**Ul components & types of layout**

**1. Constraint Layout:**

<?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\_orientation="vertical"

android:layout\_width="match\_parent"

android:layout\_height="match\_parent"

tools:context=".MainActivity">

<TextView

android:layout\_orientation = "vertical"

android:id="@+id/no1"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="NO.1"

app:layout\_constraint Bottom\_toBottom Of="parent"

app:layout\_constraintHorizontal\_bias="0.263"

app:layout\_constraint Left\_toLeftOf="parent"

app:layout\_constraint Right\_toRightOf="parent"

app:layout\_constraintTop\_toTopOf="parent"

app:layout\_constraintVertical\_bias="0.248" />

<EditText

android:id="@+id/editText"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:ems="10"

android:inputType="textPerson Name"

android:text="Name"

tools:layout\_editor\_absoluteX="160dp"

tools:layout\_editor\_absoluteY="163dp" />

<TextView

android:id="@+id/textView"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="NO2"

tools:layout\_editor\_absoluteX="100dp"

tools:layout\_editor\_absoluteY="246dp" />

<EditText

android:id="@+id/editText2"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:ems="10"

android:inputType="textPerson Name"

android:text="Name"

tools:layout\_editor\_absoluteX="158dp"

tools:layout\_editor\_absoluteY="228dp" />

<TextView

android:id="@+id/textView2"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="ANS"

tools:layout\_editor\_absoluteX="104dp"

tools:layout\_editor\_absoluteY="320dp" />

<EditText

android:id="@+id/editText3"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:ems="10"

android:inputType="textPersonName"

android:text="Name"

tools:layout\_editor\_absoluteX="161dp"

tools:layout\_editor\_absoluteY="309dp" />

<Button

android:id="@+id/button"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="Button"

tools:layout\_editor\_absoluteX="111dp"

tools:layout\_editor\_absolute Y="449dp" />

<Button

android:id="@+id/button2"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="Button"

tools:layout\_editor\_absoluteX="111dp"

tools:layout\_editor\_absolute Y="383dp" />

<Button

android:id="@+id/button3"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="Button"

tools:layout\_editor\_absoluteX="226dp"

tools:layout\_editor\_absolute Y="383dp" />

<Button

android:id="@+id/button4"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="Button"

tools:layout\_editor\_absoluteX="225dp"

tools:layout\_editor\_absoluteY="449dp" />

<RadioButton

android:id="@+id/radioButton"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="RadioButton"

tools:layout\_editor\_absoluteX="79dp"

tools:layout\_editor\_absolute Y="523dp" />

<RadioButton

android:id="@+id/radioButton2"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="RadioButton"

tools:layout\_editor\_absoluteX="225dp"

tools:layout\_editor\_absoluteY="523dp" />

<CheckBox

android:id="@+id/checkBox"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="CheckBox"

tools:layout\_editor\_absoluteX="94dp"

tools:layout\_editor\_absoluteY="579dp" />

<CheckBox

android:id="@+id/checkBox2"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="CheckBox"

tools:layout\_editor\_absoluteX="226dp"

tools:layout\_editor\_absoluteY="579dp" />

<ToggleButton

android:id="@+id/toggleButton"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="ToggleButton"

tools:layout\_editor\_absoluteX="152dp"

tools:layout\_editor\_absoluteY="642dp" />

**2.Linear Layout:**

<?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">

<LinearLayout

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:orientation="horizontal">

<TextView

android:id="@+id/no1"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="NO.1"

/>

<EditText

android:id="@+id/editText"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:hint="enter no 1" />

</LinearLayout>

<LinearLayout

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:orientation="horizontal">

<TextView

android:id="@+id/textView"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="NO2"

/>

<EditText

android:id="@+id/editText2"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:hint="enter no 2"

/>

</LinearLayout>

<LinearLayout

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:orientation="horizontal">

<TextView

android:id="@+id/textView2"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

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

<EditText

android:id="@+id/editText3"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:hint="see ans here" />

</LinearLayout>

<LinearLayout

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:orientation="horizontal">

<Button

android:id="@+id/button"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="**Add**"

/>

<Button

android:id="@+id/button2"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="**Sub**"

/>

<Button

android:id="@+id/button3"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="**Mul**"

/>

<Button

android:id="@+id/button4"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="**Div**"

/>

</LinearLayout>

<LinearLayout

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:orientation="horizontal">

<RadioButton

android:id="@+id/radioButton"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="Male" />

<RadioButton

android:id="@+id/radioButton2"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="Female" />

</LinearLayout>

<LinearLayout

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:orientation="horizontal">

<CheckBox

android:id="@+id/checkBox"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="Music"

/>

<CheckBox

android:id="@+id/checkBox2"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="Sports" />

</LinearLayout>

<ToggleButton

android:id="@+id/toggleButton"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="Ok" />

</LinearLayout>

**3. Table Layout:**

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

<TableLayout

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">

<TableRow>

<TextView

android:id="@+id/no1"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="NO.1"

/>

<EditText

android:id="@+id/editText"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:hint="enter no 1" />

</TableRow>

<TableRow>

<TextView

android:id="@+id/textView"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="NO2"

/>

<EditText

android:id="@+id/editText2"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android hint-"enter no 2"

/>

</TableRow>

<TableRow>

<TextView

android:id="@+id/textView2"

android:layout\_width="wrap\_content"

android layout\_height="wrap\_content"

android text="ANS"

/>

<EditText

android:id="@+id/editText3"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android hint="see ans here"

/>

</TableRow>

<TableRow>

<Button

android:id="@+id/button"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="Add"

/>

<Button

android:id="@+id/button2"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="Sub"

/>

<Button

android:id="@+id/button3"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="mul"

/>

<Button

android:id="@+id/button4"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="div"

/>

</TableRow>

<TableRow>

<RadioButton

android:id="@+id/radioButton"

android layout\_width="wrap\_content"

android layout\_height="wrap\_content"

android text="Male" />

<RadioButton

android:id="@+id/radioButton2"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="Female"

/>

</TableRow>

<TableRow>

<CheckBox

android:id="@+id/checkBox"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="Music"

/>

<CheckBox

android:id="@+id/checkBox2"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="Sports"

/>

</TableRow>

<ToggleButton

android:id="@+id/toggleButton"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="Ok"

/>

</>

**4.Grid Layout**

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

<GridLayout

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:rowCount="7"

android:columnCount="2"

tools:context=".MainActivity">

<TextView

android:id="@+id/no1"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="NO.1"

/>

<EditText

android:id="@+id/editText"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:hint="enter no 1" />

<TextView

android:id="@+id/textView"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="NO2"

/>

<EditText

android:id="@+id/editText2"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:hint="enter no 2"

/>

<TextView

android:id="@+id/textView2"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="ANS"

/>

<EditText

android:id="@+id/editText3"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:hint="see ans here"

/>

<Button

android:id="@+id/button"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="Add"

/>

<Button

android:id="@+id/button2"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="Sub"

/>

<Button

android:id="@+id/button3"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="mul"

/>

<Button

android:id="@+id/button4"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="div"

/>

<RadioButton

android:id="@+id/radioButton"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="Male" />

<RadioButton

android:id="@+id/radioButton2"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="Female"

/>

<CheckBox

android:id="@+id/checkBox"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="Music"

/>

<CheckBox

android:id="@+id/checkBox2"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="Sports"

/>

<ToggleButton

android:id="@+id/toggleButton"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="Ok"

/>

</>

**Event Handling:**

Package com.example.uicomponents40;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;

import android.view.View;

import android.widget.\*;

public class MainActivity extends AppCompatActivity {

EditText e1,e2,e3;

Button b1,b2,b3,b4;

RadioButton r1,r2;

CheckBox c1, c2;

ToggleButton t1;

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity\_main);

e1=(EditText) findViewById(R.id.editText);

e2=(EditText)findViewById(R.id.editText2);

e3=(EditText)findViewById(R.id.editText3);

b1=(Button) findViewById(R.id.button);

b2=(Button)findViewById(R.id.button2);

b3=(Button)findViewById(R.id.button3);

b4=(Button)findViewById(R.id.button4);

r1=(RadioButton) findViewById(R.id.radioButton);

r2=(RadioButton) findViewById(R.id.radioButton2);

c1=(CheckBox) findViewById(R.id.checkBox);

c2=(CheckBox) findViewById(R.id.checkBox2);

t1=(ToggleButton)findViewById(R.id.toggleButton);

b1.setOnClickListener(new View.OnClickListener() {

@Override

public void onClick(View view) {

Toast.makeText(getApplicationContext(), "this is add button", Toast.LENGTH\_LONG).show();

}

});

r1.setOnCheckedChangeListener(new Compound Button.OnCheckedChangeListener() {

@Override

public void onCheckedChanged(Compound Button compoundButton, boolean b) {

Toast.makeText(getApplicationContext(), "Male selected", Toast.LENGTH\_LONG).show();

}

});

r2.setOnCheckedChangeListener(new Compound Button. On Checked ChangeListener() {

@Override

public void onCheckedChanged(Compound Button compoundButton, boolean b) {

Toast.makeText(getApplicationContext(), "FeMale selected", Toast.LENGTH\_LONG).show();

}

});

c1.setOnClickListener(new View.OnClickListener() {

@Override

public void onClick(View view) {

Toast.makeText(getApplicationContext(), "this is music

checkbox",Toast.LENGTH\_LONG).show();

}

});

c2.setOnClickListener(new View.OnClickListener() {

@Override

public void onClick(View view) {

Toast.makeText(getApplicationContext(), "this is sports

checkbox",Toast.LENGTH\_LONG).show();

}

});

b1.setOnClickListener(new View.OnClickListener() {

@Override

public void onClick(View view) {

int n1, n2, a;

n1=Integer.parseInt(e1.getText().toString());

n2=Integer.parseInt(e2.getText().toString());

a=n1+n2;

e3.setText("sum= "+a);

}

});

b2.setOnClickListener(new View.OnClickListener() {

@Override

public void onClick(View view) {

int n1, n2, a;

n1=Integer.parseInt(e1.getText().toString());

n2=Integer.parseInt(e2.getText().toString());

a=n1-n2;

e3.setText("sub= "+a);

}

});

}

}