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Octave Tutorial

Tutorial video: https://www.youtube.com/watch?v=1PSFLKiEV7U&t=1178s&ab_channel=GreatLearning

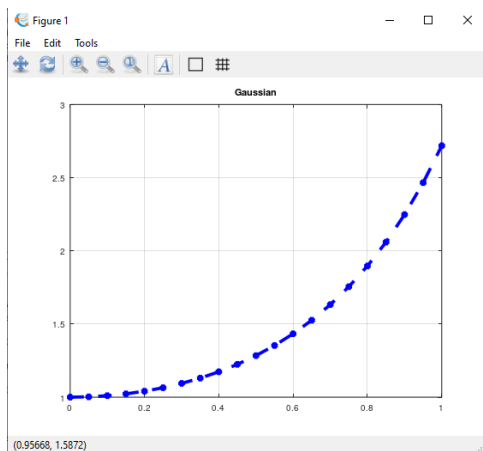Tutorial PDF: https://www.yanivplan.com/files/tutorial5plot.pdf

This project required me to research different tutorials about octave and Matlab. During my research I first arrived on a YouTube video that gave me the basic understanding of Octave. This tutorial taught me how to use shorthand on the command window and gave me a generic rundown of the whole program. This video first started with an introduction into the Matlab GUI and gave me a basic idea for how stored variables work inside of the IDE. There was lots of helpful information throughout this whole tutorial showing us basic things that are unique to Matlab and Octave. This includes not having to import any math libraries to use pi and sin and being able to plot a function on the fly very easily with the plot function. Although this tutorial was thorough it failed to give a concrete example on plotting, so I researched for another tutorial.

The next tutorial I found was a pdf that included many plotting examples and two exercises for me to do. This tutorial first started out by walking me through on how to correctly plot a function. The first function they covered was line spacing which is used to determine the interval for which you would like to plot your graph on. Then cover the different variables you can include in your plot method to change the output of your plot. This includes changing the color, the line width, and the line itself (dashed or not dashed). Once we run the first script we are presented with this answer.
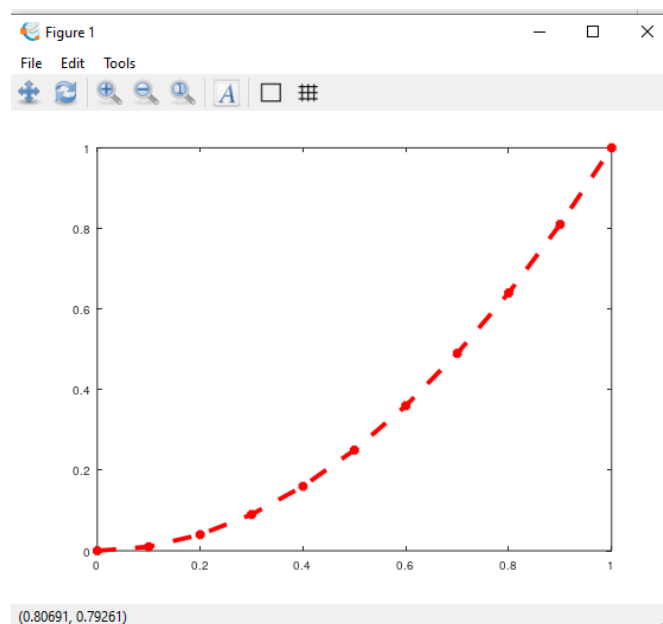
Next the tutorial wants us to do the two exercises which are similar, but different in difficulty. The first exercise wants us to plot the function $f(x) = e^{-x^2}$ on the interval $0 \leq x \leq 1$. To do this exercise we first need to set our interval and then solve for the y values. We then can just plot the x and y values and use the correct syntax to get our plot to look like what we want it to look like. The next exercise wants us to graph two different functions in the same script. The first function is $y = \sin(2\pi x)$ and the second one is $y = \cos(2\pi x)$. This exercise mostly follows the steps above except for plotting the two functions on the same figure. To do this we need to use the subplot method which takes a graph one at a time and adds it to a bigger figure. We could just print the graphs one at a time, but this way gives us a way cleaner answer. Both these exercises are displayed below.

Exercise1:   Exercise 2: