

Lab-Report

Report No: 07

Course code: ICT-3110

Course title: Operating System Lab

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Submitted by

Name: Ashikur Rahman Miran

ID:IT-18014

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Dept. of ICT

MBSTU.

Submitted To

Nazrul Islam

Assistant Professor

Dept. of ICT

MBSTU.

Experiment No: 07

Experiment Name: Implementation of FCFS scheduling algorithm.

Objectives:

- i) What is FCFS scheduling algorithm?
- ii) How to implement FCFS scheduling algorithm.

Theory:

FCFS is also known as first come first serve algorithm. It is a scheduling algorithm that automatically executes queued request and processes in order of their arrival. It is the easiest and simplest scheduling algorithm.

Implementation:

- 1. Take input of burst time and process.
- 2. Calculate **waiting time = starting time – arrival time.**
- 3. Calculate **turnaround time = burst time + waiting time.**

Process	Arrival time	Burst time
P1	0	80
P2	0	20
P3	0	10
P4	0	20
P5	0	80

Grant chart:

P1	P2	P3	P4	P5
0	80	100	110	130
				210

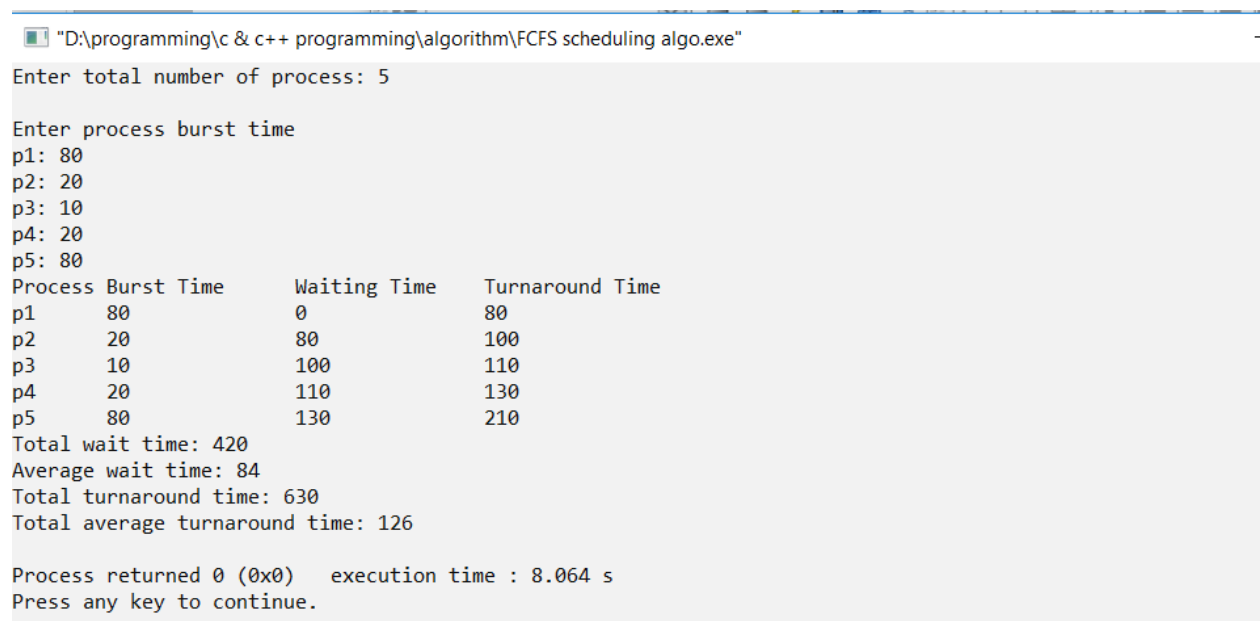
Process	Arrival time(At)	Burst time(Bt)	Waiting time Wt=st-at	Total turnaround time Tat=wt+bt
P1	0	80	0	80
P2	0	20	80	100
P3	0	10	100	110
P4	0	20	110	130
P5	0	80	130	210

Source code:

```
#include<bits/stdc++.h>
using namespace std;
int main()
{
    int n,bt[100],i,j,wt=0,tat;
    double twt=0,ttat=0;
    cout<<"Enter total number of process: ";
    cin>>n;
    cout<<endl<<"Enter process burst time"<<endl;
    for(i=1;i<=n;i++)
    {
        cout<<"p"<<i<<": ";
        cin>>bt[i];
    }
    bt[0]=0;
    cout<<"Process\tBurst Time\tWaiting Time\tTurnaround Time"<<endl;
    for(i=1;i<=n;i++)
    {
        cout<<"p"<<i<<"\t"<<bt[i];
        wt+=bt[i-1];
        twt+=wt;
        cout<<"\t\t"<<wt;
        tat=bt[i]+wt;
        ttat+=tat;
        cout<<"\t\t"<<tat<<endl;
    }
    cout<<"Total wait time: "<<twt<<endl;
    cout<<"Average wait time: "<<double(twt/n)<<endl;
```

```
cout<<"Total turnaround time: "<<ttat<<endl;
cout<<"Total average turnaround time: "<<double(ttat/n)<<endl;
}
```

Output:



The screenshot shows a Windows command prompt window titled "D:\programming\c & c++ programming\algorithm\FCFS scheduling algo.exe". The program prompts the user to enter the total number of processes (5) and then the burst times for five processes (p1: 80, p2: 20, p3: 10, p4: 20, p5: 80). It then displays a table of scheduling results for FCFS:

Process	Burst Time	Waiting Time	Turnaround Time
p1	80	0	80
p2	20	80	100
p3	10	100	110
p4	20	110	130
p5	80	130	210

Below the table, the program calculates and displays the following values:

- Total wait time: 420
- Average wait time: 84
- Total turnaround time: 630
- Total average turnaround time: 126

The program concludes with the message "Process returned 0 (0x0) execution time : 8.064 s" and "Press any key to continue."

Conclusion:

In this lab I learn about FCFS scheduling algorithm. I also implement It in c language. The output result is as expected.