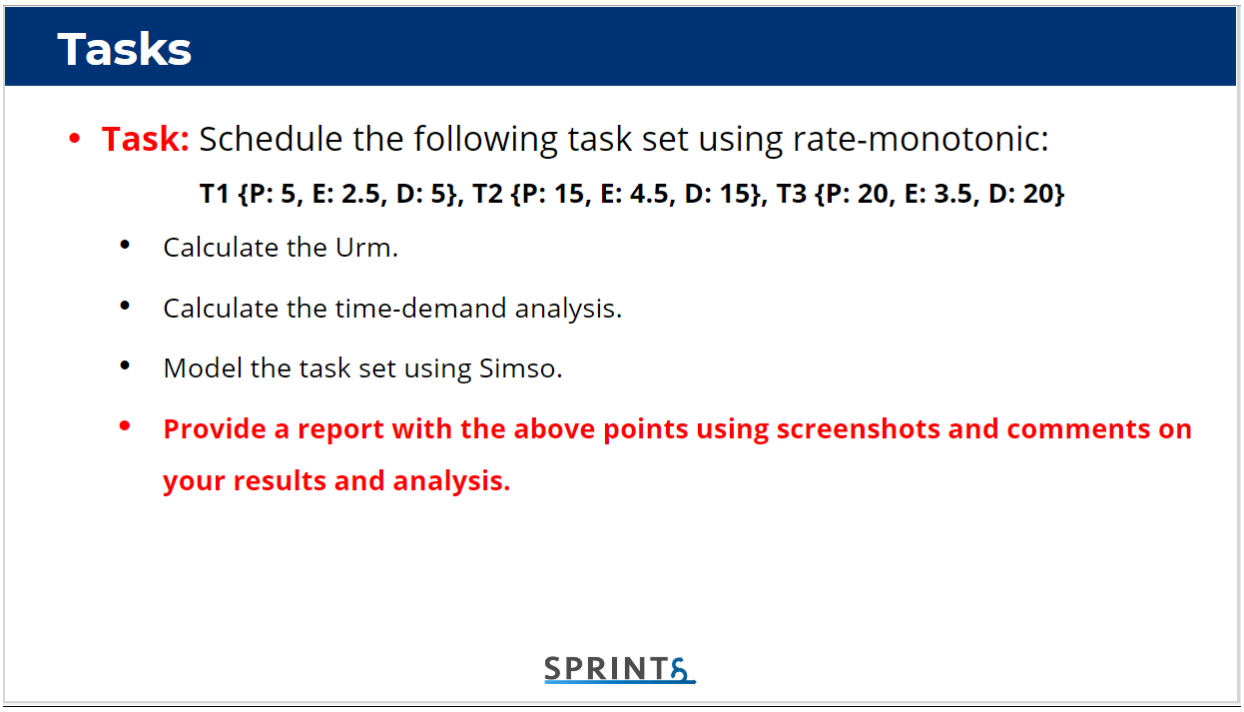
Sprints

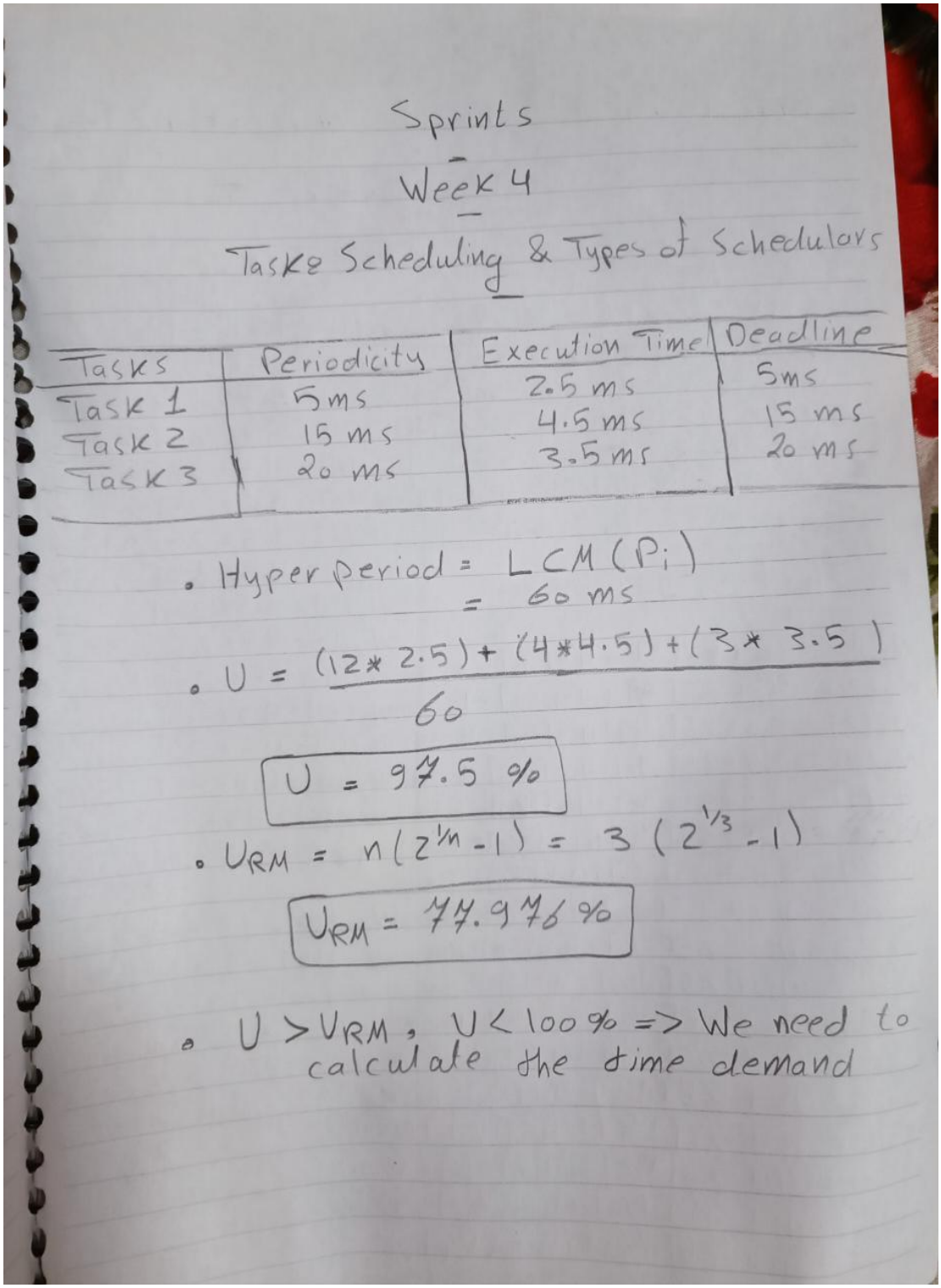
Week 4 Task

Scheduling & Types of Schedulers



Delivered By: Omar Adel Khedr

- **Hand Analysis**



Sprints

Week 4

Tasks Scheduling & Types of Schedulers

Tasks	Periodicity	Execution Time	Deadline
Task 1	5 ms	2.5 ms	5ms
Task 2	15 ms	4.5 ms	15 ms
Task 3	20 ms	3.5 ms	20 ms

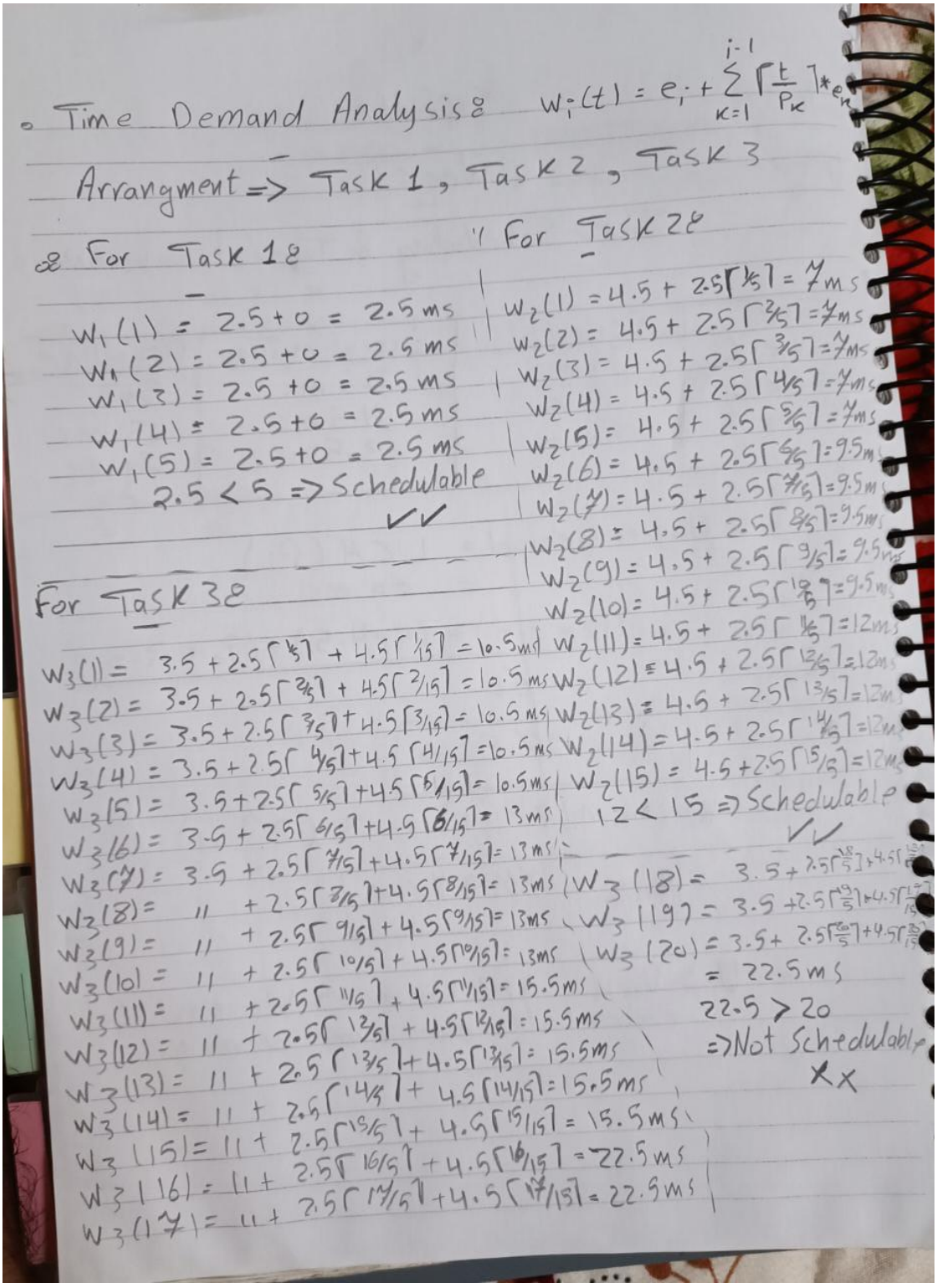
- Hyper period = LCM (P_i)
  = 60 ms
- $U = \frac{(12 * 2.5) + (4 * 4.5) + (3 * 3.5)}{60}$

$U = 97.5\ \%$

- $U_{RM} = n(2^{1/n} - 1) = 3(2^{1/3} - 1)$

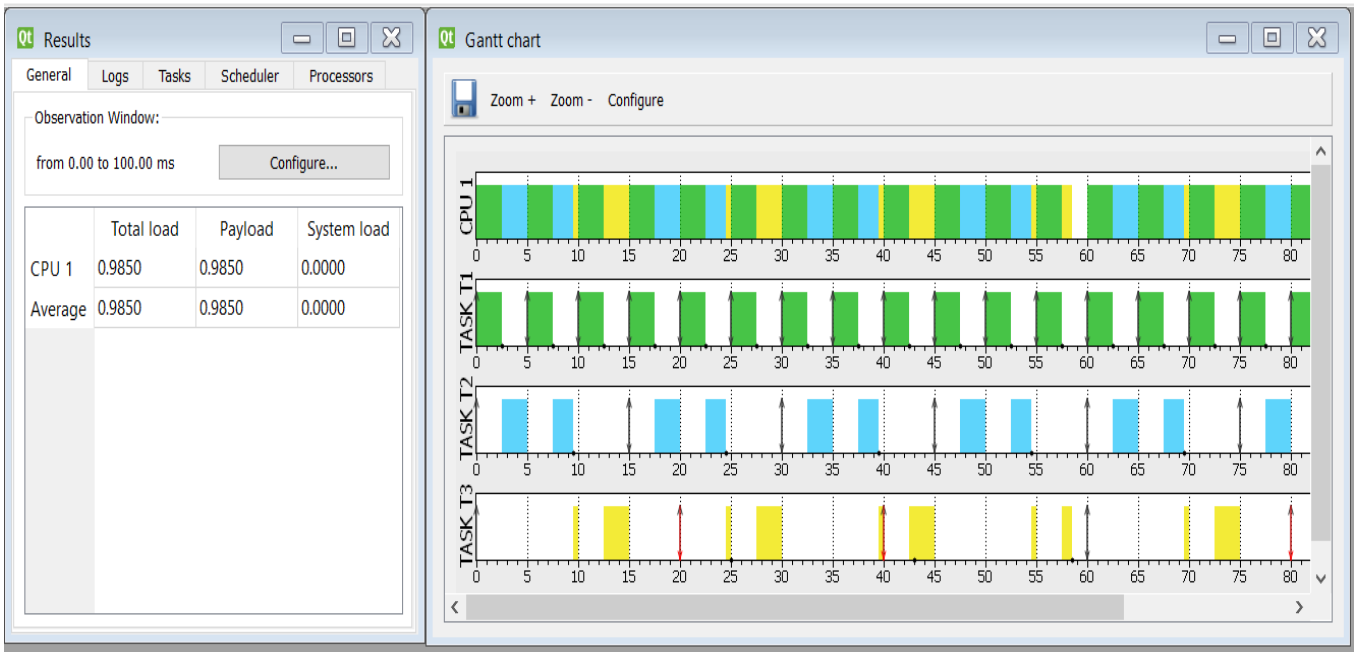
$U_{RM} = 77.976\ \%$

- $U > U_{RM}$, $U < 100\ \%$ => We need to calculate the time demand



From the analysis: Task 3 isn't schedulable which means that the whole system isn't feasible (T3: w (20) = 22.2 ms > Deadline)

- **Simso Simulation Results**



- Comments

1. Only Task 3 misses the deadline as predicted from the results of the calculations
2. The Bound test wasn't able to decide if the system is schedulable or not as U> Urm but U<100%
3. As the RM is the most optimal scheduling policy among other fixed priority schedulers, that means that no other fixed priority scheduler can make the system feasible
4. System is heavily loaded (CL = 98.5%)