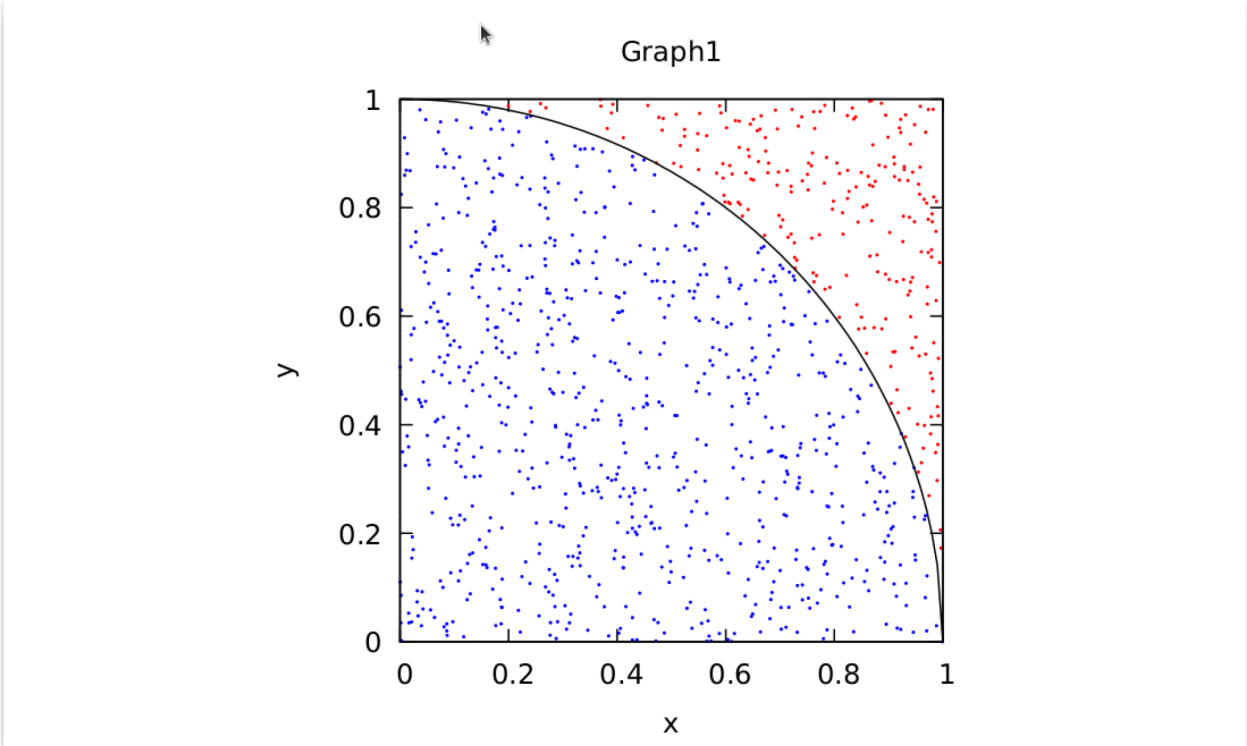
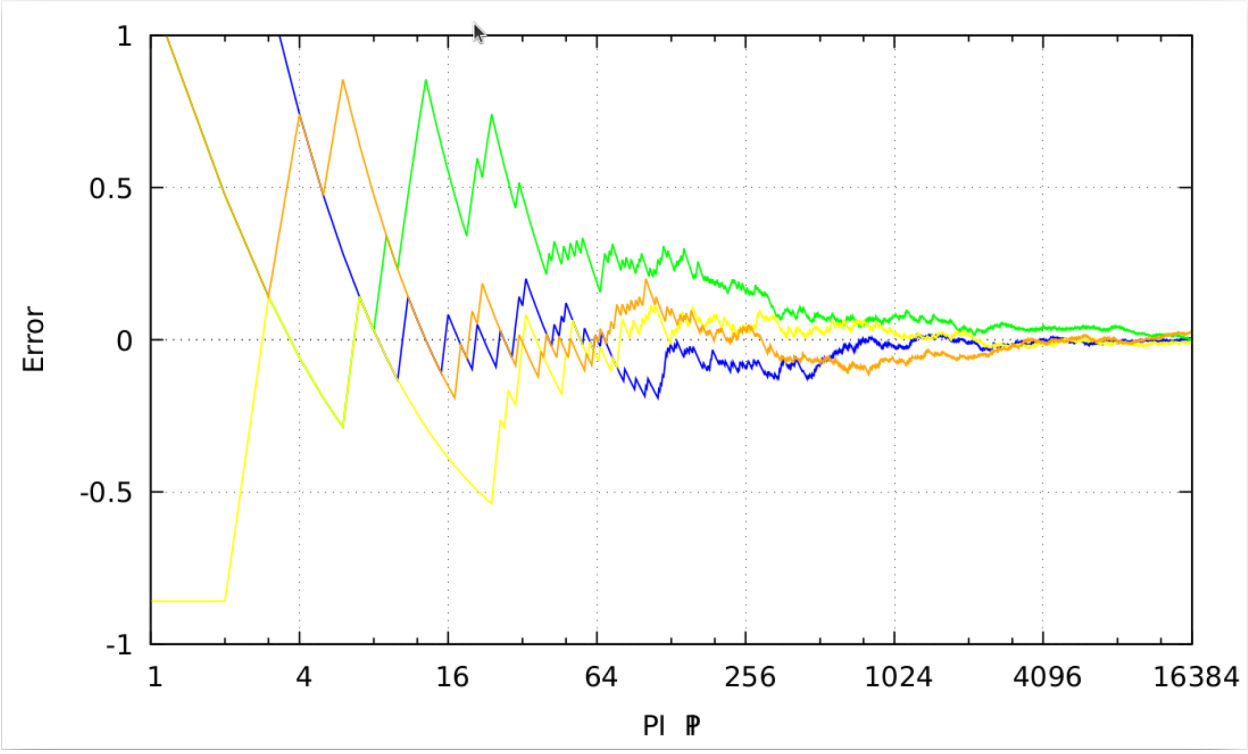
For this assignment We were instructed to create two graphs. I have developed a bash script that executes a c program and iterates through the data to extract a pattern and graph it. Throughout this assignment I use bash commands and awk. Awk was used to make reading patterns in the graph much more efficient code wise. If I used bash commands and loops, I would have a few loops nested inside each other to generate the graphs.



Graph one was generated by using awk commands to separate points that are in the circle and that are not. When a point with the circle value of 0 or 1 were detected they would be separated into their respective temp files. Their x and y values would be extracted and stored for plotting later in a tmp file. The reason I used two tmp files instead of 1 is to make the color coding of the plots easier later in my program. With two files I can make them red and blue.
The graph shows a very scattered plotting with an arc going through it.



Graph two was a combination of 4 graphs that are all the calculations of Actual PI and PI estimate. For this graph I called monte_carlo with a random seed and iterated through the output using AWK. The graph as you will notice will have major differences in the PI values at the beginning but as the simulation runs it will show how the value is more and more accurate when calculating.