

Program

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

void sort(int bt[], int n, int pid[], char pname[])
{
    int temp;
    for (int i=0;i<n-1;i++)
    {
        for (int j=0;j<n-i-1;j++)
        {
            if (bt[j]>bt[j+1])
            {
                temp = bt[j];
                bt[j] = bt[j+1];
                bt[j+1] = temp;

                temp = pid[j];
                pid[j] = pid[j+1];
                pid[j+1] = temp;

                char tname = pname[j];
                pname[j] = pname[j+1];
                pname[j+1] = tname;
            }
        }
    }
}

void calculateTimes(int bt[], int n, int wt[], int tt[])
{
    wt[0] = 0;
    tt[0] = bt[0];

    for (int i = 1; i < n; i++)
    {
        wt[i] = bt[i-1] + wt[i-1];
        tt[i] = wt[i] + bt[i];
    }
}

void printResults(int pid[], char pname[], int bt[], int wt[], int tt[], int n)
{
    printf("\nProcess ID | Process Name | Burst Time | Waiting Time | Turnaround Time\n");
    for (int i = 0; i < n; i++)
    {
        printf("%d      | %c      | %d      | %d      | %d\n", pid[i], pname[i], bt[i], wt[i], tt[i]);
    }
}

int main()
{
    int n;
    printf("Enter the number of processes: ");
    scanf("%d",&n);
```

```

int pid[n];
char pname[n];
int bt[n];
int wt[n];
int tt[n];

for(int i = 0; i < n; i++)
{
    printf("Enter the name of process %d: ", i+1);
    scanf("%c",&pname[i]);
    printf("Enter the burst time of process %d: ", i+1);
    scanf("%d",&bt[i]);
    pid[i] =i+1;
}

sort(bt,n,pid,pname);
calculateTimes(bt,n,wt,tt);
printResults(pid,pname,bt,wt,tt,n);

float avg_wt = 0, avg_tt = 0;
for (int i = 0; i < n; i++)
{
    avg_wt += wt[i];
    avg_tt += tt[i];
}
avg_wt /= n;
avg_tt /= n;

printf("\nAverage Waiting Time: %.2f", avg_wt);
printf("\nAverage Turnaround Time: %.2f", avg_tt);

return 0;}

```

Output

```

student@dl-32:~/irine$ ./a.out
Enter the number of processes: 2
Enter the name of process 1: 1
Enter the burst time of process 1: 2
Enter the name of process 2: 2
Enter the burst time of process 2: 3

Process ID | Process Name | Burst Time | Waiting Time | Turnaround Time
1          | 1            | 2          | 0            | 2
2          | 2            | 3          | 2            | 5

Average Waiting Time: 1.00
Average Turnaround Time: 3.50student@dl-32:~/irine$ gedit fcfs2.c

```