Course: System Programming

Module 3. Multithreading and Asynchrony

Topic: Multithreading and Asynchrony. Part 1

Task 1

Create a window application that generates a set of prime numbers in the range specified by the user. If the lower bound is not specified, the thread starts with 2. If the upper bound is not specified, the numbers keep generating until the app shuts down. Use the thread mechanism. The numbers must display in a window interface.

Task 2

Supplement Task 1 with a thread that generates a set of Fibonacci numbers. The numbers must display in a window interface.

Task 3

Supplement Task 2 with a button to stop each thread. One button per thread. If the user clicks the stop button, the thread stops its work completely.

Task 4

Supplement Task 3 with buttons to suspend and resume each thread. For instance, a user can suspend the generation of Fibonacci numbers by clicking on the button. He should click on another button to continue the generation.

Task 5

Supplement Task 4 with the possibility to restart threads with new bounds.