isChecked);  
    }  
});
```

```
this.buttonSave.setOnClickListener(new Button.OnClickListener() {
```

```
    @Override  
    public void onClick(View v) {  
        doSave();  
    }  
});
```

```
}
```

```
private void doOnDifficultyLevelChanged(RadioGroup group, int checkedId) {  
    int checkedRadioid = group.getCheckedRadioButtonId();
```

```
    if(checkedRadioid== R.id.radioButton_easy) {  
        Toast.makeText(this,"You choose the level of difficulty:  
Easy",Toast.LENGTH_SHORT).show();  
    }elseif(checkedRadioid== R.id.radioButton_medium) {  
        Toast.makeText(this,"You choose the level of difficulty:  
Medium",Toast.LENGTH_SHORT).show();  
    }elseif(checkedRadioid== R.id.radioButton_hard) {  
        Toast.makeText(this,"You choose the level of difficulty:  
Hard",Toast.LENGTH_SHORT).show();  
    }  
}
```

```
// When radio button checked change.
```



```

        private void doOnGameCharacterChanged(CompoundButton buttonView, boolean
isChecked) {
            RadioButton radio =(RadioButton) buttonView;

            Log.i(LOGTAG, "RadioButton "+ radio.getText()+"."+isChecked);
        }
        private void doSave() {
            int difficultyLevel = this.radioGroupDiffLevel.getCheckedRadioButtonId();
            int gameCharacter = this.radioGroupCharacter.getCheckedRadioButtonId();

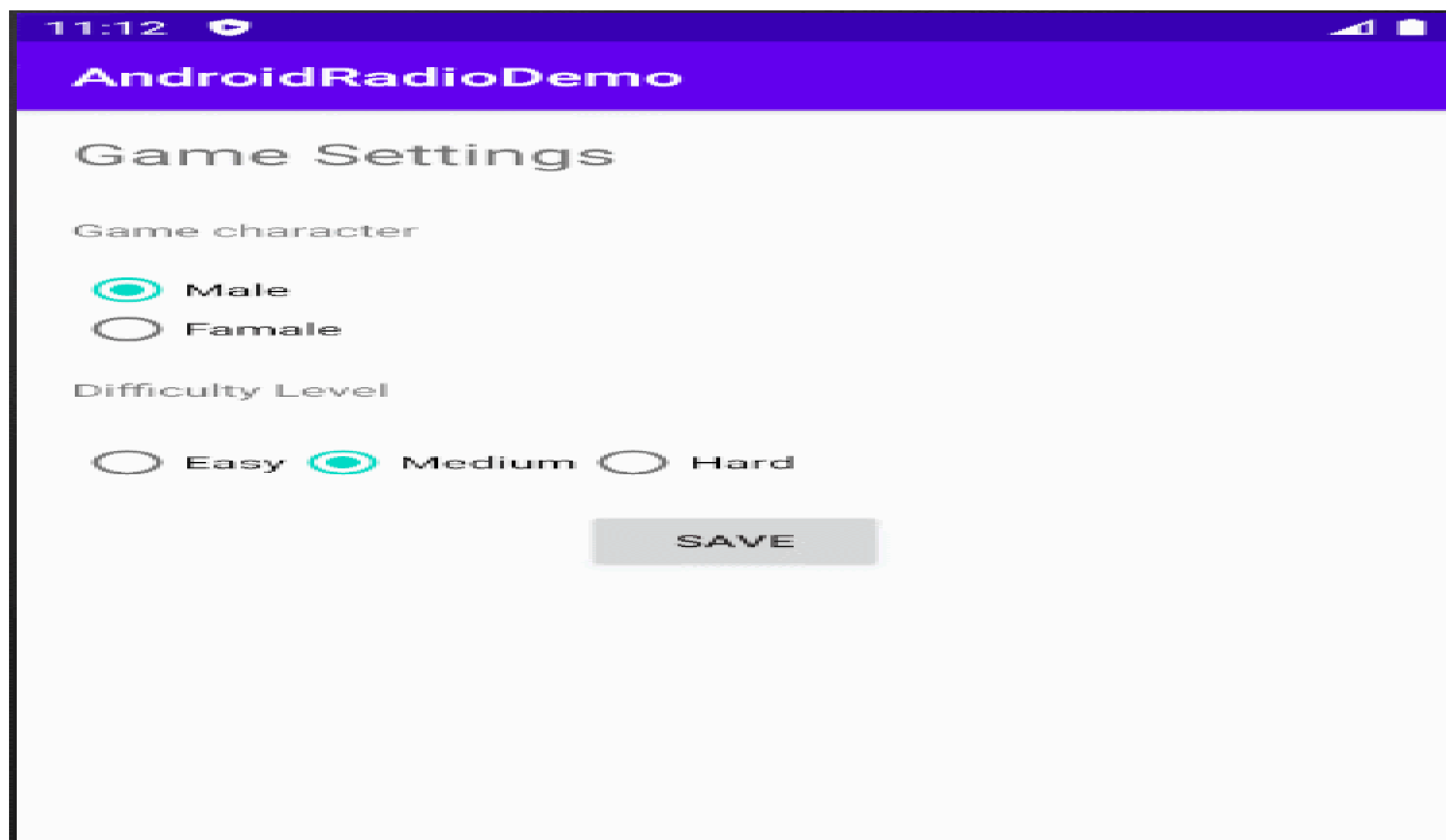
            RadioButton radioButtonDiffLevel = (RadioButton) this.findViewById(difficultyLevel);
            RadioButton radioButtonGameCharacter = (RadioButton)
this.findViewById(gameCharacter);

            String message = "Difficulty Level: "+ radioButtonDiffLevel.getText()
                + ", Game Character: " + radioButtonGameCharacter.getText();

            Toast.makeText(this, message, Toast.LENGTH_LONG).show();
        }
    }
}

```

## OUTPUT





## 15# Write a program Android TextView

<TextView

android:id="@+id/textView\_a11"

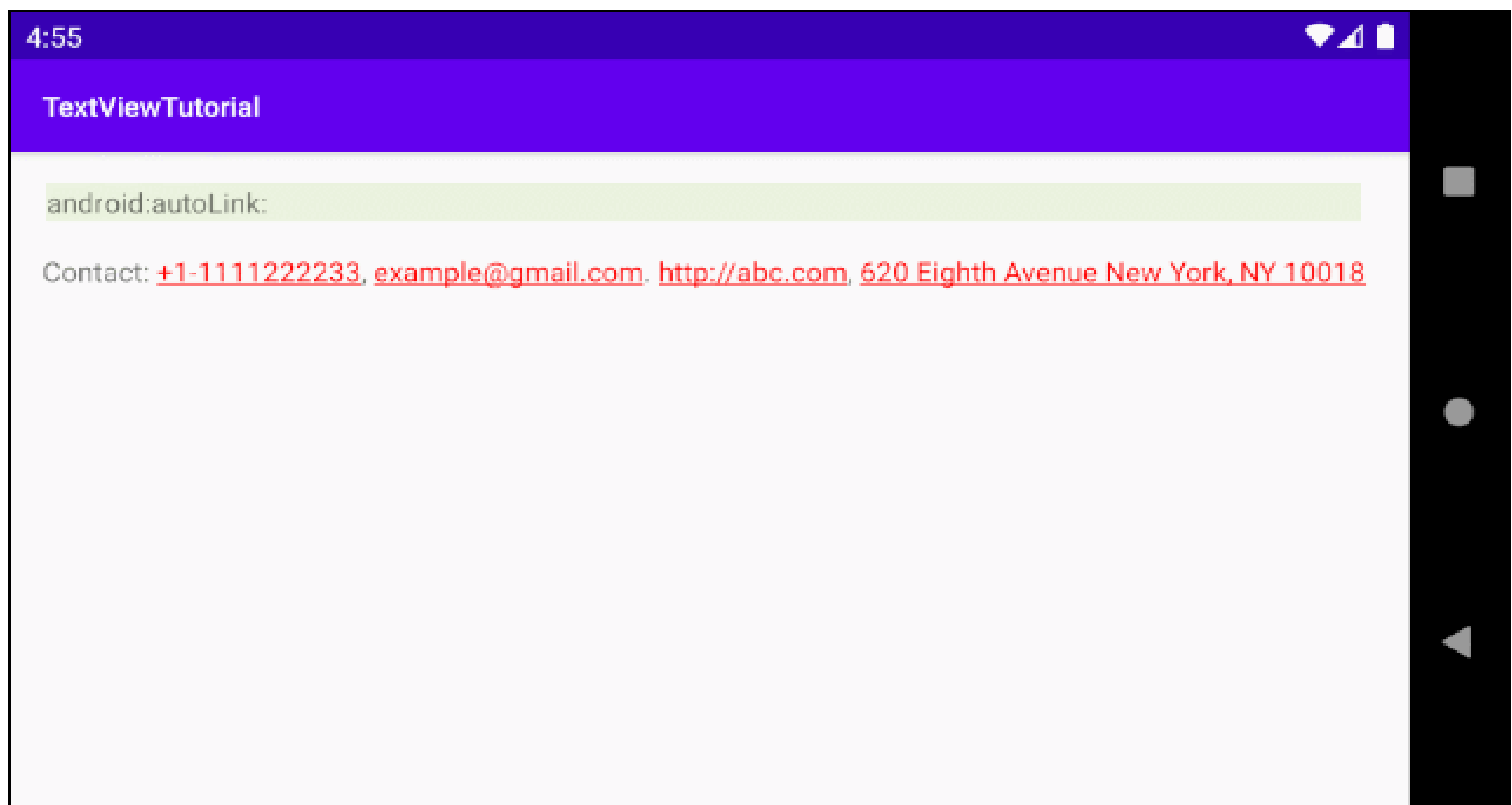
android:autoLink="email|phone|map|web"

android:textColorLink="#FF0000"

android:text="Contact: +1-1111222233, example@gmail.com. http://abc.com, 620 Eighth Avenue New York, NY 10018"

.../>

## OUTPUT



## 16# Write a program Android EditText

### activity\_main.xml

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

#### <EditText

```
    android:id="@+id/editText_test"
    android:layout_width="0dp"
    android:layout_height="wrap_content"
    android:layout_marginStart="16dp"
    android:layout_marginLeft="16dp"
    android:layout_marginTop="16dp"
    android:layout_marginEnd="16dp"
    android:layout_marginRight="16dp"
    android:ems="10"
    android:inputType="text"
    android:text="0123456789"
    android:textSize="50sp"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent" />
```

#### <TextView

```
    android:id="@+id/textView_info"
    android:layout_width="0dp"
    android:layout_height="wrap_content"
    android:layout_marginStart="16dp"
    android:layout_marginLeft="16dp"
    android:layout_marginTop="8dp"
    android:layout_marginEnd="16dp"
    android:layout_marginRight="16dp"
```

```
android:background="#F3FBDE"
android:gravity="center_horizontal"
android:text="(Info)"
android:textColor="#3F51B5"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toBottomOf="@+id/editText_test"/>
```

#### <LinearLayout

```
android:id="@+id/linearLayout"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_marginTop="16dp"
android:orientation="horizontal"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toBottomOf="@+id/textView_info">
```

#### <Button

```
android:id="@+id/button_selectAll"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:text="selectAll()"
android:textAllCaps="false"/>
```

#### <Button

```
android:id="@+id/button_extendSelection"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:text="extendSelection(5)"
android:textAllCaps="false"/>
```

#### </LinearLayout>

#### <LinearLayout

```
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_marginTop="8dp"
android:orientation="horizontal"
app:layout_constraintEnd_toEndOf="parent"
```

```
app:layout_constraintStart_toStartOf="parent"  
app:layout_constraintTop_toBottomOf="@+id/linearLayout">
```

```
<Button
```

```
    android:id="@+id/button_setSelection1"  
    android:layout_width="wrap_content"  
    android:layout_height="wrap_content"  
    android:text="setSelection(3)"  
    android:textAllCaps="false" />
```

```
<Button
```

```
    android:id="@+id/button_setSelection2"  
    android:layout_width="wrap_content"  
    android:layout_height="wrap_content"  
    android:text="setSelection(2,7)"  
    android:textAllCaps="false" />
```

```
</LinearLayout>
```

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

---

## MainActivity.java

```
package com.example.editttextexample;
```

```
import androidx.appcompat.app.AppCompatActivity;
```

```
import android.os.Bundle;
```

```
import android.text.TextWatcher;
```

```
import android.view.View;
```

```
import android.widget.Button;
```

```
import android.widget.EditText;
```

```
import android.widget.TextView;
```

```
public class MainActivity extends AppCompatActivity {
```

```
    private EditText editTextTest;
```

```
    private TextView textViewInfo;
```

```
    private Button button_selectAll;
```

```

private Button button_setSelection1;
private Button button_setSelection2;
private Button button_extendSelection;
@Override
protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_main);
    this.editTextTest = (EditText) this.findViewById(R.id.editText_test);
    this.textViewInfo = (TextView) this.findViewById(R.id.textView_info);
    this.button_selectAll = (Button) this.findViewById(R.id.button_selectAll);
    this.button_setSelection1 = (Button) this.findViewById(R.id.button_setSelection1);
    this.button_setSelection2 = (Button) this.findViewById(R.id.button_setSelection2);
    this.button_extendSelection = (Button)
this.findViewById(R.id.button_extendSelection);
    this.editTextTest.requestFocus();
    this.button_selectAll.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View v) {
            selectAllHandler();
        }
    });

    this.button_setSelection1.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View v) {
            setSelection1Handler();
        }
    });
    this.button_setSelection2.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View v) {
            setSelection2Handler();
        }
    });

    this.button_extendSelection.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View v) {
            extendSelectionHandler();
        }
    });
}

```

```

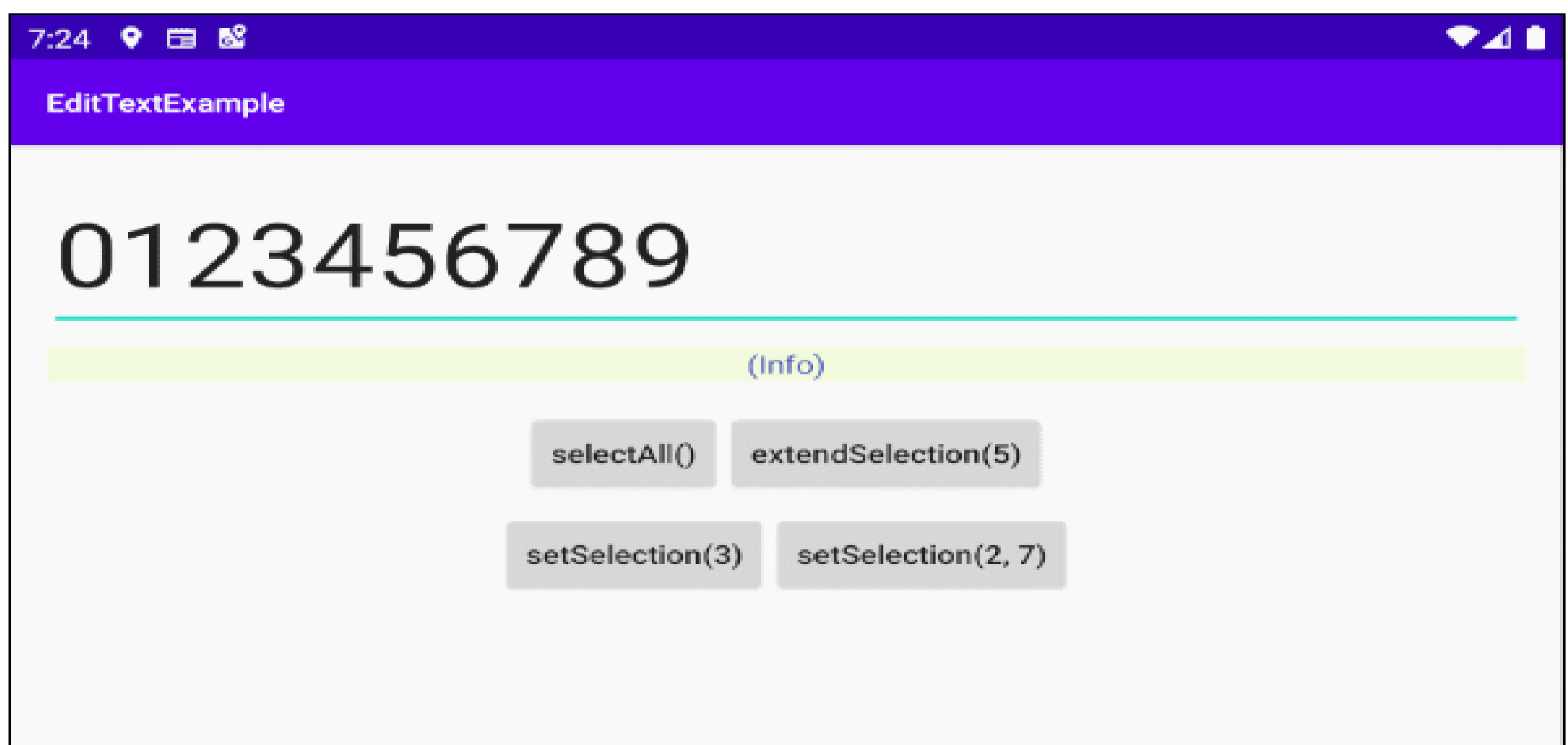
    }
    });
}
private void selectAllHandler() {
    this.editTextTest.selectAll();
    this.textViewInfo.setText("selectAll()");
}
private void setSelection1Handler() {
    this.editTextTest.setSelection(3);
    this.textViewInfo.setText("setSelection(3)");
}
private void setSelection2Handler() {
    this.editTextTest.setSelection(2, 7);
    this.textViewInfo.setText("setSelection(2, 7)");
}
private void extendSelectionHandler() {
    this.editTextTest.extendSelection(5);

    int selectionStart = this.editTextTest.getSelectionStart();
    this.textViewInfo.setText("selectionStart = " + selectionStart + " -> extendSelection(5)");
}

}

```

## OUTPUT



## #17. Write a program android-textinputlayout

### activity\_main.xml

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

```
<androidx.constraintlayout.widget.ConstraintLayout
```

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

```
    xmlns:app="http://schemas.android.com/apk/res-auto"
```

```
    xmlns:tools="http://schemas.android.com/tools"
```

```
    android:layout_width="match_parent"
```

```
    android:layout_height="match_parent"
```

```
    android:background="#ECE9E9"
```

```
    tools:context=".MainActivity">
```

```
    <com.google.android.material.textfield.TextInputLayout
```

```
        android:id="@+id/textInputLayout_user_name"
```

```
        android:layout_width="0dp"
```

```
        android:layout_height="wrap_content"
```

```
        android:layout_marginStart="16dp"
```

```
        android:layout_marginLeft="16dp"
```

```
        android:layout_marginTop="24dp"
```

```
        android:layout_marginEnd="16dp"
```

```
        android:layout_marginRight="16dp"
```

```
        app:hintTextAppearance="@style/TextAppearance.AppCompat.Medium"
```

```
        app:layout_constraintEnd_toEndOf="parent"
```

```
        app:layout_constraintStart_toStartOf="parent"
```

```
        app:layout_constraintTop_toTopOf="parent">
```

```
    <com.google.android.material.textfield.TextInputEditText
```

```
        android:layout_width="match_parent"
```

```
        android:layout_height="wrap_content"
```

```
        android:hint="Username" />
```

```
</com.google.android.material.textfield.TextInputLayout>
```

```
<EditText
```

```
    android:id="@+id/editText51"
```

```
    android:layout_width="0dp"
```

```
    android:layout_height="wrap_content"
```

```
    android:layout_marginStart="16dp"
```



```
android:layout_marginLeft="16dp"
android:layout_marginTop="16dp"
android:layout_marginEnd="16dp"
android:layout_marginRight="16dp"
android:ems="10"
android:inputType="textPersonName"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toBottomOf="@+id/textInputLayout_user_name"/>
```

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

---

## MainActivity.java

```
package com.example.inputtextlayoutexample;
import android.os.Bundle;
import android.text.Editable;
import android.text.TextWatcher;
import androidx.appcompat.app.AppCompatActivity;
import com.google.android.material.textfield.TextInputLayout;
public class MainActivity extends AppCompatActivity {
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

        this.setupFloatingLabelError();
    }
    private void setupFloatingLabelError() {
        final TextInputLayout textInputLayoutUserName = (TextInputLayout)
        findViewById(R.id.textInputLayout_user_name);
        textInputLayoutUserName.getEditText().addTextChangedListener(new TextWatcher() {
            @Override
            public void onTextChanged(CharSequence text, int start, int count, int after) {
                if (text.length() == 0) {
                    textInputLayoutUserName.setError("Username is required");
                    textInputLayoutUserName.setErrorEnabled(true);
                } else if (text.length() < 5) {
```

```

        textInputLayoutUserName.setError("Username is required and length must be >=
5");
        textInputLayoutUserName.setErrorEnabled(true);
    } else {
        textInputLayoutUserName.setErrorEnabled(false);
    }
}
@Override
public void beforeTextChanged(CharSequence s, int start, int count,
int after) {
}
@Override
public void afterTextChanged(Editable s) {
}
});
}
}

```

## OUTPUT

Floating Hint and Floating Label Error:

Username

Character Counting and Floating Label Error:

Username

0 / 10

Password Visibility Toggle and Floating Label Error:

Password



## 18# Write a program Android ImageView

### activity\_main.xml

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

#### <ImageView

```
    android:id="@+id/imageView"
    android:layout_width="375dp"
    android:layout_height="207dp"
    android:layout_marginStart="16dp"
    android:layout_marginLeft="16dp"
    android:layout_marginTop="17dp"
    android:layout_marginEnd="16dp"
    android:layout_marginRight="16dp"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:srcCompat="@drawable/ic_launcher_foreground"
    tools:ignore="VectorDrawableCompat" />
```

#### <LinearLayout

```
    android:layout_width="0dp"
    android:layout_height="wrap_content"
    android:layout_marginStart="16dp"
    android:layout_marginLeft="16dp"
    android:layout_marginTop="16dp"
    android:layout_marginEnd="16dp"
```

```
android:layout_marginRight="16dp"
android:orientation="horizontal"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toBottomOf="@+id/imageView">
```

**<Space**

```
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_weight="1" />
```

**<Button**

```
android:id="@+id/button1"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_weight="0"
android:text="Show Image 1" />
```

**<Button**

```
android:id="@+id/button2"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_weight="0"
android:text="Show Image 2" />
```

**<Space**

```
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_weight="1" />
```

**</LinearLayout>**

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

---

---

## **MainActivity.java**

```
package org.o7planning.androidimageview;
```

```
import androidx.appcompat.app.AppCompatActivity;
```

```
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.ImageView;
```

```
public class MainActivity extends AppCompatActivity {
```

```
    private ImageView imageView;
    private Button button1;
    private Button button2;
```

```
    @Override
```

```
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
```

```
        this.imageView = (ImageView) this.findViewById(R.id.imageView);
```

```
        this.button1 = (Button) this.findViewById(R.id.button1);
```

```
        this.button2 = (Button) this.findViewById(R.id.button2);
```

```
        this.button1.setOnClickListener(new Button.OnClickListener() {
```

```
            @Override
```

```
            public void onClick(View v) {
                showImage1();
            }
```

```
        });
```

```
        this.button2.setOnClickListener(new Button.OnClickListener() {
```

```
            @Override
```

```
            public void onClick(View v) {
                showImage2();
            }
```

```
        });
```

```
    }
```

```
private void showImage1() {  
    this.imageView.setImageResource(R.drawable.triceratops_1);  
}  
  
private void showImage2() {  
    this.imageView.setImageResource(R.drawable.triceratops_2 );  
}
```

## OUTPUT



## 19# Write a program Android SeekBar

### activity\_main.xml

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

#### <SeekBar

```
    android:id="@+id/seekBar"
    android:layout_width="0dp"
    android:layout_height="27dp"
    android:layout_marginStart="19dp"
    android:layout_marginLeft="19dp"
    android:layout_marginTop="43dp"
    android:layout_marginEnd="21dp"
    android:layout_marginRight="21dp"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent" />
```

#### <TextView

```
    android:id="@+id/textView"
    android:layout_width="0dp"
    android:layout_height="24dp"
    android:layout_marginStart="22dp"
    android:layout_marginLeft="22dp"
    android:layout_marginTop="34dp"
    android:layout_marginEnd="21dp"
    android:layout_marginRight="21dp"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/seekBar" />
```

#### <LinearLayout



```
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_marginStart="1dp"
android:layout_marginLeft="1dp"
android:layout_marginTop="50dp"
android:layout_marginEnd="1dp"
android:layout_marginRight="1dp"
android:orientation="horizontal"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toBottomOf="@+id/textView">
```

```
<Button
```

```
    android:id="@+id/button_decrease"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_weight="1"
    android:text="-" />
```

```
<Button
```

```
    android:id="@+id/button_increase"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_weight="1"
    android:text="+" />
```

```
</LinearLayout>
```

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

---

---

## MainActivity.java

```
package org.o7planning.seekbardemo;
```

```
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.util.Log;
import android.view.View;
import android.widget.Button;
```

```

import android.widget.SeekBar;
import android.widget.TextView;
import android.widget.Toast;
public class MainActivity extends AppCompatActivity {
    private SeekBar seekBar;
    private TextView textView;
    private Button buttonDecrease;
    private Button buttonIncrease;
    private static int DELTA_VALUE = 5;
    private static final String LOGTAG = "SeekBarDemo";

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        this.seekBar = (SeekBar) findViewById(R.id.seekBar);
        this.textView = (TextView) findViewById(R.id.textView);
        this.buttonDecrease = (Button) findViewById(R.id.button_decrease);
        this.buttonIncrease = (Button) findViewById(R.id.button_increase);
        this.seekBar.setMax(100);
        this.seekBar.setProgress(15);
        this.textView.setText("Progress: " + seekBar.getProgress() + "/" + seekBar.getMax());
        this.seekBar.setOnSeekBarChangeListener(new SeekBar.OnSeekBarChangeListener() {
            int progress = 0;
            @Override
            public void onProgressChanged(SeekBar seekBar, int progressValue, boolean
fromUser) {
                progress = progressValue;
                textView.setText("Progress: " + progressValue + "/" + seekBar.getMax());
                Log.i(LOGTAG, "Changing seekbar's progress");
                Toast.makeText(getApplicationContext(), "Changing seekbar's progress",
Toast.LENGTH_SHORT).show();
            }
            @Override
            public void onStartTrackingTouch(SeekBar seekBar) {
                Log.i(LOGTAG, "Started tracking seekbar");
                Toast.makeText(getApplicationContext(), "Started tracking seekbar",
Toast.LENGTH_SHORT).show();
            }
        });
    }
}

```

```

    }
    @Override
    public void onStopTrackingTouch(SeekBar seekBar) {
        textView.setText("Progress:" + progress + "/" + seekBar.getMax());
        Log.i(LOGTAG, "Stopped tracking seekbar");
        Toast.makeText(getApplicationContext(), "Stopped tracking seekbar",
Toast.LENGTH_SHORT).show();
    }
});
this.buttonDecrease.setOnClickListener(new Button.OnClickListener() {
    @Override
    public void onClick(View v) {
        decreaseProgress();
    }
});

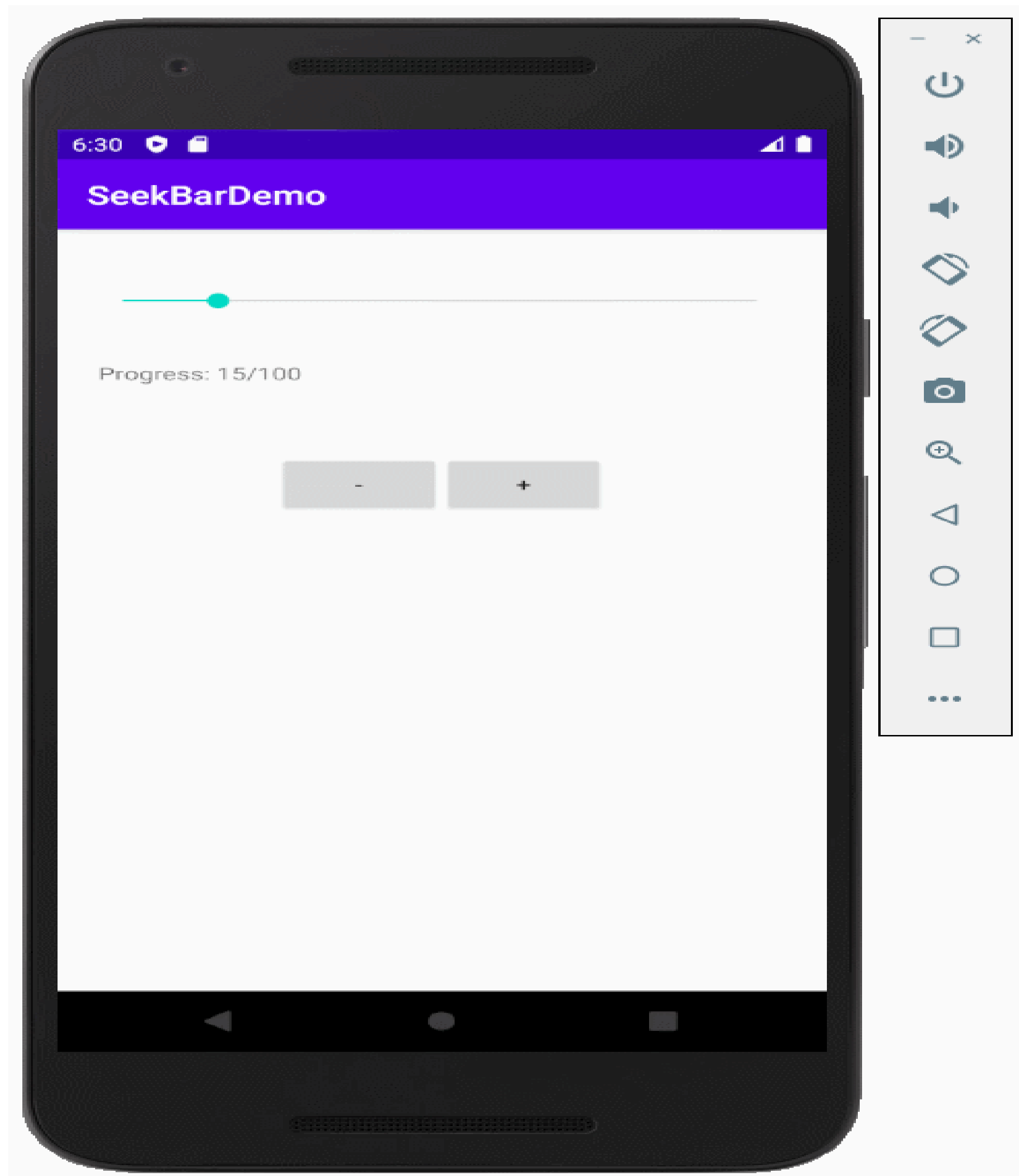
this.buttonIncrease.setOnClickListener(new Button.OnClickListener() {

    @Override
    public void onClick(View v) {
        increaseProgress();
    }
});
}
private void decreaseProgress() {
    int progress=this.seekBar.getProgress();
    if(progress-DELTA_VALUE<0) {
        this.seekBar.setProgress(0);
    } else {
        this.seekBar.setProgress(progress- DELTA_VALUE);
    }
    textView.setText("Progress:" + seekBar.getProgress()+ "/" + seekBar.getMax());
}
private void increaseProgress() {
    int progress=this.seekBar.getProgress();
    if(progress+ DELTA_VALUE>this.seekBar.getMax()) {
        this.seekBar.setProgress(0);
    } else{
        this.seekBar.setProgress(progress+ DELTA_VALUE);
    }
}

```

```
    }  
    textView.setText("Progress:" + seekBar.getProgress() + "/" + seekBar.getMax());  
}  
  
}
```

## OUTPUT



## 20# Write a program Android ProgressBar

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

```
<androidx.constraintlayout.widget.ConstraintLayout
```

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

```
    xmlns:app="http://schemas.android.com/apk/res-auto"
```

```
    xmlns:tools="http://schemas.android.com/tools"
```

```
    android:layout_width="match_parent"
```

```
    android:layout_height="match_parent"
```

```
    tools:context=".MainActivity">
```

```
<TextView
```

```
    android:id="@+id/textView11"
```

```
    android:layout_width="0dp"
```

```
    android:layout_height="wrap_content"
```

```
    android:layout_marginStart="16dp"
```

```
    android:layout_marginTop="16dp"
```

```
    android:layout_marginEnd="16dp"
```

```
    android:text="Widget.DeviceDefault.Light.ProgressBar.Small"
```

```
    app:layout_constraintEnd_toEndOf="parent"
```

```
    app:layout_constraintHorizontal_bias="0.0"
```

```
    app:layout_constraintStart_toStartOf="parent"
```

```
    app:layout_constraintTop_toTopOf="parent" />
```

```
<ProgressBar
```

```
    android:id="@+id/progressBar11"
```

```
    style="@android:style/Widget.DeviceDefault.Light.ProgressBar.Small"
```

```
    android:layout_width="0dp"
```

```
    android:layout_height="wrap_content"
```

```
    android:layout_marginStart="16dp"
```

```
    android:layout_marginTop="8dp"
```

```
    android:layout_marginEnd="16dp"
```

```
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.0"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toBottomOf="@+id/textView11"/>
```

#### <TextView

```
android:id="@+id/textView12"
android:layout_width="0dp"
android:layout_height="wrap_content"
android:layout_marginStart="16dp"
android:layout_marginTop="16dp"
android:layout_marginEnd="16dp"
android:text="Widget.DeviceDefault.Light.ProgressBar.Small.Inverse"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toBottomOf="@+id/progressBar11"/>
```

#### <ProgressBar

```
android:id="@+id/progressBar12"
style="@android:style/Widget.DeviceDefault.Light.ProgressBar.Small.Inverse"
android:layout_width="0dp"
android:layout_height="wrap_content"
android:layout_marginStart="16dp"
android:layout_marginTop="8dp"
android:layout_marginEnd="16dp"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toBottomOf="@+id/textView12"/>
```

#### <TextView

```
android:id="@+id/textView13"
android:layout_width="0dp"
android:layout_height="21dp"
android:layout_marginStart="16dp"
android:layout_marginTop="16dp"
android:layout_marginEnd="16dp"
android:text="Widget.DeviceDefault.Light.ProgressBar.Large"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintStart_toStartOf="parent"
```



```
app:layout_constraintTop_toBottomOf="@+id/progressBar12" />
```

#### <ProgressBar

```
    android:id="@+id/progressBar13"  
    style="@android:style/Widget.DeviceDefault.Light.ProgressBar.Large"  
    android:layout_width="0dp"  
    android:layout_height="wrap_content"  
    android:layout_marginStart="16dp"  
    android:layout_marginLeft="16dp"  
    android:layout_marginTop="16dp"  
    android:layout_marginEnd="16dp"  
    android:layout_marginRight="16dp"  
    app:layout_constraintEnd_toEndOf="parent"  
    app:layout_constraintStart_toStartOf="parent"  
    app:layout_constraintTop_toBottomOf="@+id/textView13" />
```

#### <TextView

```
    android:id="@+id/textView14"  
    android:layout_width="0dp"  
    android:layout_height="wrap_content"  
    android:layout_marginStart="16dp"  
    android:layout_marginTop="8dp"  
    android:layout_marginEnd="16dp"  
    android:text="Widget.DeviceDefault.Light.ProgressBar.Large.Inverse"  
    app:layout_constraintEnd_toEndOf="parent"  
    app:layout_constraintStart_toStartOf="parent"  
    app:layout_constraintTop_toBottomOf="@+id/progressBar13" />
```

#### <ProgressBar

```
    android:id="@+id/progressBar14"  
    style="@android:style/Widget.DeviceDefault.Light.ProgressBar.Large.Inverse"  
    android:layout_width="0dp"  
    android:layout_height="wrap_content"  
    android:layout_marginStart="16dp"  
    android:layout_marginTop="8dp"  
    android:layout_marginEnd="16dp"  
    app:layout_constraintEnd_toEndOf="parent"  
    app:layout_constraintStart_toStartOf="parent"  
    app:layout_constraintTop_toBottomOf="@+id/textView14" />
```



### <TextView

```
    android:id="@+id/textView15"
    android:layout_width="0dp"
    android:layout_height="wrap_content"
    android:layout_marginStart="16dp"
    android:layout_marginTop="16dp"
    android:layout_marginEnd="16dp"
    android:text="Widget.ProgressBar.Large"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/progressBar14" />
```

### <ProgressBar

```
    android:id="@+id/progressBar15"
    style="@android:style/Widget.ProgressBar.Large"
    android:layout_width="0dp"
    android:layout_height="wrap_content"
    android:layout_marginStart="16dp"
    android:layout_marginTop="8dp"
    android:layout_marginEnd="16dp"
    android:progress="80"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/textView15" />
```

### <TextView

```
    android:id="@+id/textView16"
    android:layout_width="0dp"
    android:layout_height="wrap_content"
    android:layout_marginStart="16dp"
    android:layout_marginTop="8dp"
    android:layout_marginEnd="16dp"
    android:text="Widget.ProgressBar.Large.Inverse"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/progressBar15" />
```

### <ProgressBar

```
android:id="@+id/progressBar16"  
style="@android:style/Widget.ProgressBar.Large.Inverse"  
android:layout_width="0dp"  
android:layout_height="wrap_content"  
android:layout_marginStart="16dp"  
android:layout_marginTop="8dp"  
android:layout_marginEnd="16dp"  
app:layout_constraintEnd_toEndOf="parent"  
app:layout_constraintStart_toStartOf="parent"  
app:layout_constraintTop_toBottomOf="@+id/textView16"/>
```

</androidx.constraintlayout.widget.ConstraintLayout>

## OUTPUT

