# Assignment 1 Getting Acquainted with UNIX and C

Design Document

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## 1 Overview

In this assignment, we will be using bash to create a script that creates multiple graphs with the usage of the Monte Carlo C program.

## 2 Figure 2

This is the Monte Carlo Pi estimation. This will plot points inside and outside a Circe. Inside being blue and red being outside the circle.

- Graph a circle using gnuplot
- Graph the blue dots as within the circle.
- Graph the red dots as outside the circle.
- Look at the 1 or 0 to determine if blue or red, respectively
- Store red and blue dots in different data files

## 3 Figure 3

I will find the error in Pi Monte Carlo by subtracting Pi - Column 2 which is the C program generated Pi value.

- Graph 5 times with different seed to create different colors
- use logscale to scale by $4^x$

## 4 Interesting Graph

All of these graphs will be tested on seed 1 and will compare the error of pi within the circle and outside of the circle. The constant will be the standard error of both inside and outside of the circle which was seen in figure 3.

- Graph

## 5 Notes

Using tail can remove the 1st line of the Monte Carlo Output.