

FIRST COME FIRST SERVE

```
#include <stdio.h>
#include <stdlib.h>

struct process_struct
{
    int pid;
    int at;
    int bt;
    int ct, wt, tat, rt, start_time;
} ps[20];

int comparatorAT(const void *a, const void *b)
{
    int x = ((struct process_struct *)a)->at;
    int y = ((struct process_struct *)b)->at;
    if (x < y)
        return -1;
    else if (x >= y)
        return 1;
}

int max(int a, int b)
{
    return a > b ? a : b;
}

int main()
{
    int n;
    printf("Enter Total Number of Processes: ");
    scanf("%d", &n);

    float sum_tat = 0, sum_wt = 0;

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

```
{
    printf("Enter Process %d Arrival Time: ", i);
    scanf("%d", &ps[i].at);
    ps[i].pid = i;
}

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

for (int i = 0; i < n; i++)
{
    ps[i].start_time = (i == 0) ? ps[i].at :
max(ps[i].at, ps[i - 1].ct);
    ps[i].ct = ps[i].start_time + ps[i].bt;
    ps[i].tat = ps[i].ct - ps[i].at;
    ps[i].wt = ps[i].tat - ps[i].bt;

    sum_tat = sum_tat + ps[i].tat;
    sum_wt = sum_wt + ps[i].wt;
}
qsort((void *)ps, n, sizeof(struct process_struct),
comparatorAT);
printf("\nProcess No. \tAT\tBurst
Time\tCT\tTAT\tWT\n");
for (int i = 0; i < n; i++)
{
    printf("%d\t%d\t%d\t%d\t%d\t%d\n", ps[i].pid,
ps[i].at, ps[i].bt, ps[i].ct, ps[i].tat, ps[i].wt);
    printf("\n");
}
printf("\nAverage Turn Around Time: %.2f", sum_tat /
n);
printf("\nAverage Waiting Time: %.2f", sum_wt / n);
return 0;
}
```

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OUTPUT

```
PS E:\Mega Sync\Programming\C> cd "e:\Mega Sync\Programming\C\Scheduling Algorithms\" ; if ($?) { gcc fcfs.c -o fcfs } ; if ($?) { .\fcfs
}
Enter Total Number of Processes: 4
Enter Process 0 Arrival Time: 0
Enter Process 1 Arrival Time: 1
Enter Process 2 Arrival Time: 5
Enter Process 3 Arrival Time: 6

Enter Process 0 Burst Time: 2

Enter Process 1 Burst Time: 2

Enter Process 2 Burst Time: 3

Enter Process 3 Burst Time: 4



| Process No. | AT | Burst Time | CT | TAT | WT |
|-------------|----|------------|----|-----|----|
| 0           | 0  | 2          | 2  | 2   | 0  |
| 1           | 1  | 2          | 4  | 3   | 1  |
| 2           | 5  | 3          | 8  | 3   | 0  |
| 3           | 6  | 4          | 12 | 6   | 2  |



Average Turn Around Time: 3.50
Average Waiting Time: 0.75
PS E:\Mega Sync\Programming\C\Scheduling Algorithms> 
```