CPP-A05: Array Assignment

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1. Print All Elements of an Array

Write a program to print all elements of an array.

Sample Input:

```
{1, 2, 3, 4, 5}
```

Sample Output:

```
1 2 3 4 5
```

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2. Find the Sum of All Elements

Write a program to calculate the sum of all elements in an array.

Sample Input:

```
{10, 20, 30}
```

Sample Output:

```
Sum of elements: 60
```

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3. Find the Maximum Element

Write a program to find the largest element in an array.

Sample Input:

```
{4, 8, 1, 7}
```

Sample Output:

```
Largest element: 8
```

4. Find the Minimum Element

Write a program to find the smallest element in an array.

Sample Input:

```
{4, 8, 1, 7}
```

Sample Output:

```
Smallest element: 1
```

5. Count Elements Greater Than a Given Value

Write a program to count how many numbers in the array are greater than a given value.

Sample Input:

```
Array: {5, 10, 15, 20}
Value: 12
```

Sample Output:

```
Count: 2
```

6. Find Even Numbers

Write a program to print all the even numbers in an array.

Sample Input:

```
{1, 2, 3, 4, 5, 6}
```

Sample Output:

```
Even numbers: 2 4 6
```

7. Find Odd Numbers

Write a program to print all the odd numbers in an array.

Sample Input:

```
{1, 2, 3, 4, 5}
```

Sample Output:

```
Odd numbers: 1 3 5
```

8. Multiply Each Element by 2

Write a program to multiply each element of an array by 2 and display the new array.

Sample Input:

```
{2, 4, 6}
```

Sample Output:

```
New array: {4, 8, 12}
```

9. Search for an Element

Write a program to check if a given number exists in an array.

Sample Input:

```
Array: {3, 7, 9, 2}
Number: 7
```

Sample Output:

```
Number found: true
```

10. Find the First and Last Elements

Write a program to print the first and last elements of an array.

Sample Input:

```
{5, 10, 15, 20, 25}
```

Sample Output:

```
First element: 5
Last element: 25
```

11. Reverse an Array

Write a program to reverse the elements of an array.

Sample Input:

```
{1, 2, 3, 4, 5}
```

Sample Output:

```
Reversed array: {5, 4, 3, 2, 1}
```

12. Count Even and Odd Numbers

Write a program to count the number of even and odd numbers in an array.

Sample Input:

```
{12, 3, 5, 8, 10}
```

Sample Output:

```
Even count: 3, Odd count: 2
```

13. Check if Array is Sorted

Write a program to check if an array is sorted in ascending order.

Sample Input:

```
{1, 2, 3, 4, 5}
```

Sample Output:

```
Array is sorted: true
```

Sample Input:

```
{5, 3, 8, 1}
```

Sample Output:

```
Array is sorted: false
```

14. Merge Two Arrays

Write a program to merge two arrays into one.

Sample Input:

```
Array 1: {1, 3, 5}
Array 2: {2, 4, 6}
```

Sample Output:

```
Merged array: {1, 2, 3, 4, 5, 6}
```

15. Find the Frequency of Each Element

Write a program to count the frequency of each element in an array.

Sample Input:

```
{1, 2, 2, 3, 1, 3, 1}
```

Sample Output:

```
Frequency:
1: 3
2: 2
3: 2
```