

SCHEDULING

ANALYSIS

Prepared by:

Amr El-Abd

Tasks:-

T1 {P: 5, E: 2.5, D: 5},

T2 {P: 15, E: 4.5, D:15),

T3 (P: 20, E: 3.5, D: 20).

URM Calculations:-

- $U = (2.5/5) + (4.5/15) + (3.5/20) = 0.975$
- $U_{rm} = 3 * (2^{(1/3)} - 1) = 0.779$
- $U > U_{rm}$

So the system needs more tests.

Time demand Calculation :-

Task 1 (Highest priority):

- $W(5) = 2.5 + 0 = 2.5$
- $T_n < T_p$ then Task 1 is Schedulable.

Task 2:

- $W(15) = 4.5 + (15/5)*2.5 = 12$
- $T_n < T_p$ then Task 2 is Schedulable

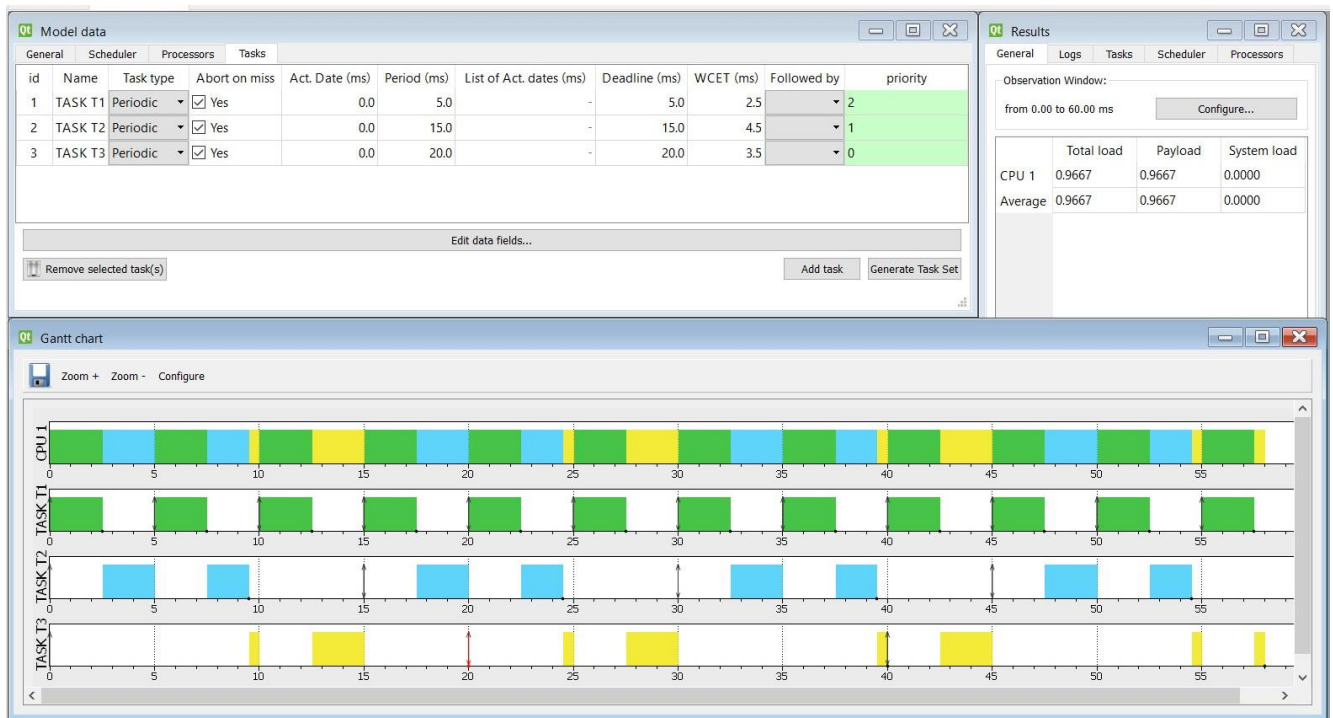
Task 3:

- $W(20) = 3.5 + (20/15)*4.5 + (20/5)*2.5 = 3.5 + 9 + 10 = 22.5\text{ms}$
- $T_n > T_p$ then Task 3 is not Schedulable.

Analysis:-

Task 3 is not Schedulable, so the system is not Schedulable.

Simso test run:-



Same results as the manual calculations, task 3 missed the deadline, and the system is not schedulable.