1. 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:

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

namespace factorial_factors_primecheck
{
    internal class program
    {
        //Author: Vinay Kudali
        //Purpose: factorial, factors, primecheck
            class Mathsoperations
        {
            private int input;
            /// <summary>
            /// This method Will read two numbers from user
            /// </summary>
            public void Readinput()
            {
                Console.WriteLine("Enter the number");
                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 print factors
    /// </summary>

    public void Printfactors()
    {
        for (int i = 1; i <= input; i++)
        {
            if (input % i == 0)
                Console.WriteLine(i);
        }
    }
    /// <summary>
    /// this method will check the number prime or not
    /// </summary>
    /// <returns>Isprimeornot</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;
    }
}
class Program
{
    static void Main(string[] args)
    {
        Mathsoperations obj = new Mathsoperations();
        obj.Readinput();
        obj.Factorial();
        obj.Printfactors();
        if (obj.Isprime())
            Console.WriteLine("Input is prime");
        else
            Console.WriteLine("Input is not prime");

        Console.ReadLine();
```

```
        }
      }
    }
}
```

Output:

```
Enter the number
7
5040
1
7
Input is prime
```

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:

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

namespace day9Project2
{
    internal class MathTask

    {
        //Author: Vinay Kudali
        //Purpose: factorial, factors, primecheck
        private int x;
        private int z;
        /// <summary>
        /// this method will readdata from user
        /// </summary>
        public void Readinput()
        {
            Console.WriteLine("Enter first number");
            x = Convert.ToInt32(Console.ReadLine());
            Console.WriteLine("Enter Second Number");
```

```csharp
            z = Convert.ToInt32(Console.ReadLine());
        }
        /// <summary>
        /// this method will add Two numbers
        /// </summary>
        /// <returns>sum</returns>
        public int Addnumbers()
        {
            return x + z;
        }
        /// <summary>
        /// this method will substract two numbers
        /// </summary>
        /// <returns>substract</returns>
        public int Subtractnumbers()
        {
            return x - z;
        }
        /// <summary>
        /// this method will multiply two numbers
        /// </summary>
        /// <returns>multiply</returns>
        public int Multiplynumbers()
        {
            return x * z;
        }
        /// <summary>
        /// this Method will divide two numbers
        /// </summary>
        /// <returns>divide</returns>
        public int Dividenumbers()
        {
            return x / z;
        }
    }
    class Program
    {
        static void Main(string[] args)
        {
            MathTask vk = new MathTask();
            vk.Readinput();
            Console.WriteLine(vk.Addnumbers());
            Console.WriteLine(vk.Subtractnumbers());
            Console.WriteLine(vk.Multiplynumbers());
            Console.WriteLine(vk.Dividenumbers());
            Console.ReadLine();
        }
    }
```

```
}
```

Output:

```
Enter first number
8
Enter Second Number
4
12
4
32
2
```

3. 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 Day9Project3
{
    class Employee
    {
        /*****************************************************************
        Author: Vinay kudali
        Program: Creating employee class and printing variables
        *****************************************************************/
        private int id;
        private string name;
        private int salary;
        public static string company;

        /// <summary>
        /// this method will read data from user
        /// </summary>
        public void Readdata()
        {
            Console.WriteLine("Enter ID number");
            id = Convert.ToInt32(Console.ReadLine());
            Console.WriteLine("Enter name ");
```

```
        name = Console.ReadLine();
        Console.WriteLine("Enter salary");
        salary = Convert.ToInt32(Console.ReadLine());
        company = "Amazon";
    }
    /// <summary>
    /// this method will print data
    /// </summary>
    public void Printdata()
    {
        Console.WriteLine($"Id={id}, Name={name}, Salary={salary}, Company={company}");
    }
}
class Program
{
    static void Main(string[] args)
    {
        Employee emp = new Employee();
        emp.Readdata();
        emp.Printdata();
        Employee emp2 = new Employee();
        emp2.Readdata();
        emp2.Printdata();
        Console.ReadLine();
    }

}
}
```

Output:

```
D:\DotNetProjects\Day9 morning Assignment by vinay\Day9Project3\Day9Project3\bin\Debug\Day9Project3.exe
Enter ID number
1897
Enter name
arun kumar
Enter salary
14500
Id=1897, Name=arun kumar, Salary=14500, Company=Amazon
Enter ID number
```

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

Normal variable	Static Variable
Normal Variables are accessed by using objects	Static variables are accessed by using class name.
The only current object will effected, if any changes are made to normal variable	The whole class will be effected, if any changes are made to static varable.

We can maintain multiple copies of normal variables.	We can maintain only single copy of static variable.

5. Write 5 points discussed about constructor?

1. Constructor is a special type of method which has no Access Specifier, Access Modifier, and return type.

2. Constructor Name Should be same as Class name.

3. In C#, we have Default Constructor which initialize values.

4. Constructor doesn't have return type values.

5. Constructor is used to Initialize the class variables.

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 Day9Project6
{
  class Employee
  {
    //Author: Vinay Kudali
    //Purpose: Creating a employee class with two constroctors
    public int id;
    public string name;
    public int salary;
    public static string company = "Deloitte";
    public Employee()
    {
      id = 0;
      name = "null";
      salary = 0;
    }
    public Employee(int eid, string ename, int esalary)
```

```csharp
        {
            this.id = eid;
            this.name = ename;
            this.salary = esalary;
        }
        /// <summary>
        /// this method will read data from user
        /// </summary>
        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());
        }
        /// <summary>
        /// This method will printdata
        /// </summary>
        public void PrintData()
        {
            Console.WriteLine($"id={id},Name={name},salary={salary},company={company}");
        }
    }

    class Program
    {
        static void Main(string[] args)
        {
            Employee emp = new Employee();
            emp.PrintData();
            Console.ReadLine();
        }
    }
}
```

Output:

```
id=0,Name=null,salary=0,company=Deloitte
```