

Program 2: SJF scheduling

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#include <iostream>

using namespace std;

int main() {

    // Matrix for storing Process Id, Burst
    // Time, Average Waiting Time & Average
    // Turn Around Time.
    int A[100][4];

    int i, j, n, total = 0, index, temp;

    float avg_wt, avg_tat;

    cout << "Enter number of process: ";

    cin >> n;

    cout << "Enter Burst Time:" << endl;

    // User Input Burst Time and allotting Process Id.
    for (i = 0; i < n; i++) {

        cout << "P" << i + 1 << ": ";

        cin >> A[i][1];

        A[i][0] = i + 1;

    }

    // Sorting process according to their Burst Time.

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

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index = i;

for (j = i + 1; j < n; j++)
    if (A[j][1] < A[index][1])
        index = j;

temp = A[i][1];
A[i][1] = A[index][1];
A[index][1] = temp;

temp = A[i][0];
A[i][0] = A[index][0];
A[index][0] = temp;
}

A[0][2] = 0;

// Calculation of Waiting Times
for (i = 1; i < n; i++) {
    A[i][2] = 0;
    for (j = 0; j < i; j++)
        A[i][2] += A[j][1];
    total += A[i][2];
}

avg_wt = (float)total / n;
total = 0;

cout << "P BT WT TAT" << endl;

```

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// Calculation of Turn Around Time and printing the
// data.
for (i = 0; i < n; i++) {
    A[i][3] = A[i][1] + A[i][2];
    total += A[i][3];
    cout << "P" << A[i][0] << " " << A[i][1] << " " << A[i][2] << " " << A[i][3] << endl;
}

avg_tat = (float)total / n;
cout << "Average Waiting Time= " << avg_wt << endl;
cout << "Average Turnaround Time= " << avg_tat << endl;
}

```

Output:

Enter number of process: 5

Enter Burst Time:

P1: 4

P2: 5

P3: 3

P4: 2

P5: 1

P BT WT TAT

P5 1 0 1

P4 2 1 3

P3 3 3 6

P1 4 6 10

P2 5 10 15

Average Waiting Time= 4

Average Turnaround Time= 7