Day 9(03-02-2022) Morning Assignment
By Sudha Sugasani

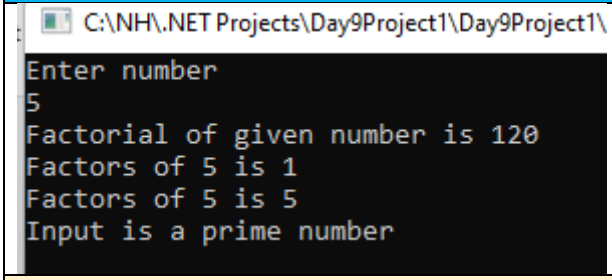
Q1.Write a C# program to read input from user and print
a.factorial of a number
b.factors of a number
c.check if it prime or not

Code:

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

namespace Day9Project1
{
    /*********************************************************************
     * Author:Sudha Sugasani
     * Purpose:Program to find factorial of a number,factors of a number,
     *         to check given number is prime or not
     * *******************************************************************/

     class Mathsoperations
     {
        private int input;

        /// <summary>
        /// This method will read input from user.
        /// </summary>

        public void Readinput()
        {
            Console.WriteLine("Enter number");
            input=Convert.ToInt32(Console.ReadLine());
        }

        /// <summary>
        /// This method will find Factorial of a number and prints it
        /// </summary>
        /// <returns>Factorial</returns>
        public int Factorial()
        {
            int fact = 1;
            for(int i=1;i<=input;i++)
            {
                fact = fact * i;
            }
            return fact;
        }

        /// <summary>
        /// This methods will find Factors of a given number
        /// </summary>

        public void Printfactors()
        {
            for (int i = 1; i <= input; i++)
```

```
            {
                if (input % i == 0)
                {
                    Console.WriteLine($"Factors of {input} is {i}");
                }
            }
        }

        /// <summary>
        /// This method will check if the given number 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==1)
                return true;
            else
                return false;
        }
     }
    internal class Program
    {
        static void Main(string[] args)
        {
            Mathsoperations obj=new Mathsoperations();
            obj.Readinput();
            Console.WriteLine($"Factorial of given number is {obj.Factorial()}");
            obj.Printfactors();
            if (obj.Isprime())
                Console.WriteLine("Input is a prime number ");
            else
                Console.WriteLine("Input is not a prime number");
            Console.ReadLine();
        }
    }
}
```

Output:



Q2. .Write a 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

Code:

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

namespace Day9project2
{

        /*****************************************************************
         * Author:Sudha Sugasani
         * Purpose:Program to find sum of two numbers,difference of two numbers,
         *         product of two numbers,division of two numbers
         * ***************************************************************/

        class MathsTask
        {
            private int input1;
            private int input2;

            /// <summary>
            /// This method will read input from user.
            /// </summary>

            public void Readinput()
            {
                Console.WriteLine("Enter  first number");
                input1 = Convert.ToInt32(Console.ReadLine());
                Console.WriteLine("Enter second number");
                input2 = Convert.ToInt32(Console.ReadLine());
             }

            /// <summary>
            /// This method will find Addition of two numbers and prints it
            /// </summary>
            /// <returns>sum</returns>
            public int Addition()
            {
                int sum;
                sum=input1+input2;
                return sum;
            }

            /// <summary>
            /// This methods will find Difference of  two numbers
            /// </summary>

            public void Difference()
            {
                 int Difference;
                Difference = input1 - input2;
            Console.WriteLine($"The Difference of two numbers are {Difference}");

            }

        /// <summary>
        /// This method will find the product of two numbers
        /// </summary>
        /// <returns>Product</returns>
```

```
            public int Product()
            {
            int Product;
            Product = input1 * input2;
            return Product;
            }

        /// <summary>
        /// This methods will find Division of  two numbers
        /// </summary>
          public void Division()
          {
            int Division;
            Division= input1 / input2;
            Console.WriteLine($"Division is {Division}");
          }
    }
    internal class Program
        {
            static void Main(string[] args)
            {
                MathsTask obj = new MathsTask();
                obj.Readinput();
                Console.WriteLine($"Addition of two numbers is {obj.Addition()}");
                obj.Difference();
                Console.WriteLine($"Product of two numbers is {obj.Product()} ");
                obj.Division();
                Console.ReadLine();
            }
        }
    }
```

Output:

```
C:\NH\.NET Projects\Day9project2\Day9project2\bi
Enter  first number
15
Enter second number
10
Addition of two numbers is 25
The Difference of two numbers are 5
Product of two numbers is 150
Division is 1
```

Q3.Create an Employee class with below variables

Id,name,salary,company

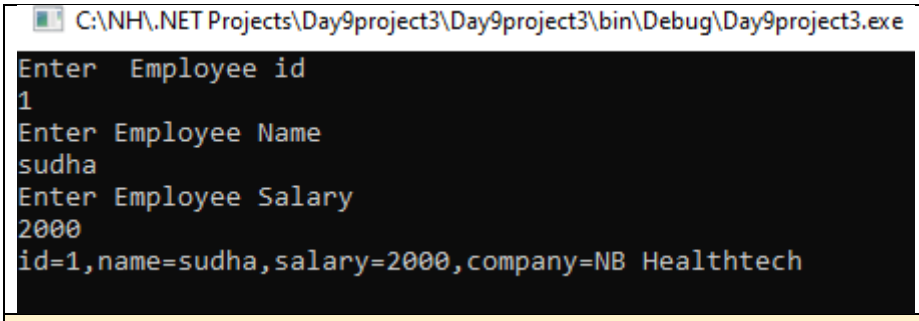
Write methods to read data and print data

Code:

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

namespace Day9project3
{
```

```
        /*************************************************************************
         * Author:Sudha Sugasani
         * Purpose:Creating an Employee class with variables id,name,salary,company
         *         write methods to read and print data
         * ***********************************************************************/

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


            /// <summary>
            /// This method will read input from user.
            /// </summary>

            public void Readinput()
            {
                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 print data
            /// </summary>

            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.Readinput();
                emp.PrintData();
                Console.ReadLine();
            }
        }
    }
```

Output:



Q4.Research and find the difference between normal variables and static variables

Normal Variables	Static variables
➢ Non-static variables will have one copy each per object. Each instance of a class will have one copy of non-static variables.	➢ A static variable is associated with the class has only one copy per class but not for each object. An instance of a class does not have static variables.
➢ Instance variables can be accessed only by the instance methods.	➢ Static variables can be accessed by static or instance methods
➢ Memory is allocated at compile time.	➢ Memory is allocated when the class is loaded in context area at run time.

Q5.Write 5 points discussed about the constructor

- A Constructor is used to initialise class variables while creating an object.
- By default C# will have default constructor even if we don't see it ,it will be there default constructor ,which will initialise to default values.
- When you write your own constructor the default constructor will be gone.
- If we still need default constructor after we creating our own constructor, we need to create the default constructor.
- Constructor name is same as class name.
- We can create any number of constructors in a class.
- When Class variable name, constructor variable name are same we have to use this . to clear the confusion.
- This. Indicates class variables.
- For a constructor we don't write any return type even void

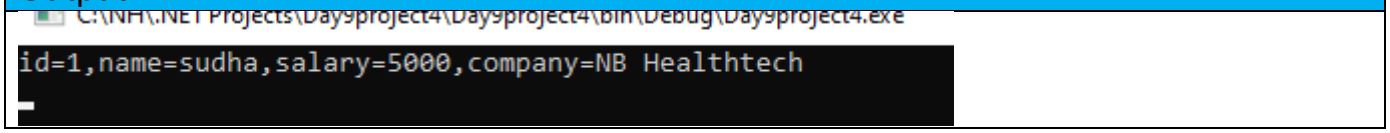
Q6.Create employee class with two constructors as discussed in the class.

Code:

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

namespace Day9project4
{

        /*************************************************************************
         * Author:Sudha Sugasani
         * Purpose:Creating an Employee class with variables id,name,salary,company
         *         using constuctors
```

```
         * ***********************************************************************/

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

        public Employee()
        {
            this.id = 0;
            this.name = null;
            this.salary = 0;
        }
        public Employee(int eid,string ename,int esalary)
        {
            id = eid;
            name = ename;
            salary = esalary;
        }


            /// <summary>
            /// This method will read input from user.
            /// </summary>

            public void Readinput()
            {
                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 print data
            /// </summary>

            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(1,"sudha",5000);

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

Output:


C:\NH\.NET Projects\Daysproject4\Daysproject4\bin\Debug\Daysproject4.exe
id=1,name=sudha,salary=5000,company=NB Healthtech