**EXPERIMENT NO – 2**

**Aim:-** To implement First Come First Served [FCFS] CPU scheduling algorithm.

**Lab objective**: - Describe Process & Process Management using CPU Scheduling Algorithm.

**Theory:-**

**First Come First Serve (FCFS)** is an operating system scheduling algorithm that automatically executes queued requests and processes in order of their arrival. It is the easiest and simplest CPU scheduling algorithm. In this type of algorithm, processes which requests the CPU first get the CPU allocation first. This is managed with a FIFO queue.

The average time is quite long under FCFS algorithm. The CPU time is allotted to processes as they arrive. The process arriving first will use the CPU and will execute fully. Meanwhile, if any process comes then it will be added in waiting queue. As soon as the execution of first process ends, the CPU is allotted to the process waiting in queue.

**Code:**

pid = ['p1', 'p2', 'p3', 'p4']

at = [0, 1, 2, 3]

bt = [8, 4, 9, 5]

def get\_ct(at, bt):

    ct = []

    for i in range(len(pid)):

        if i == 0:

            ct.append(at[i] + bt[i])

        else:

            ct.append(ct[i-1] + bt[i])

    return ct

def get\_tat(ct, at):

    tat = []

    for i in range(len(pid)):

        tat.append(ct[i] - at[i])

    return tat

def get\_wt(tat, bt):

    wt = []

    for i in range(len(pid)):

        wt.append(tat[i] - bt[i])

    return wt

ct = get\_ct(at, bt)

tat = get\_tat(ct, at)

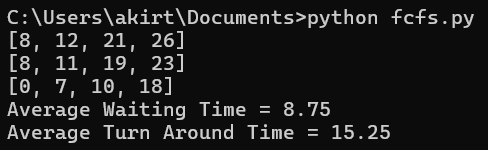
wt = get\_wt(tat, bt)

print(ct, tat, wt, sep='\n')

print(f"Average Waiting Time = {sum(wt)/len(wt)}")

print(f"Average Turn Around Time = {sum(tat)/len(tat)}")

**Output:**



**Discussion:**

1. Understood the CPU Scheduling and the FCFS (First come, First served) algorithm with the working of code. Given n processes with their burst times, the task was to find average waiting time and average turn around time using FCFS scheduling algorithm.
2. We understood that it is the simplest scheduling algorithm wherein it simply queues processes in the order that they arrive in the ready queue.
3. In this, the process that comes first will be executed first and next process starts only after the previous gets fully executed.

**Lab Outcome:-**

CPU Scheduling is a process of determining which process will own CPU for execution while another process is on hold. The successful implementation of FCFS algorithm helps to understand that Jobs are always executed on a first-come, first-serve basis.

**Conclusion:-**

* + FCFS is a Non-Preemptive CPU scheduling algorithm, so after the process has been allocated to the CPU, it will never release the CPU until it finishes executing.
  + The Average Waiting Time is high.
  + Short processes that are at the back of the queue have to wait for the long process at the front to finish.