

SWE 507 PARALLEL PROGRAMMING PROJECT STUDY 3 (2024)

Due date: 26 April 2024, class time.

In this project, you are expected to do the similar tasks that you do for the Project 1, but this time you will use OpenMP.

- Create a largest possible size array (not a matrix) that your computer allows with double (real) numbers in the heap.
- Fill this array with random real numbers between 0-1 exclusive.
- Start time-stamping
 - Multiply every element with PI number.
 - Find the maximum element in the array.
 - Divide every element with this maximum number.
 - Add all the numbers in the array, show the total sum in the screen at the end.
- End time-stamping
- Repeat this 5 times and take average execution time.
- Do this 1(sequential), 2, 4, 8 and 16 threads.
- Draw a graph using spreadsheet that shows thread count (x-axis) versus execution time (y-axis)
- Compare your work with Pthreads solution in following perspectives:
 - The work required to the job
 - The performance

Grading:

No	Task	Grade
1	Program works correctly	40
2	OpenMP versus Pthread comparison is done	40
3	Graphs and comments about study.	20

PS: In class presentation is required.