

Computing for Math and Stats

Lecture 7.

The save and load Commands

- Matlab allows one to save matrices and retrieve them
- Typically used to load data collected and save the result of a computation to publish, or use elsewhere
- Can be saved in either machine format or ASCII (human readable)
- Can save all or selected variables

Command Form

- Typically used interactively
- Usually one writes
 - `save myfile V1 V2 M1`
 - `save -ascii myfile V1`
- Without the `-ascii` it saves in a format that (the current) Matlab can read
- It will save in a `.mat` file
- These files are not portable and contain only data

Save Command

- The ASCII (Amer. Std Code for Info Interchange) version saves in a human readable and portable format
- It takes more space and does not save variable names or shape
 - Accuracy is not great
- Does not append the “.mat” ending
- Tricky to save more than one variable per file
- Have a look at LoadSaveCompare.m

The function-like format

- One can write
 - `save('myfile','V1','V2')`
 - `save('myfile','V1','-ascii')`
- Has many more options (see the documentation)

Load Command

- Used to restore data saved by another Matlab session.
- Has an ASCII version to input data from another application
- Can load every variable in the file or some only
- If the variable name is not specified in the file
 - It means it is in ASCII format
 - The command version assigns the values to a variable with the same name as the file
 - The function version returns it so it can be used in an assignment
 - If we do not assign it somewhere it assigns it to a variable with the same name as the file
- Have a look at WeightHeightScatter.m

Other I/O

- We can read and write spreadsheet files
- We can specify columns, rows, and ranges, etc
 - So we do not have to save/load the whole spreadsheet
- Very useful since many people use spreadsheets to collect data
- Have a look at `handmadecsv.m`

Plotting (trailer)

- Matlab has many plotting commands
- The vanilla version (plot) accepts 2 arguments: the X coordinate and the Y coordinate
- Accepts a string of specifiers:
 - rgb for red, green, blue
 - cmyk for cyan, magenda, yellow, black
 - w for white
 - -- for dashed
 - . dotted
 - d for diamonds
- Have a look at playplot1.m playplot2.m UniPlot.m
- For more exciting facts about plotting please stay for the next class