Dev Sansakriti Vishwavidyalaya Haridwar

Assignment

On

C#.NET

Session 2020-2021

Submitted to:

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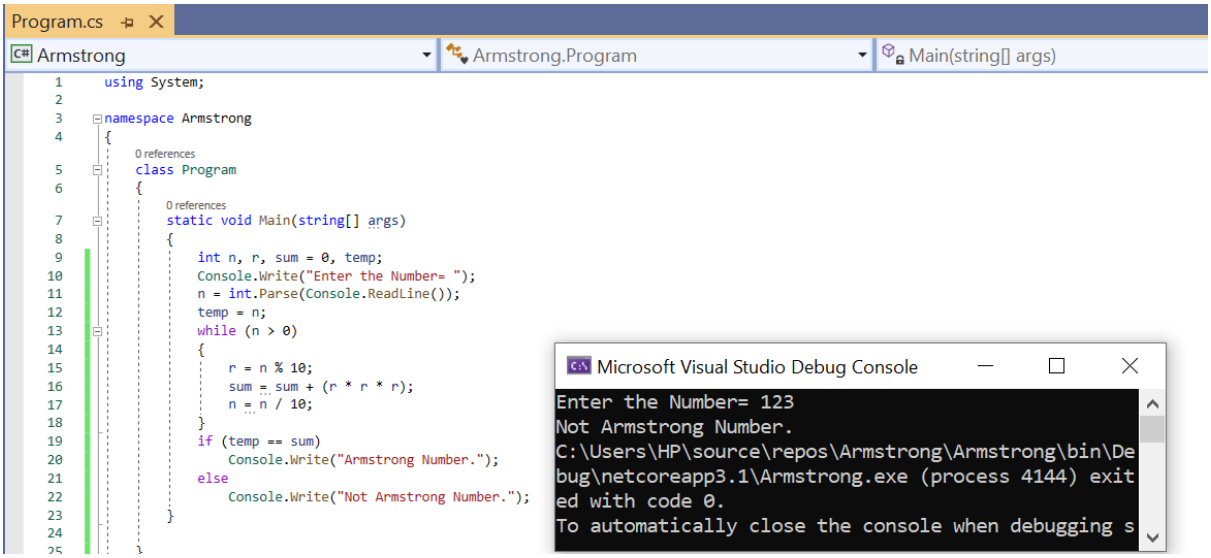
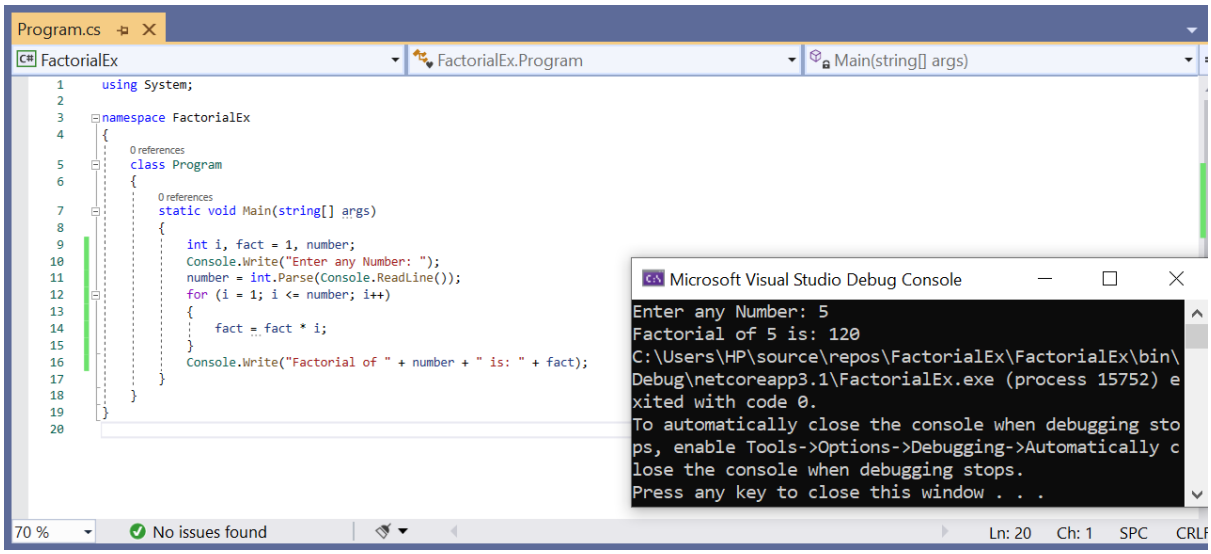
Signature……

Task 1 Write a program to check Armstrong Number



Task 2 Write a program to find Factorial of a number



Task 3 Write a program to find GCD of two number

```
0 references
static void Main(string[] args)
{
    Console.WriteLine("enter two number");
    int a = int.Parse(Console.ReadLine());
    int b = int.Parse(Console.ReadLine());
    int temp, remainder;
    if(b>a)
    {
        temp = b;
        b = a;
        a = temp;
    }
    while(a!=0&&b!=0)
    {
        remainder = a % b;
        a = b;
        b = remainder;
    }
    if(a==0&b!=0)
    {
        Console.WriteLine("GCD:" + b);
    }
    else if(a!=0&&b==0)
    {
        Console.WriteLine("GCD:" + a);
    }
```

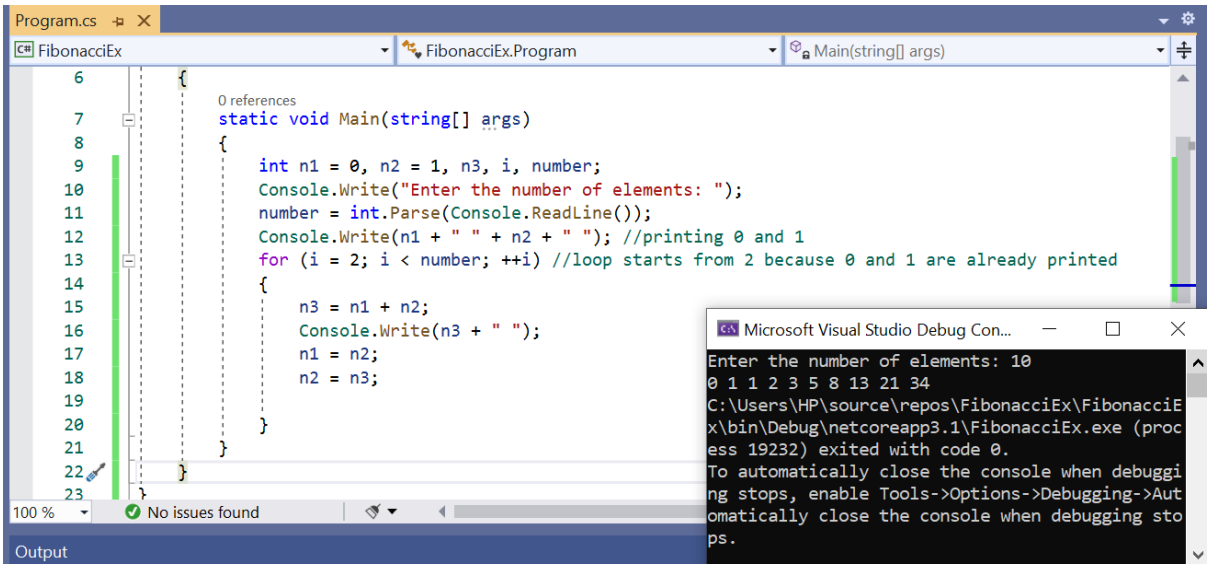
```
Microsoft Visual Studio Debug Co
enter two number
192
270
GCD:6

C:\Users\HP\source\repos\GCD
process 17092) exited with c
To automatically close the c
```

Task 4 Write a program to Prime number.

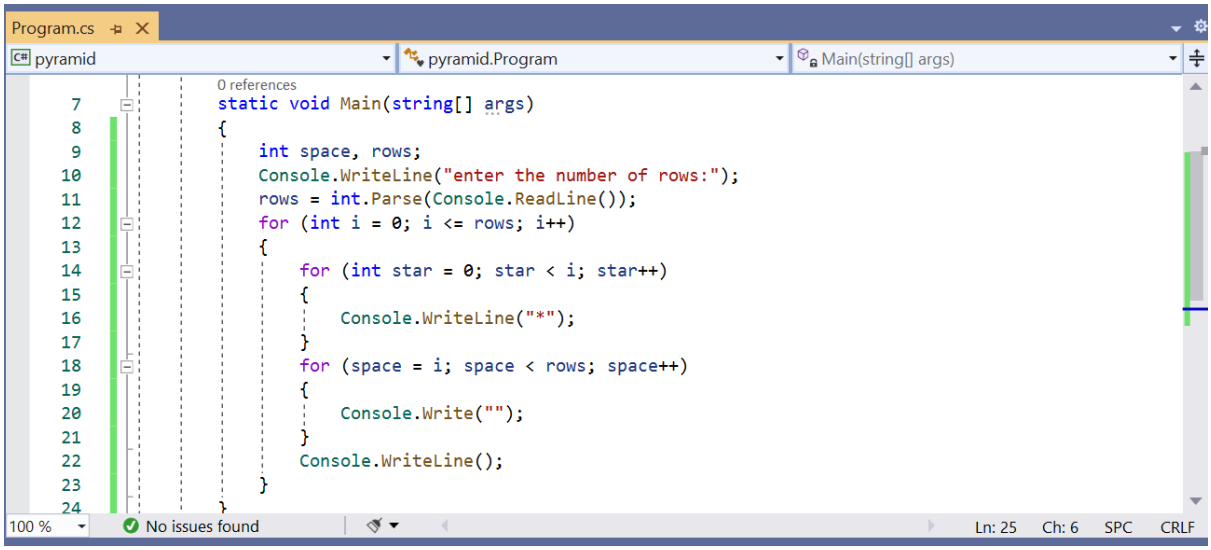
```
Program.cs
prime
prime.Program
Main(string[] args)
namespace prime
{
    0 references
    class Program
    {
        0 references
        static void Main(string[] args)
        {
            int n, i, m = 0, flag = 0;
            Console.Write("Enter the Number to check Prime: ");
            n = int.Parse(Console.ReadLine());
            m = n / 2;
            for (i = 2; i <= m; i++)
            {
                if (n % i == 0)
                {
                    Console.Write("Number is not Prime.");
                    flag = 1;
                    break;
                }
            }
            if (flag == 0)
                Console.Write("Number is Prime.");
        }
    }
70 %
No issues found
Ln: 28  Ch: 1  SPC  CRLF
```

```
Microsoft Visual Studio Debug Console
Enter the Number to check Prime: 453
Number is not Prime.
C:\Users\HP\source\repos\prime\prime\bin\Debug\netcor
eapp3.1\prime.exe (process 11872) exited with code 0.

To automatically close the console when debugging sto
ps, enable Tools->Options->Debugging->Automatically c
```

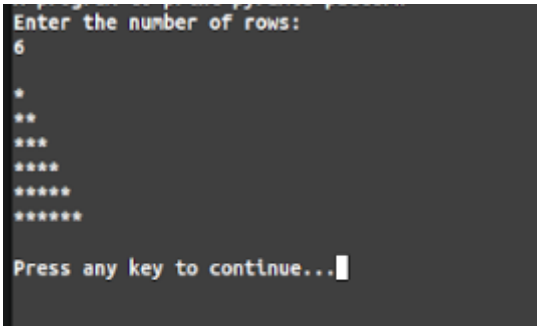
Task 5 Write a program to print Fibonacci series



Task 6 Write a program to print the half pyramid pattern.



Output:-



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

```
7pyramidpattermnumber | _7pyramidpattermnumber.Program | Main(string[] args)
0 references
static void Main(string[] args)
{
        int num;
        Console.WriteLine("enter the number of rows");
        num = Convert.ToInt32(Console.ReadLine());

        for(int i=1;i<=num;i++)
        {
            for(int j=1;j<=i;j++)
            {
                Console.Write(j+ " ");
            }
            Console.WriteLine();
        }
        Console.ReadKey();
}
}
No issues found
```

Output:-

```
Microsoft Visual Studio Debug Console
enter the number of rows
5
1
1 2
1 2 3
1 2 3 4
1 2 3 4 5

C:\Users\HP\source\repos\7pyramidpattermnumber\7pyramidpattermnumber\bin\Debu
g\netcoreapp3.1\7pyramidpattermnumber.exe (process 6848) exited with code 0.
To automatically close the console when debugging stops, enable Tools->Option
s->Debugging->Automatically close the console when debugging stops.
Press any key to close this window . . .
```

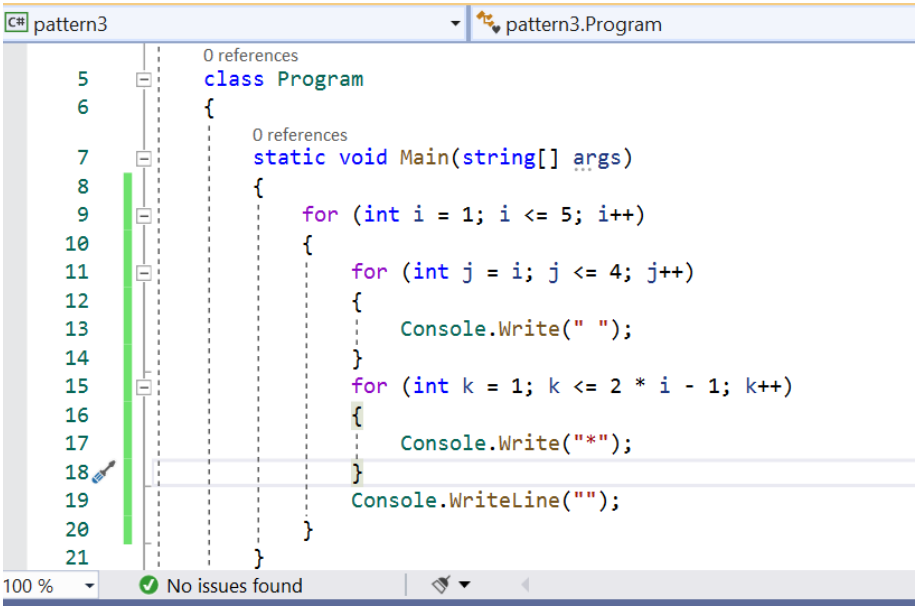
Task 8 Write a program to print the half pyramid inverse pattern

```
pattern1                                   pattern1.Program
    {
        0 references
        static void Main(string[] args)
        {
            for (int i = 1; i <= 5; i++)
            {
                for (int j = i; j <= 5; j++)
                {
                    Console.Write("*");
                }
                Console.WriteLine(" ");
            }
            Console.ReadLine();
        }
    }
}

0 %   No issues found
```

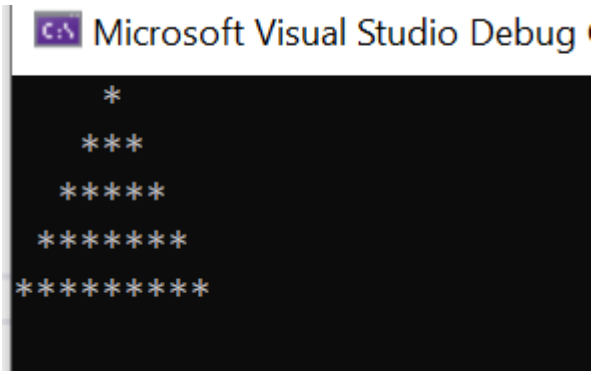
Output:-

```
C:\Users\HP\source\repos\pattern1\pattern1
*****
****
***
**
*
```

Task 9 Write a program to print pyramid pattern.



Output:-



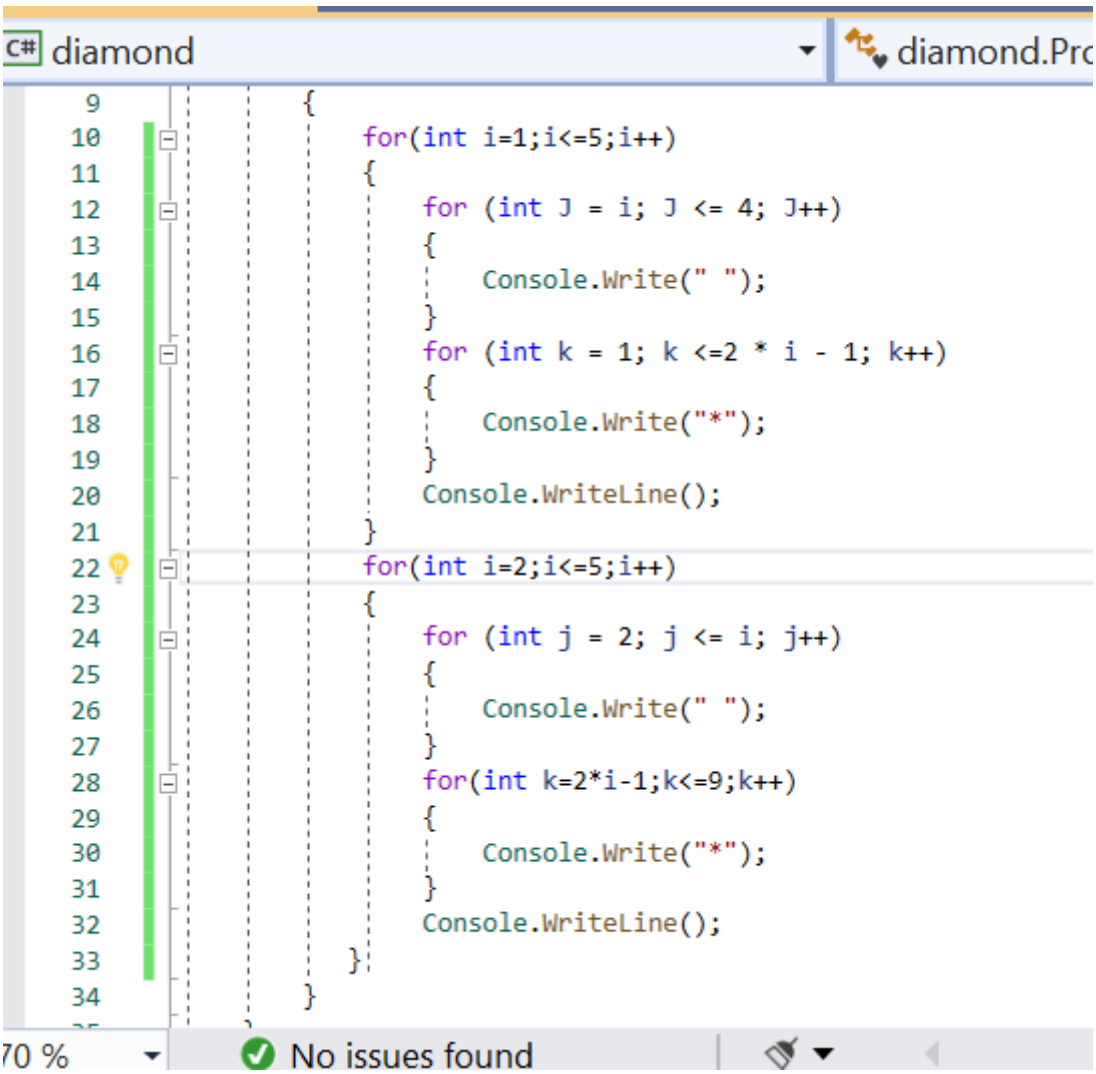
Task 10 Write a program to print inverse pyramid pattern.

```
pattern4                                    pattern4.Program
                0 references
    8           static void Main(string[] args)
    9           {
   10               for (int i = 1; i <= 5; i++)
   11               {
   12                   for (int j = 2; j <= i; j++)
   13                   {
   14                       Console.Write(" ");
   15                   }
   16                   for (int k = 2 * i - 1; k <= 9; k++)
   17                   {
   18                       Console.Write("*");
   19                   }
   20                   Console.WriteLine("");
   21               }
   22           }
   23       }
   24   }
   25
00 %    No issues found
```

Output:-

```
Microsoft Visual Studio Debug
*********
 *******
  *****
   ***
    *
```

Task 11 Write a program for print the diamond pattern.



```
{
    for(int i=1;i<=5;i++)
    {
        for (int J = i; J <= 4; J++)
        {
            Console.Write(" ");
        }
        for (int k = 1; k <=2 * i - 1; k++)
        {
            Console.Write("*");
        }
        Console.WriteLine();
    }
    for(int i=2;i<=5;i++)
    {
        for (int j = 2; j <= i; j++)
        {
            Console.Write(" ");
        }
        for(int k=2*i-1;k<=9;k++)
        {
            Console.Write("*");
        }
        Console.WriteLine();
    }
}
```

Output:-

```
Microsoft Visual Studio De
    *
   ***
  *****
 *******
*********
 *******
  *****
   ***
    *

C:\Users\HP\source\repo
To automatically close
```

Task 12 Write the program for Pascal's triangle.

```
Pascal | Pascal.Program | Main(string[] args)
        {
            Console.WriteLine("enter the number of rows");
            int n = int.Parse(Console.ReadLine());
            for(int i=0;i<n;i++)
            {
                for(int p=1;p<=n-i;p++)
                {
                    Console.Write(" ");
                }
                int k = 1;
                for(int j=0;j<=i;j++)
                {
                    Console.Write(" " + k);
                    k = k * (i - j) / (j + 1);
                }
                Console.WriteLine();
            }
        }
```

100 % No issues found

Output

Microsoft Visual Studio Debug Console

```
enter the number of rows
5
     1
    1 1
   1 2 1
  1 3 3 1
 1 4 6 4 1

C:\Users\HP\source\repos\Pascal\Pascal
To automatically close the console whe
le when debugging stops.
```

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

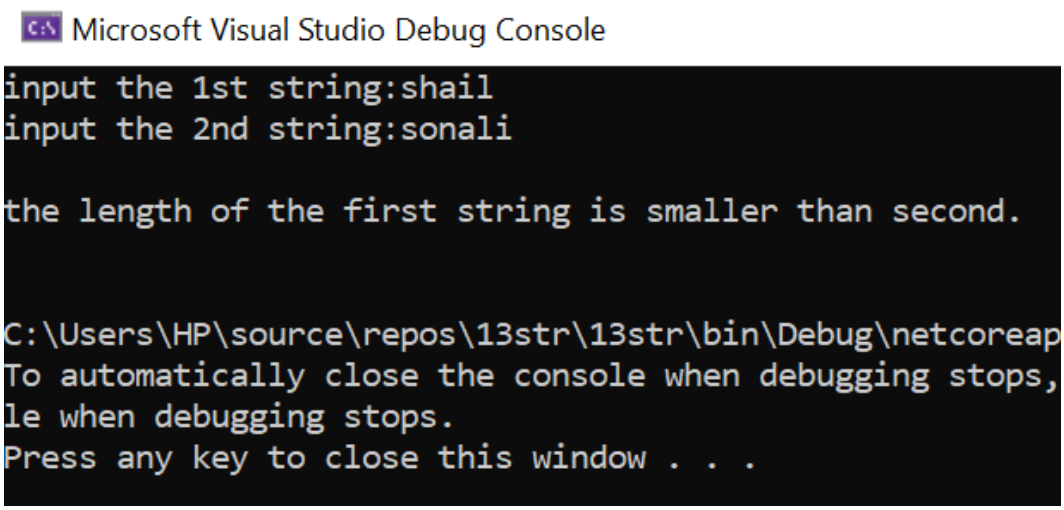
```
using System;
0 references
public class _13str
{
    0 references
    public static void Main()
    {
        string str1, str2;
        int flg = 0;
        int i = 0, l1, l2, yn = 0;
        Console.Write("input the 1st string:");
        str1 = Console.ReadLine();
        Console.Write("input the 2nd string:");
        str2 = Console.ReadLine();
        l1 = str1.Length;
        l2 = str2.Length;
        if(l1==l2)
        {
            for(i=0;i<l1;i++)
```

100 % No issues found

```
        if(l1==l2)
        {
            for(i=0;i<l1;i++)
            {
                if(str1[i]!=str2[i])
                {
                    yn = 1;
                    i = 11;
                }
            }
        }
         if(l1==l2)
        flg=0;
        else if(l1>l2)
        flg=1;
```

100 % No issues found

Output:-


Microsoft Visual Studio Debug Console
input the 1st string:shail
input the 2nd string:sonali
the length of the first string is smaller than second.
C:\Users\HP\source\repos\13str\13str\bin\Debug\netcoreap
To automatically close the console when debugging stops,
le when debugging stops.
Press any key to close this window . . .

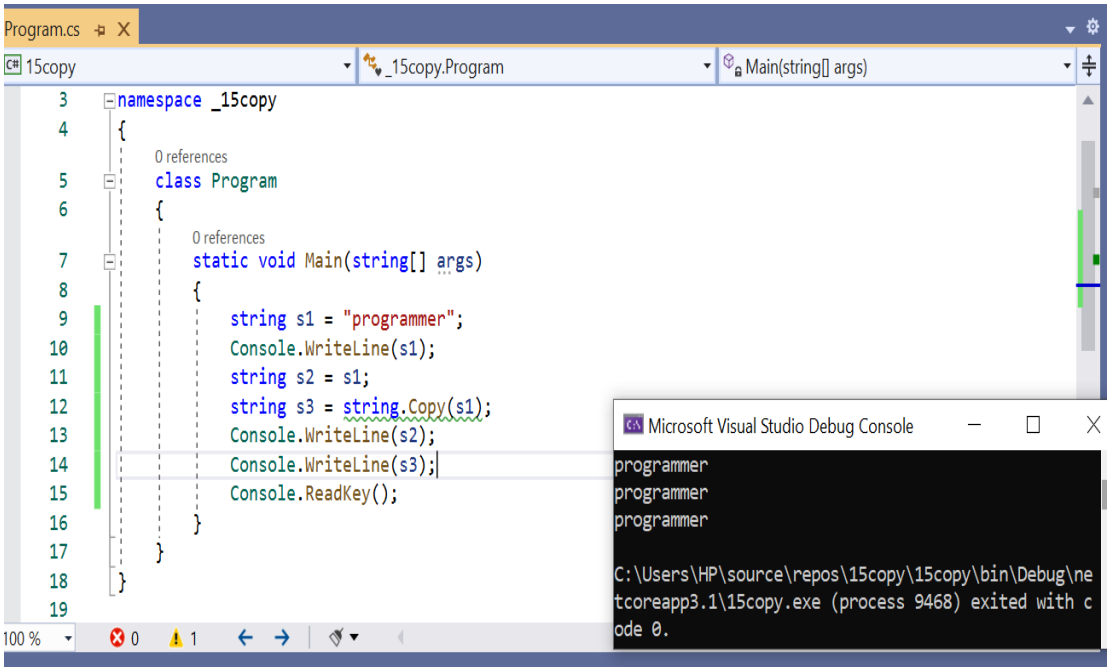
Task 14 Write a program to count a total number of alphabets, digits and and special characters in a string.

```
counts                          Exercise7                    Main()
using System;
0 references
public class Exercise7
{
    0 references
    public static void Main()
    {
        string str;
        int alp, digit, splch, i, l;
        alp = digit = splch = i = 0;
        Console.Write("Input the string : ");
        str = Console.ReadLine();
        l = str.Length;

        while (i < l)
        {
            if ((str[i] >= 'a' && str[i] <= 'z') || (str[i] >= 'A' && str[i] <= 'Z'))
            {
                alp++;
            }
            else if (str[i] >= '0' && str[i] <= '9')
            {
                digit++;
            }
            else
            {
                splch++;
            }

            i++;
        }

        Console.Write("Number of Alphabets in the string is : {0}\n", alp);
        Console.Write("Number of Digits in the string is : {0}\n", digit);
        Console.Write("Number of Special characters in the string is : {0}\n\n", splch);
    }
}
100 %   No issues found                                   Ln: 13  Ch: 9  SPC  CRLF
```

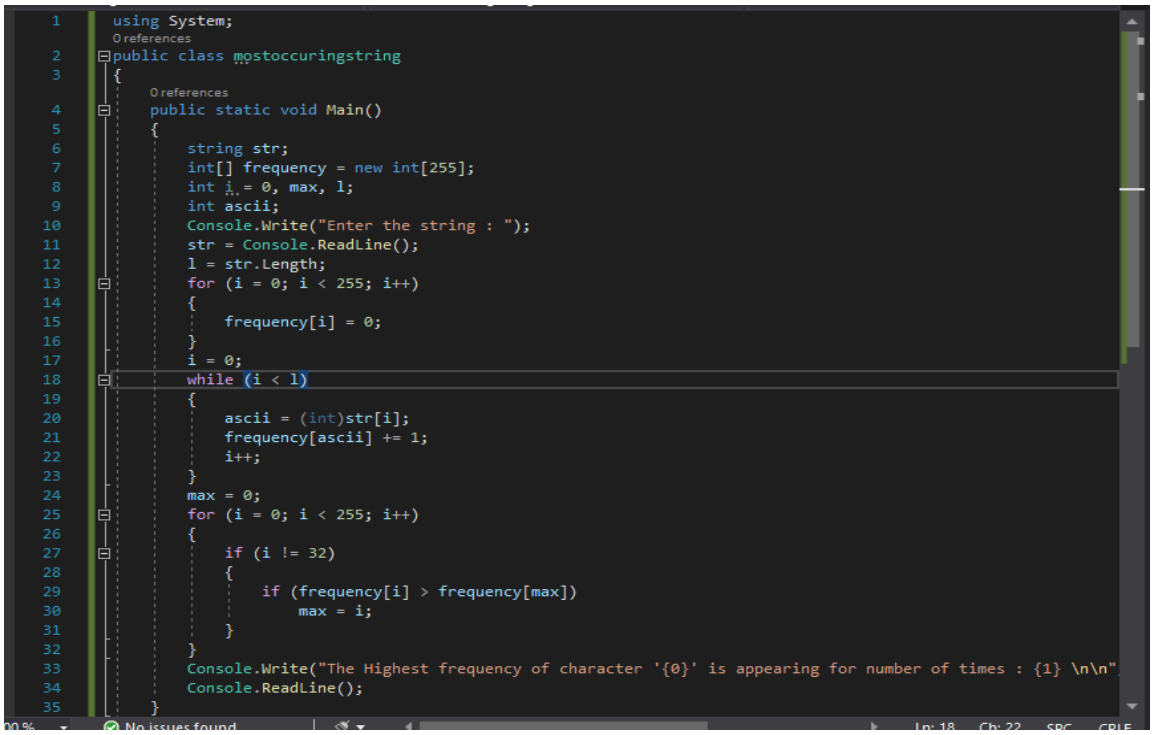
Microsoft Visual Studio Debug Console

```
Input the string : sajal@123
Number of Alphabets in the string is : 5
Number of Digits in the string is : 3
Number of Special characters in the string is : 1
```

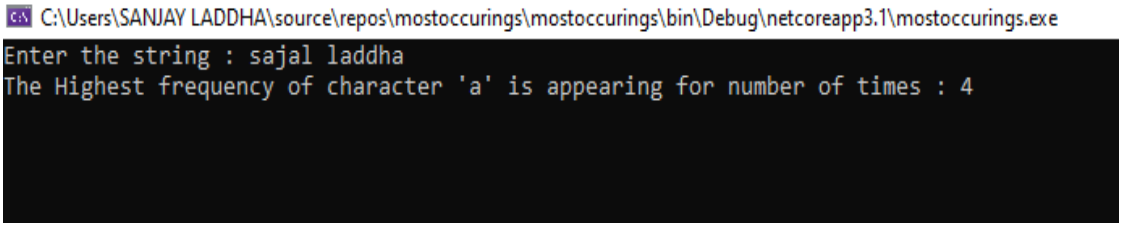
Task 15 Write a program to copy one string to another string.



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



Output:-



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

```
checksubstring                    checksubstring                    Main()
1   using System;
    0 references
2   public class checksubstring
3   {
        0 references
4       public static void Main()
5       {
6           string str1, str2;
7           bool m;
8
9
10          Console.Write("Input the string : ");
11          str1 = Console.ReadLine();
12
13          Console.Write("Input the substring to  search : ");
14          str2 = Console.ReadLine();
15          m = str1.Contains(str2); // boolean value tapped hare
16          if (m) // check boolean value is true or false.
17              Console.Write("The substring exists in the string.\n\n");
18          else
19              Console.Write("The substring is not exists in the string. \n\n");
20      }
21  }
```

Output:-

(substring exists)

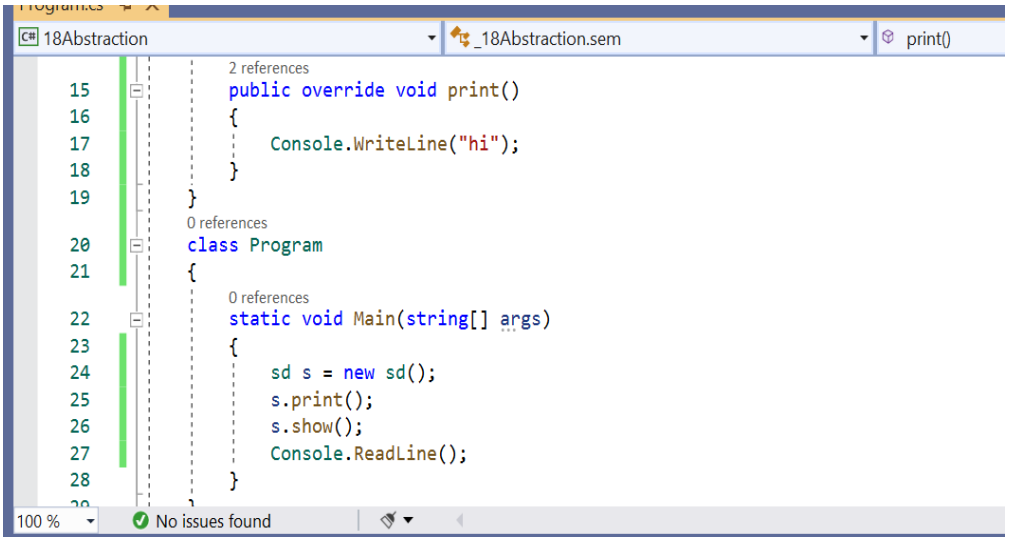
```
Microsoft Visual Studio Debug Console
Input the string : sajal sanjay laddha
Input the substring to  search : sanjay
The substring exists in the string.

C:\Users\SANJAY LADDHA\source\repos\checksubstring\checksubstring\bin\Debug\netcoreapp3.1\checksubstring.exe (process 13264) exited with code 0.
```

(substring doesn’t exists)

```
Microsoft Visual Studio Debug Console
Input the string : sajal laddha
Input the substring to  search : sanjaY
The substring is not exists in the string.


C:\Users\SANJAY LADDHA\source\repos\checksubstring\check
```

Task 18 Write a program for Abstraction.

```
gram.cs
18Abstraction                    _18Abstraction.sem                print()
3   namespace _18Abstraction
4   {
        1 reference
5       public abstract class sem // syntex for declaration
6       {
            1 reference
7           public void show()
8           {
9               Console.WriteLine("hello");
10          }
            2 references
11          public abstract void print();
12      }
        2 references
13      class sd : sem
14      {
            2 references
15          public override void print()
```



```
18Abstraction                    _18Abstraction.sem                print()
            2 references
15          public override void print()
16          {
17              Console.WriteLine("hi");
18          }
19      }
        0 references
20      class Program
21      {
            0 references
22          static void Main(string[] args)
23          {
24              sd s = new sd();
25              s.print();
26              s.show();
27              Console.ReadLine();
28          }
```

Output:-

Task 19 Write a program for single inheritance.

```
singleinheritance                    TestInheritance2                    Main(strin
1   using System;
    1 reference
2   public class Animal
3   {
        1 reference
4       public void eat() { Console.WriteLine("Eating..."); }
5   }
    2 references
6   public class Dog : Animal
7   {
        1 reference
8       public void bark() { Console.WriteLine("Barking..."); }
9   }
    0 references
10  class TestInheritance2
11  {
        0 references
12      public static void Main(string[] args)
13      {
14          Dog d1 = new Dog();
15          d1.eat();
16          d1.bark();
17      }
18  }
```

Output:-

```
Microsoft Visual Studio Debug Console
Eating...
Barking...

C:\Users\ritance\source\repos\singleinheritance\singleinheritance\bin\De
To automatically close the console when debugging stops, enable Tools->Options
Press any key to close this window . . .
```

Task 20 Write a program for multilevel inharitence.

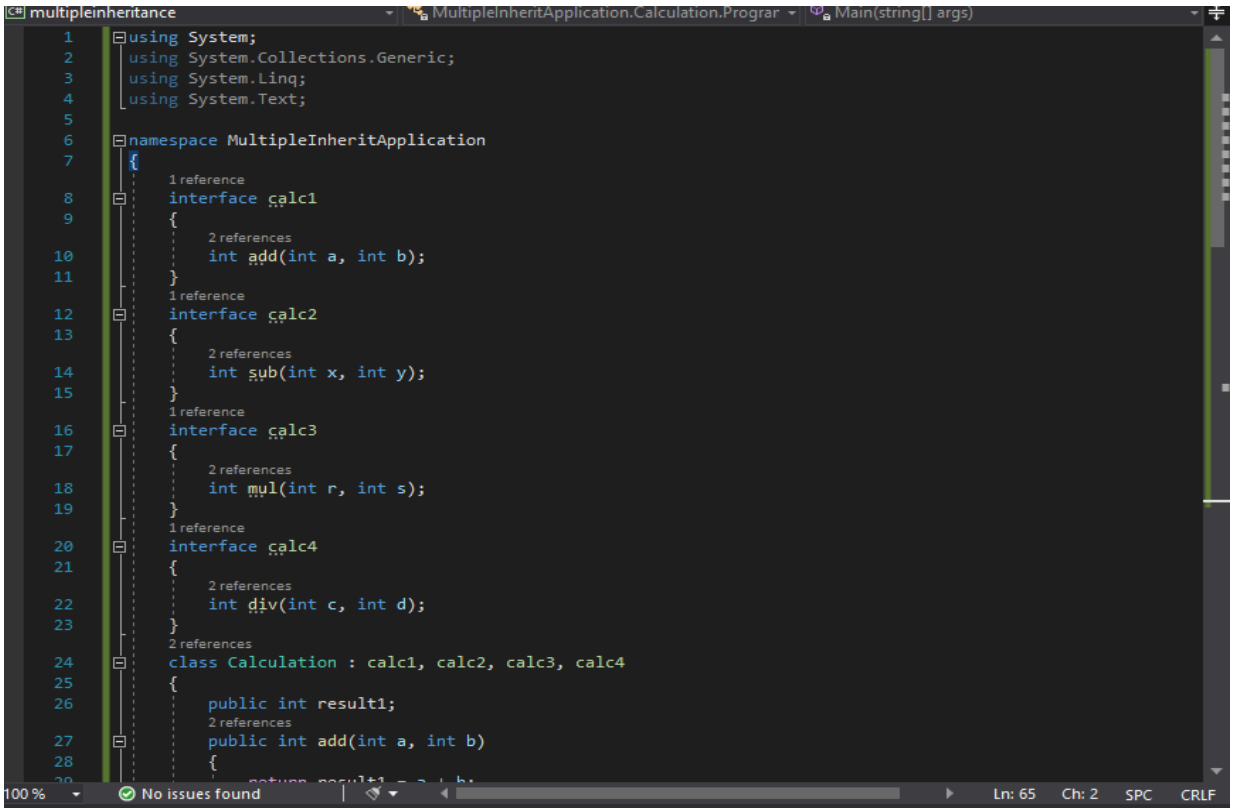
```
using System;

namespace multilevelinheritance
{
    2 references
    class Son : Father
    {
        1 reference
        public void DisplayTwo()
        {
            Console.WriteLine("Son.. ");
        }
        0 references
        static void Main(string[] args)
        {
            Son s = new Son();
            s.Display();
            s.DisplayOne();
            s.DisplayTwo();
            Console.Read();
        }
    }
    1 reference
    class Grandfather
    {
        1 reference
        public void Display()
        {
            Console.WriteLine("Grandfather...");
        }
    }
    1 reference
    class Father : Grandfather
    {
        1 reference
        public void DisplayOne()
```

```
            Console.Read();
        }
    }
    1 reference
    class Grandfather
    {
        1 reference
        public void Display()
        {
            Console.WriteLine("Grandfather...");
        }
    }
    1 reference
    class Father : Grandfather
    {
        1 reference
        public void DisplayOne()
        {
            Console.WriteLine("Father...");
        }
    }
}
```

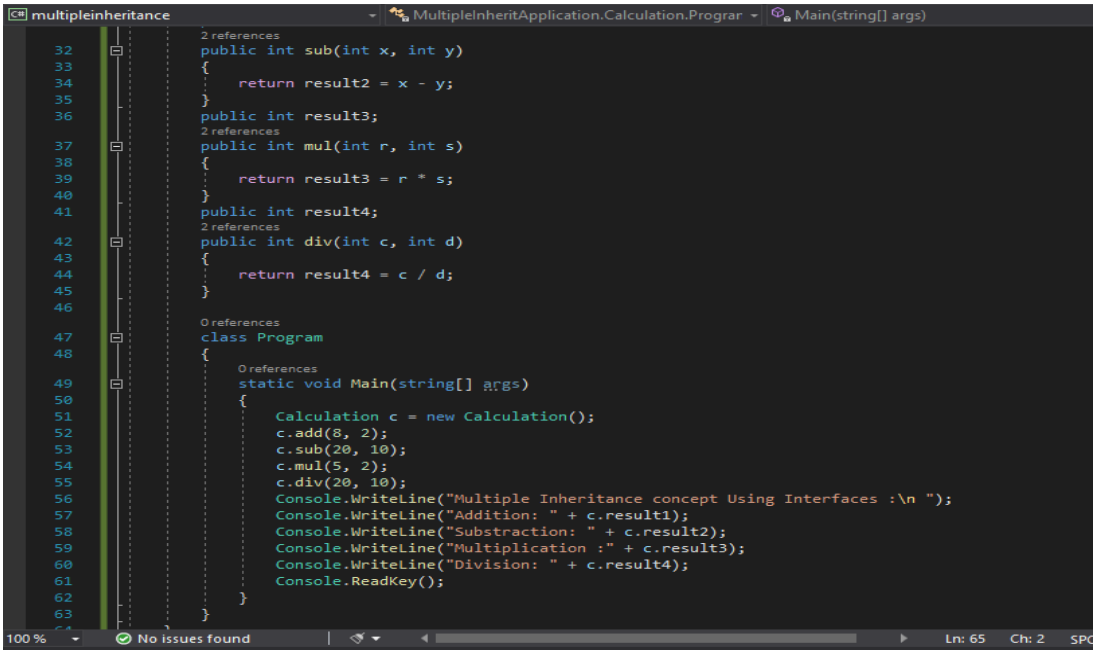
Output:-

```
Grandfather...
Father...
Son..
```

Task 21 Write a program for multiple inharitence.



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

namespace MultipleInheritApplication
{
    interface calc1
    {
        int add(int a, int b);
    }
    interface calc2
    {
        int sub(int x, int y);
    }
    interface calc3
    {
        int mul(int r, int s);
    }
    interface calc4
    {
        int div(int c, int d);
    }
    class Calculation : calc1, calc2, calc3, calc4
    {
        public int result1;
        public int add(int a, int b)
        {
```



```
        public int sub(int x, int y)
        {
            return result2 = x - y;
        }
        public int result3;
        public int mul(int r, int s)
        {
            return result3 = r * s;
        }
        public int result4;
        public int div(int c, int d)
        {
            return result4 = c / d;
        }

        class Program
        {
            static void Main(string[] args)
            {
                Calculation c = new Calculation();
                c.add(8, 2);
                c.sub(20, 10);
                c.mul(5, 2);
                c.div(20, 10);
                Console.WriteLine("Multiple Inheritance concept Using Interfaces :\n ");
                Console.WriteLine("Addition: " + c.result1);
                Console.WriteLine("Substraction: " + c.result2);
                Console.WriteLine("Multiplication :" + c.result3);
                Console.WriteLine("Division: " + c.result4);
                Console.ReadKey();
            }
        }
```

Output:-

```
Microsoft Visual Studio Debug Console
Multiple Inheritance concept Using Interfaces :

Addition: 10
Substraction: 10
Multiplication :10
Division: 2

C:tionrs\9DHA\e\rep\9DHAource\repos\multipleinheritance\multipleinheritar
To automatsally olots the console when debugging stops, enable Tools->Op
Press any key to close this window . . .
```

Task 22 Write a program for method overloading .

```
methodoverloading | MyApplication.Program | PlusMethod(int x, int y)
1   using System;
2
3   namespace MyApplication
4   {
        0 references
5       class Program
6       {
            1 reference
7           static int PlusMethod(int x, int y)
8           {
9               return x + y;
10          }
11
            1 reference
12          static double PlusMethod(double x, double y)
13          {
14              return x + y;
15          }
16
            0 references
17          static void Main(string[] args)
18          {
19              int myNum1 = PlusMethod(8, 5);
20              double myNum2 = PlusMethod(4.3, 6.26);
21              Console.WriteLine("Int: " + myNum1);
22              Console.WriteLine("Double: " + myNum2);
23          }
24      }
25  }
26
```

Output:-

```
Microsoft Visual Studio Debug Console
Int: 13
Double: 10.559999999999999

C:\Users\obodw z    enibsource\repos\methodoverloading\methodoverloading\bin\Debug\netcoreapp3.1\methodoverloading.exe (proc
To automati  ly  se the console when debugging stops, enable Tools->Options->Debugging->Automatically close the console
Press any key to close this window . . .
```

Task 23 Write a program for method overriding.

```
overriding                          TestOverriding                    Main()
1   using System;
    1 reference
2   public class Animal
3   {
        2 references
4       public virtual void eat()
5       {
6           Console.WriteLine("Eating...");
7       }
8   }
    2 references
9   public class Dog : Animal
10  {
        2 references
11      public override void eat()
12      {
13          Console.WriteLine("Eating bread...");
14      }
15  }
    0 references
16  public class TestOverriding
17  {
        0 references
18      public static void Main()
19      {
20          Dog d = new Dog();
21          d.eat();
22      }
23  }
```

Output:-

```
Microsoft Visual Studio Debug Console
Eating bread...

C:\Userserridn\Debreap\source\repos\overriding\overriding\bin\Debug\netcoreapp3.1\overriding.exe (proc
To automa deable ctioe the console when debugging stops, enable Tools->Options->Debugging->Automatical
Press any key to close this window . . .
```

Task 24 Write a program for interface.

```
using System;

namespace MyApplication
{
    1 reference
    interface IFirstInterface
    {
        2 references
        void myMethod(); // interface method
    }
    1 reference
    interface ISecondInterface
    {
        2 references
        void myOtherMethod(); // interface method
    }
    2 references
    class DemoClass : IFirstInterface, ISecondInterface
    {
        2 references
        public void myMethod()
        {
            Console.WriteLine("Some text..");
        }
        2 references
        public void myOtherMethod()
        {
            Console.WriteLine("Some other text...");
        }
    }
    0 references
    class Program
    {
        0 references
        static void Main(string[] args)
        {
            DemoClass myObj = new DemoClass();
            myObj.myMethod();
            myObj.myOtherMethod();
        }
    }
}
```

Output:-

```
Microsoft Visual Studio Debug Console
Some text..
Some other text...

C:\Users\epos\sourCMA2/source\repos\interfaces\interfaces\bin\Debug\netcoreapp3.1\interfaces.exe (process 14668) exit
To automatically close the console when debugging stops, enable Tools->Options->Debugging->Automatically close the co
Press any key to close this window . . .
```

Task 25 Write a program for exception handing through try and catch.

```
tryandcatch                                          tryandcatch.Program
using System;

namespace tryandcatch
{
    0 references
    class Program
    {
        0 references
        static void Main(string[] args)
        {
            try
            {
                int[] myNumbers = { 1, 2, 3 };
                Console.WriteLine(myNumbers[10]);
            }
            catch (Exception e)
            {
                Console.WriteLine("Something went wrong.");
            }
        }
    }
}
```

Output:-

```
Microsoft Visual Studio Debug Console
Something went wrong.

C:\Users\dcat...\Drce\source\repos\tryandcatch\tryandcatch\bin\Debug\netcoreapp3.1\tryandcat
To automatically close the console when debugging stops, enable Tools->Options->Debugging->Au
Press any key to close this window . . .
```

Task 26 Write a program for Properties.

```
properties                    TestEmployee                    Main(string[] args)
using System;
    2 references
public class Employee
{
    private string name;

    2 references
    public string Name
    {
        get
        {
            return name;
        }
        set
        {
            name = value;
        }
    }
}
    0 references
class TestEmployee{
    0 references
    public static void Main(string[] args)
    {
        Employee e1 = new Employee();
        e1.Name = "sajal laddha";
        Console.WriteLine("Employee Name: " + e1.Name);

    }
}
```

Output:-

```
Microsoft Visual Studio Debug Console
Employee Name: sajal laddha

C:\Users\ourc\A\sou\rtisource\repos\properties\properties\bin\Debug\netcoreapp3.1\properties.exe (process 14764) exited with code 0.
To automa.cally tlose the console when debugging stops, enable Tools->Options->Debugging->Automatically close the console when debugging stops.
Press any key to close this window . . .
```

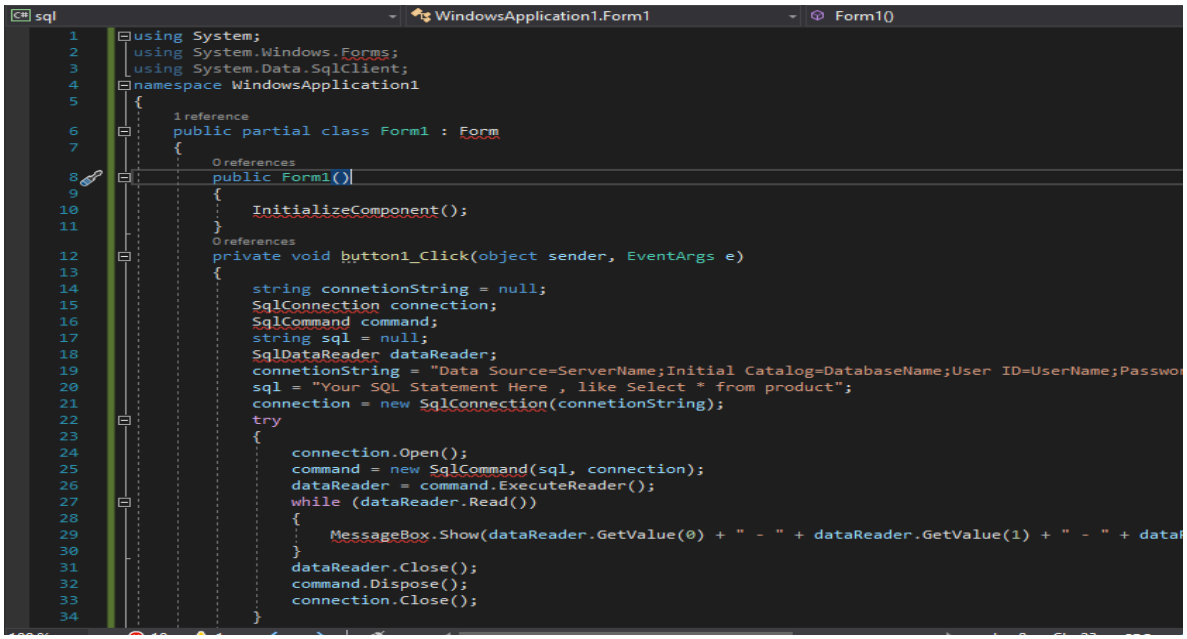
Task 27 Write a program for Threading.

```
threading                GFG                mythread()
1   using System;
2   using System.Threading;
3
    0 references
4   class GFG
5   {
6
7       // Main method
        0 references
8       static void Main(string[] args)
9       {
10
11          // Creating and initializing thread
12          Thread thr = new Thread(mythread);
13          thr.Start();
14          Console.WriteLine("Main Thread Ends!!");
15      }
16
17      // Static method
        1 reference
18      static void mythread()
19      {
20          for (int c = 0; c <= 3; c++)
21          {
22
23              Console.WriteLine("mythread is in progress!!");
24              Thread.Sleep(1000);
25          }
26          Console.WriteLine("mythread ends!!");
27      }
28  }
```

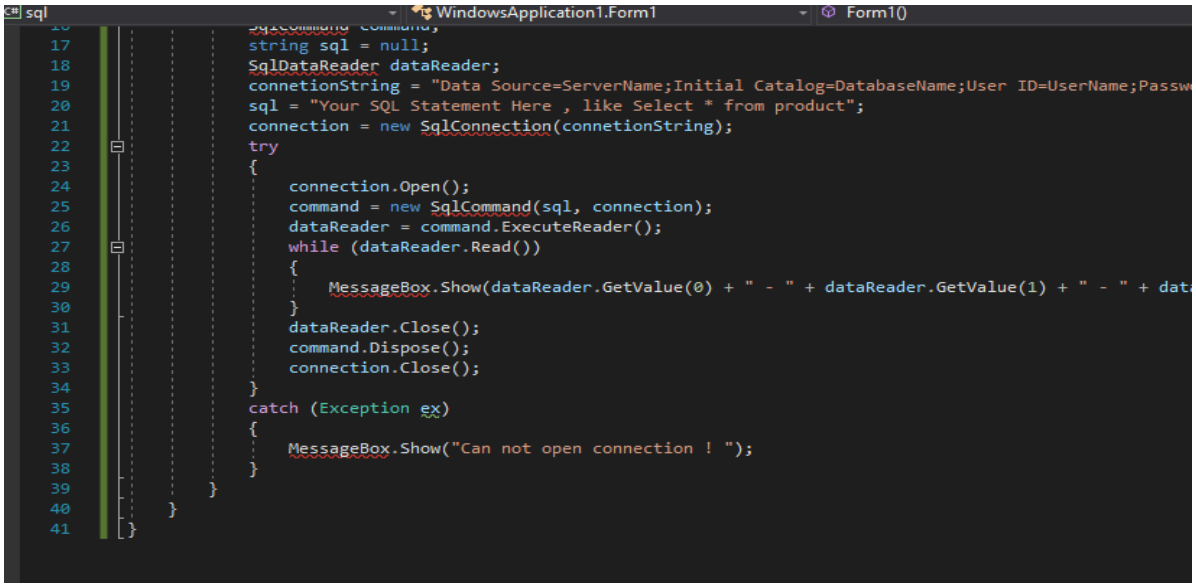
Output:-

```
Microsoft Visual Studio Debug Console
Main Thread Ends!!
mythread is in progress!!
mythread is in progress!!
mythread is in progress!!
mythread is in progress!!
mythread ends!!

C:\Users\ourc\AH      HA\source\repos\threading\threading\bin\Debug\netcoreapp3.1\threading.exe (process 149
To autome cca?ly close the console when debugging stops, enable Tools->Options->Debugging->Automatically c
Press any key to close this window . . .
```

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



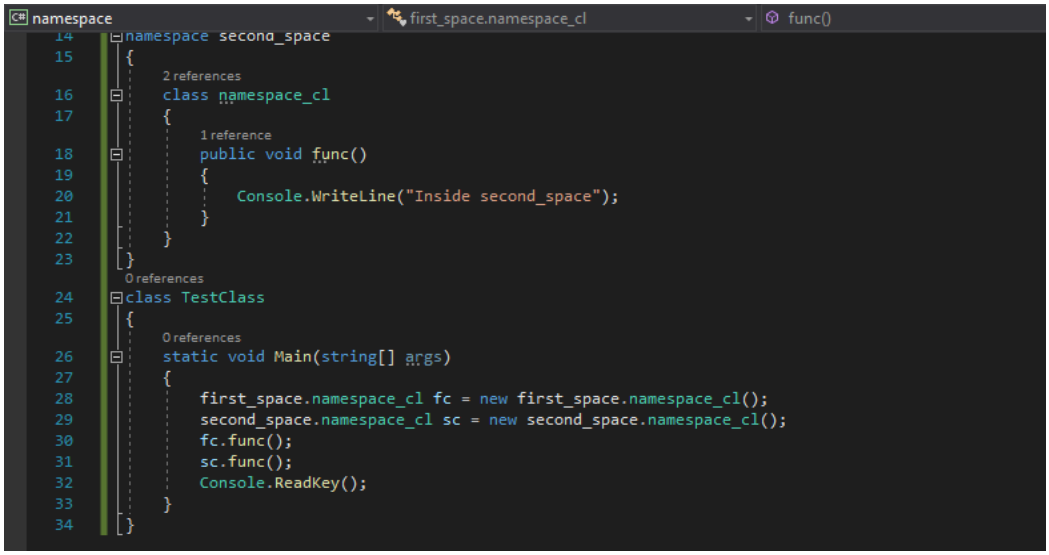
```
sql                                  WindowsApplication1.Form1          Form1()
using System;
using System.Windows.Forms;
using System.Data.SqlClient;
namespace WindowsApplication1
{
    1 reference
    public partial class Form1 : Form
    {
        0 references
        public Form1()
        {
            InitializeComponent();
        }
        0 references
        private void button1_Click(object sender, EventArgs e)
        {
            string connetionString = null;
            SqlConnection connection;
            SqlCommand command;
            string sql = null;
            SqlDataReader dataReader;
            connetionString = "Data Source=ServerName;Initial Catalog=DatabaseName;User ID=UserName;Passwo
            sql = "Your SQL Statement Here , like Select * from product";
            connection = new SqlConnection(connetionString);
            try
            {
                connection.Open();
                command = new SqlCommand(sql, connection);
                dataReader = command.ExecuteReader();
                while (dataReader.Read())
                {
                    MessageBox.Show(dataReader.GetValue(0) + " - " + dataReader.GetValue(1) + " - " + data
                }
                dataReader.Close();
                command.Dispose();
                connection.Close();
            }
```



```
sql                                  WindowsApplication1.Form1          Form1()
            string sql = null;
            SqlDataReader dataReader;
            connetionString = "Data Source=ServerName;Initial Catalog=DatabaseName;User ID=UserName;Passw
            sql = "Your SQL Statement Here , like Select * from product";
            connection = new SqlConnection(connetionString);
            try
            {
                connection.Open();
                command = new SqlCommand(sql, connection);
                dataReader = command.ExecuteReader();
                while (dataReader.Read())
                {
                    MessageBox.Show(dataReader.GetValue(0) + " - " + dataReader.GetValue(1) + " - " + dat
                }
                dataReader.Close();
                command.Dispose();
                connection.Close();
            }
            catch (Exception ex)
            {
                MessageBox.Show("Can not open connection ! ");
            }
        }
    }
}
```

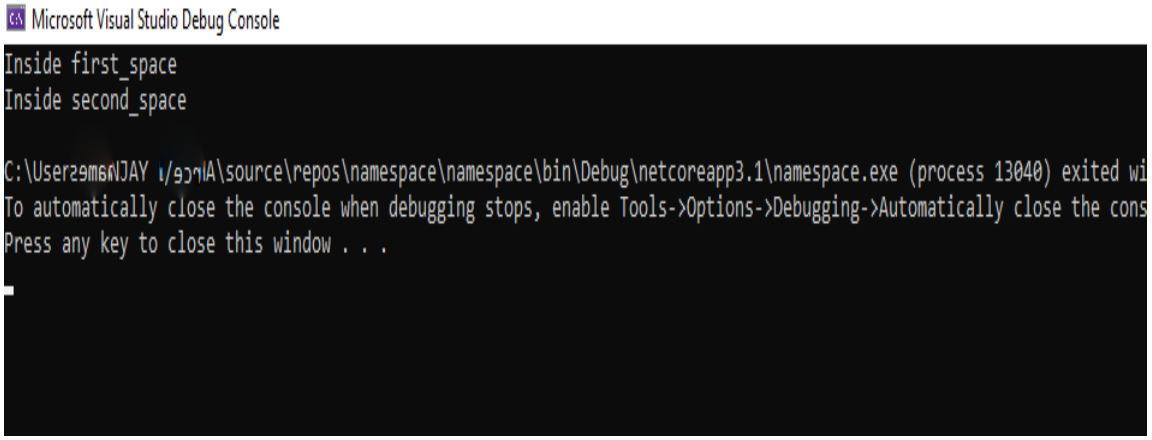
Task 29 Write a programme using namespace.

```
using System;

namespace first_space
{
    2 references
    class namespace_cl
    {
        1 reference
        public void func()
        {
            Console.WriteLine("Inside first_space");
        }
    }
}
namespace second_space
{
    2 references
    class namespace_cl
    {
        1 reference
        public void func()
        {
            Console.WriteLine("Inside second_space");
        }
    }
}
0 references
class TestClass
{
    0 references
    static void Main(string[] args)
    {
        first_space.namespace_cl fc = new first_space.namespace_cl();
        second_space.namespace_cl sc = new second_space.namespace_cl();
        fc.func();
        sc.func();
        Console.ReadKey();
    }
}
```



```
namespace second_space
{
    2 references
    class namespace_cl
    {
        1 reference
        public void func()
        {
            Console.WriteLine("Inside second_space");
        }
    }
}
0 references
class TestClass
{
    0 references
    static void Main(string[] args)
    {
        first_space.namespace_cl fc = new first_space.namespace_cl();
        second_space.namespace_cl sc = new second_space.namespace_cl();
        fc.func();
        sc.func();
        Console.ReadKey();
    }
}
```

Output:-



```
Microsoft Visual Studio Debug Console
Inside first_space
Inside second_space

C:\Users\amaNJAY\source\repos\namespace\namespace\bin\Debug\netcoreapp3.1\namespace.exe (process 13040) exited wi
To automatically close the console when debugging stops, enable Tools->Options->Debugging->Automatically close the cons
Press any key to close this window . . .
```