- In C#, it's recommended to use a string when the value is not expected to change frequently, and StringBuilder when there are frequent modifications to the string.

- The base class for all arrays in C# is System.Array.

- Array.Sort() method.

- The Length property of an array object can be used to get the total number of elements in an array.

- No, System.Array can only store a single data type. However, you can create an array of objects (object[]) which can store any type of data, but this may impact performance due to the need for type conversions.

- The Array.CopyTo() method copies the elements of an array to another existing array. The elements are copied to the specified index in the destination array. The Array.Clone() method creates a shallow copy of an array, which means that a new array object is created with the same length and values as the original, but the elements themselves are not cloned. Any changes made to the elements in the new array will also affect the original array.

```
0 references
class Program
{
    0 references
    static void Main(string[] args)
    {
        int[] originalArray = { 1, 2, 3, 4, 5, 6, 7, 8, 9, 10 };
        int[] copiedArray = new int[originalArray.Length];

        for (int i = 0; i < originalArray.Length; i++)
        {
            copiedArray[i] = originalArray[i];
        }

        Console.WriteLine("Original array:");
        foreach (int num in originalArray)
        {
            Console.Write(num + " ");
        }

        Console.WriteLine("\nCopied array:");
        foreach (int num in copiedArray)
        {
            Console.Write(num + " ");
```

```
Microsoft Visual Studio Debug Console
Original array:
1 2 3 4 5 6 7 8 9 10
Copied array:
1 2 3 4 5 6 7 8 9 10
C:\Users\eugen\Desktop\Antra Assignment\Antra\HW2_Code\bin\Debug\net6.0\HW2_Code.exe (process 34660) exited with code 0.
Press any key to close this window . . .
```

```
{
    0 个引用
    static void Main(string[] args)
    {
        List<string> list = new List<string>();

        while (true)
        {
            Console.WriteLine("Enter command (+ item, - item, or -- to clear):");

            string input = Console.ReadLine();
            string action = input.Substring(0, 2);
            string item = input.Substring(2);

            switch (action)
            {
                case "+ ":
                    list.Add(item);
                    break;
                case "- ":
                    list.Remove(item);
                    break;
                case "--":
                    list.Clear();
                    break;
            }

            Console.WriteLine("Current list:");
```

```
C:\Users\eugen\Desktop\Antra Assignment\Antra\HW2_Code\bin\Debug\net6.0\HW2_Code.exe
Enter command (+ item, - item, or -- to clear):
+ apple
Current list:
apple
Enter command (+ item, - item, or -- to clear):
+ banana
Current list:
apple
banana
Enter command (+ item, - item, or -- to clear):
+ pppp
Current list:
apple
banana
pppp
Enter command (+ item, - item, or -- to clear):
- pppp
Current list:
apple
banana
Enter command (+ item, - item, or -- to clear):
--
Current list:
Enter command (+ item, - item, or -- to clear):
-
```

```
    {
        int[] primes = FindPrimesInRange(1, 100);

        Console.WriteLine("Prime numbers between 1 and 100:");
        foreach (int prime in primes)
        {
            Console.Write(prime + " ");
        }

        Console.ReadLine();
    }
    1 个引用
    static bool IsPrime(int num)
    {
        if (num < 2) return false;

        for (int i = 2; i <= Math.Sqrt(num); i++)
        {
            if (num % i == 0) return false;
        }

        return true;
    }

    1 个引用
    static int[] FindPrimesInRange(int startNum, int endNum)
```

```
C:\Users\eugen\Desktop\Antra Assignment\Antra\HW2_Code\bin\Debug\net6.0\HW2_Code.exe
Prime numbers between 1 and 100:
2 3 5 7 11 13 17 19 23 29 31 37 41 43 47 53 59 61 67 71 73 79 83 89 97
```

```
        for (int r = 1; r <= k; r++)
        {
            // Rotate the array right by one position
            int temp = array[array.Length - 1];
            for (int i = array.Length - 1; i > 0; i--)
            {
                array[i] = array[i - 1];
            }
            array[0] = temp;

            // Calculate the sum after this rotation
            for (int i = 0; i < array.Length; i++)
            {
                sum[i] += array[(i + r) % array.Length];
            }
        }

        // Output the sum array
        for (int i = 0; i < sum.Length; i++)
        {
            Console.Write(sum[i] + " ");
        }
    }
}
```

```
Microsoft Visual Studio Debug Console
3 2 4 -1 3 2 5 6
2
6 4 8 -2 6 4 10 12
C:\Users\eugen\Desktop\Antra Assignment\Antra\HW2_Code\bin\Debug\net6.0\HW2_Code.exe (process 37728) exited with co
Press any key to close this window . . .
```

```
        // Loop through the array, tracking the current sequence
        int count = 1;
        for (int i = 1; i < array.Length; i++)
        {
            if (array[i] == array[i - 1])
            {
                count++;
            }
            else
            {
                if (count > maxCount)
                {
                    maxCount = count;
                    maxIndex = i - count;
                }
                count = 1;
            }
        }

        // Check the last sequence
        if (count > maxCount)
        {
            maxCount = count;
            maxIndex = array.Length - count;
        }
```

```
Microsoft Visual Studio Debug Console
2 1 1 2 3 3 2 2 2 1 2 2 2
2 2 2
C:\Users\eugen\Desktop\Antra Assignment\Antra\HW2_Code\bin\Debug\net6.0\HW2_Code.exe (process 9768) exited with code 0.
Press any key to close this window . . .
```

```
{
    // Read the input sequence from the console
    int[] sequence = Array.ConvertAll(Console.ReadLine().Split(' '), int.Parse);

    // Initialize a dictionary to count the frequ
    Dictionary<int, int> counts = new Dictionary<

    // Loop through the sequence, counting the fr
    int maxCount = 0;
    int mostFrequent = sequence[0];
    for (int i = 0; i < sequence.Length; i++)
    {
        int num = sequence[i];
        if (!counts.ContainsKey(num))
        {
            counts[num] = 0;
        }
        counts[num]++;
        if (counts[num] > maxCount || (counts[num] == maxCount && num < mostFrequent))
        {
            maxCount = counts[num];
            mostFrequent = num;
        }
    }
```

```
Microsoft Visual Studio Debug Console
4 1 1 4 2 3 4 4 1 2 4 9 3
The number 4 is the most frequent (occurs 5 times)

C:\Users\eugen\Desktop\Antra Assignment\Antra\HW2_Code\bin\Debug\net6.0\HW2_Code.exe (process 35952) exited with code 0.
Press any key to close this window . . .
```

```
using System;

0 references
class MainClass
{
    0 references
    public static void Main(string[] args)
    {
        // Read the input string from the console
        string input = Console.ReadLine();

        // Convert the string to a char array, rev
        char[] chars = input.ToCharArray();
        Array.Reverse(chars);
        string reversed = new string(chars);

        // Output the reversed string
        Console.WriteLine(reversed);
    }
}
```

```
Microsoft Visual Studio Debug Console
123fdas
sadf321

C:\Users\eugen\Desktop\Antra Assignment\Antra\HW2_Code\bin\Debug\net6.0\HW2_Code.exe (process 17260) exited with code 0.
Press any key to close this window . . .
```

```
using System;

0 references
class MainClass
{
    0 references
    public static void Main(string[] args)
    {
        // Read the input string from the console
        string input = Console.ReadLine();

        // Print the letters of the string in reverse
        for (int i = input.Length - 1; i >= 0; i--)
        {
            Console.Write(input[i]);
        }

        // Output a newline character to separate from any following text
        Console.WriteLine();
    }
}
```

```
Microsoft Visual Studio Debug Console
14fdfsf
fsfdf41

C:\Users\eugen\Desktop\Antra Assignment\Antra\HW2_Code\bin\Debug\net6.0\HW2_Code.exe (process 22448) exited with code 0.
Press any key to close this window . . .
```

```
0 references
public static void Main(string[] args)
{
    // Read the input sentence from the console
    string input = Console.ReadLine();

    // Define the word separators
    char[] separators = new char[] { ' ', '.', ',', ':', ';', '=', '(', ')', '&', '[', ']', '"', '\'', '\\', '/',

    // Split the sentence into words using the separators
    string[] words = input.Split(separators, StringSplitOptions.RemoveEmptyEntries);

    // Reverse the words array
    Array.Reverse(words);

    // Build the output string using the original separ
    string[] parts = input.Split(words, StringSplitOpti
    string output = "";
    for (int i = 0; i < parts.Length; i++)
    {
        output += parts[i];
        if (i < words.Length)
        {
            output += words[i];
        }
```

```
Microsoft Visual Studio Debug Console
The quick brown fox jumps over the lazy dog /Yes! Really!!!/
Really Yes dog lazy the over jumps fox brown /quick! The!!!/

C:\Users\eugen\Desktop\Antra Assignment\Antra\HW2_Code\bin\Debug\net6.0\HW2_Code.exe (process 24556) exited with code 0.
Press any key to close this window . . .
```

```
class MainClass
{
    0 references
    public static void Main(string[] args)
    {
        // Read the input text from the console
        string input = Console.ReadLine();

        // Define the word separators and ignore case when checking for palindromes
        char[] separators = new char[] { ' ', ',', '.', ':', ';', '!', '?', '\'', '\"' };
        StringComparison comparison = StringComparison.OrdinalIgnoreCase;

        // Split the text into words using the separat
        string[] words = input.Split(separators, Strir

        // Initialize a set to store the unique palinc
        HashSet<string> palindromes = new HashSet<stri

        // Loop through the words, checking for palinc
        foreach (string word in words)
        {
            if (IsPalindrome(word, comparison))
            {
                palindromes.Add(word);
            }
        }

        // Sort the palindromes and output them to the console
        List<string> sortedPalindromes = palindromes.ToList();
        sortedPalindromes.Sort();
        Console.WriteLine(string.Join(", ", sortedPalindromes));
    }
```

```
Select Microsoft Visual Studio Debug Console
Hi, exe? ABBA! Hog fully a string: ExE. Bob
a, ABBA, exe, ExE

C:\Users\eugen\Desktop\Antra Assignment\Antra\HW2_Code\bin\Debug\net6.0\HW2_Code.exe (process 18636) exited with code 0.
Press any key to close this window . . .
```

```
        // Read the input URL from the console
        string input = Console.ReadLine();

        // Parse the URL into its parts
        string protocol = "";
        string server = "";
        string resource = "";
        int protocolIndex = input.IndexOf("://");
        if (protocolIndex != -1)
        {
            protocol = input.Substring(0, protocolIndex);
            input = input.Substring(protocolIndex + 3);
        }
        int resourceIndex = input.IndexOf("/");
        if (resourceIndex != -1)
        {
            server = input.Substring(0, resourceIndex);
            resource = input.Substring(resourceIndex + 1);
        }
        else
        {
            server = input;
        }

        // Output the parsed parts to the console
        Console.WriteLine("[protocol] = \"{0}\"", protocol);
        Console.WriteLine("[server] = \"{0}\"", server);
        Console.WriteLine("[resource] = \"{0}\"", resource);
    }
}
```