OS LAB WEEK 3

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Q:- SJF (Non Pre-emptive) using C

```
#include <stdio.h>
struct process{
    int burst;
    int arr_time;
    int waiting_time;
    int turn_time;
};
typedef struct process proc;

void sjf(proc processes[],int n){
    int comp_time=0;
    float avg_tat=0;
    float avg_wait=0;
    proc temp;
    for(int i=0;i<n-1;i++){
        for(int j=0;j<n-i-1;j++){
            if(processes[j+1].burst<processes[j].burst){
                temp=processes[j];
                processes[j]=processes[j+1];
                processes[j+1]=temp;
            }
        }
    }
    for(int i=0;i<n;i++){
        comp_time+=processes[i].burst;
```

```
processes[i].turn_time=comp_time-processes[i].arr_time;
        avg_tat+=processes[i].turn_time;
    }
    for(int i=0;i<n;i++){

processes[i].waiting_time=processes[i].turn_time-processes[i].
burst;
        avg_wait+=processes[i].waiting_time;
    }
    for(int i=0;i<n;i++){
        printf("\nburst, arrival time for process:%d\t",i+1);
        printf("%d\t",processes[i].burst);
        printf("%d\t",processes[i].arr_time);
        printf("%d\t",processes[i].turn_time);
        printf("%d\n",processes[i].waiting_time);
    }
    printf("average waiting time: %f\n",avg_wait/n);
    printf("average turn around time: %f\n",avg_tat/n);
}
int main(){
    int n;
    printf("enter the number of processes:\t");
    scanf("%d",&n);
    proc processes[n];
    for(int i=0;i<n;i++){
        printf("enter  the burst, arrival time for
process:%d\n",i+1);
        scanf("%d",&processes[i].burst);
        scanf("%d",&processes[i].arr_time);
    }
    for(int i=0;i<n;i++){
        printf("burst, arrival time for process:%d\t",i+1);
        printf("%d\t",processes[i].burst);
        printf("%d\n",processes[i].arr_time);
    }
    sjf(processes,n);
}
```

Output:-

```
enter the number of processes:  4
enter  the burst, arrival time for process:1
21 0
enter  the burst, arrival time for process:2
3 0
enter  the burst, arrival time for process:3
6 0
enter  the burst, arrival time for process:4
2 0
burst, arrival time for process:1       21      0
burst, arrival time for process:2       3       0
burst, arrival time for process:3       6       0
burst, arrival time for process:4       2       0

burst, arrival time for process:1       2       0       2       0

burst, arrival time for process:2       3       0       5       2

burst, arrival time for process:3       6       0       11      5

burst, arrival time for process:4       21      0       32      11
average waiting time: 4.500000
average turn around time: 12.500000


...Program finished with exit code 0
Press ENTER to exit console.
```