# 20 C# programs Assignment by M.Pallavi

# 27-01-2022

# Program 1: Write a c# program to print factorial of given number

#### code:

```
using System;
namespace fact
{
   internal class Program
   {
      static void Main(string[] args)
      {
        int n, fact=1;
            Console.WriteLine ("enter n value");
            n=Convert.ToInt32 (Console.ReadLine());
        for(int i=1; i<=n; i++)
        {
            fact = fact * i;
        }
        Console.WriteLine("{0}",fact);
      }
    }
}</pre>
```

#### Output:

enter n value

5

120

# Program 2: Write C# code to find sum of n natural numbers

### Code:

```
using System;

namespace day2evnprogram
{
    internal class Program
    {
        static void Main(string[] args)
        {
            int n, sum = 0, i;
            Console. WriteLine("enter any number");
            n=Convert.ToInt32(Console.ReadLine());
            for(i = 0; i <= n; i++)
            {
                sum=sum+i;
            }
            Console.WriteLine("{0}",sum);
        }
    }
}</pre>
```

#### Output:

enter any number

5

15

Program 3:Write C# code to print factors of a given number

Code:

```
enter any number

2
1
2
C:\Users\Administrator\source\repos\ConsoleApp1\ConsoleApp1\bin\Debug\netcoreapp3.1\C
ed with code 0.
To automatically close the console when debugging stops, enable Tools->Options->Debug
le when debugging stops.

Press any key to close this window . . .
```

Program 4: Write C# code to print multiplication of given number

Code:

```
using System;
namespace day2evnprogram
  internal class Program
     static void Main(string[] args)
       int input, i;
       Console.WriteLine ("enter any number");
       input =Convert.ToInt32(Console.ReadLine());
       for( i= 1;i <= 10;i++)
          Console.WriteLine (input +"x"+i+ " = "+input*i);
       }
       Console.ReadLine ();
       for (i = 1; i <= 10; i++)
          Console.WriteLine("\{0\}x\{1\}=\{2\}",input,i,input*i);
       }
       Console.ReadLine();
    }
  }
}
```

```
C:\Users\Administrator\source\repos\day2evnprogram\day2evnprogram\bin\Debug\net5.0
enter any number

5
x1 = 5
5x2 = 10
5x3 = 15
5x4 = 20
5x5 = 25
5x6 = 30
5x7 = 35
5x8 = 40
5x9 = 45
5x10 = 50

5x1=5
5x2=10
5x3=15
5x4=20
5x5=25
5x6=30
5x7=35
5x8=40
5x9=45
5x10=50
```

```
namespace CMDExecute
{
  internal class Program
  {
    static void Main(string[] args)
    {
        int n1;
            Console.WriteLine("enter any number");
            n1 = Convert.ToInt32(Console.ReadLine());
        long fact = FactorialCalcu(n1);
        Console.WriteLine("The factorial of {0} is : {1} ", n1, fact);
        Console.ReadKey();
    }
    private static long FactorialCalcu(int n1)
    {
        if (n1 == 0)
        {
            return 1;
        }
        return n1 * FactorialCalcu(n1 - 1);
    }
}
```

```
enter any number

The factorial of 5 is : 120

C:\Users\Administrator\source\repos\CMDExecute\CMDExecute\bin\I
with code 0.

To automatically close the console when debugging stops, enable
le when debugging stops.

Press any key to close this window . . ._
```

## Program 6: Write C# code to print factors of a given number

code:

#### Output:

C:\Users\Administrator\source\repos\day2evnprogr

```
enter any number
6
1
2
3
```

#### Program 7:write C# program to print factorial of number using recursion

Code:

```
using System;
namespace CMDExecute
  internal class Program
     static void Main(string[] args)
       Console.Write(" enter any positive number : ");
       int n1 = Convert.ToInt32(Console.ReadLine());
       long fact = Factorial(n1);
       Console.WriteLine(" The factorial of {0} is : {1} ", n1, fact);
       Console.ReadKey();
     }
     private static long Factorial(int n1)
       if (n1 == 0)
          return 1;
       return n1 * Factorial(n1 - 1);
     }
  }
```

#### Output:

```
enter any positive number : 6
The factorial of 6 is : 720

C:\Users\Administrator\source\repos\CMDExecute\CMDExecute\bin\Debug\netcoreapp3.1\CMI

ith code 0.
To automatically close the console when debugging stops, enable Tools->Options->Debug

le when debugging stops.

Press any key to close this window . . .
```

# Program 8: write a c# program to print power of given number[a power b] code:

```
using System;
namespace CMDExecute
  internal class Program
     static void Main(string[] args)
       int b, expo, i;
       int result = 1;
       Console.WriteLine("enter base value");
       b = Convert.ToInt32(Console.ReadLine());
       Console.WriteLine("enter exponent value");
       expo = Convert.ToInt32(Console.ReadLine());
       for (i = 1; i \le expo; i++)
          result = result * b;
       }
       Console.WriteLine(result);
    }
  }
}
```

#### Output:

```
enter base value
2
enter exponent value
1
2
C:\Users\Administrator\source\repos\CMDExecute\CMDExecute\bin\Debug\netcorwith code 0.
To automatically close the console when debugging stops, enable Tools->Optle when debugging stops.
Press any key to close this window . . .
```

```
Program 9: write a c# program to print whether the given number is prime or not code:
```

```
using System;
namespace CMDExecute
{
  internal class Program
     static void Main(string[] args)
          int num, i, c= 0;
          Console.Write("enter a number: ");
          num = Convert.ToInt32(Console.ReadLine());
          for (i = 2; i \le num / 2; i++)
            if (num \% i == 0)
               C++;
               break;
            }
  }
          if (c == 0 \&\& num != 1)
            Console.Write("{0} is a prime number.\n", num);
            Console.Write("{0} is not a prime number\n", num);
       }
     }
```

```
enter a number: 6
6 is not a prime number

C:\Users\Administrator\source\repos\CMDExecute\CMDExecute\bin\Debug\netcoreapp3.1\CMDExecute.exe (pro with code 0.

To automatically close the console when debugging stops, enable Tools->Options->Debugging->Automatical e when debugging stops.

Press any key to close this window . . . _
```

Program 10: Write a c# program to print whether the given number is prime or not using functions

#### code:

Output:

```
using System;
namespace CMDExecute
  internal class Program
       static bool prime(int num)
          for (int i = 2; i < num; i++)
            if (num \% i == 0)
               return false;
          return true;
       }
       public static void Main()
          Console.Write("enter a number: ");
          int n = Convert.ToInt32(Console.ReadLine());
          if (prime(n))
            Console.WriteLine("{0}", n, is a prime number");
          else
            Console.WriteLine( "{0}",n, is not a prime number");
       }
    }
  }
```

# enter a number: 5 5 is a prime number. C:\Users\Administrator\source\repos\CMDExecute\CMDExecute\bin\Debuwith code 0. To automatically close the console when debugging stops, enable To le when debugging stops. Press any key to close this window . . .\_

# Program 11:Write a c# program to print prime numbers within given range code:

```
using System;
namespace CMDExecute
  internal class Program
     public static void Main()
       int num1, num2, s = 0;
       Console.Write("Enter lower range: ");
       num1 = Convert.ToInt32(Console.ReadLine());
       Console.Write("Enter upper range: ");
       num2 = Convert.ToInt32(Console.ReadLine());
       Console.WriteLine("Prime numbers between {0} and {1} are: ", num1, num2);
       for (int i = num1; i < num2; i++)
         s = 0;
          if (i > 1)
            for (int j = 2; j < i; j++)
              if (i % j == 0)
                 s = 1;
                 break;
            if (s==0)
               Console.WriteLine(i);
```

```
}
     }
   }
 }
Output:
 Microsoft Visual Studio Debug Console
Enter lower range: 2
Enter upper range: 7
Prime numbers between 2 and 7 are:
3
C:\Users\Administrator\source\repos\CMDExecute\CMDExecute\bin\Debug\netcoreapp3.
with code 0.
To automatically close the console when debugging stops, enable Tools->Options->
le when debugging stops.
Press any key to close this window . . .
```

Program 12: Write a c# program to print whether the given number is armstrong or not code:

```
using System;
namespace CMDExecute
  internal class Program
    public static void Main()
       int n, r, temp, sum = 0;
       Console.Write("Enter Your Number ");
       n = Convert.ToInt32(Console.ReadLine());
       temp = n;
       while (n > 0)
         r = n \% 10;
         sum = sum + (r * r * r);
         n = n/10;
       if (temp == sum)
         Console.WriteLine(temp + " Is A Armstrong Number");
       else
         Console.WriteLine(temp + " Is Not A Armstrong Number");
       Console.ReadLine();
  }
```

 ${\color{red}\underline{\textbf{GNDExecute}\backslash CMDExecute\backslash bin\backslash Debug\backslash netcoreapp 3.1\backslash CMDExecute.e}}$ 

```
Enter Your Number 153
153 Is A Armstrong Number
```

Program 13:write a c# program to find the armstrong number for a given range of number. code:

```
using System;
namespace CMDExecute
  internal class Program
    public static void Main()
       int num, r, sum, temp;
       int stno, enno;
       Console.Write("enter starting number of range: ");
       stno = Convert.ToInt32(Console.ReadLine());
       Console.Write("enter ending number of range: ");
       enno = Convert.ToInt32(Console.ReadLine());
       Console.Write("Armstrong numbers in given range are: ");
       for (num = stno; num <= enno; num++)</pre>
         temp = num;
         sum = 0;
         while (temp != 0)
            r = temp \% 10;
            temp = temp / 10;
            sum = sum + (r * r * r);
         if (sum == num)
            Console.Write("{0} ", num);
       Console.Write("\n");
  }
}
```

#### Output:

```
Microsoft Visual Studio Debug Console
enter starting number of range: 1
enter ending number of range: 500
Armstrong numbers in given range are: 1 153 370 371 407

C:\Users\Administrator\source\repos\CMDExecute\CMDExecute\bin\Debug\netwith code 0.
To automatically close the console when debugging stops, enable Tools->
le when debugging stops.
Press any key to close this window . . .
```

```
Program 14: write a c# program to print sum of digits of given number code:
```

```
Code:
using System;

namespace CMDExecute

{
    internal class Program
    {
        public static void Main()
        {
            int a = 258, sum = 0, b;
            while (a!= 0)
            {
                 b = a % 10;
                 sum = sum + b;
                       a = a / 10;
            }
            Console.WriteLine("The sum of the digits is: " + sum);
        }
}
```

Output:
The sum of the digits is: 15  C:\Users\Administrator\source\repos\CMDExecute\CMDExecute\bin\Debug\netcoreap ith code 0.  To automatically close the console when debugging stops, enable Tools->Option le when debugging stops.  Press any key to close this window
Program 15:write a c# program to print reverse of given number
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code:

```
using System;

namespace CMDExecute
{
   internal class Program
   {
     public static void Main()
     {
        int n, reverse = 0, rem;
        Console.Write("Enter a number: ");
        n = Convert.ToInt32(Console.ReadLine());
        while (n!= 0)
        {
            rem = n % 10;
            reverse = reverse * 10 + rem;
            n /= 10;
        }
        Console.WriteLine("Reversed Number:{0}", reverse);
    }
}
Output:
```

Microsoft Visual Studio Debug Console

Enter a number: 234 Reversed Number:432

C:\Users\Administrator\source\repos\CMDExecute\CMDExecute\bin\Debug\netcoreapp3.1\C with code 0.

To automatically close the console when debugging stops, enable Tools->Options->Deb le when debugging stops.

Press any key to close this window . . .

Program 16: write a c# program to print palindrome of given number code:

```
using System;
namespace CMDExecute
  internal class Program
    public static void Main()
       int num, x, sum = 0, y;
       Console.Write("Enter the Number: ");
       num = Convert.ToInt32(Console.ReadLine());
       y = num;
       while (num > 0)
         x = num \% 10;
         sum = (sum * 10) + x;
         num = num / 10;
       if (y == sum)
         Console.Write("Palindrome Number.");
         Console.Write("Not a Palindrome Number.");
  }
}
```

```
Enter the Number: 123454321

Palindrome Number.

C:\Users\Administrator\source\repos\CMDExecute\CMDExe

with code 0.

To automatically close the console when debugging sto

le when debugging stops.

Press any key to close this window . . .
```

# Program 17:write a C# program to print swapping numbers using third variable.

```
code:
```

```
using System;
namespace CMDExecute
{
    internal class Program
    {
        public static void Main()
        {
            int a = 5, b = 3, temp;
            temp = a;
            a = b;
            b = temp;

            Console.WriteLine("Values after swapping are:");
            Console.WriteLine("{0}", a);
            Console.WriteLine("{0}", b);
        }
}
```

#### Output:

Microsoft Visual Studio Debug Console

```
Values after swapping are:
3
5
C:\Users\Administrator\source\repos\CMDExecute\CMDExecute\bin\Debug\netcoreapp3.1\CMDExe with code 0.
To automatically close the console when debugging stops, enable Tools->Options->Debuggin le when debugging stops.
Press any key to close this window . . . _
```

Program 18: write a C# program to print swapping numbers without using third variable. code:

```
using System;
namespace CMDExecute
       internal class Program
               public static void Main()
                              int a = 10, b = 20;
                              a = a + b;
                              b = a - b;
                              a = a - b;
                              Console.WriteLine("Values after swapping are:");
                              Console.WriteLine("a=" + a);
                              Console.WriteLine("b=" + b);
                      }
               }
       }
Output:
Select Microsoft Visual Studio Debug Console
Values after swapping are:
a=20
b=10
C:\Users\Administrator\source\repos\CMDExecute\CMDExecute\bin\Debug\netcoreapp3.1\CMDExe
with code 0.
To automatically close the console when debugging stops, enable Tools->Options->Debuggir
le when debugging stops.
Press any key to close this window . . ._
```

Program 19: write a C# program to print Stars (\*) in Right angled Triangle code:

```
using System;
namespace CMDExecute
        internal class Program
                                  static void Main(string[] args)
                         int x, y;
                         Console.WriteLine("enter x value");
                         x = Convert.ToInt32(Console.ReadLine());
                         Console.WriteLine("enter y value");
                         y = Convert.ToInt32(Console.ReadLine());
                         for (x = 1; x \le 6; x++)
                                  for (y = 1; y \le x; y++)
                                           Console.Write("*");
                                  Console.WriteLine();
                         Console.ReadLine();
                 }
        }
Output:
 C:\Users\Administrator\source\repos\CMDExecute\CMDExecute\bin\Debug\netcoreapp3.1\CMDExecute.exe
enter x value
enter y value
```

Program 20: write a C# program to print Armstrong of number using functions code:

```
using System;
namespace CMDExecute
  internal class Program
       public static void Main(
         )
         int n = 15;
         Console. WriteLine (ArmstrongNum (n));\\
     static int ArmstrongNum(int n)
       int cnt = 0;
       for (int m = 1; m <= int.MaxValue; m++)</pre>
         int num = m, rem, digit = 0, res = 0;
         num = m;
         digit = (int)Math.Log10(num) + 1;
         while (num > 0)
            rem = num % 10;
            res = res + (int)Math.Pow(rem, digit);
            num = num / 10;
         if (m == res)
            cnt++;
         if (cnt == n)
            return m;
       }
       return n;
  }
```

Microsoft Visual Studio Debug Console	
8208	
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To automatically close the console when debugging stops, enable Toolsle when debugging stops.	>0
Press any key to close this window	