Laboratory #10 –Mutex– May 26th 2021

Exercise 1- Similarly to previous labs, write a multi-thread program that evaluates the following math series:

$$\sum_{0}^{x} \frac{1}{2^i}$$

The main program receives the x value as input and creates the set of necessary threads. Each thread evaluates a single 1/2^i instance, where i is the index of creation (e.g., the thread 1 evaluates 1/2^0 , the thread 2 evaluates 1/2^1 and so on) and adds it directly to the final results. Once all the threads complete their job, the main program displays the final result. Use a **mutex** to protect shared memory locations: is there any critical section issue?

Exercise 2- Write a multi-thread program that performs the following multiplication:

$$\prod_{0}^{N} x^i$$

The main program receives N and *x* values and let *N+1* thread dealing with the power operation. Force the threads to update the content of the multiplication.

Once all threads are done, display the final result. Use a **mutex** to protect shared memory locations: is there any critical section issue?