Scheduling analysis

KAREEM MAGDY
ALBOLAQI

SPRINTS

Task

- **Task:** Schedule the following task set using rate-monotonic:

  T1 {P: 5, E: 2.5, D: 5}, T2 {P: 15, E: 4.5, D: 15}, T3 {P: 20, E: 3.5, D: 20}

  - Calculate the Urm.
  - Calculate the time-demand analysis.
  - Model the task set using Simso.
  - **Provide a report with the above points using screenshots and comments on your results and analysis.**

✓ **URM** = N((2^(1/N)) – 1)

= 3*((2^ (1/3)) -1) = 0.78

U = C/T = (2.5/5) + (4.5/15) +(3.5/20)

= 0.98

U > URM, so we need more tests

✓ TIME DEMAND ANALYSIS:

Cause we have a Rate-Monotonic schedule so the priority depends the periodicity (the highest priority is for the highest task rate) So,
T1 → priority 3 , T2 → priority 2 , T3 → priority 1

➢ Calculations:

For T1 :

W(5) = 5+0 = 5ms

Tn = Tp ,so this task is schedulable

For T2 :

W(15) = 4.5 + (15/5)*2.5 = 12ms < 15

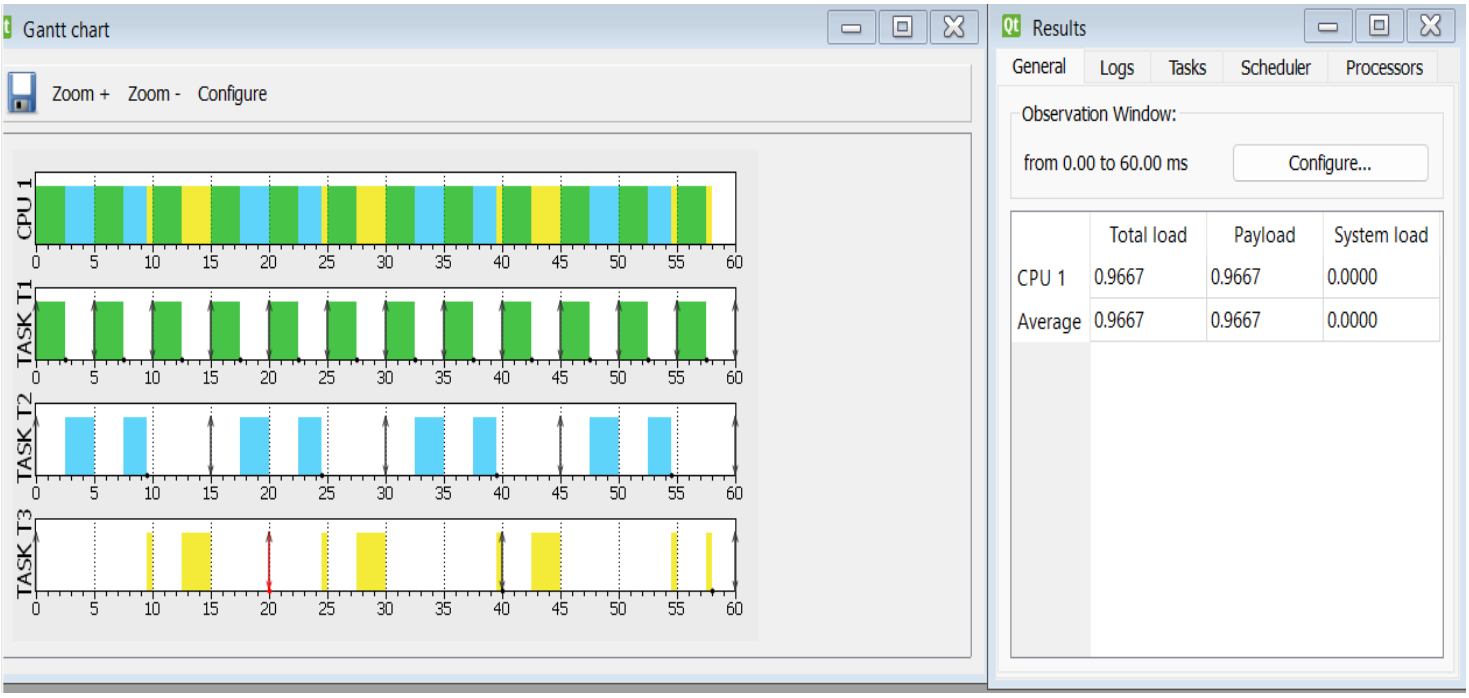
Tn >Tp ,so this task is schedulable

For T3 :

W(15) = 3.5 + ((20/5)*2.5)
+((20/15)*4.5) = 22.5ms > 20

Tn < Tp ,so this task is not schedulable

✓ SIMSO



AS WE CAN SEE ONLY T3 IS MISS DEADLINE SO THIS SYSTEM IS NOT FEASABLE AND NOT SCHEDUABLE