

Lab Program: 5 Timer

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XML Code:

```
<?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/view1"
        android:layout_width="176dp"
        android:layout_height="45dp"
        android:text="@string/counter_app"
        android:textSize="30sp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.069" />

    <Button
        android:id="@+id/startbut"
        android:layout_width="wrap_content"
```

```
android:layout_height="wrap_content"
android:text="@string/start"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.498"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.183" />
```

<TextView

```
android:id="@+id/out"
android:layout_width="65dp"
android:layout_height="59dp"
android:textSize="25sp"
android:textStyle="bold"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.531"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.303" />
```

<Button

```
android:id="@+id/stopbut"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:text="@string/stop"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.507"
```

```
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.404" />

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

Java Code:

```
package com.example.counter;

import androidx.appcompat.app.AppCompatActivity;

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

public class MainActivity extends AppCompatActivity
implements View.OnClickListener {

    Button start, stop;
    TextView counter;

    int i;

    Handler handler;

    Runnable runnable;
```

```

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

    start = findViewById(R.id.startbut);
    stop = findViewById(R.id.stopbut);
    counter = findViewById(R.id.out);

    handler = new Handler();
    start.setOnClickListener(this);
    stop.setOnClickListener(this);
}

public void Counter() {
    runnable = new Runnable() {
        @Override
        public void run() {
            i++;
            counter.setText(String.valueOf(i));
            handler.postDelayed(this, 100);
        }
    };
    handler.post(runnable);
}

@Override
public void onClick(View view) {
    if (view.getId() == R.id.startbut)
    {

```

```
        Counter();
        start.setEnabled(false);
        stop.setEnabled(true);
    }
    else if (view.getId()==R.id.stopbut)
    {
        handler.removeCallbacks(runnable);
        start.setEnabled(true);
        stop.setEnabled(false);
    }

}

}
```

Counter

Counter

START

17

STOP