

In422: Final assignment

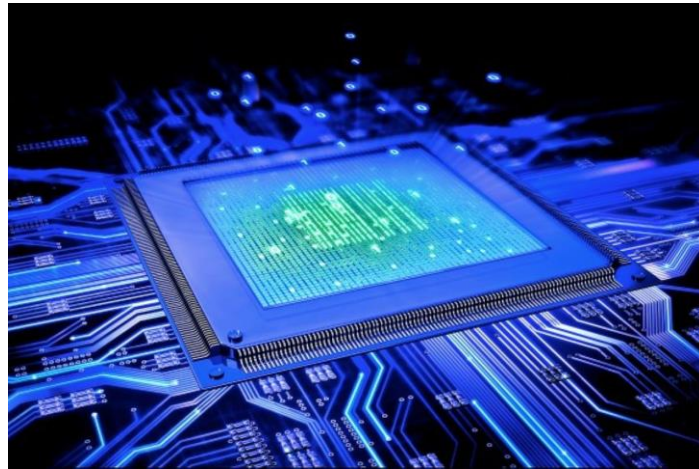


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I. INTRODUCTION

For this practical, we are going to schedule 4 different periodic tasks, with their priority, WCET and period. In order to do that, we will first analyse each task, verify the schedulability and implement the code on FreeRTOS.

II. METHOD

The Task1 is just a print of a small string “Working”, this task may not use a lot of time of execution. We can fix a WCET of 1ms and a period of 5ms.

The Task2 is also a print but with a small operation. The WCET can be 2ms (because the operation) and a period of 20ms.

The Task3 requires more time of execution so we can fix a WCET of 5ms and a period of 50ms (because the operation with 2 long int).

The Task4 is a binary search of a list of 50 elements (complexity $O(\log n)$). The WCET will depend on the length of the list. But with 50 elements, we can fix a WCET of 10ms and a period of 50ms.

III. RESULTS

To verify the schedulability, we can calculate the Utilization:

$$U = 1/5 + 2/20 + 5/50 + 10/50 = 0.6 < 1 \Rightarrow \text{Schedulable.}$$

Task	C_i	T_i	P_i
τ_1	1	5	0
τ_2	2	20	1
τ_3	5	50	2
τ_4	10	50	3

