

Code:

// Write a program to implement Non preemptive Priority scheduling. Calculate waiting time, turnaround time for each process. Calculate avg. waiting time, avg. turnaround time

```
#include <algorithm>
#include <iostream>
using namespace std;

struct Process {
    int pid;
    int bt;
    int tat;
    int wt;
    int priority;
};

bool compare(Process P1, Process P2) { return P1.priority < P2.priority; }

void findWaitingTime(Process processes[], int n) {
    sort(processes, processes + n, compare);
    processes[0].wt = 0;
    for (int i = 1; i < n; i++)
        processes[i].wt = processes[i - 1].wt + processes[i - 1].bt;
}

void findTurnaroundTime(Process processes[], int n) {
    for (int i = 0; i < n; i++)
        processes[i].tat = processes[i].bt + processes[i].wt;
}

void findAvgTime(Process processes[], int n) {
    int awt = 0, atat = 0;
    findWaitingTime(processes, n);
    findTurnaroundTime(processes, n);
    cout << "\nProcess\t\tPriority\tBurst-Time\tWaiting-Time\tTurnAround-Time\n";
    for (int i = 0; i < n; i++) {
        cout << processes[i].pid << "\t\t\t" << processes[i].priority << "\t\t\t"
            << processes[i].bt << "\t\t\t" << processes[i].wt << "\t\t\t\t\t"
            << processes[i].tat << endl;
        awt += processes[i].wt;
        atat += processes[i].tat;
    }
    cout << "\nAverage Waiting Time: " << (float)awt / (float)n << endl;
    cout << "\nAverage Turn-Around Time: " << (float)atat / (float)n << endl;
}

int main() {
    int n;
```

```

cout << "Enter number of process: ";
cin >> n;
Process processes[n];
cout << "\nEnter burst time and priority for each process:\n";
for (int i = 0; i < n; i++) {
    cin >> processes[i].bt;
    cin >> processes[i].priority;
    processes[i].pid = i + 1;
    processes[i].wt = 0;
    processes[i].tat = 0;
}
findAvgTime(processes, n);
return 0;
}

```

Sample Output:

Enter number of process: 5

Enter burst time and priority for each process:

10 3

1 1

2 3

1 4

5 2

Process	Priority	Burst-Time	Waiting-Time	TurnAround-Time
2	1	1	0	1
5	2	5	1	6
1	3	10	6	16
3	3	2	16	18
4	4	1	18	19

Average Waiting Time: 8.2

Average Turn-Around Time: 12