Parallel and Distributed Computing Assignment

Due: 23.59 on 11th Oct.

1. Please write a program in OpenMP, to compute the sum of a vector,

$$\text{sum(x)} = \sum_{i=0}^{n} x_i$$

2. Please implement a function to compute matrix multiplication in OpenMP.

    You should consider the sizes of the matrices variable (see the notice_2).

$$\text{Mat}_C = Mat_a \times Mat_b$$

Reference.

[1]. openMP 文档

[2]. Visual Studio 上配置 OpenMP

[3]. Linux 环境下的 OpenMP 多线程编程

NOTICE:

1. There should be 2 source code files in your homework (one for each task), and you should write some explanation in your source code.

2. It should be a standalone function to perform the computation, i.e., everybody can reuse your function to do the similar job with variable configurations. You are suggested to use template if possible to become generic. For the matrix multiplication task, the prototype of the function should be like this:

```
template <typename Type>
void Matrix_Mul(Type* Mat_A, Type* Mat_B, Type* Mat_C, int M, int N, int K){
    // Mat_C = Mat_A × Mat_B
    // The size of Matrices A, B and C is
    // (M, K), (K, N) and (M, N) respectively.
}
```

3. Archive your source code with StudentID_Name_HW1.zip (or any archive file types). Do not include binary file.

4. If you have any questions, please feel free to contact TAs(吴飞洋、王雅洁、官惠泽) in the Wechat group.