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SUBJECT : OPERATING SYSTEM

IMPLEMENTATION OF FCFS SCHEDULING ALGORITHM

PROGRAM

```
#include <stdio.h>
int waitingtime(int proc[], int n, int burst_time[], int wait_time[])
{
    wait_time[0] = 0;
    for (int i = 1; i < n; i++) wait_time[i] = burst_time[i-1] + wait_time[i-1]; return 0;
}

int turnaroundtime(int proc[], int n, int burst_time[], int wait_time[], int tat[]) {
    int i;
    for (i = 0; i < n; i++) tat[i] = burst_time[i] + wait_time[i]; return 0;
}

int avgtime(int proc[], int n, int burst_time[]) {
    int wait_time[n], tat[n], total_wt = 0, total_tat = 0;
    int i;
    waitingtime(proc, n, burst_time, wait_time); turnaroundtime(proc, n, burst_time, wait_time, tat); printf("Processes Burst waiting Turn around \n");
    for (i = 0; i < n; i++) printf("Average waiting time = %f\n", (float)total_wt / (float)n); printf("Average turn around time = %f\n", (float)total_tat / (float)n); return 0;
}

int main() {
    int proc[] = { 1, 2, 3 }; int n = sizeof proc / sizeof proc[0]; int burst_time[] = { 5, 8, 12 }; avgtime(proc, n, burst_time);
    return 0;
}
```

}

ALGORITHM

START

Step 1- In function `int waitingtime(int proc[], int n, int burst_time[], int wait_time[])`

Set `wait_time[0] = 0`

Loop For `i = 1` and `i < n` and `i++`

Set `wait_time[i] = burst_time[i-1] + wait_time[i-1]`

End For

Step 2- In function `int turnaroundtime(int proc[], int n, int burst_time[], int wait_time[], int tat[])`

Loop For `i = 0` and `i < n` and `i++`

Set `tat[i] = burst_time[i] + wait_time[i]`

End For

Step 3- In function `int avgtime(int proc[], int n, int burst_time[])`

Declare and initialize `wait_time[n]`, `tat[n]`, `total_wt = 0`, `total_tat = 0`;

Call `waitingtime(proc, n, burst_time, wait_time)`

Call `turnaroundtime(proc, n, burst_time, wait_time, tat)`

Loop For `i=0` and `i` Set `total_wt = total_wt + wait_time[i]`

Set `total_tat = total_tat + tat[i]`

Print process number, bursttime wait time and turnaround time

End For

Print "Average waiting time = i.e. $\text{total_wt} / n$

Print "Average turn around time = i.e. $\text{total_tat} / n$

Step 4- In `int main()`

Declare the input `int proc[] = { 1, 2, 3 }`

Declare and initialize `n = sizeof proc / sizeof proc[0]`

Declare and initialize $\text{burst_time}[] = \{10, 5, 8\}$

Call $\text{avgtime}(\text{proc}, n, \text{burst_time})$

STOP

C:\Users\hp\Documents\CCC.exe

Processes	Burst	Waiting	Turn around
1	5	0	5
2	8	5	13
3	12	13	25

Average waiting time = 6.000000

Average turn around time = 14.333333

Process returned 0 (0x0) execution time : 0.269 s

Press any key to continue.