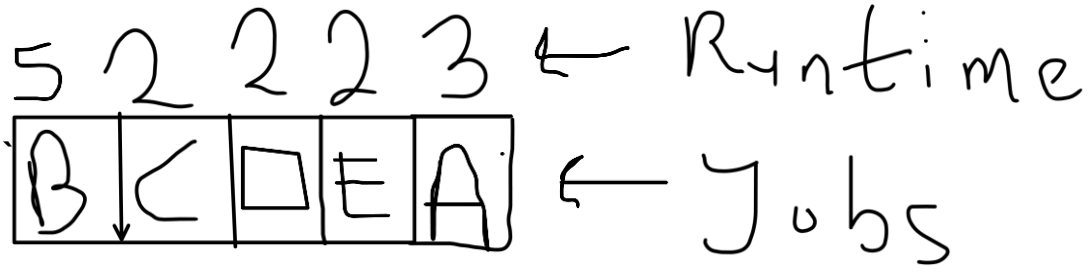
Batch Scheduling Visual Representation

Prompt: Consider 5 jobs, A through E, with runtimes 3, 5, 2, 2, 2 and arrival times 0, 0, 5, 5, 5 respectively. Provide a visual representation of both cases showing the runtimes and arrival times

Solution:



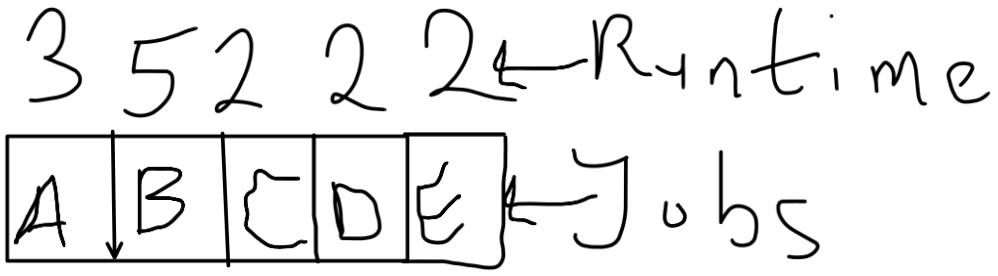
a)

Running jobs in defined order: Using a defined order, the average wait time is 3.4 which is shown below:

Job	Arrival Time	Start time	Wait Time (Start Time – Arrival Time)
B	0	0	0
C	5	5	0
D	5	7	2
E	5	9	4
A	0	11	11

Average Wait Time = Total Wait Time/ number of jobs = 17/5 = 3.4

Note: Start time = max(finish time of previous job, arrival time of current job)



b)

Running jobs in shortest job first (sjf) order: it picks the job with the shortest run time. Using sjf, the average wait time is 3.6

Job	Arrival Time	Start time	Wait Time (Start Time – Arrival Time)
A	0	0	0
B	0	3	3
C	5	8	3
D	5	10	5
E	5	12	7

Average Wait Time = Total Wait Time/ number of jobs = 18/5 = 3.6