

# Meeting 6

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Github: <https://github.com/TheKurusUGM/Praktikum-Pemograman-UGM->

## 1 Question:

Question:

Create a program (by using arrays and structs) which asks the student data (nim, UTS values and UAS value) of N inputs (N is determined by the users themselves, maximum 50), then calculate the average value of each student.

For example :

enter the number of students : 1

enter the nim : 412

enter UTS value : 72

enter UAS value : 74

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nim : 412

average : 73

Answer:

```
1
2  #include <iostream>
3
4  using namespace std;
5  struct Student {
6      int nim;
7      float uts;
8      float uas;
9      float average;
10 };
11
12 int main() {
13     int N;
```

```

14
15     cout << "Enter the number of students (max 50): ";
16     cin >> N;
17
18     if (N > 50) {
19         cout << "The maximum number of students is 50. Please try
20         ↪ again." << endl;
21         return 1;
22     }
23     Student students[50];
24
25     for (int i = 0; i < N; i++) {
26         cout << "\nEnter data for student " << i + 1 << ":" << endl;
27
28         cout << "Enter NIM: ";
29         cin >> students[i].nim;
30
31         cout << "Enter UTS score: ";
32         cin >> students[i].uts;
33
34         cout << "Enter UAS score: ";
35         cin >> students[i].uas;
36
37         students[i].average = (students[i].uts + students[i].uas) /
38         ↪ 2;
39     }
40
41     cout << "\nStudent data and averages:" << endl;
42     for (int i = 0; i < N; i++) {
43         cout << "NIM: " << students[i].nim << endl;
44         cout << "Average: " << students[i].average << endl;
45     }
46     return 0;
47 }

```

Explanation:

A data struct holds the NIM, UTS, UAS, and average scores for each student data.

```

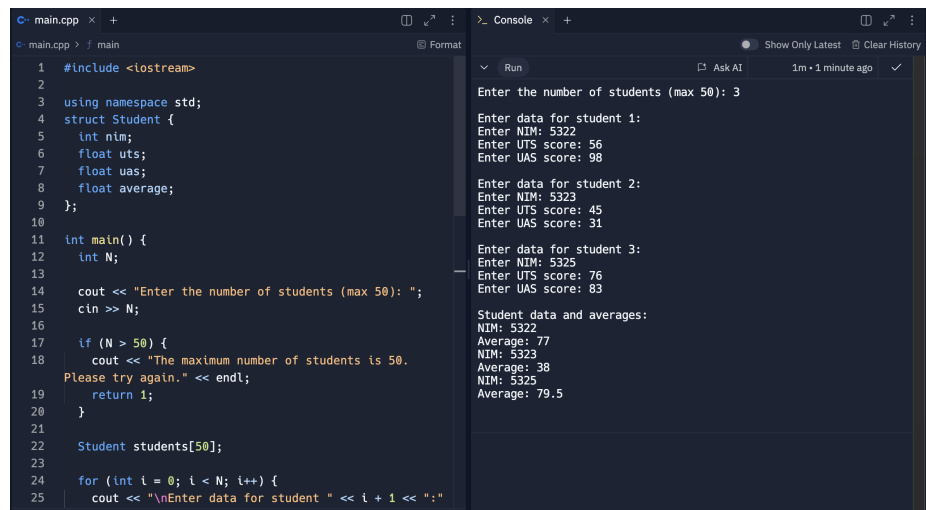
1 using namespace std;
2 struct Student {
3     int nim;
4     float uts;
5     float uas;
6     float average;

```

```
7 };  
8
```

Students[50]: Holds up to 50 students data. The array size is made to contain 50 student but only a user inputted N entry are used.

```
1 students[i].average = (students[i].uts + students[i].uas) / 2;  
2 }  
3  
4 cout << "\nStudent data and averages:" << endl;  
5 for (int i = 0; i < N; i++) {  
6     cout << "NIM: " << students[i].nim << endl;  
7     cout << "Average: " << students[i].average << endl;  
8 }
```



The image shows a C++ IDE with two panels. The left panel displays the source code for `main.cpp`, and the right panel shows the console output.

**Source Code (main.cpp):**

```
1 #include <ostream>
2
3 using namespace std;
4 struct Student {
5     int nim;
6     float uts;
7     float uas;
8     float average;
9 };
10
11 int main() {
12     int N;
13
14     cout << "Enter the number of students (max 50): ";
15     cin >> N;
16
17     if (N > 50) {
18         cout << "The maximum number of students is 50.
19         Please try again." << endl;
20         return 1;
21     }
22
23     Student students[50];
24
25     for (int i = 0; i < N; i++) {
```

**Console Output:**

```
Run
Enter the number of students (max 50): 3
Enter data for student 1:
Enter NIM: 5322
Enter UTS score: 56
Enter UAS score: 98
Enter data for student 2:
Enter NIM: 5323
Enter UTS score: 45
Enter UAS score: 31
Enter data for student 3:
Enter NIM: 5325
Enter UTS score: 76
Enter UAS score: 83
Student data and averages:
NIM: 5322
Average: 77
NIM: 5323
Average: 38
NIM: 5325
Average: 79.5
```

Figure 1: Example Output