DAY 9 MORNING ASSIGNMENT

(BY G V S S SRI LASYA)

1) Research and find the difference between normal variable and static variable.

Static variable	Non static variable
1)Declared using “static” keyword	1)”static” keyword is not used for declaration.Also called as “Object variable”
2)Called by classname.variable	2)Called by objectname.variable
3)Only one copy of static variable exists in the entire program	3)Each time an object is created,a new value can be assigned to the non static variable
4)Initialised immediately after the execution of class begins	4)Initialised only after an object of the class is created
5)If not initialised during declaration,they are assigned “0” by daefault	5)Initialised with some garbage value if not explicitly initialised

2) Write 5 points discussed about constructor

- Constructors are used to initialsie class variables
- By default,there would be one constructor called default constructor which initialises with default values
- Once a user defined constructor is created,the default constructor will be gone.We can create deafult constructor too if needed
- Constructor names houkd be same as class name
- Constructors wont have return values
- In parameterised constructors,if the names of parameters are same as class variables,we can put “this.” to indicates class variables and thus differentiate them from the constructor parameters

3) 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;


/*****************************************************************
Author : G V S S SRI LASYA
Purpose :  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
*****************************************************************/



namespace Day9project1
{
    class MathOperations
    {
        private int input;

       /// <summary>
       /// To take input from the user
       /// </summary>
       /// <return>
       /// void
       /// </return>

        public void ReadInput()
        {
            Console.Write("\nEnter the number : ");
            input = Convert.ToInt32(Console.ReadLine());
        }


        /// <summary>
        /// To find factorial of given number and return factorial
        ///</summary>
        ///<returns>
        ///int
        ///</returns>

        public int FindFactorial()
        {
            int factorial = 1;

            for(int i = 1; i <= input; i++)
                factorial *= i;

            return factorial;

        }

        /// <summary>
        /// To check if a number is prime or not
        /// </summary>
        /// <returns>
        /// bool
        /// </returns>
           public bool IsPrime()
        {
            int count = 0;
            for (int i = 1; i <= input; i++)
            {
                if (input % i == 0)
```

```
                    count++;
                }

               return (count == 2) ? true : false;

            }

            /// <summary>
            /// To print factors of give number
            /// </summary>
            /// <returns>
            /// void
            /// </returns>
            public void PrintFactors()
            {

                Console.Write($"\n\nFactors of {input} are : ");
                for(int i = 1; i <= input; i++)
                {
                    if (input % i == 0)
                        Console.Write("\t" + i);
                }
            }
        }
        internal class Program
        {
            static void Main(string[] args)
            {
                MathOperations object1 = new MathOperations();

                //calling all the methods of MathOperations class
                object1.ReadInput();

                Console.Write($"\n\nFactorial is : {object1.FindFactorial()}");

                if (object1.IsPrime())
                    Console.Write("\n\nGiven number is prime");
                else
                    Console.Write("\n\nGiven number is not prime");

                object1.PrintFactors();

                Console.ReadLine();

            }
        }
}
```

OUTPUT

```
Enter the number : 6


Factorial is : 720

Given number is not prime

Factors of 6 are :      1       2       3       6
```

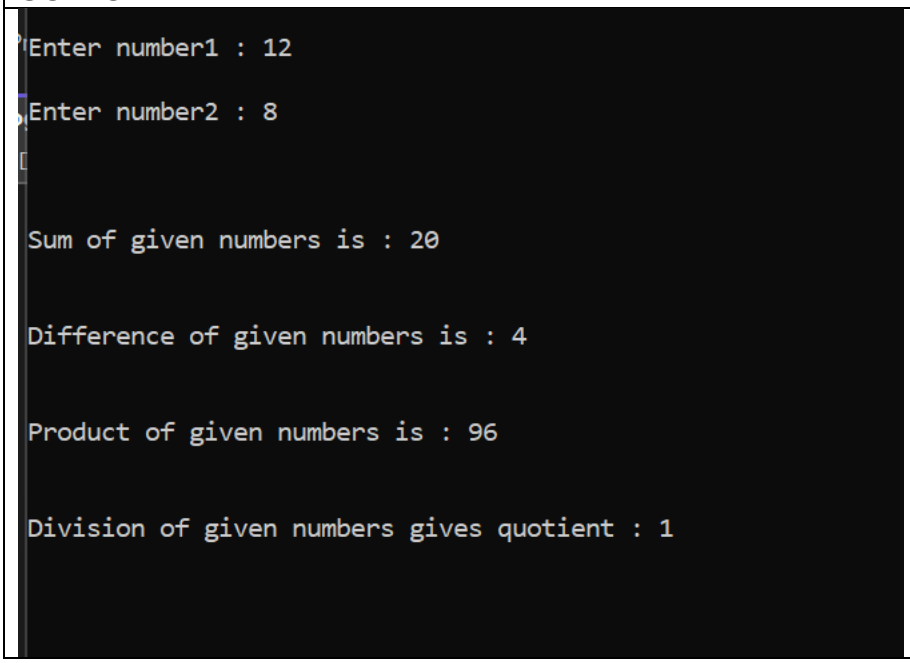
4) Write C# program to read two numbers from use and print
a. sum of two numbers
b. difference of two numbers
c. product of two numbers
d. division of two numbers.

CODE

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

/*****************************************************************
Author : G V S S SRI LASYA
Purpose : 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.
*****************************************************************/


namespace Day9Project2
{
    class MathTasks
    {
       private int number1, number2;

        /// <summary>
        /// To take inputs from user
        /// </summary>
        ///<return>
        ///void
        /// </return>
        public void ReadInput()
        {
            Console.Write("\nEnter number1 : ");
            number1 = Convert.ToInt32(Console.ReadLine());
            Console.Write("\nEnter number2 : ");
            number2 = Convert.ToInt32(Console.ReadLine());

        }

        /// <summary>
        /// To add given inputs
        /// </summary>
        ///<return>
        ///int
        /// </return>
        public int AddNumbers()
        {
            return number1 + number2;

        }

        /// <summary>
        /// To subtract given inputs
        /// </summary>
        ///<return>
        ///int
        /// </return>
        public int SubtractNumbers()
        {
            return number1 - number2;
        }

        /// <summary>
        /// To multiply given inputs
        ///<return>
        ///int
        /// </return>
```

```
        public int MultiplyNumbers()
        {

            return number1 * number2;

        }

        /// <summary>
        /// To divide given inputs
        /// </summary>
        ///<return>
        ///int
        /// </return>
        public int DivideNumbers()
        {
            return number1 / number2;

        }


    }
    internal class Program
    {
        static void Main(string[] args)
        {
            MathTasks object1 = new MathTasks();

            //calling methods of the class MathTasks
            object1.ReadInput();
            Console.Write($"\n\n\nSum of given numbers is : {object1.AddNumbers()}");
            Console.Write($"\n\n\nDifference of given numbers is :
{object1.SubtractNumbers()}");
            Console.Write($"\n\n\nProduct of given numbers is :
{object1.MultiplyNumbers()}");
            Console.Write($"\n\n\nDivision of given numbers gives quotient :
{object1.DivideNumbers()}");


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

OUTPUT



5)Create an employee class with 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;

/*****************************************************************************
Author : G V S S SRI LASYA
Purpose : Create an employee class with the variables id,name,salary,company.
Write methods to read data and print data.
*****************************************************************************/

namespace Day9Project3
{
    class Employee
    {
        public int id;
        public string name;
        public int salary;
        public static string company = "ABC";

        /// <summary>
        /// To take user inputs
        /// </summary>
        /// <returns>
        /// void
        /// </returns>
        public void ReadData()
        {
            Console.Write("\nEnter employee id : ");
            id = Convert.ToInt32(Console.ReadLine());
            Console.Write("Enter employee name : ");
            name = Console.ReadLine();
            Console.Write("Enter employee salary : ");
            salary = Convert.ToInt32(Console.ReadLine());
        }

        /// <summary>
        /// To print data
        /// </summary>
        /// <returns>
        /// void
        /// </returns>
        public void PrintData()
        {
            Console.Write($"\nEmployee id is : {id}\tname : {name}\tsalary :
{salary}\tcompany : {company}");

        }
    }
    internal class Program
    {
        static void Main(string[] args)
        {
            Employee emp1 = new Employee();
            Employee emp2 = new Employee();

            emp1.ReadData();
            emp2.ReadData();

            emp1.PrintData();
            emp2.PrintData();

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

OUTPUT

```
Enter employee id : 1
Enter employee name : Kavya
Enter employee salary : 200000

Enter employee id : 2
Enter employee name : Anitha
Enter employee salary : 150000

Employee id is : 1      name : Kavya    salary : 200000 company : ABC
Employee id is : 2      name : Anitha   salary : 150000 company : ABC
```

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;


/*****************************************************************************
Author : G V S S SRI LASYA
Purpose : Create Employee class with two constructors as discussed in the class.
*****************************************************************************/



namespace Day9Project4
{
    class Employee
    {
        public int id;
        public string name;
        public int salary;
        public static string company = "ABC";

        /// <summary>
        /// To read data from the user
        /// </summary>
        ///<return>
        ///void
        /// </return>
        public void ReadData()
        {


            Console.Write("\nEmployee ID : ");
            id = Convert.ToInt32(Console.ReadLine());
            Console.Write("\nEmployee Name : ");
            name =Console.ReadLine();
            Console.Write("\nEmployee Salary : ");
            salary = Convert.ToInt32(Console.ReadLine());

        }

        /// <summary>
        /// To print data
        /// </summary>
        ///<return>
        ///void
        /// </return>
        public void PrintData()
        {
            Console.Write($"\nID : {id}\tName : {name}\tSalary : {salary}\t\tCompany :
{company}");

        }

        //parameterised constructor
        public Employee(int id,string name,int salary)
        {
            this.id = id;
            this.name = name;
            this.salary = salary;
        }

        //default constructor
        public Employee()
        {
            id = 0;
            name = null;
            salary = 0;
        }
    }
```

```
    internal class Program
    {
        static void Main(string[] args)
        {
            Employee emp1 = new Employee(1, "Ritu", 150000);

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

            Console.WriteLine("\n");
            emp1.PrintData();
            emp2.PrintData();

            Console.ReadLine();


        }
    }
}
```

OUTPUT

```
Employee ID : 2

Employee Name : Akanksha

Employee Salary : 150000



ID : 1  Name : Ritu     Salary : 150000         Company : ABC
ID : 2  Name : Akanksha Salary : 150000         Company : ABC
```