**Writing MATLAB Scripts**

**Learning Objectives**

* Learn how to write and save MATLAB scripts.
* Learn how to save MATLAB plots to disk.

**Part 1 – Intro to Scripts**

Why we use scripts

.m extension

Comments first

Make separate data folder (discuss good data conventions, read only)

Reading data, analyse data

Save script

Run Script (ERROR!)

cd

% script is to analyse patient data

cd('C:\Users\kerry\_000\SkyDrive\ResPlat Test\Data')

% read in data

patient\_data=csvread('inflammation-01.csv');

% find maximum inflammation

max\_inflammation = max(patient\_data(:));

% find minimum

min\_inflammation = min(patient\_data(:));

% find std

std\_inflammation = std(patient\_data(:));

% display values

disp(['Maximum inflammation: ' num2str(max\_inflammation)]);

disp(['Minimum inflammation: ' num2str(min\_inflammation)]);

disp(['standard Deviation of inflammation: ' num2str(std\_inflammation)]);

CHALLENGE! (etherpad)

* Do this for the second file

**Part 2 - Plotting**

Review:

* Characters
* Strings
* Converting from numbers to strings
* Concatenating strings
* Indexing strings and matrices
* Changing a number in matrix

plotting data (just plot mean)

run script

% plot data

plot(mean(patient\_data,1)) %plot mean

xlabel('Days')

ylabel('mean inflammation')

title('Mean inflammation over time')

%plot min

%plot max

%plot std

CHALLENGE! (etherpad)

* Plot mean, min, max and std calculated over all patients for each day in a subplot. Arrange your subplot so that you have two plots in the first row and two in the second row.
* Give all subplots x and y labels and a title

**Part 3 – Printing Figures To File**

Copy subplot stuff in from below

% plot data

subplot(2,2,1)

plot(mean(patient\_data,1)) %plot mean

xlabel('Days')

ylabel('Mean inflammation')

title('Mean inflammation over time')

%plot min

subplot(2,2,2)

plot(min(patient\_data,[],1))

xlabel('Days')

ylabel('Min inflammation')

title('Min inflammation over time')

%plot max

subplot(2,2,3)

plot(max(patient\_data,[],1))

xlabel('Days')

ylabel('Max inflammation')

title('Max inflammation over time')

%plot std

subplot(2,2,4)

plot(std(patient\_data,[],1))

xlabel('Days')

ylabel('Std inflammation')

title('Std inflammation over time')

Saving figures

% save figure to file

print('patient\_data-01', '-dpng')