## EOSC 211: Logical Indexing & Formatted I/O

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| Exercise | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Done? |  |  |  |  |  |  |  |

**Logical Indexing Practice**

1. **In the lab this week you will use the commuting data from week 2. The variable “md” is an Nx1 array containing the mode of transport. “md” is a character array containing “B” if the mode of transportation was bus, “W” for “walk”, “R” for bike, “C” for car. The array “mins” is the corresponding Nx1 array containing the travel time in minutes to UBC for person (mins is ordered in the same way as md). Finally the array “km” is the corresponding Nx1 array containing the travel distance in km to UBC. Using logical indexing, how would you calculate**

**the median commuting time for people who drive?**

**the median distance driven?**

**the number of people who drive?**

**More background for lab: understanding the code.**

1. **What do each the following lines of code do?**

x=rand(10,4);

xmean=mean(x);

plot(x,'\*-');

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*3.* What does the code snippet below do?

clear all;

close all;

n=3;

fid=fopen('filenames.txt','w');

for ii=1:n

myfile=sprintf('f%1d.txt',ii);

end

*4.*

1. What line of code should be added to the code above to write out the content(s) of variable "myfile" at each iteration to the file "filenames.txt"
2. Now write the line of code to close the file

*5.* What does the following code snippet do?

x = 1:3:11;

y=sum(x);

fprintf('The sum of the values in x is %4d\n',y);

*6.* How would you output the result of computing half the mean value of x to a file called "xdata.txt"? You can use the built-in MATLAB function “mean”. Assume x is a vector (not a matrix).

*7.* Now write a line of code that will also write the values contained in x above to the file xdata.txt. Output this information in the first line of the file. Format your output as follows: e.g. if x = 1:4, the first line should read

x = [1 2 3 4]