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TECOC64

Subject:SPOS

Assignment No.3

1. Fcfs

Input:

```
import java.util.*;
```

```
import java.io.*;
```

```
public class fcfs
```

```
{
```

```
    public static void main(String args[])
```

```
    {
```

```
        int n,sum=0;
```

```
        float total_tt=0,total_waiting=0;
```

```
        Scanner s=new Scanner(System.in);
```

```
        System.out.println("Enter Number Of Process U want 2 Execute---"); n=s.nextInt();
```

```
        int arrival[]=new int[n]; int cpu[]=new  
        int[n];
```

```
        int finish[]=new int[n]; int
```

```
        turntt[]=new int[n]; int wait[]=new
```

```
        int[n]; int process[]=new int[n];
```

```
        // int pro[][]=new int[3][3]; for(int i=0;i<n;i++)
```

```
        {
```

```
            System.out.println("Enter arrival time of "+(i+1)+" Process :
```

```
");
```

```
            arrival[i]=s.nextInt();
```

```
            System.out.println("Enter CPU time of "+(i+1)+" Process : "); cpu[i]=s.nextInt();
```

```
            process[i]=i+1;
```

```
        }
```

```
        for(int i=0;i<n;i++)
```

```
        {
```

```
            sum=sum+cpu[i];
```

```
            finish[i]=sum;
```

```
        }
```

```
        for(int i=0;i<n;i++)
```

```
        {
```

```
            turntt[i]=finish[i]-arrival[i];
```

```
            total_tt=total_tt+turntt[i]; wait[i]=turntt[i]-
```

```
            cpu[i];
```

```
            total_waiting+=wait[i];
```

```
        }
```

```
        System.out.println("\n\nProcess\t\tAT\t\tCPU_T"); for(int i=0;i<n;i++)
```

```
        {
```

```
            System.out.println(process[i]+"\\t\\t"+arrival[i]+"\\t"+cpu[i]);
```

```
        }
```

```

        System.out.println("\n\n");
        System.out.println("Total turn around time is : "+(total_tt/n)); System.out.println("Total waiting time
is : "+(total_waiting/n));

    }
}

```

OUPUT:

Enter Number Of Process U want 2 Execute---

3

Enter arrival time of 1 Process :

0

Enter CPU time of 1 Process :

5

Enter arrival time of 2 Process :

1

Enter CPU time of 2 Process :

3

Enter arrival time of 3 Process :

2

Enter CPU time of 3 Process :

8

Process	AT	CPU_T
1	0	5
2	1	3
3	2	8

Total turn around time is : 9.0

Total waiting time is : 4.6666665

2. Priority

INPUT:

```
import java.util.*; import java.io.*;
```

```
public class priority
```

```
{
```

```
    public static void main(String args[])
```

```
    {
```

```
        int n,sum=0;
```

```
        float total_tt=0,total_waiting=0;
```

```
        Scanner s=new Scanner(System.in);
```

```
        System.out.println("Enter Number Of Process U want 2 Execute---"); n=s.nextInt();
```

```
        int arrival[]=new int[n]; int cpu[]=new
        int[n];
```

```
        int pri[]=new int[n]; int
```

```
        finish[]=new int[n]; int turntt[]=new
```

```
        int[n]; int wait[]=new int[n];
```

```

int process[]=new int[n];

// int pro[][]=new int[3][3]; for(int i=0;i<n;i++)
{
    System.out.println("Enter arrival time of "+(i+1)+" Process :

");

    arrival[i]=s.nextInt();
    System.out.println("Enter CPU time of "+(i+1)+" Process : "); cpu[i]=s.nextInt();

    System.out.println("Enter Priority of "+(i+1)+" Process : "); pri[i]=s.nextInt();

    process[i]=i+1;
}

for(int i=0;i<n-1;i++)
{
    for(int j=i+1;j<n;j++)
    {
        if(pri[i]>pri[j])
        {
            inttemp=cpu[i]; cpu[i]=cpu[j];
            cpu[j]=temp;

            //temp=arrival[i];
            //arrival[i]=arrival[j];
            //arrival[j]=temp;

            temp=process[i];
            process[i]=process[j];
            process[j]=temp;

            temp=pri[i];
            pri[i]=pri[j];
            pri[j]=temp;

        }
    }
}

for(int i=0;i<n;i++)
{
    sum=sum+cpu[i];
    finish[i]=sum;
}

for(int i=0;i<n;i++)
{
    turntt[i]=finish[i]-arrival[i];

    total_tt=total_tt+turntt[i]; wait[i]=turntt[i]-

    cpu[i];

    total_waiting+=wait[i];
}

System.out.println("\n\nProcess\t\tAT\t\tCPU_T"); for(int i=0;i<n;i++)
{

```

```

        System.out.println(process[i]+"\\t\\t"+arrival[i]+"\\t"+cpu[i]);
    }

    System.out.println("\\n\\n");
    System.out.println("Total turn around time is : "+(total_tt/n)); System.out.println("Total waiting time
is : "+(total_waiting/n));

    }
}

```

OUTPUT:

Enter Number Of Process U want 2 Execute---

3

Enter arrival time of 1 Process :

0

Enter CPU time of 1 Process :

5

Enter Priority of 1 Process :

2

Enter arrival time of 2 Process :

1

Enter CPU time of 2 Process :

3

Enter Priority of 2 Process :

1

Enter arrival time of 3 Process :

2

Enter CPU time of 3 Process :

8

Enter Priority of 3 Process :

3

Process	AT	CPU_T
2	0	3
1	1	5
3	2	8

Total turn around time is : 11.0

Total waiting time is : 7.0

3.ROBBIN

INPUT:

```
import java.util.*;
```

```
import java.io.*;
```

```
public class robbin
```

```
{
```

```
    public static void main(String args[])
```

```
    {
```

```
        int n,sum=0;
```

```
        float total_tt=0,total_waiting=0;
```

```

Scanner s=new Scanner(System.in);
System.out.println("Enter Number Of Process U want 2 Execute---"); n=s.nextInt();
int arrival[]=new int[n]; int cpu[]=new
int[n];
int ncpu[]=new int[n]; int pri[]=new
int[n];
int finish[]=new int[100]; int
turntt[]=new int[n]; int wait[]=new
int[n];
int process[]=new int[n];
int t_quantum,difference,temp_sum=0,k=0; int seq[]=new
int[100];

// int pro[][]=new int[3][3]; for(int i=0;i<n;i++)
{
    System.out.println("Enter arrival time of "+(i+1)+" Process :

");

    arrival[i]=s.nextInt();
    System.out.println("Enter CPU time of "+(i+1)+" Process : "); ncpu[i]=cpu[i]=s.nextInt();

    process[i]=i+1;
}

System.out.println("Enter time quantum : "); t_quantum = s.nextInt();

int tv=0;
for(int i=0;i<n;i++){temp_sum=temp_sum+cpu[i];}
//System.out.println(temp_sum);

System.out.println("Process execution sequence : "); while(sum!=temp_sum){
    for(int i=0;i<n;i++)
    {
        if(ncpu[i]<t_quantum)
        {
            difference=ncpu[i]; tv=ncpu[i];
            ncpu[i]=0;

        }
        else
        {
            difference = ncpu[i]-t_quantum; tv=t_quantum;
            ncpu[i]=difference;

        }
        if(tv > 0)
        {
            sum=sum+tv; finish[k]=sum;
            seq[k]=i;
            System.out.print(seq[k]+1+" "); k++;
        }
    }
}

```

```

        System.out.println();

        for(int i=0;i<n;i++)
        {
            int carr=0,tt=0; carr=arrival[i];

            for(int j=0;j<k;j++)
            {
                if(seq[j]==i)
                {
                    tt=tt+(finish[j]-carr); carr=finish[j];
                }
            }

            turntt[i]=tt;
            System.out.println("Turn around time for "+(i+1)+" process : total_tt=total_tt+turntt[i];
"+turntt[i]);

            wait[i]=turntt[i]-cpu[i];

            System.out.println("Waiting time for "+(i+1)+" process :

"+wait[i]);

            total_waiting+=wait[i];
        }

        System.out.println("\n\nProcess\t\tAT\t\tCPU_T"); for(int i=0;i<n;i++)
        {
            System.out.println(process[i]+\t\t"+arrival[i]+\t\t"+cpu[i]);
        }

        System.out.println("\n\n");
        System.out.println("Total turn around time is : "+(total_tt/n)); System.out.println("Total waiting time
is : "+(total_waiting/n));

    }
}

```

OUTPUT:

Enter Number Of Process U want 2 Execute---

3

Enter arrival time of 1 Process :

0

Enter CPU time of 1 Process :

5

Enter arrival time of 2 Process :

1

Enter CPU time of 2 Process :

3

Enter arrival time of 3 Process :

2

Enter CPU time of 3 Process :

8

Enter time quantum :

2

Process execution sequence :

1 2 3 1 2 3 1 3 3

Turn around time for 1 process : 14

Waiting time for 1 process : 9

Turn around time for 2 process : 8

Waiting time for 2 process : 5

Turn around time for 3 process : 17

Waiting time for 3 process : 9

Process		AT	CPU_T
1	0	5	
2	1	3	
3	2	8	

Total turn around time is : 13.0

Total waiting time is : 7.6666665

4.sjf

INPUT:

```
import java.util.*; import java.io.*;
```

```
public class sjf
{
```

```
    public static void main(String args[])
    {
```

```
        int n,sum=0;
```

```
        float total_tt=0,total_waiting=0;
```

```
        Scanner s=new Scanner(System.in);
```

```
        System.out.println("Enter Number Of Process U want 2 Execute---"); n=s.nextInt();
```

```
        int arrival[]=new int[n]; int cpu[]=new
        int[n];
```

```
        int finish[]=new int[n]; int
```

```
        turntt[]=new int[n]; int wait[]=new
```

```
        int[n]; int process[]=new int[n];
```

```
        // int pro[][]=new int[3][3]; for(int i=0;i<n;i++)
```

```
        {
```

```
            System.out.println("Enter arrival time of "+(i+1)+" Process :
```

```
");
```

```
            arrival[i]=s.nextInt();
```

```
            System.out.println("Enter CPU time of "+(i+1)+" Process : "); cpu[i]=s.nextInt();
```

```
            process[i]=i+1;
```

```
        }
```

```

for(int i=0;i<n-1;i++)
{
    for(int j=i+1;j<n;j++)
    {
        if(cpu[i]>cpu[j])
        {
            int temp=cpu[i]; cpu[i]=cpu[j];
            cpu[j]=temp;

            temp=arrival[i]; arrival[i]=arrival[j];
            arrival[j]=temp;

            temp=process[i];
            process[i]=process[j];
            process[j]=temp;

        }
    }
}

for(int i=0;i<n;i++)
{
    sum=sum+cpu[i];
    finish[i]=sum;
}

for(int i=0;i<n;i++)
{
    turntt[i]=finish[i]-arrival[i];

    total_tt=total_tt+turntt[i]; wait[i]=turntt[i]-
    cpu[i];

    total_waiting+=wait[i];
}

System.out.println("\n\nProcess\t\tAT\t\tCPU_T"); for(int i=0;i<n;i++)
{
    System.out.println(process[i]+\t\t"+arrival[i]+\t\t"+cpu[i]);
}

System.out.println("\n\n");
System.out.println("Total turn around time is : "+(total_tt/n)); System.out.println("Total waiting time
is : "+(total_waiting/n));

}
}

```

OUTPUT:

Enter Number Of Process U want 2 Execute---

3

Enter arrival time of 1 Process :

0

Enter CPU time of 1 Process :

5

Enter arrival time of 2 Process :

1

Enter CPU time of 2 Process :

3

Enter arrival time of 3 Process :

2

Enter CPU time of 3 Process :

8

Process	AT	CPU_T
2	1	3
1	0	5
3	2	8

Total turn around time is : 9.0

Total waiting time is : 4.6666665