**DYNAMIC IMPLEMENTATION OF FCFS SCHEDULING ALGORITHM**

* FCFS stands for First Come First Serve .
* In the FCFS scheduling algorithm, the job that arrived first in the ready queue is allocated to the CPU and then the job that came second, and so on.
* FCFS is a non-preemptive scheduling algorithm as a process holds the CPU until it either terminates or performs I/O.
* If a longer job has been assigned to the CPU then many shorter jobs after it will have to wait. This algorithm is used in most batch operating systems.

CHARACTERISTICS :

* It follows the non-preemptive approach i.e. once a process has control over the CPU it will not preempt until it terminates.
* The criteria for the selection of processes is arrival time. The dispatcher selects the first job in the ready queue and this job runs to completion of its CPU burst.

The average waiting time is very high so not optimal and thus gives poor performance.

HOW FCFS CPU SCHEDULING WORKS :

* The waiting time for the first process is 0 as it is executed first.
* The waiting time for upcoming process can be calculated by: wt[i] = ( at[i – 1] + bt[i – 1] + wt[i – 1] ) – at[i] where ,

wt[i] = waiting time of current process ,

at[i-1] = arrival time of previous process ,

bt[i-1] = burst time of previous process ,

wt[i-1] = waiting time of previous process ,

at[i] = arrival time of current process

* The Average waiting time can be calculated by: Average Waiting Time = (sum of all waiting time)/(Number of processes)

COMPLEXITY ANALYSIS :

Time complexity :- O(N)

SPACE COMPLEXITY :- O(N)

1. Input the processes along with their burst time(bt).

2. Find waiting time (wt) for all processes.

3. As first process that comes need not to wait so waiting time for process 1 will be 0 i.e.

wt[0] = 0.

4.Find waiting time for all other processes i.e for process i : wt[i] = bt[i-1] + wt[i-1] .

5. Find turnaround time = waiting time + burst time for all processes.

6. Find average waiting time =

total waiting time / no of processes.

7. Similarly, find average turnaround time =

total turnaround time / no of processes