

C# 20 PROGRAMS

By

RAM CHARAN PATNALA

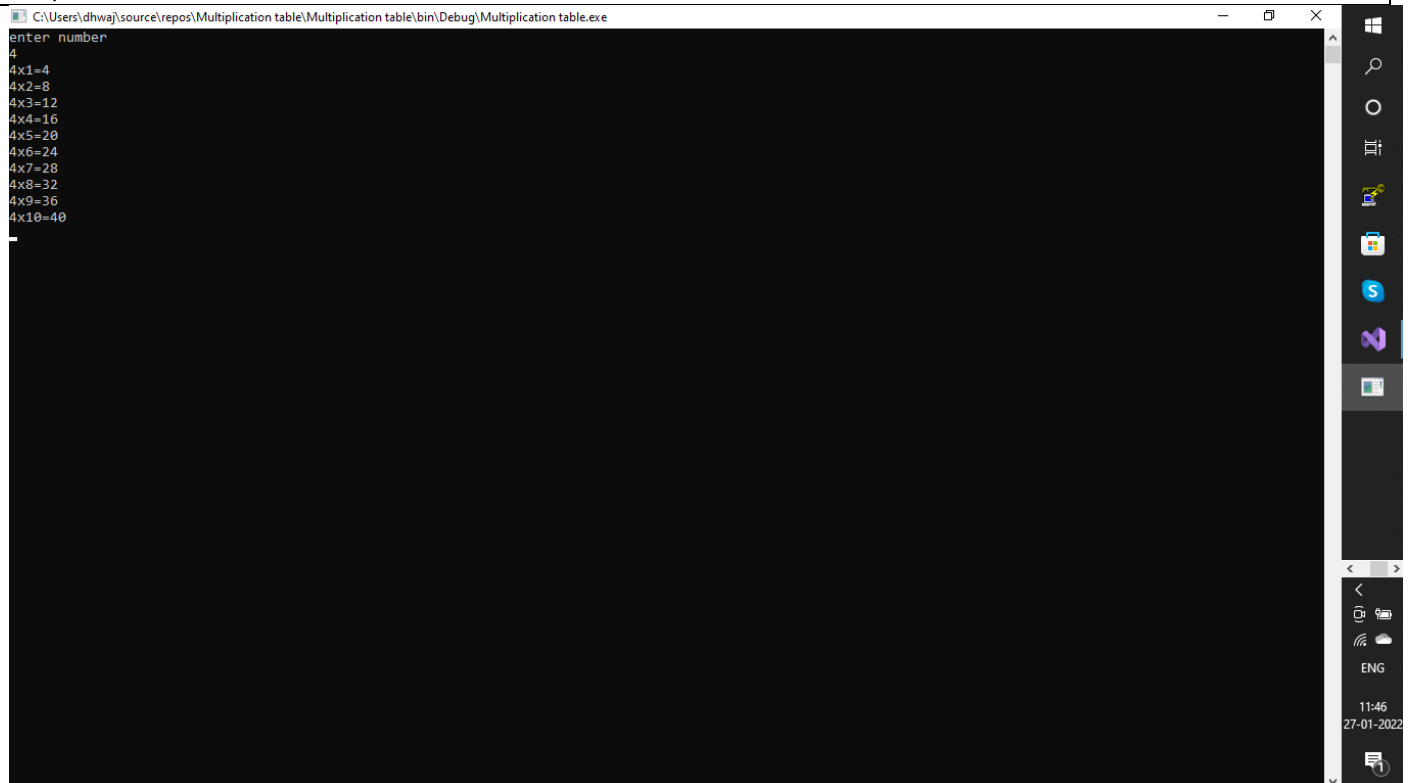
Program 1:Write a C# Program to Print Multiplication Table of given numbers.

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:



```
C:\Users\dhwa\source\repos\Multiplication table\Multiplication table\bin\Debug\Multiplication table.exe
enter number
4
4x1=4
4x2=8
4x3=12
4x4=16
4x5=20
4x6=24
4x7=28
4x8=32
4x9=36
4x10=40
-
{0}x{1}={2}
4x1=4
4x2=8
4x3=12
4x4=16
4x5=20
4x6=24
4x7=28
4x8=32
4x9=36
4x10=40
```

Program 2:

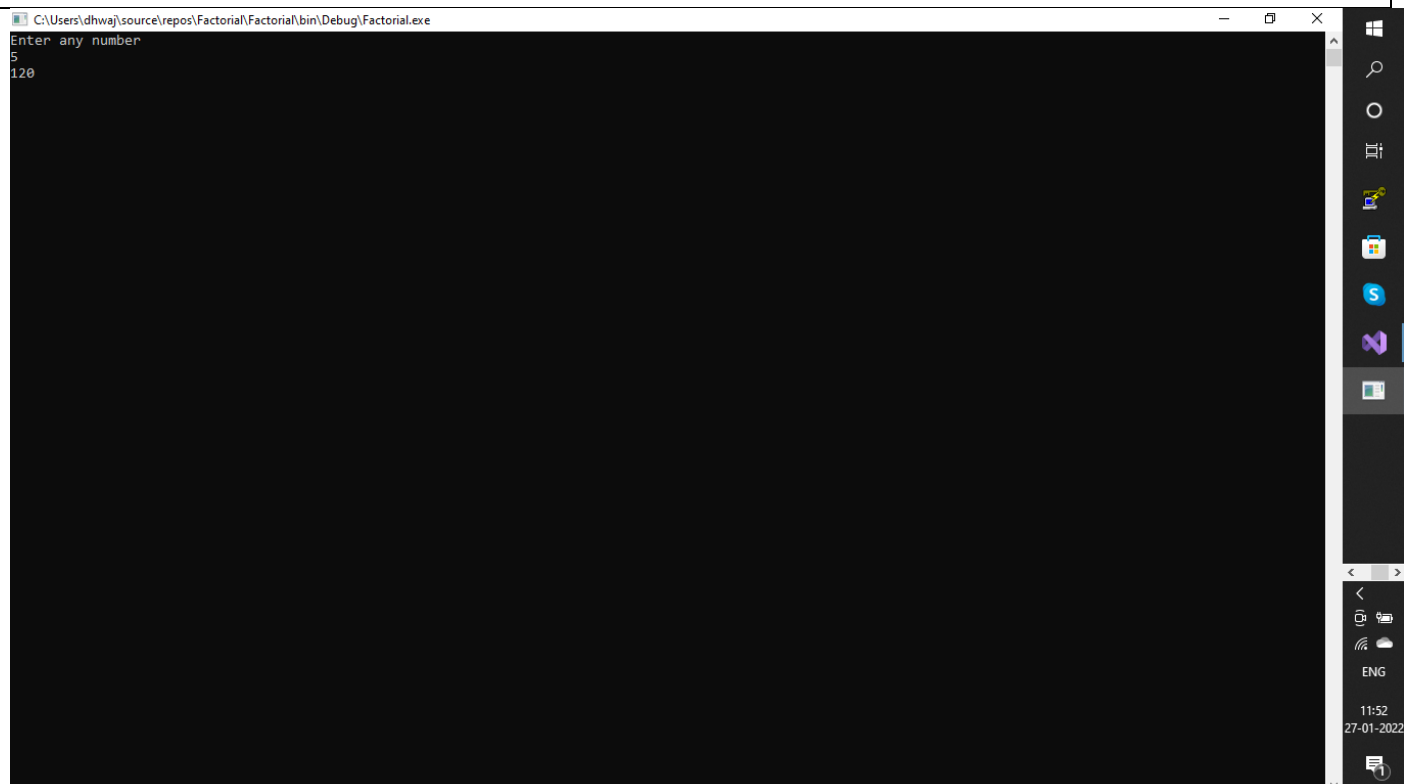
Write a C# Program to find Factorial of a given number.

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:

A screenshot of a Windows console window titled "C:\Users\dhwa\source\repos\Factorial\Factorial\bin\Debug\Factorial.exe". The console displays the text "Enter any number" followed by the user input "5". Below the input, the output "120" is shown. The Windows taskbar is visible on the right side of the screen, showing various application icons and the system clock indicating 11:52 on 27-01-2022.

Program 3:

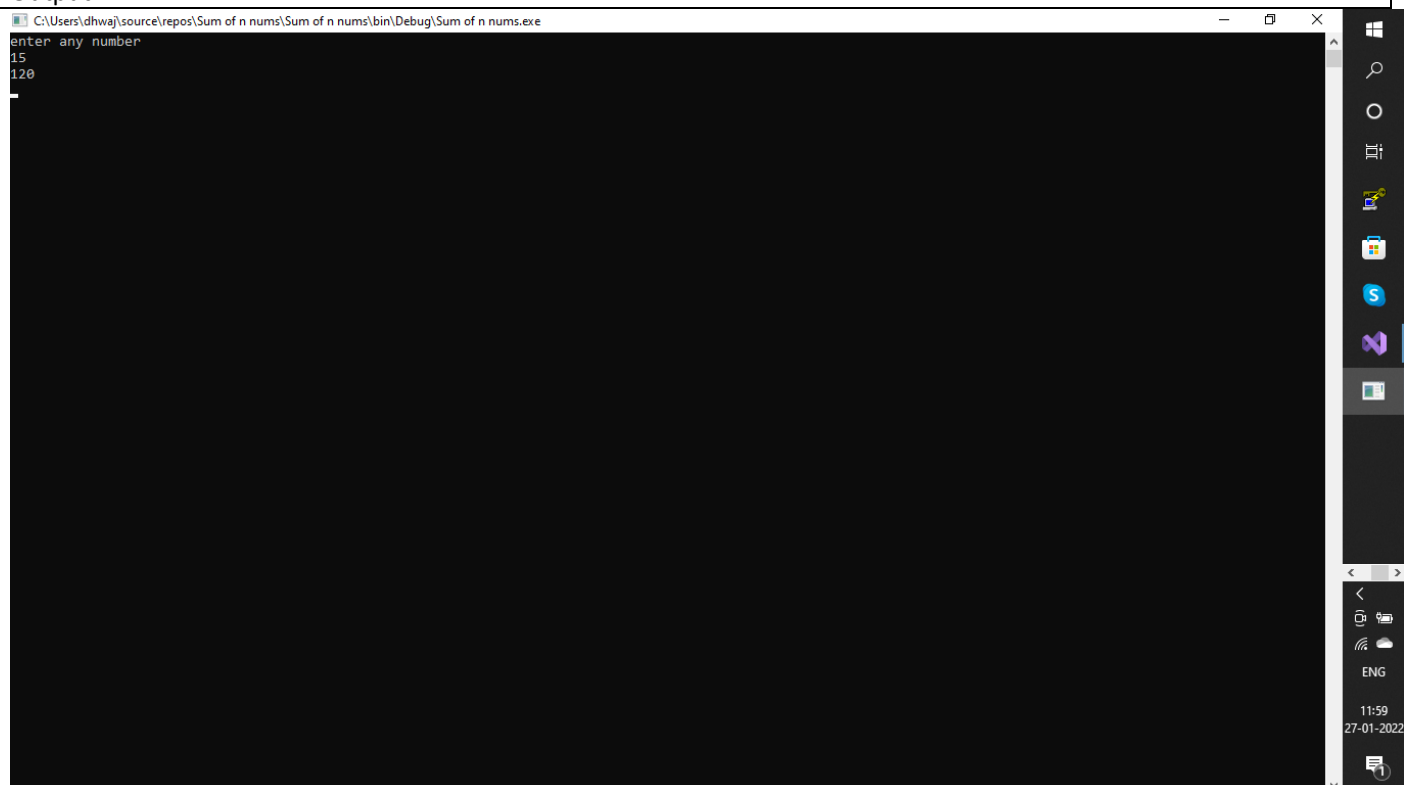
Write a C# Program to Print sum of n Natural numbers

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:



```
C:\Users\dhwaj\source\repos\Sum of n nums\Sum of n nums\bin\Debug\Sum of n nums.exe
enter any number
15
120
```

Program 4:

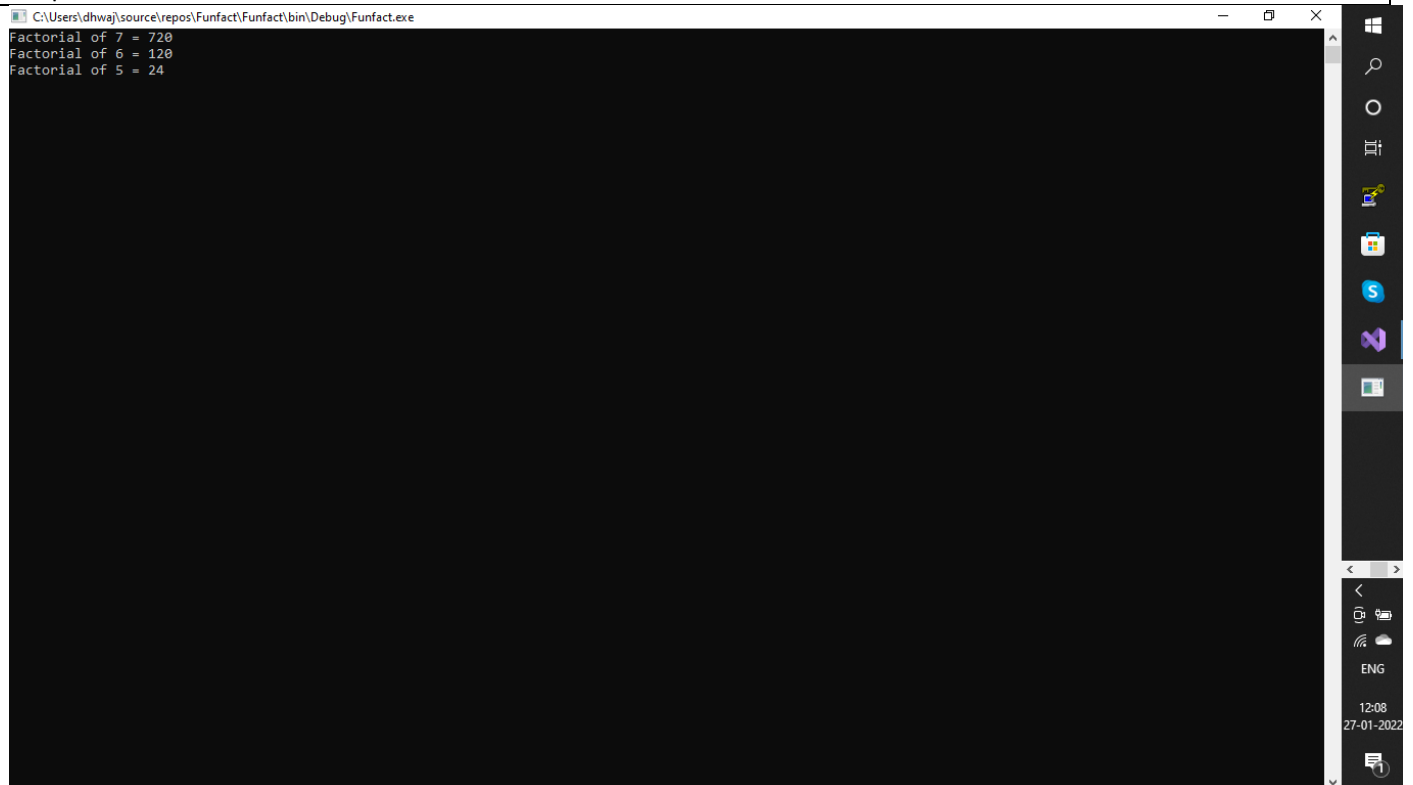
Write a C# Program to find Factorial using Function.

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:

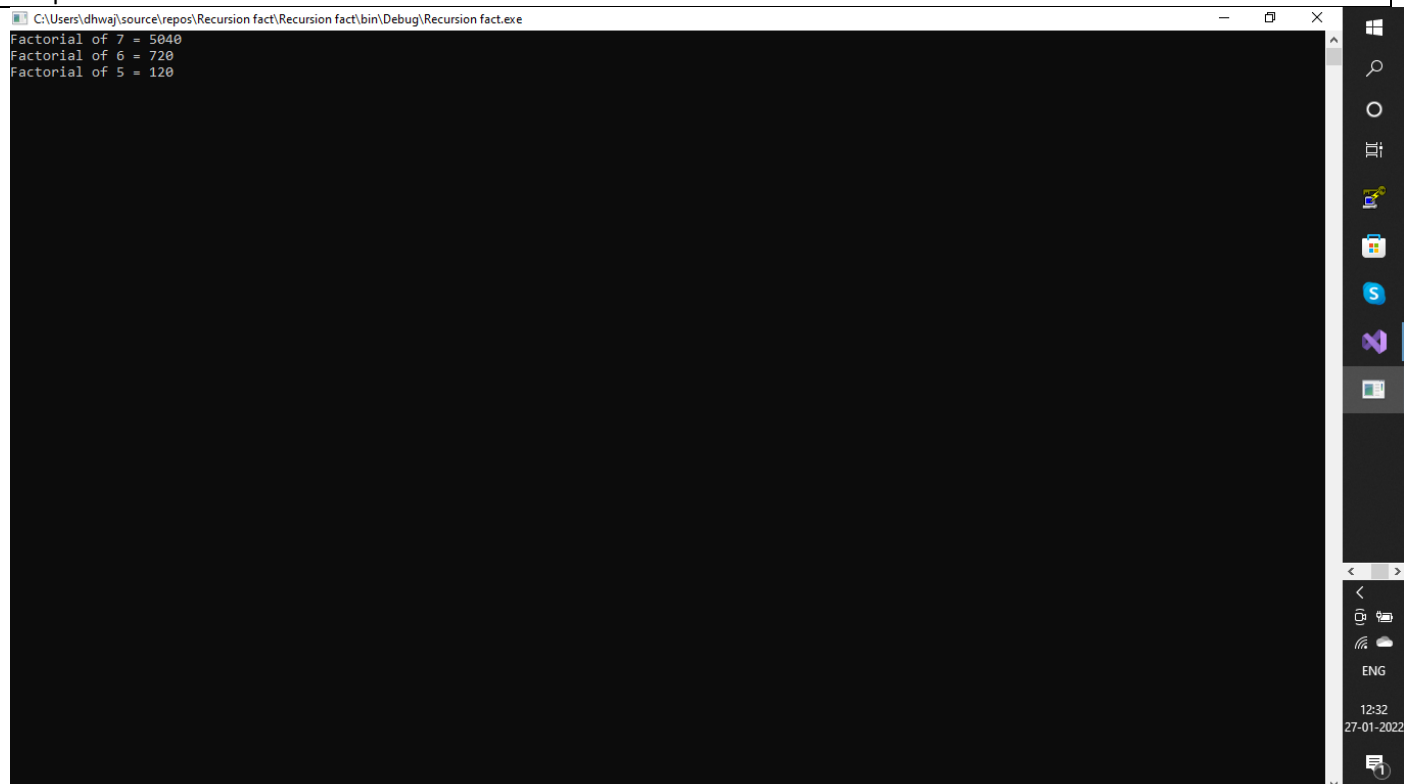
Write a C# Program to find Factorial using Recursion.

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:

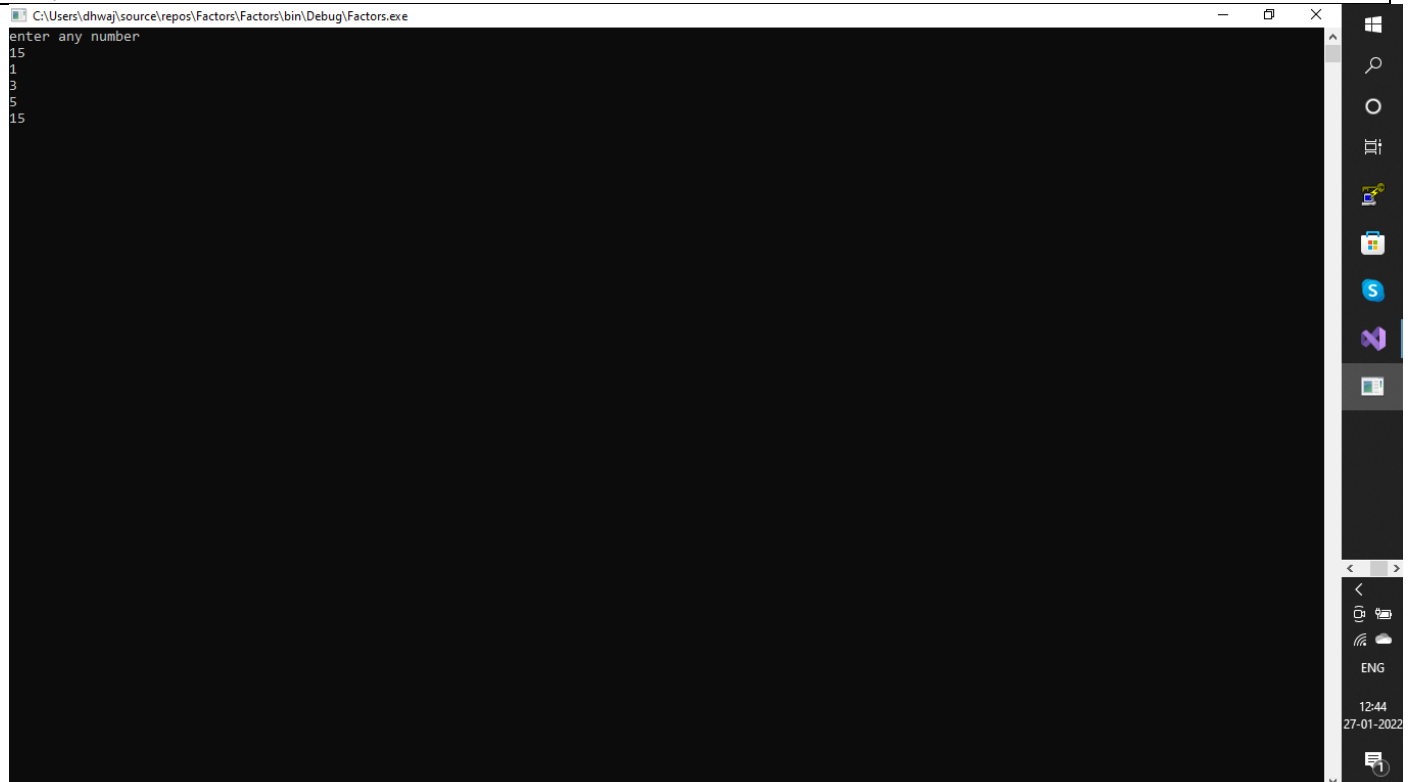
Write a C# Program to find Factors of a given number.

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:



```
C:\Users\dhwa\source\repos\Factors\Factors\bin\Debug\Factors.exe
enter any number
15
1
3
5
15
```

Program 7:

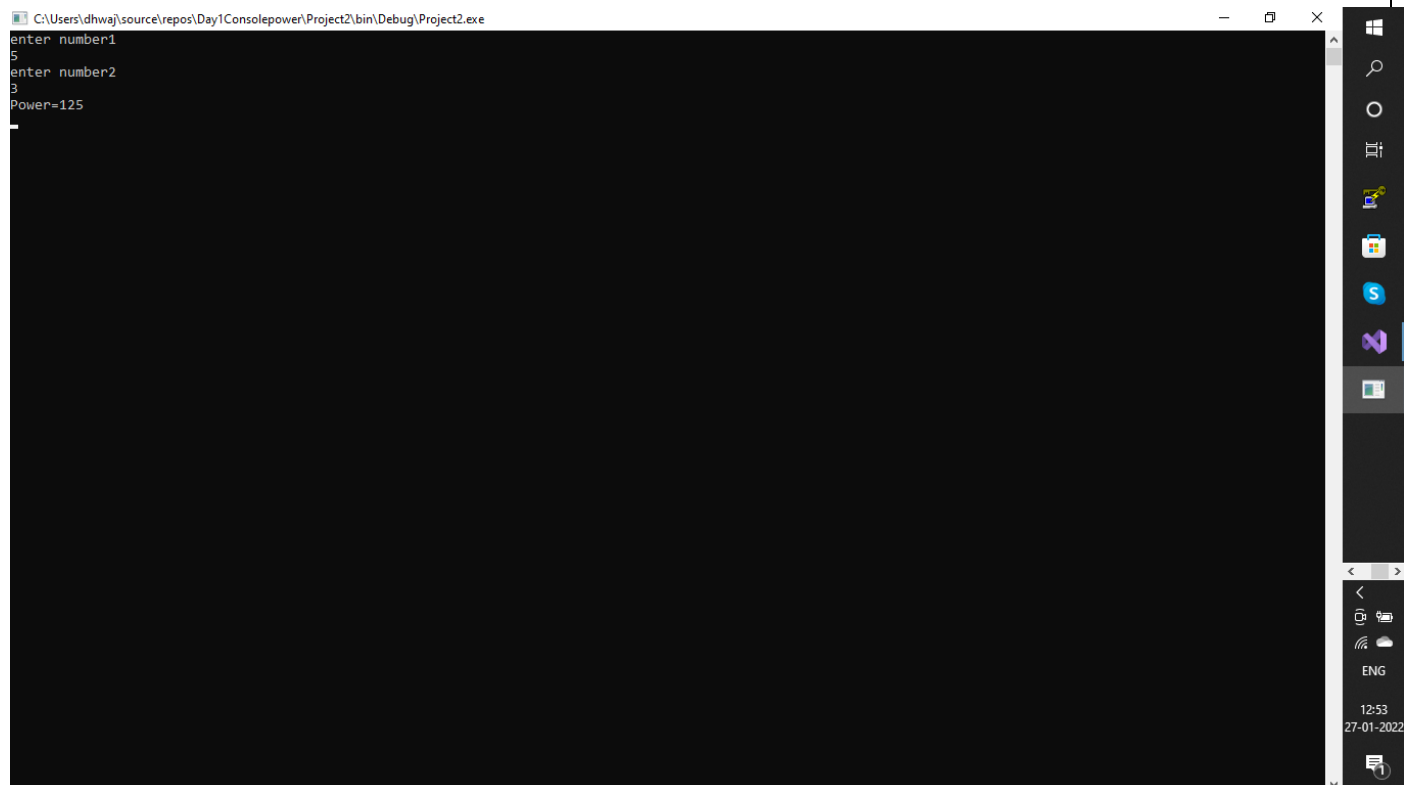
Write a C# Program to find Power of given numbers[a power b].

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:



```
C:\Users\dhwa\source\repos\Day1Consolepower\Project2\bin\Debug\Project2.exe
enter number1
5
enter number2
3
Power=125
```


Program 8:

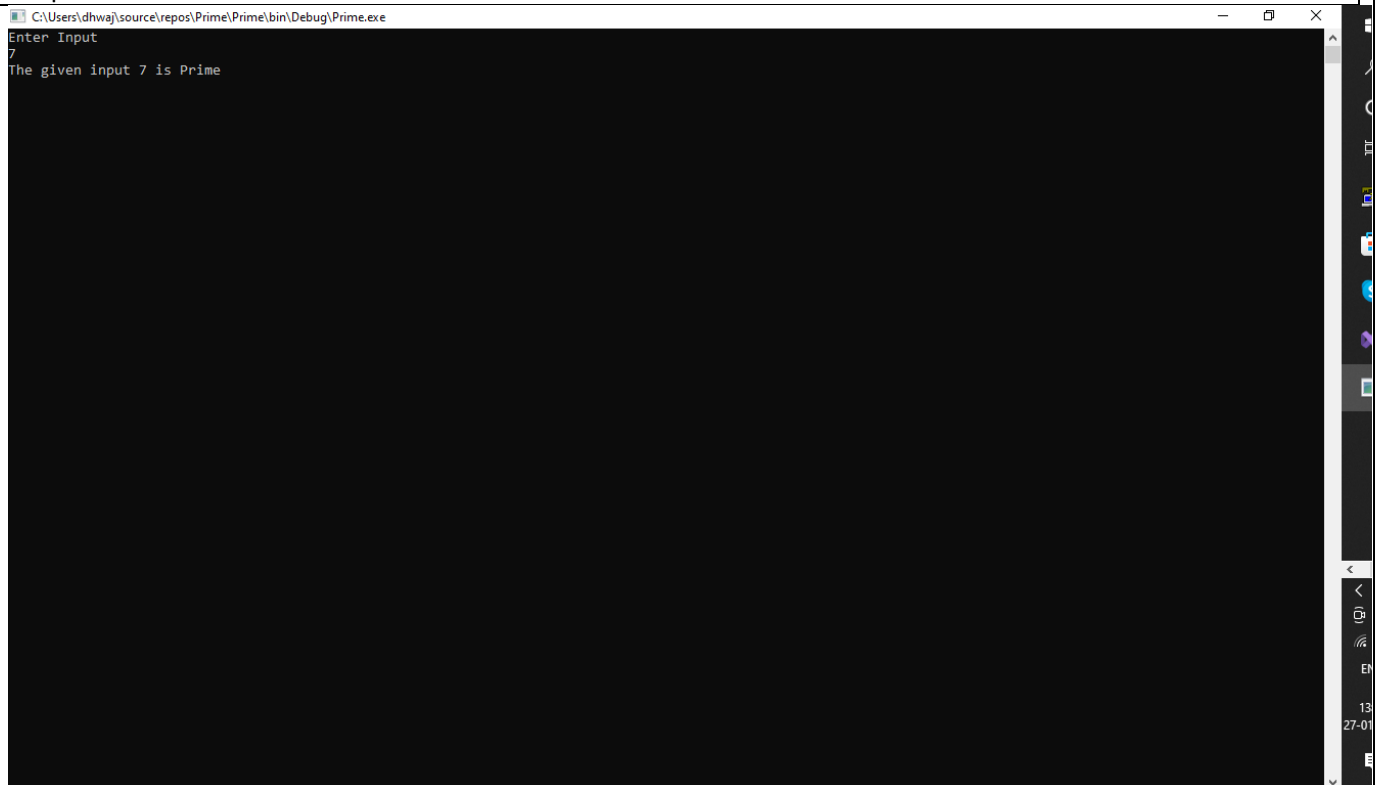
Write a C# Program to find given number is prime or not.

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:



```
C:\Users\dhwa\source\repos\Prime\Prime\bin\Debug\Prime.exe
Enter Input
7
The given input 7 is Prime
```

Program 9

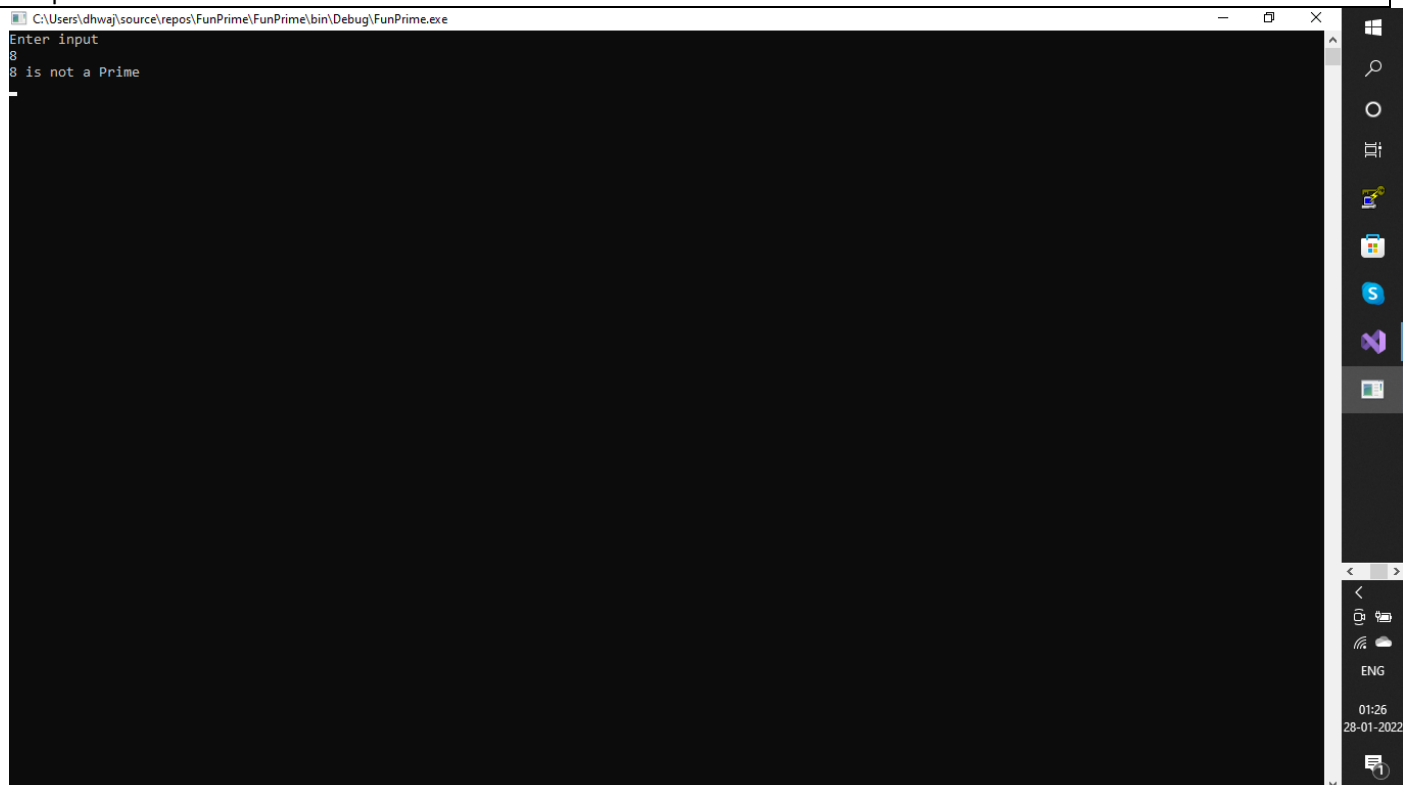
Write a C# Program to find given number is prime or not using Function.

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:



```
C:\Users\dhwa\source\repos\FunPrime\FunPrime\bin\Debug\FunPrime.exe
Enter input
8
8 is not a Prime
```

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

Windows taskbar showing icons for Start, Search, Task View, File Explorer, Microsoft Edge, Microsoft Store, Microsoft Teams, and a notification area with a clock showing 01:31 and date 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
1
2
3
5
8
13
21
34
55

Windows taskbar area containing icons for Start, Search, Task View, and several application shortcuts (including a folder, a blue 'S' icon, and a purple icon). At the bottom, it shows system tray icons for network, volume, and language (ENG), along with the date and time: 01:34, 28-01-2022.

Program 12:

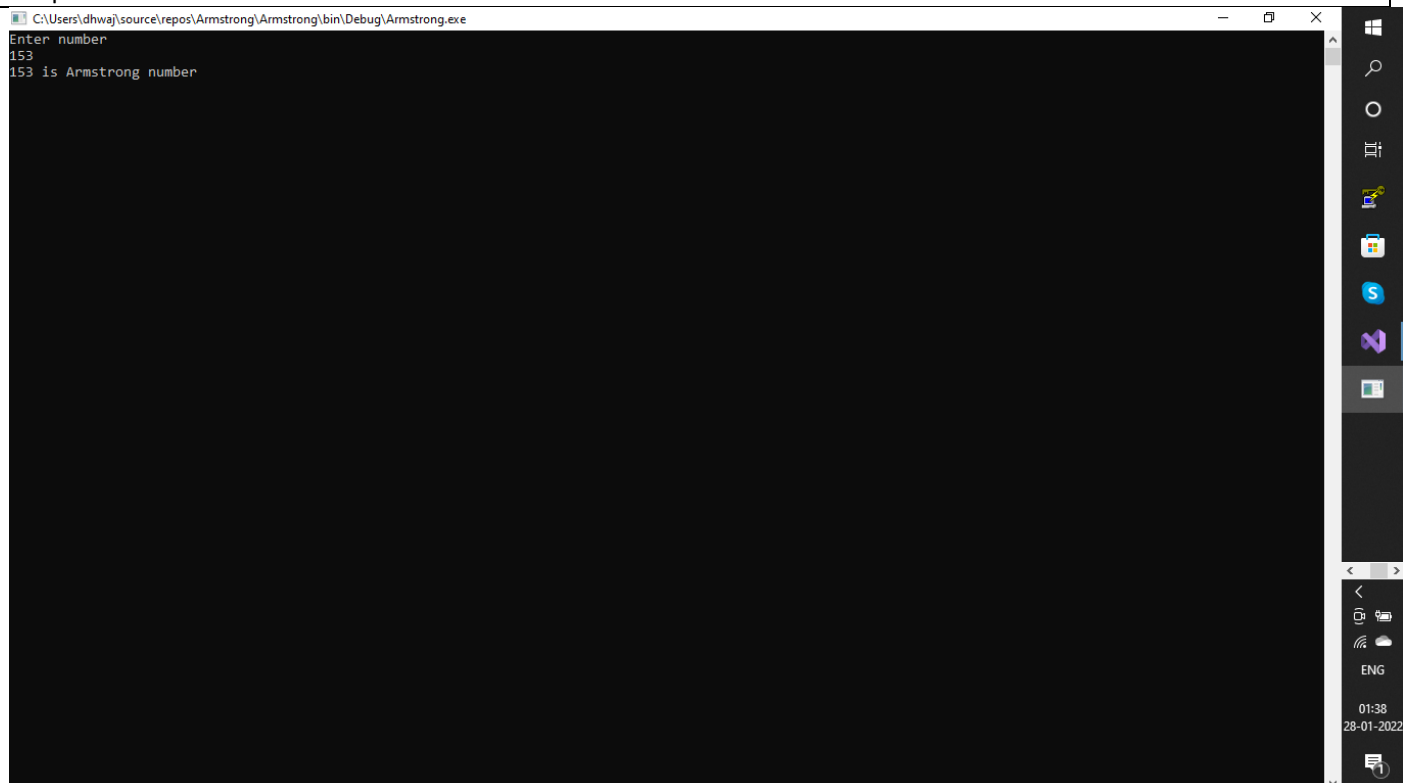
Write a C# Program to find given number is Armstrong.

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:

A screenshot of a Windows console window titled "C:\Users\dhwa\source\repos\Armstrong\Armstrong\bin\Debug\Armstrong.exe". The console shows the following text: "Enter number", "153", and "153 is Armstrong number". The window is set against a black background with white text. The Windows taskbar is visible on the right side of the screen, showing various application icons and the system clock indicating 01:38 on 28-01-2022.

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\dhwa\source\repos\FunArmstrong\FunArmstrong\bin\Debug\FunArmstrong.exe

Enter number:

22

22 is not Armstrong number



The image shows a Windows taskbar and system tray. The taskbar is on the right side of the screen, featuring the Start button, a search bar, and several pinned application icons including File Explorer, Microsoft Edge, and the Visual Studio Code icon. The system tray at the bottom right contains icons for network, volume, and power, along with the language indicator 'ENG', the time '01:41', and the date '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

Windows taskbar showing icons for Start, Search, Task View, File Explorer, Microsoft Store, Microsoft Edge, and others. The system tray on the right shows network, volume, and power icons, along with the language indicator 'ENG' and the date/time '01:43 28-01-2022'.

Program 15:

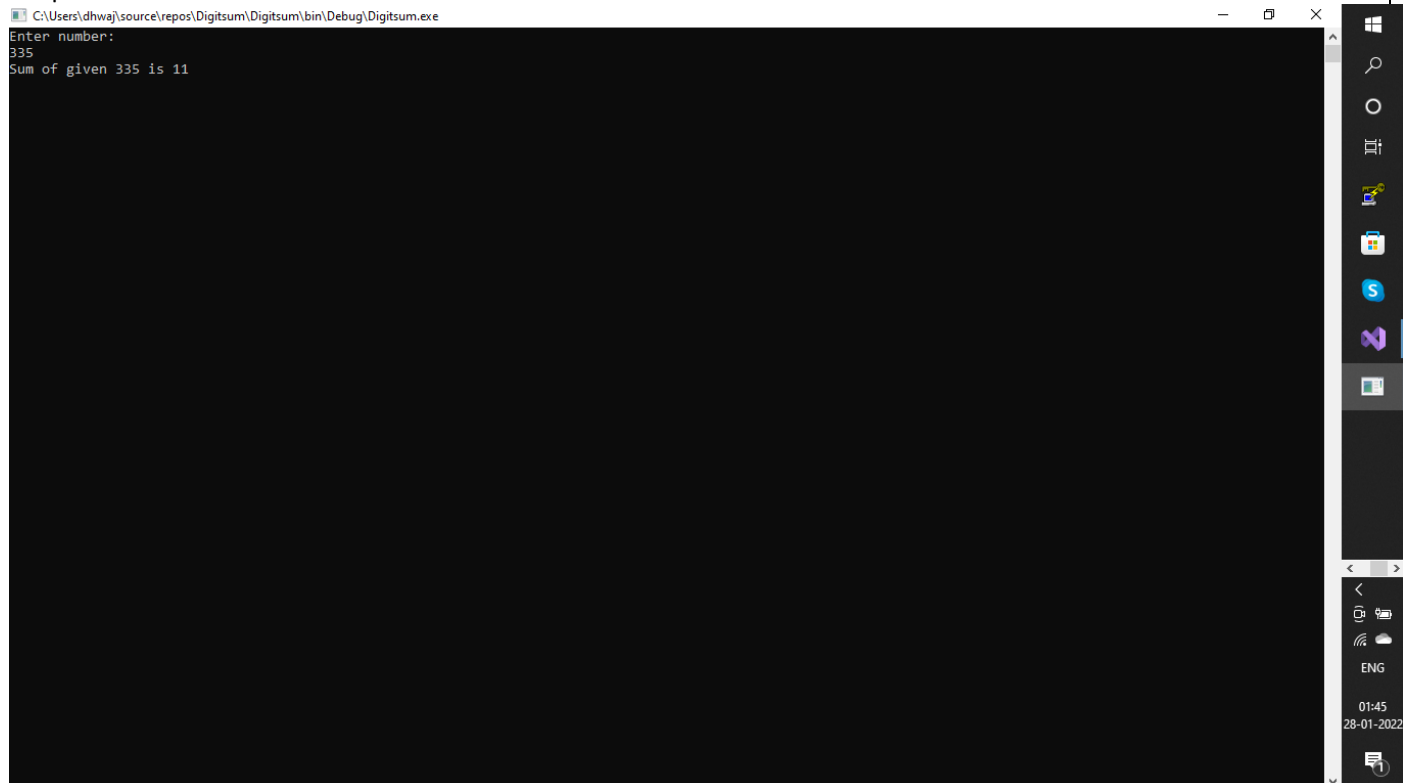
Write a C# Program to find sum of digits in given number.

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:



```
C:\Users\dhwa\source\repos\Digitsum\Digitsum\bin\Debug\Digitsum.exe
Enter number:
335
Sum of given 335 is 11
```

Program 16

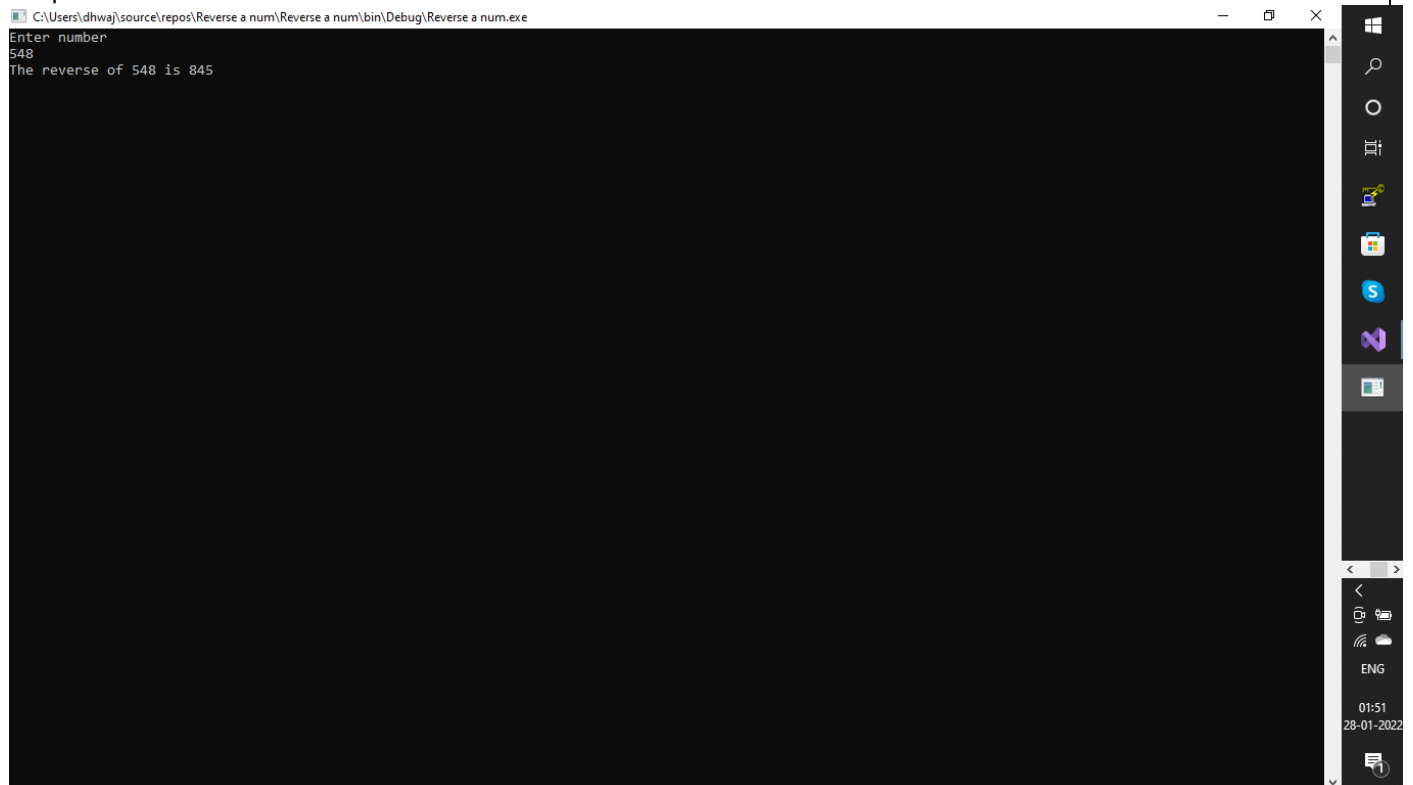
Write a C# Program to Reverse a given number.

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:



```
C:\Users\dhwaj\source\repos\Reverse a num\Reverse a num\bin\Debug\Reverse a num.exe
Enter number
548
The reverse of 548 is 845
```

Program 17

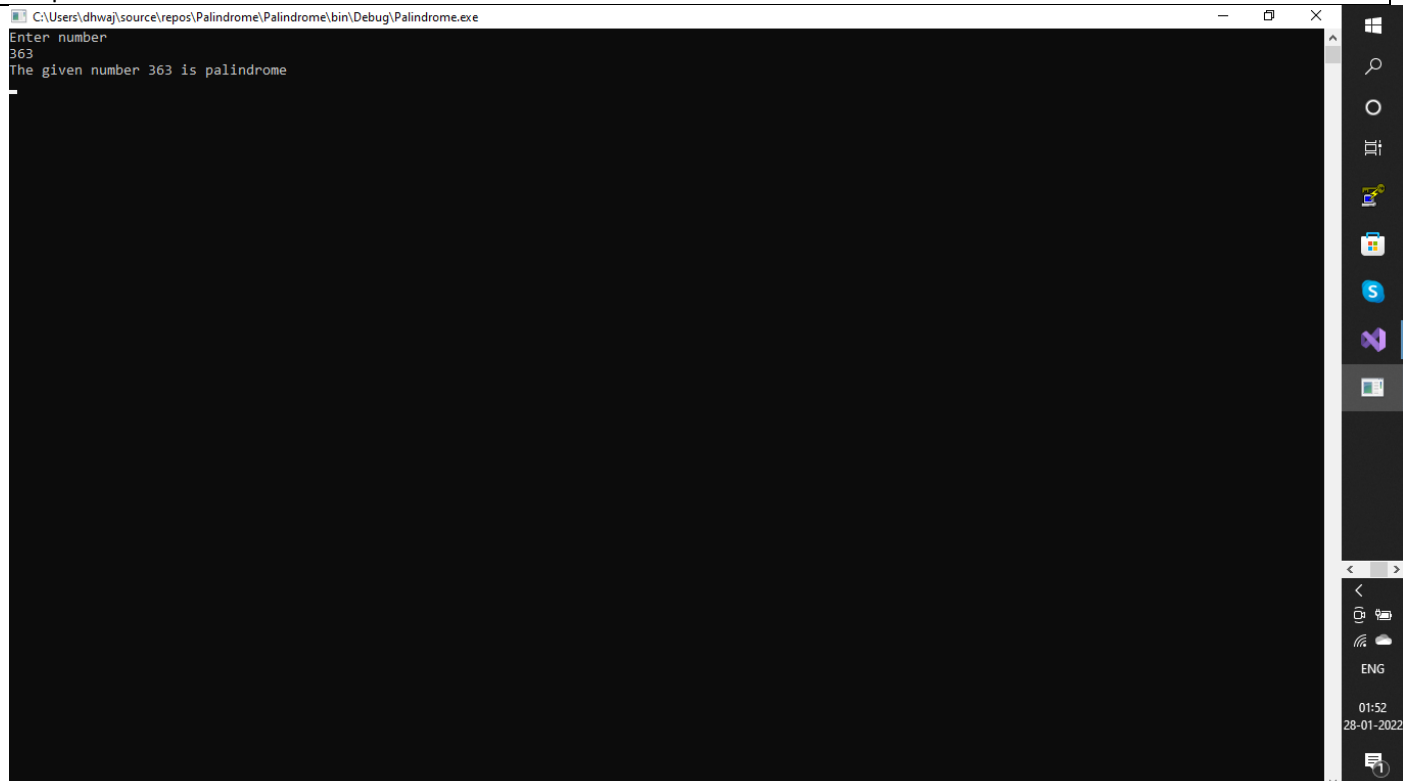
Write a C# Program to find given number is palindrome or not.

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:



```
C:\Users\dhwa\source\repos\Palindrome\Palindrome\bin\Debug\Palindrome.exe
Enter number
363
The given number 363 is palindrome
```

Program 18:

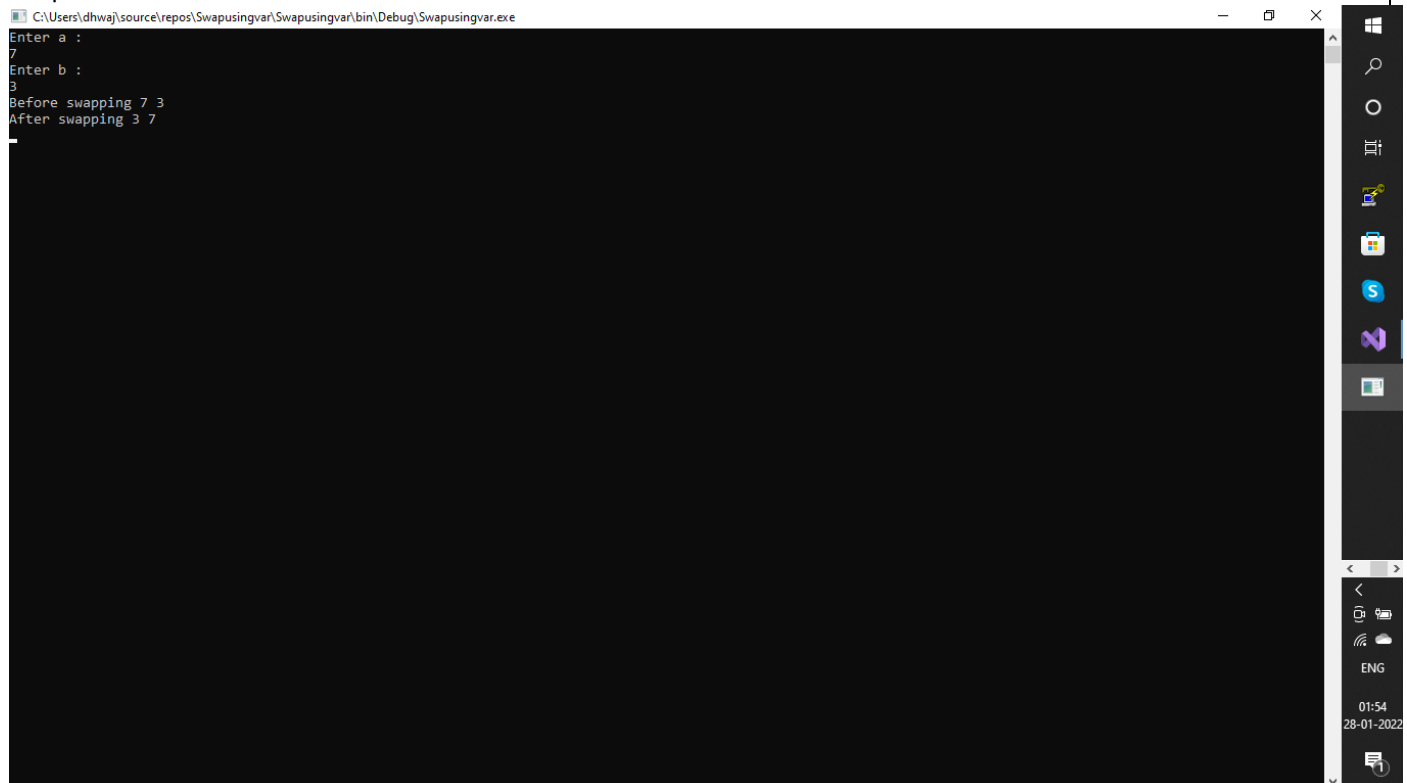
Write a C# Program to swap two numbers using variable.

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:



```
C:\Users\dhwaj\source\repos\Swapusingvar\Swapusingvar\bin\Debug\Swapusingvar.exe
Enter a :
7
Enter b :
3
Before swapping 7 3
After swapping 3 7
```

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:

C:\Users\dhwaj\source\repos\Swapwithoutvar\Swapwithoutvar\bin\Debug\Swapwithoutvar.exe

```
Enter a :
5
Enter b :
9
Before swapping 5 9
after swapping 9 5
```


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:

