Day 9 Morning Assignments

By

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NB Health Care

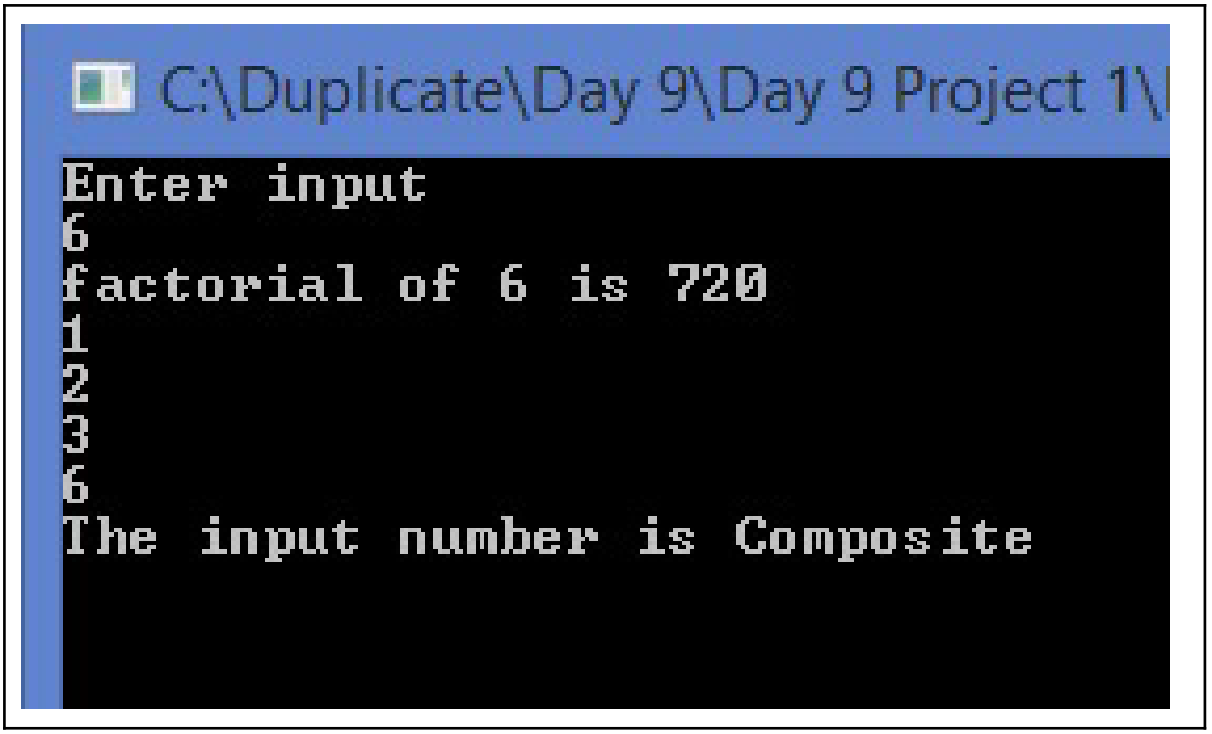
1. Write a C# program to read input from user andprint
a. factorial of a number
b. factors of a number
c. check if it prime or not

Code:

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

namespace Day_9_Project_1
{
    // Author : Praveen Chakravarthi
    // Purpose : Mathematical Operations using Classes

    class MathsOperations
    {
        private int input;
        /// <summary>
        /// This method will read input from the user
        /// </summary>
        public void ReadInput()
        {
            Console.WriteLine("Enter input");
            input = Convert.ToInt32(Console.ReadLine());
        }
        /// <summary>
        /// this method will find factorial of a given Number
        /// </summary>

        // Factorial
        public void Factorial()
        {
            int fact = 1;
            for (int i = 1; i <= input; i++)
            {
                fact = fact * i;
            }
            Console.WriteLine($"factorial of {input} is {fact}");
        }
        /// <summary>
        /// This method will find factors of a given number
        /// </summary>
        public void PrintFactors()
        {
            for (int i = 1; i <= input; i++)
            {
                if (input % i == 0)
                    Console.WriteLine(i);
```

```
        }
    }
    /// <summary>
    /// This method will find the given number is prime or composite
    /// </summary>
    /// <returns></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)
    {
    MathsOperations obj = new MathsOperations();
    obj.ReadInput();
    obj.Factorial();
    obj.PrintFactors();
    if (obj.IsPrime())
        Console.WriteLine("The input Number is Prime");
    else
        Console.WriteLine("The input number is Composite");


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

Output:



2. 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.

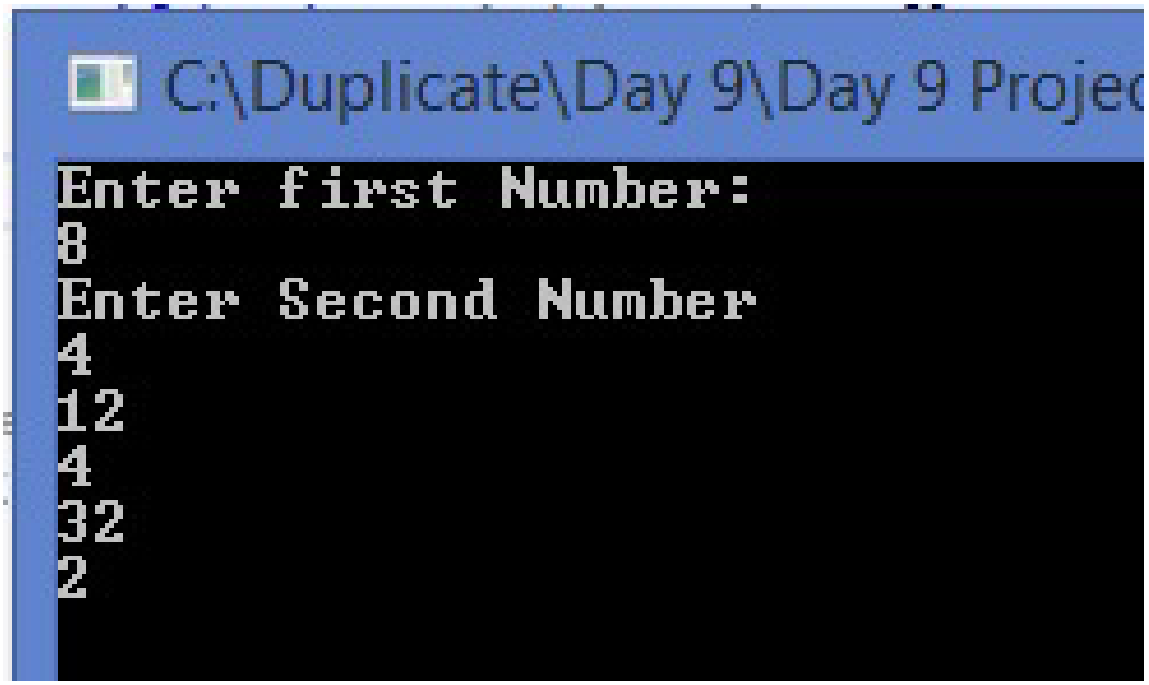
Code:

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

namespace Day_9_Project_2
{
    // Author : Praveen Chakravarthi
    // Purpose : Arithmetic Operations using MathsTasks Class
    class MathsTasks
    {
        private int a;
        private int b;

        /// <summary>
        /// This Method reads input from the user
```

```
    /// </summary>
    public void Readinput()
    {
        Console.WriteLine("Enter first Number: ");
        a= Convert.ToInt32(Console.ReadLine());
        Console.WriteLine("Enter Second Number");
        b= Convert.ToInt32(Console.ReadLine());
    }

    /// <summary>
    /// This Method Adds the given Numbers
    /// </summary>
    /// <returns></returns>
    public int AddNumbers()
    {
        return a + b;
    }

    /// <summary>
    /// This Method Subracts the given Numbers
    /// </summary>
    /// <returns></returns>
    public int SubtractNumbers()
    {
        return a - b;
    }

    /// <summary>
    /// This Method Multiplies the given Numbers
    /// </summary>
    /// <returns></returns>
    public int MultiplyNumbers()
    {
        return a * b;
    }

    public int DivideNumbers()
    {
        return a/b;
    }
}
internal class Program
{
    static void Main(string[] args)
    {
        MathsTasks math = new MathsTasks();
        math.Readinput();
        Console.WriteLine(math.AddNumbers());
        Console.WriteLine(math.SubtractNumbers());
        Console.WriteLine(math.MultiplyNumbers());
        Console.WriteLine(math.DivideNumbers());

        Console.ReadLine();
```

```
    }
  }
}
```

Output:



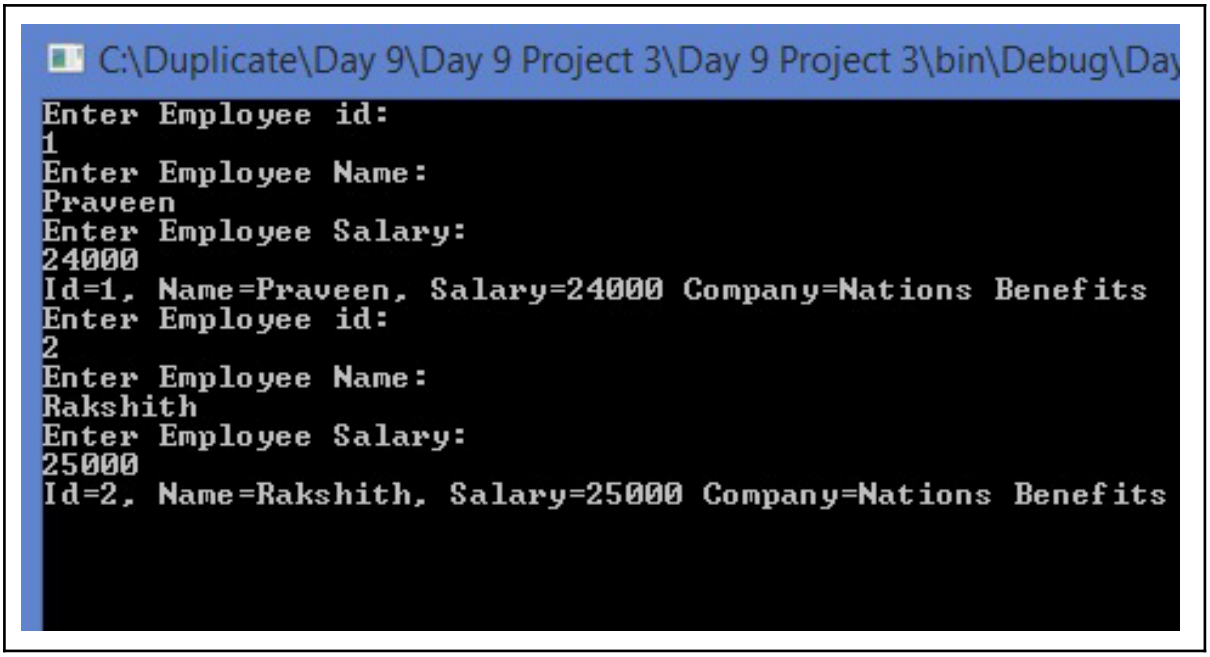
3. Create an employee class with below variables id, name, salary, company write methods to read data and print data.

Code:

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

namespace Day_9_Project_3
{
    // Author : Praveen Chakravarthi
    // Purpose : Read and Print from Employee Class

    class Employee
    {
        public int id;
        public string name;
```

```
        public int salary;
        public static string company = "Nations Benefits";

            public void ReadEmployee()
        {
            Console.WriteLine("Enter Employee id: ");
            id = Convert.ToInt32(Console.ReadLine());
            Console.WriteLine("Enter Employee Name: ");
            name = Console.ReadLine();
            Console.WriteLine("Enter Employee Salary: ");
            salary = Convert.ToInt32(Console.ReadLine());
        }

        public void PrintEmployee()
        {
            Console.WriteLine($"Id={id}, Name={name}, Salary={salary}
Company={company}");
        }
    }
    internal class Program
    {
        static void Main(string[] args)
        {
            Employee emp = new Employee();
            emp.ReadEmployee();
            emp.PrintEmployee();

            Employee emp1 = new Employee();
            emp1.ReadEmployee();
            emp1.PrintEmployee();

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

Output:



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

Static Variable	Normal Variable
1.It acts as a Global Variable and is shared among all the objects of the class	1. A Normal Variable is specific to instance Object in which they are created
2. Keyword: Static	2. Doesn't have Any special Keyword

5. Write 5 points discussed about constructor

1 .A constructor used to initialise class variables while creating objects
2. C# has a Default constructor
3. Default Constructor will be removed when user defined constructor is created
4. If you want default constructor after creating a user defined constructor we have to create one
5. The Constructor name should be same as class name
6. We can create any number of constructors for a class
7. This. is used when the variable names are same as Class Variables (This. Indicates class variables)
8. We should not use any return type or void in constructor

6. 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 : Praveen Chakravarthi
    // Purpose : Employeee Class with 2 Constructors

    class Employee
    {
        public int id;
        public string name;
        public int salary;
        public static string company = "Nations Benefits";

        public Employee()
        {
            this.id = 0;
            this.name = null;
            this.salary = 0;
        }
        public Employee(int id, string name, int salary)
        {
            this.id = id;
            this.name = name;
            this.salary = salary;
        }
        public void ReadEmployee()
        {
            Console.WriteLine("Enter Employee id: ");
            id = Convert.ToInt32(Console.ReadLine());
            Console.WriteLine("Enter Employee Name: ");
            name = Console.ReadLine();
            Console.WriteLine("Enter Employee Salary: ");
            salary = Convert.ToInt32(Console.ReadLine());
        }

        public void PrintEmployee()
        {
            Console.WriteLine($"Id={id}, Name={name}, Salary={salary}
Company={company}");
        }
```

```
    }
    internal class Program
    {
        static void Main(string[] args)
        {
            Employee emp = new Employee();
            emp.ReadEmployee();
            emp.PrintEmployee();

            Employee emp1 = new Employee(2, "Rohit", 24000);
            emp1.PrintEmployee();
            Console.ReadLine();
        }
    }
}
```

Output: