Day 16 Assignments

By

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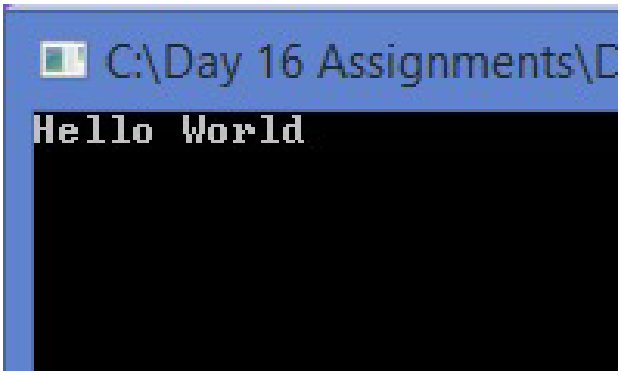
NB Health Care

1. WACP to print Hello World
Hint: Think object oriented

Code :

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

namespace Day_16_Project_1
{
    // Author : Praveen Chakravarthi
   // Purpose : Printing Hello World using Class

   internal class Program
   {
      class Message
      {
         public static void PrintHello()
         {
            Console.WriteLine("Hello World");
         }

      }

      static void Main(string[] args)
      {
         Message.PrintHello();
         Console.ReadLine();
      }
   }
}
```

Output :

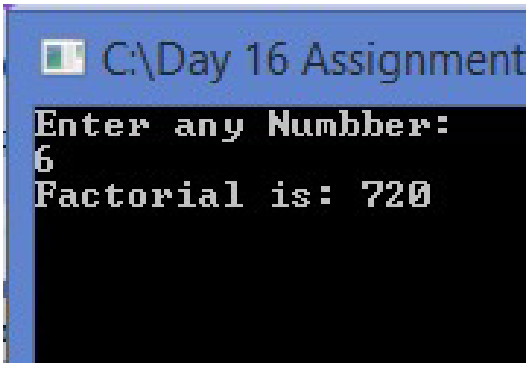


2. WACP to read a number from user and print factorial of it
Hink : Think object oriented

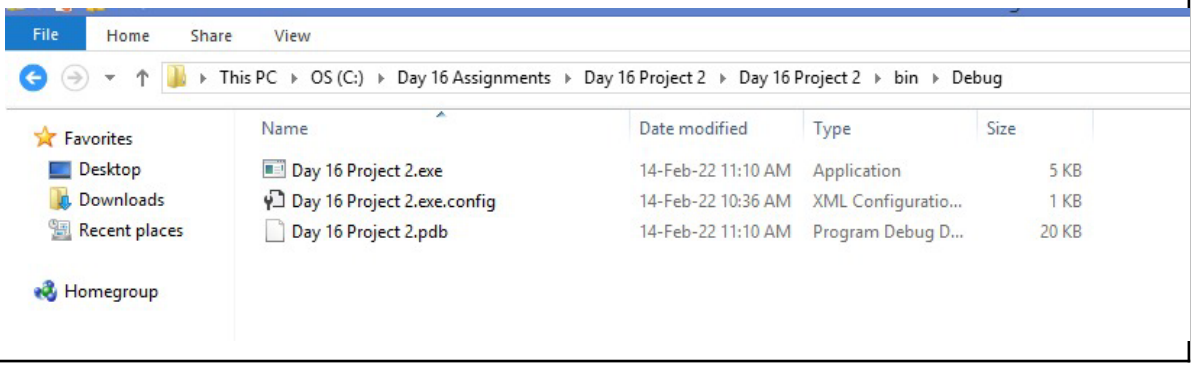
Code :

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

namespace Day_16_Project_2
{
    // Author : Praveen Chakravarthi
    // Purpose : Factorial using Class
    internal class Program
    {
        class Factorial
        {
            /// <summary>
            /// This Method Reads a Number and Returns the Factorial
            /// </summary>
            public static int GetFactorial()
            {
                int n;
                Console.WriteLine("Enter any Numbber: ");
                n = Convert.ToInt32(Console.ReadLine());
                int fact = 1;
                for (int i = 1; i <=n; i++ )
                    fact = fact * i;
                return fact;

            }
        }
        static void Main(string[] args)
        {
            Console.WriteLine($"Factorial is: { Factorial.GetFactorial()}");
            Console.ReadLine();

        }
    }
}
```

Output :



3. For the console application created in 2nd task, add screen shot of the exe file location



4. Create a Class Library Project with name as «YourName>Library
(Example : MeganadhLibrary)
Create a class Mathematics as discussed in the class.
[Add methods for reading number and finding factorial]
Re-Build the project and you will a .dll file
(Put the screen shot of this)
Copy the dll file to your desktop
(put the screen shot of this)

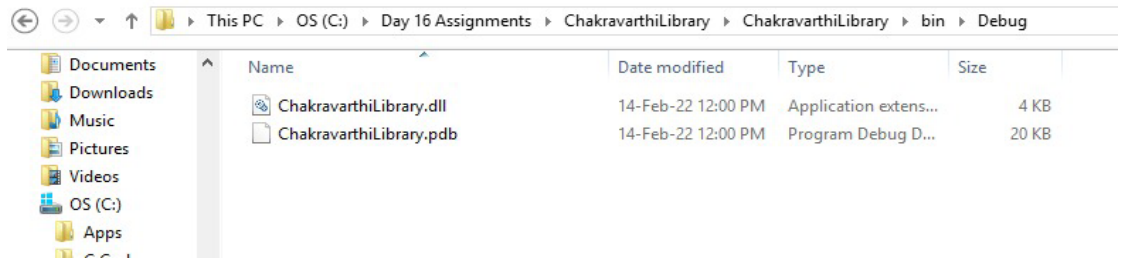
Code :

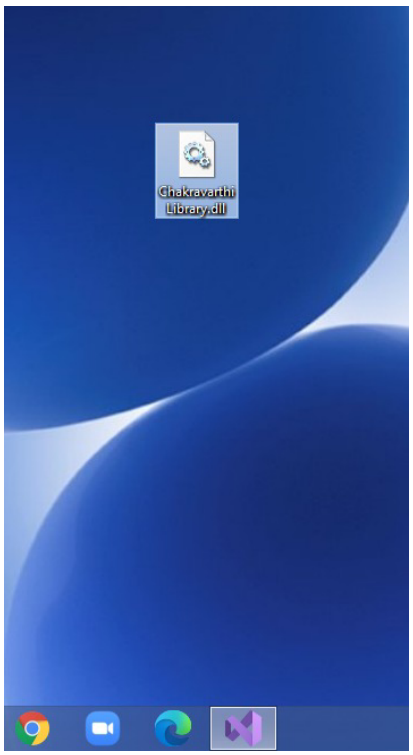
ChakravarthiLibrary(.dll)

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

```
using System.Text;
using System.Threading.Tasks;

namespace ChakravarthiLibrary
{
    public class Mathematics
    {
        int n;
        public void ReadInput()
        {
            Console.WriteLine("Enter any Number: ");
            n = Convert.ToInt32(Console.ReadLine());
        }
            public int GetFactorial()
            {
                int fact = 1;
                for (int i = 1; i <= n; i++)
                    fact = fact * i;
                 return fact;
        }
    }
}
```

Output :





5. Create a class library with three classes in it:
a. Mathematics
b. Physics
c. Chemistry
and add methods as discussed in the class
refer all the three classes in a console application.

Code :

a. Mathematics(.dll)

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

namespace CPraveenLibrary
{
    public class Mathematics
    {
        int n;
        public static int GetFactorial()
        {
            int n; int fact = 1;
            Console.WriteLine("Ënter any Number: ");
            n = Convert.ToInt32(Console.ReadLine());
            for (int i = 1; i <= n; i++)
                fact = fact * i;
```

```
            return fact;
        }

        public static int GetMul(int a, int b)
        {

            return a * b;
        }

        public static int GetDiv(int a, int b)
        {
            return a / b;
        }
    }
}
```

b. Physics(.dll)

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

namespace CPraveenLibrary
{
    public class Physics
    {
        public static int GetDistance(int s, int t)
        {
            return s * t;
        }
    }
}
```

c. Chemistry(.dll)

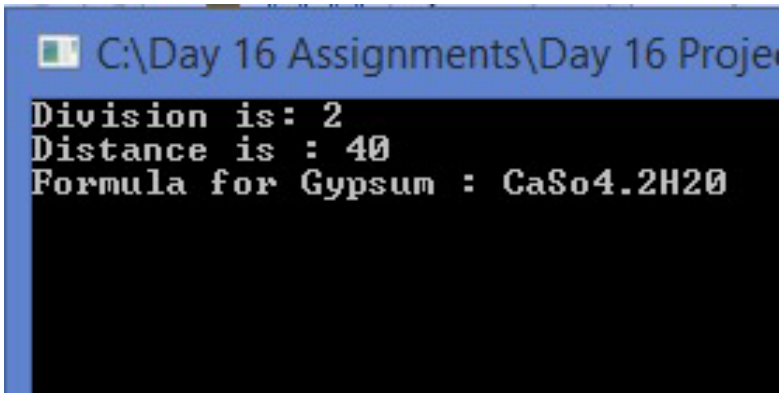
```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
using System.Threading.Tasks;

namespace CPraveenLibrary
{
    public class Chemistry
    {
        public static string GetChloroform()
        {
            return "CHCl3";
        }
        public static string GetGypsum()
        {
            return "CaSo4.2H20";
```

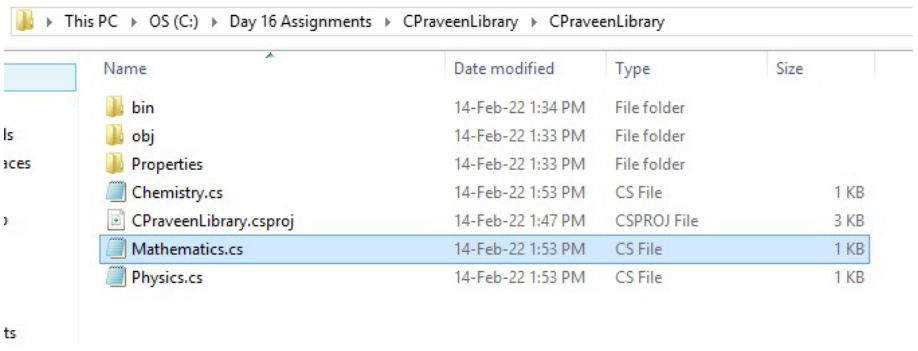
```
        }
    }
}
```

Console Program Using all Libraries

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

namespace Day_16_Project_5
{
    // Author : Pravee Chakravarthi
    // Purpose : Various Methods using Libraries
    internal class Program
    {
        static void Main(string[] args)
        {
            Console.WriteLine($"Division is: {Mathematics.GetDiv(10, 5)}\nDistance is :
{Physics.GetDistance(10, 4)}\nFormula for Gypsum : {Chemistry.GetGypsum()}");

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

Output :



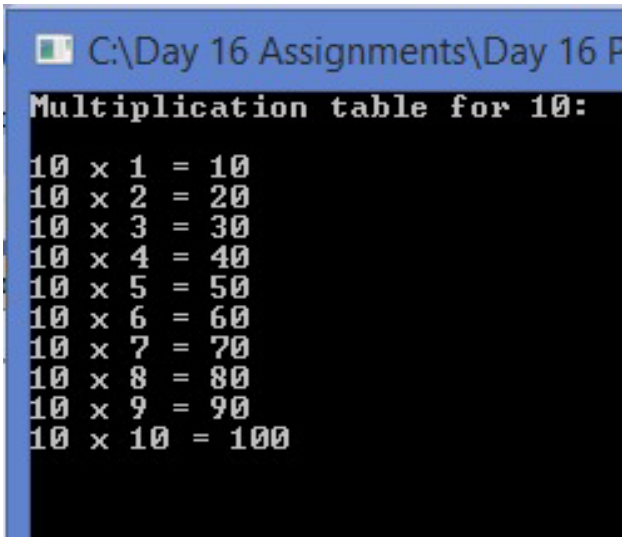


6. WACP to print multiplication table of a number

Code :

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

namespace Day_16_Project_6
{
    // Author : Praveen Chakravarthi
    // Purpose : Multiplication using OOPS Concept
    internal class Program
    {
        class MultiplicationTable
        {
            /// <summary>
            /// This Method gives the Multiplication of a given Number
            /// </summary>
            public static void GetMultiplication(int n)
            {

                for (int i = 1; i <= 10; i++)
                {
                    Console.WriteLine($"{n} x {i} = {n*i}");
                }
            }
        }
        static void Main(string[] args)
        {
            Console.WriteLine("Multiplication table for 10: \n");
            MultiplicationTable.GetMultiplication(10);
            Console.ReadLine();
        }
    }
}
```

Output :



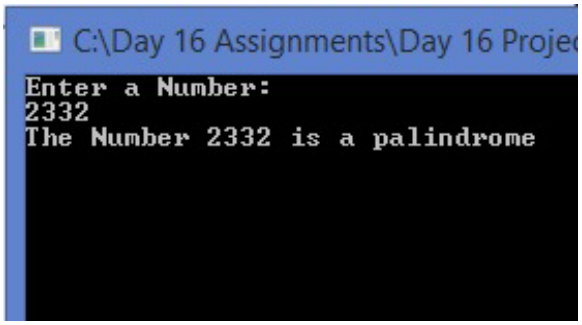
7. WACP to check if the given is number is a Palindrome or not

Code :

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

namespace Day_16_Project_7
{
    // Author : Praveen Chakravarthi
    // Purpose : Palindrome using OOPS Concept
    internal class Program
    {
        class Palindrome
        {
            /// <summary>
            /// This Method States whether the input is Palindrome or not
            /// </summary>
            public static void GetPalindrome()
            {
                int n, m, rem, rev = 0;

                Console.WriteLine("Enter a Number: ");
                n = Convert.ToInt32(Console.ReadLine());

                m = n;
                while (m > 0)
```

```
            {
                rem = m % 10;
                rev = (rev * 10) + rem;
                m = m / 10;
            }
            if (n == rev)
                Console.WriteLine("The Number {0} is a palindrome",n);
            else
                Console.WriteLine("The Number {0} is not a Palindrome",n);
        }
    }
    static void Main(string[] args)
    {
        Palindrome.GetPalindrome();
        Console.ReadLine();
    }
  }
}
```

Output :



8. Create a solution "MyProject" (as discussed in class)
Add three projects
a. YourNameLibrary (and add any class with methods)
b. PublicLibrary (add any class with methods)
c. ClientApp and here refer above two libraries)

Code :

PraveenChakravarthiLibrary(.dll)

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

namespace PraveenChakravarthiLibrary
{
  public static class Mathematics
  {
    public static int GetMul(int a, int b)
```

```
        {
            return a * b;
        }

        public static int GetDiff(int a,int b)
        {
            return a - b;
        }
    }
}
```

PublicLibrary(.dll)

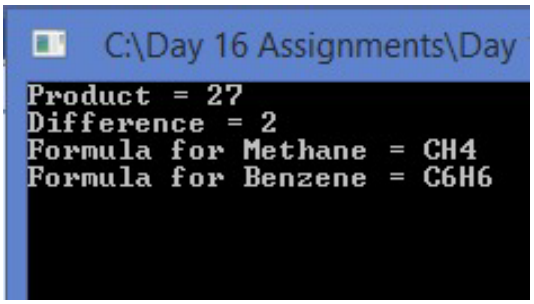
```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
using System.Threading.Tasks;

namespace PublicLibrary
{
    public static class Chemistry
    {
        public static string GetBenzene()
        {
            return "C6H6";
        }
        public static string GetMethane()
        {
            return "CH4"; ;
        }
    }
}
```

ClientApp(.exe)

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

namespace ClientApp
{
    internal class Program
    {
        static void Main(string[] args)
        {
            Console.WriteLine($"Product = {Mathematics.GetMul(9, 3)}\nDifference =
{Mathematics.GetDiff(4,2)}\nFormula for Methane = {Chemistry.GetMethane()}\nFormula
for Benzene = {Chemistry.GetBenzene()}");
```

```
            Console.WriteLine($"Division : {Mathematics.GetDiv(10,5)}");
            Console.ReadLine();
        }
    }
}
```

Output :



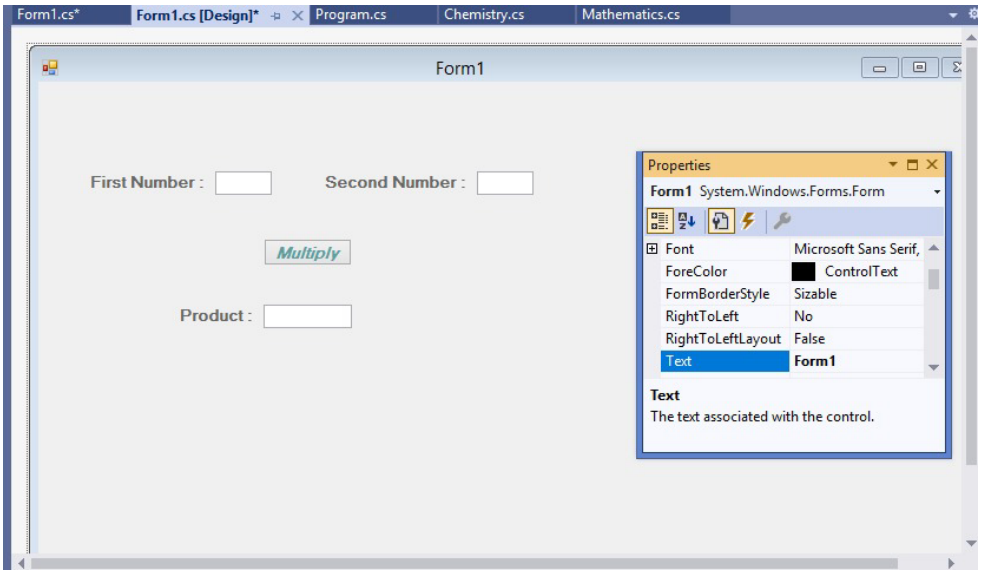
9. Add one more project (windows application)
Add some 3 or 4 screen shots just to prove that you have done this.

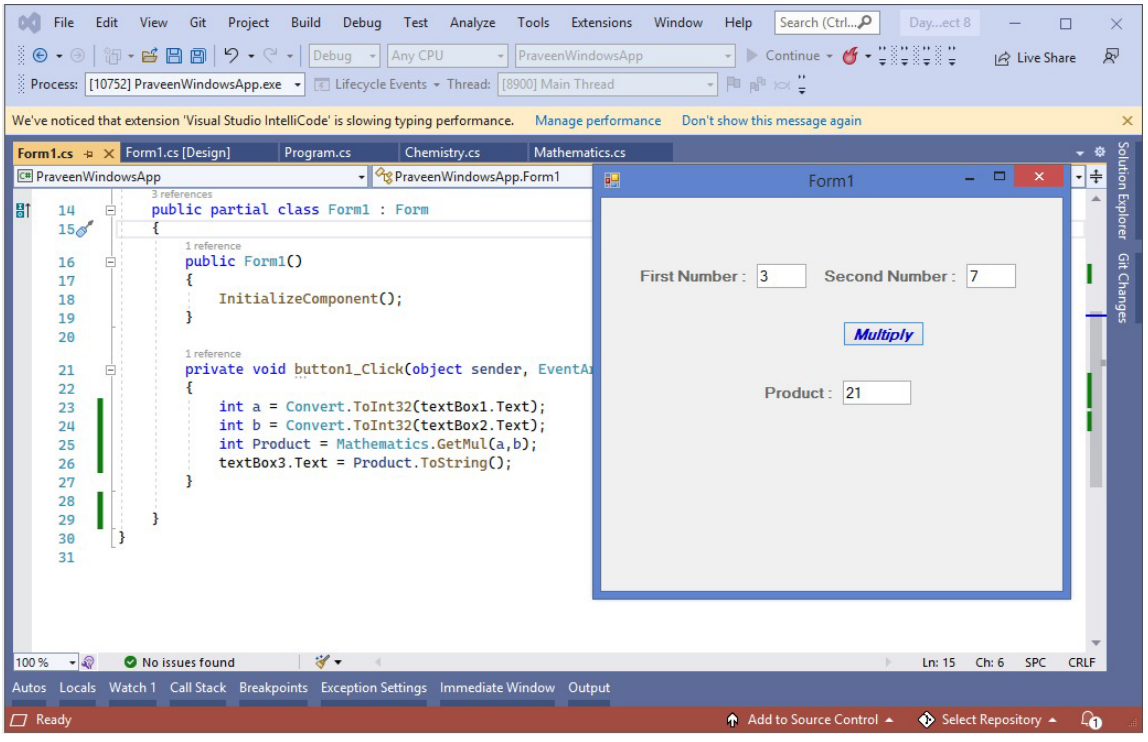
Code :

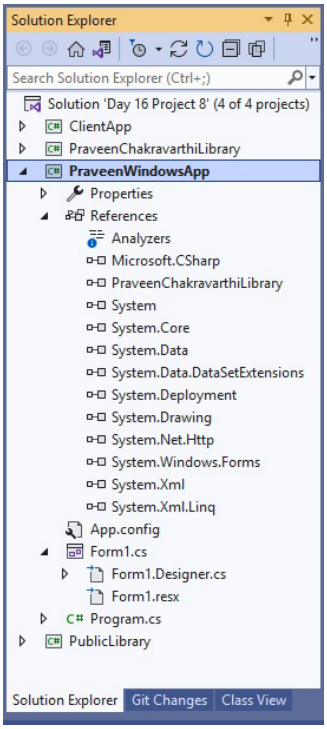
```
using System;
using System.Collections.Generic;
using System.ComponentModel;
using System.Data;
using System.Drawing;
using System.Linq;
using System.Text;
using System.Threading.Tasks;
using System.Windows.Forms;
using PraveenChakravarthiLibrary;

namespace PraveenWindowsApp
{
    public partial class Form1 : Form
    {
        public Form1()
        {
            InitializeComponent();
        }

        private void button1_Click(object sender, EventArgs e)
        {
            int a = Convert.ToInt32(textBox1.Text);
            int b = Convert.ToInt32(textBox2.Text);
            int Product = Mathematics.GetMul(a,b);
```

```
            textBox3.Text = Product.ToString();
        }

    }
}
```

Output :







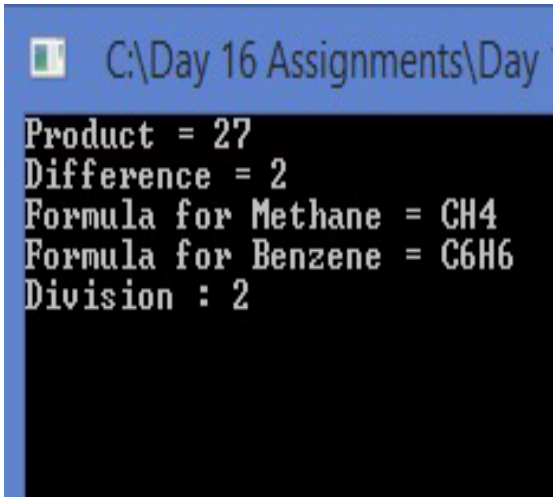
10. Research and write what is the use of partial classes in C#
Write Example Codes and Put Screenshots

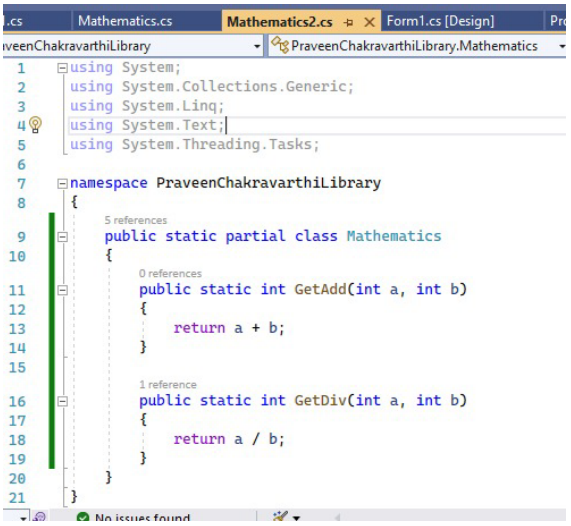
Code :

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

namespace PraveenChakravarthiLibrary
{
    public static partial class Mathematics
    {
        public static int GetMul(int a, int b)
        {
            return a * b;
        }

        public static int GetDiff(int a,int b)
        {
```

```
            return a - b;
        }
    }
}

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

namespace PraveenChakravarthiLibrary
{
    public static partial class Mathematics
    {
        public static int GetAdd(int a, int b)
        {
            return a + b;
        }

        public static int GetDiv(int a, int b)
        {
            return a / b;
        }
    }
}
```

Output :





- **Partial Classes are used to define the same class name when there is an excess of methods in one class**
- **We can use the keyword ”Partial” and create a class with other name and access both the methods under the same class name.**