Q1.Write a c# program to read input from user and print
a. factorial of number
b. factors of a number
c. check if it prime or not

Code:

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

namespace DAY_9_morning_project1
{
    //*********************\\
    //Author: MANOHAR ANDE
    //Purpose:To write a C# program to read input from user and print
    //Factorial of a number
    //Factors of a number
    //Check if it is Prime or not
    //*********************\\
    class MathsOperations
    {
        private int input;
        /// <summary>
        /// This method will read input
        /// </summary>
        public void ReadInput()
        {
            Console.WriteLine("Enter input");
            input = Convert.ToInt32(Console.ReadLine());
        }
        /// <summary>
        /// this method will find factorial
        /// </summary>
        public void Factorial()
        {
            int fact = 1;
            for (int i = 1; i <= input; i++)
            {
                fact = fact * i;
            }
            Console.WriteLine(fact);
        }
```

```csharp
        /// <summary>
        /// This method will find factors
        /// </summary>
        public void PrintFactors()
        {
            for (int i = 1; i <= input; i++)
            {
                if (input % i == 0)
                    Console.WriteLine(i);
            }
        }
        /// <summary>
        /// This method will find a number as prime or not
        /// </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 not prime");


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

Output:

```
Enter input
6
720
1
2
3
6
The input number is not prime
```

Q2. Write c# program o read two numbers from use and print
a. Sum of two numbers
b. difference of two numbers
c. division of two numbers

Code:

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

namespace Day9Project2
{   //************************\\
    //Author:ANDE MANOHAR
    //Purpose:Write C# program to read two numbers from user and print
    //A)Sum of two numbers
    //B)Difference of two numbers
    //C)Product of two numbers
    //d)Division of two numbers


    class MathTask
    {
        private int a;
        private int b;
        // <summary>
        // This method read input From user
        // </summary>
        public void ReadInput()
        {
            Console.WriteLine("Enter fisrt number:");
            a = Convert.ToInt32(Console.ReadLine());
            Console.WriteLine("Enter Second number:");
            b = Convert.ToInt32(Console.ReadLine());
        }// <summary>
         // This method Add Two numbers
         // </summary>
         // <returns></returns>
        public int AddNumbers()
```

```csharp
        {
            return a + b;
        }
        // <summary>
        // this method is for multiplication
        // </summary>
        // <returns></returns>
        public int Product()
        {
            return a * b;
        }
        // <summary>
        // this method is substraction
        // </summary>
        // <returns></returns>
        public int Substract()
        {
            return a - b;
        }
        // <summary>
        // this method is for division
        // </summary>
        // <returns></returns>
        public int Division()
        {
            return b / a;
        }
    }


    internal class Program
    {
        static void Main(string[] args)
        {
            MathTask mt = new MathTask();
            mt.ReadInput();
            Console.WriteLine(mt.AddNumbers());
            Console.WriteLine(mt.Product());
            Console.WriteLine(mt.Substract());
            Console.WriteLine(mt.Division());
            Console.ReadLine();
        }
    }
}
```
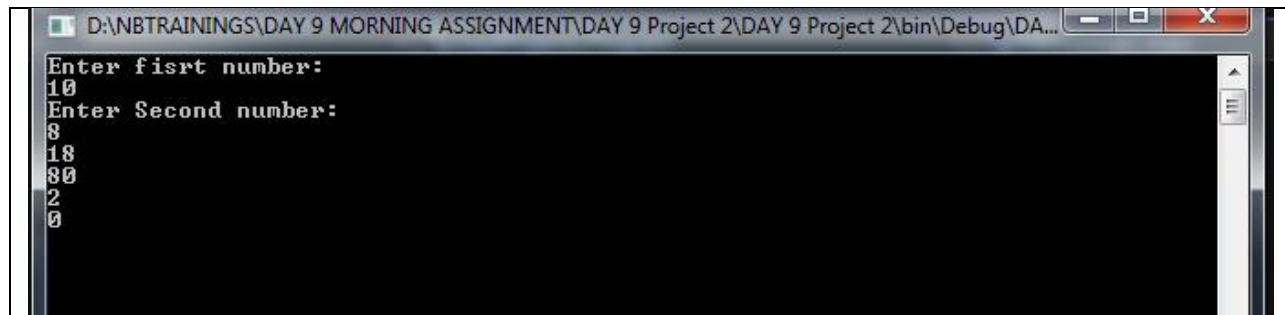OUTPUT:

```
Enter fisrt number:
10
Enter Second number:
8
18
80
2
0
```

Q3.Create an Employee class with below variables
Id, name , salary, company
Write methods to read data and print data

Code:

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

namespace DAY_9__Employees_class
{
    //Author: MANOHAR ANDE
    //Purpose:To create an Employee class using varibale and write methods to Readdata and prindata

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

        public void ReadData()
        {
            Console.WriteLine("Enter employeee id:");
            id = Convert.ToInt32(Console.ReadLine());
            Console.WriteLine("Enter employeee name:");
            name = Console.ReadLine();
            Console.WriteLine("Enter employeee salary:");
            salary = Convert.ToInt32(Console.ReadLine());


            company = "Amazone";


        }
```

```csharp
        public void PrintData()
        {
            Console.WriteLine($"id : {id}, name: {name},salary: {salary}, Company: {company}");

        }


    }
    internal class Program
    {
        static void Main(string[] args)
        {

            Employee emp1 = new Employee();

            emp1.ReadData();
            emp1.PrintData();


            Employee emp2 = new Employee();
            emp2.ReadData();
            emp2.PrintData();

            Console.ReadLine();



        }
    }
}
```
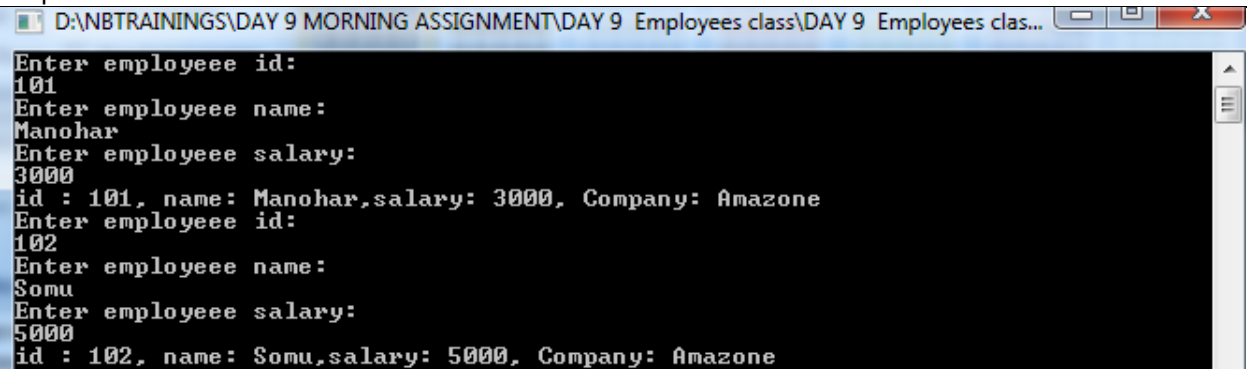
Output:


```
Enter employeee id:
101
Enter employeee name:
Manohar
Enter employeee salary:
3000
id : 101, name: Manohar,salary: 3000, Company: Amazone
Enter employeee id:
102
Enter employeee name:
Somu
Enter employeee salary:
5000
id : 102, name: Somu,salary: 5000, Company: Amazone
```

Q4. Difference between static variable and normal variable	
STATIC VARIABLE	NORMAL VARIABALE
1. A static variable acts as a global variable and is shared among all he objects of the class.	1. A normal variable are specific o instance object in which they are created.

2.Stativ variables occupies less space and memory allocation happens once.	2. A normal variable is not required to have any special keyword

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Q5. Write 5 points about constructor discussed in the class

1. A constructor is useful to initialize the class variable.
2. By default c# will have one constructor that is called "default constructor" which is used to initialize default values.
3. The moment you create the user defined constructor the default constructor will gone now you still need default constructor create a default constructor of your own. And constructor name should be same as your class name if your.
4.If you are using same class variable as that of class variable use this.id ,this.name , this .salary to differentiate class variables.
5. And for a constructor we should not write return type not even void.

Q6.Create Employees class with two constructors as discussed in the class

Code:

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

namespace DAY_9_constructor_employyes__project
{
    //*******************\\
    //Author:ANDE MANOHAR
    //Purpose:Employee class with two constructors

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

        public Employee()
        {
            id = 0;
            name = null;
            salary = 0;
        }
        public Employee(int eid, string emane, int esalary)
        {
            id = eid;
```

```csharp
            name = emane;
            salary = esalary;

        }
        public void ReadData()
        {
            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 PrintData()
        {
            Console.WriteLine($"id:{id},Name={name},salary={salary},company={company}");
        }
    }
    internal class Program
    {
        static void Main(string[] args)
        {
            Employee emp = new Employee();
            emp.PrintData();

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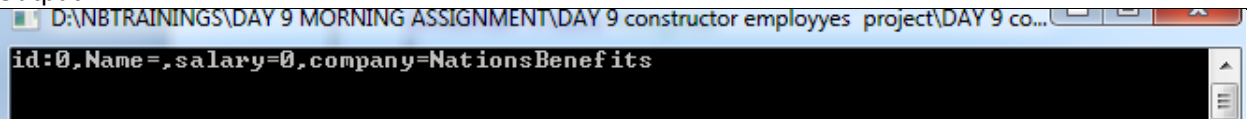
Output:

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```
id:0,Name=,salary=0,company=NationsBenefits
```