CO225:Software Construction
Matrix Multiplication
Deadline: 29th September 2017 , 23:00

Objective: Concurrent programming using threads

Description:

Consider the multiplication of two matrices A and B of size **m × p** and **p × n**. You are expected to create an application which use threads to compute the result of **A × B**: each thread will have a certain number of rows of the results to compute.

Write a Java programs such that:

- values of matrices are stored in text files named **A.txt , B.txt** . Your program should read values of A and B from these text files ;
- You specify the number **t** of threads from the command line (the last thread has the remainder of m/t row to compute);
- you verify the results of the multiplication. Write a single-threaded program doing the same multiplication and compare correctness of result and execution times.

Tests : experiment with your application for combinations of following cases

- Small and large m,p,n values
- Different number of threads
- Different data types (int, float, double) in matrices A,B

Submission :

- The file which contain main method of your application should named as **MatrixMultiplication.java**
- A report which contain results your experiments with various test cases (minimum 5 test cases) . Your report should include descriptions of test cases, results and conclusions about your observations. Your report should be a text file named **Results.txt**
- Provide data you used for each test cases as text files. These files should be in a folder named "**TestCases"** . Each file should have appropriate names correspondence with your results report (Ex: Test1_A.txt , Test1_B.txt , Test2_A.txt , Test2_B.txt , ..,. etc)
- Include all the submission files into a single tar.bz2 archive.
- File name format : **Lab05_[Your E Number].tar.bz2** (Ex : Lab05_E14001.tar.bz2)