Implement the priority scheduling. (Non preemptive)

CODE: -

import java.util.Arrays;

import java.util.Comparator;

import java.util.Scanner;

class ProcessPriority {

int id;

int arrivalTime;

int burstTime;

int priority;

int waitingTime;

int turnaroundTime;

public ProcessPriority(int id, int arrivalTime, int burstTime, int priority) {

this.id = id;

this.arrivalTime = arrivalTime;

this.burstTime = burstTime;

this.priority = priority;

}

}

public class PriorityScheduling {

public static void main(String[] args) {

Scanner scanner = new Scanner(System.in);

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

int n = scanner.nextInt();

ProcessPriority[] processes = new ProcessPriority[n];

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

System.out.print("Enter arrival time for process " + (i + 1) + ": ");

int arrivalTime = scanner.nextInt();

System.out.print("Enter burst time for process " + (i + 1) + ": ");

int burstTime = scanner.nextInt();

System.out.print("Enter priority for process " + (i + 1) + ": ");

int priority = scanner.nextInt();

processes[i] = new ProcessPriority(i + 1, arrivalTime, burstTime, priority);

}

// Sort processes by arrival time, then by priority if arrival times are the same

Arrays.sort(processes, Comparator.comparingInt((ProcessPriority p) -> p.arrivalTime)

.thenComparingInt(p -> p.priority));

int currentTime = 0;

for (ProcessPriority process : processes) {

if (currentTime < process.arrivalTime) {

currentTime = process.arrivalTime;

}

process.waitingTime = currentTime - process.arrivalTime;

process.turnaroundTime = process.waitingTime + process.burstTime;

currentTime += process.burstTime;

}

System.out.println("\nProcess\tArrival Time\tBurst Time\tPriority\tWaiting Time\tTurnaround Time");

for (ProcessPriority process : processes) {

System.out.println("P" + process.id + "\t\t" + process.arrivalTime + "\t\t" + process.burstTime + "\t\t" +

process.priority + "\t\t" + process.waitingTime + "\t\t" + process.turnaroundTime);

}

double avgWaitingTime = Arrays.stream(processes).mapToInt(p -> p.waitingTime).average().orElse(0);

double avgTurnaroundTime = Arrays.stream(processes).mapToInt(p -> p.turnaroundTime).average().orElse(0);

System.out.println("\nAverage Waiting Time: " + avgWaitingTime);

System.out.println("Average Turnaround Time: " + avgTurnaroundTime);

}

}

OUTPUT:-