Tutorial - 3

In this tutorial, you will test the concepts such as private variables, reduction operator and firstprivate clauses that we learned in the class.

1. The *reduction* clause is only applicable for associative operators such as addition and multiplication. For non-associative operators such as subtraction and division its behavior is unspecified in the OpenMP standard. Write a small program that uses the reduction operator in which the array elements are subtracted successively instead of being added. Comment on whether the result is correct or not. You can consider the elements of the array to be floating point numbers. Comment on the result obtained if division is used instead of subtraction.

2. Develop an OpenMP program for odd-even transposition sort that we learned in the lecture. Run the program on 2, 4, and 8 threads on integer arrays of sizes 10 and 1000 elements. You can begin with arrays that contain random integers and the program should sort them in ascending order successfully.

3. Develop an OpenMP program to test the behaviors of the clauses *private*, *firstprivate*, and *threadprivate*.