**Task01:**

import java.util.\*;

public class srjPreemption {

public static void main(String [] args){

Scanner var = new Scanner(System.in);

System.out.println("Please enter no of process:");

int n = var.nextInt();

int [] processId = new int[n];

int [] arrivalTime = new int[n];

int [] burstTime = new int[n];

int [] completeTime = new int[n];

int [] turnAroundTime = new int[n];

int [] waitingTime = new int[n];

int [] flag = new int[n];

int [] storedBurstTime = new int[n];

int st = 0, tot = 0;//tot means total number of process

double avgWaitingTime = 0.0;

double avgTurnAroundTime = 0.0;

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

System.out.print("Please enter process\_"+(i+1)+" arrival time: ");

arrivalTime[i] = var.nextInt();

//System.out.println();

System.out.print("Please enter process\_"+ (i+1)+ " burst time: ");

burstTime[i] = var.nextInt();

processId[i] = i+1;

storedBurstTime[i] = burstTime[i];

flag[i] = 0;

}

boolean a = true;

while(true){

int c = n, min = 999;

if( tot==n )

break;

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

if ((arrivalTime[i] <= st) && (flag[i] == 0) && (burstTime[i] < min)) {

min = burstTime[i];

c=i;

}

}

if ( c==n )

st++;

else {

burstTime[c]--;

st++;

if(burstTime[c]==0){

completeTime[c]= st;

flag[c]=1;

tot++;

}

}

}

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

turnAroundTime[i] = completeTime[i] - arrivalTime[i];

waitingTime[i] = turnAroundTime[i] - storedBurstTime[i];

avgWaitingTime+= waitingTime[i];

avgTurnAroundTime+= turnAroundTime[i];

}

System.out.println("\nprocessId | Arrival time | Brust time| Complete time | Turnaround time | Waiting time");

System.out.println("-----------------------------------------------------------------------------------------");

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

System.out.println(" "+processId[i]+"\t\t\t\t"+arrivalTime[i]+"\t\t\t"+storedBurstTime[i]+"\t\t\t\t"+completeTime[i]+"\t\t\t\t"+turnAroundTime[i]+"\t\t\t\t"+waitingTime[i]);

System.out.println("----------|--------------|------------|--------------|-----------------|---------------");

}

avgTurnAroundTime = avgTurnAroundTime/n;

avgWaitingTime = avgWaitingTime/n;

System.out.println ("Average turn around time: "+ avgTurnAroundTime);

System.out.println ("Average waiting Time: "+avgWaitingTime);

}

}

**Task02:**

import java.util.\*;

public class priorityScheduler {

public static void main(String [] args) {

Scanner var = new Scanner(System.in);

System.out.println("Please enter no of process:");

int n = var.nextInt();

int [] process = new int[n];

int [] processPriority = new int [n];

//int [] arrivalTime = new int[n];

int [] burstTime = new int[n];

//int [] completeTime = new int[n];

int [] turnAroundTime = new int[n];

int [] waitingTime = new int[n];

//int st = 0, tot = 0;//tot means total number of process

int x;

int avgWaitingTime = 0;

int avgTurnAroundTime = 0;

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

//System.out.print("Please enter process\_"+(i+1)+" arrival time: ");

//arrivalTime[i] = var.nextInt();

System.out.print("Please enter process\_"+(i+1)+" burst time: ");

burstTime[i] = var.nextInt();

System.out.print("Please enter process\_"+ (i+1)+ " process priority: ");

processPriority[i] = var.nextInt();

process[i] = i+1;

}

for(int i = 0; i< n-1;i++) {

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

if(processPriority[i]>processPriority[j]) {

x = processPriority[i];

processPriority[i] = processPriority[j];

processPriority[j] = x;

x = burstTime[i];

burstTime[i] = burstTime[j];

burstTime[j] = x;

x = process[i];

process[i]= process[j];

process[j] = x;

}

}

}

//ompleteTime[0] = arrivalTime[0]+ burstTime[0];

waitingTime[0] = 0;

avgWaitingTime = 0;

turnAroundTime[0] = burstTime[0];//burstTime[0];

avgTurnAroundTime = turnAroundTime[0];

for(int i=1;i<n;i++) {

//completeTime[i] = burstTime[i]+completeTime[i];

waitingTime[i] = turnAroundTime[i-1];

avgWaitingTime = avgWaitingTime+waitingTime[i];

turnAroundTime[i] = waitingTime[i] + burstTime[i];

avgTurnAroundTime = avgTurnAroundTime+turnAroundTime[i];

}

System.out.println("\nprocessId | Brust time| Process priority | Turnaround time | Waiting time");

System.out.println("-----------------------------------------------------------------------------------------");

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

System.out.println(" "+process[i]+"\t\t\t\t"+burstTime[i]+"\t\t\t"+processPriority[i]+"\t\t\t\t"+turnAroundTime[i]+"\t\t\t\t"+waitingTime[i]);

System.out.println("----------|--------------|------------|--------------|-----------------|---------------");

}

double favgTurnAroundTime = (double)(avgTurnAroundTime/n);

double favgWaitingTime = (double)(avgWaitingTime/n);

System.out.println ("Average turn around time: "+ favgTurnAroundTime);

System.out.println ("Average waiting Time: "+favgWaitingTime);

}

}

**Task03:**

import java.util.\*;

public class roundRobin {

public static void main(String [] args)

{

Scanner var = new Scanner(System.in);

int sum;

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

int n = var.nextInt();

int [] process = new int [n];

int [] burtstTime = new int[n];//?bt

int [] waitingTime = new int[n];

int [] turnAroundTime = new int[n];

int [] a = new int[n];

int [] storedBurstTime = new int[n];

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

System.out.print("Please enter process\_"+(i+1)+" burst time: ");

burtstTime[i] = var.nextInt();

process[i] = i+1;

storedBurstTime[i] = burtstTime[i];

}

System.out.print("Please enter time quantum:");

int q = var.nextInt();

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

a[i] = burtstTime[i];

}

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

waitingTime[i] = 0;

}

do{

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

if(burtstTime[i] > q){

burtstTime[i] = burtstTime[i]-q;

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

if((j!=i) && (burtstTime[j]!=0))

waitingTime[j] = waitingTime[j]+q;

}

}

else {

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

if((j!=i)&&(burtstTime[j]!=0))

waitingTime[j] = waitingTime[j]+burtstTime[i];

}

burtstTime[i]=0;

}

}

sum = 0;

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

sum = sum+burtstTime[i];

}

while(sum != 0);

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

turnAroundTime[i] = waitingTime[i] + a[i];

}

float avgWaitingTime = 0;

float avgTurnAroundTime = 0;

System.out.println("Process No | Burst time | Waiting Time| Turnaround Time");

System.out.println("---------------------------------------------------------");

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

System.out.println(" "+process[i]+"\t\t\t\t"+storedBurstTime[i]+"\t\t\t "+waitingTime[i]+"\t\t\t\t"+turnAroundTime[i]);

avgWaitingTime+=waitingTime[i];

avgTurnAroundTime+=turnAroundTime[i];

System.out.println("-----------|------------ |------------|------------------");

}

avgWaitingTime= avgWaitingTime/n;

avgTurnAroundTime = avgTurnAroundTime/n;

System.out.println("Average waiting time "+avgWaitingTime);

System.out.println("Average turn around time "+avgTurnAroundTime);

}

}