Assignment 1
DESIGN

Description:

The program itself is a straightforward implementation of the Collatz sequence. The sequence if implemented successfully should be able to take a number(n), and through the following procedure of the sequence, it should systematically reach the term '1':
If n is odd – 3n +1
If n is even – n/2
The program will terminate once the number reaches 1 which hypothetically every starting point should generate a sequence that follows the same convergence pattern.

Files:

Provided:

1. plot.sh: Produces Collatz sequence plots, that are used in my report.
2. collatz.c: Implementation of the collatz sequence program
3. Makefile: Directs the compilation of the collatz sequence program

Created:

1. README.md: Describes the usage of the program
2. DESIGN.pdf: (THIS FILE) provides the preliminary description of the program
3. Writeup: Describes the function and program created, within a denouement stage of the assignment process

Pseudocode:

User inputs *n* therefore - input = *n*
The sequence runs until it reaches its convergence point of 1
While *n* is not equal to 1 {
    If *n* is odd {
        Multiply *n* by 3 and add 1
        } else if *n* is even {
        divide the *n* by 2 and make it equal to itself
        }
    print *n*, so we know the current value, and can see the change over time in the output
}

After the while loop is complete we print n, which in this case will be 1, and will terminate the program