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<u>Lab 10 Analysis and Discussion</u>

Expectations:

Base on the two different functions (iterative, and recursive) I would make the assumption that the recursive function will take longer to return the answer than the iterative. I think that this is the case because it will take more resources to make the function calls x amount of times rather than just having the program follow simple steps until the answer has been found.

Results:

The results of the first testing bunch was what I would of expected. It can be hard to see the results of the programs unless you account for a large sample size. The programs would often times run so fast that the clock would not have the chance to move before the program had finished finding the number. With the iterative function, I had to often times put in numbers as large as 10,000 just to get the clock to show some time.

The way that I programmed this assignment was that I would let the user enter an integer in the Fibonacci sequence they wanted to program to find. I did not have it outputted to the screen because that was not asked in the assignment. I also allowed the user to enter a number for both programs because the iterative program took a MUCH LARGER size to get the clock to run, when compared to the iterative program.

Once I started getting close to 40-50 for the recursive function you could tell that there was a big delay in the speed that the program was running at. It would take 5+ seconds once the sequence number that was to be calculated was greater then 40. In this case, the program would just sit there and look as though it was loading.

I also had a single data file that the program would create and the user could look at when they were done. It was rounded to the 100th second but is easily moved 3 decimal places to get the decimals for how long it took the function to calculate.