

Structured Programming Quiz 3V1

Student Name /ID:

Q1: What is the output of the following code:

```
#include <stdio.h>

void foo(int arr[], int size, int score) {
    for (int i = 0; i < size; i++) {
        arr[i] += score;
    }
}

int main() {
    int numbers[3] = {10, 20, 30};
    int Value = 5;

    foo(numbers, 3, Value);

    for (int i = 0; i < 3; i++) {
        printf("%d ", numbers[i]);
    }

    return 0;
}
```

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Q2: Write a complete C program that includes a function named **AverageAbove**. This function takes **an array of integers, its size, and a score value** as input parameters and returns the **average of all numbers greater than or equal to the given score** as a `double`. If no numbers meet the condition, the function should return `0.0`. The `main` function should define an integer array of size **70**, take user input for the number of students (up to 70), and then read their grades. It should call `AverageAbove` to compute and display(print) the **average of students who passed (grades ≥ 50)**.

```
#include <stdio.h>
```

```
// Function to calculate the average of numbers greater than or equal to a given score
```

```
double AverageAbove(int arr[], int size, int score) {
```

```
    int sum = 0, count = 0;
```

```
    for (int i = 0; i < size; i++) {
```

```
        if (arr[i] >= score) {
```

```
            sum += arr[i];
```

```
            count++;
```

```
        }
```

```
    }
```

```
    return (count > 0) ? (double)sum / count : 0.0;
```

```
}
```

```
int main() {
```

```
    int grades[70], num_students;
```

```
    // Input the number of students
```

```
printf("Enter the number of students (up to 70): ");

scanf("%d", &num_students);


// Validate input size

if (num_students < 1 || num_students > 70) {

    printf("Invalid number of students. Please enter a value between 1 and
70.\n");

    return 1;

}


// Input the grades

printf("Enter the grades of the students: \n");

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

    scanf("%d", &grades[i]);

}


// Compute the average of students who passed (grades >= 50)

double average = AverageAbove(grades, num_students, 50);


// Print the result

printf("The average of students who passed (grades >= 50) is: %.2f\n",
average);


return 0;
```

}