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Day 16 Assignment

By
Triveni Anumolu

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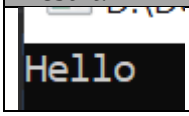
1. WACP to print Hello World

Hint: Think object oriented

Code:

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

namespace Day16project1
{
    class PrintHello
    {
        public static void Hello()
        {
            Console.WriteLine("Hello");
        }
    }
    class Program
    {
        static void Main(string[] args)
        {
            PrintHello.Hello();
            Console.ReadLine();
        }
    }
}
```

Result:



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

Code:

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

namespace Day16Project2
{
    class Calculation
    {
        public  void Factorial()
        {
            int n, fact=1;
            Console.WriteLine("Enter a number");
            n = Convert.ToInt32(Console.ReadLine());
            for(int i=1;i<=n;i++)
            {
                fact = fact * i;
            }
            Console.WriteLine("Factorial of {0} is {1}", n,fact);

        }
    }
    class Program
    {
        static void Main(string[] args)
        {
            Calculation cal = new Calculation();
            cal.Factorial();
            Console.ReadLine();
        }
    }
}
```

Result:

```
Enter a number
7
Factorial of 7 is 5040
```

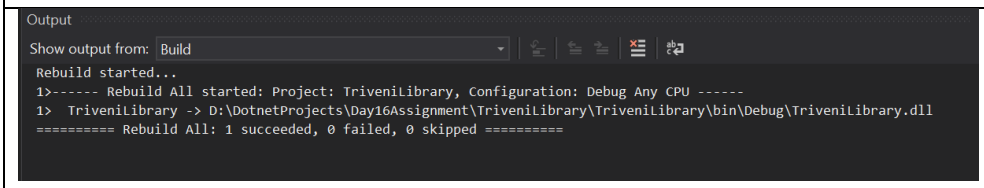
3. For the console application created in 2nd task, add screen shot of the .exe file location.

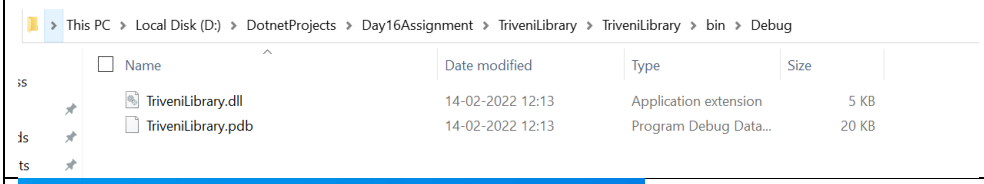
4. Create a Class Library Project with name as
<YourName>Library (Example : MeganadhLibrary)
Create a class Mathematics as discussed in the class.
[Add methods for reading number and finding factorial]
Re-Build the project and you will get a .dll file.
(Put the screen shot of this)
Copy the dll file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

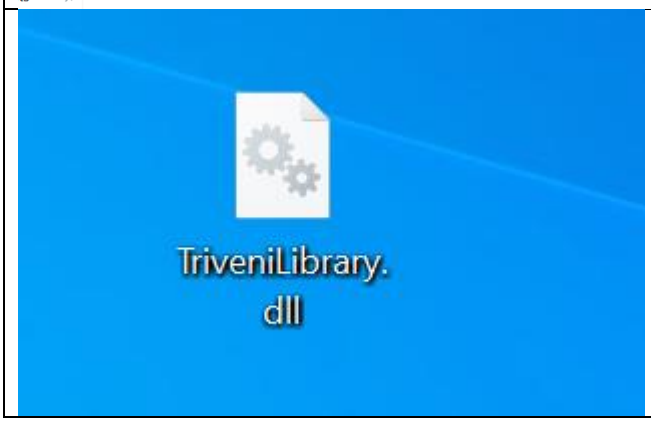
Code:

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

namespace TriveniLibrary
{
   class Mathematics
   {
      int n;
      public void ReadInput()
      {
         Console.WriteLine("Enter a number");
         n = Convert.ToInt32(Console.ReadLine());
      }
      public void Factorial()
      {
         int fact = 1;
         for (int i = 1; i <= n; i++)
```

```
        {
            fact = fact * i;
        }
        Console.WriteLine("Factorial of {0} is {1}", n, fact);

    }
  }

}
```







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.

Chemistry:

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

namespace TriveniLibrary
{
```

```
  public class Chemistry
   {
      public string GetBenzene()
      {
         return "C6H6";
      }
      public string GetWater()
      {
         return "H2O";
      }
      public string GetMethane()
      {
         return "CH4";
      }
   }
}
```

Physics:

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

namespace TriveniLibrary
{
   public class Physics
   {
     public int GetForce(int m, int a)
      {
         return m * a;
      }
   }
}
```

Mathematics:

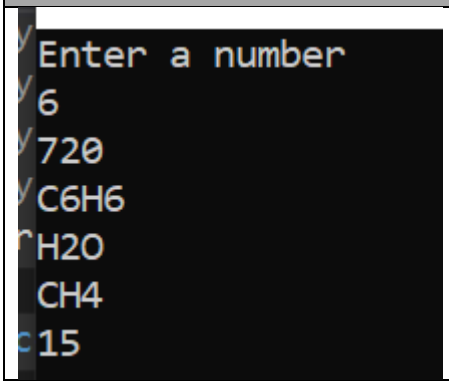
```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
using System.Threading.Tasks;

namespace TriveniLibrary
{
   public class Mathematics
   {
      int n;
```

```
        public void ReadInput()
        {
            Console.WriteLine("Enter a number");
            n = Convert.ToInt32(Console.ReadLine());
        }
        public int Factorial()
        {
            int fact = 1;
            for (int i = 1; i <= n; i++)
            {
                fact = fact * i;
            }
            return fact;
            //Console.WriteLine("Factorial of {0} is {1}", n, fact);

        }
    }

}
```

Library:

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

namespace Day16Assignment
{
    class Program
    {
        static void Main(string[] args)
        {
            Mathematics m = new Mathematics();
            m.ReadInput();
            Console.WriteLine(m.Factorial());
            Chemistry c = new Chemistry();
            Console.WriteLine(c.GetBenzene());
            Console.WriteLine(c.GetWater( ));
            Console.WriteLine(c.GetMethane());
            Physics p = new Physics();
            Console.WriteLine(p.GetForce(3,5));
            Console.ReadLine();

        }
    }
}
```

Result:



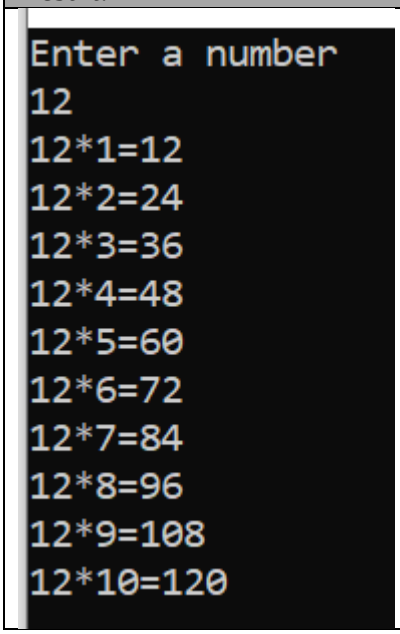
6. WACP to print multtiple table of a number

Code:

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

namespace Day16project4
{
    class MulTable
    {
        int n;
        public  void ReadData()
        {
            Console.WriteLine("Enter a number");
            n = Convert.ToInt32(Console.ReadLine());
        }
        public void PrintTable()
        {
            for(int i=1;i<=10;i++)
            {
                Console.WriteLine(n+"*"+i+"="+n*i);
            }

        }
    }
    class Program
    {
        static void Main(string[] args)
        {
            MulTable mt = new MulTable();
            mt.ReadData();
```

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

Result:



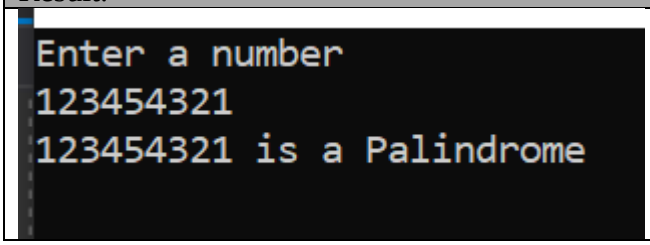
7. WACP to check if the given is number is Palindrome or not

Code:

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

namespace Day16Project5
{
    class Palindrome
    {
        int n;

        public void ReadInput()
        {

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

        }
```

```
        public void Check()
        {
            int temp = n;
            int rem, sum = 0;
            while (n > 0)
            {
                rem = n % 10;
                sum = sum * 10 + rem;
                n = n / 10;
            }
            if (temp == sum)
                Console.WriteLine("{0} is a Palindrome", temp);
            else
                Console.WriteLine("{0} is not a Palindrome", temp);
        }

    }
    class Program
    {
        static void Main(string[] args)
        {
            Palindrome p = new Palindrome();
            p.ReadInput();
            p.Check();
            Console.ReadLine();

        }
    }
}
```

Result:



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)
Note : If you are confused., see the video

Code:

Mathematics:

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

namespace TriveniALibrary
{
   public class Mathematics
   {
      public int Mul(int a , int b)
      {
         return a * b;
      }

   }
}
```

Physics:

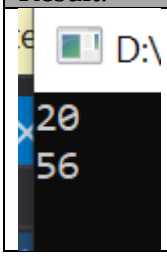
```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
using System.Threading.Tasks;

namespace PublicLibrary
{
   public class Physics
   {
      public int Force(int m, int a)
      {
         return m * a;
      }

   }
}
```

ClientApp:

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

```
namespace ClientApp
{
   class program
   {
      static void Main(string[] args)
      {
         Mathematics m = new Mathematics();
         Console.WriteLine(m.Mul(4, 5));
         Physics p = new Physics();
         Console.WriteLine(p.Force(7, 8));
         Console.ReadLine();
      }
   }
}
```

Result:



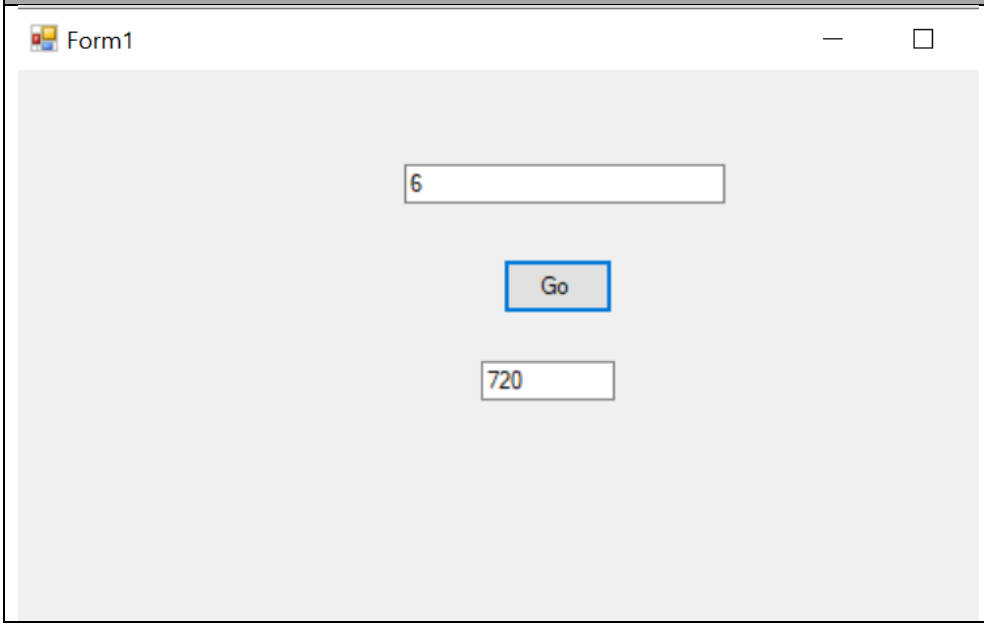
9. Add one more project (windows application) Add some 3 or 4 screen shots just to prove that you have done this.

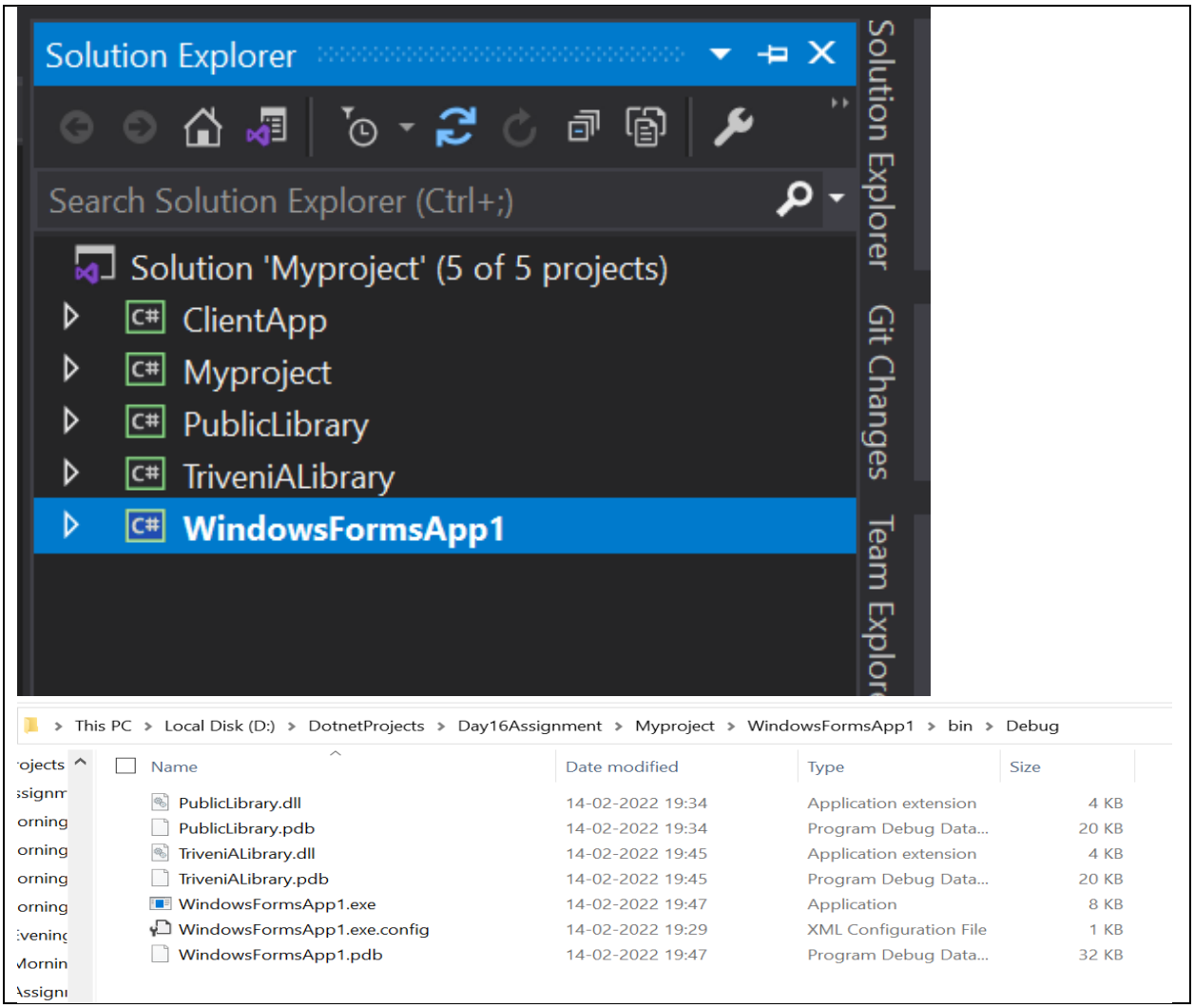
Code:

```
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 PublicLibrary;
using TriveniALibrary;

namespace WindowsFormsApp1
{
   public partial class Form1 : Form
   {
```

```
        public Form1()
        {
            InitializeComponent();
        }

        private void button1_Click(object sender, EventArgs e)
        {
            int input = Convert.ToInt32(textBox1.Text);
            int fact = Mathematics.Fact(input);
            textBox2.Text = fact.ToString();
        }
    }
}
```

Result:





10. Research and write what is the use of partial classes in C#. WRITE EXAMPLE CODE AND PUT SCREEN SHOTS
Use of partial class:
1.With the help of partial classes, multiple developers can work simultaneously in the same class in different files. 2. We can maintain an application in an efficient manner by compressing large classes into small one.
Example code:
Mathematics:
using System; using System.Collections.Generic; using System.Linq; using System.Text; using System.Threading.Tasks;

```
namespace TriveniALibrary
{
   public static partial class Mathematics
   {

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

   }
}
```

Mathematics2:

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

namespace TriveniALibrary
{
   public static partial class Mathematics
   {

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

   }
}
```

Program:

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

```
namespace ClientApp
{
   class program
   {
      static void Main(string[] args)
      {

         Console.WriteLine(Mathematics.Fact(5));
         Console.WriteLine(Mathematics.Add(7,8));
         Console.ReadLine();

      }
   }
}
```

Result: