

DEV SANSKRITI VISHWAVIDYALAYA

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Practical File Of

C#.NET

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Signature						

1. Write a program for Armstrong Numbers

```
using System;
namespace TestConsoleApp{
       public class Armstrong
        public static void Main(string[] args)
            Console.WriteLine("A program to check the given number is Armstron
g Number or not");
            int n, m, num, d;
            double result = 0, number;
            Console.WriteLine("Enter the number of iterations: ");
            n = int.Parse(Console.ReadLine());
            for (m = 0; m < n; m++)
                Console.WriteLine("Enter the number of digits: ");
                d = int.Parse(Console.ReadLine());
               Console.WriteLine("Enter the number: ");
                num = int.Parse(Console.ReadLine());
                number = num;
               for (int i = 0; i < d; i++)
                    int rem = num % 10; //split last digit from number
                    double power = Math.Pow(rem, d);
                    result = result + power;
                    num = num / 10;
                if (number == result)
                    Console.WriteLine(number + " Armstrong number.");
                    result = 0;
                else
                    Console.WriteLine(number + " NOT an Armstrong number");
                    result = 0;
                    Console.ReadLine();
```

```
Enter the number of iterations:
5
Enter the number of digits:
5
Enter the number:
23
23 NOT an Armstrong number
```

2. Write a program to print factorial of a number

```
A program to print factorial of the given number n
Enter the value of n:
7
5040
```

3. Write a program to find the GCD of two numbers

```
using System;
namespace TestConsoleApp{
    public class GCD
        public static void Main(string[] args)
            int n, a, b, gcd = 1, temp;
            Console.WriteLine("A program to find out the GCD of two numbers");
            Console.WriteLine("Enter the number of iterations: ");
            n = int.Parse(Console.ReadLine());
            for (int i = 0; i < n; i++)
                Console.WriteLine("Enter the no.:");
                a = int.Parse(Console.ReadLine());
                b = int.Parse(Console.ReadLine());
                 for(int z = 1; z <= a && z <= b; z++)
                          if (a%z==0 && b%z==0)
                              gcd = z;
                while (b != 0)
                    temp = b;
                    b = a % b;
                    a = temp;
                gcd = a;
                Console.WriteLine("GCD = " + gcd);
                Console.ReadLine();
```

```
A program to find out the GCD of two numbers
Enter the number of iterations:
1
Enter the no.:
12
16
GCD = 4
```

4. Write a program to check if a number is prime number

```
using System;
namespace TestConsoleApp{
    public class Prime
        public static void Main(string[] args)
            Console.WriteLine("A program to check the number is prime or not."
);
            int m, n, count = 0, i, j;
            Console.WriteLine("Enter the number of iterations: ");
            j = int.Parse(Console.ReadLine());
            for (i = 0; i < j; i++)
                Console.WriteLine("Enter the number: ");
                n = int.Parse(Console.ReadLine());
                for (m = 2; m <= n / 2; m++)
                    if (n % m == 0)
                        count = count + 1;
                if (count == 0)
                    Console.WriteLine("This number " + n + " is a prime number
");
                else
                    Console.WriteLine("This number " + n + " is NOT a prime nu
mber");
                    count = 0;
```

```
A program to check the number is prime or not.
Enter the number of iterations:
1
Enter the number:
12
This number 12 is NOT a prime number
```

5. Write a program to print the fibonacci series

```
using System;
namespace TestConsoleApp{
    public class Prime
        public class Fibonacci
            public static void Main(string[] args)
                Console.WriteLine("A program to print fibonacci series of n te
rms");
                int m, n, a = 0, b = 1;
                Console.WriteLine("Enter the value: ");
                n = int.Parse(Console.ReadLine());
                Console.WriteLine("Fibonacci Serise: ");
                for (m = 1; m <= n; m++)
                    Console.WriteLine(a);
                    int next = a + b;
                    a = b;
                    b = next;
```

```
A program to print fibonacci series of n terms
Enter the value:
6
Fibonacci Serise:
0
1
2
3
5
```

6. Write a program to print the half pyramid pattern

```
A program to print half pyramid pattern
Enter the number of rows:

*

**

***

***

****

*****
```

7. Write a program to print the half pyramid pattern with numbers

```
using System;
namespace TestConsoleApp{
    public class Pattern_HalfPyramidNum
        public static void Main(string[] args)
            int space, rows;
            Console.WriteLine("A program to print half pyramid pattern of numb
ers:");
            Console.WriteLine("Enter the number of rows:");
            rows = int.Parse(Console.ReadLine());
            Console.WriteLine();
            for (int i = 1; i <= rows; i++)
                for (int num = 1; num <= i; num++)</pre>
                     Console.Write(num);
                for (space = i; space < rows; space++)</pre>
                    Console.Write(" ");
                Console.WriteLine();
                Console.ReadLine();
```

```
A program to print half pyramid pattern of numbers:
Enter the number of rows:

1
12
123
1234
```

8. Write a program to print the half pyramid inverse pattern

```
using System;
namespace TestConsoleApp{
   public class Pattern_HalfInversePyramid
        public static void Main(string[] args)
            int space, rows;
            Console.WriteLine("A program to print half pyramid inverse pattern
");
            Console.WriteLine("Enter the number of rows:");
            rows = int.Parse(Console.ReadLine());
            Console.WriteLine();
            for (int i = 0; i <= rows; i++)
                for (int star = rows; star > i; star--)
                    Console.Write("*");
                for (space = i; space < rows; space++)</pre>
                    Console.Write(" ");
                Console.WriteLine();
                Console.ReadLine();
```

9. Write a program to print the pyramid pattern

```
A program to print pyramid pattern
Enter the number of rows:

***

***

*****

******

*******
```

10. Write a program to print the inverse pyramid pattern

```
using System;
namespace TestConsoleApp{
       public class Pattern PyramidInverse
    {
        public static void Main(string[] args)
            int space, rows;
            Console.WriteLine("A program to print inverse pyramid pattern");
            Console.WriteLine("Enter the number of rows:");
            rows = int.Parse(Console.ReadLine());
            for (int i = rows; i >= 1; i--)
                for (space = i; space <= rows; space++)</pre>
                    Console.Write(" ");
                for (int star = (i * 2); star > 1; star--)
                    Console.Write("*");
                Console.WriteLine();
                Console.ReadLine();
```

11. Write a program to print the diamond pattern

```
using System;
namespace TestConsoleApp{
       public class Pattern_diamond
        public static void Main(string[] args)
            int rows, i, j, space;
            Console.Write("Enter the number of rows: ");
            rows = int.Parse(Console.ReadLine());
            for (i = 0; i <= rows / 2; i++)
                for (space = i; space < rows / 2; space++)</pre>
                    Console.Write(" ");
                for (j = 0; j <= i * 2; j++)
                    Console.Write("*");
                Console.WriteLine();
            for (i = rows / 2 + 1; i >= 1; i--)
                for (space = i; space <= rows / 2 + 1; space++)
                    Console.Write(" ");
                for (j = i * 2 - 4; j >= 0; j--)
                    Console.Write("*");
                Console.WriteLine();
                Console.ReadLine();
```

```
Enter the number of rows: 3

*

***

*
```

12. Write a program to print the Pascal's triangle

```
using System;
namespace TestConsoleApp{
      public class Pascal_Triangle
       public static int Factorial(int fact)
           for (m = 1; m <= fact; m++)
               f = f * m;
           return f;
       public static int Ncr(int a, int b)
           return Factorial(a) / (Factorial(b) * Factorial(a - b));
       public static void Main(string[] args)
           int space, rows, c;
           Console.WriteLine("A program to print the Pascal triangle.");
           Console.WriteLine("Enter the number of rows:");
           rows = int.Parse(Console.ReadLine());
           for (int i = 0; i <= rows; i++)
               for (space = i; space < rows; space++)</pre>
                   Console.Write(" ");
               for (int j = 0; j <= i; j++)
                   c = Ncr(i, j);
Console.Write(c + " ");
               Console.WriteLine();
               Console.ReadLine();
A program to print the Pascal triangle.
Enter the number of rows:
        1
     121
   1331
  14641
1 5 10 10 5 1
```

13. Write a program to compare two string without using string library functions

```
using System;
namespace TestConsoleApp
    class Program
        public class StringCompare
            public static void Main(string[] args)
                string str1, str2; int flag = 0;
                Console.WriteLine("A program to compare two strings.");
                Console.WriteLine("Enter string 1: ");
                str1 = Console.ReadLine();
                Console.WriteLine("Enter string 2: ");
                str2 = Console.ReadLine();
                for (int i = 0; i < str1.Length; i++)</pre>
                    if (str1[i] != str2[i])
                        flag = 0; break;
                    eLse
                        flag = 1;
                if (flag == 0)
                    Console.WriteLine(str1 + " and " + str2 + " are NOT equal"
);
                else if (flag == 1)
                    Console.WriteLine(str1 + " and " + str2 + " are Equal");
```

```
A program to compare two strings.

Enter string 1:

Title

Enter string 2:

Debate

Title and Debate are NOT equal
```

14. Write a program to count a total number of alphabets, digits and special characters in a string

```
using System;
namespace TestConsoleApp{
        public class StringCount
        public static void Main(string[] args)
             string str;
             int alpha = 0, digit = 0, sym = 0;
             Console.WriteLine("Enter the main string: ");
             str = Console.ReadLine();
             foreach (char s in str)
                 if (s >= 65 && s <= 90 || s >= 97 && s <= 122)
                      alpha += 1;
                 else if (s >= 48 && s <= 57)
                     digit += 1;
                 else
                      sym += 1;
             Console.WriteLine();
             Console.WriteLine("Number of Alphabets: " + alpha);
Console.WriteLine("Number of Digits: " + digit);
             Console.WriteLine("Number of Special Characters: " + sym);
             Console.ReadLine();
```

```
Enter the main string:
Pk@123

No of Alphabets: 2

No of Digits: 3

No of Special Characters: 1
```

15. Write a program to copy one string to another string

```
using System;
namespace TestConsoleApp{
    public class StringCopy
    {
        public static void Main(string[] args)
        {
            string s1, s2 = "";

            Console.WriteLine("A program to copy one string to another string"
);

        Console.WriteLine("Enter the string: ");
        s1 = Console.ReadLine();

        foreach (char a in s1)
        {
            s2 += a;
        }
        Console.WriteLine("String Copied");
        Console.WriteLine("Copied String is: " + s2);
        Console.ReadLine();
    }
}
```

```
A program to copy one string to another string
Enter the string:
Desktop
String copied
Copied string is: Desktop
```

16. Write a program to find maximum occurring character in a string

```
using System;
namespace TestConsoleApp{
        public class StringMax
        public static void Main(string[] args)
            string str;
            int[] count = new int[256];
            Console.WriteLine("Enter the string: ");
            str = Console.ReadLine();
            for (int i = 0; i < str.Length; i++)</pre>
                count[str[i]]++;
            int max = -1;
            char result = ' ';
            for (int i = 0; i < str.Length; i++)</pre>
                if (max < count[str[i]])</pre>
                    max = count[str[i]];
                    result = str[i];
            Console.WriteLine("Maximum occuring character in string: " + resul
t);
            Console.ReadLine();
```

Enter the string:

Sanjeev

Maximum occurring character in string: e

17. Write a program to check whether a given substring is present in the given string

```
using System;
namespace TestConsoleApp{
    public class StringSubString
        public static void Main(string[] args)
            string str, substr;
Console.WriteLine("A program to check whether a given substring i
s present in the given string.");
            Console.WriteLine("Enter the string: ");
            str = Console.ReadLine();
            Console.WriteLine("Enter the Sub-string");
            substr = Console.ReadLine();
            int flag = 0;
for (int i = 0; i <= str.Length - substr.Length; i++)</pre>
                 for (int j = i; j < i + substr.Length; j++)</pre>
                     flag = 1;
                     if (str[j] != substr[j - i])
                         flag = 0;
                 if (flag == 1)
                     break;
             if (flag == 1)
                 Console.WriteLine("The substring is present in given String");
                 Console.WriteLine("The substring is NOT present in given Strin
g");
                 Console.ReadLine();
```

A program to check whether a given string is present in the given string.

Enter the string:

PKumar

Enter the sub-string

Kumar

The substring is present in given String

18. Write a program for Abstraction

```
using System;
namespace TestConsoleApp{
    public class Abstraction
            public abstract void Fun();
        private class Good : Cs
            public override void Fun()
                Console.WriteLine("C# is Good");
        private class Best : Cs
            public override void Fun()
                Console.WriteLine("C# is Best");
        private class Better : Cs
            public override void Fun()
                Console.WriteLine("C# is Better");
        public class MyClass
            public static void Main()
                c = new Good();
c.Fun();
                c = new Best();
                c.Fun();
                c = new Better();
c.Fun();
                Console.ReadLine();
```

```
C# is Good
C# is Best
C# is Better
```

19. Write a program for single Inheritence

```
using System;
namespace TestConsoleApp{
    public class Inheritence
    {
        class MainClass
            public void Print()
                Console.WriteLine("vaibhav");
        class Subclass : MainClass
            void Print1()
                Console.WriteLine("Manish");
            static void Main(string[] args)
                Subclass s = new Subclass();
                s.Print();
                s.Print1();
                Console.ReadLine();
    }
```

```
Vaibhav
Manish
```

20. Write a program for Multilevel Inheritence

```
using System;
namespace TestConsoleApp{
    public class MultiInheritence
        class MainClass
            public void Print()
                Console.WriteLine("Vaibhav");
            }
        class Subclass : MainClass
            public void Print1()
                Console.WriteLine("Manish");
            }
        class Subclass2 : Subclass
            public void Print2()
                Console.WriteLine("Kushagra");
            static void Main(string[] args)
                Subclass2 s = new Subclass2();
                s.Print();
                s.Print1();
                s.Print2();
            }
```

```
Vaibhav
Manish
Kushagra
```

21. Write a program for multiple Inheritence

```
using System;
namespace TestConsoleApp{
    public class MultipleInheritence
        class MainClass
            public void Print()
                Console.WriteLine("Vaibhav");
        interface MainClass1
            void Print1();
        class Subclass: MainClass, MainClass1
            void Print2()
                Console.WriteLine("Manish");
            public void Print1()
                Console.WriteLine("Kushagra");
            static void Main(string[] args)
                Subclass s = new Subclass();
                s.Print();
                s.Print1();
                s.Print2();
                Console.ReadLine();
```

```
Vaibhav
Kushagra
Manish
```

22. Write a program for method overloading

```
using System;
namespace TestConsoleApp{
    public class MethodOverloading
        static int Sum(int a, int b)
            return a + b;
        static double Sum(double a, double b)
            return a + b;
        public static void Main()
            int sum1 = Sum(54, 74);
            double sum2 = Sum(34.84, 65.16);
            Console.WriteLine(sum1);
            Console.WriteLine(sum2);
            Console.ReadLine();
        }
```

```
128
```

23. Write a program for method overriding

```
using System;
namespace TestConsoleApp{
   public class MethodOverriding
        public class Cs
            public virtual void Fun()
                Console.WriteLine("B.Sc");
        public class MCA : Cs
            public override void Fun()
                Console.WriteLine("M.Sc");
        private class BCA : Cs
            public override void Fun()
                Console.WriteLine("B.Sc");
        }
        public static void Main()
            Cs c;
            c = new BCA();
            c.Fun();
            c = new MCA();
            c.Fun();
            Console.ReadLine();
```

```
B.Sc
M.Sc
```

24. Write a program for Interface

```
using System;
namespace TestConsoleApp{
    public class Interface
        public interface Cs
            void Fun();
        private class Bca : Cs
            public void Fun()
                Console.WriteLine("BCA");
        private class Mca : Cs
            public void Fun()
                Console.WriteLine("MCA");
        }
        public class MyClass
            public static void Main(string[] args)
                Cs c;
                c = new Bca();
                c.Fun();
                c = new Mca();
                c.Fun();
                Console.ReadLine();
            }
       }
    }
```

```
BCA
MCA
```

25. Write a program for exception handling through try and catch

Index was outside the bounds of the array.

26. Write a program for Properties

```
using System;
namespace TestConsoleApp{
    public class Properties
         public class CSharp
             public int roll;
public string name;
             private string Result;
             public CSharp(int a, string b, string c)
                  roll = a;
name = b;
Result1 = c;
             public string Result1
                  get
{
                      return Result;
                      if (value == "good" || value == "average" || value == "bad
                           Result = value;
                           Result = "Not Valid";
    class Program
         static void Main(string[] args)
```

```
Properties.CSharp c1 = new Properties.CSharp(1, "Xyz", "good");
    Properties.CSharp c2 = new Properties.CSharp(2, "Ijk", "5");
    Console.WriteLine(c1.roll + " " + c1.name + " " + c1.Result1);
    Console.WriteLine(c2.roll + " " + c2.name + " " + c2.Result1);
    Console.ReadLine();
}
```

1 Xyz good 2 ljk Not Valid

27. Write a program for Threading

```
using System;
using System.Threading;
namespace TestConsoleApp{
    class Program
        static void T1()
            Console.WriteLine("Thread1 Started");
            Thread.Sleep(5000);
            Console.WriteLine("Thread1 executing");
            Thread.Sleep(5000);
            Console.WriteLine("Thread1 executing");
        static void T2()
            Console.WriteLine("Thread2 Started");
            Thread.Sleep(5000);
            Console.WriteLine("Thread2 executing");
            Thread.Sleep(5000);
            Console.WriteLine("Thread2 executing");
        public static void Main()
            Thread t1 = new Thread(T1);
            Thread t2 = new Thread(T2);
            t1.Start();
            t2.Start();
            Console.ReadLine();
```

```
Thread1 Started
Thread2 Started
Thread2 executing
Thread1 executing
Thread2 executing
Thread1 executing
Thread1 executing
```

28. Write a program to access data from database using ADO.NET

```
using System;
namespace TestConsoleApp{
   class Program
        public static void Main(string[] args)
            string connectionString;
            MySqlConnection conn;
            connectionString = @"Data Source=localhost;Initial
Catalog=test;User ID=myuser;Password=password";
                                                            conn = new MySqlCo
nnection(connectionString);
            conn.Open();
            Console.WriteLine("Connected to Database!");
                                                                      string qu
ery = "select * from student";
            MySqlCommand cmd = new MySqlCommand(query, conn);
            MySqlDataReader dataReader = cmd.ExecuteReader();
            Console.WriteLine(dataReader.GetName(0)+"
"+dataReader.GetName(1)+"
                            "+dataReader.GetName(2));
            while (dataReader.Read())
                Console.WriteLine(dataReader.GetValue(0)+" "+
dataReader.GetValue(1)+" "+dataReader.GetValue(2));
            conn.Close();
       }
    }
```

```
Connected to Database!
Roll Name Marks
1824001 Abhijeet 7
1824003 Aman 7
1824004 Amisha 7
1824005 Amit 8
1824006 Aniket 8
Process finished with exit code 0.
```