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

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
```

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)
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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)
```

```
        {
            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;
```

```
        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;
```

```
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;

```
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.

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);
```

```
            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:

```
D:\.NET\Ayushi_Tutorials>T1Q9
INPUT : HeLlO
OUTPUT : hElLo
```

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);
```

```
            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);
```

```
        }
        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!!
```

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
   {
```

```
    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 :

```
*

**

***

****
```

```
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
{
```

```
internal class T1Q16
{
   public static void Main(string[] args)
   {
      // Ex. 153 is an Armstrong number because :
      //1³ +5³ +3³ = 1 + 125 + 27 = 153

      Console.Write("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

```
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;
```

```
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

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.Write("Input the number of terms : ");
         int n = int.Parse(Console.ReadLine());

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

         int term = 0;
         int sum = 0;

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

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

Output:

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