

## Structured Programming Quiz 3V2

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;
}
```

5 15 25

**Q2:** Write a complete **C program** that includes a function named **MaxAbove**, which takes an array of integers, its size, and a score value as input parameters and returns the **maximum value** among the numbers greater than or equal to the given score as an integer; if no such numbers exist, the function should return -1. The `main` function should define an **integer array named temp with a size of 70**, prompt the user to enter the values of temperatures, It should call `MaxAbove` to determine and print the **Max Temperature greater than 30 (temperature  $\geq 30$ )**

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

```
// Function to find the maximum value greater than or equal to a given score
```

```
int MaxAbove(int arr[], int size, int score) {
```

```
    int max = -1;
```

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

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

```
            if (max == -1 || arr[i] > max) {
```

```
                max = arr[i];
```

```
            }
```

```
        }
```

```
    }
```

```
    return max;
```

```
}
```

```
int main() {
```

```
    int temp[70], num_temps;
```

```
    // Input the number of temperatures
```

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

scanf("%d", &num_temps);


// Validate input size

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

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

    return 1;

}


// Input the temperatures

printf("Enter the temperature values: \n");

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

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

}


// Compute the maximum temperature greater than or equal to 30

int max_temp = MaxAbove(temp, num_temps, 30);


// Print the result

if (max_temp == -1) {

    printf("No temperatures were greater than or equal to 30.\n");

} else {
```

```
        printf("The maximum temperature greater than or equal to 30 is: %d\n",  
max_temp);
```

```
    }
```

```
    return 0;
```

```
}
```