

Lab Report No. **07**

Lab Report Name: **Implementation of FCFS Scheduling algorithm .**

Objectives:

- i What is FCFS Scheduling algorithm.
- ii How to implementation in C

Theory: First Come First Served (FCFS) is a **Non-Preemptive** scheduling algorithm. FIFO (First In First Out) strategy assigns priority to process in the order in which they request the processor. The process that requests the CPU first is allocated the CPU first. This is easily implemented with a FIFO queue for managing the tasks. As the process come in, they are put at the end of the queue. As the CPU finishes each task, it removes it from the start of the queue and heads on to the next task.

Turn Around Time = Completion Time - Arrival Time

Waiting Time = Turnaround time - Burst Time

Advantages of FCFS

- Simple
- Easy
- First come, First serv

Disadvantages of FCFS

- 1.The scheduling method is non preemptive, the process will run to the completion.
- 2.Due to the non-preemptive nature of the algorithm, the problem of starvation may occur.
- 3.Although it is easy to implement, but it is poor in performance since the average waiting time is higher as compare to other scheduling algorithms.

Corresponding Code:

```
#include<stdio.h>

int main()
{
    int n,bt[20],wt[20],tat[20],avwt=0,avtat=0,i,j;

    printf("Enter total number of processes: ");
    scanf("%d",&n);

    printf("\nEnter Process Burst Time\n");
    for(i=0;i<n;i++)
    {
        printf("P[%d]: ",i+1);
        scanf("%d",&bt[i]);
    }

    wt[0]=0;  //waiting time for first process is 0

    //calculating waiting time
    for(i=1;i<n;i++)
    {
        wt[i]=0;
        for(j=0;j<i;j++)
            wt[i]+=bt[j];
    }

    printf("\nProcess\t\tBurst Time\tWaiting Time\tTurnaround Time");
```

```

//calculating turnaround time

for(i=0;i<n;i++)
{
    tat[i]=bt[i]+wt[i];
    avwt+=wt[i];
    avtat+=tat[i];

    printf("\nP[%d]\t\t%d\t\t%d\t\t%d",i+1,bt[i],wt[i],tat[i]);
}

avwt/=i;
avtat/=i;

printf("\n\nAverage Waiting Time:%d",avwt);
printf("\nAverage Turnaround Time:%d",avtat);

printf("\n\n");

return 0;
}

```

Output:

```

tanvir@tanvir-HP-Pavilion-Laptop-15-cc1xx: ~/CodePractice/C_programming
File Edit View Search Terminal Help
(base) tanvir@tanvir-HP-Pavilion-Laptop-15-cc1xx:~/CodePractice/C_programming$ ./FCFS
Enter total number of processes: 4

Enter Process Burst Time
P[1]: 2
P[2]: 4
P[3]: 7
P[4]: 5

Process      Burst Time      Waiting Time      Turnaround Time
P[1]          2                0                 2
P[2]          4                2                 6
P[3]          7                6                13
P[4]          5                13                18

Average Waiting Time:5
Average Turnaround Time:9

(base) tanvir@tanvir-HP-Pavilion-Laptop-15-cc1xx:~/CodePractice/C_programming$

```