asgn1 writeup

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Plots

Figure 2 - In/Out Circle Plot

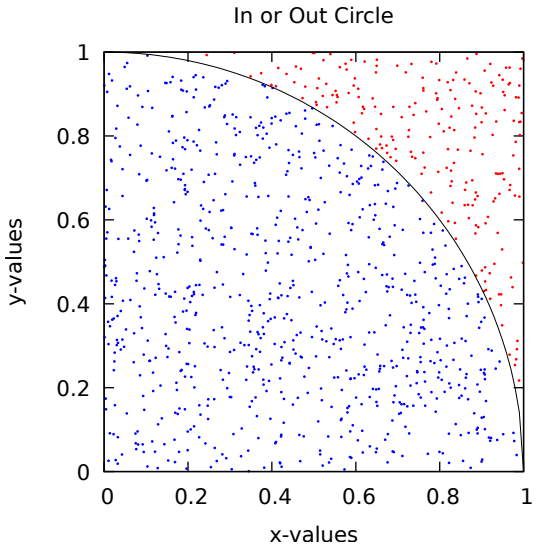
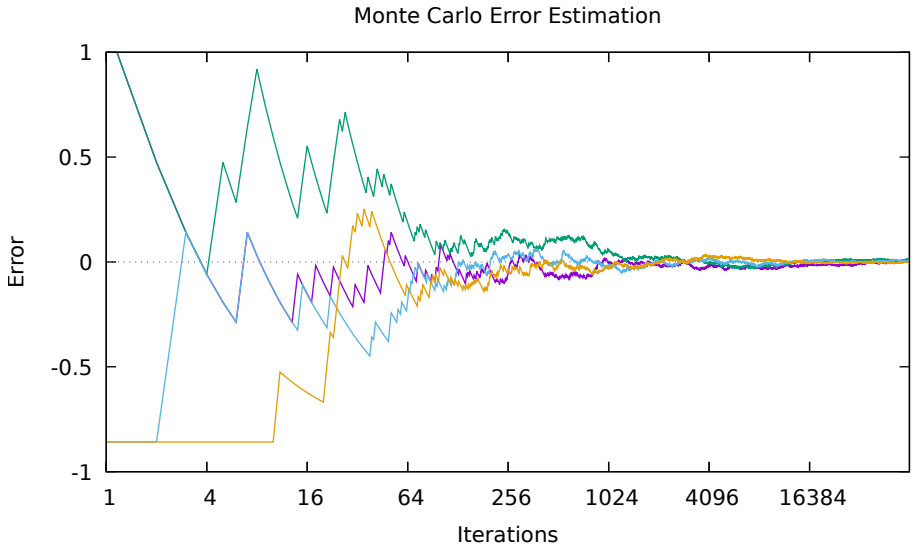


Figure 3 - Monte Carlo Estimation Plot



UNIX Commands

Explanation

Plot 1

For my first plot, the unix commands I used were tail, echo, awk, and rm.

Tail, specifically, tail -n +2, was used to ignore the first line of output from the monte carlo program. Tail was used so that when I used echo, a command I used to direct the x and y points into the red or blue.dat files, it wouldn't include the program title words.

Once again, I used echo to direct the x and y values to red or blue.dat files.

I used awk to isolate the 3rd and 4th columns for the x and y values with awk print. I also used the if statments for awk to first decide which file to direct the values into. I decided to isolate using awk this way because the plot only requires the x and y values. I used the if statement so that depending on 0 or 1 from the 5th column, using awk, I can what tell what color the point should be.

Lastly, rm was used to remove the created red and blue.dat files so that the script would be more reusable.

Plot 2

For my second plot, the unix commands I used were tail, echo, awk, and rm.

Tail was once again used to remove the output title words from the monte carlo program like in plot 1. I did this again because I didn't need the words in my data files.

Echo was used once again like in plot 1 to direct the desired values into their plot.data files. I used echo again because I needed the iterations and the estimated pi values to be directed into the plot.dat files.

Awk was used once again for isolating columns. For plot 2, I isolated columns 1 and 2 for iterations and estimations of pi. I also included a pi variable subtracting the pi estimation in the awk print statement so that the echoed columns 1 and 2 would be iterations and error values. These 2 columns would be directed into 4 different plot.dat files due to my for loop to be graphed.

Just like plot 1, I used rm because I created .dat files which needed to be removed with rm to make the script more resuable. I also added custom axis labels and titles to better show the graph's ideas.

Conclusion

To close, asgn1 and graphing these 2 figures has taught me a lot about using UNIX commands and I learned a lot from experimenting with them. It took a lot of trial and error and looking up the manuals for these commands before choosing which ones to use. It all came down to what the graph was asking and which commands could achieve that.