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## **Practical – 1**

**Objective:** To Implement the FCFS CPU scheduling algorithm.

**Code:**

#include <stdio.h>

void calcAvgTime(int processes[], int n, int bt[], int at[]) {

int wt[n], tat[n];

getWaitTime(n, bt, wt, at);

getTurnTime(n, bt, wt, tat);

float avg\_wt = 0, avg\_tat = 0;

for (int i = 0; i < n; i++) {

avg\_wt += wt[i];

avg\_tat += tat[i];

}

avg\_wt /= n;

avg\_tat /= n;

printf("Process\tArrivalTime\tBurstTime\tWaitingTime\tTurnaroundTime\n");

for (int i = 0; i < n; i++) {

printf("%d\t%d\t\t%d\t\t%d\t\t%d\n", processes[i], at[i], bt[i], wt[i], tat[i]);

}

printf("Average Waiting Time: %.2f\n", avg\_wt);

printf("Average Turnaround Time: %.2f\n", avg\_tat);

}

void getWaitTime(int n, int bt[], int wt[], int at[]) {

int service\_time[n];

service\_time[0] = at[0];

for (int i = 1; i < n; i++) {

service\_time[i] = service\_time[i - 1] + bt[i - 1];

}

for (int i = 0; i < n; i++) {

wt[i] = service\_time[i] - at[i];

}

}

void getTurnTime(int n, int bt[], int wt[], int tat[]) {

for (int i = 0; i < n; i++) {

tat[i] = bt[i] + wt[i];

}

}

int main() {

int n;

printf("Enter the number of processes: ");

scanf("%d", &n);

int processes[n];

int arrival\_time[n];

int burst\_time[n];

printf("Enter the arrival time and burst time for each process:\n");

for (int i = 0; i < n; i++) {

printf("Process %d:\n", i + 1);

printf("Arrival Time: ");

scanf("%d", &arrival\_time[i]);

printf("Burst Time: ");

scanf("%d", &burst\_time[i]);

processes[i] = i + 1;

}

calcAvgTime(processes, n, burst\_time, arrival\_time);

return 0;

}

**Output:-**

Enter the number of processes: 4

Enter the arrival time and burst time for each process:

Process 1:

Arrival Time: 0

Burst Time: 3

Process 2:

Arrival Time: 1

Burst Time: 4

Process 3:

Arrival Time: 2

Burst Time: 5

Process 4:

Arrival Time: 3

Burst Time: 10

Process Arrival Time Burst Time Waiting Time Turnaround Time

1 0 3 0 3

2 1 4 2 6

3 2 5 5 10

4 3 10 9 19

Average Waiting Time: 4.00

Average Turnaround Time: 9.50