Ex. No.: 6b)
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SHORTEST JOB FIRST

Aim:

To implement the Shortest Job First (SJF) scheduling technique

Algorithm:

1. Declare the structure and its elements.
2. Get number of processes as input from the user.
3. Read the process name, arrival time and burst time
4. Initialize waiting time, turnaround time & flag of read processes to zero. 5. Sort based on burst time of all processes in ascending order 6. Calculate the waiting time and turnaround time for each process. 7. Calculate the average waiting time and average turnaround time. 8. Display the results.

Program Code:

```
#include<stdio.h>
int main(){
int n;
printf("Enter no of Processes:");
scanf("%d",&n);
int P[n], bt[n], wt[n], tat[n];
int total-wt=0, total-tat=0;
printf("Enter burst time for the each processess:\n");
for(int i=0;i<n;i++){
        scanf("%d",&bt[i]);
}
for(int i=0;i<n;i++){
        for(int j=i+1;j<n;j++){
                if(bt[i]>bt[j]){
                        int temp=bt[i];
                        bt[i]=bt[j];
                        bt[j]=temp;
                        p[i]=
                        temp=p[i];
                        p[i]=p[j];
                        p[j]=temp;
                }
        }
}
```

```
wt[0] = 0;
for (int i=1; i<n; i++){
    wt[i] = bt[i-1] + wt[i-1];
}
for (int i = 0; i<n; i++){
    tat[i] = bt[i] + wt[i];
}
for (int i=0 ; i<n; i++){
    total_wt = total_wt + wt[i];
    total_tat = total_tat + tat[i];
}
printf ("Process \t Burst time \t Waiting Time \t TAT \n");
for (int i = 0 ; i<n; i++){
    printf ("%d \t %d \t %d \t \n", p[i], bt[i], wt[i], tat[i]);
}
float avg_wt, avg_tat;
avg_wt = total_wt/n;
avg_tat = total_tat/n;
printf ("Average Waiting Time: %.1f", avg_wt);
printf ("Average TAT: %.1f", avg_tat);
}
```

Sample Output:
Enter the number of process:
4
Enter the burst time of the processes:
8 4 9 5

Process	Burst Time	Waiting Time	Turn Around Time
2	4	0	4
4	5	4	9
1	8	9	17
3	9	17	26

Average waiting time is: 7.5
Average Turn Around Time is: 13.0

Enter the no of Process : 4
Enter the burst time for all process : 6 8 7 3

Burst Time
3
6
7
8

Process	Burst time (ms)	Waiting Time (ms)	Turn around Time (ms)
0	3	0	3
1	6	3	9
2	7	9	16
3	8	16	24

Result:

Avg Waiting Time : 7.0 ms
Avg Turn around Time : 13.0 ms

Thus the shortest Job first algorithm is executed.