C# 20 PROGRAMS

By

RAM CHARAN PATNALA

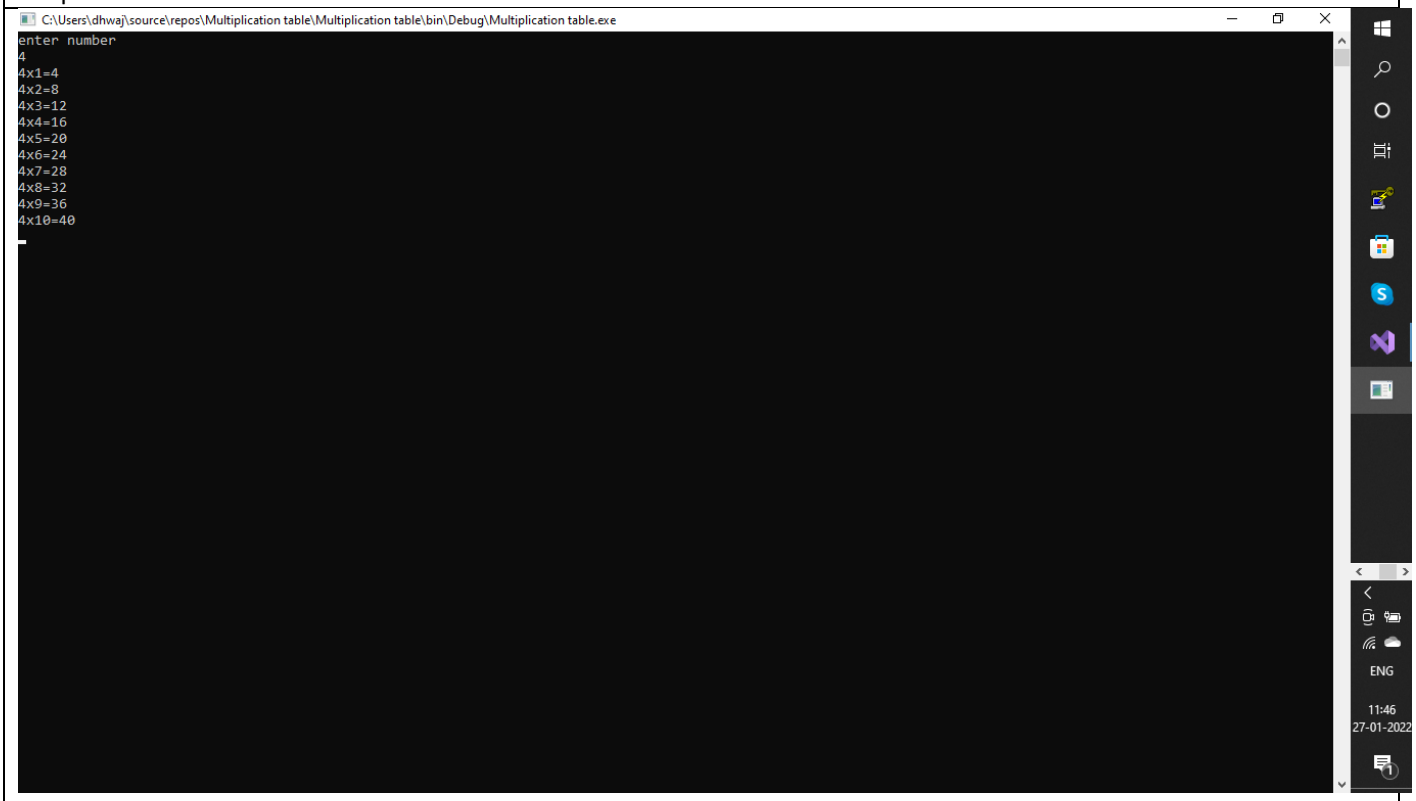
Program 1:Write a C# Program to Print Multiplication Table of given numbers.

Code:

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

namespace Multiplication_table
{
    internal class Program
    {
        static void Main(string[] args)
        {
            //variable declaration
            int input, i;
            //user input
            Console.WriteLine("enter number");
            input=Convert.ToInt32(Console.ReadLine());
            //logic
            for (i = 1; i <= 10; i++)
            {
                Console.WriteLine(input + "x" + i + "=" + input * i);
            }
            for (i = 1; i <= 10; i++)
            {
                Console.WriteLine("{0}x{1}={2}", input, i, input * i);
            }
            Console.ReadLine();
        }
    }
}
```

Output:



Program 2:

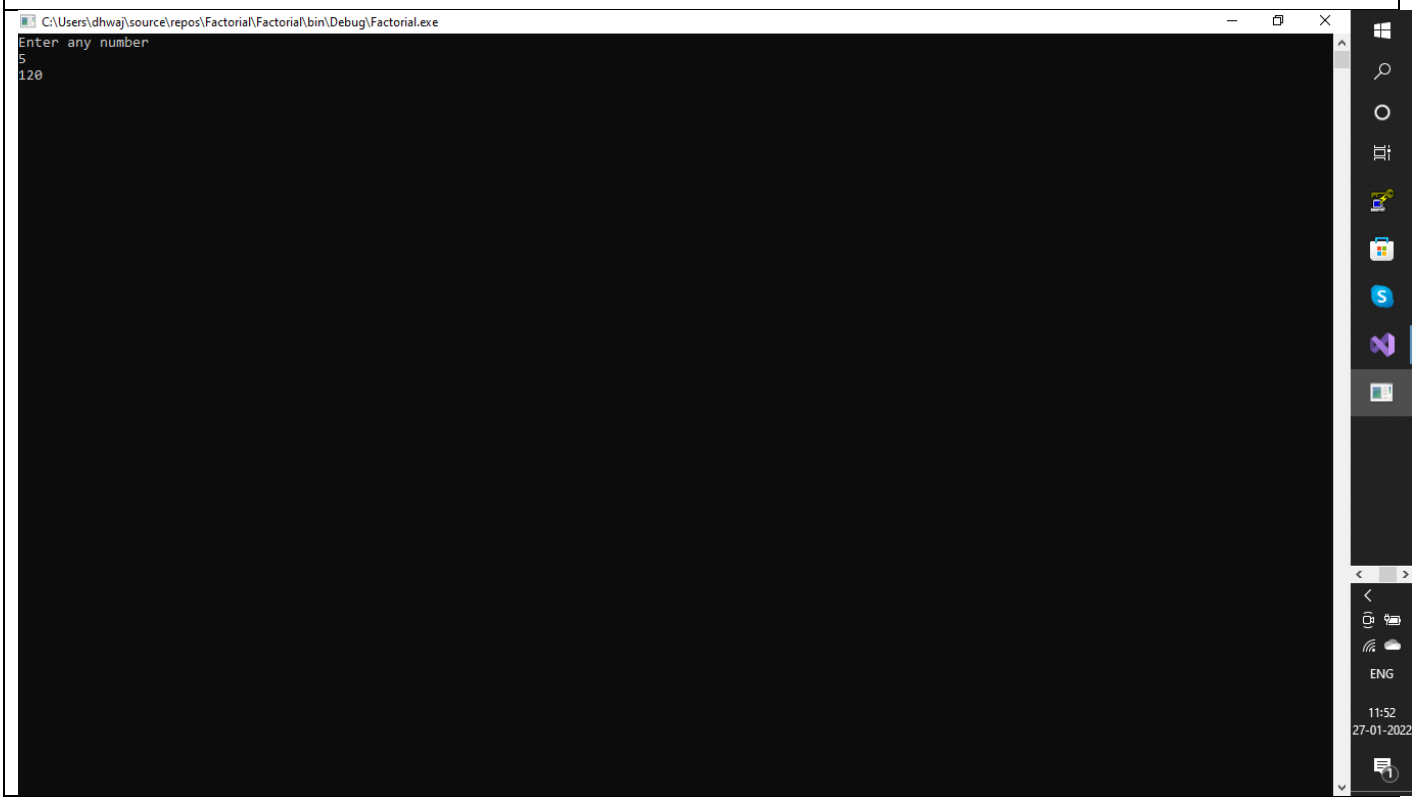
Write a C# Program to find Factorial of a given number.

Code:

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

namespace Factorial
{
    internal class Program
    {
        static void Main(string[] args)
        {
            //variable declaration
            int input, product = 1,i;
            //user input
            Console.WriteLine("Enter any number");
            input=Convert.ToInt32(Console.ReadLine());
            //logic
            for(i=1;i<=input;i++)
            {
                product = product * i;
            }
            //output
            Console.WriteLine(product);
            Console.ReadLine();
        }
    }
}
```

Output:



Program 3:

Write a C# Program to Print sum of n Natural numbers

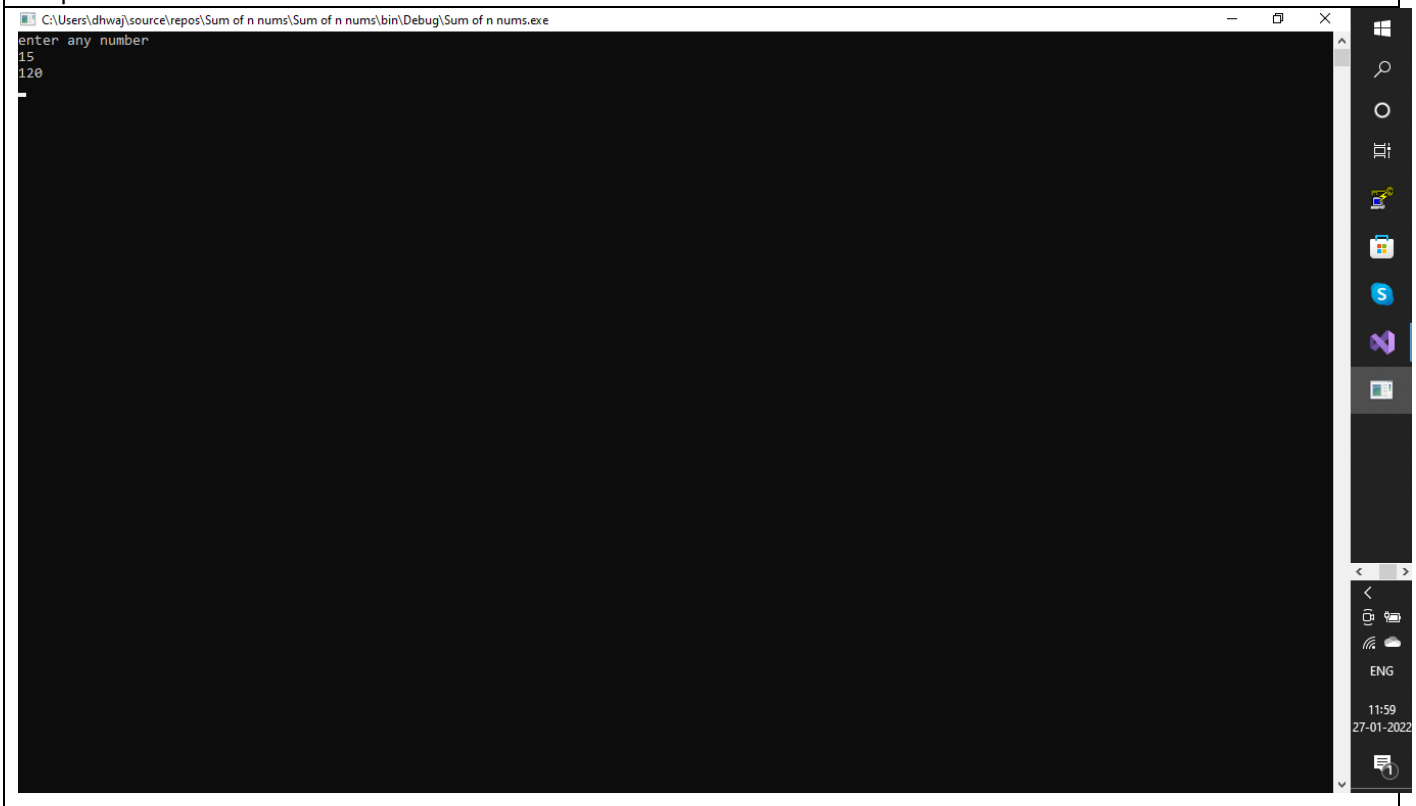
Code:

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

namespace Sum_of_n_nums
{
    internal class Program
    {
        static void Main(string[] args)
        {
            //variable declaration
            int input, sum = 0, i;
            //user input
            Console.WriteLine("enter any number");
            input=Convert.ToInt32(Console.ReadLine());
            //logic
            for(i=1;i<=input;i++)
            {
                sum=sum+i;
            }
            //print output
            Console.WriteLine(sum);
            Console.ReadLine();

        }
    }
}
```

Output:



Program 4:

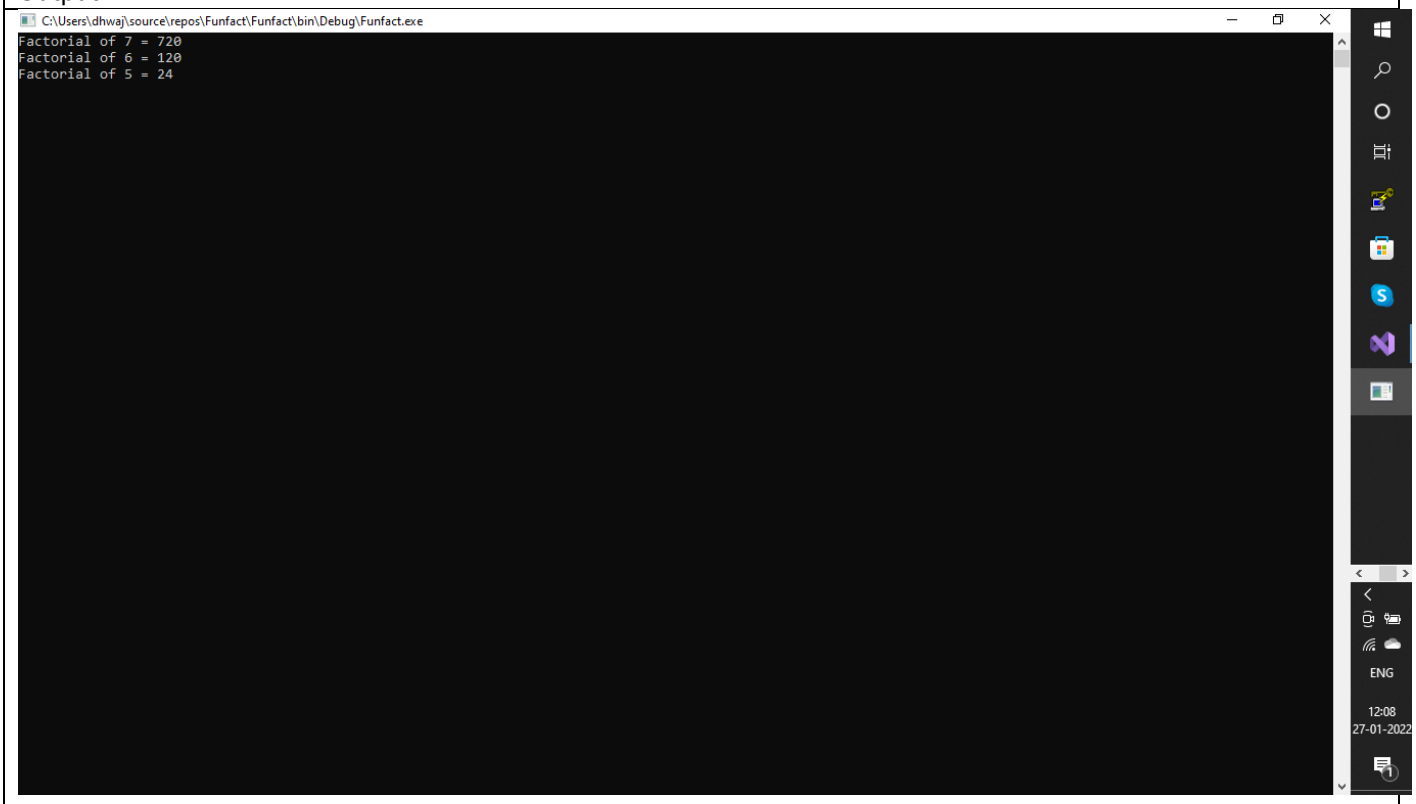
Write a C# Program to find Factorial using Function.

Code:

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

namespace Funfact
{
    internal class Program
    {
        public static int Factorial(int n)
        {
            int fact = 1;
            for(int i = 1; i < n; i++)
                fact *= i;
            return fact;
        }
        public static void Print(int n)
        {
            Console.WriteLine("Factorial of {0} = {1}", n, Factorial(n));
        }
        static void Main(string[] args)
        {
            int n = 7, n1 = 6, n2 = 5;
            Print(n);
            Print(n1);
            Print(n2);
            Console.ReadLine();
        }
    }
}
```

Output:



Program 5:

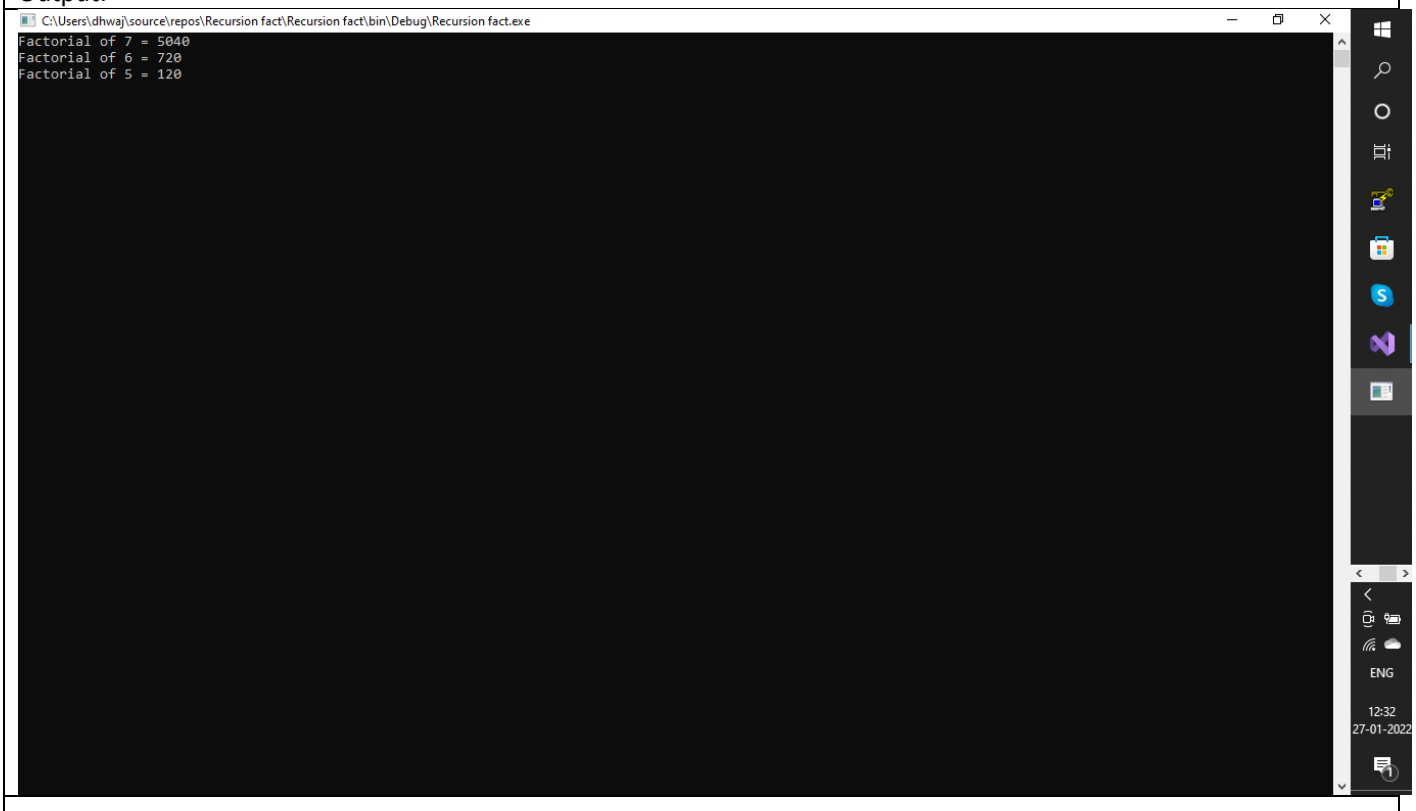
Write a C# Program to find Factorial using Recursion.

Code:

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

namespace Recursion_fact
{
    internal class Program
    {
        public static int Factorial(int n)
        {
            if (n == 0)
                return 1;
            else
                return n * Factorial(n - 1);
        }
        public static void Print(int n)
        {
            Console.WriteLine("Factorial of {0} = {1}", n, Factorial(n));
        }
        static void Main(string[] args)
        {
            int n = 7, n1 = 6, n2 = 5;
            Print(n);
            Print(n1);
            Print(n2);
            Console.ReadLine();
        }
    }
}
```

Output:



Program 6:

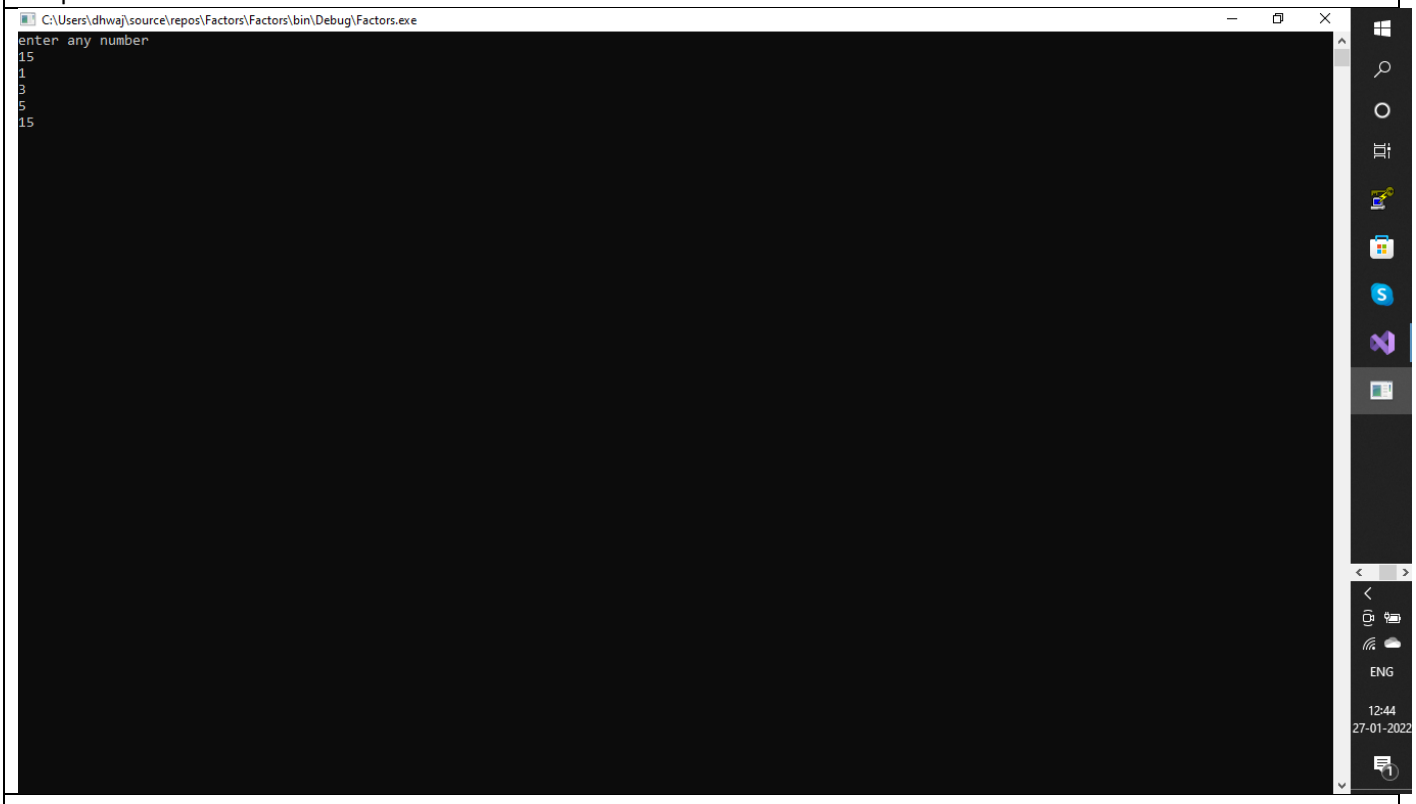
Write a C# Program to find Factors of a given number.

Code:

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

namespace Factors
{
   internal class Program
   {
      static void Main(string[] args)
      {
         //variable declaration
         int input, i;
         //user input
         Console.WriteLine("enter any number");
         input=Convert.ToInt32(Console.ReadLine());
         //logic
         for(i=1;i<=input;i++)
         {
            if(input%i==0)
               Console.WriteLine(i);
         }
         Console.ReadLine();
      }
   }
}
```

Output:



Program 7:

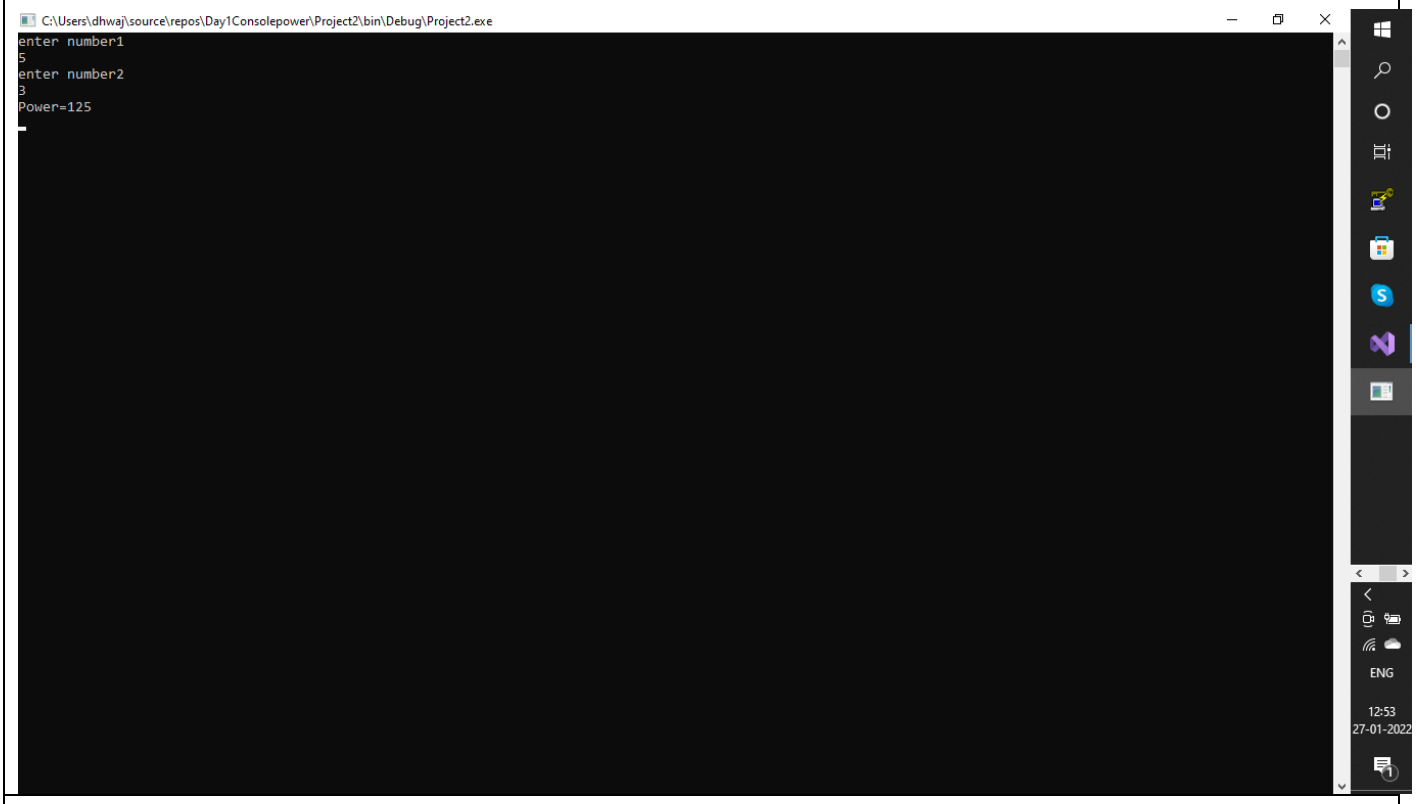
Write a C# Program to find Power of given numbers[a power b].

Code:

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

namespace Project2
{
    internal class Program
    {
        static void Main(string[] args)
        {
            int fn, sn, p=1;
            Console.WriteLine("enter number1");
            fn = Convert.ToInt32(Console.ReadLine());
            Console.WriteLine("enter number2");
            sn = Convert.ToInt32(Console.ReadLine());
            for(int i=1;i<=sn;i++)
            {
                p = p * fn;
            }
            Console.WriteLine("Power=" + p);
            Console.ReadLine();
        }
    }
}
```

Output:



Program 8:

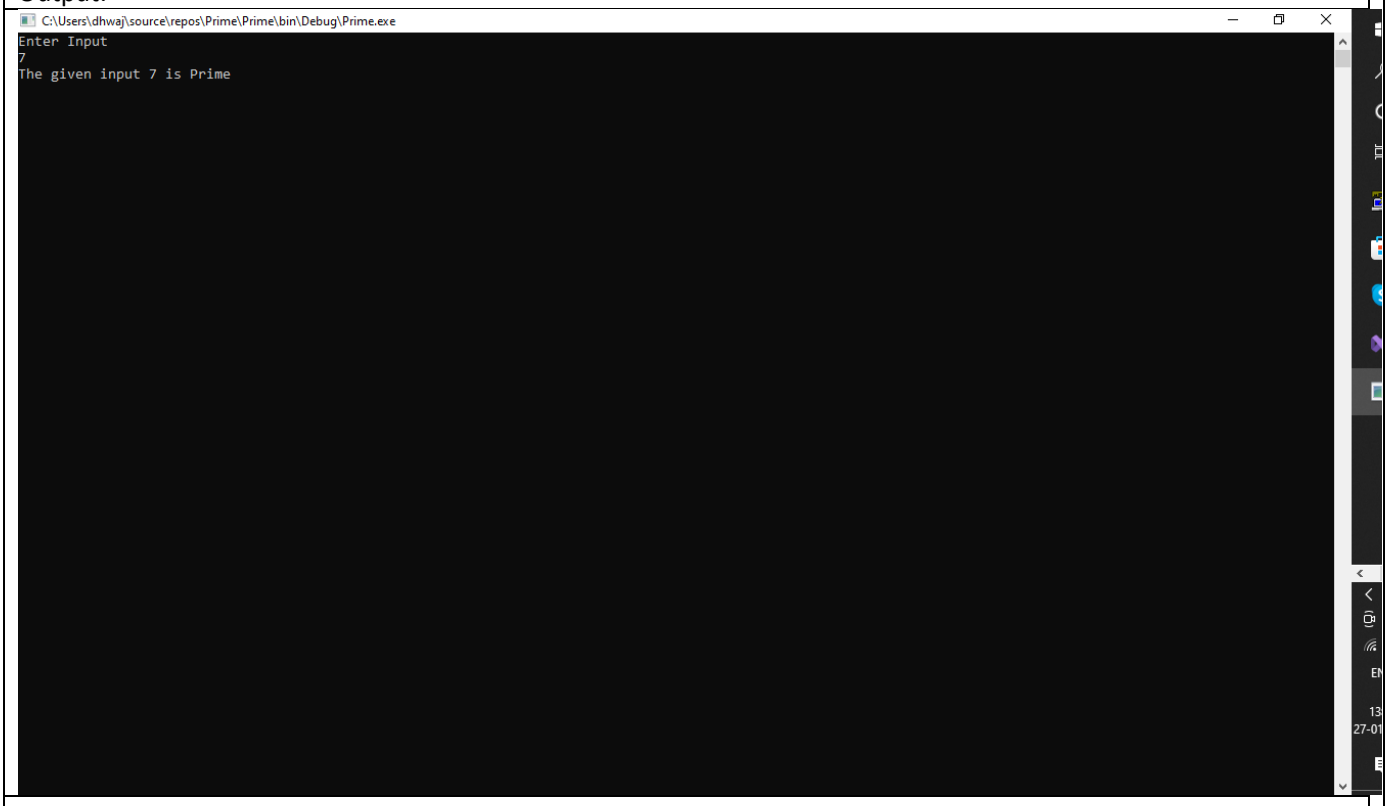
Write a C# Program to find given number is prime or not.

Code:

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

namespace Prime
{
    internal class Program
    {
        static void Main(string[] args)
        {
            //variable dec
            int input,count=0;
            // user input
            Console.WriteLine("Enter Input");
            input = Convert.ToInt32(Console.ReadLine());
            for (int i = 2;i<input;i++)
            {
                if(input%i==0)
                    break;
            }
            if (i == input)
                Console.WriteLine("The given input {0} is Prime ", input);
            else
                Console.WriteLine("The given input {0} is not a prime", input);
            Console.ReadLine();
        }
    }
}
```

Output:



Program 9

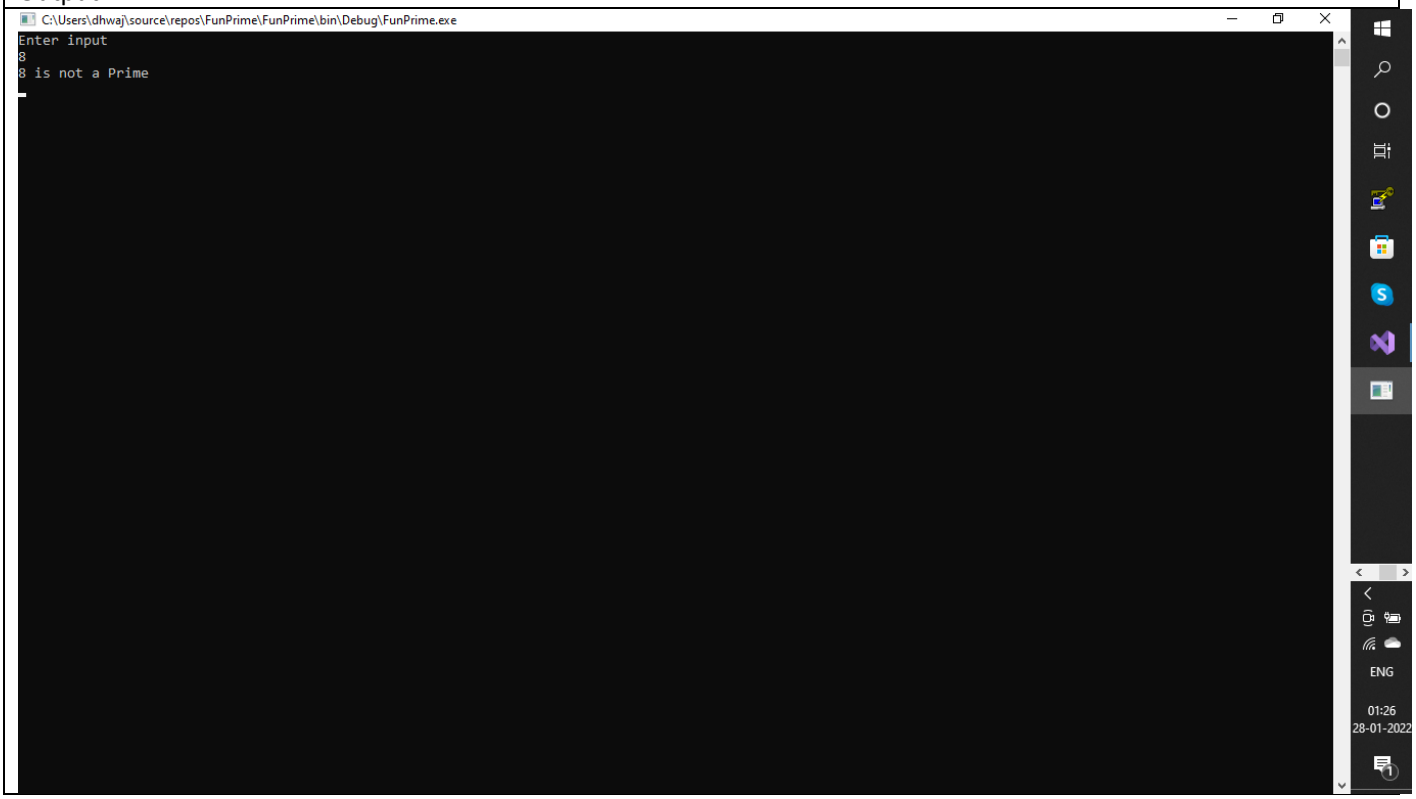
Write a C# Program to find given number is prime or not using Function.

Code:

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

namespace FunPrime
{
    internal class Program
    {
        public static void Prime(int input)
        {
            int i;
            for (i = 2; i < input; i++)
            {
                if (input % i == 0)
                    break;
            }
            if (i == input)
                Console.WriteLine("{0} is Prime", input);
            else
                Console.WriteLine("{0} is not a Prime", input);
        }
        static void Main(string[] args)
        {
            Console.WriteLine("Enter input");
            Prime(Convert.ToInt32(Console.ReadLine()));
            Console.ReadLine();
        }
    }
}
```

Output:



Program 10:

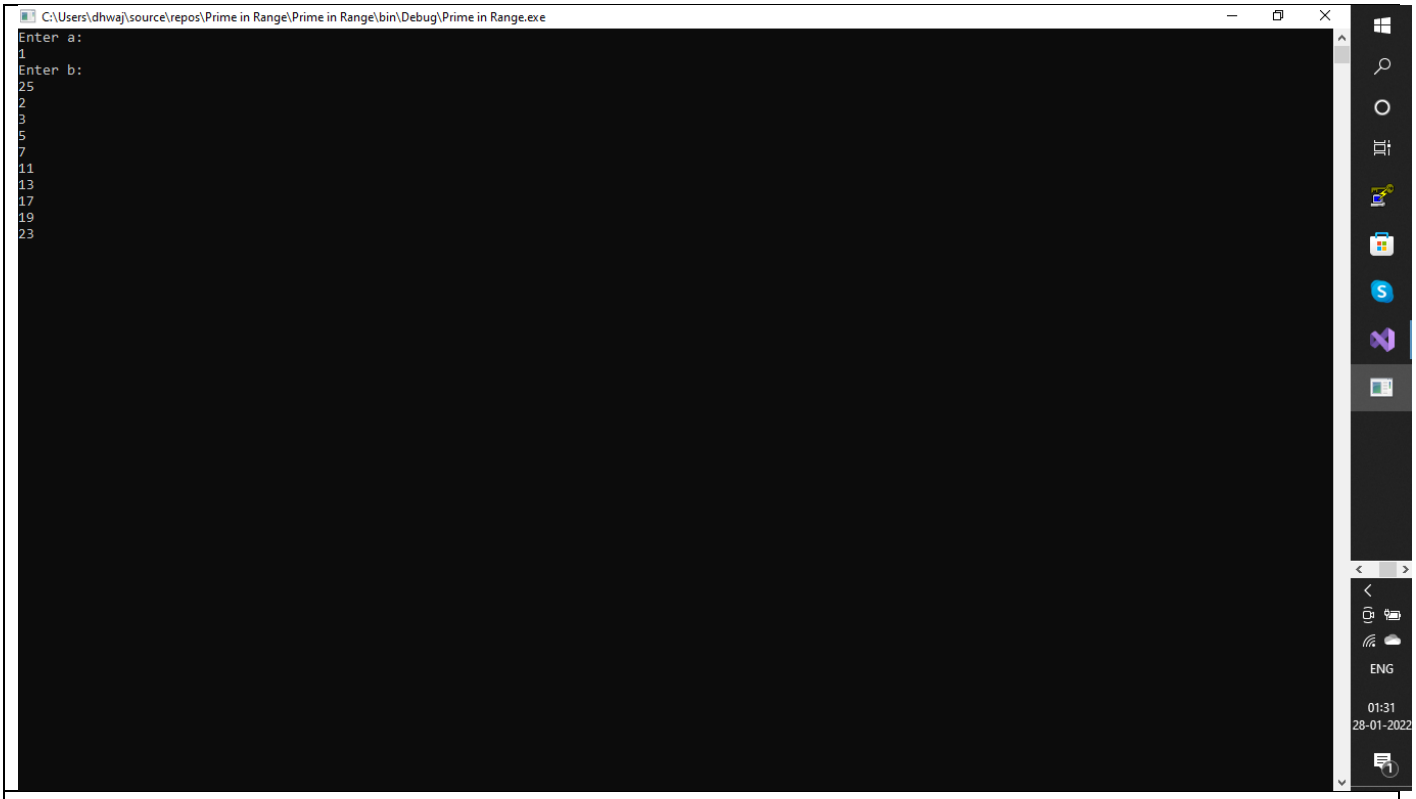
Write a C# Program to find prime numbers in given range.

Code:

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

namespace Prime_in_Range
{
    internal class Program
    {
        public static bool Prime(int input)
        {
            int i;
            for (i = 2; i < input; i++)
            {
                if (input % i == 0)
                    break;
            }
            if (i == input)
                return true;
            else
                return false;
        }
        static void Main(string[] args)
        {
            int i,a, b;
            Console.WriteLine("Enter a:");
            a = Convert.ToInt32(Console.ReadLine());
            Console.WriteLine("Enter b:");
            b = Convert.ToInt32(Console.ReadLine());
            for (i=a;i<=b;i++)
            {
                if (Prime(i))
                    Console.WriteLine(i);
            }
            Console.ReadLine();
        }
    }
}
```

Output:


C:\Users\dhwaj\source\repos\Prime in Range\Prime in Range\bin\Debug\Prime in Range.exe
Enter a:
1
Enter b:
25
2
3
5
7
11
13
17
19
23
ENG
01:31
28-01-2022

Program 11:

Write a C# Program to find Fibonacci series.

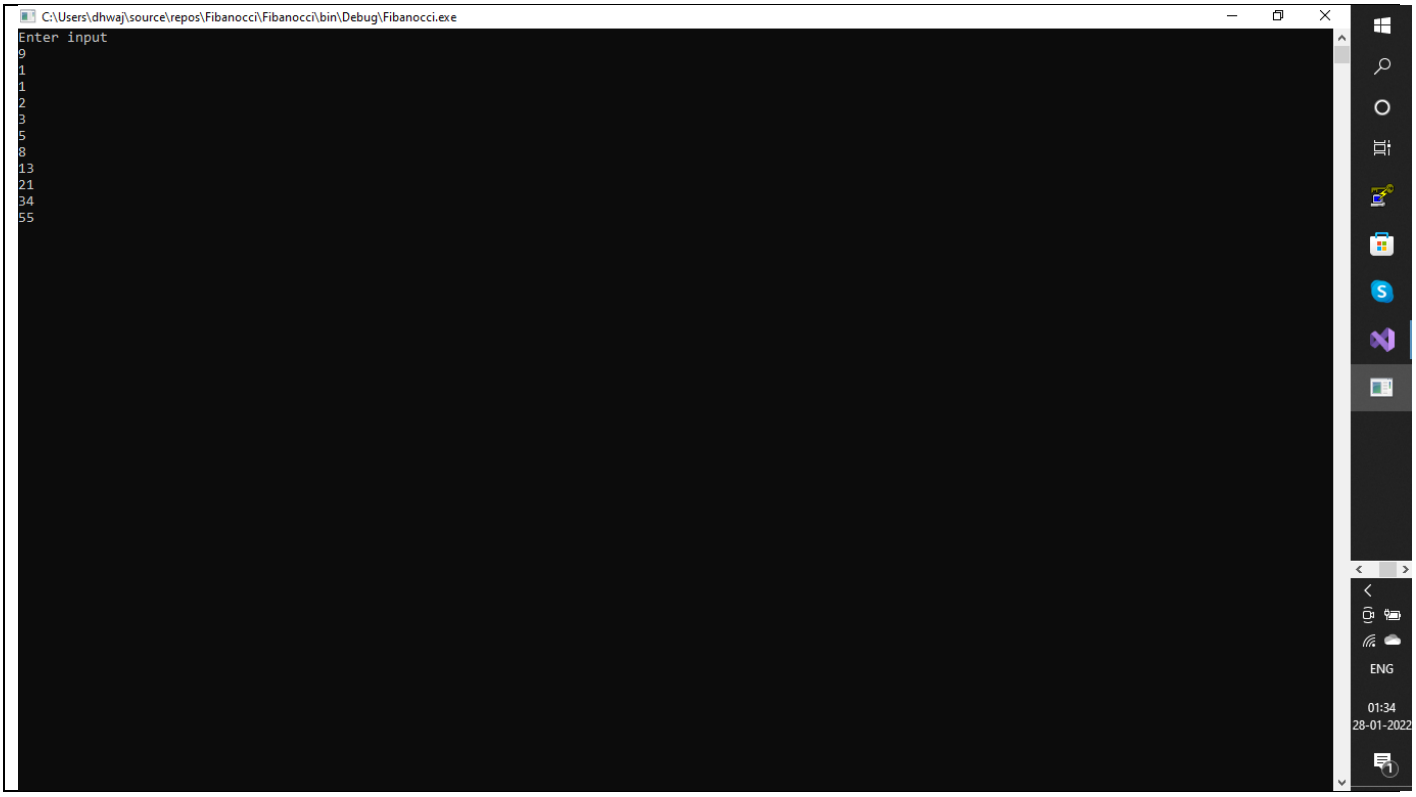
Code:

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

namespace Fibanocci
{
    internal class Program
    {
        static void Main(string[] args)
        {
            int input;
            Console.WriteLine("Enter input");
            input=Convert.ToInt32(Console.ReadLine());
            int next = 0;
            int prev = 0;
            for(int i=0;i<=input;i++)
            {

                if(next==0)
                {
                    next = 1;
                }
                else
                {
                    int temp = next;
                    next = next+prev;
                    prev = temp;
                }
                Console.WriteLine(next);
            }
            Console.ReadLine();
        }
    }
}
```

Output:


C:\Users\dhwaj\source\repos\Fibanocci\Fibanocci\bin\Debug\Fibanocci.exe
Enter input
9
1
1
2
3
5
8
13
21
34
55
ENG
01:34
28-01-2022

Program 12:

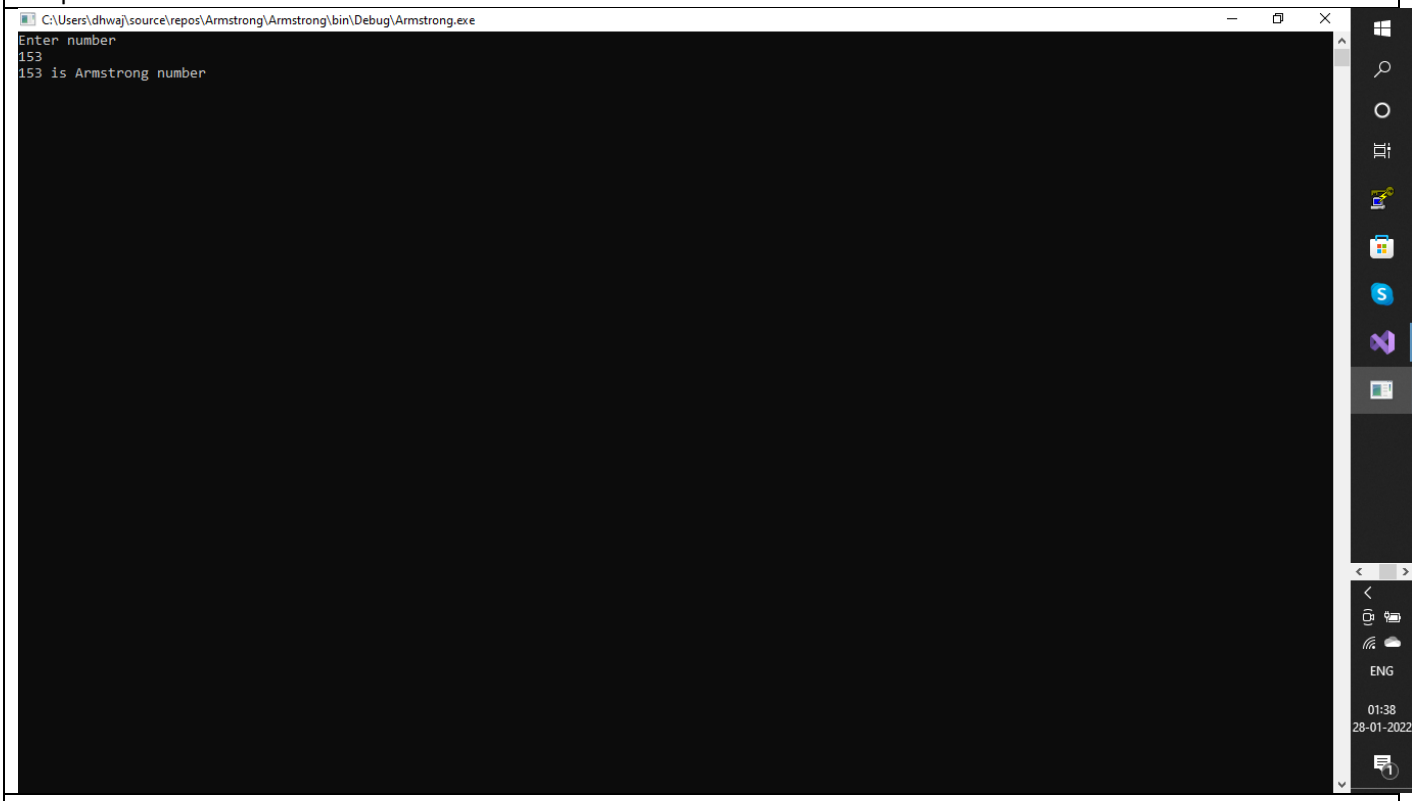
Write a C# Program to find given number is Armstrong.

Code:

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

namespace Armstrong
{
    internal class Program
    {
        static void Main(string[] args)
        {
            int number, rem, sum = 0, temp;
            Console.WriteLine("Enter number");
            number=Convert.ToInt32(Console.ReadLine());
            temp = number;
            while(number>0)
            {
                rem=number%10;
                sum=sum+(rem*rem*rem);
                number=number/10;
            }
            if (temp == sum)
            {
                Console.WriteLine("{0} is Armstrong number ", temp);
            }
            else
            {
                Console.WriteLine("{0} is not Armstrong ", temp);
            }
            Console.ReadLine();
        }
    }
}
```

Output:



Program 13:

Write a C# Program to find Armstrong number using Function.

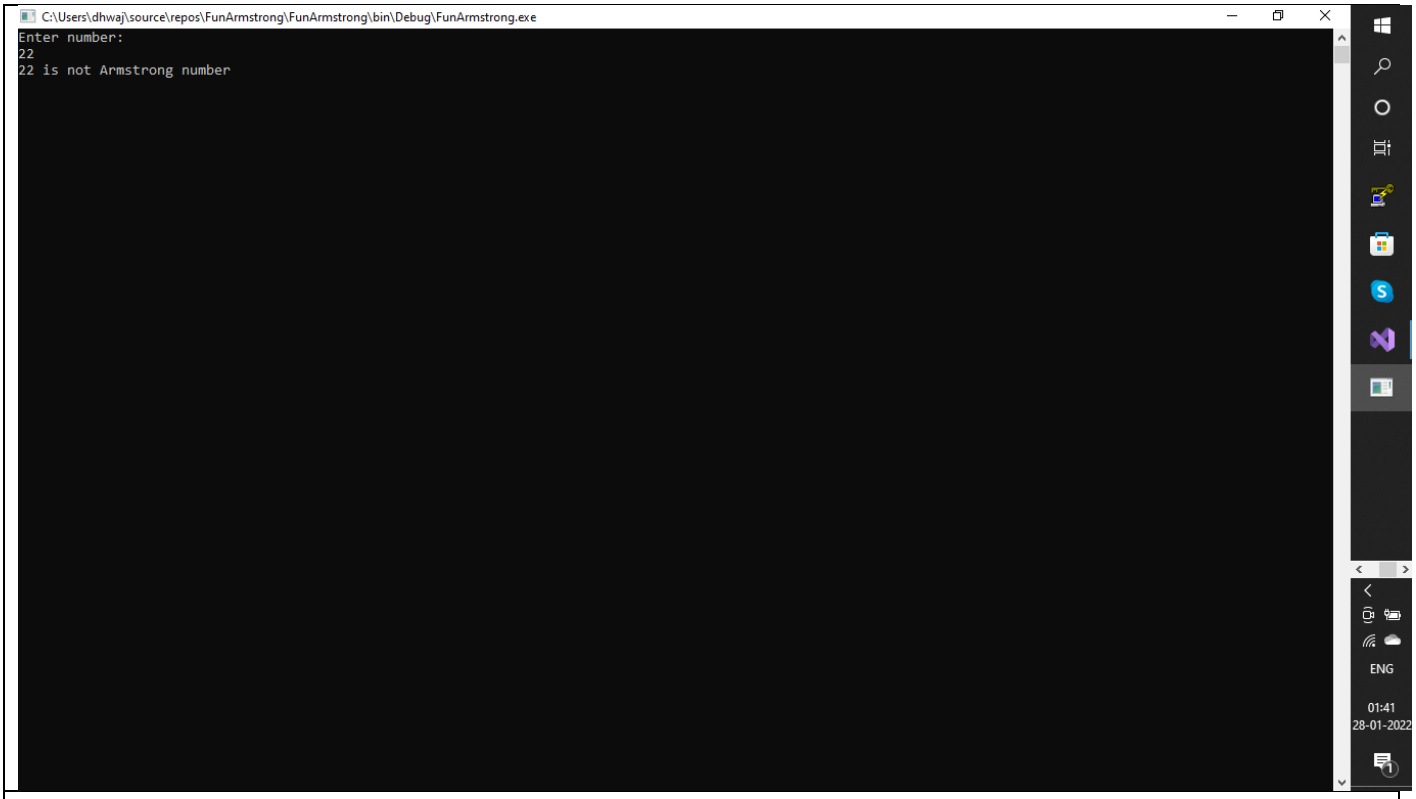
Code:

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

namespace FunArmstrong
{
    internal class Program
    {
        public static bool Arm(int number)
        {
            int temp, sum = 0, rem;
            temp = number;
            while (number > 0)
            {
                rem = number % 10;
                sum = sum + (rem * rem * rem);
                number = number / 10;
            }
            if (temp == sum)
            {
                return true;
            }
            else
            {
                return false;
            }
        }
        static void Main(string[] args)
        {
            int number;
            Console.WriteLine("Enter number:");
            number=Convert.ToInt32(Console.ReadLine());
            if(Arm(number)==true)
                Console.WriteLine("{0} is Armstrong number ",number);
            else
                Console.WriteLine("{0} is not Armstrong number ",number);
            Console.ReadLine();

        }
    }
}
```

Output:


C:\Users\dhwaj\source\repos\FunArmstrong\FunArmstrong\bin\Debug\FunArmstrong.exe
Enter number:
22
22 is not Armstrong number
ENG
01:41
28-01-2022

Program 14:

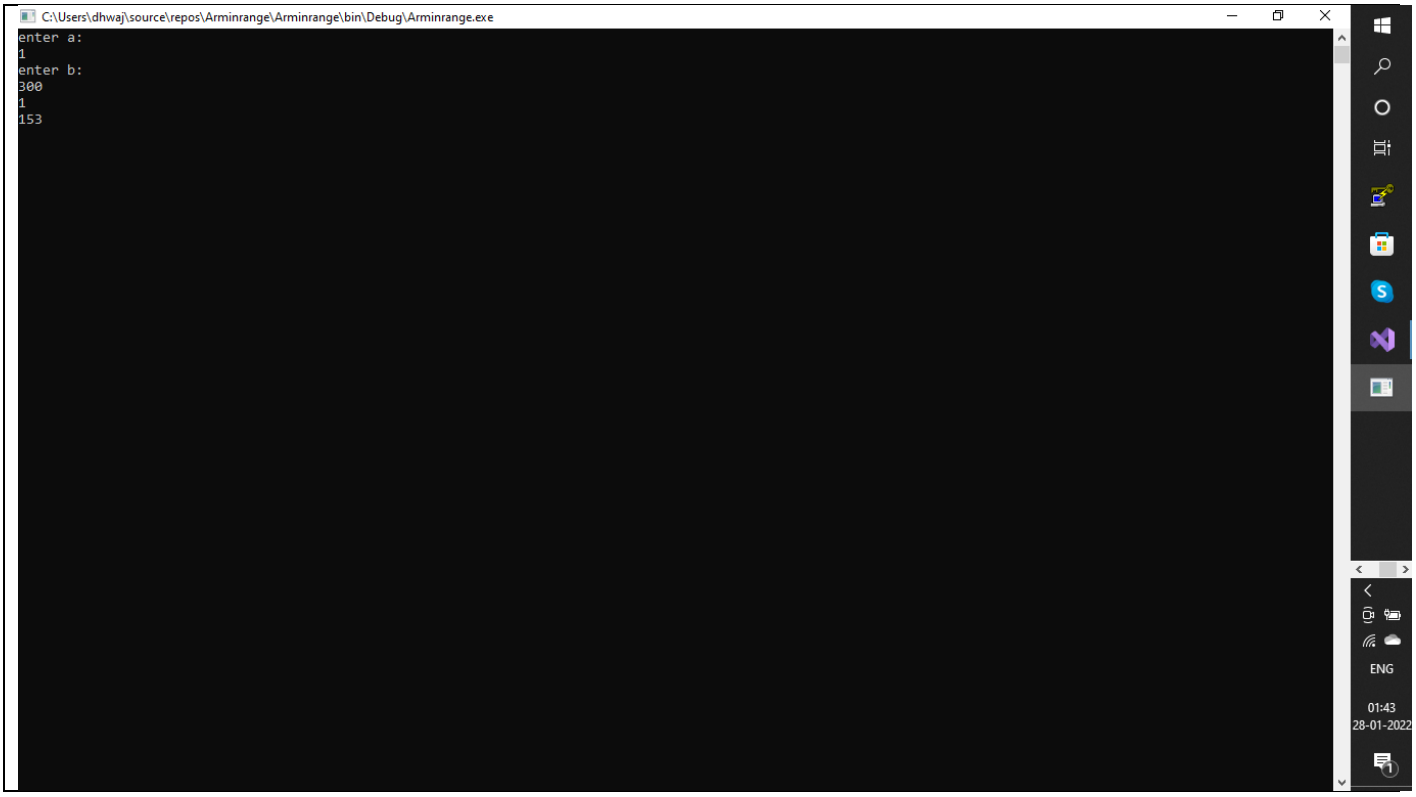
Write a C# Program to find Armstrong numbers in given range.

Code:

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

namespace Arminrange
{
    internal class Program
    {
        public static bool Arm(int number)
        {
            int temp, sum = 0, rem;
            temp = number;
            while (number > 0)
            {
                rem = number % 10;
                sum = sum + (rem * rem * rem);
                number = number / 10;
            }
            if (temp == sum)
            {
                return true;
            }
            else
            {
                return false;
            }
        }
        public static void Main(string[] args)
        {
            int a, b;
            Console.WriteLine("enter a:");
            a = Convert.ToInt32(Console.ReadLine());
            Console.WriteLine("enter b:");
            b = Convert.ToInt32(Console.ReadLine());
            for (int i = a; i <= b; i++)
            {
                if (Arm(i))
                    Console.WriteLine(i);
            }
            Console.ReadLine();
        }
    }
}
```

Output:


C:\Users\dhwaj\source\repos\Arminrange\Arminrange\bin\Debug\Arminrange.exe
enter a:
1
enter b:
300
1
153
ENG
01:43
28-01-2022

Program 15:

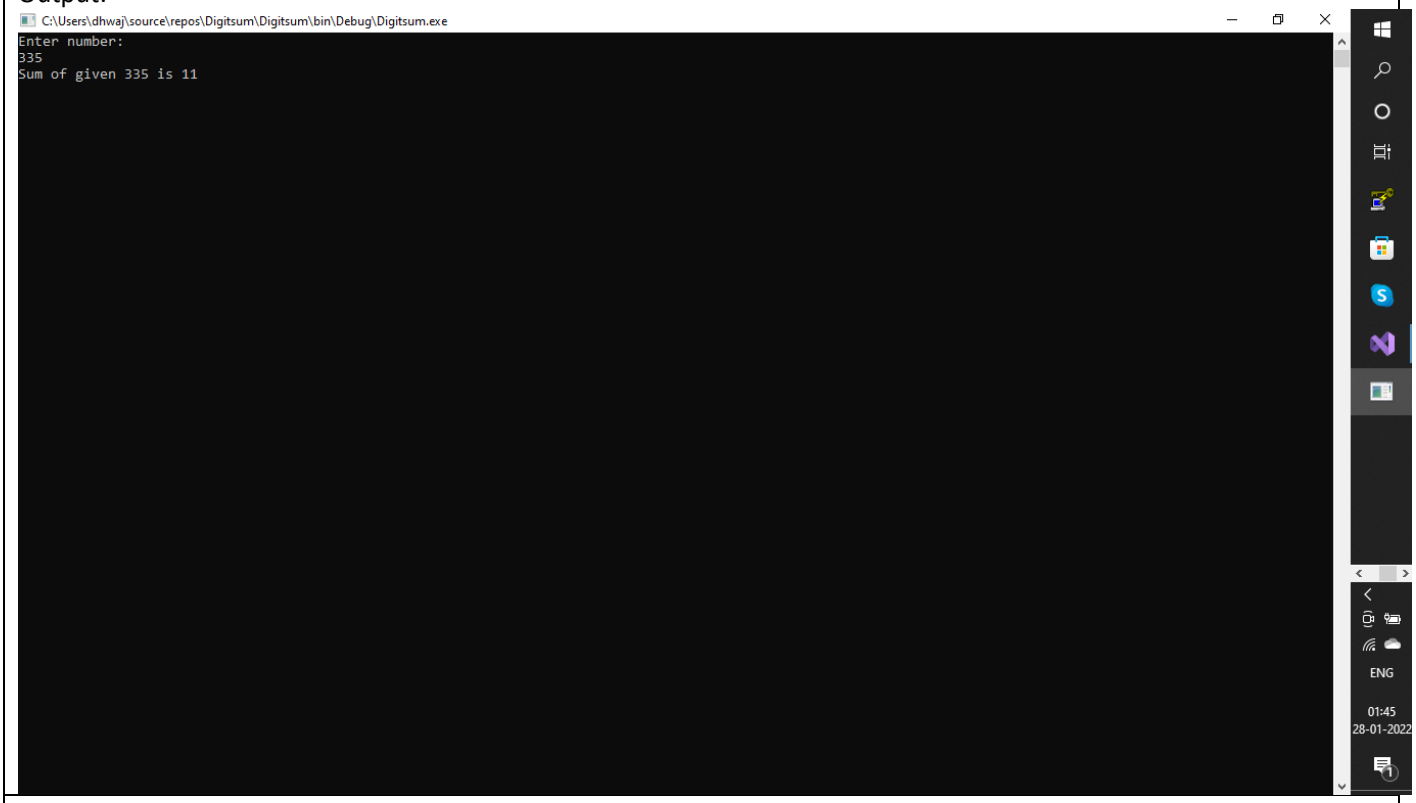
Write a C# Program to find sum of digits in given number.

Code:

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

namespace Digitsum
{
    internal class Program
    {
        static void Main(string[] args)
        {
            int rem, sum = 0, number;
            Console.WriteLine("Enter number: ");
            number=Convert.ToInt32(Console.ReadLine());
            int temp = number;
            while(number>0)
            {
                rem = number % 10;
                sum=sum+rem;
                number = number / 10;
            }
            Console.WriteLine("Sum of given {0} is {1} ",temp,sum );
        Console.ReadLine();
        }
    }
}
```

Output:



Program 16

Write a C# Program to Reverse a given number.

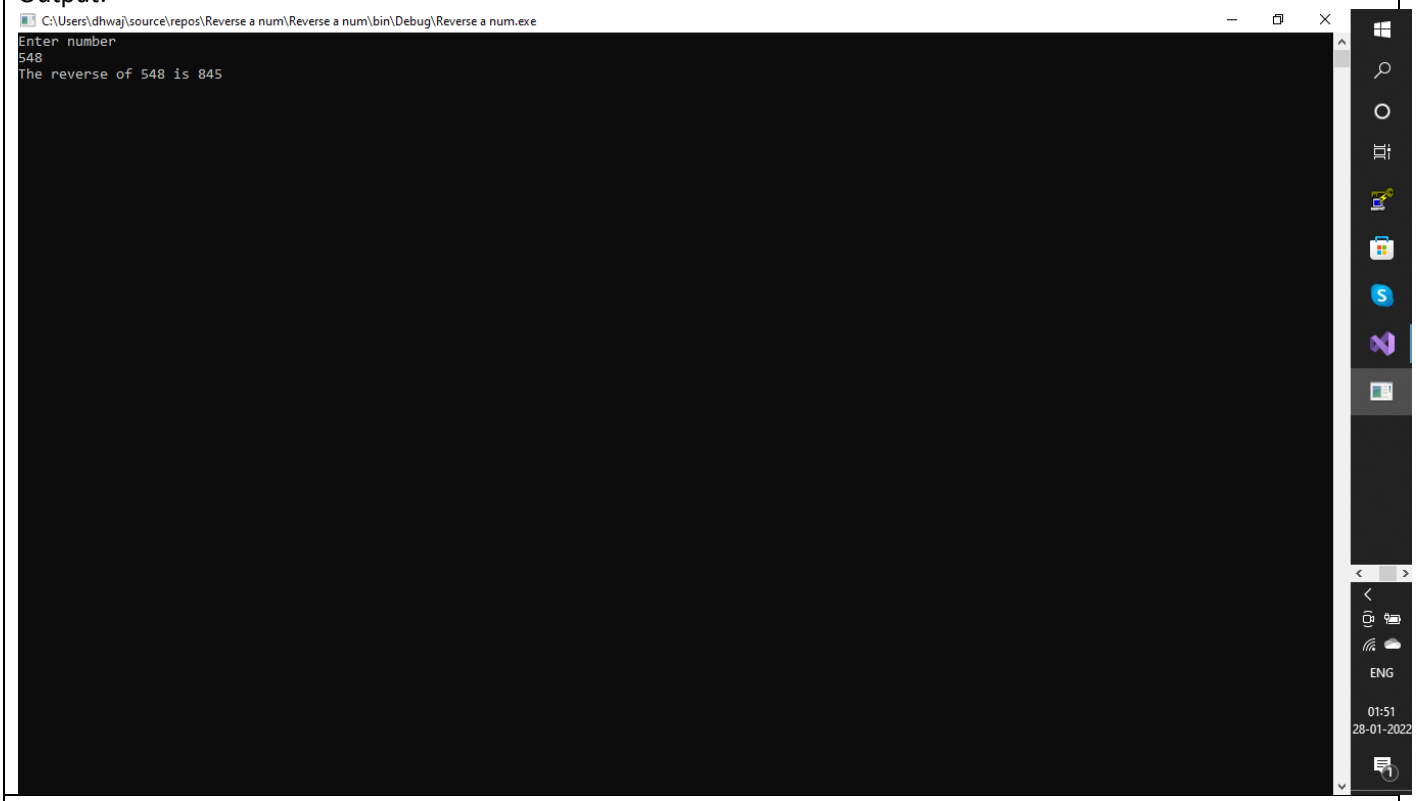
Code:

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

namespace Reverse_a_num
{
    internal class Program
    {
        static void Main(string[] args)
        {
            int n,temp,rem,rev=0;
            Console.WriteLine("Enter number");
            n=Convert.ToInt32(Console.ReadLine());
            temp = n;
            while(n > 0)
            {
                rem = n % 10;
                rev = (rev * 10) + rem;
                n = n / 10;

            }
            Console.WriteLine("The reverse of {0} is {1} ", temp, rev);
            Console.ReadLine();
        }
    }
}
```

Output:



Program 17

Write a C# Program to find given number is palindrome or not.

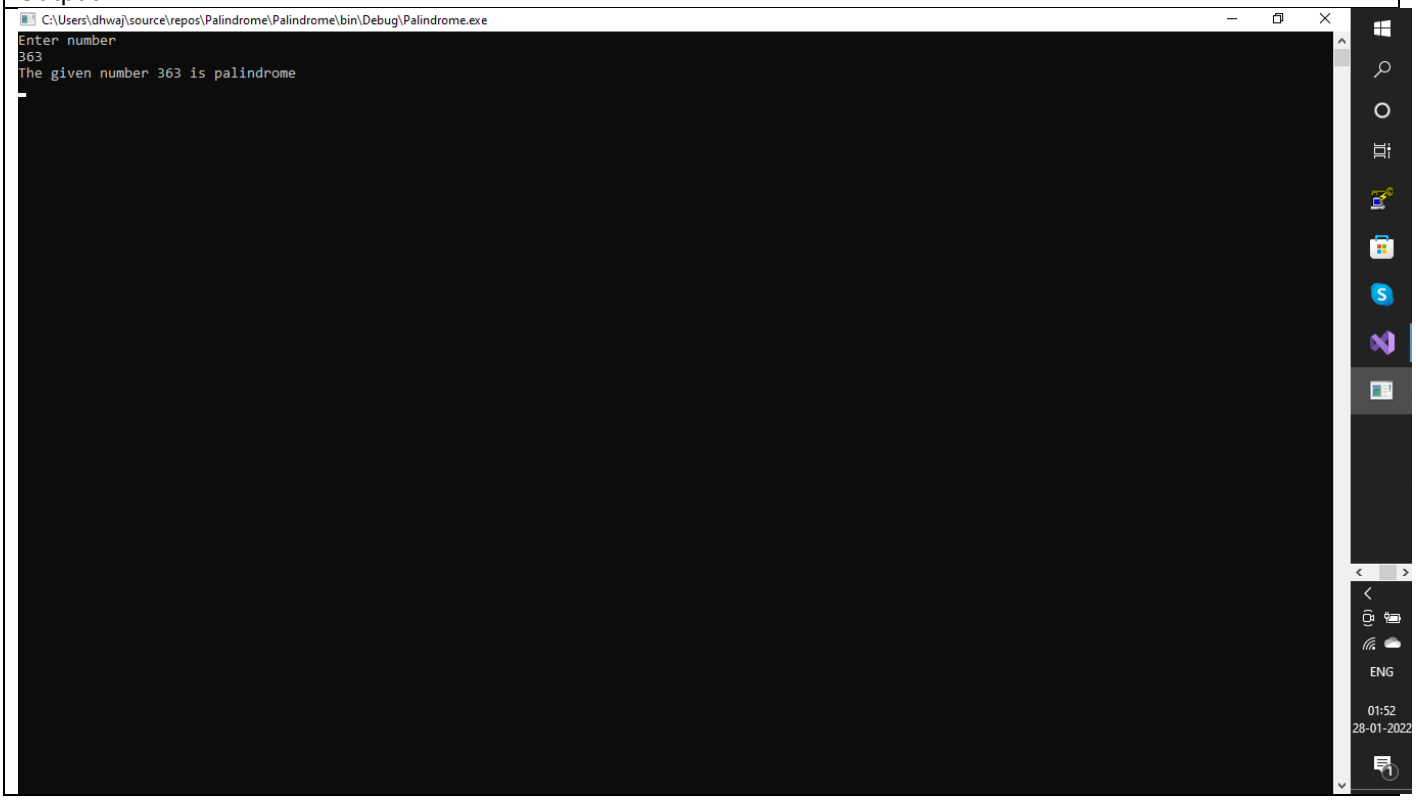
Code:

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

namespace Palindrome
{
    internal class Program
    {
        static void Main(string[] args)
        {
            int n, temp, rem, rev = 0;
            Console.WriteLine("Enter number");
            n = Convert.ToInt32(Console.ReadLine());
            temp = n;
            while (n > 0)
            {
                rem = n % 10;
                rev = (rev * 10) + rem;
                n = n / 10;

            }
            if(temp==rev)
                Console.WriteLine("The given number {0} is palindrome ", temp);
            else
                Console.WriteLine("The given number {0} is not a palindrome ", temp);
            Console.ReadLine();
        }
    }
}
```

Output:



Program 18:

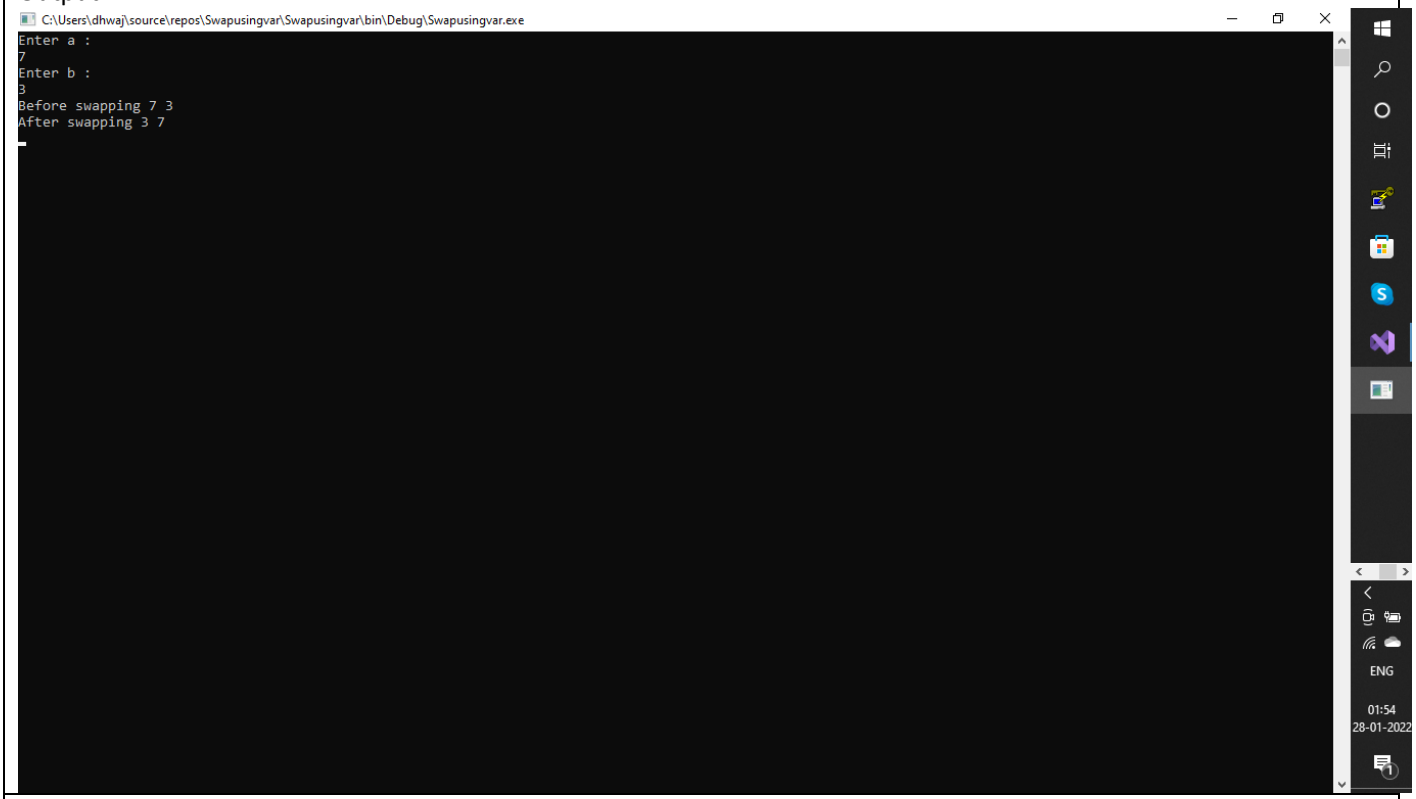
Write a C# Program to swap two numbers using variable.

Code:

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

namespace Swapusingvar
{
    internal class Program
    {
        static void Main(string[] args)
        {
            int temp, a, b;
            Console.WriteLine("Enter a :");
            a = Convert.ToInt32(Console.ReadLine());
            Console.WriteLine("Enter b :");
            b= Convert.ToInt32(Console.ReadLine());
            Console.WriteLine("Before swapping {0} {1} ",a,b);
            temp = a;
            a=b;
            b=temp;
            Console.WriteLine("After swapping {0} {1} ",a,b);
            Console.ReadLine();
        }
    }
}
```

Output:



Program 19

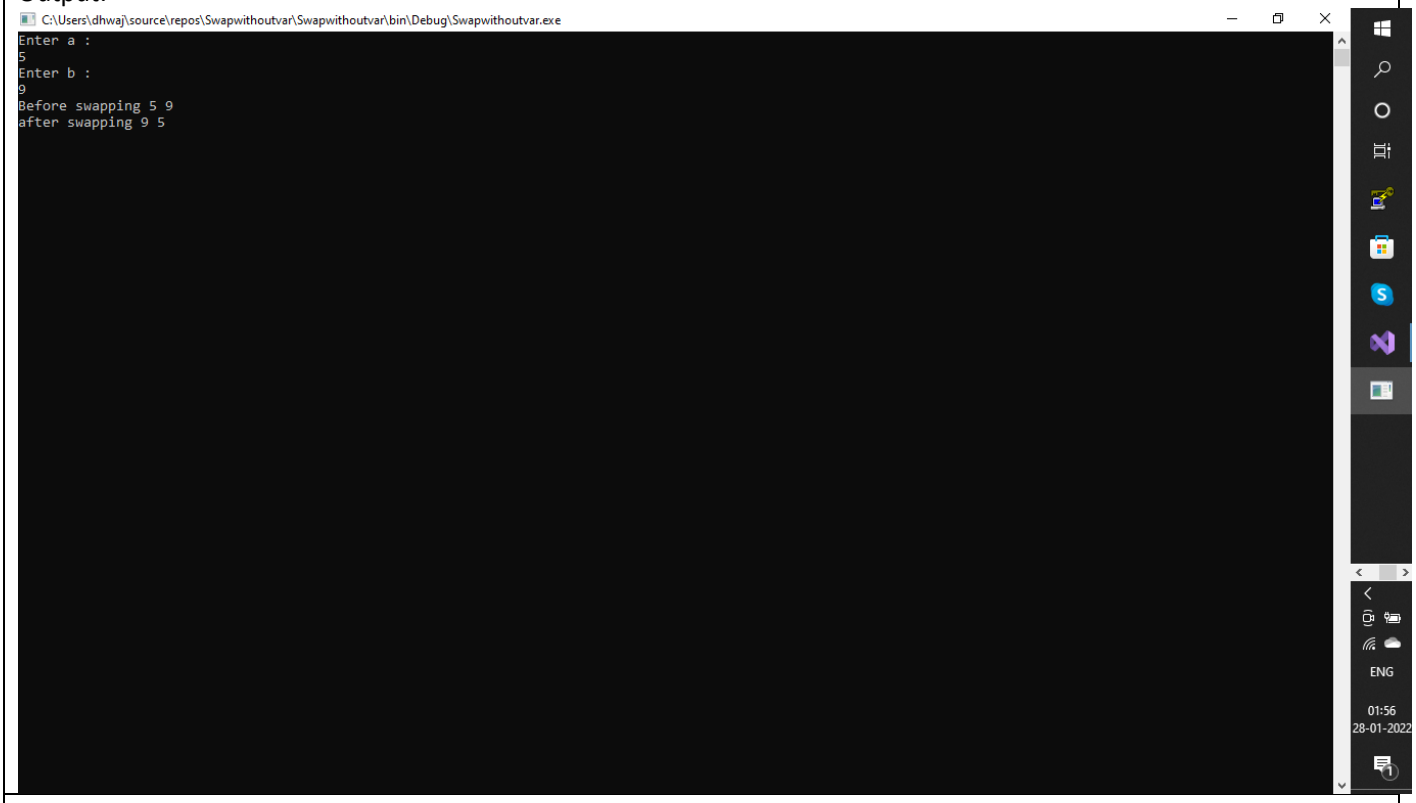
Write a C# Program to swap two numbers without using variable.

Code:

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

namespace Swapwithoutvar
{
    internal class Program
    {
        static void Main(string[] args)
        {
            int  a, b;
            Console.WriteLine("Enter a :");
            a = Convert.ToInt32(Console.ReadLine());
            Console.WriteLine("Enter b :");
            b = Convert.ToInt32(Console.ReadLine());
            Console.WriteLine("Before swapping {0} {1} ", a, b);
            a = a + b;
            b = a - b;
            a = a - b;
            Console.WriteLine("after swapping {0} {1} ", a, b);
            Console.ReadLine();
        }
    }
}
```

Output:



Program 20:

Write a C# Program to Print Patterns.

Code:

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

namespace Patterns
{
    internal class Program
    {
        static void Main(string[] args)
        {
            int n,i,j;
            Console.WriteLine("Enter no. of rows");
            n = Convert.ToInt32(Console.ReadLine());
            for(i=1;i<=n;i++)
            {
                for(j=1;j<=i;j++)
                {
                    Console.Write("*");
                }
                Console.WriteLine();
            }
            Console.ReadLine();
        }
    }
}
```

Output: