

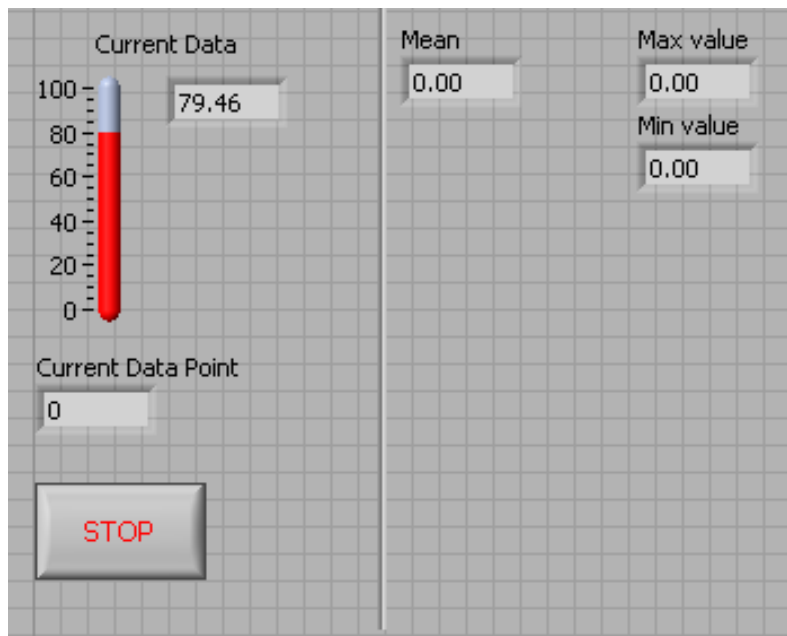
**Post-Grad  
LabVIEW Course  
Exercise 5  
G Boorman**

## Exercise 5 - Analyzing Data

Complete the following steps to build a VI that measures temperature every 0.25s for 10s. During the acquisition, the VI displays the measurements in real time on a waveform chart. After the acquisition is complete, the VI plots the data on a graph and calculates the minimum, maximum, and average temperatures. The VI displays the best fit of the temperature graph.

### Front Panel

1. Open a new VI and build the following front panel using the following tips.

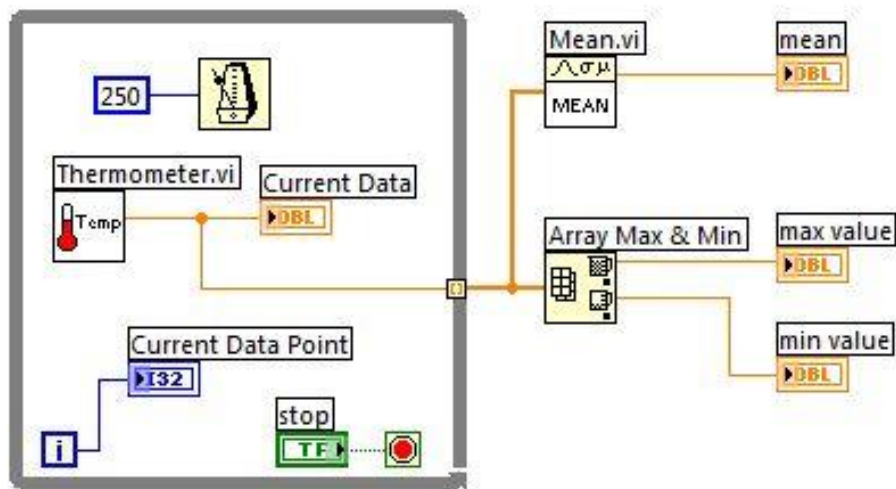


- a. Do not create the **Mean**, **Max**, and **Min** indicators yet. Create them on the Block Diagram by right clicking on the functions and choosing Create Indicator. Then position them on the Front Panel.

- b. Drag the thermometer from the Numeric palette to the front panel. Right-click the thermometer and select *Visible Items>>Digital Display*.
- c. A vertical line to separate the Data from the Analysis can be found in *Decorations* palette.

## Block Diagram

2. Build the following block diagram.



- a. Select **Select a VI...** and choose *Thermometer.vi* (from previous exercise).
- b. Place the *Wait Until Next ms Multiple* function located on the **Programming»Timing** palette and create a constant of 250. This causes the While Loop to execute every 0.25s (250ms).
- c. Place the *Array Max & Min* function located on the **Programming»Array** palette. This function returns the maximum and minimum temperature.
- d. Add the *Mean VI* located on the **Mathematics»Probability and Statistics** palette. This VI returns the average of the temperature measurements.

e. Right-click the output terminals of the Array Max & Min function and Mean VI and select **Create»Indicator** from the shortcut menu to create the **Max**, **Min**, and **Mean** indicators.

3. Save the VI as Temperature Logger.vi.
4. Display the front panel and run the VI.
5. Ensure you understand how the VI works!

**End of Exercise**