UNIVERSITY OF ENGINEERING AND TECHNOLOGY, TAXILA

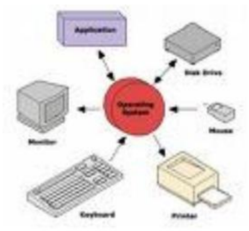
FACULTY OF TELECOMMUNICATION AND INFORMATION ENGINEERING

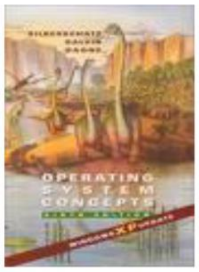
COMPUTER ENGINEERING DEPARTMENT

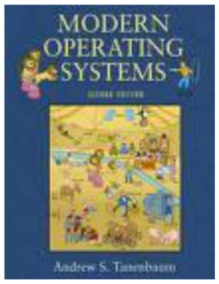
Operating systems

SCHEDULING TECHNIQUES OF OS

LAB MANUAL 11







Date:	
Name:	
Reg#:	**Group:**
Marks:	**Signature:**

Lab Objective

Write a C program to implement the various process scheduling mechanisms such as Priority Scheduling.

Algorithm for Priority Scheduling

Step 1: Start the process

Step 2: Accept the number of processes in the ready Queue

Step 3: For each process in the ready Q, assign the process id and accept the CPU burst time

Step 4: Sort the ready queue according to the priority number.

Step 5: Set the waiting of the first process as ‘0’ and its burst time as its turnaround time

Step 6: For each process in the Ready Q calculate

(a) Waiting time for process(n)= waiting time of process (n-1) + Burst time of process(n-1)

(b) Turnaround time for Process(n)= waiting time of Process(n)+ Burst time for process(n)

Step 7: Calculate

(a) Average waiting time = Total waiting Time / Number of process

(b) Average Turnaround time = Total Turnaround Time / Number of

process Step 8: Stop the process

/* PRIORITY SCHEDULING */

```
#include <stdio.h>
#include <conio.h>
void main()
{
        int i,j,n,tat[10],wt[10],bt[10],pid[10],pr[10],t,twt=0,ttat=0;
        float awt,atat;
        clrscr();
        printf("\n-----------PRIORITY SCHEDULING--------------
        \n"); printf("Enter the No of Process: "); scanf("%d", &n);

        for (i=0;i<n;i++)
                {
                        pid[i] = i;
                        printf("Enter the Burst time of Pid %d : ",i);
                        scanf("%d",&bt[i]);
                        printf("Enter the Priority   of Pid %d : ",i);
                        scanf ("%d",&pr[i]);
                }
// Sorting start
                for (i=0;i<n;i++)
                        for(j=i+1;j<n;j++)
                        {
                                if (pr[i] > pr[j] )
                                {
                                        t = pr[i];
                                        pr[i] = pr[j];
                                        pr[j] = t;

                                        t = bt[i];
                                        bt[i] = bt[j];
                                        bt[j] = t;

                                        t = pid[i];
                                        pid[i] = pid[j];
                                        pid[j] = t;
                                }
                        }



// Sorting finished


        tat[0] = bt[0];
        wt[0] = 0;

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



        printf("\n-----------------------------------------------------------------\n");
        printf("Pid\t Priority\tBurst time\t WaitingTime\tTurnArroundTime\n");
        printf("\n---------------------------------------------------------------\n");
                for(i=0;i<n;i++)
                {
                        printf("\n%d\t\t%d\t%d\t\t%d\t\t%d",pid[i],pr[i],bt[i],wt[i],tat[i]);
                }
        for(i=0;i<n;i++)
                {
                ttat = ttat+tat[i];
                twt = twt + wt[i];
                }
        awt = (float)twt / n;
        atat = (float)ttat / n;
        printf("\n\nAvg.Waiting Time: %f\nAvg.Turn Around Time:
        %f\n",awt,atat); getch();
}
```

OUTPUT

```
-----------PRIORITY SCHEDULING--------------

Enter the No of Process:          4
Enter the Burst time of Pid 0 : 2
Enter the Priority   of Pid 0 :      3
Enter the Burst time of Pid 1 : 6
Enter the Priority   of Pid 1 :      2
Enter the Burst time of Pid 2 : 4
Enter the Priority   of Pid 2 :      1
Enter the Burst time of Pid 3 : 5
Enter the Priority   of Pid 3 :      7

---------------------------------------------------------------------------------------
Pid     Priority       Burst time       WaitingTime     TurnArroundTime

---------------------------------------------------------------------------------------

  2           1      4                 0                  4
  1           2      6                 4                  10
  0           3      2                 10                 12
  3           7                5                 12                 17



Avg.Waiting Time: 6.500000
Avg.Turn Around Time: 10.750000
```