ASSIGNMENT 1 Desgin.pdf

Project Description:

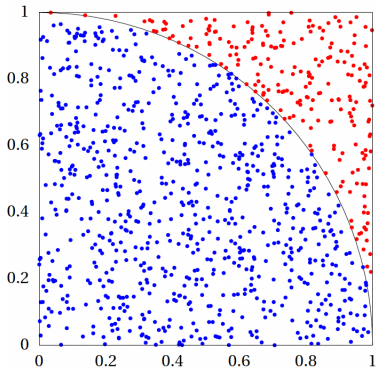
This program will use the data produced by our monte.carlo.c file and produce graphs to understand the behavior of the monte carlo estimation using a bash script.

Files included in the directory asgn1:

Monte_carlo.c:

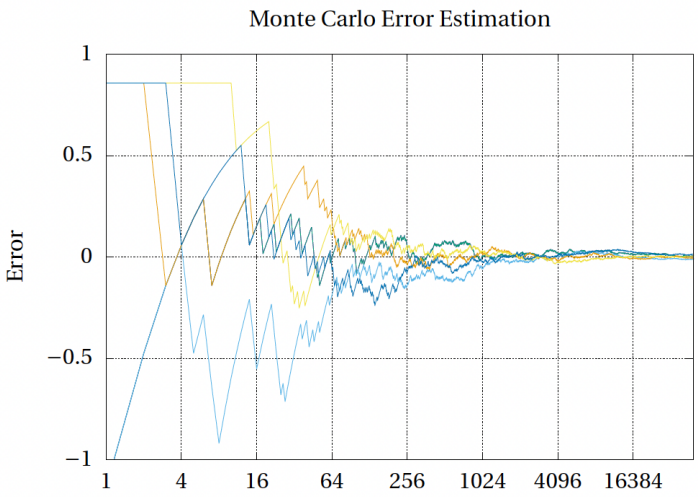
- This program will print the Monte Carlo estimation including the amount of iterations, pi values, x and y values, and weather x and y are inside the quarter circle
  (refer to Figure 1 below)
  Figure 1:

(Source: Assignment 1:Getting Acquainted with UNIX and C Prof. Darrell Long CSE 13S –Winter 2023 pg. 5)



- If our values(x and y) have a distance that are less than or equal to 1 then our data point is blue and inside the circle, otherwise our coordinates are red.

Figure 2(source:*Assignment 1:Getting Acquainted with UNIX and C Prof. Darrell Long CSE 13S –Winter 2023 pg.7)*



plot.sh:

- This file is where we will receive the compiled data from monte_carlo.c and interpret this data in various graphs using a bash script.

README.md:

- This file will inform the user of any necessary input or information regarding the program

WRITEUP.pdf:

- This file is a pdf that will be used to display our results from plot.sh as well as our analysis.

Pseudocode and Design:

plot.sh:

Get n amount of iterations from our monte_carlo.c file
Store these values in a data.dat file

Plot 1:

Only use data “x” and “y”

While not end of file

if x plus y is greater than or equal to one

Make coordinate blue

Else

Make coordinate red

Create point on graph

Insert quarter circle function

Plot 2:(refer to figure 2)

Only use “interactions” and “PI” values

Initliaze error value

While not end of file

Error will be equal to the expected pi value subtracted by our produced pi value

Error will be our y axis

Iterations will be our x axis

Create a line graph with this data

Plot 3:

Will use “iterations” and “circle”

Will create a line graph with these values

NOTES ABOUT PSUEDOCODE:

I have no chosen the amount of iterations I will use yet.