In422   Lab/TP N°01

Objectives   Understand the notion of thread and manage its execution using C++. At the end of the TP, you need to send one page of explanation and all the codes.

Exercise 1   **Download the program: « TP1-Exo1.cpp » and compile it.**
• Is the program compiling? What can you modify?
• What is the program doing?
• What is the difference between « temps », « temps_local » and « temps_systeme »?
• Is it normal that the value of « temps_systeme » is higher than « temps »? correct the program.
• Check with your professor

Exercise 2   (Synchronize several threads using Handle or pthread_join)

The document « TP1-DOC.pdf » will help you to implement threads.
TP1-Exo2.cpp shows a program that doesn't work correctly. The problem is related to screen access synchronization. You will modify the program to:

• Synchronize threads where we want to see, first «Je suis le TRAITEMENT 1. », then « Je suis actif …», then « Program END » and finally « write a letter to end your program».
• Display the number of threads Th1.

Exercise 3   **Synchronize several threads.**
TP1-Exo3.cpp uses the principal thread, a thread that visualizes character defined in the main.

• Modify this program to display this char from the thread T2.

Exercise 4   **Synchronize several threads.**
Modify the program from Exercise3 to capture the char TT from the user using a thread (called: Saisie). If the user doesn't enter a char TT after 5 seconds, the program keeps asking the user to enter a new char.

After entering the char, another thread called Visualisation is able to generate the inverse of the char. For example, « pro-gramme » will be «emmargorp ».