Day9 Morning Assignment

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Question 1:

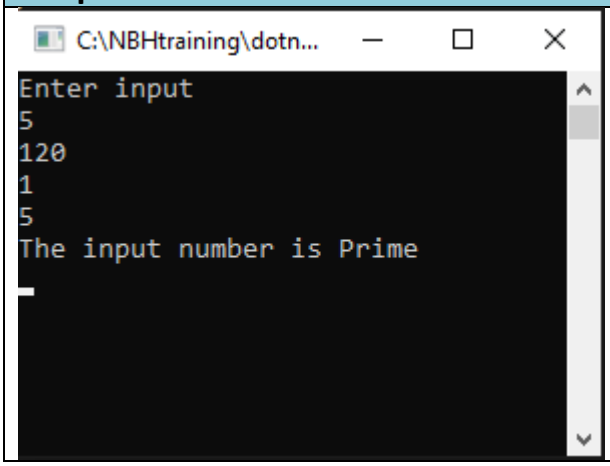
Write a c# program to read input from user and print
A)Factorial of a number
B)Factors of a number
C)Check if it is Prime or not

Program:

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

namespace Day9project1
{       //*************************************************************\\
        //Author:Narala Praveen
        //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);
         }
         /// <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:



Question 2:

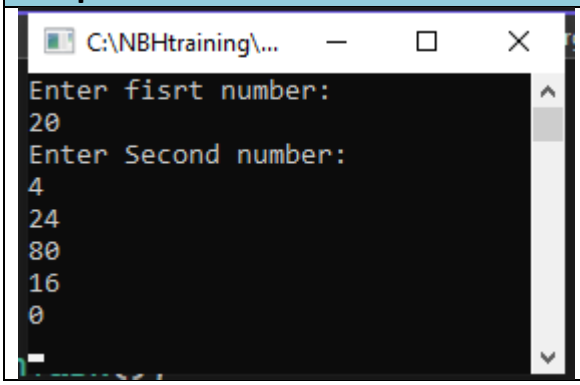
Write C# program to read two numbers from user and print
A)Sum of two numbers
B)Difference of two numbers
C)Product of two numbers
d)Division of two numbers

Program:

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

namespace Day9Project2
{     //*****************************************************************\\
    //Author:Narala Praveen
    //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()
        {
            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:



Question3:

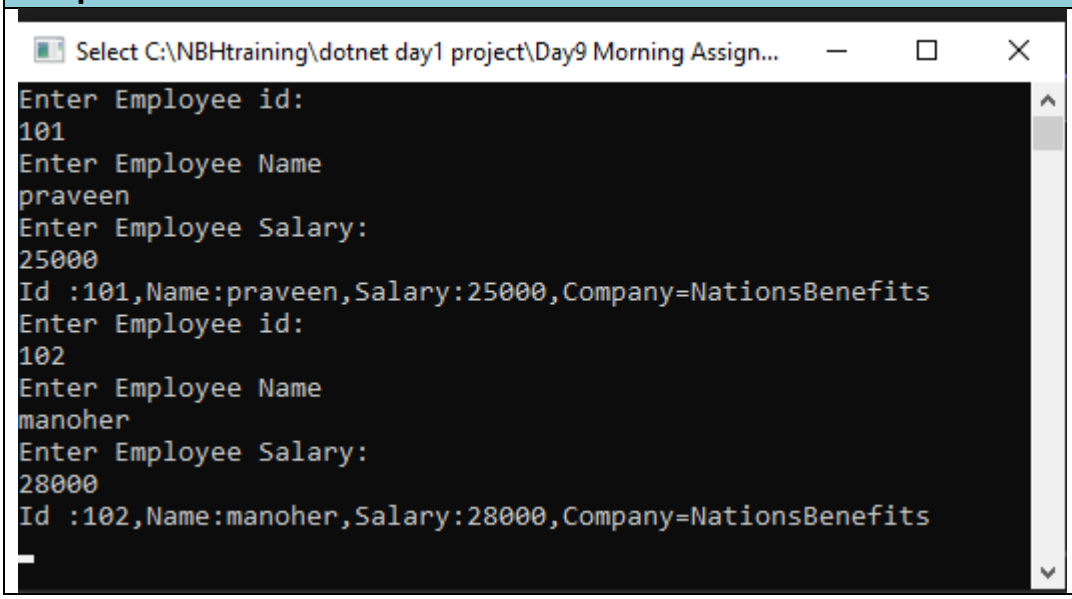
Create an employee class with below variables id, name, salary, company Write methods to read data and print data?

Program:

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

namespace Day9Project3
{       //*********************************************\\
        //Author:Narala Praveen
        //Purpose:To create a employee class and print data
        //*********************************************\\

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

     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 emp1 = new Employee();
            emp1.ReadData();
            emp1.PrintData();

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


            Console.ReadLine();
        }
    }
```

```
}
```

Output:


Select C:\NBHtraining\dotnet day1 project\Day9 Morning Assign...
Enter Employee id:
101
Enter Employee Name
praveen
Enter Employee Salary:
25000
Id :101,Name:praveen,Salary:25000,Company=NationsBenefits
Enter Employee id:
102
Enter Employee Name
manoher
Enter Employee Salary:
28000
Id :102,Name:manoher,Salary:28000,Company=NationsBenefits

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

Static variable	Non Static or Normal variable
1.Static variable acts as a global variable and is shared among all the objects of the class .	Normal variable is specific to instance object in which they are created.
2.A static variable is declared using static key word.	A normal variable is not required to have any special key word.

5.Write 5 points discussed about constructor in class?

1. A constructor is useful to initialize 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 u want Default Constructor after creating a user defined Constructor after creating a user defined constructor we have to create one.
5.The Constructor name should be same as class name, we can create any number of constructors for a class.

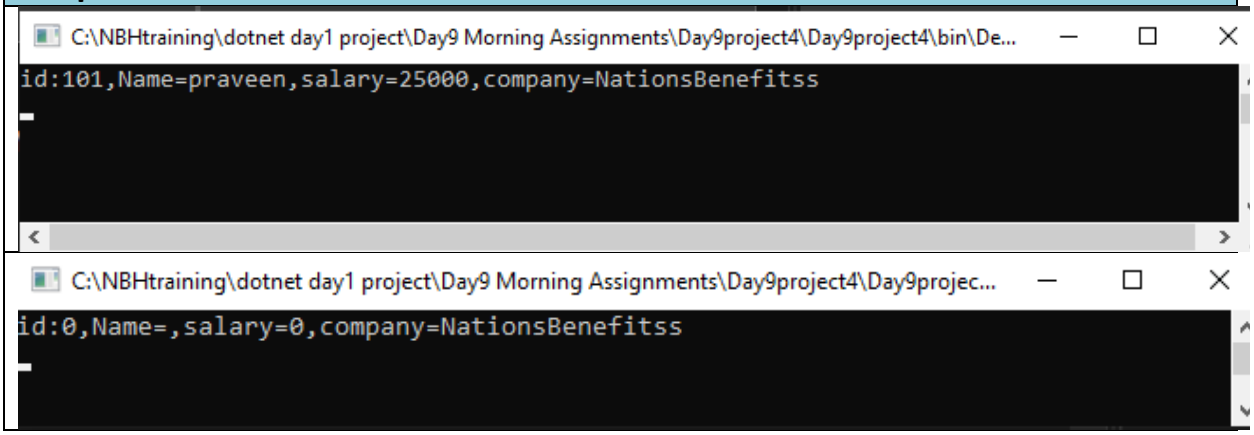
Question 6:

Create Employee class with two constructors as discussed in the class?

Program:

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

namespace Day9project4
{       //*********************************************************\\
    //Author:Narala Praveen
    //Purpose:Employee class with two constructors

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

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

Outputs:


C:\NBHtraining\dotnet day1 project\Day9 Morning Assignments\Day9project4\Day9project4\bin\De...
id:101,Name=praveen,salary=25000,company=NationsBenefitss

C:\NBHtraining\dotnet day1 project\Day9 Morning Assignments\Day9project4\Day9projec...
id:0,Name=,salary=0,company=NationsBenefitss