

Meteorology 227 – Homework #7

Due: 10/21/2024

Write a program that will read a file that contains station data from the Iowa Environmental Mesonet. The data file contains **daily** data taken at **one minute** intervals and has the following format:

```
09 10 2006 10 05 60.1 95 0 208 29.97 1.74
09 10 2006 10 06 60.1 95 0 208 29.97 1.75
09 10 2006 10 07 60.1 95 0 208 29.97 1.75
09 10 2006 10 08 60.1 95 0 208 29.97 1.76
09 10 2006 10 09 60.1 95 0 208 29.97 1.77
09 10 2006 10 10 60.1 95 0 208 29.97 1.77
09 10 2006 10 11 60.1 95 0 208 29.97 1.78
09 10 2006 10 12 60.1 95 0 155 29.97 1.78
09 10 2006 10 13 60.1 95 0 199 29.97 1.79
```

The data file contains, from left to right, the month, day, year, hour, minute, temperature (°F), relative humidity (%), wind speed (mph), wind direction (degrees), pressure (in of Hg), **monthly** accumulated precipitation.

The program will ask the user for the name of the data file and use an **unformatted** read statement to read the data file. Your program should read one line at a time until the end of the file is reached. Once you reach the end of the file, your program should calculate and output the following:

1. Average and variability (standard deviation) of temperature,
2. Maximum daily temperature,
3. Minimum daily temperature,
4. Average and variability (standard deviation) of wind speed,
5. Average and variability (standard deviation) of pressure in millibars,
6. Daily accumulated precipitation.

Your program should print this data, nicely formatted, to the screen, for the user to view.

Hand in your assignment by emailing it as an attachment to mteor2270@iastate.edu and submitting a hard copy version of your program to the instructor.

