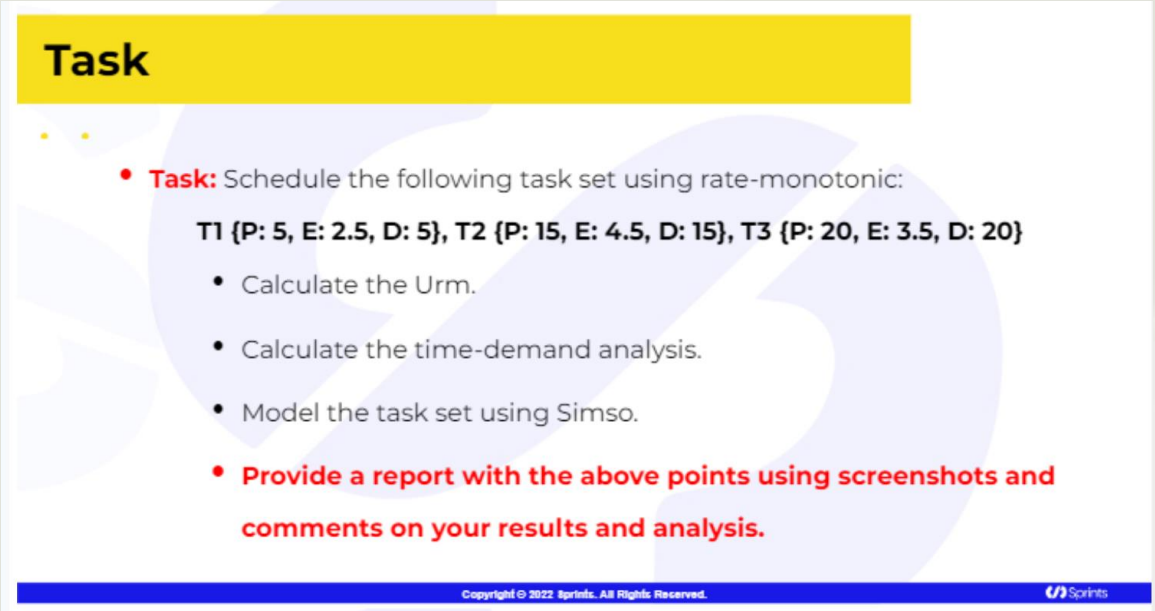
Sprints

Scheduling analysis

By: Nada Abdelazim

Sprints

System Requirement



Sprints

Calculate the Urm:

Task 1: P: 5, E: 2.5, D: 5

Task 2: P: 15, E: 4.5, D: 15

Task 3: P: 20, E: 3.5, D: 20

- U = (2.5/5) + (4.5/15) + (3.5/20) = 0.975
- Urm = 3*(2^(1/3)-1) = 0.799
- U > Urm
- System needs more tests.

Calculate the time-demand analysis:

Task 1: P: 5, E: 2.5, D: 5

Task 2: P: 15, E: 4.5, D: 15

Task 3: P: 20, E: 3.5, D: 20

Assume that Task 1 has the highest priority:

- calculate time demand for T1 at time instant = D= 5:

W (5) = 2.5 +0 = 2.5.

W (5) < D = 2.5 < 5

- T1 is schedulable.

Assume that Task 2 has the second highest priority:

- calculate time demand for T1 at time instant = D= 15 :

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

W (15) < D = 12 < 15

- T2 is schedulable.

Assume that Task 3 has the lowest priority:

- calculate time demand for T1 at time instant = D= 20:

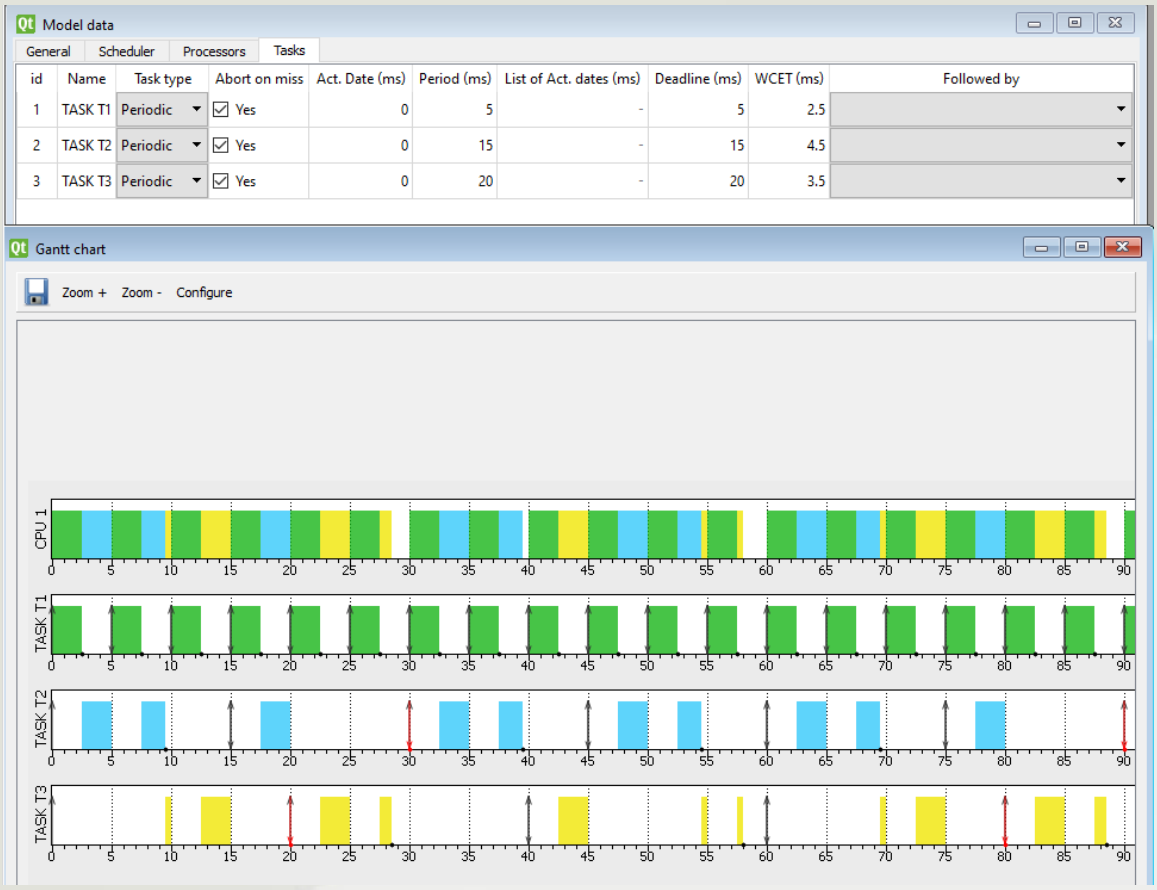
- W (20) = 3.5 + (20/15) *4.5+ (20/5) *2.5

= 3.5 +2(round up)*4.5+4*2.5= 22.5

- W (20) > D = 22.5 >20

- T2 is not schedulable.

Modeling the system using Simso:



* The system is not schedulable, and it approves the analytical Rate-Monotonic utilization and time-demand analysis result as the system not schedulable at all of them.

* Task 2 and Task 3 missing deadlines.