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Octave Report

Octave is a script-based computer language, primarily aiming at solving algebraic and differential equations. It has numerous built-in functions and various plotting capabilities. It also allows for developing user-defined functions. Octave is a free software that is compatible with MATLAB. In the GUI version of Octave there are four windows including the Command Window, File Explorer, Workspace, and Command History. To perform a basic math equation such as 2+2, you just enter 2+2 into the command window and press enter for the result. To clear the command window, you just enter “clc”. If more information is needed on a function, then entering “help” can be used. You can also search for one by typing “lookfor”. For variables you can type “a=5;” which will create the variable a and store the integer 5. Typing who and pressing enter will show all the variables created. Workspace will also show every variable being used. After learning the basics, I learned about reading from a csv file and using it to plot.

I created the variables x and y with the length of 5 using the plot function. The variable x ranges from -2 to 2 and y ranges from 0 to 2. Entering “plot (x1, y1)” the graph popped up in another window and showed the result as a straight line. I then added the grid, gave the graph a title, and labeled the x and y axis to make the graph easier to understand. The blue linear line on the graph represents the equation “y=0.5x+1” while the green line represents “y=x^2”. Octave can be used to read from a csv file and to do that I first created values for x in an excel sheet and used the function “y=x^2”. I saved this as a csv file and copied it to the current workspace in Octave. The results show the values taken from the csv file and plotted on a graph.

Chart, line chart

Description automatically generated

Plotting of (blue) and (green)

Chart, line chart

Description automatically generatedA picture containing table

Description automatically generated

Values from csv file plotted

Values in csv file

First Plotting Example