Dear students,

here are the instructions for Assignment 1.

The deadline is Friday November, 13rd. Please send me an email with the subject "RTOS Assignment 1" and attach two separate files for the two exercises.

PAY ATTENTION: the assignment is MANDATORY for EMARO STUDENTS; non EMARO students will choose to use or not to use the score of the assignments to modify the score of the exam (they can decide after the exam whether to use assignments or not).

I remind you that students are not allowed to talk with each other about the assignment starting from now to the deadline.

I will randomly choose 3 students and ask them to comment on their exercises. If I find somebody cheating, you will feel the full extent of my wrath!

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Assignment 1

Deadline: November, 13rd

The assignment includes two different exercises, in the following referred to as 1) and 2). Successfully performing exercise 1 gives you a score of 90 out of 100; Successfully performing exercises 1 and 2 gives you a score of 100 out of 100.

A partial accomplishment will give you a score that is reduced accordingly to what you have accomplished.

Exercise 1: starting from the example that we have seen during the lesson, make an application in which

- periodic tasks are scheduled with Rate Monotonic (use the three periodic tasks in the example)

- aperiodic tasks are scheduled with a Polling Server (i.e., not in background). To simplify the exercise, suppose that there can be 2 aperiodic tasks, but the overall computational time of the 2 aperiodic tasks is lower than the capacity of the polling server. That is, one period of the server is sufficient to schedule both aperiodic tasks in sequence, if required.

Exercise 2: starting from the example that we have seen during the lesson, make an application in which

- periodic tasks are scheduled with Earliest Deadline First instead of Rate Monotonic (use the three periodic tasks in the example, we do not need a generic solution).

- there are no aperiodic tasks.

Hint: the key problem here is to find the right place to update priorities depending on deadlines.

For any question, please do not hesitate to contact me.