

Problem 1: Calculating the Sum of an Array

Problem Statement:

Write an algorithm that calculates the sum of all numbers in a given array of integers.

1. Pseudocode:

Start Create variable sum and set it to 0 **For** each number in the array **Add** number to sum **End For** **Display** the value of variable sum to user **End**

2. Translate to C#

```
// Initialize an array of integers
int[] numbers = { 5, 8, 3, 4, 2 };

// Initialize the sum variable
int sum = 0;

// Loop through each number in the array
foreach (int number in numbers)
{
    sum += number;
}

// Output the sum of the array
Console.WriteLine("The sum of the array is: " + sum);
```

Problem 2: Counting the Number of Vowels in a String

Problem Statement:

Write an algorithm to count the number of vowels (a, e, i, o, u) in a given string.

1. Pseudocode:

Start Create variable vowelCount and set to 0 **For** each character in the string **If** character is a vowel **Add** 1 to vowelCount **End For** **Print** vowelCount **End**

2. Translate to C#

```
int vowelCount1 = 0;
char[] letters = ['h', 'e', 'l', 'l', 'o'];
char[] vowels = ['a', 'e', 'i', 'o', 'u'];
foreach (char letter in letters)
{
    if (vowels.Contains(char.ToLower(letter)))
    {
        vowelCount1 += 1;
    }
}
```

```
}
```

```
Console.WriteLine(vowelCount1);
```