**Priority Algorithm:**

#include <iostream>

#include <algorithm>

#include <iomanip>

using namespace std;

const int N = 100005;

struct process {

int priority;

int id;

int burst\_time;

int arrival\_time;

int waiting\_time;

int finishing\_time;

int turn\_around\_time;

};

int n;

process P[N];

bool operator<(process A, process B) {

return A.arrival\_time < B.arrival\_time;

}

void Priority() {

sort(P, P + n);

double total\_waiting\_time = 0.0;

double total\_turn\_around\_time = 0.0;

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

P[i].finishing\_time = (i == 0 ? P[i].arrival\_time : max(P[i].arrival\_time, P[i - 1].finishing\_time)) + P[i].burst\_time;

P[i].turn\_around\_time = P[i].finishing\_time - P[i].arrival\_time;

P[i].waiting\_time = P[i].turn\_around\_time - P[i].burst\_time;

total\_waiting\_time += P[i].waiting\_time;

total\_turn\_around\_time += P[i].turn\_around\_time;

}

cout << fixed << setprecision(2);

cout << "ID\tBurst Time\tArrival Time\tPriority\tWT\tCT\tTAT\n";

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

cout << P[i].id << "\t" << P[i].burst\_time << "\t\t" << P[i].arrival\_time << "\t\t" << P[i].priority << "\t\t" << P[i].waiting\_time << "\t" << P[i].finishing\_time << "\t" << P[i].turn\_around\_time << "\n";

}

cout << "Average Waiting Time: " << (total\_waiting\_time / n) << "\n";

cout << "Average Turn Around Time: " << (total\_turn\_around\_time / n) << "\n";

}

int main() {

cout << "Number of Processes: ";

cin >> n;

cout << "Process Ids:\n";

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

cin >> P[i].id;

cout << "Process Burst Times:\n";

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

cin >> P[i].burst\_time;

cout << "Process Arrival Times:\n";

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

cin >> P[i].arrival\_time;

cout << "Process Priorities:\n";

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

cin >> P[i].priority;

Priority();

return 0;

}

**OUTPUT**:

Number of Processes: 6

Process Ids:

1 2 3 4 5 6

Process Burst Times:

4 5 1 2 3 6

Process Arrival Times:

0 1 2 3 4 5

Process Priorities:

3 4 6 2 1 5

ID Burst Time Arrival Time Priority WT CT TAT

1 4 0 3 0 4 4

2 5 1 4 3 9 8

3 1 2 6 7 10 8

4 2 3 2 7 12 9

5 3 4 1 8 15 11

6 6 5 5 10 21 16

Average Waiting Time: 5.83

Average Turn Around Time: 9.33