Laboratory #11 –Condition Variable – June 9th 2021

Exercise 1- Write the multi-thread program to search if a number N is a prime number by checking if it is divisible by any number in the range [2, N/2]. The program receives the number N and the number P of threads to use as input.

The program must create P threads and assign to each of them a subset of possible divisors to test. Each thread, then verifies if N is divisible by any of the assigned divisors. The main program continuously checks the result of the generated threads.

Resorting to a proper usage of **Conditional variables** let the main program detect when the number is not prime as soon as possible; if so, it has to end all threads immediately.

Exercise 2- Write a program that creates 3 threads, displays their ID and prompt the user to choose which thread has to end. Once the selected thread ends (and only at that time!), the list of remaining open threads ID has to be re-printed and the user has to choose a new one to end.
The main program communicates the end to threads using one or more **Condition Variables**. It ends when all threads terminate.