Source Code

The complete source code for this assignment is available on github @
https://github.com/bradyhouse/ITM455.

Screenshot

The application offers 3 states depending on the position of the seekbar
control. These states are depicted below.

Startup / Slider <= 40 F	
40 F > Slider < 90 F	
Slider >= 90 F	

ManifestAndroid.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    package="com.iit.itm455.hw2.temperatureconverter"
    android:versionCode="1"
    android:versionName="1.0" >

    <uses-sdk
        android:minSdkVersion="23"
        android:targetSdkVersion="23" />

    <application
        android:allowBackup="true"
        android:icon="@drawable/ic_launcher"
        android:label="@string/app_name"
        android:theme="@style/AppTheme" >
        <activity
            android:name=".MainActivity"
            android:label="@string/app_name" >
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />

                <category android:name="android.intent.category.LAUNCHER" />
            </intent-filter>
        </activity>
    </application>

</manifest>
```

strings.xml

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

    <string name="app_name">Temperature Converter</string>
    <string name="action_settings">Settings</string>
      <string name="label_temperature_range_min">0F</string>
      <string name="label_temperature_range_max">200F</string>
      <string name="label_temperature_fahrenheit">Fahrenheit:</string>
      <string name="label_temperature_celsius">Celsius:</string>
      <string name="text_temperature_fahrenheit">0.00</string>
      <string name="text_temperature_celsius">-17.78</string>
      <string name="label_status_message">Too Cold!</string>
</resources>
```

MainActivity.Class

```java
package com.iit.itm455.hw2.temperatureconverter;

import android.R.string;
import android.app.Activity;
import android.os.Bundle;
import android.view.Menu;
import android.view.MenuItem;
import android.widget.EditText;
import android.widget.ImageView;
import android.widget.SeekBar;
import android.widget.SeekBar.OnSeekBarChangeListener;
import android.widget.TextView;

public class MainActivity extends Activity {

        public SeekBar seekBar;

        @Override
        protected void onCreate(Bundle savedInstanceState) {
                super.onCreate(savedInstanceState);
                setContentView(R.layout.activity_main);
                seekBar = (SeekBar) findViewById(R.id.seekBarTemperatureRange);
                TextView statusMessage = (TextView) findViewById(R.id.labelStatusMessage);
                statusMessage.setBackgroundResource(R.color.blue);
                seekBar.setOnSeekBarChangeListener(new OnSeekBarChangeListener() {
                        int factor = 0;
                        float fahrenheit = 0.0f;
                        float celsius = 0.0f;
                        String status = "Too cold!";
                        int statusDrawableId = 0;
                        int statusColorId = 0;
                        @Override
                        public void onProgressChanged(SeekBar seekBar, int progress,
                                            boolean fromUser) {
                                this.factor = progress;
                                calculateFahrenheit();
                                calculateCelsius();
                                calculateStatus();
                                bindView();
                        }
                        @Override
                        public void onStartTrackingTouch(SeekBar seekBar) {
                                // TODO Auto-generated method stub

                        }
                        @Override
                        public void onStopTrackingTouch(SeekBar seekBar) {
                                // TODO Auto-generated method stub

                        }
                        private void calculateFahrenheit() {
                                float multiplier = 2f;
                                this.fahrenheit = factor * multiplier;
                        }
                        private void calculateCelsius() {
                                this.celsius = (5f / 9f) * (this.fahrenheit - 32f);
                        }
                        private void calculateStatus() {
                                if (fahrenheit <= 40.0f) {
                                        this.status = "Too cold!";
                                        this.statusColorId = R.color.blue;
                                        this.statusDrawableId = R.drawable.too_cold;
                                } else if (this.fahrenheit > 40.0f && this.fahrenheit < 90.0f) {
                                        this.status = "Just Right!";
                                        this.statusColorId = R.color.green;
                                        this.statusDrawableId = R.drawable.just_right;
                                } else if (this.fahrenheit >= 90.0f) {
                                        this.status = "Too Hot!";
                                        this.statusColorId = R.color.red;
                                        this.statusDrawableId = R.drawable.too_hot;
                                }
                        }
                        private void bindView() {
                                //super.editCelsius.setText(String.format("%.2f", this.celsius));
                                TextView editCelsius = (TextView) findViewById(R.id.editTemperatureCelsius);
                                TextView editFahrenheit = (TextView) findViewById(R.id.editTemperatureFahrenheit);
                                ImageView imageViewStatus = (ImageView) findViewById(R.id.imageViewStatus);
                                TextView statusMessage = (TextView) findViewById(R.id.labelStatusMessage);
                                editCelsius.setText(String.format("%.2f", this.celsius));
                                editFahrenheit.setText(String.format("%.2f", this.fahrenheit));
                                statusMessage.setText(this.status);
                                statusMessage.setBackgroundResource(this.statusColorId);
                                imageViewStatus.setImageResource(this.statusDrawableId);
                        }
                });

        }

        @Override
        public boolean onCreateOptionsMenu(Menu menu) {
                // Inflate the menu; this adds items to the action bar if it is present.
                getMenuInflater().inflate(R.menu.main, menu);
                return true;
        }

        @Override
        public boolean onOptionsItemSelected(MenuItem item) {
                // Handle action bar item clicks here. The action bar will
                // automatically handle clicks on the Home/Up button, so long
                // as you specify a parent activity in AndroidManifest.xml.
                int id = item.getItemId();
                if (id == R.id.action_settings) {
                        return true;
                }
                return super.onOptionsItemSelected(item);
        }
}
```

activity_main.xml

```xml
<?xml version="1.0" encoding="UTF-8"?>
<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"
    android:background="#FFC438"
    android:paddingBottom="@dimen/activity_vertical_margin"
    android:paddingLeft="@dimen/activity_horizontal_margin"
    android:paddingRight="@dimen/activity_horizontal_margin"
    android:paddingTop="@dimen/activity_vertical_margin"
    tools:context="com.iit.itm455.hw2.temperatureconverter.MainActivity" >

    <TextView
        android:id="@+id/labelTemperatureRangeMin"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignBottom="@+id/seekBarTemperatureRange"
        android:text="@string/label_temperature_range_min" />

    <SeekBar
        android:id="@+id/seekBarTemperatureRange"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_alignBottom="@+id/labelTemperatureRangeMax"
        android:layout_marginLeft="30dp"
        android:layout_marginRight="30dp"
        android:layout_toEndOf="@+id/labelTemperatureRangeMin" />

    <TextView
        android:id="@+id/labelTemperatureRangeMax"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignParentRight="true"
        android:text="@string/label_temperature_range_max" />

    <TextView
        android:id="@+id/labelTemperatureFahrenheit"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignBottom="@+id/editTemperatureFahrenheit"
        android:layout_below="@+id/labelTemperatureRangeMin"
        android:layout_marginTop="20dp"
        android:text="@string/label_temperature_fahrenheit" />

    <TextView
        android:id="@+id/editTemperatureFahrenheit"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignParentRight="true"
        android:layout_below="@+id/labelTemperatureRangeMax"
        android:layout_marginTop="20dp"
        android:editable="false"
        android:enabled="true"
        android:inputType="numberDecimal"
        android:text="@string/text_temperature_fahrenheit"
        android:textSize="15sp" />

    <TextView
        android:id="@+id/labelTemperatureCelsius"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        xmlns:android:layout_alignBottom="@+id/editTemperatureCelsius"
        android:layout_below="@+id/labelTemperatureFahrenheit"
        android:text="@string/label_temperature_celsius" />

    <TextView
        android:id="@+id/editTemperatureCelsius"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignParentRight="true"
        android:layout_below="@+id/editTemperatureFahrenheit"
        android:editable="false"
        android:enabled="true"
        android:inputType="numberDecimal"
        android:text="@string/text_temperature_celsius"
        android:textSize="15sp" />

    <TextView
        android:id="@+id/labelStatusMessage"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_below="@+id/labelTemperatureCelsius"
        android:layout_marginTop="20dp"
        android:background="@color/blue"
        android:text="@string/label_status_message" />

    <ImageView
        android:id="@+id/imageViewStatus"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_alignParentBottom="true"
        android:layout_alignParentLeft="true"
        android:layout_below="@+id/labelStatusMessage"
        android:layout_marginLeft="10dp"
        android:layout_marginRight="10dp"
        android:layout_marginTop="150dp"
        android:scaleType="fitXY"
        android:src="@drawable/too_cold" />

</RelativeLayout>
```