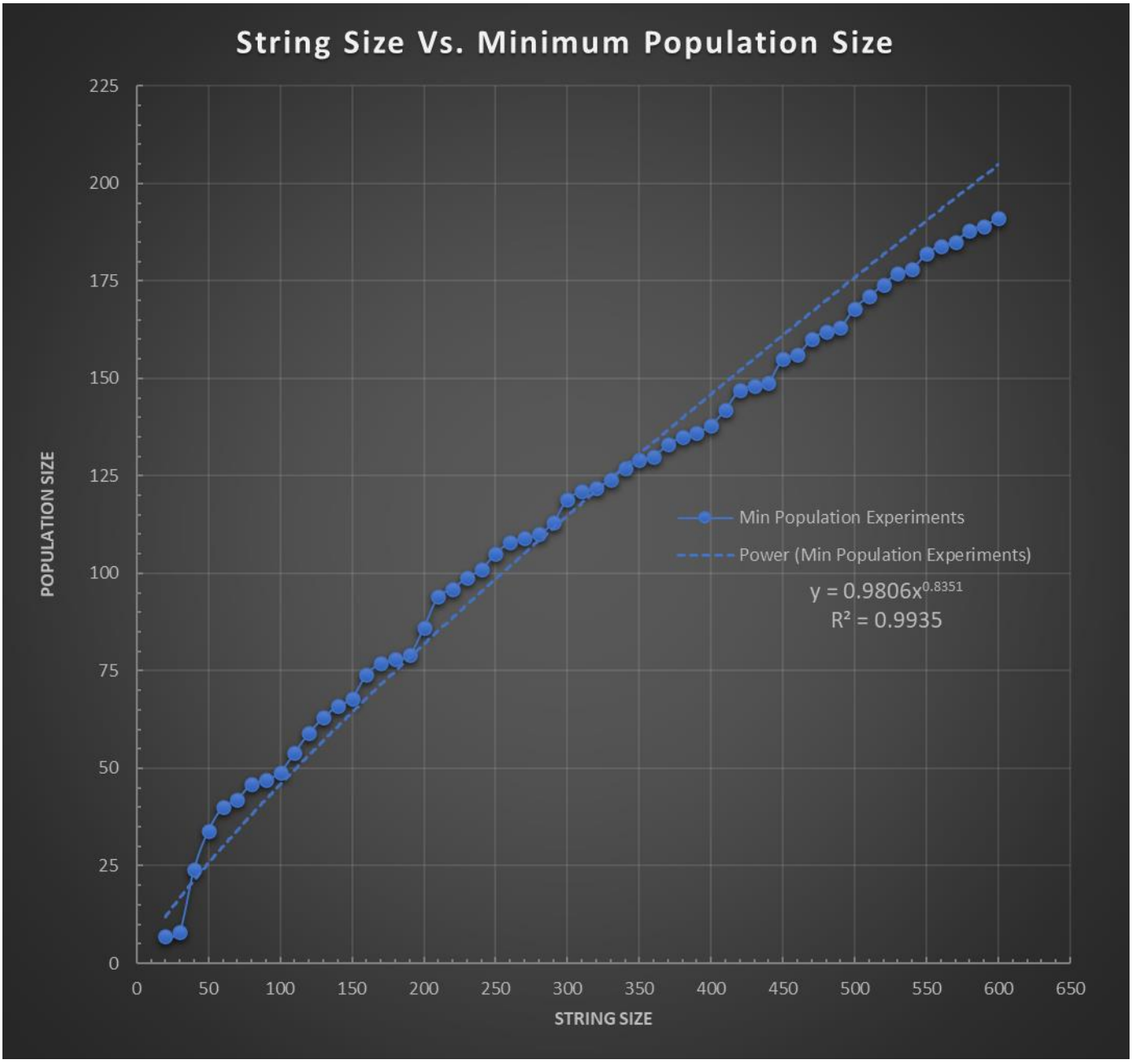
Daniel Glauber

Project 1 Results

Graph of results from experiments.



To determine the minimum population size for a given string size, I wrote bash script that increments the population size until the program successfully completes for the given string size. I collected data for 59 different string sizes from 20 to 600. When the data is plotted, the equation for the line of best fit follows a power distribution and equals f(min population size) = 0.9806(string size)^0.8351. I calculated that for a string size of 100 the minimum population size required is 46, but the actual required

minimum population size is 49. This means my equation for calculating the minimum population for a given string size is off by about 7%. I calculated the minimum population required for a string size of 1000000 to be 100483. If my calculated minimum population size for a string size of 1000000 is also off by 7%, the minimum population required for a string size of 1000000 should be about 107517. My program was unable to determine the actual minimum population size required for a string size of 1000000.