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OS lab

Assignment 5

To write a C program for implementation of Priority scheduling algorithms.

Code:  
#include<stdio.h>

struct process{

    int id;

    int bt;

    int priority;

    int wt;

    int tat;

};

void sortprocesses(struct process proc[],int n)

{

    struct process temp;

    for(int i=0;i<n-1;i++)

    {

        for(int j=0;j<n;j++)

        {

            if(proc[i].priority > proc[j].priority)

            {

                temp=proc[i];

                proc[i]=proc[j];

                proc[j]=temp;

            }

        }

    }

}

void calculatetimes(struct process proc[],int n)

{

    proc[0].wt=0;

    for(int i=1;i<n;i++){

        proc[i].wt=proc[i-1].wt+proc[i-1].bt;

    }

    for(int i=0;i<n;i++){

        proc[i].tat=proc[i].bt+proc[i].wt;

    }

}

void dispalyprocess(struct process proc[],int n)

{

    printf("\nPriority Scheduling Process Execution Order:\n");

    printf("PID\tBurst Time\tPriority\tWaiting Time\tTurnaround Time\n");

    for (int i = 0; i < n; i++) {

        printf("%d\t%d\t\t%d\t\t%d\t\t%d\n",

        proc[i].id, proc[i].bt, proc[i].priority, proc[i].wt, proc[i].tat);

    }

    float avgwt=0;

    float avgtat=0;

    for (int i = 0; i < n; i++) {

        avgwt += proc[i].wt;

        avgtat += proc[i].tat;

    }

    avgwt /= n;

    avgtat /= n;

    printf("\nAverage Waiting Time: %.2f", avgwt);

    printf("\nAverage Turnaround Time: %.2f", avgtat);

}

int main()

{

    int n;

    printf("Enter the number of processes: ");

    scanf("%d",&n);

    struct process proc[n];

    for(int i=0;i<n;i++)

    {

        proc[i].id=i+1;

        printf("Enter the burst time and priority for process %d: ",proc[i].id);

        scanf("%d",&proc[i].bt);

        scanf("%d",&proc[i].priority);

    }

    sortprocesses(proc,n);

    calculatetimes(proc,n);

    dispalyprocess(proc,n);

    return 0;

}

Output:  
