

## Additional C++ Array Exercises

### Exercise 1: Array Element Replacement

Write a program that initializes an array with the values {1, 2, 3, 4, 5}. Replace each element with its square, and then print the updated array.

Expected Output: 1 4 9 16 25

### Exercise 2: Average of Array Elements

Write a program to calculate the average of elements in an array. Use the array {8, 6, 10, 12, 14}.

Expected Output: The average is: 10

### Exercise 3: Find the Smallest Element

Write a program to find the smallest element in an array {9, 3, 7, 1, 5}.

Expected Output: The smallest element is: 1

### Exercise 4: Count Positive and Negative Numbers

Given an array {4, -3, 2, -1, 6, -5}, write a program to count how many elements are positive and how many are negative.

Expected Output:

Number of positive numbers: 3

Number of negative numbers: 3

### Exercise 5: Reverse Array Copy

Write a program that initializes an array with values {2, 4, 6, 8, 10}. Create a second array that stores the elements of the first array in reverse order. Print both arrays.

Expected Output:

Original array: 2 4 6 8 10

Reversed array: 10 8 6 4 2

### Exercise 6: Sum of Even and Odd Indexed Elements

Write a program to calculate the sum of elements at even indices and the sum of elements at odd indices for the array {1, 3, 5, 7, 9, 11}.

Expected Output:

Sum of elements at even indices: 15

Sum of elements at odd indices: 21

### Exercise 7: Find the Second Largest Element

Write a program to find the second largest element in an array {12, 35, 1, 10, 34, 1}.

Expected Output: The second largest element is: 34

### Exercise 8: Count Multiples of a Number

Given an array {3, 6, 9, 12, 15, 18}, write a program to count how many elements are multiples of 3.

Expected Output: The number of multiples of 3 is: 6

### Exercise 9: Merge Two Arrays

Write a program to merge two arrays {1, 2, 3} and {4, 5, 6} into a single array and then print it.

Expected Output: Merged array: 1 2 3 4 5 6

### Exercise 10: Find Frequency of Elements

Write a program to find the frequency of each element in an array {1, 2, 2, 3, 3, 3, 4, 4, 4, 4}.

Expected Output:

Frequency of 1 is 1

Frequency of 2 is 2

Frequency of 3 is 3

Frequency of 4 is 4