

Task 3

3.1 Round Robin scheduling

T1: Starts at T=0. Waiting time = 0.
T2: Starts at T=1 (after T1's quantum). Waiting time = 1.
T3: Starts at T=3. Waiting time = 3.
T4: Starts at T=6. Waiting time = 6.
T5: Starts at T=9. Waiting time = 9.
T6: Starts at T=16. Waiting time = 16 - 11 = 5.
T7: Starts at T=19. Waiting time = 19 - 11 = 8.
T8: Starts at T=22. Waiting time = 22 - 11 = 11.
T9: Starts at T=25. Waiting time = 25 - 11 = 14.
T10: Starts at T=27. Waiting time = 27 - 11 = 16.

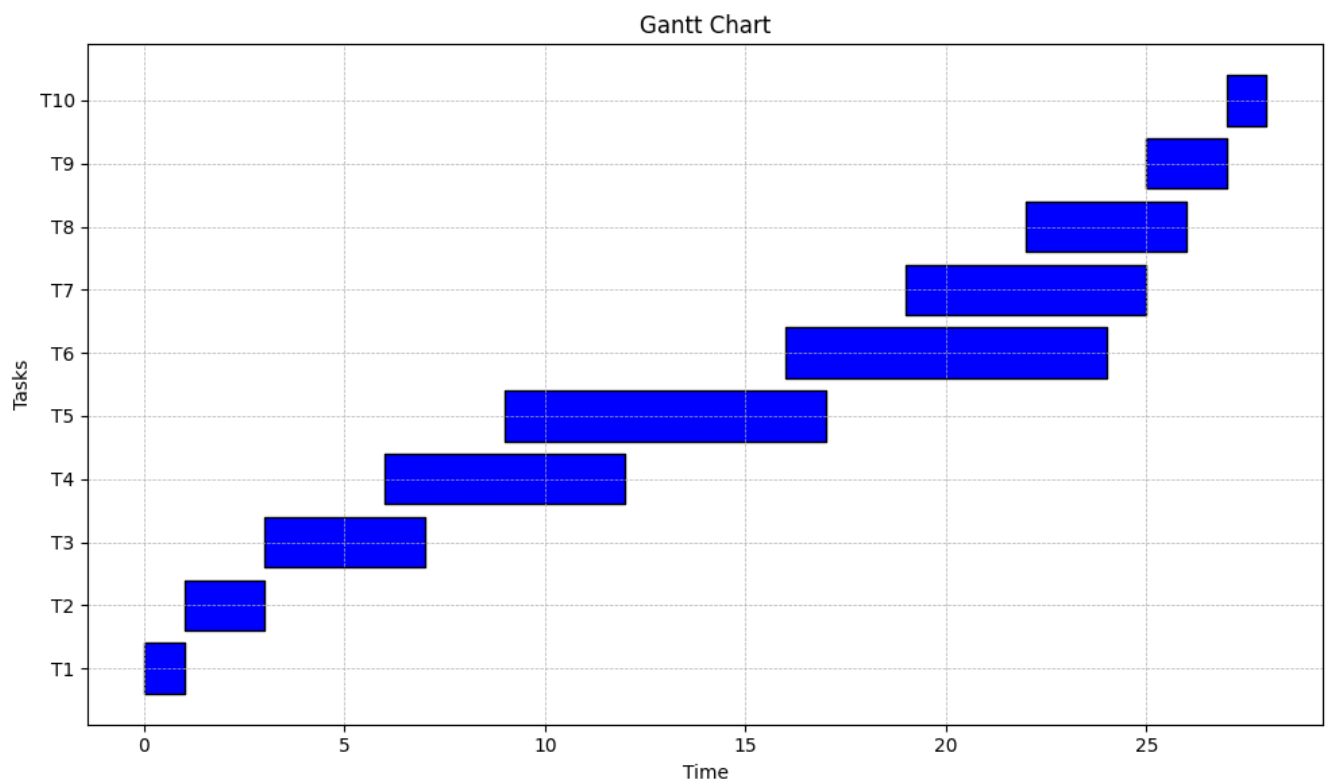
In the RR scheduling, each task is given a quantum (or time slice). If a task does not finish within its quantum, it's moved to the back of the queue.

Shortest waiting time: T1 with 0.

Longest waiting time: T10 with 16.

Average waiting time:

$$(0+1+3+6+9+5+8+11+14+16) / 10 = 7.3$$



3.2: First Come First Serve scheduling

T1: Starts at T=0. Waiting time = 0.
T2: Starts at T=1. Waiting time = 1.
T3: Starts at T=3. Waiting time = 3.
T4: Starts at T=7. Waiting time = 7.
T5: Starts at T=13. Waiting time = 13.
T6: Starts at T=21. Waiting time = 21 - 11 = 10.
T7: Starts at T=29. Waiting time = 29 - 11 = 18.
T8: Starts at T=35. Waiting time = 35 - 11 = 24.
T9: Starts at T=39. Waiting time = 39 - 11 = 28.
T10: Starts at T=41. Waiting time = 41 - 11 = 30.

In FCFS, tasks are executed in the order they arrive.

Shortest waiting time: T1 with 0.

Longest waiting time: T10 with 30.

Average waiting time:

$$(0+1+3+7+13+10+18+24+28+30) / 10 = 13.6$$

