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1. **Write a program to create an activity with two buttons START and STOP. On pressing START button, the activity must start the counter by displaying the numbers from One and counter must keep on counting until the STOP button in pressed. Display the counter value in a TextViewcontrol.**

**XML Code:**

```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="289dp"
        android:layout_height="120dp"
        android:layout_marginTop="128dp"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />

    <Button
        android:id="@+id/bstart"
        android:layout_width="149dp"
        android:layout_height="75dp"
        android:layout_marginTop="92dp"
        android:text="Start"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/textView" />

    <Button
        android:id="@+id/bstop"
        android:layout_width="137dp"
        android:layout_height="107dp"
        android:layout_marginTop="104dp"
        android:text="Stop"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.521"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/bstart"
        app:layout_constraintVertical_bias="0.0" />
```

</androidx.constraintlayout.widget.ConstraintLayout>

**Java Code:**

```java
package com.example.counter;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.TextView;
import android.os.Handler;
import android.os.Message;

public class MainActivity extends AppCompatActivity implements View.OnClickListener {
    TextView tcounter;
    Button start,stop;
    int counter=0;
    boolean running=false;

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

        tcounter = (TextView)findViewById(R.id.textView);
        start=(Button)findViewById(R.id.bstart);
        stop=(Button)findViewById(R.id.bstop);

        start.setOnClickListener(this);
        stop.setOnClickListener(this);
    }
    public void onClick(View v){
        if(v.equals(start)) {
            counter =0;
            running = true;
            new Mycounter().start();
        }
        else if(v.equals(stop)) {
            running = false;
        }
    }

    Handler handler = new Handler()
    {
```

```java
   public void handleMessage(Message m)
   {
      tcounter.setText(String.valueOf(m.what));
   }
};
class Mycounter extends Thread
{
   public void run()
   {
      while(running)
      {
         counter++;
         handler.sendEmptyMessage(counter);
         try {
            Thread.sleep( 1000);
         }
         catch(Exception e){}
      }
   }
}
}
```

**Output:**