LAB 3

DUE DATE: Fri 13 Oct 5pm (upload to polylearn)

Names in Group (max 2): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Write a program in OpenMP to accelerate Matrix Multiplication

Compare timings between your Sequential, Pthreads and OpenMP implementations

|  |  |  |  |
| --- | --- | --- | --- |
| code | Sequential | Pthreads (4 threads) | OpenMP (4 threads) |
| 512\*512 |  |  |  |

2. Accelerate the following program in OpenMP (diffussion\_opmvec.c) in the attached file

|  |  |
| --- | --- |
| Sequential |  |
| OpenMP |  |

{\displaystyle \mathbf {A} \mathbf {B} ={\begin{pmatrix}a&b&c\\x&y&z\end{pmatrix}}{\begin{pmatrix}\alpha &\rho \\\beta &\sigma \\\gamma &\tau \\\end{pmatrix}}={\begin{pmatrix}a\alpha +b\beta +c\gamma &a\rho +b\sigma +c\tau \\x\alpha +y\beta +z\gamma &x\rho +y\sigma +z\tau \\\end{pmatrix}}\,,}

**What to turn in**

Upload a report in PDF with the following:

1. Your name
2. Explanation of the pragmas you are using and where you are placing them
3. Prove that the code is correct by printing the difference in values between the non parallel and parallel version
4. Table with execution times
5. Appendix with your code