Mawlana Bhashani Science and Technology University

Lab-Report

Report No: 09

Course code: ICT-3110

Course title: Operating Systems Lab

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Experiment no : 09

**Experiment Name :** Implementation of Priority Scheduling Algorithm.

Theory :

Priority scheduling is one of the most common scheduling algorithms in batch systems. Each process is assigned a priority. Process with the highest priority is to be executed first and so on. Processes with the same priority are executed on first come first served basis. Priority can be decided based on memory requirements, time requirements or any other resource requirement.

Implementation :

1. First input the processes with their burst time and priority.

2. Sort the processes, burst time and priority according to the priority.

3. Now simply apply FCFS algorithm.

Process	Burst Time	Priority
P1	10	2
P2	5	0
P3	8	1

Gannt Chart :

P1	P3	P2

0   10   18   23
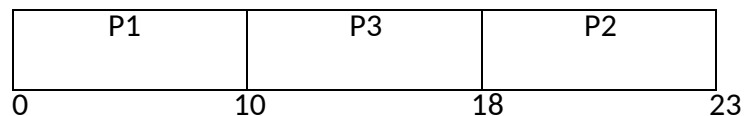
Working Process :

Code for Priority Scheduling Algorithm –

```c
#include<stdio.h>
#include<conio.h>
int main()
 {
   int x,n,p[10],pp[10],pt[10],w[10],t[10],awt,atat,i;
   printf("Enter the number of process : ");
   scanf("%d",&n);
   printf("\nEnter process : time priorities \n");
   for(i=0;i<n;i++)
    {
      printf("\nProcess no %d : ",i+1);
      scanf("%d  %d",&pt[i],&pp[i]);
      p[i]=i+1;
    }
  for(i=0;i<n-1;i++)
   {
     for(int j=i+1;j<n;j++)
     {
       if(pp[i]<pp[j])
       {
         x=pp[i];
         pp[i]=pp[j];
         pp[j]=x;
         x=pt[i];
         pt[i]=pt[j];
         pt[j]=x;
         x=p[i];
         p[i]=p[j];
         p[j]=x;
      }
    }
  }
}
w[0]=0;
awt=0;
t[0]=pt[0];
atat=t[0];
for(i=1;i<n;i++)
 {
   w[i]=t[i-1];
   awt+=w[i];
```

```
    t[i]=w[i]+pt[i];
    atat+=t[i];
  }
 printf("\n\n Job \t Burst Time \t Wait Time \t Turn Around Time   Priority \n");
 for(i=0;i<n;i++)
   printf("\n %d \t\t %d  \t\t %d \t\t %d \t\t %d \n",p[i],pt[i],w[i],t[i],pp[i]);
 awt/=n;
 atat/=n;
 printf("\n Average Wait Time : %d \n",awt);
 printf("\n Average Turn Around Time : %d \n",atat);
 getch();
 }
```

Output :

```
 Enter process : time priorities

Process no 1 : 3
1

Process no 2 : 4
2

Process no 3 : 5
3

Process no 4 : 6
4


 Job        Burst Time        Wait Time        Turn Around Time   Priority

 4              6                 0                   6                 4

 3              5                 6                  11                 3

 2              4                11                  15                 2

 1              3                15                  18                 1

 Average Wait Time : 8

 Average Turn Around Time : 12
```

Discussion :

This lab helps to learn Priority scheduling algorithm. We have implemented this algorithm using C language. In future we can solve any problem of this algorithm.