Assignment 3

Question 1

We want to develop a program that can do the following:

· Prompt the user for input of two integers, which we will call numerator and denominator. For clarity, we are only looking at integers, because this assignment is about rational numbers. A rational number can always be expressed as a quotient of two integers.

· Calculate the floating point division result (e.g. 10/4 = 2.5).

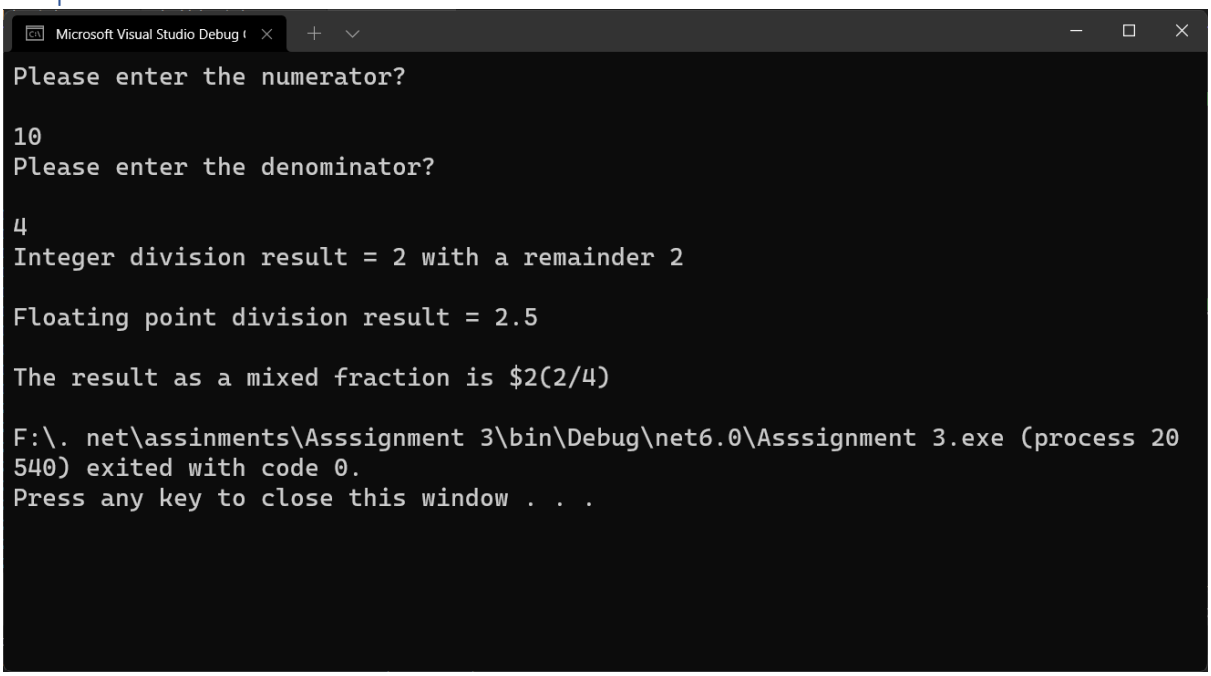
· Calculate the quotient and the remainder (e.g. 10/4 = 2 with a remainder of 2 = 2 2/4).

Your final program should work as in this sample run, and use the same labelled

Code:

```
using System;
class DoTheMath
{
    public static void Main()
    {
        int numerator;
        int denominator;
        int intResult;
        float floatResult;
        int remainder;


        Console.WriteLine("Please enter the numerator?\n");
        numerator = int.Parse(Console.ReadLine());
        Console.WriteLine("Please enter the denominator?\n");
        denominator = int.Parse(Console.ReadLine());

        intResult = numerator / denominator;
        remainder = numerator % denominator;
        floatResult = (float)numerator/ (float)denominator;

        Console.WriteLine($"Integer division result = {intResult} with a
remainder {remainder}\n ");
        Console.WriteLine($"Floating point division result = {floatResult}\n");
        Console.WriteLine($"The result as a mixed fraction is
${intResult}({remainder}/{denominator})");

    }

   }
```

Output:



Question 2

1. Read a string from the keyboard and print the length of the string, with a label.
2. Read a sentence (string) from a line of input, and print whether it represents a declarative sentence (i.e. ending in a period), interrogatory sentence (ending in a question mark), or an exclamation (ending in exclamation point) or is not a sentence (anything else).

It makes sense to only make small changes at once and build up to final code. First you might just code it to check if a sentence is declarative or not. Then remember you can test further cases with else if (...).

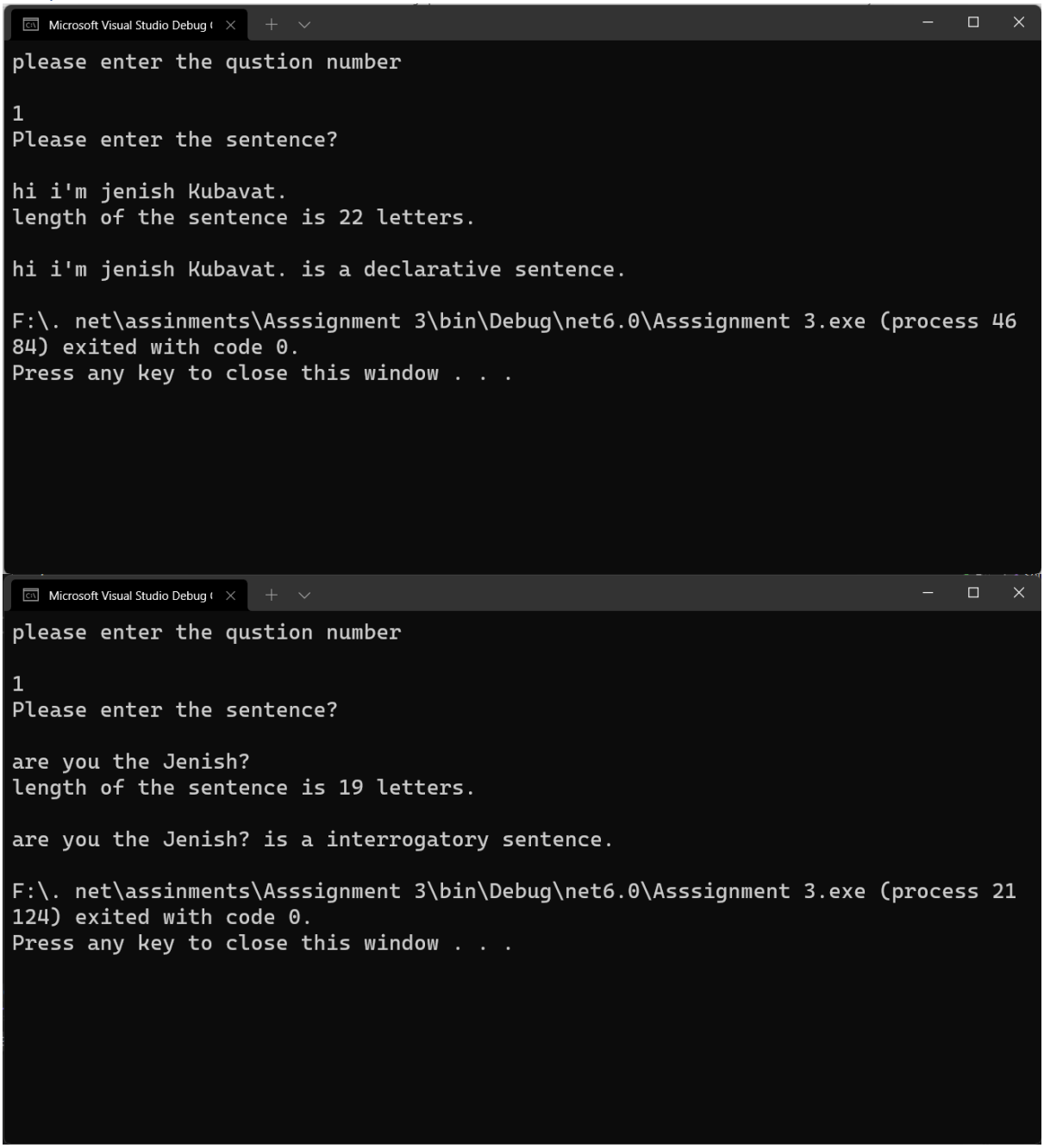
3. Read a whole name from a single line of user input. Do not ask for first and last names to be entered on separate lines! Assume first and last names are separated by a space (no middle name). Print last name first followed by a comma and a space, followed by the first name. For example, if the input is "Marcel Proust", the output is "Proust, Marcel".
4. Improve the previous part, so it also allows a single name without spaces, like “Socrates”, and prints the original without change. If there are two parts of the name, it should work as in the original version.

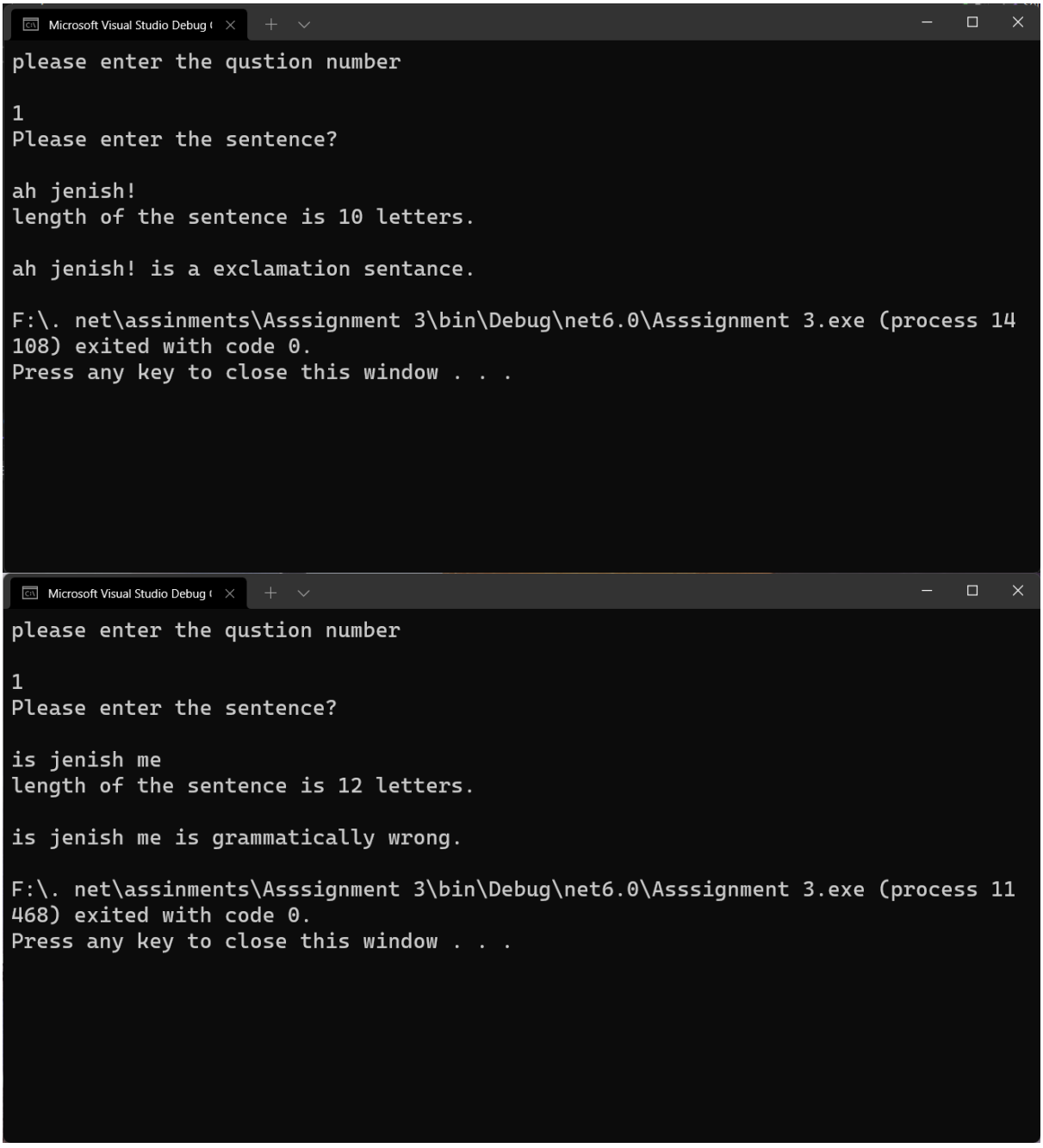
Code:

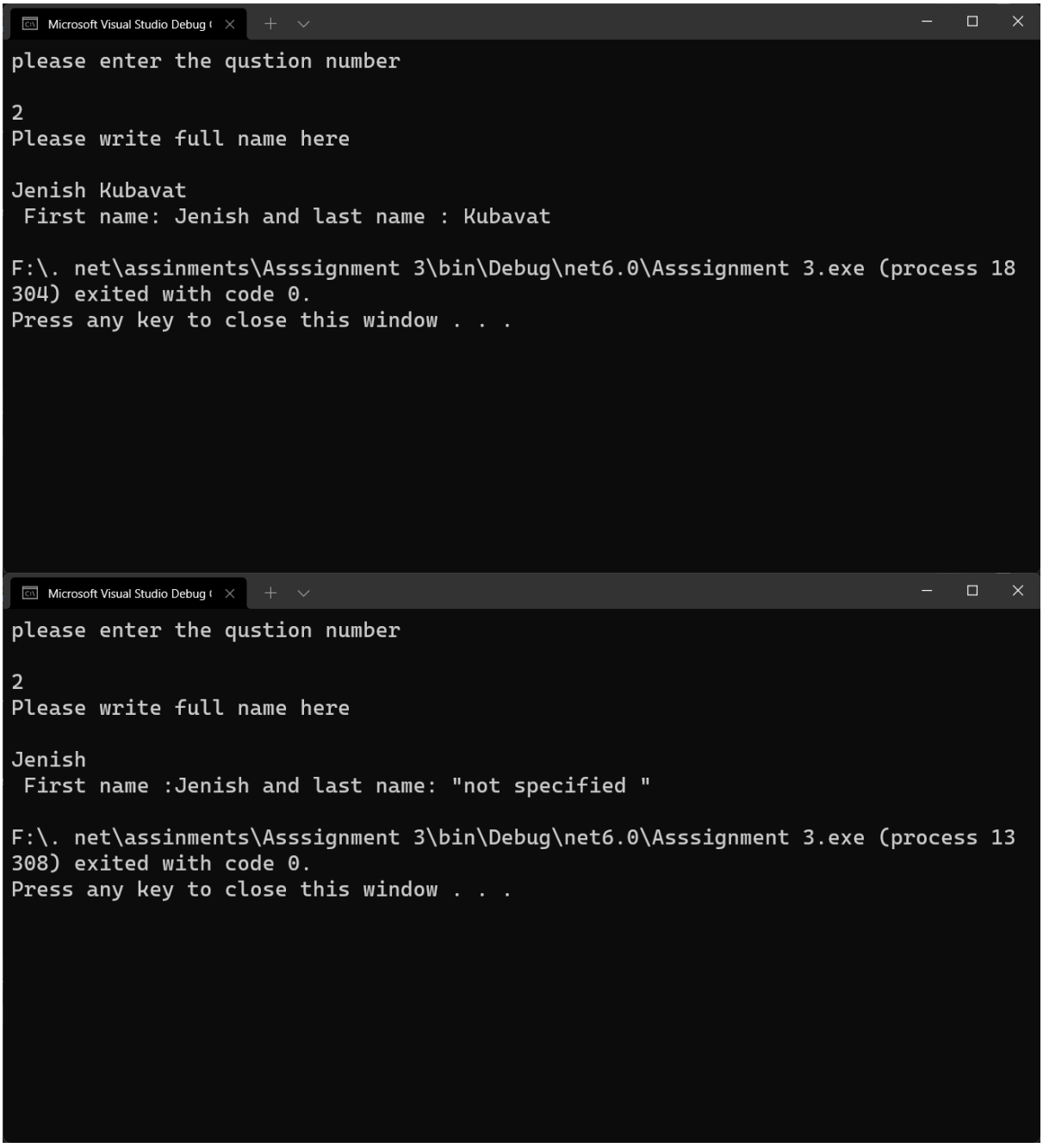
```
using System;

public class stringMainpulation
{
    public static void Main()
    {int choice = 0;
        Console.WriteLine("please enter the qustion number\n");
        choice = Convert.ToInt32(Console.ReadLine());
        if (choice == 1)
        {

            Question1();
```

```
        }
        else if (choice == 2)
        {
            Question2();
        }
    }
    public static void Question1()
    {
        string sentence;
        int length;
        int lastChar;

        Console.WriteLine("Please enter the sentence?\n");
        sentence = Console.ReadLine();
        length = sentence.Length;
        lastChar = Convert.ToInt32(sentence[length - 1]);
        Console.WriteLine($"length of the sentence is {length} letters.\n ");
        if (lastChar == 46)
        {
            Console.WriteLine($"{sentence} is a declarative sentence.");

        }
        else if (lastChar == 63)
        {
            Console.WriteLine($"{sentence} is a interrogatory sentence.");
        }
        else if (lastChar == 33)
        {
            Console.WriteLine($"{sentence} is a exclamation sentance.");

        }
        else
        {
            Console.WriteLine($"{sentence} is grammatically wrong. ");
        }
    }
    public static void Question2()
    {
        string fullName;
        Console.WriteLine("Please write full name here \n");
        fullName = Console.ReadLine();
        string[] names=fullName.Split(' ');
      if (names.Length == 2)
        {
            Console.WriteLine($" First name: {names[0] } and last name :
{names[1]}");

        }
      else
        {
            Console.WriteLine($" First name :{names[0]} and last name: \"not
specified \" ");

        }



    }
}
```

Output:


Microsoft Visual Studio Debug
please enter the qustion number
1
Please enter the sentence?
hi i'm jenish Kubavat.
length of the sentence is 22 letters.
hi i'm jenish Kubavat. is a declarative sentence.
F:\. net\assinments\Asssignment 3\bin\Debug\net6.0\Asssignment 3.exe (process 4684) exited with code 0.
Press any key to close this window . . .
Microsoft Visual Studio Debug
please enter the qustion number
1
Please enter the sentence?
are you the Jenish?
length of the sentence is 19 letters.
are you the Jenish? is a interrogatory sentence.
F:\. net\assinments\Asssignment 3\bin\Debug\net6.0\Asssignment 3.exe (process 21124) exited with code 0.
Press any key to close this window . . .


Microsoft Visual Studio Debug
please enter the qustion number
1
Please enter the sentence?
ah jenish!
length of the sentence is 10 letters.
ah jenish! is a exclamation sentance.
F:\. net\assinments\Asssignment 3\bin\Debug\net6.0\Asssignment 3.exe (process 14108) exited with code 0.
Press any key to close this window . . .
Microsoft Visual Studio Debug
please enter the qustion number
1
Please enter the sentence?
is jenish me
length of the sentence is 12 letters.
is jenish me is grammatically wrong.
F:\. net\assinments\Asssignment 3\bin\Debug\net6.0\Asssignment 3.exe (process 11468) exited with code 0.
Press any key to close this window . . .



Question 3:

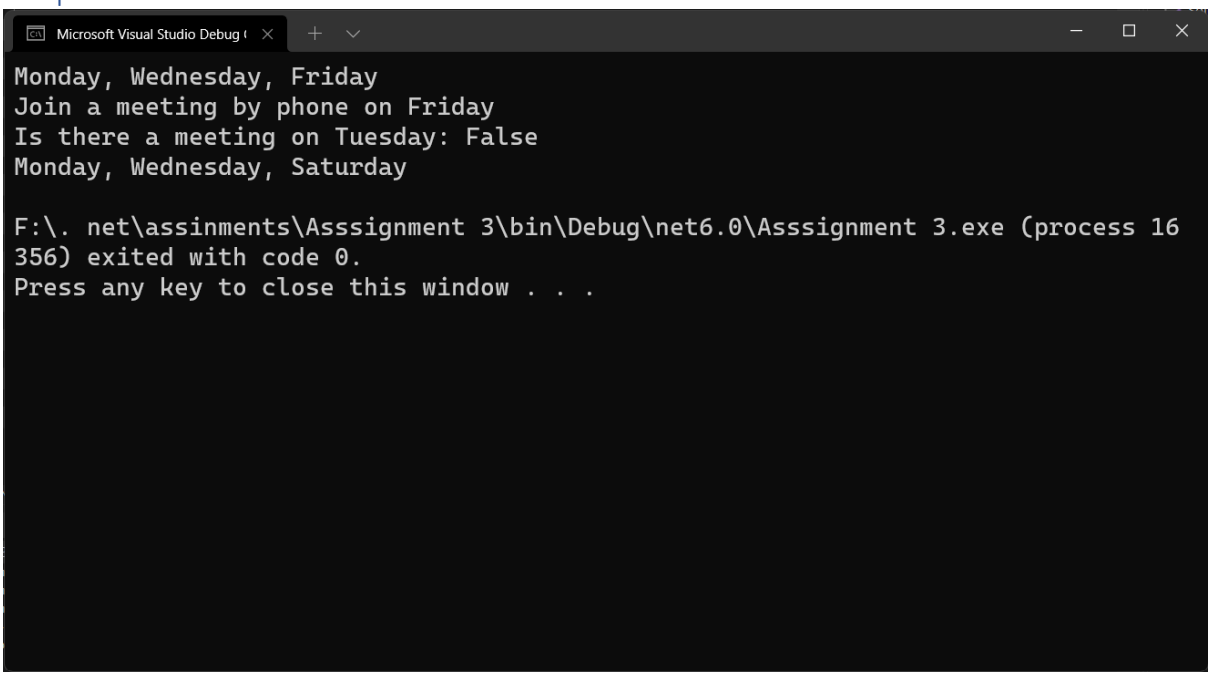
Enumeration Sample with bit flags

Code:

```
using System;
[Flags]

public enum Days

{

        None = 0b_0000_0000, // 0

        Monday = 0b_0000_0001, // 1

        Tuesday = 0b_0000_0010, // 2
```

```
        Wednesday = 0b_0000_0100, // 4
        Thursday = 0b_0000_1000, // 8
        Friday = 0b_0001_0000, // 16
        Saturday = 0b_0010_0000, // 32
        Sunday = 0b_0100_0000, // 64
        Weekend = Saturday | Sunday
}
public class enumMMainpulation
{
        public static void Main()
        {
                Days meetingDays = Days.Monday | Days.Wednesday | Days.Friday;
                Console.WriteLine(meetingDays);

                Days workingFromHomeDays = Days.Thursday | Days.Friday;
                Console.WriteLine($"Join a meeting by phone on {meetingDays &
workingFromHomeDays}");

                bool isMeetingOnTuesday = (meetingDays & Days.Tuesday) ==
Days.Tuesday;
                Console.WriteLine($"Is there a meeting on Tuesday:
{isMeetingOnTuesday}");

                var a = (Days)37;
                Console.WriteLine(a);
                // Output:
                // Monday, Wednesday, Saturday
        }
}
```

Output:


Microsoft Visual Studio Debug
Monday, Wednesday, Friday
Join a meeting by phone on Friday
Is there a meeting on Tuesday: False
Monday, Wednesday, Saturday
F:\. net\assinments\Asssignment 3\bin\Debug\net6.0\Asssignment 3.exe (process 16356) exited with code 0.
Press any key to close this window . . .