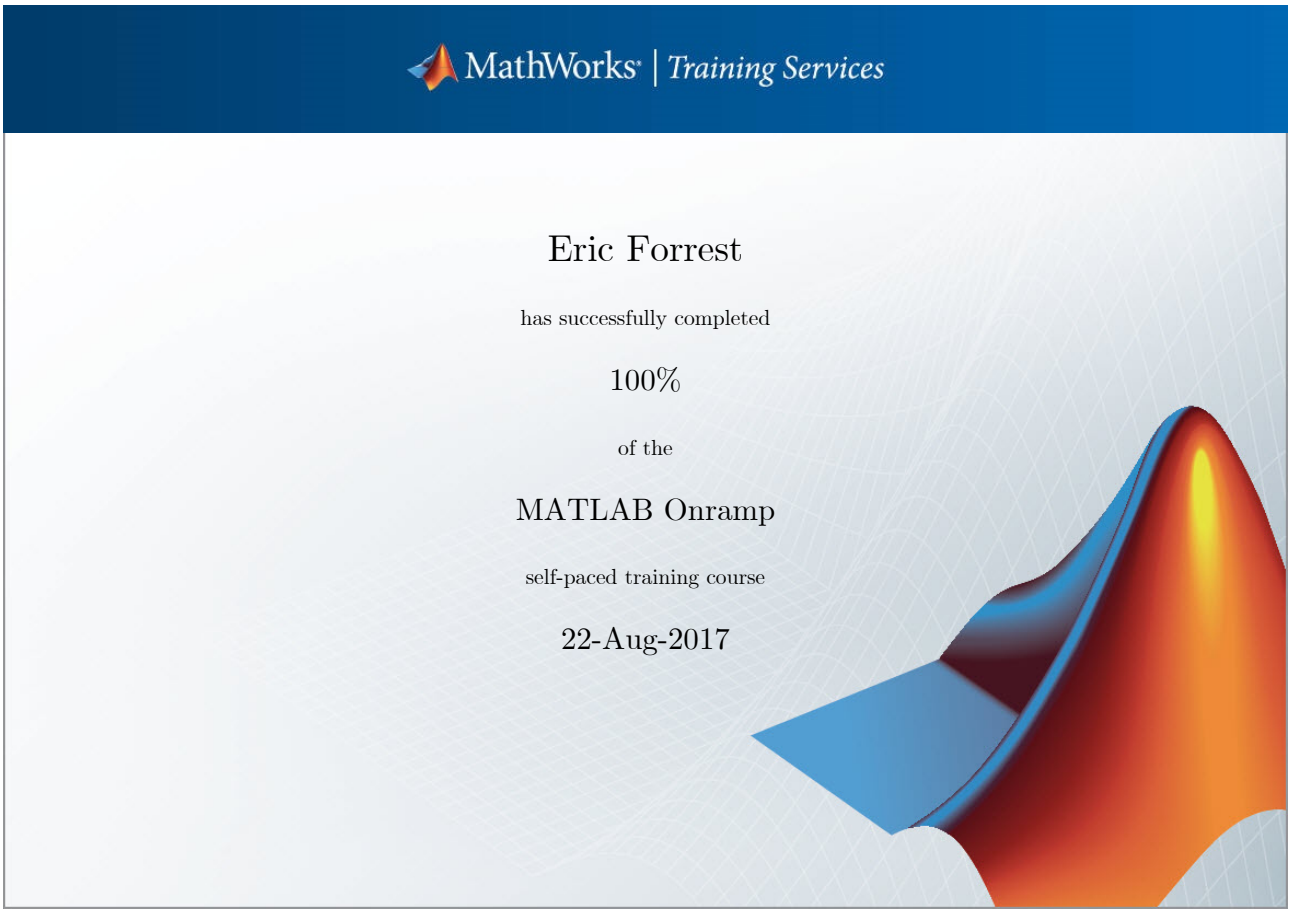
ENG-101
Intro Computing Engineers Homework 6

Question 1 (10 Points)

Complete the MATLAB Academy online training for MATLAB entitled MATLAB On-Ramp (no cost). The training is located at https://matlabacademy.mathworks.com. Provide the certificate as evidence of your completion via CANVAS. Allow two hours to complete the course by submitting the certificate to Canvas in a file *myTraining.pdf*. No partial credit for the assignment will be given.



Question 2 (10 Points)

Write a well-documented MATLAB program that adds the first N integers together – using *vectorizing* commands. Do not use for-loops, while-loops or any other similar construct. Title your program *sumVector.m*. The MATLAB script can fix the value of N inside the program, without prompting the user for input. Consider clearing the temporary workspace before the program is run. Have your program display the summation result by entering the result without using the semi-colon.

Question 3 (20 Points)

Write a well-documented MATLAB program that plots the damped sinusoid $e^{-t/2}\sin(2\pi t)$ over time, over the range of 0 to 10 seconds – at a 10ms increment. Use the *vectorizing* command of the form $t = t_{start}{:}\,t_{inc}{:}\,t_{end}$ to allocate the time vector, followed by a semicolon to suppress the vector. Construct the damped sinusoid by forming an exponential vector of the form $e^{-t/2}$ followed by a sinusoid vector of the form $\sin(2\pi t)$.

Plot your result using the plot command (Your plot will only be the damped plot). Make sure that the time vector t is the same length as the damped sinusoid. Label the x and y axis. Add a title to your graph. Submit your program into a program *dampedSinusoid.m*. Save your plot to a file labeled '*dampSine.fig*', with the *savefig* command.

Hint: Use the element-by-element multiplication operator in your solution.