Embedded OS Implementation, Fall 2020

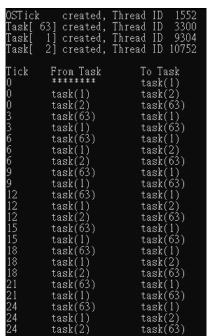
Homework #1 (due October 21, 2020 (Wednesday) 13:00)

Hello uC/OS-II

Problem Definition:

- (a) Please draw the system flow of "Hello μ C/OS-II (the modified main.c in Lab1)" and explain the process (functions). Note: Please start from the function "OSTaskCreateExt".
- (b) Consider two periodic tasks (τ_1 , τ_2) and their delay time are 3 ticks and 6 ticks, respectively. Task priority of two tasks (τ_1 , τ_2) are 1 and 2, respectively. Please add some code to the μ C/OS-II scheduler in the kernel level to observe how CPU is switched among tasks by means of context switches.

The output results are shown below:



Crediting:

Your homework needs to show the following information:

- The system flow and the explanation of the process(functions). (45%)
- The screenshot of the result. (10%)
- A report that describes your implementation (please attach the screenshot of the code and MARK the modified part). (45%)

Homework submit:

Submit to Moodle.

Submit deadline: October 21, 2020 (Wednesday) 13:00

File name format: RTOS_ your student ID_HW1.zip

RTOS_ your student ID_HW1.zip includes:

 $\hbox{\% The report (RTOS_ your student ID_HW1.} pdf).$

* The file you modify(hello_ucosii.c, os_core.c, etc.)

Hints:

- 1. The time tick when OS starting is not 0 because of the overhead of system initialization. Therefore, you need to call the function OSTimeSet(0) before OS start.
- 2. Using OSTimeGet() to get the current tick in the system.
- 3. Using OSTimeDly() to delay the task.