

Ex. No.: 6c)

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## PRIORITY SCHEDULING

### Aim:

To implement priority scheduling technique

### Algorithm:

1. Get the number of processes from the user.
2. Read the process name, burst time and priority of process.
3. Sort based on burst time of all processes in ascending order based priority
4. Calculate the total waiting time and total turnaround time for each process
5. Display the process name & burst time for each process.
6. Display the total waiting time, average waiting time, turnaround time

### Program Code:

```
#include <stdio.h>
int main()
{
    int n, i, j;
    printf("Enter no. of processes");
    scanf("%d", &n);
    int bt[n], wt[n], tat[n], p[n], pri[n], temp;
    float total_wt = 0, total_tat = 0;
    printf("Enter the burst time & priority : \n");
    for(i=0; i<n; i++) {
        printf(" P[%d]", i);
        printf(" Burst time : ");
        scanf("%d", &bt[i]);
        printf(" Priority : ");
        p[i] = i;
        scanf("%d", &pri[i]);
    }
}
```

2

```

for (i=0; i<n-1; i++) {
    for (j=i+1; j<n; j++) {
        if (pri[i] > pri[j]) {
            temp = bt[i];
            bt[i] = bt[j];
            bt[j] = temp;
            temp = pri[i];
            pri[i] = pri[j];
            pri[j] = temp;
            temp = p[i];
            p[i] = p[j];
            p[j] = temp;
        }
    }
}

```

```

wt[0] = 0;
for (i=1; i<n; i++) {
    wt[i] = wt[i-1] + bt[i-1];
}

```

```

for (i=0; i<n; i++) {
    tat[i] = bt[i] + wt[i];
}

```

printf ("In process %d Burst time %d Waiting time %d Turnaround time %d")

```

for (i=0; i<n; i++) {
    printf ("%d %d %d %d %d", i, bt[i], wt[i], tat[i]);
    total_wt += wt[i];
    total_tat += tat[i];
}

```

printf ("Average waiting time of %f", total\_wt/n);

printf ("Average turnaround time = %f", total\_tat/n);

OUTPUT:

Enter the no. of process : 3

Enter Burst time & priority (in 3):

P[0] Burst time: 3

Priority 2

P[1] Burst time: 4

Priority 1

P[2] Burst time: 2

Priority 3

Process	Burst time	Priority	Turnaround time	Waiting time
P <sub>2</sub>	4	2	4	0
P <sub>1</sub>	3	1	7	4
P <sub>3</sub>	2	3	9	7

P <sub>2</sub>	P <sub>1</sub>	P <sub>3</sub>
0	4	7

$$\text{Avg tat} = \frac{4+7+9}{3} = \frac{20}{3}$$

$$\text{Avg wt} = \frac{0+4+7}{3} = \frac{11}{3}$$

$$\text{Avg wt} = \frac{0+4+7}{3} = \frac{11}{3}$$

$$= 3.67 \text{ ms}$$

### Sample Output:

```
C:\Users\admin\Desktop\Untitled1.exe
Enter Total Number of Process:4
Enter Burst Time and Priority
P[1]
Burst Time:6
Priority:3
P[2]
Burst Time:2
Priority:2
P[3]
Burst Time:14
Priority:1
P[4]
Burst Time:6
Priority:4
Process      Burst Time          Waiting Time    Turnaround Time
P[3]           14                  0                14
P[2]           2                   14               16
P[1]           6                   16               22
P[4]           6                   22               28
Average Waiting Time=13
Average Turnaround Time=20
```

### Result:

thus the above program to implement priority scheduling technique has been executed successfully

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