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OS-LAB-WEEK-4

1. Write a C program to implement Shortest-Job-First scheduling algorithm.

PROGRAM:

```
#include<stdio.h>
#include<stdlib.h>
int SJF(int burst[],int n,int processor[]){
int pos,temp,i;
int  wait[20],turn[20];
for(int i=0;i<n;i++){
pos=i;
        for(int j=i+1;j<n;j++)
        {
                if(burst[pos]>burst[j])
                        pos=j;

        }
if(pos!=i){
temp=burst[i];
burst[i]=burst[pos];
burst[pos]=temp;

temp=processor[i];
processor[i]=processor[pos];
processor[pos]=temp;
}
}
float total=0;
wait[0]=0;
for(i=1;i<n;i++)
{
        wait[i]=0;
        for(int j=0;j<i;j++)
                wait[i]+=burst[j];
        total+=wait[i];
}
float totalturn=0;
for(i=0;i<n;i++){
        total=burst[i]+wait[i];
        turn[i]=total;
```

```
        totalturn+=turn[i];
}
float average_waitint_time=total/n;
float avaerage_turn_time=totalturn/n;


printf("processor        burst time        waiting time      turn around time\n");
for(int i=0;i<n;i++)
        printf("%d                %d                %d
        %d\n",processor[i],burst[i],wait[i],turn[i]);
printf("Average waiting time is %f\nAverage turn around time is
%f\n",average_waitint_time,avaerage_turn_time);

}

int main(){
int n,i,burst[20],processor[20];
printf("****SHORTEST JOB FIRST****\n\n");
printf("Enter the number of processes :  \n");
scanf("%d",&n);
for(int i=0;i<n;i++){
        printf("Enter burst time of  processor %d : ",i+1);
        scanf("%d",&burst[i]);
        processor[i]=i+1;
        printf("\n");

}
SJF(burst,n,processor);

}
```

OUTPUT:

```
varsha@ubuntu:~/PES1UG19EC339/os$ cc SJF.c
varsha@ubuntu:~/PES1UG19EC339/os$ ./a.out
****SHORTEST JOB FIRST****

Enter the number of processes :
4
Enter burst time of  processor 1 : 4

Enter burst time of  processor 2 : 3

Enter burst time of  processor 3 : 5

Enter burst time of  processor 4 : 2

processor       burst time      waiting time    turn around time
4               2               0               2
2               3               2               5
1               4               5               9
3               5               9               14
Average waiting time is 3.500000
Average turn around time is 7.500000
```

2. Write a C program to implement Priority Scheduling algorithm.

PROGRAM:

```
#include<stdio.h>
#include<stdlib.h>
int PJS(int prior[],int burst[],int n,int processor[]){
int pos,temp,i;
int  wait[20],turn[20];
for(int i=0;i<n;i++){
pos=i;
        for(int j=i+1;j<n;j++)
        {
                if(prior[pos]>prior[j])
                        pos=j;


        }
if(pos!=i){
temp=prior[i];
prior[i]=prior[pos];
prior[pos]=temp;

temp=burst[i];
burst[i]=burst[pos];
burst[pos]=temp;
```

```
temp=processor[i];
processor[i]=processor[pos];
processor[pos]=temp;
}
}
float total=0;

wait[0]=0;
for(i=1;i<n;i++)
{
        wait[i]=0;
        for(int j=0;j<i;j++)
                wait[i]+=burst[j];
        total+=wait[i];
}
float average_waiting_time=total/n;
float totalturn=0;
for(i=0;i<n;i++){
        total=burst[i]+wait[i];
        turn[i]=total;
        totalturn+=turn[i];
}

float average_turn_time=totalturn/n;


printf("job   Priority     burst time          waiting time      turn around time\n");
for(int i=0;i<n;i++)
        printf("%d        %d                %d                %d
        %d\n",processor[i],prior[i],burst[i],wait[i],turn[i]);
printf("Average waiting time is %f\nAverage turn around time is
%f\n",average_waiting_time,average_turn_time);

}

int main(){
int n,i,burst[20],processor[20];
int prior[20];
printf("****PRIORITY JOB SCHEDULING****\n\n");
printf("Enter the number of jobs :  \n");
scanf("%d",&n);
for(int i=0;i<n;i++){
```

```
        printf("Enter burst time of  processor %d : ",i+1);
        scanf("%d",&burst[i]);
        printf("Enter the priority of processor %d:",i+1);

        scanf("%d",&prior[i]);
        processor[i]=i+1;
        printf("\n");

}
PJS(prior,burst,n,processor);

}
```

OUTPUT:

```
varsha@ubuntu:~/PES1UG19EC339/os$ ./a.out
****PRIORITY JOB SCHEDULING****

Enter the number of jobs :
4
Enter burst time of  processor 1 : 3
Enter the priority of processor 1:2

Enter burst time of  processor 2 : 6
Enter the priority of processor 2:1

Enter burst time of  processor 3 : 7
Enter the priority of processor 3:3

Enter burst time of  processor 4 : 8
Enter the priority of processor 4:4

job   Priority     burst time    waiting time     turn around time
2       1              6              0              6
1       2              3              6              9
3       3              7              9              16
4       4              8              16             24
Average waiting time is 7.750000
Average turn around time is 13.750000
```