IAM 550 Introduction to Engineering Computing
Computer Lab 4
Data files
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Objectives:

- Be able to manipulate strings.
- Be able to read files.
- Be able to extract and manipulate data from files.
- Learn how to properly document code with comments.

Deliverables:

- A MATLAB diary for each of your entire laboratory session (25% of your laboratory grade). Each one should be submitted via canvas as an assignment within 2 days after the session.
- A lab hard-copy report summarizing your results and including all required files (scripts, plots), but **not any data files**. Make sure your name is on *all* pages of your lab report. Document your script profusely with comments. This will be emphasized when grading.
- **This report is due at the beginning of your next lab session the following week (10/1 or 10/3).**

Reading data from ASCII (text) files:

***Before you begin*:** Initialize a MATLAB diary: LastnameFirstinitial_Diary_Lab4.txt.

(a) Download the script lec08_b.m from the course web page. This is the script I discussed in class for about 20 minutes, which is completely insufficient, in particular since lecturing a script is not an efficient way to learn. In this lab, go through the script line by line. Comment each line (more than there is already) and make sure that you understand what is accomplished by the respective commands. That should be on average 3 lines of comment, less for simple commands, more if functions are involved. Use the MATLAB help system (or Google) to get the information if necessary. If still in doubt, ask the TA. Also comment on the lines that I commented out. Usually they are in there for debugging. To understand the code, you also need to look into the data file. You can retrieve it by just running the script, or by pasting the URL into a web browser.

(b) Modify the script (just one character!) to plot the wind speed instead of the temperature. Turn in that plot with your report.

For this assignment your report only needs to have the title page, the commented script, and the wind plot.

You need to understand the following concepts at a basic level:

- String operations, loops, conditional statements.
- Reading and writing files.