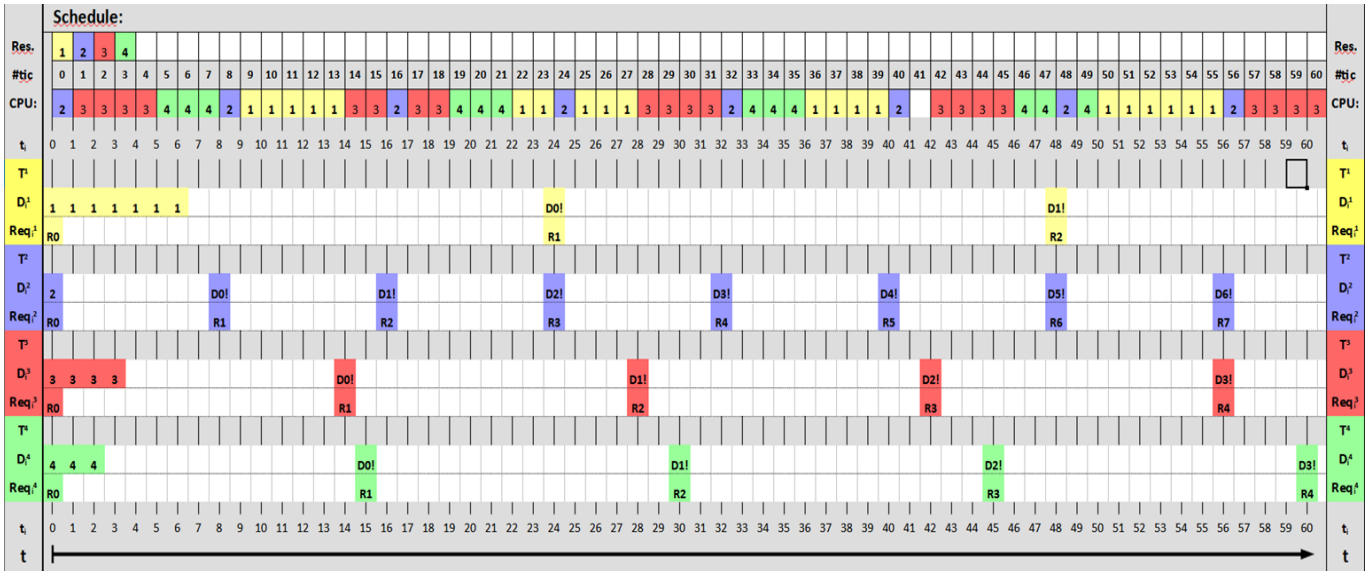
Name : Anh Quoc Nguyen

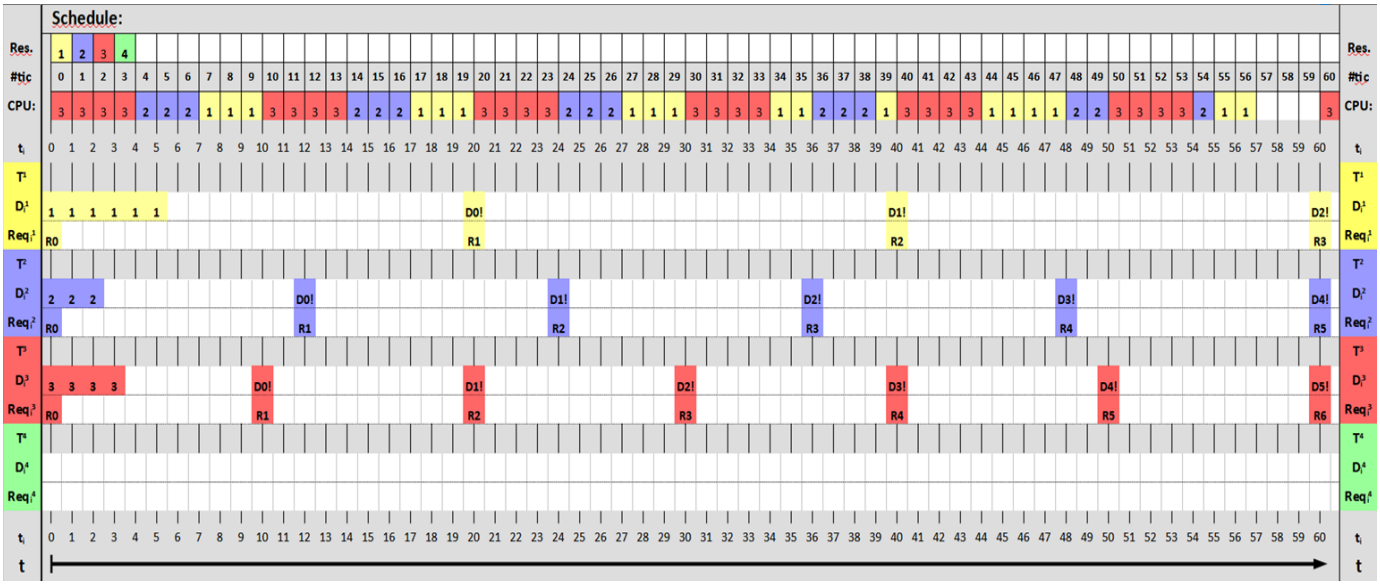
Matriculation number : 1397466

RMS:

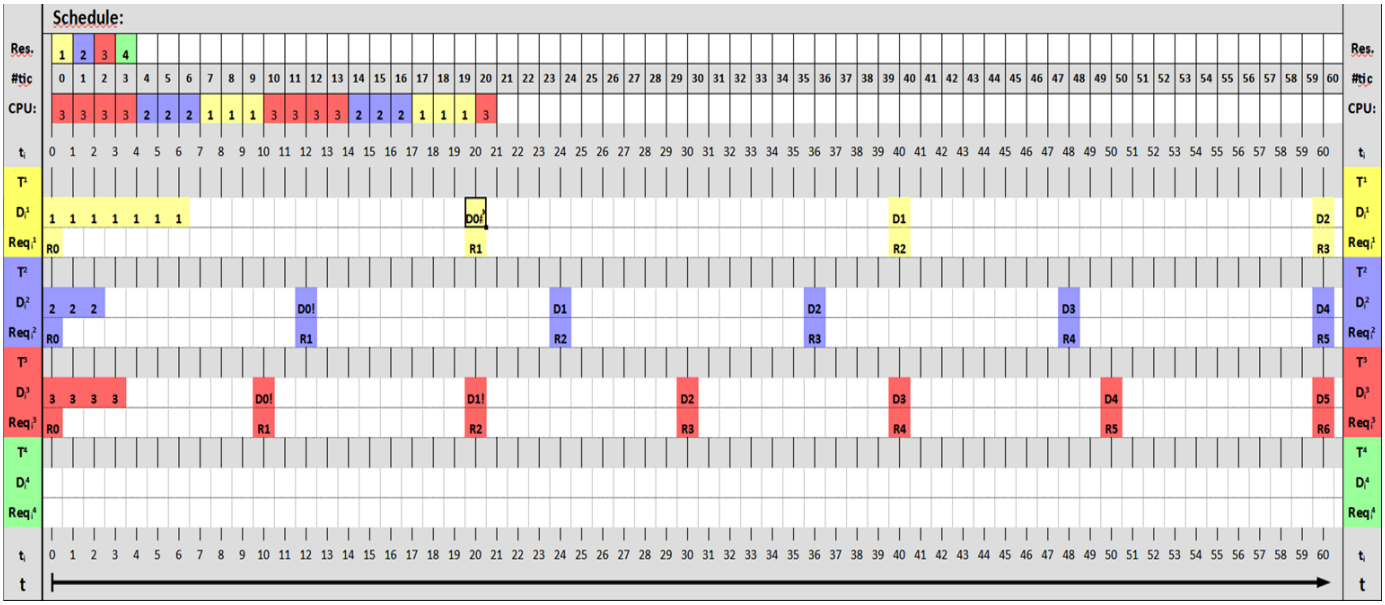
1. Taskset: { T^1 (7, 24); T^2 (1, 8); T^3 (4, 14); T^4 (3, 15) }



2. Taskset: { T^1 (6, 20); T^2 (3, 12); T^3 (4, 10) }



3. Taskset: { T^1 (7, 20); T^2 (3, 12); T^3 (4, 10) }



4) Calculate the load (each task and in total) of the systems:

Load of a task: $U_i = e_i/D_i$

1. Taskset: U = 7/24 + 1/8 + 4/14 + 3/15 = 379/420 ≈ 0.902
2. Taskset: U = 6/20 + 3/12 + 4/10 = 0.95
3. Taskset: U = 7/20 + 3/12 + 4/10 = 1

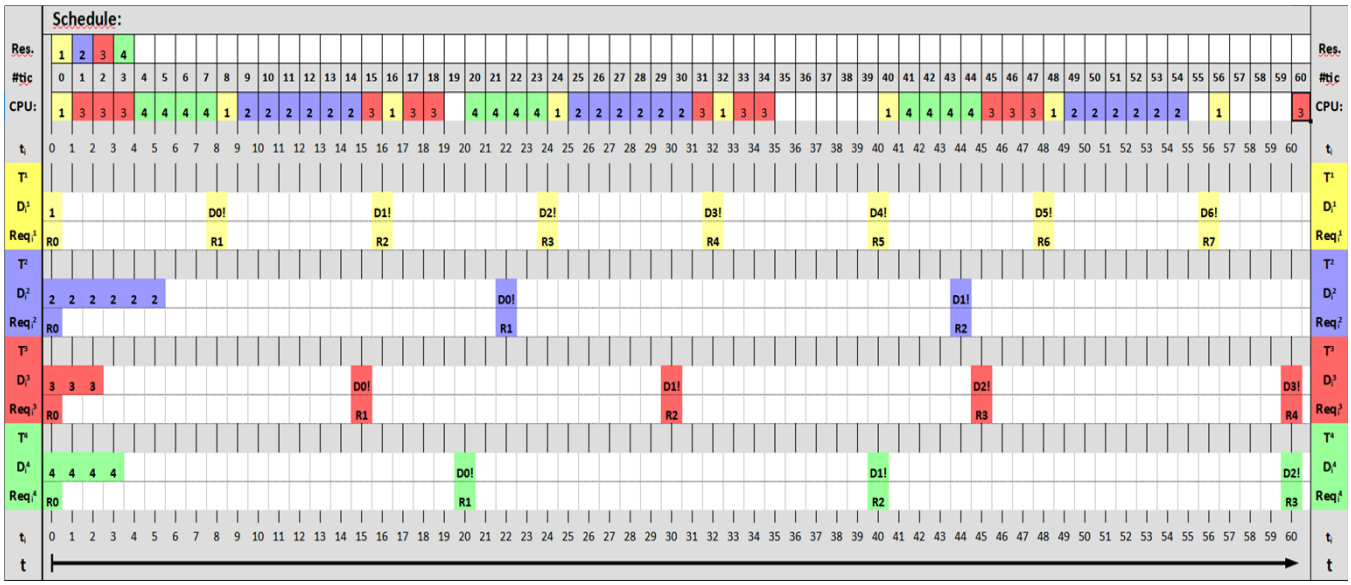
5) Do and document the schedulability tests for the systems

$U \leq n * (2^{1/n} - 1)$ n = number of periodic tasks

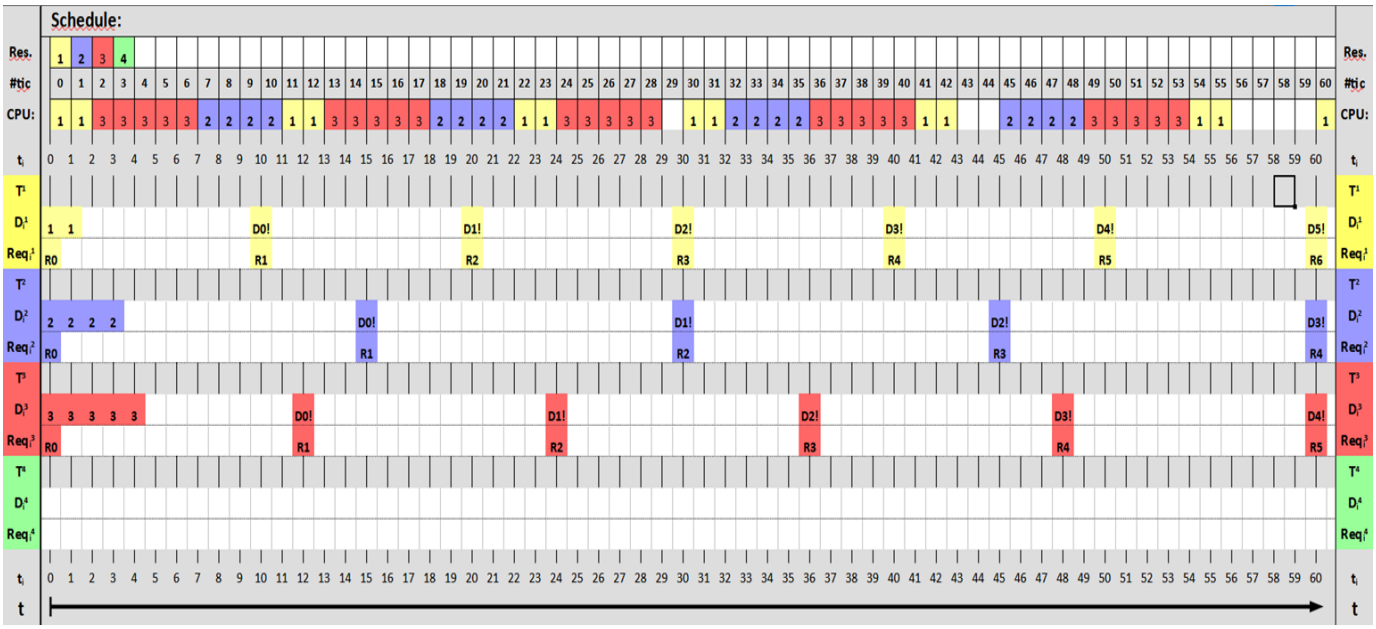
1. Taskset: $0.902 \leq 4 * (2^{1/4} - 1) \rightarrow 0.902 \leq 0.757$
2. Taskset: $0.95 \leq 3 * (2^{1/3} - 1) \rightarrow 0.95 \leq 0.78$
3. Taskset: $1 \leq 3 * (2^{1/3} - 1) \rightarrow 1 \leq 0.78$

EDF:

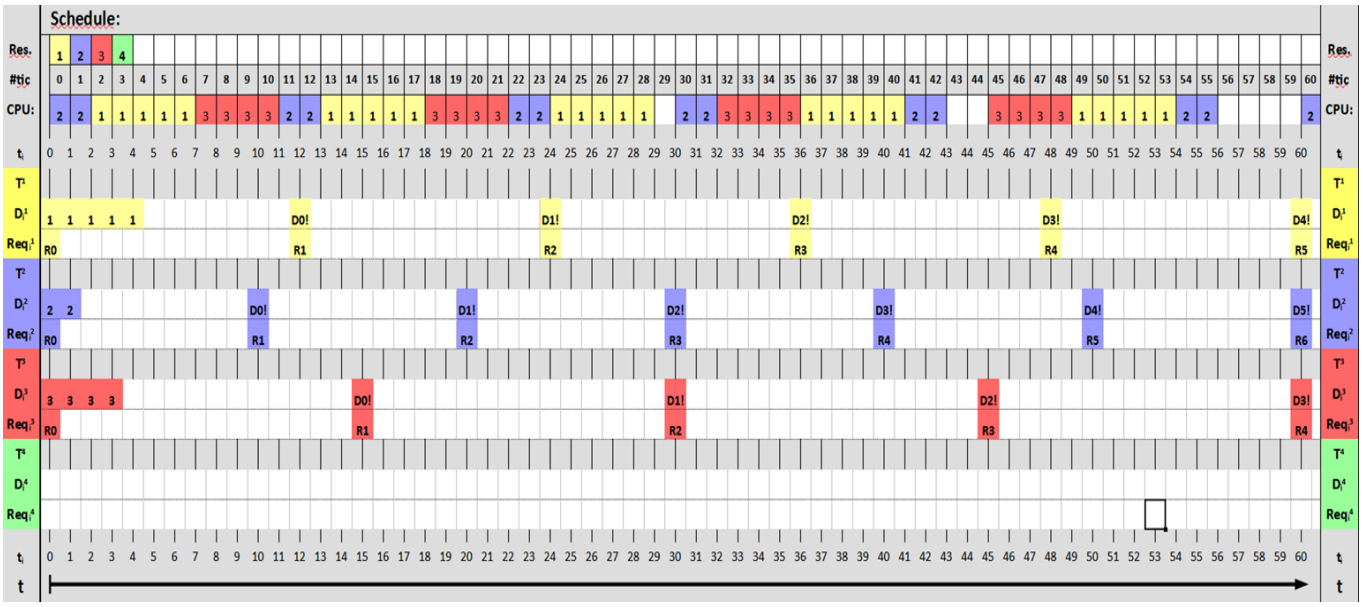
1. Taskset: { T^1 (1, 8); T^2 (6, 22); T^3 (3, 15); T^4(4, 20)}



2. Taskset: { T^1 (2, 10); T^2 (4, 15); T^3 (5, 12)}



3. Taskset: { T^1 (5, 12); T^2 (2, 10); T^3 (4, 15)}



4) Do and document the (tow) schedulability tests for the taskset of 1 (as if you were using RMS).

Load of a task: $U_i = e_i/D_i$

System load: $U = \sum_{i=1}^{n} U_i \sum_{i=1}^{n} \frac{e_i}{D_i}$

Schedulability: $U \leq n * (2^{1/n} - 1)$ n = number of periodic tasks

1. Taskset: $U = 1/8 + 6/22 + 3/15 + 4/20 = 351/440 \approx 0.798$

   $0.798 \leq 4 * (2^{1/4} - 1) \rightarrow 0.798 \leq 0.757$

2. Taskset: $U = 2/10 + 4/15 + 5/12 = 53/60 \approx 0.883$

   $0.883 \leq 3 * (2^{1/3} - 1) \rightarrow 0.883 \leq 0.78$

3. Taskset: $U = 5/12 + 2/10 + 4/15 = 53/60 \approx 0.883$

   $0.883 \leq 3 * (2^{1/3} - 1) \rightarrow 0.883 \leq 0.78$