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Design Doc:

Purpose: We are developing a program to generate graph output using gnuplot with bash, to graph 3 plots given to us figure 2, figure 3, and figure 4 from given values using different labels as well as creating our own plot using the Collatz sequence.

Puesdocode

#!/bin/bash : creating my files to execute (bash script)

make clean && make sincos : removes all object files that have been created

placing the data points (collatz.c) into a file

making a program to execute collatz

Graph 1 (Figure 2)

Putting it into gnuplot. Saving the graph into pdf version, then setting the title to the pdf. Next we have to set the title of the graph, as well as setting x and y label. X is called n, and Y is called length. The graph has a maximum value of 300 on the Y axis. Next we have to draw the x-axis and y-axis. Lastly using redirection to get the data into a file.

Graph 2 (Figure 3)

Putting it into gnuplot. Saving the graph into pdf version, then setting the title to the pdf. Next we have to set the title of the graph, as well as setting x and y label. X is called n, and Y is called value. The graph has a maximum value of 10000 on the Y axis. Next we have to draw the x-axis and y-axis. Lastly using redirection to get the data into a file.

Graph 3 (Figure 4)

Putting it into gnuplot. Saving the graph into pdf version, then setting the title to the pdf. Next we have to set the title of the graph, as well as setting x and y label. X is called length, and Y is called frequency. The graph has a maximum value of 225 on the Y axis. Next we have to draw the x-axis and y-axis. Lastly using redirection to get the data into a file.

Graph 4 (Additional Plot)

Putting it into gnuplot. Saving the graph into pdf version, then setting the title to the pdf. Next we have to set the title of the graph, as well as setting x and y label. X is called (unknown), and Y is called (unknown). The graph has a maximum value of (generated value) on the Y axis. Next we have to draw the x-axis and y-axis. Lastly using redirection to get the data into a file.