20 C# Programs Assignment

By

Sudha Kumari Sugasani

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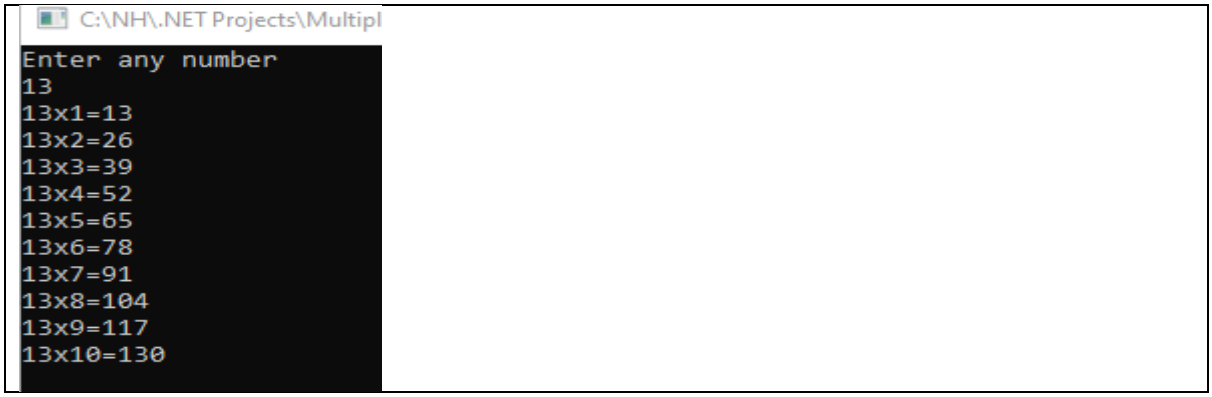
Program1:

Write a C# Program to print multiplication table of a given number

Code:

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

namespace MultiplicationTable
{
    internal class Program
    {
        static void Main(string[] args)
        {
            //Variable declaration
            int input;

            //Read data from user
            Console.WriteLine("Enter any number");
            input=Convert.ToInt32(Console.ReadLine());


            //Logic and Output
            for(int i=1;i<=10;i++)
            {
                Console.WriteLine(input+"x"+i+"="+input*i);
            }
            Console.ReadLine();
        }
    }
}
```

Output:



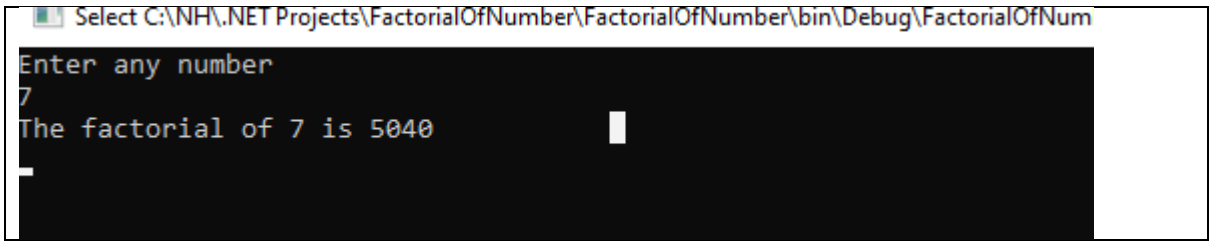
Program2:

Write a C# Program to print factorial of a given number

Code:

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

namespace FactorialOfNumber
{
    internal class Program
    {
        static void Main(string[] args)
        {
            //Variable declaration
            int input;
            int fact=1;

            //Read data from user
            Console.WriteLine("Enter any number");
            input = Convert.ToInt32(Console.ReadLine());


            //Logic
            for (int i = 1; i <= input; i++)
            {
                fact = fact * i;
            }


            //Output
            Console.WriteLine("The factorial of {0} is {1}",input,fact);
            Console.ReadLine();
        }
    }
}
```

Output:



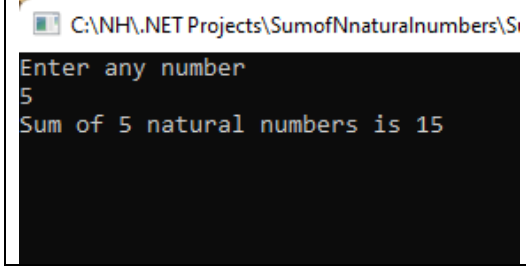
Program3:

Write a C# Program to print Sum of a n natural numbers

Code:

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

namespace SumofNnaturalnumbers
{
    internal class Program
    {
        static void Main(string[] args)
        {
            //Variable declaration
            int input;
            int Sum = 0;

            //Read data from user
            Console.WriteLine("Enter any number");
            input=Convert.ToInt32(Console.ReadLine());


            //Logic
            for(int i=1;i<=input;i++)
            {
                Sum=Sum+i;
            }


            //Output
            Console.WriteLine("Sum of {0} natural numbers is {1}",input,Sum);
            Console.ReadLine();
        }
    }
}
```

Output:



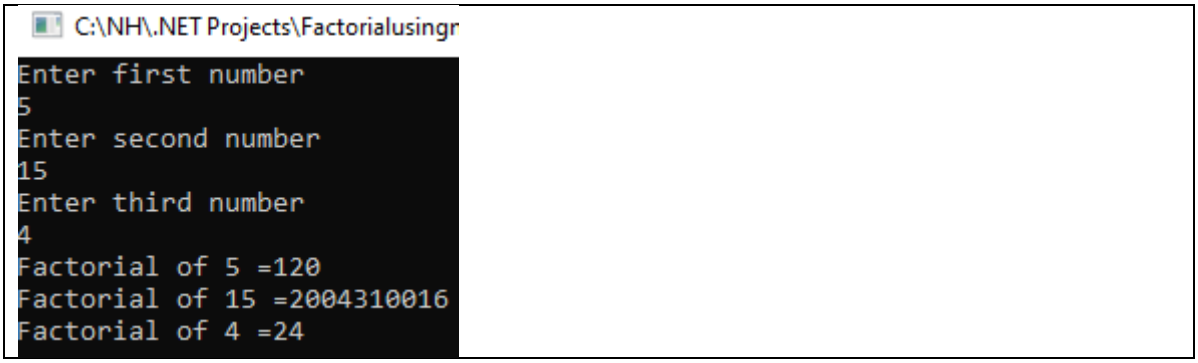
Program4:

Write a C# Program to print factorial using function

Code:

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

namespace Factorialusingmethod
{
    internal class Program
    {
        //Output
        public static void Output(int n)
        {
            Console.WriteLine("Factorial of {0} ={1}", n, factorial(n));
        }


        //Logic
        public static int factorial(int n)
        {
            int fact = 1;
            for (int i = 1; i <= n; i++)
                fact = fact * i;
            return fact;
        }


        static void Main(string[] args)
        {
            //Intialisation and read data from user
            int n , n1, n2;

            Console.WriteLine("Enter first number");
            n=Convert.ToInt32(Console.ReadLine());
            Console.WriteLine("Enter second number");
            n1= Convert.ToInt32(Console.ReadLine());
            Console.WriteLine("Enter third number");
             n2= Convert.ToInt32(Console.ReadLine());


            Output(n);
            Output(n1);
            Output(n2);
            Console.ReadLine();

        }
    }
}
```

Output:



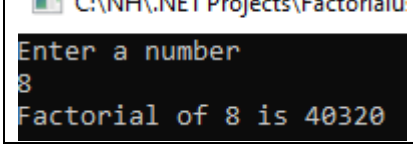
Program5:

Write a C# Program to print factorial using recurssion

Program:

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

namespace Factorialusingrecurssion
{
    internal class Program
    {


        static void Main(string[] args)
        {
            int n;
            Console.WriteLine("Enter a number");
            n=Convert.ToInt32(Console.ReadLine());

            Console.WriteLine("Factorial of {0} is {1}",n,Factorial(n));
            Console.ReadLine();
        }
        static int Factorial(int input)
        {
            if (input == 0)
                return 1;
            else
                return input * Factorial(input - 1);
        }

    }
}
```

Output:



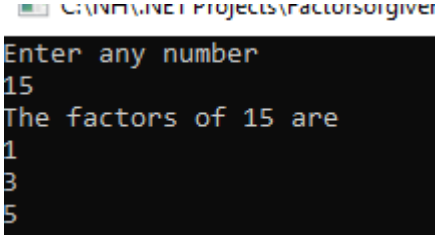
Program6:

Write a C# Program to print factors of a given number

Code:

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

namespace FactorsofgivenNumber
{
    internal class Program
    {
        static void Main(string[] args)
        {
            //Variable declaration
            int input;

            //Read input from user
            Console.WriteLine("Enter any number");
            input=Convert.ToInt32(Console.ReadLine());


            //Logic and Output
            Console.WriteLine("The factors of {0} are",input);
            for(int i = 1; i < input;i++)
            {
                if(input%i==0)
                {
                    Console.WriteLine(i);
                }

            }

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

Output:



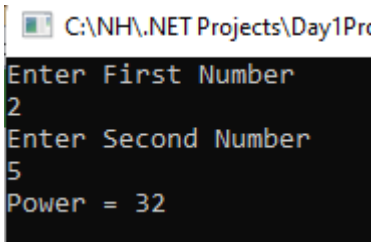
Program7:

Write a C# Program to print power of a given numbers

Code:

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

namespace Apowerb
{
    internal class Program
    {
        static void Main(string[] args)
        {
            //Variable declaration

            int fn, sn;
            int p = 1;

            Console.WriteLine("Enter First Number");
            fn = Convert.ToInt32(Console.ReadLine());
            Console.WriteLine("Enter Second Number");
            sn = Convert.ToInt32(Console.ReadLine());

            //Logic and output

            for (int i = 1; i <= sn; i++)
                p = p * fn;

            Console.WriteLine("Power = " + p);
            Console.ReadLine();
        }
    }
}
```

Output:



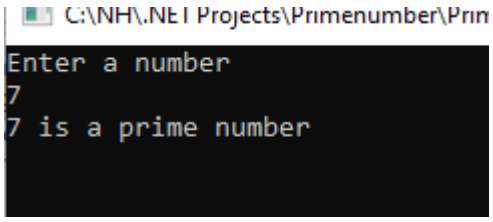
Program8:

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

Code:

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

namespace Primenumber
{
    internal class Program
    {
        static void Main(string[] args)
        {
            //Variable decalaration and reading the input
            int input;

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

            //Logic and printing output
            int i;
            for( i = 2; i < input; i++)
            {
                if(input%i==0)
                {
                    break;
                }

            }
            if(i==input)
            {
                Console.WriteLine("{0} is a prime number", input);
                Console.ReadLine();
            }
            else
            {
                Console.WriteLine("{0} is not a prime number", input);
                Console.ReadLine();
            }

        }
    }
}
```

Output:



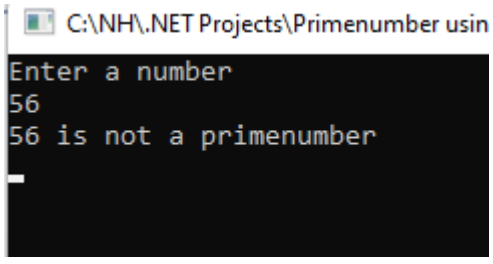
Program9:

Write a C# Program to check 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 Primenumber_using_function
{
    internal class Program
    {
        static void Main(string[] args)
        {
            //Variable declaration and reading data from user
            int input;
            Console.WriteLine("Enter a number");
            input =Convert.ToInt32(Console.ReadLine());


            //Printing Output
            if(isPrimenumber(input))
                    Console.WriteLine("{0} is a primenumber",input);
            else
                Console.WriteLine("{0} is not a primenumber", input);
             Console.ReadLine();

        }

        //Logic and returning Output
        public static Boolean isPrimenumber(int input)
        {
            int i;
            for( i=2;i<input;i++)
            {
                if (input % i == 0)
                    break;
            }
            if(i==input)
                    return true;
            else
                return false;
        }
    }
}
```

Output:



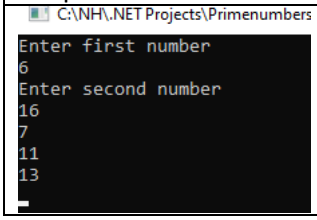
Program10:

Write a C# Program to print the prime numbers between given range

Code:

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

namespace Primenumbers_in_a_range
{
    internal class Program
    {
        static void Main(string[] args)
        {
            //Variable declaration and reading data from user
            int input1,input2;
            Console.WriteLine("Enter first number");
            input1 = Convert.ToInt32(Console.ReadLine());

            Console.WriteLine("Enter second number");
            input2 = Convert.ToInt32(Console.ReadLine());

            for(int i=input1;i<=input2;i++)
            {
                if (isPrimenumber(i))
                    Console.WriteLine("{0}", i);
            }
            Console.ReadLine();



        }

        //Logic and returning Output
        public static Boolean isPrimenumber(int input)
        {
            int i;
            for (i = 2; i < input; i++)
            {
                if (input % i == 0)
                    break;
            }
            if (i == input)
                return true;
            else
                return false;
        }

    }
}
```

Output:



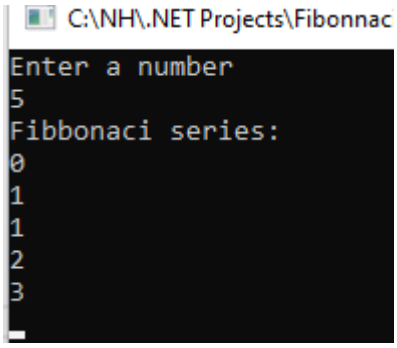
Program11:

Write a C# Program to print Fibonacci Series

Code:

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

namespace FibonnaciSeries
{
    internal class Program
    {
        static void Main(string[] args)
        {
            //Variable declaration
            int input;
            int a = 0, b = 1;
            Console.WriteLine("Enter a number");
            input=Convert.ToInt32(Console.ReadLine());

            //Logic and printing output

            Console.WriteLine("Fibbonaci series:");
            for(int i = 0; i < input; i++)
            {
                Console.WriteLine(a);
                int c = a + b;
                a = b;
                b = c;
            }
            Console.ReadLine();

        }
    }
}
```

Output:



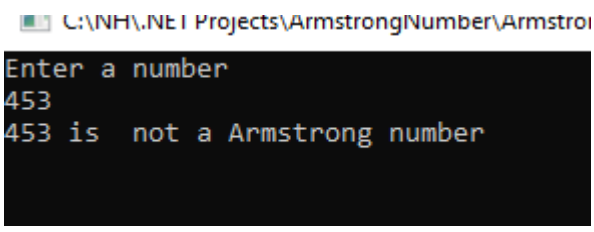
Program12:

Write a C# Program to print Armstrong number

Code:

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

namespace ArmstrongNumber
{
    internal class Program
    {
        static void Main(string[] args)
        {
            //Variable declaration and read data from user
            int input;
            int m, rem;
            int result = 0;
            Console.WriteLine("Enter a number");
            input=Convert.ToInt32(Console.ReadLine());

            //Logic and Output
            m = input;
            while(m > 0)
            {
                rem = m % 10;
                m = m / 10;
                result = result + rem *rem * rem;
            }
            if(result==input)
                Console.WriteLine("{0} is a Armstrong number",input);
            else
                Console.WriteLine("{0} is  not a Armstrong number", input);
            Console.ReadLine();
        }
    }
}
```

Output:



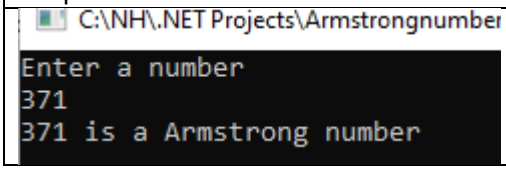
Program13:

Write a C# Program to print Armstrong number[Using Function]

Code:

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

namespace Armstrongnumberusingfunction
{
    internal class Program
    {
        static void Main(string[] args)
        {
             //Variable declaration and read data from user

             int input;

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


            //Printing Output

            if (isArmstrongnumber(input))
                Console.WriteLine("{0} is a Armstrong number", input);
            else
                Console.WriteLine("{0} is  not a Armstrong number", input);
            Console.ReadLine();
        }
        //Logic

        public static Boolean isArmstrongnumber(int input)
        {
            int m, rem;
            int result = 0;
            m = input;
            while (m > 0)
            {
                rem = m % 10;
                m = m / 10;
                result = result + rem * rem * rem;
            }
            if (result == input)
               return true;
            else
                return false;



        }
    }
}
```

Output:



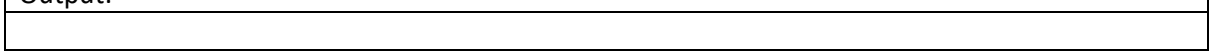
Program14:

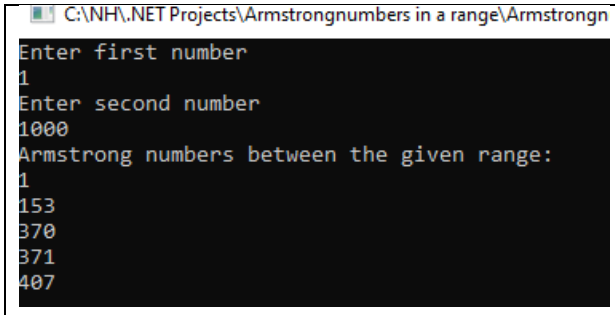
Write a C# Program to print Armstrong numbers in range

Code:

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

namespace Armstrongnumbers_in_a_range
{
    internal class Program
    {
        static void Main(string[] args)
        {
            //Variable declaration and read data from user

            int input1,input2,i;

            Console.WriteLine("Enter first number");
            input1 = Convert.ToInt32(Console.ReadLine());

            Console.WriteLine("Enter second number");
            input2 = Convert.ToInt32(Console.ReadLine());


            //Printing Output
            Console.WriteLine("Armstrong numbers between the given range:");
            for(i=input1;i<=input2;i++)
            {
                if(isArmstrongnumber(i))
                Console.WriteLine(i);
            }
            Console.ReadLine();
        }
        //Logic

        public static Boolean isArmstrongnumber(int input)
        {
            int m, rem;
            int result = 0;
            m = input;
            while (m > 0)
            {
                rem = m % 10;
                m = m / 10;
                result = result + rem * rem * rem;
            }
            if (result == input)
                return true;
            else
                return false;
        }
    }
}
```

Output:





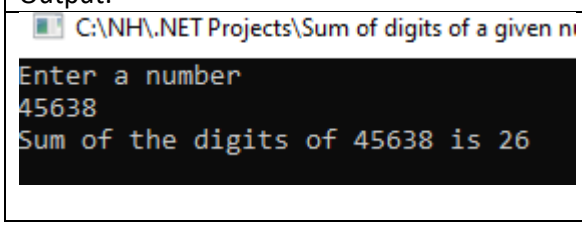
Program15:

Write a C# Program to print Sum of digits of a given number

Code:

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

namespace Sum_of_digits_of_a_given_number
{
    internal class Program
    {
        static void Main(string[] args)
        {
            //Variable declaration and read data from user
            int input;
            int m, rem;
            int result = 0;
            Console.WriteLine("Enter a number");
            input=Convert.ToInt32(Console.ReadLine());

            //Logic
            m = input;
            while (m > 0)
            {
                rem = m % 10;
                m = m / 10;
                result = result + rem ;
            }

            //Output
            Console.WriteLine("Sum of the digits of {0} is {1}",input,result);
            Console.ReadLine();
        }
    }
}
```

Output:



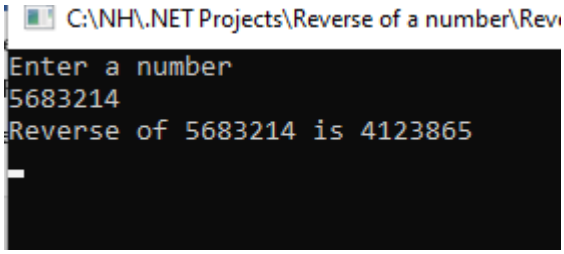
Program16:

Write a C# Program to print reverse of a given number

Code:

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

namespace Reverse_of_a_number
{
    internal class Program
    {
        static void Main(string[] args)
        {
            //Variable declaration and read data from user
            int input;
            int m, rem;
            int rev = 0;
            Console.WriteLine("Enter a number");
            input = Convert.ToInt32(Console.ReadLine());

            //Logic
            m = input;
            while (m > 0)
            {
                rem = m % 10;
                m = m / 10;
                rev = rev*10 + rem;
            }

            //Output
            Console.WriteLine("Reverse of {0} is {1}", input, rev);
            Console.ReadLine();
        }
    }
}
```

Output:



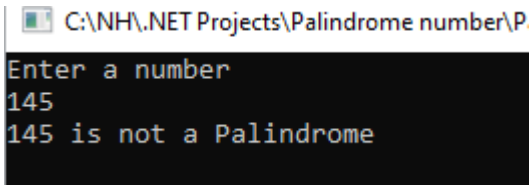
Program17:

Write a C# Program to check 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_number
{
    internal class Program
    {
        static void Main(string[] args)
        {
            //Variable declaration and read data from user

             int input;
            int m, rem;
            int rev = 0;
            Console.WriteLine("Enter a number");
            input = Convert.ToInt32(Console.ReadLine());

            //Logic and Output
            m = input;
            while (m > 0)
            {
                rem = m % 10;
                m = m / 10;
                rev = rev * 10 + rem;
            }
            if (input == rev)

                Console.WriteLine("{0} is a Palindrome", input);
            else
                Console.WriteLine("{0} is not a Palindrome", input);
            Console.ReadLine();
        }
    }
}
```

Output:



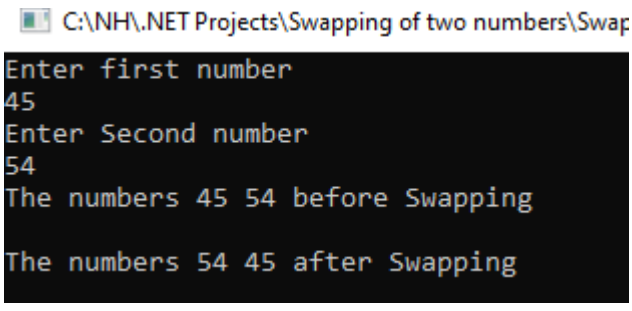
Program18:

Write a C# Program to print Swapping of two numbers using third variable

Code:

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

namespace Swapping_of_two_numbers
{
    internal class Program
    {
        static void Main(string[] args)
        {
            //Variable declaration and read data from user
            int input1,input2,t;
            Console.WriteLine("Enter first number");
            input1= Convert.ToInt32(Console.ReadLine());
            Console.WriteLine("Enter Second number");
            input2= Convert.ToInt32(Console.ReadLine());
            Console.WriteLine("The numbers {0} {1} before
Swapping",input1,input2);
            Console.ReadLine();

            //Logic and Output
            t = input1;
            input1 = input2;
            input2 = t;
            Console.WriteLine("The numbers {0} {1} after Swapping", input1,
input2);
            Console.ReadLine();
        }
    }
}
```

Output:



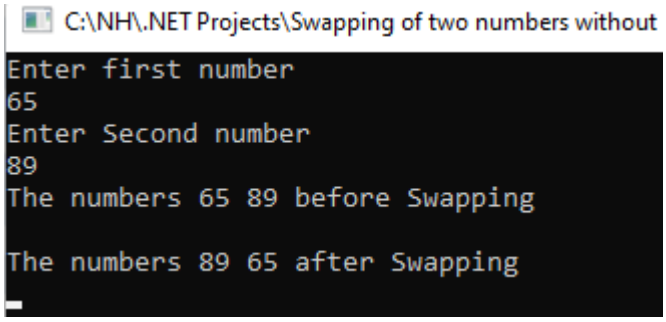
Program19:

Write a C# Program to print Swapping of two numbers without using third variable

Code:

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

namespace Swapping_of_two_numbers_without_using_third_variable
{
    internal class Program
    {
        static void Main(string[] args)
        {
            //Variable declaration and read data from user


            int input1, input2;
            Console.WriteLine("Enter first number");
            input1 = Convert.ToInt32(Console.ReadLine());


            Console.WriteLine("Enter Second number");
            input2 = Convert.ToInt32(Console.ReadLine());


            Console.WriteLine("The numbers {0} {1} before Swapping", input1,
input2);
            Console.ReadLine();

            //Logic and Output


            input1= input1+input2;
            input2 = input1-input2;
            input1 = input1-input2;
            Console.WriteLine("The numbers {0} {1} after Swapping", input1,
input2);
            Console.ReadLine();
        }
    }
}
```

Output:



Program20:

Write a C# program to print Right angled triangle(*) pattern

Code:

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

namespace Rightangled_triangle_Pattern
{
    internal class Program
    {
        static void Main(string[] args)
        {
            // Variable declaration

            int input,i,j;
            Console.WriteLine("No.of rows to be print");
            input=Convert.ToInt32(Console.ReadLine());

            //Logic and output

            for(i=1;i<=input;i++)
            {
                for(j=1;j<=i;j++)
                {
                    Console.Write("* ");
                }
                Console.WriteLine();
            }
            Console.ReadLine();
        }
    }
}
```

Output: