Solution Review: Calculate the Average Marks of a Class

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

We'll cover the following

Solution#

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

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

// Function calculate_average
double average(double marks[], int size) {
  double sum = 0;
  double average = 0;
  // Add all the elements of array
  for (int i = 0; i < size; i++) {
    sum = sum + marks[i];
  }
  // Calculate average by dividing sum by size
  average = sum / size;
  return average;
}

// main function
int main() {
```

```
    // Initialize array size
    int size = 8;
    // Declare variable to store output of function
    double result;
    // Initialize array
    double number [size] = {67, 89, 56, 43, 29, 15, 90,67};
    // Call function and store its output in result
    result = average (number,size);
    // Print value of result
    cout << "average = " << result;
```

Output 0.96s

```
average = 57
```

Explanation#

The basic formula for calculating the average of the values is given below:

$$Average = Sum\ of\ all\ values\ /\ Total\ Number\ of\ values$$

`average` function#

The `average` function takes the array `marks[]` of type `double` and its `size` of type `int` in its input parameters. It returns a value of type `double` in the output.

We already have the total number of values in the form of size passed to the function. We just need to compute the sum of all values. We iterate over each value in the array `marks` and add them together. Then, we initialize a loop from index `i = 0` to `i = size-1` (**Line No. 9**), add the element at index `i` in a new variable `sum` (initialized to 0 at **Line No. 6**), and store the updated value in sum. Use the average formula, divide sum by size, and store the

result in average. In the end, we return `average` to the calling point.

Interesting so far? Let’s solve another challenge related to arrays in the upcoming lesson.

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