Aum Sri Sai Ram

MTCS 103(P): Practical Parallel Processing

Lab Work II

Opening date: 31st August 2021

Due date: 2nd Sept 2021

Follow Academic Integrity and Honour Code.

Consider the "Game of Life" problem addressed in the LW-1.

Let the GRID be a square of size K^2.

Now, do the following:

1. Spawn multiple (N in number) OpenMP threads to execute the same problem. Compare the results obtained with your own sequential code, for correctness.
2. Change the value of N: the number of threads. At least six different values of N. Observe the changes in execution time: T, of the application. Repeat this by changing the size of the GRID for six different values. Tabulate the observations. Can you explain the observations? Can you find relationships between the N, K and T?
3. Let L be a number smaller than K. Such that K/L is a whole number. Now, divide the GRID into multiple squares of (K/L)^2. Assign the computation of one of these small squares to one of the N threads, you have spawned. Write down your method of implementation, explain the OpenMP functions used and present the results.