

Solution Review: Calculate Overall Percentage of Student's Mark

Let's go over the solution review of the challenge given in the previous lesson.

We'll cover the following ^

- Solution
- Explanation
 - struct Student
 - calculate_percentage

Solution

Press the **RUN** button and see the output!

```
#include <iostream>

using namespace std;

// Student structure
struct Student {
    // Stores the name of Student
    string name;
    // Stores the marks of student in 4 subjects
    double marks[4];
};

// calculate_percentage function
double calculate_percentage(struct Student s) {
    // Initialize variables
    double total = 0, percentage = 0;
    // for loop to traverse marks of Student
    for (int i = 0; i < 4; i++) {
        // Add marks of Student in total
        total = total + s.marks[i];
    }
    // Calculate percentage
    percentage = (total / 400) * 100;
    // Return percentage of Student
    return percentage;
}

// print_Student function
void print_Student(struct Student s) {
```



```

cout << "Name of student = " << s.name << endl;
cout << "Student marks:" << endl;
for (int i = 0; i < 4; i++) {
    cout << "Student marks in subject" << i + 1 << "=" << s.marks[i] << endl;
}
}

// main function
int main() {
    // Declare structure variable s of type Student
    struct Student s;
    // Declare variable of type double
    double result;
    // Initialize members of s
    s = {"John", {30.5, 49.7, 22.3, 32.9}};
    // Call function calculate_percentage and store output in result
    result = calculate_percentage(s);
    // Call print_Student function to print members of s
    print_Student(s);
    // Print percentage of Student
    cout << "percentage = " << result << "%";
    return 0;
}

```



Explanation

struct Student

We define the structure **Student** on **Line No. 6** that stores the **names** and **marks** of a student in 4 subjects.

Line No. 8: **name** stores the name of a student.

Line No. 10: **marks** is an array of type **double** whose size is **4**. It stores the marks of a student in 4 subjects.

calculate_percentage

The **calculate_percentage** function takes the structure variable of type **Student** in its input parameters. It returns the value of type **double** in its output.

We can calculate the percentage by dividing the sum of all marks obtained with total marks and multiplying by 100. As there are four subjects, initialize **i** from **0** to **3**, traverse the marks, and add their sum to **total**. Calculate the **percentage** by dividing the **total** by **400** and multiplying it by **100**. In the end, we return **percentage** to the calling point.

Let's solve a slightly more difficult challenge in the upcoming lesson.