**Exercise 1:**

**XML Code**

<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"  
 android:orientation="vertical"  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent">  
  
 <TextView  
 android:id="@+id/textView"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:layout\_margin="30dp"  
 android:gravity="center"  
 android:text="Hello World!"  
 android:textSize="25sp"  
 android:textStyle="bold" />  
  
 <Button  
 android:id="@+id/button1"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:layout\_margin="20dp"  
 android:gravity="center"  
 android:text="Change font size"  
 android:textSize="25sp" />  
 <Button  
 android:id="@+id/button2"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:layout\_margin="20dp"  
 android:gravity="center"  
 android:text="Change color"  
 android:textSize="25sp" />  
</LinearLayout>

**Java Code**

package com.example.exercise1;  
import android.graphics.Color;  
import androidx.appcompat.app.AppCompatActivity;  
import android.os.Bundle;  
import android.view.View;  
import android.widget.Button;  
import android.widget.TextView;  
  
public class MainActivity extends AppCompatActivity  
{  
 int ch=1;  
 float font=30;  
 @Override  
 protected void onCreate(Bundle savedInstanceState)  
 {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.activity\_main);  
 final TextView t= (TextView) findViewById(R.id.textView);  
 Button b1= (Button) findViewById(R.id.button1);  
 b1.setOnClickListener(new View.OnClickListener() {  
 @Override   
 public void onClick(View v) {  
 t.setTextSize(font);  
 font = font + 5;  
 if (font == 50)  
 font = 30;  
 }  
 });  
 Button b2= (Button) findViewById(R.id.button2);  
 b2.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View v) {  
 switch (ch) {  
 case 1:  
 t.setTextColor(Color.RED);  
 break;  
 case 2:  
 t.setTextColor(Color.GREEN);  
 break;  
 case 3:  
 t.setTextColor(Color.BLUE);  
 break;  
 case 4:  
 t.setTextColor(Color.CYAN);  
 break;  
 case 5:  
 t.setTextColor(Color.YELLOW);  
 break;  
 case 6:  
 t.setTextColor(Color.MAGENTA);  
 break;  
 }  
 ch++;  
 if (ch == 7)  
 ch = 1;  
 }  
 });  
 }  
}

**Exercise 2:**

**Main FORM**

<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"  
 xmlns:tools="http://schemas.android.com/tools"  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent"  
 tools:context=".MainActivity">  
  
 <LinearLayout  
 android:layout\_width="match\_parent"  
 android:layout\_height="100dp">  
 <TextView  
 android:id="@+id/textView"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:layout\_margin="30dp"  
 android:text="Details Form"  
 android:textSize="25sp"  
 android:gravity="center"/>  
 </LinearLayout>  
  
 <GridLayout  
 android:id="@+id/gridLayout"  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent"  
 android:layout\_marginTop="100dp"  
 android:layout\_marginBottom="200dp"  
 android:columnCount="2"  
 android:rowCount="3">  
 <TextView  
 android:id="@+id/textView1"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_margin="10dp"  
 android:layout\_row="0"  
 android:layout\_column="0"  
 android:text="Name"  
 android:textSize="20sp"  
 android:gravity="center"/>  
  
 <EditText  
 android:id="@+id/editText"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="48dp"  
 android:layout\_margin="10dp"  
 android:layout\_row="0"  
 android:layout\_column="1"  
 android:ems="10"  
 android:hint="name"/>  
  
 <TextView  
 android:id="@+id/textView2"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_margin="10dp"  
 android:layout\_row="1"  
 android:layout\_column="0"  
 android:text="Reg.No"  
 android:textSize="20sp"  
 android:gravity="center"/>  
  
 <EditText  
 android:id="@+id/editText2"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="48dp"  
 android:layout\_margin="10dp"  
 android:layout\_row="1"  
 android:layout\_column="1"  
 android:inputType="number"  
 android:ems="10"  
 android:hint="Reg no"/>  
  
 <TextView  
 android:id="@+id/textView3"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_margin="10dp"  
 android:layout\_row="2"  
 android:layout\_column="0"  
 android:text="Dept"  
 android:textSize="20sp"  
 android:gravity="center"/>  
  
 <Spinner  
 android:id="@+id/spinner"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="48dp"  
 android:layout\_margin="10dp"  
 android:layout\_row="2"  
 android:layout\_column="1"  
 android:spinnerMode="dropdown"  
 android:hint="dept"/>  
  
 </GridLayout>  
  
 <Button  
 android:id="@+id/button"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_alignParentBottom="true"  
 android:layout\_centerInParent="true"  
 android:layout\_marginBottom="150dp"  
 android:text="Submit"/>  
  
</RelativeLayout>

**Second XML Form**

*<?*xml version="1.0" encoding="utf-8"*?>*<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"  
 xmlns:tools="http://schemas.android.com/tools"  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent"  
 tools:context=".SecondActivity"  
 android:orientation="vertical"  
 android:gravity="center">  
  
 <TextView  
 android:id="@+id/textView1"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_margin="20dp"  
 android:text="New Text"  
 android:textSize="30sp"/>  
  
 <TextView  
 android:id="@+id/textView2"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_margin="20dp"  
 android:text="New Text"  
 android:textSize="30sp"/>  
  
 <TextView  
 android:id="@+id/textView3"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_margin="20dp"  
 android:text="New Text"  
 android:textSize="30sp"/>  
  
</LinearLayout>

**Java Code**

**Main Activity**

package com.example.exercise2;  
  
import android.content.Intent;  
import androidx.appcompat.app.AppCompatActivity;  
import android.os.Bundle;  
import android.view.View;  
import android.widget.ArrayAdapter;  
import android.widget.Button;  
import android.widget.EditText;  
import android.widget.Spinner;  
  
public class MainActivity extends AppCompatActivity {  
  
EditText e1,e2;  
 Button bt;  
 Spinner s;  
String [] dept\_array={"CSE","ECE","IT","Mech","Civil"};  
  
 String name,reg,dept;  
  
 @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*);  
  
 bt= (Button) findViewById(R.id.*button*);  
  
 s= (Spinner) findViewById(R.id.*spinner*);  
ArrayAdapter adapter= new

ArrayAdapter(MainActivity.this,android.R.layout.*simple\_spinner\_item*,dept\_array);  
 s.setAdapter(adapter);  
  
 *//Creating Listener for Button* bt.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View v) {  
  
 *//Getting the Values from Views(Edittext & Spinner)* name=e1.getText().toString();  
 reg=e2.getText().toString();  
 dept=s.getSelectedItem().toString();  
  
 *//Intent For Navigating to Second Activity* Intent i = new Intent(MainActivity.this,SecondActivity.class);  
  
 *//For Passing the Values to Second Activity* i.putExtra("name\_key", name);  
 i.putExtra("reg\_key",reg);  
 i.putExtra("dept\_key", dept);  
  
 startActivity(i);  
  
 }  
 });  
 }  
}

**Second Java**

package com.example.exercise2;  
import android.content.Intent;  
import androidx.appcompat.app.AppCompatActivity;  
import android.os.Bundle;  
import android.widget.TextView;  
  
public class SecondActivity extends AppCompatActivity {  
  
 TextView t1,t2,t3;  
  
 String name,reg,dept;  
  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_second*);  
  
 t1= (TextView) findViewById(R.id.*textView1*);  
 t2= (TextView) findViewById(R.id.*textView2*);  
 t3= (TextView) findViewById(R.id.*textView3*);  
  
 *//Getting the Intent* Intent i = getIntent();  
  
 *//Getting the Values from First Activity using the Intent received* name=i.getStringExtra("name\_key");  
 reg=i.getStringExtra("reg\_key");  
 dept=i.getStringExtra("dept\_key");  
  
 *//Setting the Values to Intent* t1.setText(name);  
 t2.setText(reg);  
 t3.setText(dept);  
  
 }  
}

**Exercise 3:**

**XML Code**

*<?*xml version="1.0" encoding="utf-8"*?>*<LinearLayout  
 xmlns:android="http://schemas.android.com/apk/res/android"  
 android:orientation="vertical"  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent"  
 android:layout\_margin="20dp">  
  
 <LinearLayout  
 android:id="@+id/linearLayout1"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:layout\_margin="20dp">  
  
 <EditText  
 android:id="@+id/editText1"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:layout\_weight="1"  
 android:inputType="numberDecimal"  
 android:textSize="20sp"  
 android:hint="number1"/>  
  
 <EditText  
 android:id="@+id/editText2"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:layout\_weight="1"  
 android:inputType="numberDecimal"  
 android:textSize="20sp"  
 android:hint="number2"  
  
 />  
  
 </LinearLayout>  
  
 <LinearLayout  
 android:id="@+id/linearLayout2"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:layout\_margin="20dp">  
  
 <Button  
 android:id="@+id/Add"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_weight="1"  
 android:text="+"  
 android:textSize="30sp"/>  
  
 <Button  
 android:id="@+id/Sub"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_weight="1"  
 android:text="-"  
 android:textSize="30sp"/>  
  
 <Button  
 android:id="@+id/Mul"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_weight="1"  
 android:text="\*"  
 android:textSize="30sp"/>  
  
 <Button  
 android:id="@+id/Div"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_weight="1"  
 android:text="/"  
 android:textSize="30sp"/>  
  
 </LinearLayout>  
</LinearLayout>

**Java Code**

package com.example.calci;  
import android.os.Bundle;  
import androidx.appcompat.app.AppCompatActivity;  
import android.text.TextUtils;  
import android.view.View;  
import android.view.View.OnClickListener;  
import android.widget.Button;  
import android.widget.EditText;  
import android.widget.TextView;  
import android.widget.Toast;  
  
public class MainActivity extends AppCompatActivity {  
  
 *// Defining the Views* EditText Num1;  
 EditText Num2;  
 Button Add;  
 Button Sub;  
 Button Mul;  
 Button Div;  
 TextView Result;  
  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_main*);  
  
 *// Referring the Views* Num1 = findViewById(R.id.*editText1*);  
 Num2 = findViewById(R.id.*editText2*);  
 Add = findViewById(R.id.*Add*);  
 Sub = findViewById(R.id.*Sub*);  
 Mul = findViewById(R.id.*Mul*);  
 Div = findViewById(R.id.*Div*);  
  
  
 Add.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View view) {  
 performOperation(Operation.*ADD*);  
 }  
 });  
  
 Sub.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View view) {  
 performOperation(Operation.*SUBTRACT*);  
 }  
 });  
  
 Mul.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View view) {  
 performOperation(Operation.*MULTIPLY*);  
 }  
 });  
  
 Div.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View view) {  
 performOperation(Operation.*DIVIDE*);  
 }  
 });  
 }  
  
 private void performOperation(Operation operation) {  
 String v1 = Num1.getText().toString();  
 String v2 = Num2.getText().toString();  
  
  
 if (v1.isEmpty() || v2.isEmpty()) {  
 Toast.*makeText*(getApplicationContext(), "Empty fields aren't allowed!", Toast.*LENGTH\_SHORT*).show();  
 return;  
 }  
  
 double a = Double.*parseDouble*(v1);  
 double b = Double.*parseDouble*(v2);  
 double result = 0;  
 String operationSymbol = "";  
  
 switch (operation) {  
 case *ADD*:  
 result = a + b;  
 operationSymbol = "+";  
 break;  
 case *SUBTRACT*:  
 result = a - b;  
 operationSymbol = "-";  
 break;  
 case *MULTIPLY*:  
 result = a \* b;  
 operationSymbol = "\*";  
 break;  
 case *DIVIDE*:  
 if (b == 0) {  
 Toast.*makeText*(getApplicationContext(), "Cannot divide by zero!", Toast.*LENGTH\_SHORT*).show();  
 return;  
 }  
 result = a / b;  
 operationSymbol = "/";  
 break;  
 }  
  
 String value = Double.*toString*(result);  
 if (result % 1 == 0) {  
 value = value.substring(0, value.indexOf('.'));  
 }  
  
 Toast.*makeText*(getApplicationContext(), a + " " + operationSymbol + " " + b + " = " + value,

Toast.*LENGTH\_SHORT*).show();  
 }  
  
 private enum Operation {  
 *ADD*, *SUBTRACT*, *MULTIPLY*, *DIVIDE* }  
}

**Exercise 4:**

MainActivity – Java Code

package com.example.fragments;  
  
import android.os.Bundle;  
  
import androidx.activity.EdgeToEdge;  
import androidx.appcompat.app.AppCompatActivity;  
import androidx.core.graphics.Insets;  
import androidx.core.view.ViewCompat;  
import androidx.core.view.WindowInsetsCompat;  
  
public class MainActivity2 extends AppCompatActivity {  
  
 @Override  
 protected void onCreate(Bundle savedInstanceState)  
 {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_main2*);  
 }  
}

MainActivity\_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/main"  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent"  
 tools:context=".MainActivity">  
  
 <RelativeLayout android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent">  
 <Button android:id="@+id/btn"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:text="Go to another activity"  
 android:layout\_centerVertical="true"  
 android:layout\_centerHorizontal="true" />  
 </RelativeLayout>  
 <TextView android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:text="Hello World!"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent" />  
</androidx.constraintlayout.widget.ConstraintLayout>

Main Activity2\_Form

package com.example.fragments;  
  
import android.os.Bundle;  
  
import androidx.activity.EdgeToEdge;  
import androidx.appcompat.app.AppCompatActivity;  
import androidx.core.graphics.Insets;  
import androidx.core.view.ViewCompat;  
import androidx.core.view.WindowInsetsCompat;  
  
public class MainActivity2 extends AppCompatActivity {  
  
 @Override  
 protected void onCreate(Bundle savedInstanceState)  
 {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_main2*);  
 }  
}

Activity2 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/main"  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent"  
 tools:context=".MainActivity2">  
 <RelativeLayout android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent">  
 <fragment android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:name="com.example.fragments.Fragment1"  
 android:id="@+id/fragment"  
 android:layout\_alignParentTop="true"  
 android:layout\_centerHorizontal="true"  
 tools:layout="@layout/fragment\_1" />  
  
 </RelativeLayout>  
</androidx.constraintlayout.widget.ConstraintLayout>

Fragment Java Code

package com.example.fragments;  
  
import android.os.Bundle;  
  
import androidx.fragment.app.Fragment;  
  
import android.view.LayoutInflater;  
import android.view.View;  
import android.view.ViewGroup;  
  
  
public class Fragment1 extends Fragment {  
  
 @Override  
 public View onCreateView(LayoutInflater inflater, ViewGroup container, Bundle savedInstanceState)  
 {  
 View view = inflater.inflate(R.layout.*fragment\_1*,container,false);  
 return view;  
 }  
  
}

Fragment XML

*<?*xml version="1.0" encoding="utf-8"*?>*<FrameLayout xmlns:android="http://schemas.android.com/apk/res/android"  
 xmlns:tools="http://schemas.android.com/tools"  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent"  
 tools:context=".Fragment1">  
  
 <LinearLayout android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent">  
 <TextView android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:textAppearance="?android:attr/textAppearanceLarge"  
 android:text="This is the Bottom Fragment"  
 android:id="@+id/textView"  
 android:layout\_gravity="center" />  
 </LinearLayout>  
 <TextView android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent"  
 />  
</FrameLayout>

Exercise 5:

Java Code

package com.example.ex\_menucreation;  
import android.os.Bundle;  
import androidx.appcompat.app.AppCompatActivity;  
import android.view.Menu;  
import android.view.MenuInflater;  
import android.view.MenuItem;  
import android.widget.Toast;  
import androidx.appcompat.widget.Toolbar;  
public class MainActivity extends AppCompatActivity {  
  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_main*);  
  
 *// Set up the toolbar* Toolbar toolbar = findViewById(R.id.*toolbar*);  
 setSupportActionBar(toolbar);  
 }  
  
 @Override  
 public boolean onCreateOptionsMenu(Menu menu) {  
 MenuInflater inflater = getMenuInflater();  
 inflater.inflate(R.menu.*menu\_create1*, menu);  
 return true;  
 }  
 @Override  
 public boolean onOptionsItemSelected(MenuItem item) {  
  
 Toast.*makeText*(this, "Selected Item: " +item.getTitle(), Toast.*LENGTH\_SHORT*).show();  
 int id = item.getItemId();  
  
 if (id == R.id.*search\_item*) {  
 return true;  
 } else if (id == R.id.*upload\_item*) {  
 return true;  
 } else if (id == R.id.*copy\_item*) {  
 return true;  
 } else if (id == R.id.*print\_item*) {  
 return true;  
 } else if (id == R.id.*share\_item*) {  
 return true;  
 } else if (id == R.id.*bookmark\_item*) {  
 return true;  
 } else {  
 return super.onOptionsItemSelected(item);  
 }  
 }  
}

Activity\_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">  
  
 <androidx.appcompat.widget.Toolbar  
 android:id="@+id/toolbar"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:background="?attr/colorPrimary"  
 android:elevation="4dp"  
 app:popupTheme="@style/ThemeOverlay.AppCompat.Light" />  
  
 *<!-- Other UI elements -->*</RelativeLayout>

Manu\_ Code XML

*<?*xml version="1.0" encoding="utf-8"*?>*<menu xmlns:android="http://schemas.android.com/apk/res/android" >  
 <item android:id="@+id/search\_item"  
 android:title="Search"/>  
 <item android:id="@+id/upload\_item" android:title="Upload" />  
 <item android:id="@+id/copy\_item" android:title="Copy" />  
 <item android:id="@+id/print\_item" android:title="Print" />  
 <item android:id="@+id/share\_item" android:title="Share" />  
 <item android:id="@+id/bookmark\_item" android:title="BookMark" />  
</menu>