Khadichabonu Valieva

Dr. Zhang

CSC 410

8 April 2024

Assignment # 3

1. Brief problem description

The goal of this assignment is to find the first 8 perfect numbers by writing serial C program and then modify the code to C/OpenMP parallel program.

1. Describe the methods to find perfect numbers.

I used the Euclidian method that was described in the assignment description.

1. Serial C program

A screen shot of a computer program

Description automatically generated

1. Parallel algorithm design and consideration.

I used almost the same method as for the previous assignment, using local\_start and local\_end.

A screen shot of a computer program

Description automatically generated

A computer screen shot of a code

Description automatically generated

1. Results

A screen shot of a computer

Description automatically generated



1. Performance analysis and discussion

Calculating the speedup (4.51/0.01=451 times) and efficiency (utilizing 4 threads as an example, 4.51/ (4\*0.01) =112.75%), it is obvious that the parallel computing is incredibly efficient. The results are unrealistic however I think for learning students like me, it is a good practice to see the difference between serial and parallel computing visually.

1. Conclusion

For my program, it took Ts=4.51 seconds (which is Ts<=60sec) for serial and Tp=0.01 seconds (which is Tp<=200sec) for the parallel computing. The difference is visually seen; however, I am certain there is a way to improve the code and make it more efficient. Because of the time constraint, I decided to submit this version of the code.