
OS -- C PROGRAM FOR PRIORITY SCHEDULING

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roehit@LAPTOP-0SIPK43K: ~  
roehit@LAPTOP-0SIPK43K:~$ nano ps.c
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rohit@LAPTOP-OSIPK43K: ~
GNU nano 4.8 ps.c
#include<stdio.h>

int main()
{
    int bt[20],p[20],wt[20],tat[20],pr[20],i,j,n,total=0,pos,temp,avg_wt,avg_tat;
    printf("Enter Total Number of Process:");
    scanf("%d",&n);

    printf("\nEnter Burst Time and Priority\n");
    for(i=0;i<n;i++)
    {
        printf("\nEnter %d",i+1);
        printf("Burst Time:");
        scanf("%d",&bt[i]);
        printf("Priority:");
        scanf("%d",&pr[i]);
        p[i]=i+1; //contains process number
    }

    //sorting burst time, priority and process number in ascending order using selection sort
    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=bt[i];
        bt[i]=bt[pos];
        bt[pos]=temp;

        temp=p[i];
        p[i]=p[pos];
        p[pos]=temp;
    }

    wt[0]=0; //waiting time for first process is zero

    //calculate waiting time
    for(i=1;i<n;i++)
    {
        wt[i]=0;
    }
}

```

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for(j=0;j<i;j++)  
    wt[j]=bt[j];  
  
total+=wt[i];  
}  
  
avg_wt=total/n; //average waiting time  
total=0;  
  
printf("\nProcess\t Burst Time \tWaiting Time\tTurnaround Time");  
for(i=0;i<n;i++)  
{  
    tat[i]=bt[i]+wt[i]; //calculate turnaround time  
    total+=tat[i];  
    printf("\np[%d]\tt\t %d\t\t %d\t\t\t%d\t\t\t\r[i],bt[i],wt[i],tat[i]);  
}  
  
avg_tat=total/n; //average turnaround time  
printf("\n\nAverage Waiting Time-%d",avg_wt);  
printf("\n\nAverage Turnaround Time-%d\n",avg_tat);  
  
return 0;
```

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roehit@LAPTOP-0SIPK43K: ~  
roehit@LAPTOP-0SIPK43K:~$ gcc ps.c  
roehit@LAPTOP-0SIPK43K:~$ ./a.out  
Enter Total Number of Process:7  
  
Enter Burst Time and Priority  
  
P[1]  
Burst Time:4  
Priority:2  
  
P[2]  
Burst Time:2  
Priority:4  
  
P[3]  
Burst Time:3  
Priority:6  
  
P[4]  
Burst Time:5  
Priority:10  
  
P[5]  
Burst Time:  
1  
Priority:8  
  
P[6]  
Burst Time:4  
Priority:12  
  
P[7]  
Burst Time:6  
Priority:9  
  
Process      Burst Time      Waiting Time      Turnaround Time  
P[1]          4                0                 4  
P[2]          2                4                 6  
P[3]          3                6                 9  
P[5]          1                9                10  
P[7]          6               10                16  
P[4]          5               16                21  
P[6]          4               21                25  
  
Average Waiting Time=9  
Average Turnaround Time=13  
roehit@LAPTOP-0SIPK43K:~$
```