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SEA 42

Experiment No. 5

Non Pre-emptive Scheduling
Code:

```
#include<stdio.h>
int main(){
int
burst_t[20],p[20],wait_t[20],tat[20],pr[20],i,j,n,pos,temp;
float avg_wt,avg_tat,total=0;
printf("Enter Total Number of Process:");
scanf("%d",&n);
printf("\nEnter Burst Time and
Priority\n"); for(i=0;i<n;i++){
printf("\nP[%d]\n",i+1); printf("Burst
Time:"); scanf("%d",&burst_t[i]);
printf("Priority:"); scanf("%d",&pr[i]);
p[i]=i+1; } for(i=0;i<n;i++){ pos=i;
for(j=i+1;j<n;j++){
if(pr[j]<pr[pos])
pos=j;
}
temp=pr[i];
pr[i]=pr[pos];
pr[pos]=temp;
temp=burst_t[i];
burst_t[i]=burst_t[pos];
burst_t[pos]=temp;
temp=p[i]; p[i]=p[pos];
p[pos]=temp;
}
wait_t[0]=0;
for(i=1;i<n;i++){
wait_t[i]=0;
for(j=0;j<i;j++)
wait_t[i]+=burst_t[j];
total+=wait_t[i];
}
avg_wt=total/n;
total=0;
printf("\nProcess\t Burst Time \tWaiting Time \tTurnaround Time");
for(i=0;i<n;i++){
tat[i]=burst_t[i]+wait_t[i];
total+=tat[i];
printf("\nP[%d]\t\t %d\t\t %d\t\t\t%d",p[i],burst_t[i],wait_t[i],tat[i]);  }
avg_tat=total/n; printf("\n\nAverage Waiting Time=%f",avg_wt);
printf("\nAverage Turnaround Time=%f\n",avg_tat); return 0;
}
```

```
ospc-12@ospc12-H81M-S:~/Akshit_45$ gcc Exp5NP.c
ospc-12@ospc12-H81M-S:~/Akshit_45$ ./a.out
Enter Total Number of Process:4

Enter Burst Time and Priority

P[1]
Burst Time:5
Priority:1

P[2]
Burst Time:3
Priority:2

P[3]
Burst Time:9
Priority:4

P[4]
Burst Time:2
Priority:3

Process    Burst Time          Waiting Time    Turnaround Time
P[1]              5                   0                5
P[2]              3                   5                8
P[4]              2                   8                10
P[3]              9                   10               19

Average Waiting Time=5.750000
Average Turnaround Time=10.500000
```

Pre-emptive Scheduling

Code :

```
#include<stdio.h>
int main(){
int i, limit, total = 0, x, counter = 0, qt; int wt
= 0, tat = 0, AT[10], BT[10], temp[10]; float
avg_wt, avg_tat;
printf("Enter Total Number of
Processes:"); scanf("%d", &limit); x = limit;
for(i = 0; i < limit; i++){
printf("Enter Details of Process[%d]\t", i + 1);
printf("Arrival Time:\t");
scanf("%d", &AT[i]);
printf("Burst Time:\t");
scanf("%d", &BT[i]); temp[i] =
BT[i]; } printf("Enter Time
Quantum:\t"); scanf("%d", &qt);
printf("\nProcess\t ID\tBurst Time\t Turnaround Time \tWaiting Time
\n"); for(total = 0, i = 0; x != 0;) { if(temp[i] <= qt && temp[i] > 0){ total =
total + temp[i]; temp[i] = 0; counter = 1; }
else if(temp[i] > 0){
temp[i] = temp[i] - qt;
total = total + qt; }
```

```
if(temp[i] == 0 && counter == 1){ x--
;
printf("\nProcess[%d]\t\t %d \t\t %d \t\t\t %d", i + 1, BT[i], total - AT[i], total - AT[i] - BT[i]);  wt
=
wt + total - AT[i] - BT[i];
tat = tat + total - AT[i];
counter = 0;
}
if(i == limit - 1){
i = 0; }
else if(AT[i + 1] <= total){
i++; } else{
i = 0; } }
avg_wt = wt * 1.0 / limit;
avg_tat = tat * 1.0 / limit;
printf("\nAverage Waiting Time:\t%f", avg_wt);
printf("\nAvg Turnaround Time:\t%f", avg_tat);
return 0;
```

```
ospc-12@ospc12-H81M-S:~/Akshit_45$ gcc EXP5RR.c
ospc-12@ospc12-H81M-S:~/Akshit_45$ ./a.out
Enter Total Number of Processes:4
Enter Details of Process[1]     Arrival Time:   12
Burst Time:     13
Enter Details of Process[2]     Arrival Time:   0
Burst Time:     16
Enter Details of Process[3]     Arrival Time:   8
Burst Time:     10
Enter Details of Process[4]     Arrival Time:   4
Burst Time:     8
Enter Time Quantum:     2

Process  ID     Burst Time       Turnaround Time        Waiting Time

Process[4]                8               32                      24
Process[3]                10              34                      24
Process[1]                13              31                      18
Process[2]                16              47                      31
Average Waiting Time:   24.250000
```