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package CPUScheduling;

import java.util.Scanner;
//Sai Kham Sheng 5717607
public class SJF_Preemptive {

    public static void main(String[] args) {
        Scanner sn = new Scanner (System.in);
        System.out.println("SORTEST JOB FIRST Scheduling(SJF)");
        System.out.print("Enter number of process: ");
        int n = sn.nextInt();

        int [] burstTime = new int [n+1];
        int [] turnAroundTime = new int [n+1];
        int [] waitingTime = new int [n+1];

        System.out.println("Enter Burst time for each process");
        for (int i=0;i<n;i++){
            System.out.print("P"+(i+1)+": ");
            burstTime [i] = sn.nextInt();
        }

        for (int i=0;i<n;i++){
            waitingTime[i] = 0;
            turnAroundTime[i] = 0;
        }
        int temp;
        for (int i=0;i<n;i++){
            for (int j=0;j<n-1;j++){
                if (burstTime[j]>burstTime[j+1]){
                    temp = burstTime[j];
                    burstTime[j] = burstTime[j+1];
                    burstTime[j+1] = temp;
                    temp = waitingTime[j];
                    waitingTime[j] = waitingTime[j+1];
                    waitingTime[j+1] = temp;
                }
            }
        }
        for (int i=0;i<n;i++){
            turnAroundTime[i] = burstTime[i] + waitingTime[i];
            waitingTime[i+1] = turnAroundTime[i];
        }
        turnAroundTime[n] = waitingTime[n] + burstTime[n];
        System.out.println("Process\tBT\tTAT\tWT");

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

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        System.out.println((i+1)+"\t"+burstTime[i]
+ "\t"+turnAroundTime[i]+" \t"+waitingTime[i]);
    }
    int WTResult = 0;
    for (int i=0; i<n; i++){
        WTResult += waitingTime[i];
    }
    System.out.println("Avg waiting time: "+(double) WTResult / n
+ " times");
    sn.close();
}

}
```