## Experiment Name: Priority scheduling algorithm.

**Priority scheduling Algorithm:**

In priority scheduling algorithm each process has a priority associated with it and as each process hits the queue, it is stored in based on its priority so that process with higher priority are dealt with first. It should be noted that equal priority processes are scheduled in FCFS order.

To prevent high priority processes from running indefinitely the scheduler may decrease the priority of the currently running process at each clock tick (i.e., at each clock interrupt). If this action causes its priority to drop below that of the next highest process, a process switch occurs. Alternatively, each process may be assigned a maximum time quantum that it is allowed to run. When this quantum is used up, the next highest priority process is given a chance to run.

**Code:**

#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("\nP[%d]\n",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;

for(j=0;j<i;j++)

wt[i]+=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]\t\t %d\t\t %d\t\t\t%d",p[i],bt[i],wt[i],tat[i]);

}

avg\_tat=total/n; //average turnaround time

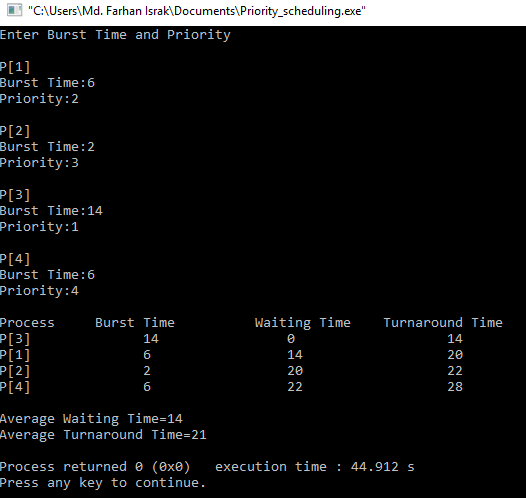
printf("\n\nAverage Waiting Time=%d",avg\_wt);

printf("\nAverage Turnaround Time=%d\n",avg\_tat);

return 0;

}

**Output:**



**Discussion:** Priority scheduling are based in the idea that each task in the systems is assigned a priority according to some decision base. Consistent with that priority, the task will be assigned for execution while the system is running.