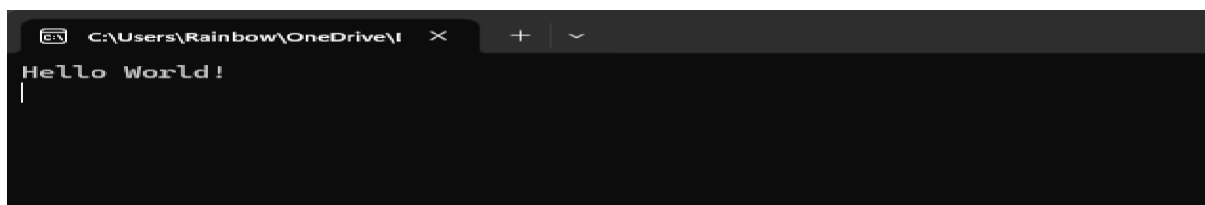


1. Write a Console Application to demonstrate the structure of C# Programming.

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

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

Output :-

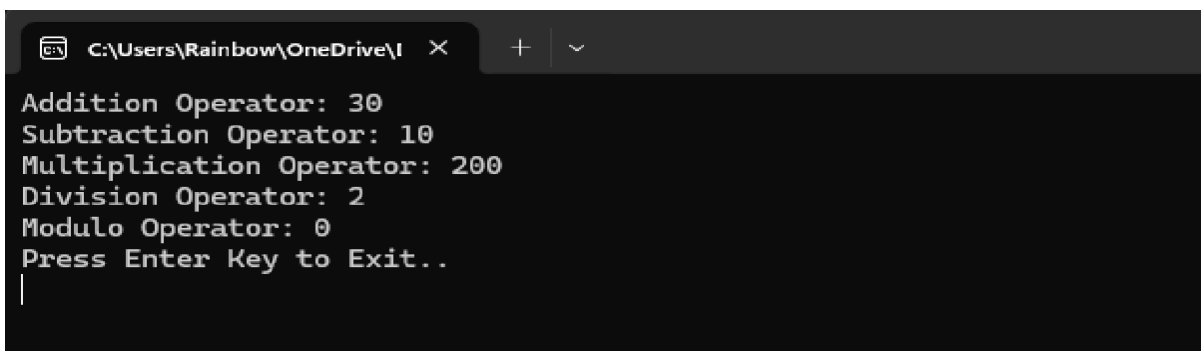


3. Write a program to show use of different operators.

1. Arithmetic Operator :

```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
using System.Threading.Tasks;
namespace Program
{
    internal class Program
    {
        static void Main(string[] args)
        {
            int result;
            int x = 20, y = 10;
            result = (x + y);
            Console.WriteLine("Addition Operator: " + result);
            result = (x - y);
            Console.WriteLine("Subtraction Operator: " + result);
            result = (x * y);
            Console.WriteLine("Multiplication Operator: " + result);
            result = (x / y);
            Console.WriteLine("Division Operator: " + result);
            result = (x % y);
            Console.WriteLine("Modulo Operator: " + result);
            Console.WriteLine("Press Enter Key to Exit..");
            Console.ReadLine();
        }
    }
}
```

Output :-



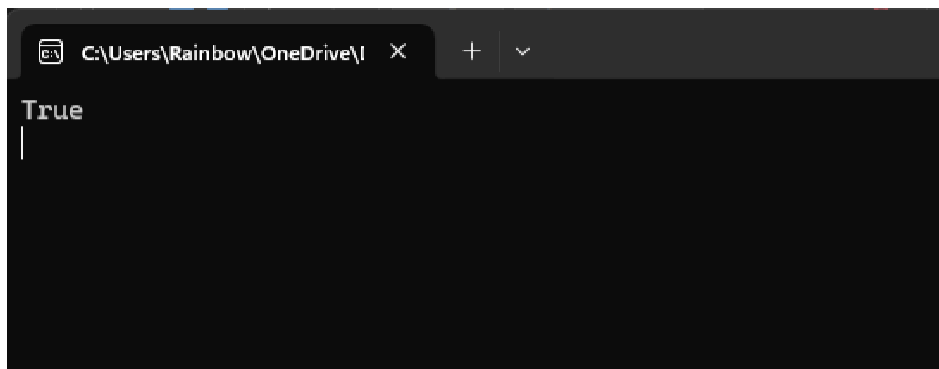
```
C:\Users\Rainbow\OneDrive\I
Addition Operator: 30
Subtraction Operator: 10
Multiplication Operator: 200
Division Operator: 2
Modulo Operator: 0
Press Enter Key to Exit..
|
```

2.Logical Operator

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

namespace Program
{
    internal class Program
    {
        static void Main(string[] args)
        {
            int x = 5;
            Console.WriteLine(x > 3 && x < 10);
            Console.Read();
        }
    }
}
```

Output :-

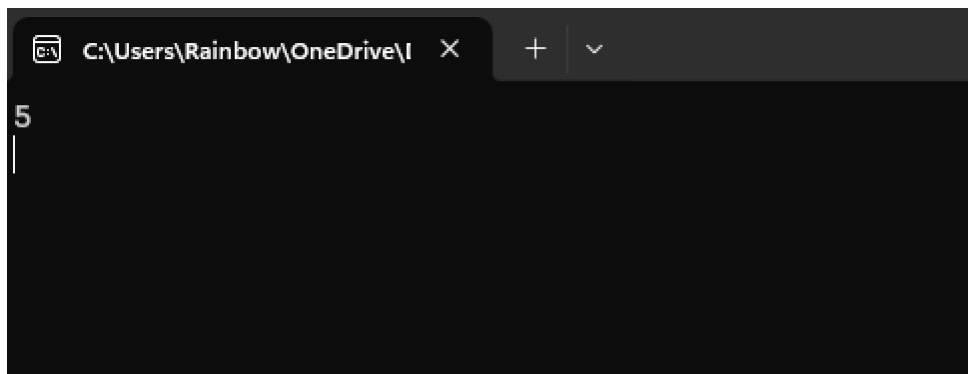


3.Assignment Operator :

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

namespace Program
{
    internal class Program
    {
        static void Main(string[] args)
        {
            int x = 5;
            Console.WriteLine(x);
            Console.Read();
        }
    }
}
```

Output :-

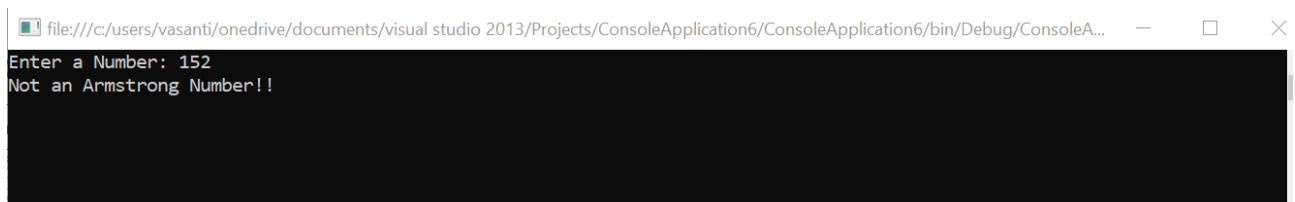
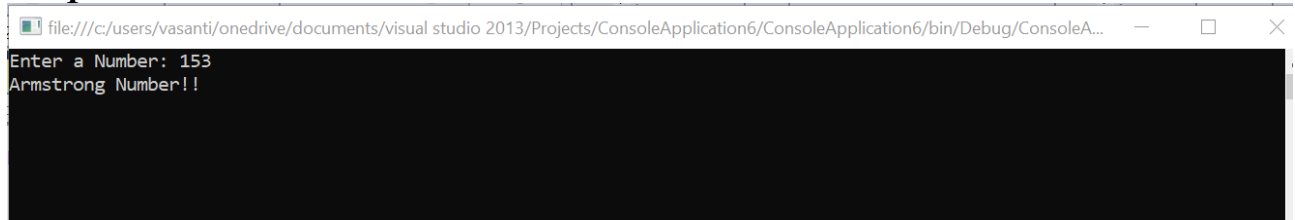


4. Write a program to reverse a string and check if it is Armstrong number.

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

namespace ConsoleApp2
{
    class Program
    {
        static void Main(string[] args)
        {
            int num, x, sum = 0, y;
            Console.Write("Enter a Number: ");
            num = int.Parse(Console.ReadLine());
            y = num;
            while (num > 0)
            {
                x = num % 10;
                sum = sum + (x * x * x);
                num = num / 10;
            }
            if (y == sum)
                Console.Write("Armstrong Number!!");
            else
                Console.Write("Not an Armstrong Number!!");
            Console.ReadLine();
        }
    }
}
```

Output:-



5. Write a program sum of first's N natural numbers using for loop.

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

namespace SumOfNaturalNumbers
{
    // Class definition
    class SumCalculator
    {
        public int N; // Field to store user input

        // Method to calculate sum
        public int CalculateSum()
        {
            int sum = 0;
            for (int i = 1; i <= N; i++)
            {
                sum += i;
            }
            return sum;
        }
    }

    class Program
    {
        static void Main(string[] args)
        {
            // Create object of SumCalculator class
            SumCalculator calculator = new SumCalculator();

            // Input from user
            Console.Write("Enter the value of N: ");
            calculator.N = Convert.ToInt32(Console.ReadLine());

            // Calculate and display result
            int result = calculator.CalculateSum();
            Console.WriteLine("Sum of first {0} natural numbers is: {1}", calculator.N,
result);

            Console.ReadLine(); // Keep the console window open
        }
    }
}
```

Output:

 file:///c:/users/vasanti/onedrive/documents/visual studio 2013/Projects/ConsoleApplication11/ConsoleApplication11/bin/De

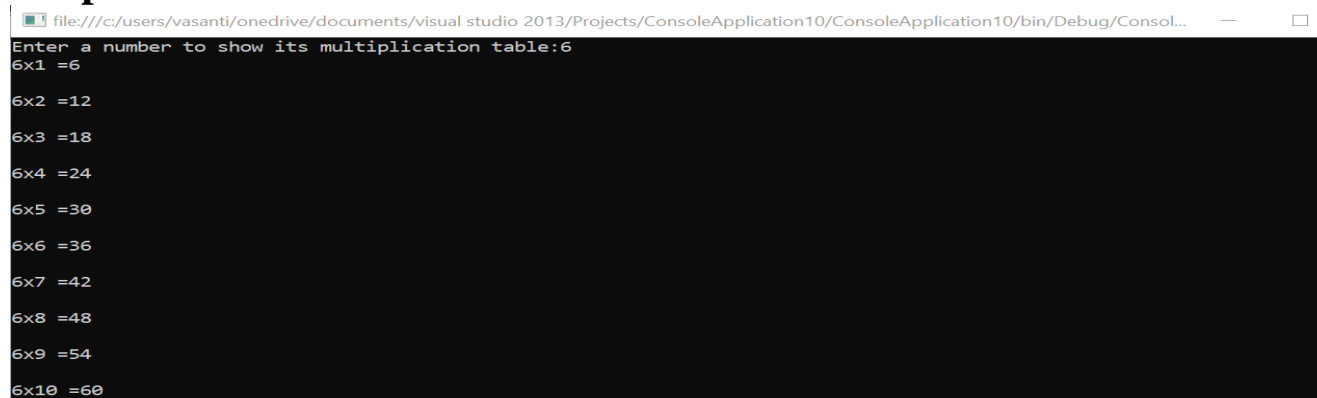
```
Enter the value of N: 5
Sum of first 5 natural numbers is: 15
```

6. Write a C#.NET program to display the multiplication table of a number entered by the user. Example: Output: 5 x 1 = 5

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

class Program
{
    static void Main()
    {
        // Ask the user for a number
        Console.WriteLine("Enter a number to show its multiplication table:");
        int number = int.Parse(Console.ReadLine());
        // Show multiplication from 1 to 10
        for (int i = 1; i <= 10; i++)
        {
            int result = number * i;
            Console.WriteLine(number + "x" + i + " =" + result);
            Console.ReadLine();
        }
    }
}
```

Output:

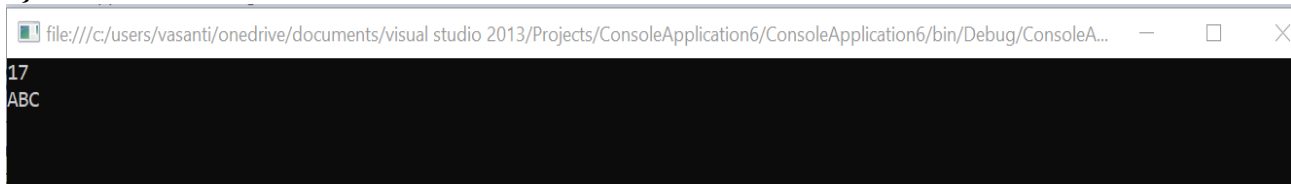


The screenshot shows a console window titled "file:///c:/users/vasanti/onedrive/documents/visual studio 2013/Projects/ConsoleApplication10/ConsoleApplication10/bin/Debug/Consol...". The prompt "Enter a number to show its multiplication table:" is followed by the input "6". The output displays the multiplication table for 6, from 6x1 to 6x10, with each result on a new line.

```
Enter a number to show its multiplication table:6
6x1 =6
6x2 =12
6x3 =18
6x4 =24
6x5 =30
6x6 =36
6x7 =42
6x8 =48
6x9 =54
6x10 =60
```


7. Write a Console Application to demonstrate the Class and object in C#.

```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
using System.Threading.Tasks;
namespace CLASS
{
public class Student
{
    int id;//data member (also instance variable)
    String name;//data member(also instance variable)
    static void Main(string[] args)
    {
        Student s1 = new Student();//creating an object of Student s1.id = 17;
        s1.name = "Ronit";
        Console.WriteLine(s1.id);
        Console.WriteLine(s1.name);
        Console.Read();
    }
}
```



8. Write a Console Application to demonstrate the Array in C#.

I.1D ARRAY

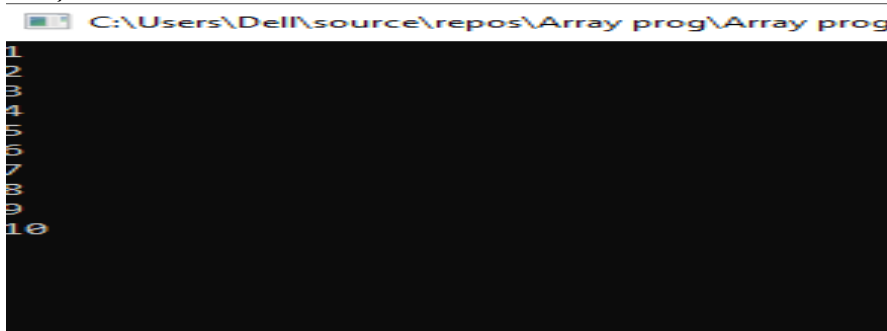
```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
using System.Threading.Tasks;

namespace Array_prog
{
    class Program
    {
        static void Main(string[] args)

        {

            int[] a = { 1, 2, 3, 4, 5, 6, 7, 8, 9, 10 };

            //traversing array
            for (int i = 0; i < a.Length; i++)
            {
                Console.WriteLine(a[i]);
            }
            Console.Read();
        }
    }
}
```



II.2D ARRAY

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

class Program
{
    static void Main()
    {
        // Define dimensions
        int rows = 2, cols = 3;
```

```

int[,] numbers = new int[rows, cols];

Console.WriteLine("Enter elements for a 2D array (2 rows x 3 columns):");

// Input elements
for (int i = 0; i < rows; i++)
{
    for (int j = 0; j < cols; j++)
    {
        Console.Write("Enter element at [{i},{j}]: ");
        numbers[i, j] = Convert.ToInt32(Console.ReadLine());
    }
}

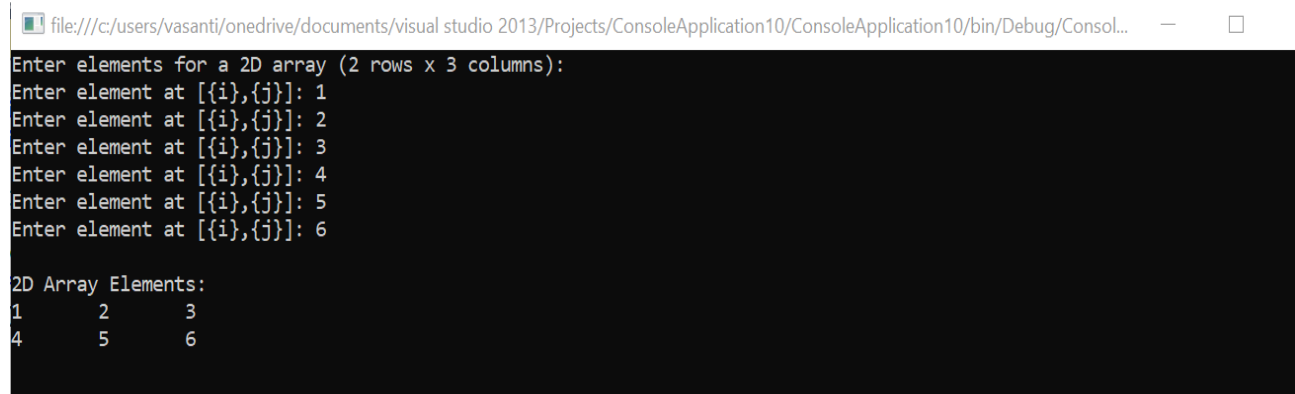
// Display the 2D array
Console.WriteLine("\n2D Array Elements:");

for (int i = 0; i < rows; i++)
{
    for (int j = 0; j < cols; j++)
    {
        Console.Write(numbers[i, j] + "\t");
    }
    Console.WriteLine();
}

Console.ReadLine(); // Keep console open
}
}

```

Output:



```

file:///c:/users/vasanti/onedrive/documents/visual studio 2013/Projects/ConsoleApplication10/ConsoleApplication10/bin/Debug/Consol...
Enter elements for a 2D array (2 rows x 3 columns):
Enter element at [{i},{j}]: 1
Enter element at [{i},{j}]: 2
Enter element at [{i},{j}]: 3
Enter element at [{i},{j}]: 4
Enter element at [{i},{j}]: 5
Enter element at [{i},{j}]: 6

2D Array Elements:
1      2      3
4      5      6

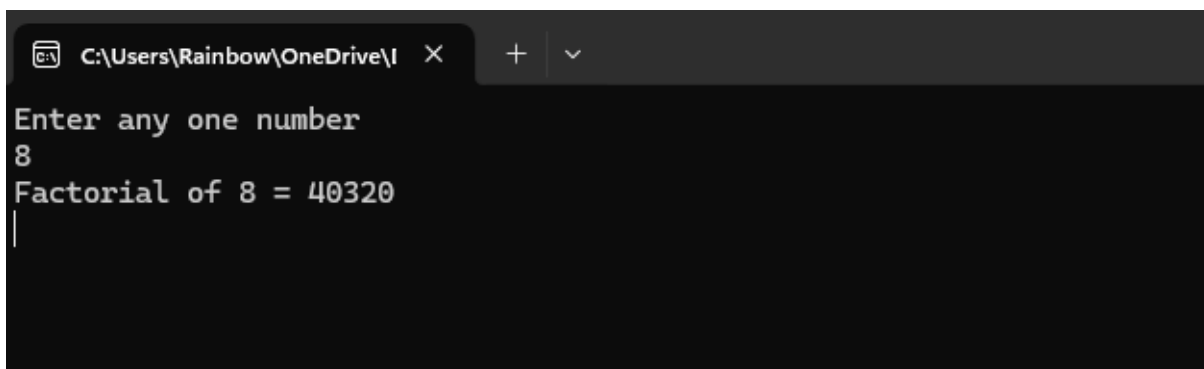
```

9. Create a Console Application to calculate the factorial of a number.

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

namespace ConsoleApp2
{
    class Program
    {
        static void Main(string[] args)
        {
            int n, fact = 1;
            Console.WriteLine("Enter any one number");
            n = int.Parse(Console.ReadLine());
            for (int i = 1; i <= n; i++)
                fact = fact * i;
            Console.WriteLine("Factorial of " + n + " = " + fact);
            Console.ReadLine();
        }
    }
}
```

Output

A screenshot of a Windows console application window. The title bar shows the file path "C:\Users\Rainbow\OneDrive\I" and standard window controls. The console output displays the prompt "Enter any one number", the user input "8", and the result "Factorial of 8 = 40320". A cursor is visible on the line following the output.

```
C:\Users\Rainbow\OneDrive\I  X  +  v
Enter any one number
8
Factorial of 8 = 40320
|
```

10. Write a Program to determine eligibility for admission to professional course based on following cat

Math \geq 65 , Physics \geq 55 , Chemistry \geq 50

Totals on all three courses \geq 180 or Total in math and course \geq 140

```
using System;
```

```
using System.Collections.Generic;
```

```
using System.Linq;
```

```
using System.Text;
```

```
using System.Threading.Tasks;
```

```
class Program
```

```
{
```

```
    static void Main()
```

```
    {
```

```
        int math, physics, chemistry;
```

```
        // Input marks
```

```
        Console.Write("Enter marks in Mathematics:");
```

```
        math = int.Parse(Console.ReadLine());
```

```
        Console.Write("Enter marks in Physics:");
```

```
        physics = int.Parse(Console.ReadLine());
```

```
        Console.Write("Enter marks in Chemistry:");
```

```
        chemistry = int.Parse(Console.ReadLine());
```

```
        int total = math + physics + chemistry;
```

```
        int mathPhysicsTotal = math + physics;
```

```
        // Check eligibility
```

```
        if (math  $\geq$  65 && physics  $\geq$  55 && chemistry  $\geq$  50 &&  
            (total  $\geq$  180 || mathPhysicsTotal  $\geq$  140))
```

```
        {
```

```
            Console.WriteLine("\n You are eligible for admission.");
```

```
        }
```

```
        else
```

```
        {
```

```
            Console.WriteLine("\n You are NOT eligible for admission.");
```

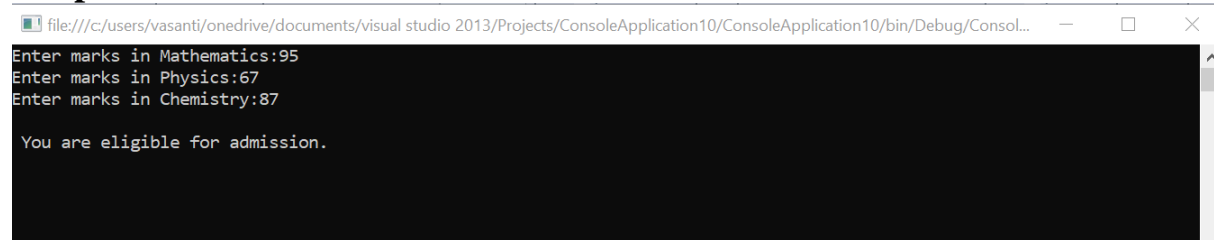
```
        }
```

```
        Console.ReadLine();
```

```
    }
```

```
}
```

Output:



```
file:///c:/users/vasanti/onedrive/documents/visual studio 2013/Projects/ConsoleApplication10/ConsoleApplication10/bin/Debug/Consol...
Enter marks in Mathematics:95
Enter marks in Physics:67
Enter marks in Chemistry:87

You are eligible for admission.
```

11. Write a program to reverse a string and check if it is palindrome

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

```
namespace Palindrom
{
    class Program
    {
        static void Main(string[] args)
        {
            int num, x, sum = 0, y;
            Console.Write("Enter the Number: ");
            num = int.Parse(Console.ReadLine());
            y = num;
            while (num > 0)
            {
                x = num % 10;
                sum = (sum * 10) + x;
                num = num / 10;
            }
            if (y == sum)
                Console.Write("Palindrome Number.");
            else
                Console.Write("Not a Palindrome Number."); Console.Read();
        }
    }
}
```



```
file:///c:/users/vasanti/onedrive/documents/visual studio 2013/Projects/ConsoleApplication6/ConsoleApplication6/bin/Debug/ConsoleA...
Enter the Number: 345
Not a Palindrome Number.
```

C:\Users\Dell\source\repos\Palindrom\Palindrom\bin\Debug\Palinc

```
Enter the Number: 151
Palindrome Number.
```

12. Write a Console Application to print a Fibonacci series.

```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
using System.Threading.Tasks;
namespace ConsoleApp2
{
    class Program
    {
        static void Main(string[] args)
        {
            int a = 0, b = 1, c, num, count = 1;
            Console.WriteLine("Enter any number : ");
            num = int.Parse(Console.ReadLine());
            Console.Write(a + "\t" + b);
            while (count <= num - 2)
            {
                c = a + b; Console.Write("\t" + c);
                a = b;
                b = c; count++;
            }
            Console.ReadLine();
        }
    }
}
```

Output:-

file:///c:/users/vasanti/onedrive/documents/visual studio 2013/Projects/ConsoleApplication6/ConsoleApplication6/bin/Debug/ConsoleA... — □ >

```
Enter any number :
5
0      1      1      2      3
```

