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import java.util.Arrays;
import java.util.Scanner;

public class Priority {

    public static void main(String[] args) {
        System.out.print("Enter Number of Process: ");
        Scanner sc = new Scanner(System.in);
        int numberOfProcess = sc.nextInt();
        String process[] = new String[numberOfProcess];

        int p = 1;
        for (int i = 0; i < numberOfProcess; i++) {
            process[i] = "P" + p;
            p++;
        }

        System.out.print("Enter Arrival Time for " + numberOfProcess + "
process: ");

        int arrivalTime[] = new int[numberOfProcess];
        for (int i = 0; i < numberOfProcess; i++) {
            arrivalTime[i] = sc.nextInt();
        }

        System.out.print("Enter Burst Time for " + numberOfProcess + "
process: ");

        int burstTime[] = new int[numberOfProcess];
        for (int i = 0; i < numberOfProcess; i++) {
            burstTime[i] = sc.nextInt();
        }

        System.out.print("Enter Priority for " + numberOfProcess + "
process: ");

        int priority[] = new int[numberOfProcess];
        for (int i = 0; i < numberOfProcess; i++) {
            priority[i] = sc.nextInt();
        }

        // Sorting process & burst time by priority
        int temp;
        String temp2;
        for (int i = 0; i < numberOfProcess - 1; i++) {
            for (int j = 0; j < numberOfProcess - 1; j++) {
                if (priority[j] > priority[j + 1]) {
                    temp = priority[j];
                    priority[j] = priority[j + 1];
                    priority[j + 1] = temp;

                    temp = burstTime[j];
                    burstTime[j] = burstTime[j + 1];
                    burstTime[j + 1] = temp;
                }
            }
        }
    }
}

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        temp2 = process[j];
        process[j] = process[j + 1];
        process[j + 1] = temp2;
    }
}

int TAT[] = new int[numberOfProcess + 1];
int waitingTime[] = new int[numberOfProcess + 1];

// Calculating Waiting Time & Turn Around Time
for (int i = 0; i < numberOfProcess; i++) {
    TAT[i] = burstTime[i] + waitingTime[i];
    waitingTime[i + 1] = TAT[i];
}

int totalWT = 0;
int totalTAT = 0;
double avgWT;
double avgTAT;

System.out.println("Process    AT        BT        Priority    WT
TAT");
for (int i = 0; i < numberOfProcess; i++) {
    System.out.println(process[i] + "        "+arrivalTime[i]
+"        "+ burstTime[i] + "        "+priority[i]+"        " +
waitingTime[i] + "        " + (TAT[i]));
    totalTAT += (waitingTime[i] + burstTime[i]);
    totalWT += waitingTime[i];
}

avgWT = totalWT / (double) numberOfProcess;
avgTAT = totalTAT / (double) numberOfProcess;

System.out.println("\n Average Wating Time: " + avgWT);
System.out.println(" Average Turn Around Time: " + avgTAT);
}
}

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/*
OUTPUT-
Enter Number of Process: 6
Enter Arrival Time for 6 process: 0
1
2
3
4
5
Enter Burst Time for 6 process: 4
5
1
2
3
6
Enter Priority for 6 process: 4
5
7
2
1
5
Process    AT      BT      Priority  WT      TAT
P5         0       3       1         0        3
P4         1       2       2         3        5
P1         2       4       4         5        9
P2         3       5       5         9       14
P6         4       6       5        14       20
P3         5       1       7        20       21

Average Wating Time: 8.5
Average Turn Around Time: 12.0
/*

```