| **DAY 9 : Morning Assignment**  **By**  **Vihar D.** |
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| **Assignment 1** |
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| **Create a class to read the inputs and print factorial, factors & is prime or not.** |
| **Answer :** |
| using System;  using System.Collections.Generic;  using System.Linq;  using System.Text;  using System.Threading.Tasks;  namespace print\_fact\_fac\_prime  {  class Math\_ops  {  private int input;  private int i;  public void ReadData()  {  Console.Write("Enter any Number to find Some Mathematical Calculations : ");  input = Convert.ToInt32(Console.ReadLine());  }  *//Print factorial-------------------------------------------------------*  public void Factorial()  {  int fact = 1;  for (int i = 1; i <= input; i++)  {  fact \*= i;  }  Console.WriteLine($"\nThe Factorial of Given Number {input} is : {fact}");  }  *//Print factors-------------------------------------------------------*  public void Factor()  {  Console.Write($"\nThe Factors of Given Number {input} is : ");  for (int i = 1; i <= input; i++)  {  if (input % i == 0)  Console.Write("\t{0}", i);  }  }  *//Print prime or not-----------------------------------------------------*  public void Prime()  {  for (i = 2; i < input; i++)  {  if (input % i == 0)  break;  }  if (i == input)  Console.WriteLine($"\n{input} is a Prime Number");  else  Console.WriteLine($"\n{input} is NOT a Prime Number");  }  }  internal class Program  {  static void Main(string[] args)  {  Math\_ops m1 = new Math\_ops();  m1.ReadData();  m1.Factorial();  m1.Factor();  m1.Prime();  Console.ReadLine();  }  }  } |
| **Output :** |
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| **Assignment 2** |
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| **Create a class to read 2 inputs and sum, difference, product & division** |
| **Answer :** |
| using System;  using System.Collections.Generic;  using System.Linq;  using System.Text;  using System.Threading.Tasks;  namespace \_2inputs\_mathops  {  class BasicMath  {  private int a, b;  private int temp;  public void ReadData()  {  Console.WriteLine("\nEnter 2 numbers : \n");  Console.Write("Enter a value : ");  a = Convert.ToInt32(Console.ReadLine());  Console.Write("\nEnter value : ");  b = Convert.ToInt32(Console.ReadLine());  }    *//Addition-----------------------------------------------------------*  public void add()  {  temp = a + b;  Console.WriteLine($"\nSum of {a} + {b} is : {temp}");  }    *//Difference-----------------------------------------------------------*  public void diff()  {  temp = a - b;  Console.WriteLine($"\nDifference of {a} - {b} is :{temp}");  }    *//Product-----------------------------------------------------------*  public void prod()  {  temp = a \* b;  Console.WriteLine($"\nProduct of {a} \* {b} is : {temp}");  }    *//Division-----------------------------------------------------------*  public void div()  {  temp = a / b;  Console.WriteLine($"\nDivision of {a} / {b} is : {temp}");  }  }  internal class Program  {  static void Main(string[] args)  {  BasicMath m2 = new BasicMath();  m2.ReadData();  m2.add();  m2.diff();  m2.prod();  m2.div();  Console.ReadLine();  }  }  } |
| **Output :** |
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| **Assignment 3** |
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| **Create an Employee class with 4 variables using one static variable and write the methods to read and print data.** |
| **Answer :** |
| using System;  using System.Collections.Generic;  using System.Linq;  using System.Text;  using System.Threading.Tasks;  namespace emp4var  {  class Employee  {  public int id;  public string name;  public int salary;  public static string company = "NB Health Tech";  public void ReadData()  {  Console.WriteLine("\nEnter employee id :");  id = Convert.ToInt32(Console.ReadLine());  Console.WriteLine("\nEnter employee name :");  name = Console.ReadLine();  Console.WriteLine("\nEnter employee salary :");  salary = Convert.ToInt32(Console.ReadLine());  }  public void PrintData()  {  Console.WriteLine("\n");  Console.WriteLine($" id : {id}, " +  $"name : {name}, " +  $"salary : {salary}, " +  $"company : {company}");  }  }  internal class Program  {  static void Main(string[] args)  {  Employee emp1 = new Employee();  Employee emp2 = new Employee();  *//Read employee data-------------------------------------*  Console.WriteLine("\n\*\*\*\*\*\*Reading employee data\*\*\*\*\*\*");  emp1.ReadData();  emp2.ReadData();  *//Print employee data-------------------------------------*  Console.WriteLine("\n\*\*\*\*\*\*Printing employee data\*\*\*\*\*\*");  emp1.PrintData();  emp2.PrintData();  Console.ReadLine();  }  }  } |
| **Output :** |
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| **Assignment 4** |
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| **Research and find the difference between normal variable and static variable.** |
| **Answer :** |
| | **Normal Variables** | **Static Variables** | | --- | --- | | * **Accessed using instance of a class** | * **Accessed using class name** | | * **Cannot be accessed inside a static method** | * **Accessed by static and normal variables** | | * **Used in the same instance of a class** | * **Shared among all instances** | | * **Does not reduce the memory used** | * **Reduces the unused memory usage** | | * **Similar to local variable** | * **Similar to global variable** | |

| **Assignment 5** |
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| **Write 5 points about constructors. ( which were discussed in the meeting session)** |
| **Answer :** |
| * **A constructor is used to initialize class variables while creating an object.** * **Default constructor is declared inside a class with default values by default.** * **Default constructor is deleted after the user-defined constructor is created.** * **Constructor name should be the same as the class name.** * **If a default constructor is needed along with the user-defined constructor, create a new default constructor with default values in the variables with their data types.** |

| **Assignment 6** |
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| **Create an Employee class with 2 constructors and write the methods to read and write the given data** |
| **Answer :** |
| using System;  using System.Collections.Generic;  using System.Linq;  using System.Text;  using System.Threading.Tasks;  namespace const2\_emp  {  internal class Program  {  class Employee  {  public int id;  public string name;  public int salary;  public static string company = "NB HealthCare";  *//Default Constructor-----------------------------------*  public Employee()  {  this.id = 0;  this.name = null;  this.salary = 0;  }  *//Constructor with values-----------------------------------*  public Employee(int eid, string ename, int esalary)  {  this.id = eid;  this.name = ename;  this.salary = esalary;  }  *//Reading Data-----------------------------------*  public void ReadData()  {  Console.Write("\nEnter employee id : ");  id = Convert.ToInt32(Console.ReadLine());  Console.Write("\nEnter employee name : ");  name = Console.ReadLine();  Console.Write("\nEnter employee salary : ");  salary = Convert.ToInt32(Console.ReadLine());  }  *//Printing Data-----------------------------------*  public void PrintData()  {  Console.WriteLine("\n");  Console.WriteLine($" id : {id}, " +  $"name : {name}, " +  $"salary : {salary}, " +  $"company :{company}");  }  }  static void Main(string[] args)  {  Employee emp1 = new Employee();  Employee emp2 = new Employee(61, "Vihar Dasari", 40000);  emp1.ReadData();  Console.WriteLine("\n\*\*\*\*\*\*\*\*\*\* Printing using default constructor \*\*\*\*\*\*\*\*\*\*");    emp1.PrintData();  Console.WriteLine("\n\*\*\*\*\*\*\*\*\*\* Printing using constructor \*\*\*\*\*\*\*\*\*\*");    emp2.PrintData();  Console.ReadLine();  }  }  } |
| **Output :** |
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