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import java.util.Scanner;

class SJF{

public static void main(String args[]){

int burst_time[],process[],waiting_time[],tat[],i,j,n,total=0,pos,temp;

float wait_avg,TAT_avg;

Scanner s = new Scanner(System.in);

System.out.print("Enter number of process: ");

n = s.nextInt();

process = new int[n];

burst_time = new int[n];

waiting_time = new int[n];

tat = new int[n];

System.out.println("\nEnter Burst time:");

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

{

System.out.print("\nProcess["+(i+1)+"]: ");

burst_time[i] = s.nextInt();

process[i]=i+1; //Process Number

}

//Sorting

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

{

pos=i;

for(j=i+1;j<n;j++)

{

if(burst_time[j]<burst_time[pos])

pos=j;

}temp=burst_time[i];

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burst_time[i]=burst_time[pos];
burst_time[pos]=temp;
temp=process[i];
process[i]=process[pos];
process[pos]=temp;
}
//First process has 0 waiting time
waiting_time[0]=0;
//calculate waiting time
for(i=1;i<n;i++)
{
    waiting_time[i]=0;
    for(j=0;j<i;j++)
        waiting_time[i]+=burst_time[j];
    total+=waiting_time[i];
}
//Calculating Average waiting time
wait_avg=(float)total/n;
total=0;

System.out.println("\nProcess\t Burst Time \tWaiting Time\tTurnaround Time");
for(i=0;i<n;i++)
{
    tat[i]=burst_time[i]+waiting_time[i]; //Calculating Turnaround
    //Timetotal+=tat[i];
    System.out.println("\n p "+process[i]+" \t\t "+burst_time[i]+" \t\t "+waiting_time[i]+" \t\t "+tat[i]);
}
//Calculation of Average Turnaround Time
TAT_avg=(float)total/n;
System.out.println("\n\nAverage Waiting Time: "+wait_avg);

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System.out.println("\nAverage Turnaround Time: "+TAT_avg);
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}}
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