CSE13S Assignment 1 WRITEUP.pdf

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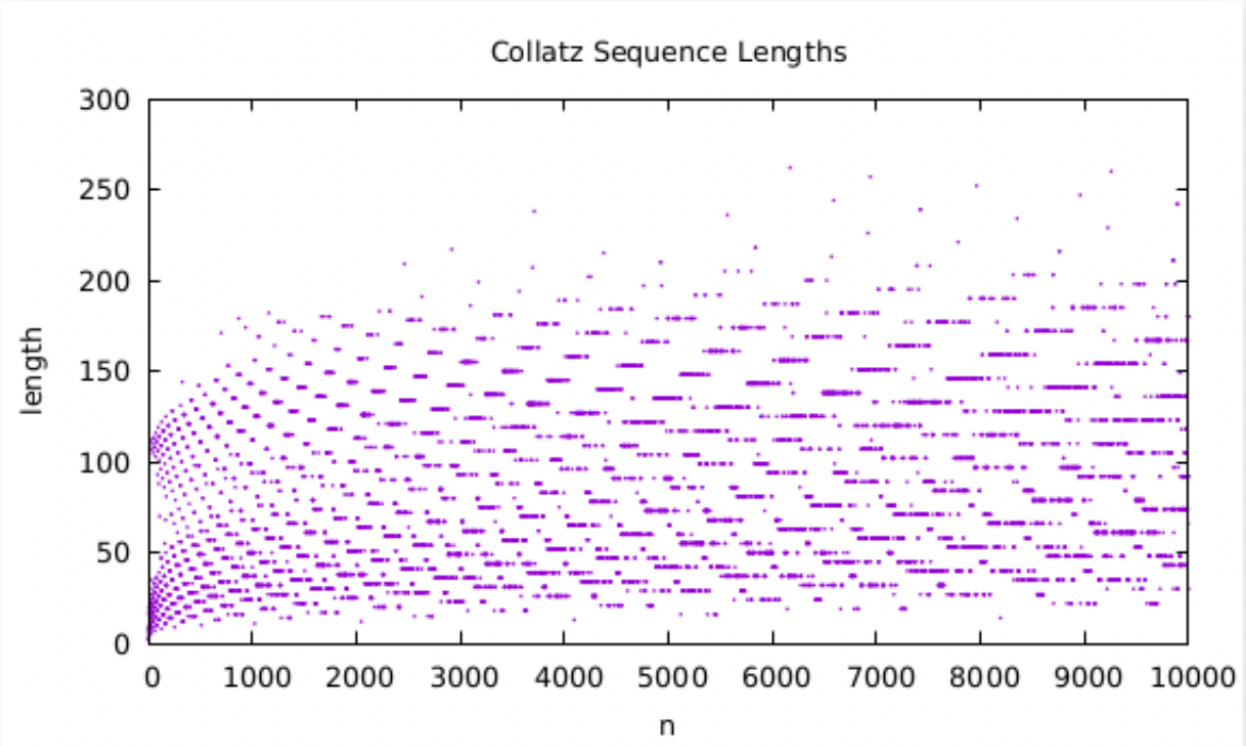
1. Program Analysis

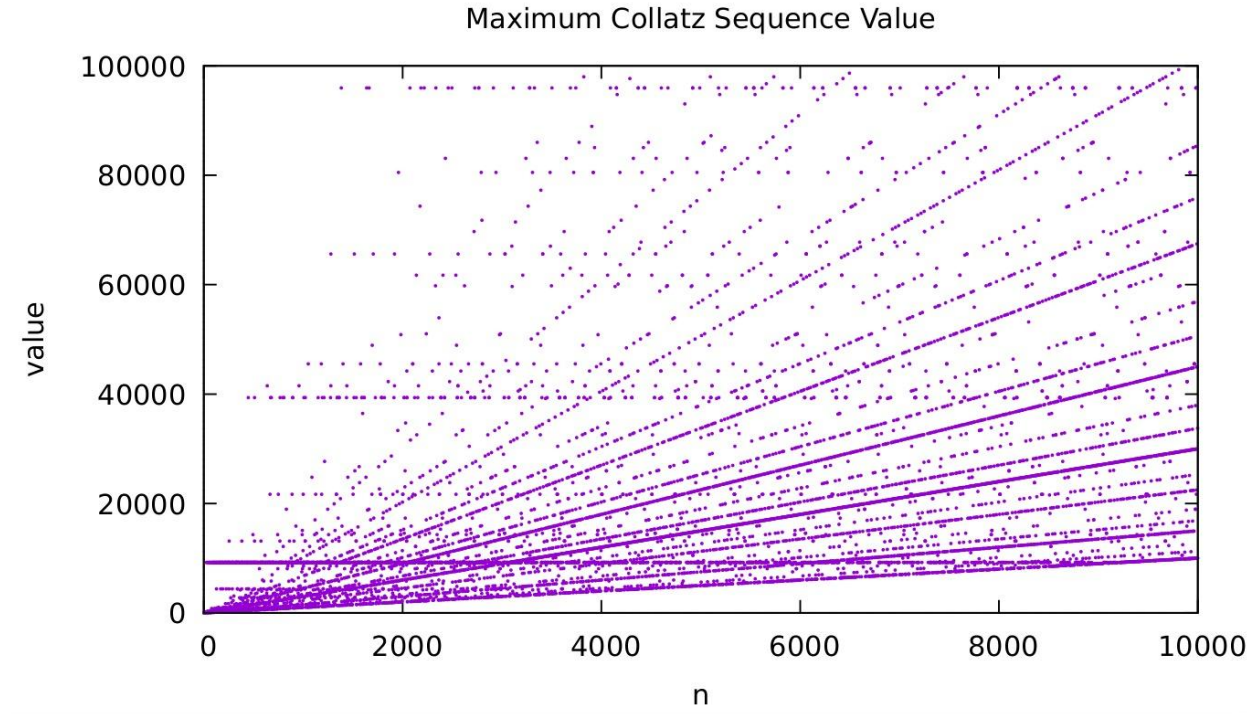
When you run this program, it creates a temporary file in which data for three collatz sequences is stored. When plot.sh is finished, it will print out the plots

2. Graphs

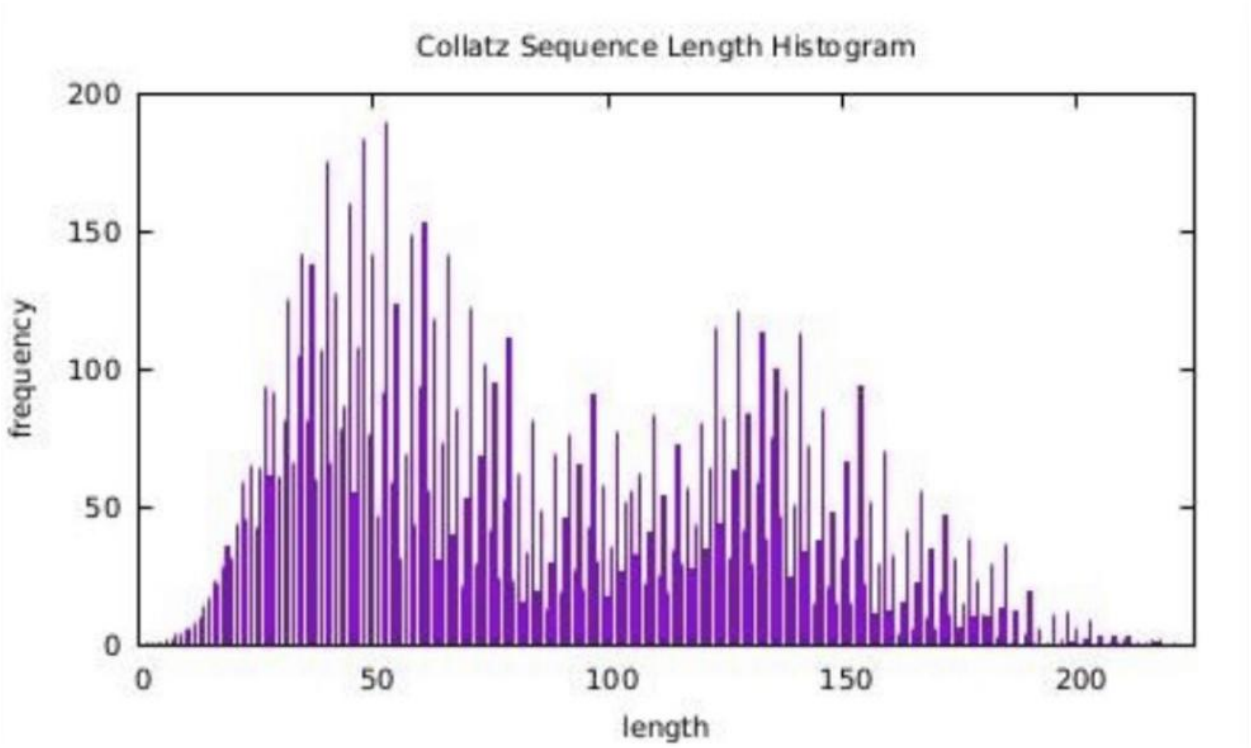


Creating a sequence in the first line ./collatz -n “$i” and putting it in num.dat. I used the wc -I command to obtain the number of lines in each iteration of the Collatz sequence for my Collatz sequence length graph. To properly format my file for gnuplot to the plot, I used an echo -n command in my for loop to count the duration of each time numerically. I had to add a space after my echo command for gnuplot to read the data file correctly. I had to add awk ‘{print $1}’ because I wanted to print the first column of the file. It kept printing sequence.dat after so adding that removed my issue. I set that all to my Y value files, and then I did the same for my x values.

After it was done I used paste to put the temps to graph1.dat. Lastly, I set up my plots by adding x and y values, setting their range, and naming everything.



Creating a sequence in the first line ./collatz -n “$i” and putting it in num.dat. I used the wc -I command to obtain the number of lines in each iteration of the Collatz sequence for my graph. I used sort -nr to sort the num.dat and created a sort_num.dat. Next, I took the max, the head from sort_num.dat, and put it in y_val.dat I had to add a space after my echo command for Gnuplot to read the data file correctly. Then I created a temp file for my x values and added my I. After it was done I used paste and set it to graph2.dat. Lastly, I set up my plots by adding x and y values, setting their range, and naming everything.



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FINAL NOTE

Ubuntu kept crashing, on the last day, it was working before so when testing code it took a while to load. The graphs print not when I do it all at once