Assignment 1 Design Document

Ryan Miller

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1 Collatz Sequence Lengths

for n from 2 to 10000:

    input n into collatz.c
    add n to next line of dat file
    add space then line count of output to dat file

graph dat file as points with n label on x axis and length label on y axis

2 Maximum Collatz Sequence Value

for n from 2 to 10000:

    input n into collatz.c
    add n to next line of dat file
    find maximum value out of the outputs
    add space then max value to dat file

graph dat file as points with n label on x axis and length label on y axis

3 Collatz Sequence Length Histogram

take data from Collatz Sequence Lengths and count frequency of each length
input into dat file length followed by its respective frequency
graph dat file as boxes with length label on x axis and frequency label on y

axis

4 Collatz Sequence Differnce Between Starting and Max Value

take data from Maximum Collatz Sequence Value and subtract n from each maximum value
input into dat file with n followed by new value
graph dat file as points with n label on x axis and difference label on y axis