

Assignment-02

Mobile Application Development

CTEC 31023

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activity_main.xml:

This file is responsible for the layout and the interface of the project. We have added a textview and the buttons through this file.

```
<?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:layout_alignParentRight="false"
    android:background="#98CBF3"
    tools:context=".MainActivity">

    <!-- We will use text view "time_view" -->
    <!-- to display the number of seconds. -->
    <TextView
        android:id="@+id/timer"
        android:layout_width="400dp"
        android:layout_height="80dp"
        android:layout_marginLeft="4dp"
        android:layout_marginTop="56dp"
        android:gravity="center"
        android:textColor="#000000"
        android:textSize="50sp"
        android:textStyle="bold"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.509"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />

    <!-- This code is for the Start button.
        android:id="@+id/start"
        android:layout_width="wrap_content"
```

```

        android:layout_height="wrap_content"
        android:layout_gravity="center_horizontal"
        android:layout_marginTop="20dp"
    When it gets clicked, the Start button
    calls the onStart() method. -->
<Button
    android:id="@+id/Start"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginTop="24dp"
    android:onClick="onStart"
    android:text="Start"
    app:backgroundTint="#2A5552"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.501"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/timer" />

<!-- This code is for the Stop button. -->
<!-- When it gets clicked, the Stop button -->
<!-- calls the onStop() method. -->
<Button
    android:id="@+id/Stop"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginTop="16dp"
    android:onClick="onStop"
    android:text="Stop"
    app:backgroundTint="#2A5552"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.501"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/Start" />

<!-- This code is for Reset button. -->
<!-- When it gets clicked, the Reset button -->
<!-- calls the onReset() method. -->
<Button
    android:id="@+id/Reset"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginTop="12dp"
    android:onClick="onReset"
    android:text="Reset"
    app:backgroundTint="#2A5552"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.501"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/Stop" />

<Button
    android:id="@+id/Goto"
    android:layout_width="166dp"
    android:layout_height="35dp"
    android:layout_marginTop="40dp"
    android:background="#6C5656"
    android:gravity="center_horizontal"

```

```

        android:onClick="onGoto"
        android:text="Next_Window"
        android:textAlignment="center"
        android:textSize="10sp"
        app:backgroundTint="#100F0F"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.497"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/Reset"
        tools:ignore="MissingConstraints,OnClick" />

</androidx.constraintlayout.widget.ConstraintLayout>

```

MainActivity.java:

This file is responsible for the working of the application. We have used this file in this project for the functioning of buttons.

```

package com.example.stopwatch;

import androidx.appcompat.app.AppCompatActivity;

import android.content.Context;
import android.content.Intent;
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 {
    private Button btn; //create button variable
    private Context context; //its used to "intent" error

    // Use seconds, running and respectively
    // Number of seconds displayed
    // on the stopwatch.
    private int seconds = 0;
    // Is the stopwatch running?
    private boolean running;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        //call the function
        startTimer();

        context = this;
    }
}

```

```

        btn=findViewById(R.id.Goto);
        btn.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                Intent intent = new Intent(context, MainActivity2.class);
                startActivity(intent);
            }
        });
    }

    // Start the stopwatch running
    // when the Start button is clicked.
    // Below method gets called
    // when the Start button is clicked.
    public void onStart(View view){
        running=true;

    // Stop the stopwatch running
    // when the Stop button is clicked.
    // Below method gets called
    // when the Stop button is clicked.
    }
    public void onStop(View view){
        running=false;

    // Reset the stopwatch when
    // the Reset button is clicked.
    // Below method gets called
    // when the Reset button is clicked.
    }
    public void onReset(View view){
        running=false;
        seconds=0;

    }

    // Sets the NUmber of seconds on the timer.
    // The runTimer() method uses a Handler
    // to increment the seconds and
    // update the text view.
    private void startTimer(){
        TextView timer=findViewById(R.id.timer);// Get the text view.
        // Creates a new Handler
        final Handler handler=new Handler();
        handler.post(new Runnable() { // passing in a new Runnable.

            // Call the run() method,
            // The post() method processes
            // code without a delay,
            // so the code in the Runnable
            // will run almost immediately.
            @Override

```

```

        public void run() {
            // Format the seconds into hours, minutes,
            int hrs=seconds/3600;
            int mins=(seconds%3600)/60;
            int sec=seconds%60;
            String time=String.format("%02d:%02d:%02d",hrs,mins,sec);
            // Set the text view text.
            timer.setText(time);
            // If running is true, increment the
            // seconds variable.
            if (running) {
                seconds++;
            }
            // Post the code again
            // with a delay of 1 second.
            handler.postDelayed(this,1000);
        }
    });
}
}

```

Activity_main2.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/linearLayout"
android:layout_width="match_parent"
android:layout_height="match_parent"
android:orientation="horizontal"
android:visibility="visible"
tools:context=".MainActivity2">

    <!--create analog text view
    its used to appear in text and position,colors,styles -->
    <TextView
        android:id="@+id/analog_text"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginTop="88dp"
        android:background="#1C95F6"
        android:gravity="center"
        android:text="Analog Clock"
        android:textSize="20dp"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.51"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        tools:ignore="MissingConstraints" />

```

```

<!--crete analog clock
align format such as color,gravity,textstyle,size...
default analog watch -->
<AnalogClock
    android:id="@+id/analog_clock"
    android:layout_width="177dp"
    android:layout_height="168dp"
    android:layout_marginTop="36dp"
    android:gravity="center_horizontal"
    android:textAlignment="center"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.501"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/analog_text" />

<!--create analog text view
its used to appear in text and position,colors,styles -->
<TextView
    android:id="@+id/digital_text"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginTop="56dp"
    android:background="#2196F3"
    android:text="Digital clock"
    android:textSize="20dp"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.488"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/analog_clock"
    tools:ignore="MissingConstraints" />

<!--crete digital clock
align format such as color,gravity,textstyle,size...
default digital watch -->
<DigitalClock
    android:id="@+id/digital_clock"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginTop="36dp"
    android:textSize="30dp"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.5"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/digital_text"
    tools:ignore="MissingConstraints" />

<androidx.constraintlayout.widget.Guideline
    android:id="@+id/guideline2"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:orientation="vertical"
    app:layout_constraintGuide_begin="20dp" />

</androidx.constraintlayout.widget.ConstraintLayout>

```

MainActivity2.java

```
package com.example.stopwatch;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;
//standad class java code
public class MainActivity2 extends AppCompatActivity {

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main2);
    }
}
```

colors.xml file:

In this file, we have mentioned the color names that we have used in the project.

```
<?xml version="1.0" encoding="utf-8"?>
<resources>
    <color name="purple_200">#FFBB86FC</color>
    <color name="purple_500">#FF6200EE</color>
    <color name="purple_700">#FF3700B3</color>
    <color name="teal_200">#FF03DAC5</color>
    <color name="teal_700">#FF018786</color>
    <color name="black">#FF000000</color>
    <color name="white">#FFFFFFFF</color>
</resources>
```

strings.xml file:

In this file, we have mentioned the words that are used in our project and also its description.

```
<resources>
    <string name="app_name">Stopwatch</string>
</resources>
```

Output window



