

## Tutorial – 1

### 1. Write a program to print “Hello World”.

```
using System;

namespace Ayushi_Tutorials
{
    internal class Program
    {
        static void Main(string[] args)
        {
            Console.WriteLine("Hello World.");
            Console.Read();
        }
    }
}
```

#### Output:

```
D:\\.NET\Ayushi_Tutorials>csc Program.cs
Microsoft (R) Visual C# Compiler version 4.14.0-3.25279.5 (995f12b6)
Copyright (C) Microsoft Corporation. All rights reserved.

D:\\.NET\Ayushi_Tutorials>Program
Hello World.
```

### 2. Design your profile page as given below.

**Name:** Ramesh Tamkuity

**DOB:** 15/10/1991

**Address:** 4, xyx society,

Kalawad Road

**City:** Rajkot

**Pincode:** 360 001

**State:** Gujarat

23SOECE11038

Enterprise Computing Through .NET Framework (CE525)

Country: India

Email: abc@ymail.com

using System;

namespace Ayushi\_Tutorials

```
{
    internal class Profile
    {
        public static void Main(string [] args)
        {
            Console.WriteLine("Name : Thummar Ayushi");
            Console.WriteLine("DOB : 14/08/2006");
            Console.WriteLine("Address : Gundasara, Gondal");
            Console.WriteLine("City : Rajkot");
            Console.WriteLine("Pin Code : 360311");
            Console.WriteLine("State : Gujarat");
            Console.WriteLine("Country : India");
            Console.WriteLine("Email : ayushi14@gmail.com");

            Console.Read();
        }
    }
}
```

### Output:

```
D:\\.NET\Ayushi_Tutorials>csc Profile.cs
Microsoft (R) Visual C# Compiler version 4.14.0-3.25279.5 (995f12b6)
Copyright (C) Microsoft Corporation. All rights reserved.
```

```
D:\\.NET\Ayushi_Tutorials>Profile
Name : Thummar Ayushi
DOB : 14/08/2006
Address : Gundasara, Gondal
City : Rajkot
Pin Code : 360311
State : Gujarat
Country : India
Email : ayushi14@gmail.com
|
```

23SOECE11038 Enterprise Computing Through .NET Framework (CE525)

**3. Find out whether the given number is odd or even.**

```
using System;

namespace Ayushi_Tutorials
{
    internal class T1Q3
    {
        public static void Main(string[] args)
        {
            Console.WriteLine("Enter any number to check whether it is even or odd :");
            int n = Convert.ToInt32(Console.ReadLine());
            if (n % 2 == 0)
            {
                Console.WriteLine("The number " + n + " is even.");
            }
            else
            {
                Console.WriteLine("The number " + n + " is odd.");
            }
        }
    }
}
```

**Output:**

```
D:\\.NET\Ayushi_Tutorials>csc T1Q3.cs
Microsoft (R) Visual C# Compiler version 4.14.0-3.25279.5 (995f12b6)
Copyright (C) Microsoft Corporation. All rights reserved.

D:\\.NET\Ayushi_Tutorials>T1Q3
Enter any number to check whether it is even or odd :
14
The number 14 is even.
```

**4. Rearrange the given code to correct the program. The resultant program will be to input a number and print whether the given number is odd or even.**

```
namespace ConsoleApplication1
{
    {

        static void Main(string[] args)
```

23SOECE11038

Enterprise Computing Through .NET Framework (CE525)

```
{  
    int x;  
    Console.WriteLine("Enter Number : ");  
    x = Convert.ToInt32(str);  
    Console.WriteLine("Number is Even");  
    else  
    Console.Read();  
        string str = Console.ReadLine();  
        if (x % 2 == 0)  
            Console.WriteLine("Number is Odd");  
    }  
}  
}
```

class Program  
using System;

**Output:**

**Enter Number: 10**

**Number is Even**

```
using System;  
  
namespace Ayushi_Tutorials  
{  
    internal class T1Q4  
    {  
        public static void Main(string[] args)  
        {  
            int x;
```

23SOECE11038 Enterprise Computing Through .NET Framework (CE525)

```
Console.WriteLine("Enter Number : ");
string str = Console.ReadLine();
x = Convert.ToInt32(str);
if(x % 2 == 0)
{
    Console.WriteLine("Number is Even");
}
else
{
    Console.WriteLine("Number is Odd");
}
Console.Read();
}}}
```

**Output:**

```
D:\.NET\Ayushi_Tutorials>csc T1Q4.cs
Microsoft (R) Visual C# Compiler version 4.14.0-3.25279.5 (995f12b6)
Copyright (C) Microsoft Corporation. All rights reserved.

D:\.NET\Ayushi_Tutorials>T1Q4
Enter Number :
10
Number is Even
```

5. Write output of the program. Also write comment for each line for the following code.

```
using System;
namespace ConsoleApplication1
{
    class Program
    {
        static void Main(string[] args)
        {
            int n,fact=1;
            Console.WriteLine("Enter Number : ");
            string str = Console.ReadLine();
            n = Convert.ToInt32(str);
            for (int i = 1; i <= n; i++)
            {
                fact = fact * i;
            }
            Console.WriteLine("Factorial : {0}",fact);
        }
    }
}
```

```
        Console.Read();
    }
}

using System; // Importing the System namespace.
namespace Ayushi_Tutorials // Defining a namespace for the program.
{
    internal class T1Q5 // Defining a class named T1Q5.
    {

        static void Main(string[] args) // Main method, the entry point of the program.
        {
            int n, fact = 1; // Declaring variables: n for the number and fact for the factorial.
            Console.WriteLine("Enter Number : "); // User input.
            string str = Console.ReadLine(); // Reading input from the console.
            n = Convert.ToInt32(str); // Converting the input string to an integer.
            for (int i = 1; i <= n; i++) // For loop from 1 to n to calculate the factorial.
            {
                fact = fact * i; // Multiplying fact by i in each iteration.
            }
            Console.WriteLine("Factorial : {0}", fact); // Printing factorial of the number.
            Console.Read(); // To hold the screen open.
        }
    }
}
```

**Output:**

```
D:\.NET\Ayushi_Tutorials>csc T1Q5.cs
Microsoft (R) Visual C# Compiler version 4.14.0-3.25279.5 (995f12b6)
Copyright (C) Microsoft Corporation. All rights reserved.

D:\.NET\Ayushi_Tutorials>T1Q5
Enter Number :
8
Factorial : 40320
```

**6. Write missing statement to get the desired output.**

```
using System;
```

23SOECE11038 Enterprise Computing Through .NET Framework (CE525)

namespace Ayushi\_Tutorials

```
{
    class T1Q6
    {
        static void Main(string[] args)
        {
            int a, b, c, result;
            string str;
            Console.Write("Enter Number 1 : ");

            //Missing statement
            str = Console.ReadLine();

            a = Convert.ToInt32(str);
            Console.Write("Enter Number 2 : ");

            //Missing statement
            str = Console.ReadLine();

            b = Convert.ToInt32(str);
            Console.Write("Enter Number 3 : ");
            str = Console.ReadLine();

            //Missing statement
            c = Convert.ToInt32(str);

            result = Sum(a, b, c);

            //Missing statement
            Console.WriteLine("Sum : " + result);

            Console.Read();
        }
        static int Sum(int x, int y, int z)
        {
            int res;
            res = x + y + z;
            return res;
        }
    }
}
```

**Output:**

```
D:\.NET\Ayushi_Tutorials>T1Q6
Enter Number 1 : 14
Enter Number 2 : 20
Enter Number 3 : 30
Sum : 64
```

7. Predict and write the output of the given code.

```
using System;
namespace While_Loop
{
    class Program
    {
        static void Main(string[] args)
        {
            int num1,res, i;

            Console.WriteLine("Enter a number");
            num1 = Convert.ToInt32(Console.ReadLine());

            i = 1; //Initialization

            //Check whether condition matches or not
            while (i <= 10)
            {
                res = num1 * i;
                Console.WriteLine("{0} x {1} = {2}", num1, i, res);

                i++; //Increment by one
            }
            Console.ReadLine();
        }
    }
}
```

```
using System;
```



23SOECE11038 Enterprise Computing Through .NET Framework (CE525)

```
namespace Ayushi_Tutorials
{
    class T1Q7
    {
        static void Main(string[] args)
        {
            int num1, res, i;

            Console.Write("Enter a number");
            num1 = Convert.ToInt32(Console.ReadLine());

            i = 1; //Initialization

            //Check whether condition matches or not
            while (i <= 10)
            {
                res = num1 * i;
                Console.WriteLine("{0} x {1} = {2}", num1, i, res);

                i++; //Increment by one
            }
            Console.ReadLine();
        }
    }
}
```

**Output:**

```
D:\\.NET\Ayushi_Tutorials>T1Q7
Enter a number
10
10 x 1 = 10
10 x 2 = 20
10 x 3 = 30
10 x 4 = 40
10 x 5 = 50
10 x 6 = 60
10 x 7 = 70
10 x 8 = 80
10 x 9 = 90
10 x 10 = 100
```

8. Write a program to convert given name in upper characters.

23SOECE11038 Enterprise Computing Through .NET Framework (CE525)

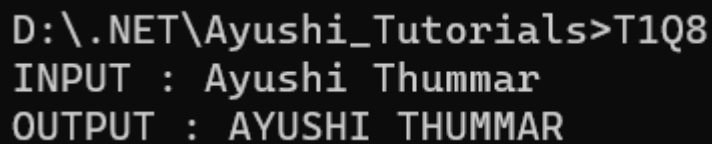
**INPUT : John F Kennedy**

**OUTPUT: JOHN F KENNEDY**

using System;

```
namespace Ayushi_Tutorials
{
    internal class T1Q8
    {
        public static void Main(string[] args)
        {
            string str1, str2;
            Console.Write("INPUT : ");
            str1 = Console.ReadLine();
            str2 = str1.ToUpper();
            Console.Write("OUTPUT : " +str2);
        }
    }
}
```

**Output:**



```
D:\ .NET\Ayushi_Tutorials>T1Q8
INPUT : Ayushi Thummar
OUTPUT : AYUSHI THUMMAR
```

**9. Write a Program to convert given name in toggle case.**

**INPUT : JoHn F kEnNedy**

**OUTPUT: jOhN f KeNneDY**

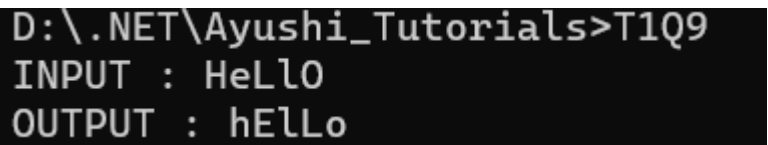
using System;

```
namespace Ayushi_Tutorials
{
    internal class T1Q9
    {
        // Regular method to toggle case
        public static string ToToggle(string input)
        {
            string result = "";
            foreach (char ch in input)
            {
                if (char.IsUpper(ch))
                    result += char.ToLower(ch);
            }
        }
    }
}
```

23SOECE11038 Enterprise Computing Through .NET Framework (CE525)

```
        else if (char.IsLower(ch))
            result += char.ToUpper(ch);
        else
            result += ch;
    }
    return result;
}
public static void Main(string[] args)
{
    string str1, str2;
    Console.Write("INPUT : ");
    str1 = Console.ReadLine();
    str2 = ToToggle(str1); // calling the regular method
    Console.Write("OUTPUT : " + str2);
}
```

**Output:**



**10. Write a Program which accepts mobile no as a string from the user and converts the last 5 digits into X.**

**INPUT : 1234567890**

**OUTPUT: 12345XXXXX**

using System;

namespace Ayushi\_Tutorials

```
{
    internal class T1Q10
    {
        public static void Main(string[] args)
        {
            Console.Write("INPUT : ");
            string mobile = Console.ReadLine();

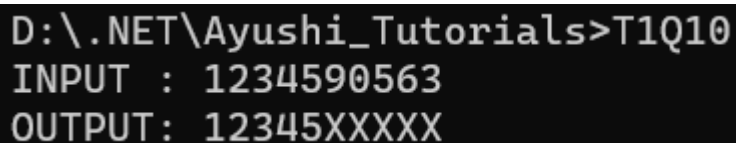
            if (mobile.Length >= 5)
            {
                string firstPart = mobile.Substring(0, mobile.Length - 5);
```

23SOECE11038 Enterprise Computing Through .NET Framework (CE525)

```
string maskedPart = new string('X', 5);
string result = firstPart + maskedPart;

Console.WriteLine("OUTPUT: " + result);
}
else
{
    Console.WriteLine("Invalid mobile number. It must have at least 5 digits.");
}}}
```

**Output:**



```
D:\.NET\Ayushi_Tutorials>T1Q10
INPUT : 1234590563
OUTPUT: 12345XXXXX
```

**11. Write a Program which accepts name and gender from the user. Here, gender may have only 1 character, M or F.**

**Based on the gender prefix the name Mr. & Ms.**

**NAME : Hillary Clinton**

**GENDER : F**

```
using System;
```

```
namespace Ayushi_Tutorials
```

```
{
```

```
    internal class T1Q11
```

```
    {
```

```
        public static void Main(string[] args)
```

```
        {
```

```
            Console.Write("NAME : ");
```

```
            string name = Console.ReadLine();
```

```
            Console.Write("GENDER (M/F): ");
```

```
            char gender = Char.ToUpper(Console.ReadKey().KeyChar); // Read single character and
convert to uppercase
```

```
            Console.WriteLine(); // move to next line
```

```
            if (gender == 'M')
```

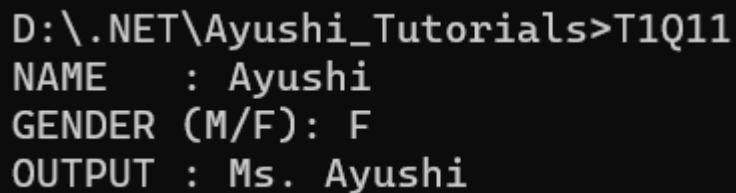
```
            {
```

```
                Console.WriteLine("OUTPUT : Mr. " + name);
```

23SOECE11038 Enterprise Computing Through .NET Framework (CE525)

```
}  
else if (gender == 'F')  
{  
    Console.WriteLine("OUTPUT : Ms. " + name);  
}  
else  
{  
    Console.WriteLine("Invalid gender entered. Please enter only 'M' or 'F'.");  
}}}
```

**Output:**



```
D:\.NET\Ayushi_Tutorials>T1Q11  
NAME : Ayushi  
GENDER (M/F): F  
OUTPUT : Ms. Ayushi
```

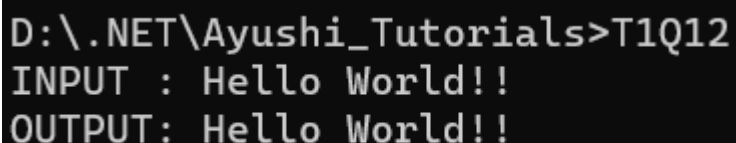
**12. Write a Program which accepts name from the user and prints the same**

**INPUT : Winston Churchill**

**OUTPUT: Winston Churchill**

```
using System;  
  
namespace Ayushi_Tutorials  
{  
    internal class T1Q12  
    {  
        public static void Main(string[] args)  
        {  
            Console.Write("INPUT : ");  
            string name = Console.ReadLine();  
  
            Console.WriteLine("OUTPUT: " + name);  
        }  
    }  
}
```

**Output:**



```
D:\.NET\Ayushi_Tutorials>T1Q12  
INPUT : Hello World!!  
OUTPUT: Hello World!!
```

23SOECE11038

Enterprise Computing Through .NET Framework (CE525)

**13. Write a Program to prints the following series**

**0 1 1 2 3 5 8 13 21 34 55**

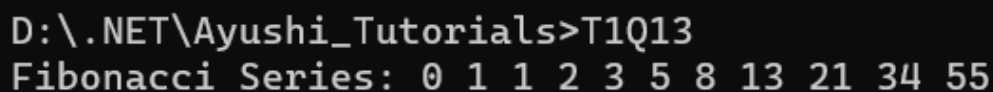
using System;

```
namespace Ayushi_Tutorials
{
    internal class T1Q13
    {
        public static void Main(string[] args)
        {
            int n1 = 0, n2 = 1, n3;
            int terms = 11; // Number of terms to print

            Console.Write("Fibonacci Series: ");
            Console.Write(n1 + " " + n2 + " ");

            for (int i = 3; i <= terms; i++)
            {
                n3 = n1 + n2;
                Console.Write(n3 + " ");
                n1 = n2;
                n2 = n3;
            }
        }
    }
}
```

**Output:**



```
D:\\.NET\Ayushi_Tutorials>T1Q13
Fibonacci Series: 0 1 1 2 3 5 8 13 21 34 55
```

**14. Write a Program which accepts no from the user and print the same in words.**

**INPUT : 98732**

**OUTPUT: Nine Eight Seven Three Two**

using System;

```
namespace Ayushi_Tutorials
{
    internal class T1Q14
    {
```

23SOECE11038 Enterprise Computing Through .NET Framework (CE525)

```
public static void Main(string[] args)
{
    Console.Write("INPUT : ");
    int no = Convert.ToInt32(Console.ReadLine());
    int digit;
    string output="";
    while (no > 0)
    {
        digit = no % 10;
        no = no / 10;
        string word = "";
        switch (digit)
        {
            case 0: word = "Zero"; break;
            case 1: word = "One"; break;
            case 2: word = "Two"; break;
            case 3: word = "Three"; break;
            case 4: word = "Four"; break;
            case 5: word = "Five"; break;
            case 6: word = "Six"; break;
            case 7: word = "Seven"; break;
            case 8: word = "Eight"; break;
            case 9: word = "Nine"; break;
        }

        output = word + " " + output;
    }

    Console.WriteLine("OUTPUT: " + output.Trim());
}
```

**Output:**

```
D:\ .NET\Ayushi_Tutorials>T1Q14
INPUT : 1425856
OUTPUT: One Four Two Five Eight Five Six
```

16. Write a program to display a pattern like a right angle triangle using an asterisk

The pattern like :

23SOECE11038

Enterprise Computing Through .NET Framework (CE525)

\*

\*\*

\*\*\*

\*\*\*\*

```
using System;
```

```
namespace Ayushi_Tutorials
```

```
{
```

```
    internal class T1Q15
```

```
    {
```

```
        public static void Main(string[] args)
```

```
        {
```

```
            int rows = 4; // Number of rows in the triangle
```

```
            for (int i = 1; i <= rows; i++)
```

```
            {
```

```
                for (int j = 1; j <= i; j++)
```

```
                {
```

```
                    Console.Write("*");
```

```
                }
```

```
                Console.WriteLine(); // Move to next line
```

```
            }  
        }  
    }  
}
```

**Output:**



```
D:\ .NET\Ayushi_Tutorials>T1Q15
```

```
*
```

```
**
```

```
***
```

```
****
```

**15. Write a Program to check whether the given no is Armstrong no or not.**

```
using System;
```

```
namespace Ayushi_Tutorials
```

```
{
```



23SOECE11038 Enterprise Computing Through .NET Framework (CE525)

```
internal class T1Q16
{
    public static void Main(string[] args)
    {
        // Ex. 153 is an Armstrong number because :
        //  $1^3 + 5^3 + 3^3 = 1 + 125 + 27 = 153$ 

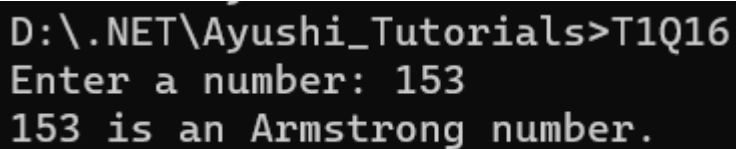
        Console.WriteLine("Enter a number: ");
        int number = int.Parse(Console.ReadLine());

        int original = number;
        int result = 0;
        int count = number.ToString().Length; // Number of digits

        while (number > 0)
        {
            int digit = number % 10;
            result += (int)Math.Pow(digit, count);
            number /= 10;
        }

        if (result == original)
        {
            Console.WriteLine(original + " is an Armstrong number.");
        }
        else{
            Console.WriteLine(original + " is NOT an Armstrong number.");
        }
    }
}
```

**Output:**



```
D:\\.NET\Ayushi_Tutorials>T1Q16
Enter a number: 153
153 is an Armstrong number.
```

**17. Write a Program to generate following output.**

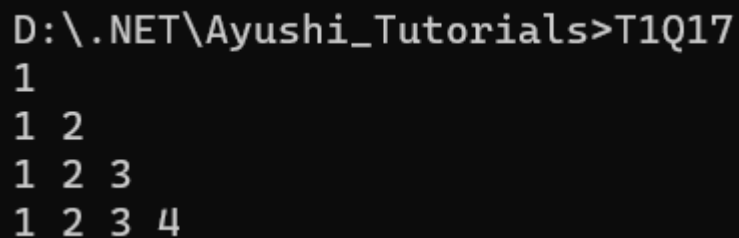
```
1
1 2
1 2 3
1 2 3 4
```

```
using System;

namespace Ayushi_Tutorials
{
    internal class T1Q17
    {
        public static void Main(string[] args)
        {
            // This program prints a right-angled triangle pattern with numbers
            int rows = 4;

            for (int i = 1; i <= rows; i++)
            {
                for (int j = 1; j <= i; j++)
                {
                    Console.Write(j + " ");
                }
                Console.WriteLine();
            }
        }
    }
}
```

**Output:**



```
D:\.NET\Ayushi_Tutorials>T1Q17
1
1 2
1 2 3
1 2 3 4
```

**18. Write a program to make such a pattern like a right angle triangle with the number increased by 1.**

**The pattern like :**

**1**

**2 3**

**4 5 6**

**7 8 9 10**

23SOECE11038

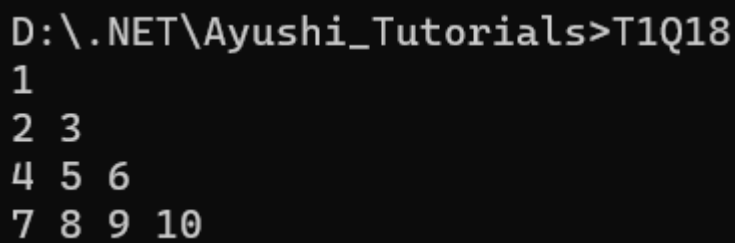
Enterprise Computing Through .NET Framework (CE525)

```
using System;

namespace Ayushi_Tutorials
{
    internal class T1Q18
    {
        public static void Main(string[] args)
        {
            int rows = 4;
            int num = 1; // Starting number

            for (int i = 1; i <= rows; i++)
            {
                for (int j = 1; j <= i; j++)
                {
                    Console.Write(num + " ");
                    num++;
                }
                Console.WriteLine();
            }
        }
    }
}
```

**Output:**



```
D:\.NET\Ayushi_Tutorials>T1Q18
1
2 3
4 5 6
7 8 9 10
```

19. Write a program to make such a pattern as a pyramid with an asterisk.

\*

\* \*

\* \* \*

\* \* \* \*

```
using System;
```

23SOECE11038

Enterprise Computing Through .NET Framework (CE525)

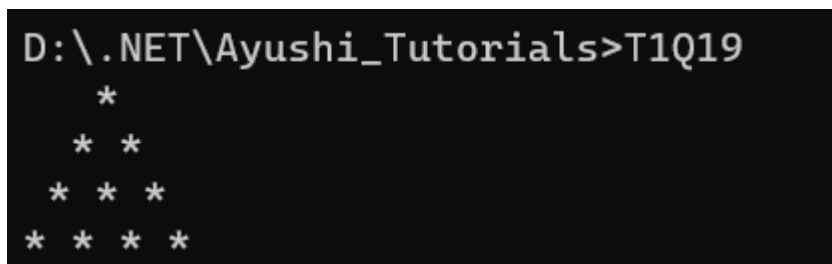
```
namespace Ayushi_Tutorials
{
    internal class T1Q19
    {
        public static void Main(string[] args)
        {
            int rows = 4;

            for (int i = 1; i <= rows; i++)
            {
                // Print leading spaces
                for (int space = 1; space <= rows - i; space++)
                {
                    Console.Write(" ");
                }

                // Print asterisks with space
                for (int star = 1; star <= i; star++)
                {
                    Console.Write("* ");
                }

                Console.WriteLine();
            }
        }
    }
}
```

**Output:**



```
D:\ .NET\Ayushi_Tutorials>T1Q19
  *
 * *
* * *
* * * *
```

**20. Write a program to make a pyramid pattern with numbers increased by 1.**

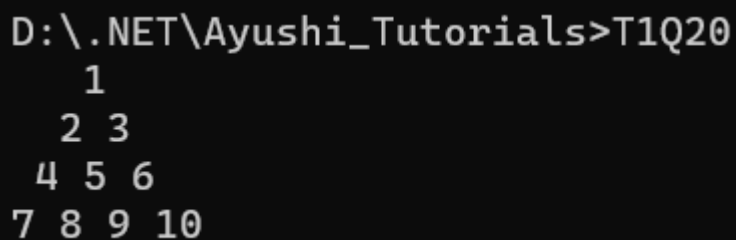
```
1
2 3
4 5 6
7 8 9 10
using System;
```

```
namespace Ayushi_Tutorials
{
    internal class T1Q20
    {
        public static void Main(string[] args)
        {
            int rows = 4; // Number of pyramid levels
            int num = 1; // Starting number

            for (int i = 1; i <= rows; i++)
            {
                // Print leading spaces
                for (int space = 1; space <= rows - i; space++)
                {
                    Console.Write(" ");
                }

                // Print numbers with space
                for (int j = 1; j <= i; j++)
                {
                    Console.Write(num + " ");
                    num++;
                }
                Console.WriteLine();
            }
        }
    }
}
```

**Output:**



```
D:\\.NET\Ayushi_Tutorials>T1Q20
  1
 2 3
4 5 6
7 8 9 10
```

**21. Write a program to find the sum of the series 5 +55 + 555 + 5555 + .. n terms.**

**Test Data :**

**Input the number of terms : 4**

**Input number : 5**

23SOECE11038

Enterprise Computing Through .NET Framework (CE525)

**Expected Output :**

**5 + 55 + 555 + 5555**

**The Sum is : 6170**

using System;

namespace Ayushi\_Tutorials

```
{
    internal class T1Q21
    {
        public static void Main(string[] args)
        {
            Console.WriteLine("Input the number of terms : ");
            int n = int.Parse(Console.ReadLine());

            Console.WriteLine("Input number : ");
            int digit = int.Parse(Console.ReadLine());

            int term = 0;
            int sum = 0;

            Console.WriteLine("Series : ");
            for (int i = 1; i <= n; i++)
            {
                term = term * 10 + digit; // Build the term like 5, 55, 555, ...
                Console.WriteLine(term);
                if (i != n) Console.WriteLine(" + ");
                sum += term;
            }

            Console.WriteLine("\nThe Sum is : " + sum);
        }
    }
}
```

**Output:**

```
D:\\.NET\Ayushi_Tutorials>T1Q21
Input the number of terms : 5
Input number : 3
Series : 3 + 33 + 333 + 3333 + 33333
The Sum is : 37035
```

**22. Write a program to display a pattern like a diamond.**

\*

\*\*\*

\*\*\*\*\*

\*\*\*\*\*

\*\*\*\*\*

\*\*\*\*\*

\*\*\*\*\*

\*\*\*

\*

```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
using System.Threading.Tasks;

namespace Ayushi_Tutorials
{
    internal class T1Q22
    {
        public static void Main(string[] args)
        {
            for (int i = 1; i <= 9; i++)
            {
                int s = i <= 5 ? i : 10 - i;

                for (int j = 1; j <= s; j++)
                {
                    Console.Write("*");
                }
            }
        }
    }
}
```

23SOECE11038      Enterprise Computing Through .NET Framework (CE525)  
Console.WriteLine();

}}}

**Output:**

```
D:\.NET\Ayushi_Tutorials>T1Q22
*
**
***
****
*****
*****
****
***
**
*
```