Devin Delfino
PHYS 228: Scientific Computing
Assignment 1: Looking for Climate Change, Part 1

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1. After loading the file *blue_hills_temperature.tsv*, the *blue_hills_temperature* variable is automatically constructed. It is a matrix of size $2055x3$, meaning it has 2055 rows and 3 columns. The data in the first column represents the number of months since January 1^{st}, 1960. For example, February 1^{st}, 1960 would be represented as 1 while December 1^{st}, 1959 would be represented as -1. The data in the third column represents the temperatures in degrees Celsius recorded during each corresponding month. The way the data is laid out, each row represents a separate entry, containing the temperature and the month during which the temperature was recorded.

2. The following charts plot the temperature data as a function of calendar date.

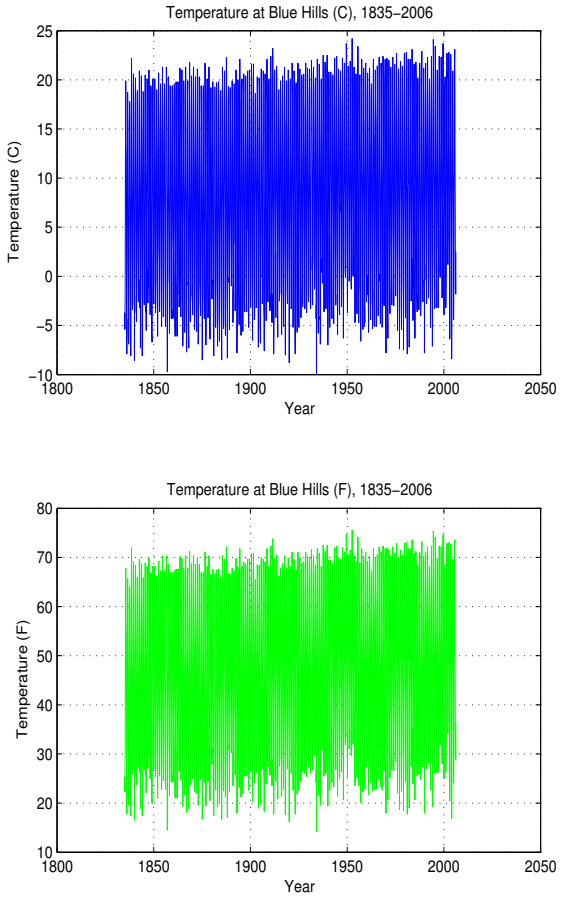

Figure 1: Temperatures recorded at Blue Hills, 1835-2006

3. Looking at the data from the previous 10 years, you can distinctly see the change of seasons. There is a severe peak during each year during the summer months. Since every year starts and ends during the winter, the temperature is lowest at these points and reaches its highest during the middle of the year. The temperatures increases in the first half of the year as the months approache summer, and then the temperature decreases in the second half of the year as winter approaches yet again.

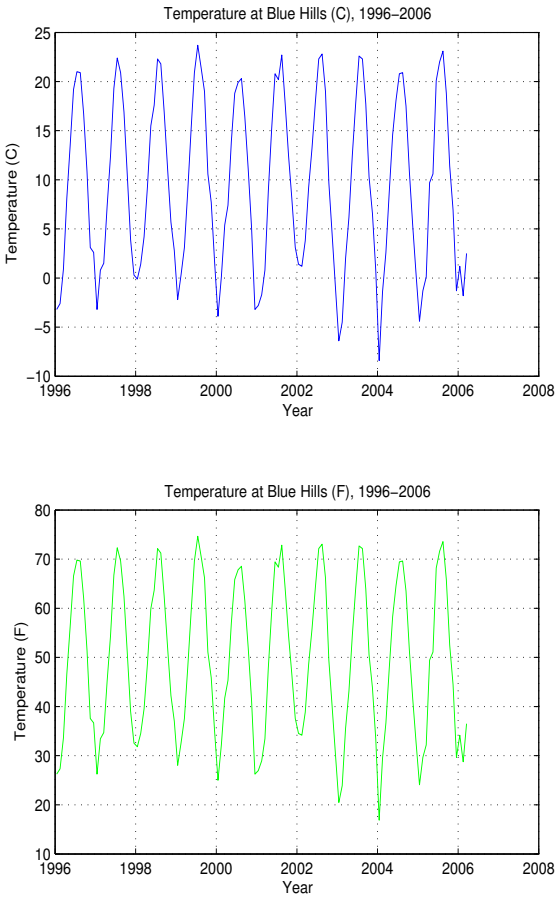

Figure 2: Temperatures recorded at Blue Hills, 1835-2006

I have abided by the Wheaton Honor Code in this work.