Day 9
Assignment
By
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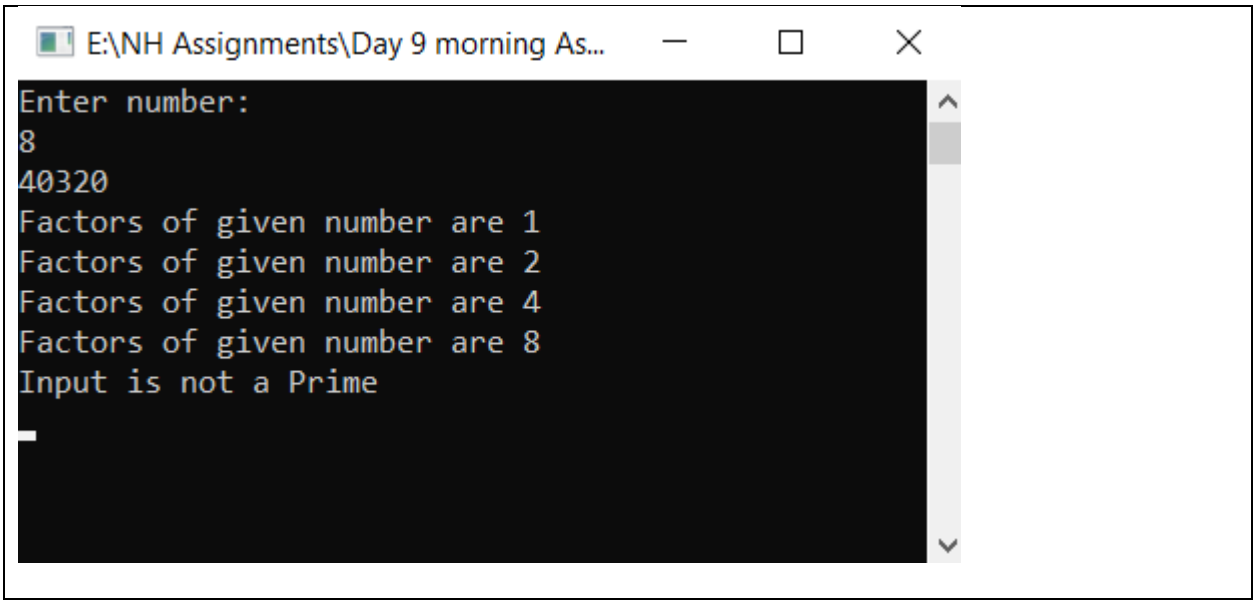
Write a C# program to read input from user and print a. factorial of a number b. factors of a number c. check if it prime or not

Code:

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

namespace Day_9_Project_1
{
   //Author: Mary Margaret
   //Purpose: Create class and object to print factorial, factors and prime or not.
   class MathsOperation
   {
      private int input;
      public void ReadInput()
      {
         Console.WriteLine("Enter number:");
         input = Convert.ToInt32(Console.ReadLine());
      }
      /// <summary>
      /// This method finds Factorial of a given number
      /// </summary>
      public void Factorial()
      {
         int fact = 1;
         for (int i = 1; i <= input; i++)
            fact = fact * i;
         Console.WriteLine(fact);
      }
      /// <summary>
      /// This method find the factors of a given number.
      /// </summary>
      public void PrintFactors()
      {
         for (int i = 1; i <= input; i++)
```

```
        {
            if (input % i == 0)
                Console.WriteLine("Factors of given number are {0} ", i);
        }
    }
    /// <summary>
    /// This is method is to check whether given is Prime or not
    /// </summary>
    /// <returns>isPrime<returns>
    public bool isPrime()
    {
        int count = 0;
        for (int i = 1; i <= input; i++)
        {
            if (input % i == 0)
                count++;
        }
        if (count == 2)
            return true;
        else
            return false;
    }
  }
  internal class Program
  {
    static void Main(string[] args)
    {

        MathsOperation obj = new MathsOperation();
        obj.ReadInput();
        obj.Factorial();
        obj.PrintFactors();
        if(obj.isPrime())
            Console.WriteLine("Input is Prime");
        else
            Console.WriteLine("Input is not a Prime");


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

Output:



Write C# program to read two numbers from use and print a. sum of two numbers. b. difference of two numbers. c. product of two numbers. d. division of two numbers.

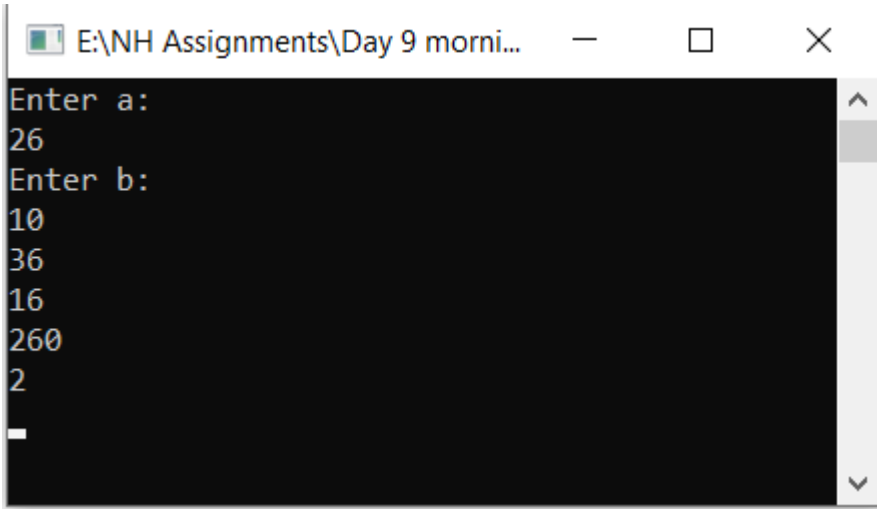
Code:

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

namespace Day_9_Project_2
{
   //Author: Mary Margaret
   //Purpose: Create class and objects for verifying add, sub, mul, div of given numbers
   class MathTask
   {
      //variable declaration
      public int a, b;

      public void ReadInput()
      {
         Console.WriteLine("Enter a:");
         a = Convert.ToInt32(Console.ReadLine());
         Console.WriteLine("Enter b:");
         b = Convert.ToInt32(Console.ReadLine());
      }
```

```
    /// <summary>
    /// This method is to find the sum
    /// </summary>
    /// <returns>sum</returns>
    public int Sum()
    {
        return a + b;
    }
    /// <summary>
    /// This method is to find Difference
    /// </summary>
    /// <returns>Difference</returns>
    public int Difference()
    {
        return a - b;
    }
    /// <summary>
    /// This method is used to Multiply
    /// </summary>
    /// <returns>Prouduct</returns>
    public int Multiply()
    {
        return a * b;
    }
    /// <summary>
    /// This method is used to Divide
    /// </summary>
    /// <returns>Quotient</returns>
    public int Division()
    {
        return a / b;
    }
}
internal class Program
{
    static void Main(string[] args)
    {
        //Object creation
        MathTask obj = new MathTask();
        obj.ReadInput();
        Console.WriteLine(obj.Sum());
        Console.WriteLine(obj.Difference());
        Console.WriteLine(obj.Multiply());
        Console.WriteLine(obj.Division());

        Console.ReadLine();

    }
```

```
    }
}
```

Output:



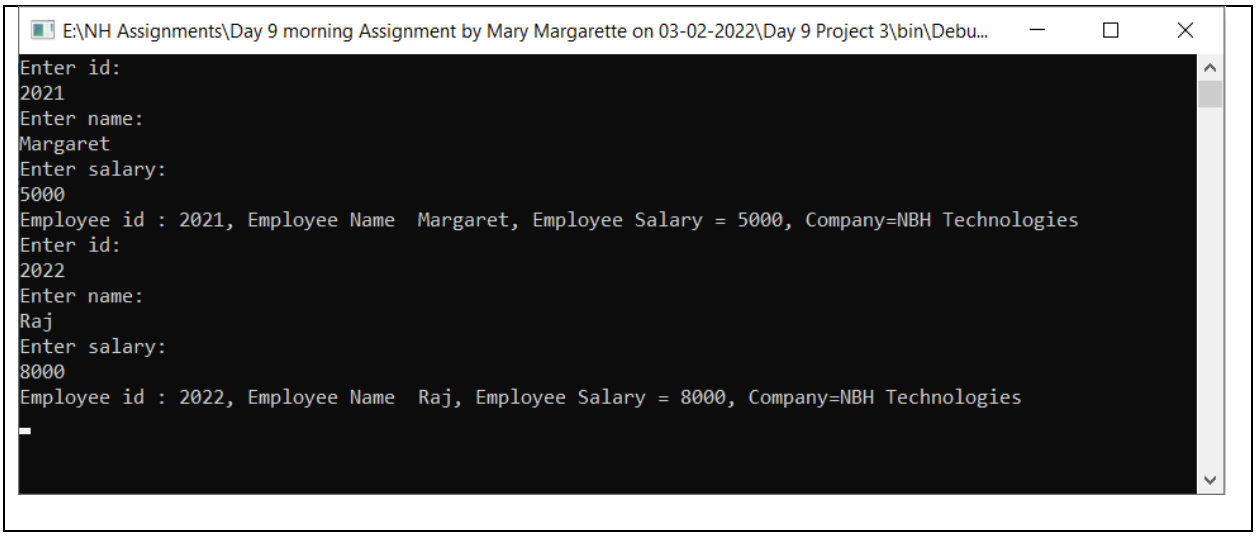
Create an employee class with the variables below id, name, salary, company write methods to read data and print data.

Code:

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

namespace Day_9_Project_3
{
    //Author : Mary Margaret
    //Purpose: Create Employee class and print data

    class Employee
    {
        public int id;
        public string name;
        public int salary;
        public static string company = "NBH Technologies";
```

```
        public void ReadData()
        {
            Console.WriteLine("Enter id:");
            id = Convert.ToInt32(Console.ReadLine());
            Console.WriteLine("Enter name:");
            name = Console.ReadLine();
            Console.WriteLine("Enter salary:");
            salary = Convert.ToInt32(Console.ReadLine());
        }
        /// <summary>
        /// This method gives Employee data
        /// </summary>
        public void PrintData()
        {
            Console.WriteLine($"Employee id : {id}, Employee Name  {name}, Employee Salary = {salary},
Company={company}");
        }
    }
    internal class Program
    {
        static void Main(string[] args)
        {
            //object1 creation
            Employee emp = new Employee();
            emp.ReadData();
            emp.PrintData();
            //object2 creation
            Employee emp1 = new Employee();
            emp1.ReadData();
            emp1.PrintData();

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

Output:



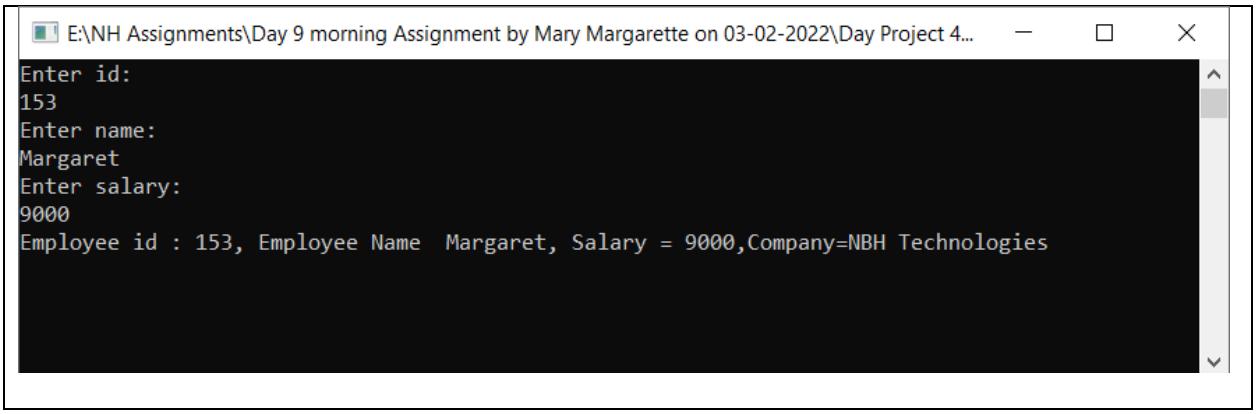
Create Employee class with two constructors as discussed in the class

Code:

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

namespace Day_9_Project_4
{
   //Author : Mary Margaret
   //Purpose: Create Employee class with 2 constructors

   class Employee
   {

      public int id;
      public string name;
      public int salary;
      public static string company = "NBH Technologies";
      // default constructor
      public Employee()
      {
         this.id = 0;
         this.name = null;
         this.salary = 0;
      }
```

```
    //Constructor
    public Employee(int id, string name, int salary)
    {
       this.id = id;
       this.name = name;
       this.salary = salary;
    }


    public void ReadInput()
    {
       Console.WriteLine("Enter id:");
       id = Convert.ToInt32(Console.ReadLine());
       Console.WriteLine("Enter name:");
       name = Console.ReadLine();
       Console.WriteLine("Enter salary:");
       salary = Convert.ToInt32(Console.ReadLine());
    }
    /// <summary>
    /// This method givess Employee data
    /// </summary>
    public void PrintData()
    {
       Console.WriteLine($"Employee id : {id}, Employee Name  {name}, Salary =
{salary},Company={company}");
    }
  }
  internal class Program
  {
    static void Main(string[] args)
    {
       //object1 creation
       Employee emp = new Employee();
       emp.ReadInput();
       emp.PrintData();

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

Output:



Research and find the difference between normal variable and static variable.

Static Variables	Normal Variables
1. Static method can't access normal variable.	1) Normal method can access static variable.
2. It is implemented using a static method.	2) It doesn't have a particular method for implementation.
3. The static variable gets initialized immediately once the execution of the class starts.	3) The normal variables are initialized only after creating the object of the class.
4. A static variable gets initialized only once during the cycle of a class.	4) Normal variable gets initialized depending on the number of objects created for that class.

Write 5 points discussed about constructor
→ Constructor is used to Initialize class variables while creating objects.
→ Constructor doesn’t allow return type.
→ We can include any number of Constructors.
→ Constructor name is same as Class name.
→ After creating own constructor, default constructor will disappear.