

MATLAB Assignment 1

Turning in your assignment: place all your files in a directory called "lastName_Matlab_01", zip that directory, and upload the resulting file "lastName_Matlab_01.zip" in the appropriate Dropbox Folder at Learn@UW._

Problem 1. Implement a MATLAB program that does the following things:

- Opens the file "*functionDefinition.txt*" and reads the string of characters that is on the first line of this file
- Converts this string of characters to a function that depends on time
- Passes this function as an argument to a MATLAB function, call it *myAverageStdDev* (defined in the file "*myAverageStdDev.m*")
- The MATLAB function *myAverageStdDev* uses 101 values of time, $t = 0.0, 0.1, 0.2, \dots, 10.0$ to generate a 101 entry array **myArr** that stores in its i^{th} entry the value of the function parsed from "*functionDefinition.txt*" evaluated at time $t_i = i * 0.1$, for $i = 0, \dots, 100$.
- *myAverageStdDev* should finally compute and then return to the calling MATLAB function two numbers: the values of the average and standard deviation of all entries stored in **myArr**

Please use the *tic-toc* construct in MATLAB to get the amount of time it took you to run your MATLAB program. When done, post on the forum three things: the average value you obtained, the standard deviation, and the amount of time your code took to do this.

The file "*functionDefinition.txt*" is assumed to contain one line only, which should read:

```
10.5*sin(2.4*t + pi/2)
```

Notes:

- The zip file for this assignment should contain a file `runme.m` which I can run to check the correctness of your solution.