Index

Name …… Roll …… Class……

Subject ……Section …… Phone……..

College/School ……..

Problem Statement 13: Write a program in C# to create a class, constructor and usage of this keyword.

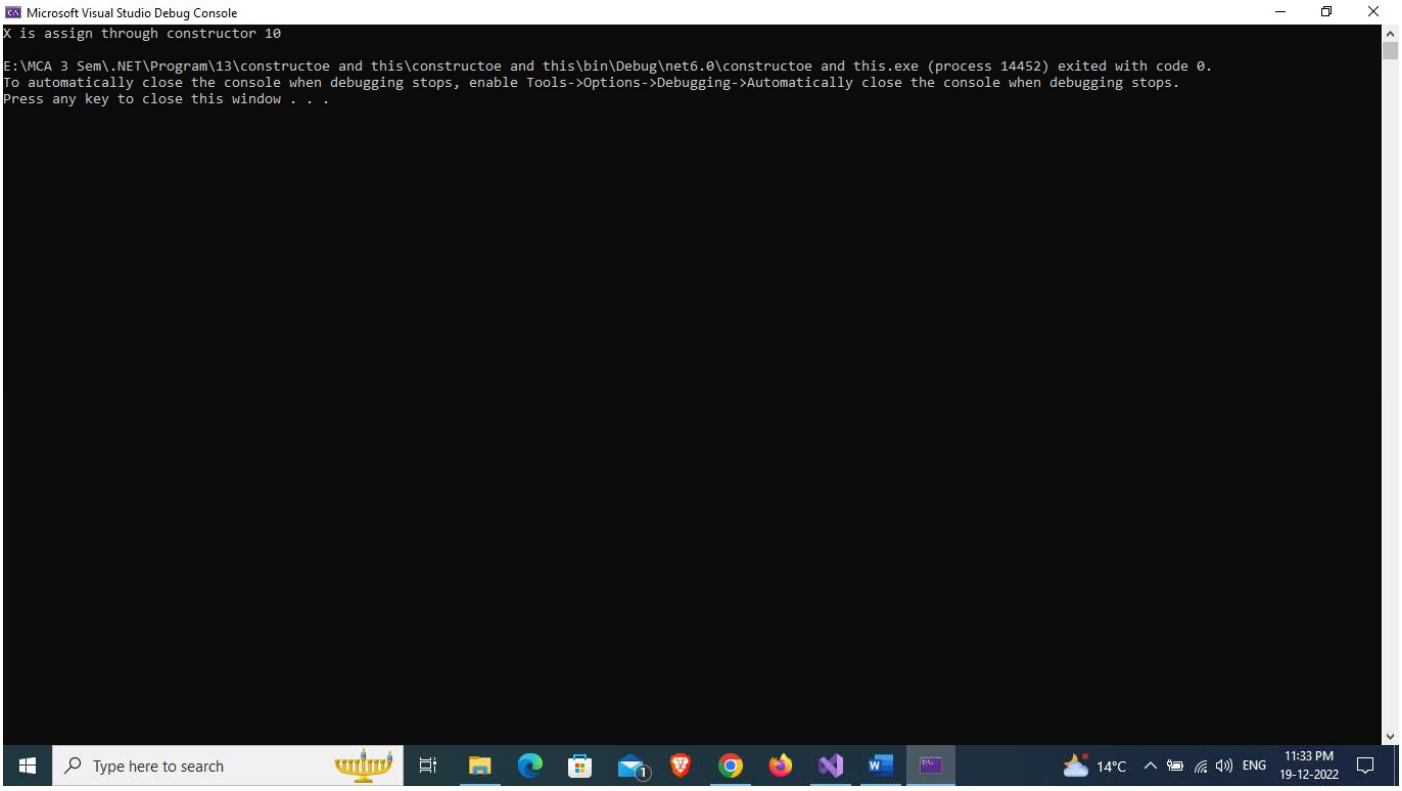
Objective: To learn class constructor and usages of this keyword in C#.

Description: A constructor is a special method that is used to initialize objects. The advantage of a constructor is that it is called when an object of a class is created. The “this” keyword in C# is used to refer to the current instance of the class. It is also used to differentiate between the method parameters and class fields if they both have the same name.

Code constructor:

```
using System;
class Constr
{
   int x;
   public Constr()
   {
     x= 10;
   }

   static void Main(string[] args)
   {
      Constr obj = new Constr();
      Console.WriteLine("X is assign through constructor "+ obj.x);
   }
}
```

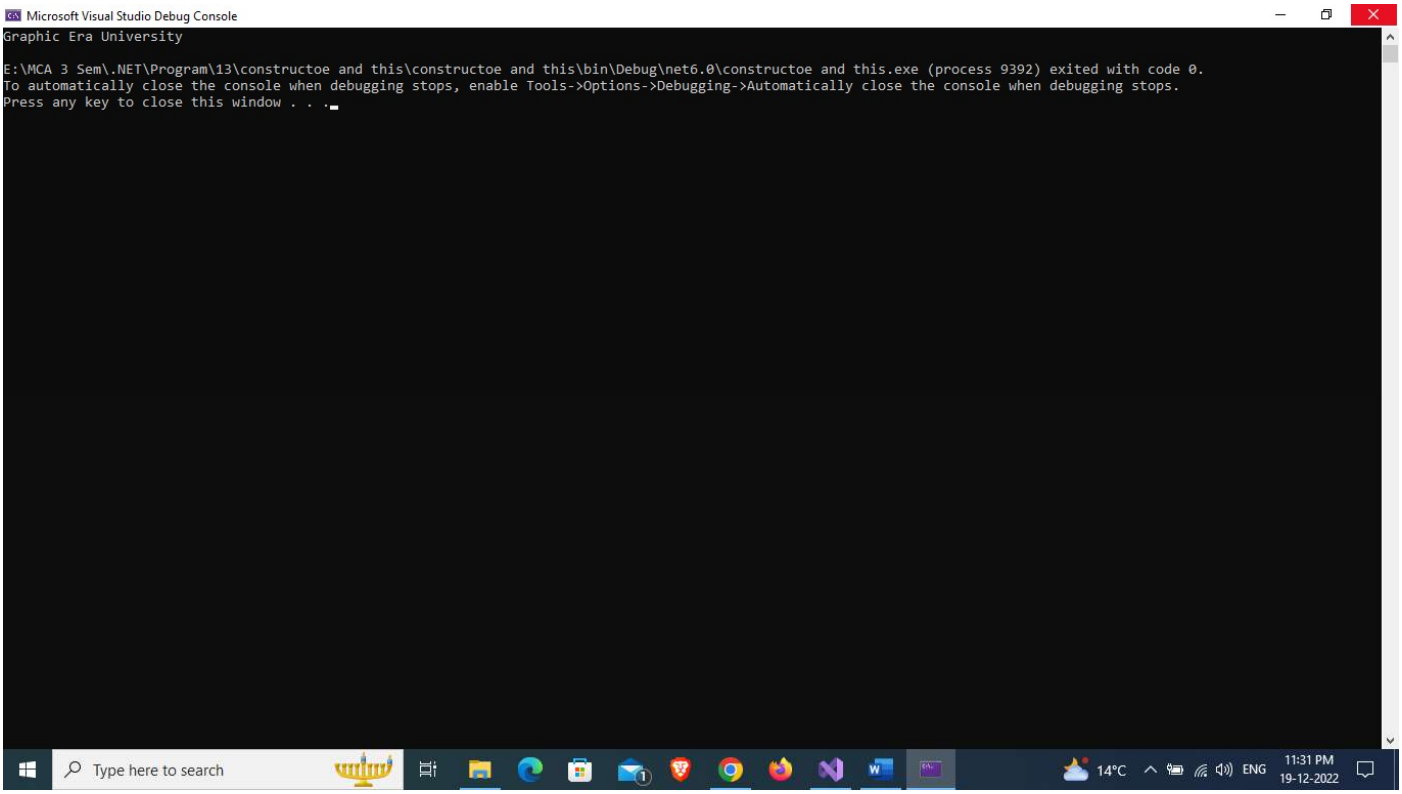
Output:



Code using this keyword:

```
using System;
class First
{
   public string Name;

   public string GetName()
   {
      return Name;
   }


   public void SetName(string Name)
   {
      this.Name = Name;
   }
}

class program
{
   public static void Main()
   {
      First obj = new First();
      obj.SetName("Graphic Era University");
      Console.WriteLine(obj.GetName());
   }
}
```

Output:



Problem Statement 14: Write a program in C# to demonstrate static and instance data members for calculating area of circle.

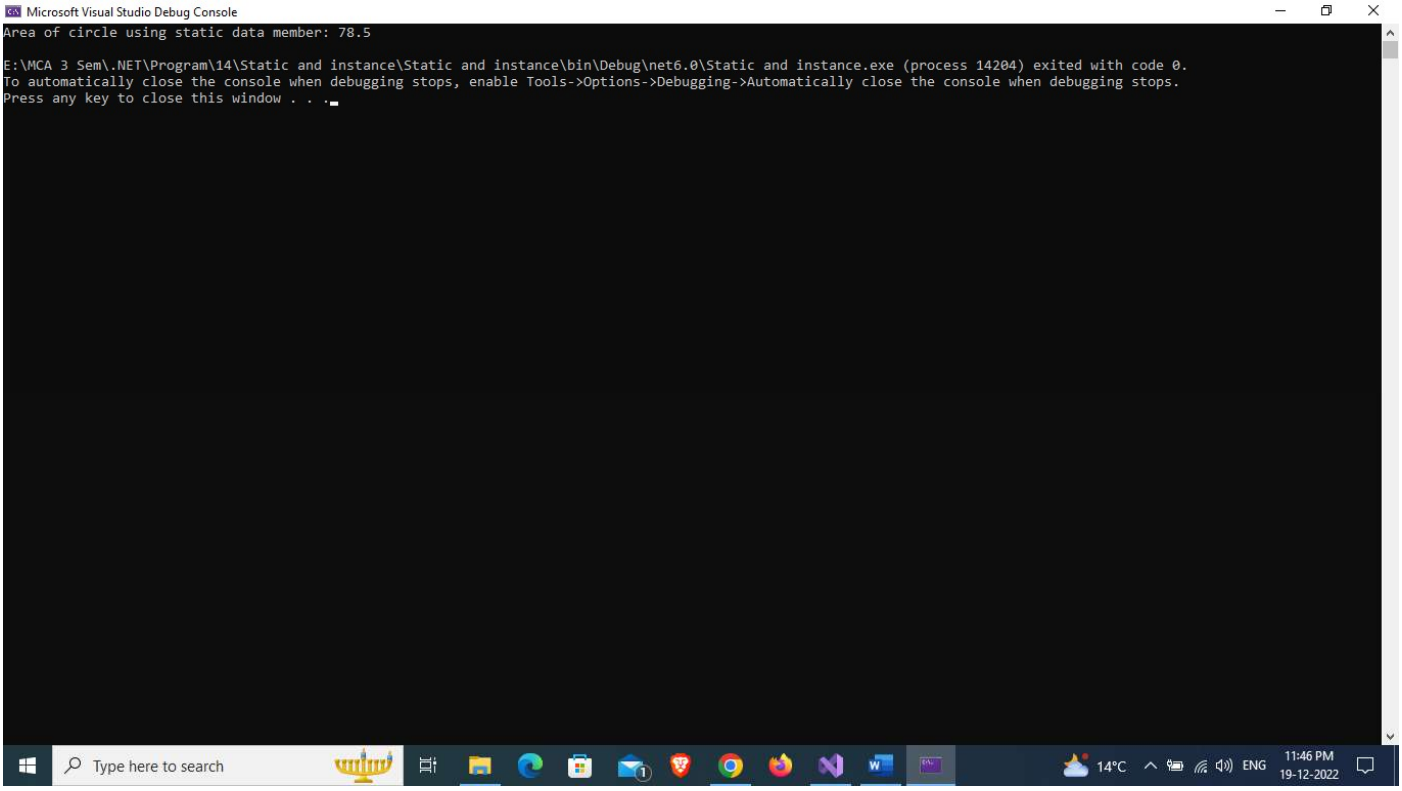
Objective: To learn static and instance data member in C#.

Description: An instance data member of a class is recreated each time when a new instance of the class is created, and it is associated with that instance only. Whereas a static data member of a class is not recreated with new instance creation, only one copy of it is shared by all the instances

Code using static data member:

```
using System;
static class First
{
   public static int num = 5;
   public static double area = 3.14 * num * num;
}
public class Final
{
   static public void Main()
   {
      Console.WriteLine("Area of circle using static data member: {0} ", First.area);
   }
}
```

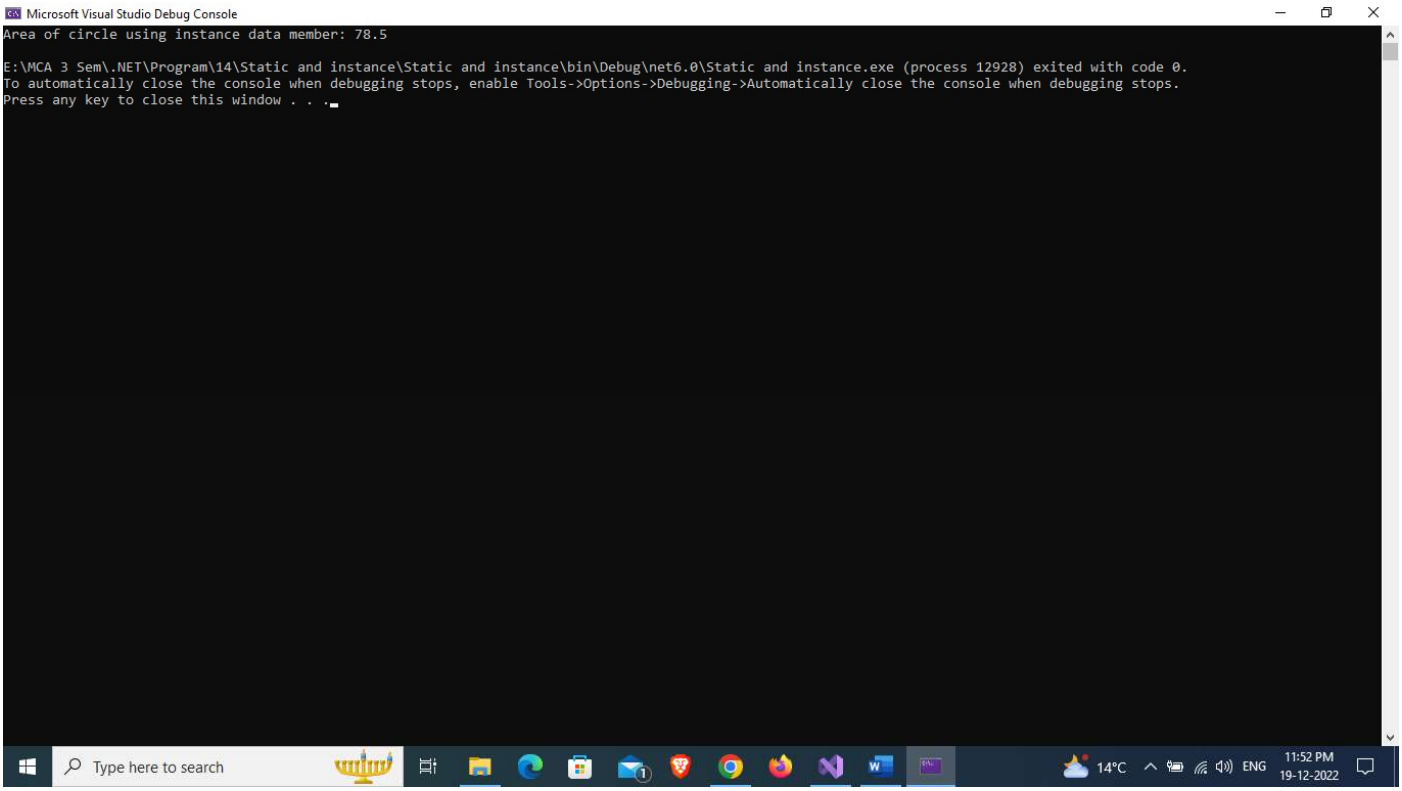
Output:



Code using instance data member:

```
using System;
class First
{
   public int num = 5;
   public double a;
   public void area()
   {
      a = 3.14 * num * num;
      Console.WriteLine("Area of circle using instance data member: {0} ", a);
   }
}
public class Final
{
   static public void Main()
   {
      First fst = new First();
      fst.area();
   }
}
```

Output:



Problem Statement 15: Write a program in C# to demonstrate inheritance in C# by creating PartTime Emp, FullTime Emp and Emp Class.

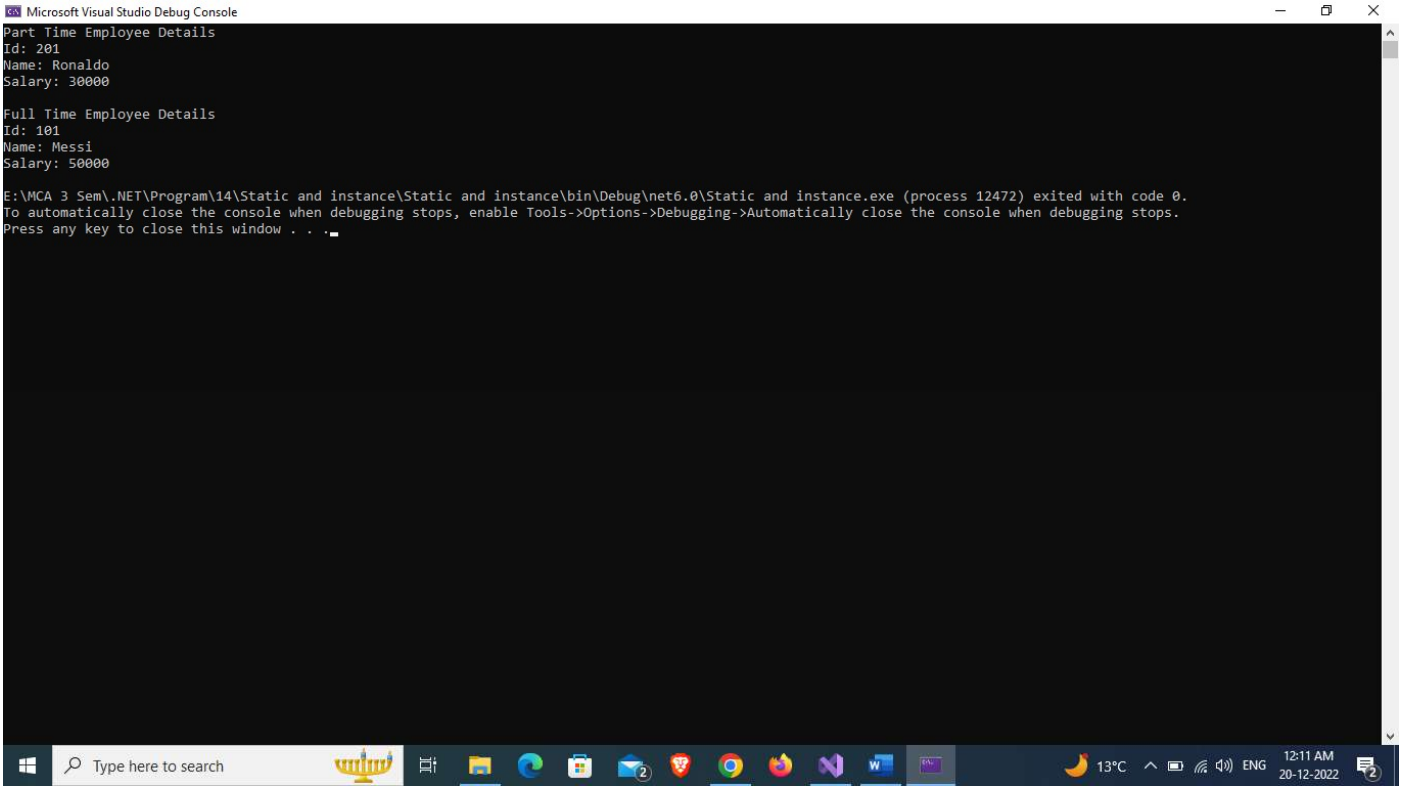
Objective: To learn inheritance in C#.

Description: An instance data member of a class is recreated each time when a new instance of the class is created, and it is associated with that instance only. Whereas a static data member of a class is not recreated with new instance creation, only one copy of it is shared by all the instances

Code:

```
using System;

class PartTimeEmp
{
   public int PId = 201;
   public string Pname = "Ronaldo";
   public int Psalary = 30000;
}
class FullTimeEmp : PartTimeEmp
{
   public int FId = 101;
   public string Fname = "Messi";
   public int Fsalary = 50000;
}
class Emp
{
   static public void Main(string[] args)
   {
      FullTimeEmp fte = new FullTimeEmp();
      Console.WriteLine("Part Time Employee Details");
      Console.WriteLine("Id: " + fte.PId);
      Console.WriteLine("Name: " + fte.Pname);
      Console.WriteLine("Salary: " + fte.Psalary);
      Console.WriteLine();
      Console.WriteLine("Full Time Employee Details");
      Console.WriteLine("Id: " + fte.FId);
      Console.WriteLine("Name: " + fte.Fname);
      Console.WriteLine("Salary: " + fte.Fsalary);
   }
}
```

Output:


Microsoft Visual Studio Debug Console
Part Time Employee Details
Id: 201
Name: Ronaldo
Salary: 30000
Full Time Employee Details
Id: 101
Name: Messi
Salary: 50000
E:\MCA 3 Sem\.NET\Program\14\Static and instance\Static and instance\bin\Debug\net6.0\Static and instance.exe (process 12472) exited with code 0.
To automatically close the console when debugging stops, enable Tools->Options->Debugging->Automatically close the console when debugging stops.
Press any key to close this window . . .
Type here to search
13°C
ENG
12:11 AM
20-12-2022

Problem Statement 16: Write a program in C# to demonstrate method Hiding in C# and how to invoke hidden base class members.

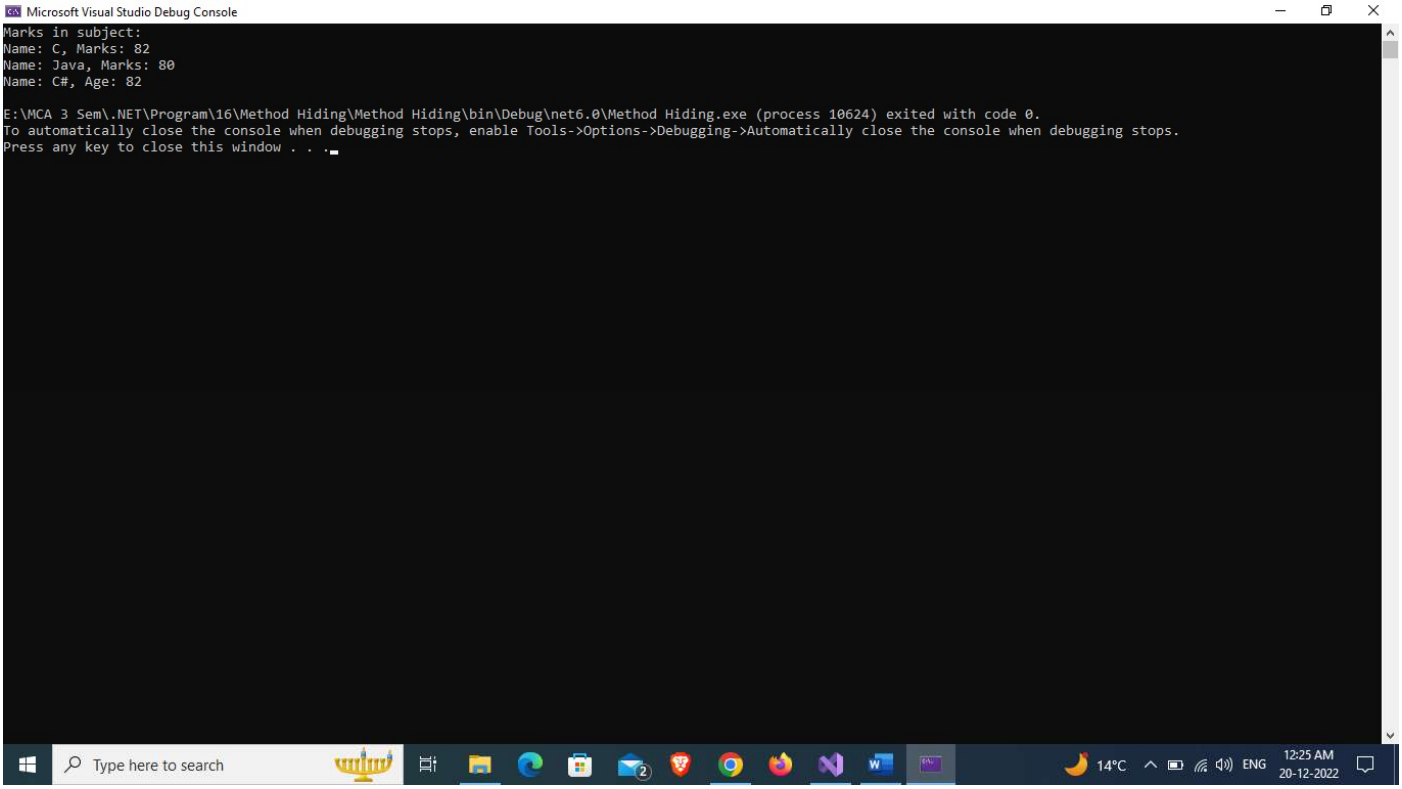
Objective: To learn method hiding concept in C#.

Description: An instance data member of a class is recreated each time when a new instance of the class is created, and it is associated with that instance only. Whereas a static data member of a class is not recreated with new instance creation, only one copy of it is shared by all the instances.

Code:

```
using System;
public class MCA
{
   public void subject()
   {
      Console.WriteLine("Marks in subject: ");
   }
}

// Derived Class
public class Marks : MCA
{


   public new void subject()
   {
      base.subject();
      Console.WriteLine("Name: C, Marks: 82 \nName: Java," +
                        " Marks: 80 \nName: C#, Age: 82");
   }
}

class GFG
{

   // Main method
   static public void Main()
   {

      // Creating the object of the derived class
      Marks obj = new Marks();

      // Access the method of derived class
      obj.subject();
   }
}
```

Output:


Microsoft Visual Studio Debug Console
Marks in subject:
Name: C, Marks: 82
Name: Java, Marks: 80
Name: C#, Age: 82
E:\MCA 3 Sem\.NET\Program\16\Method Hiding\Method Hiding\bin\Debug\net6.0\Method Hiding.exe (process 10624) exited with code 0.
To automatically close the console when debugging stops, enable Tools->Options->Debugging->Automatically close the console when debugging stops.
Press any key to close this window . . .
Type here to search
14°C
ENG
12:25 AM
20-12-2022

Problem Statement 17: Write a program to demonstrate polymorphism that enables you to invoke derived class methods through base class reference variables at runtime.

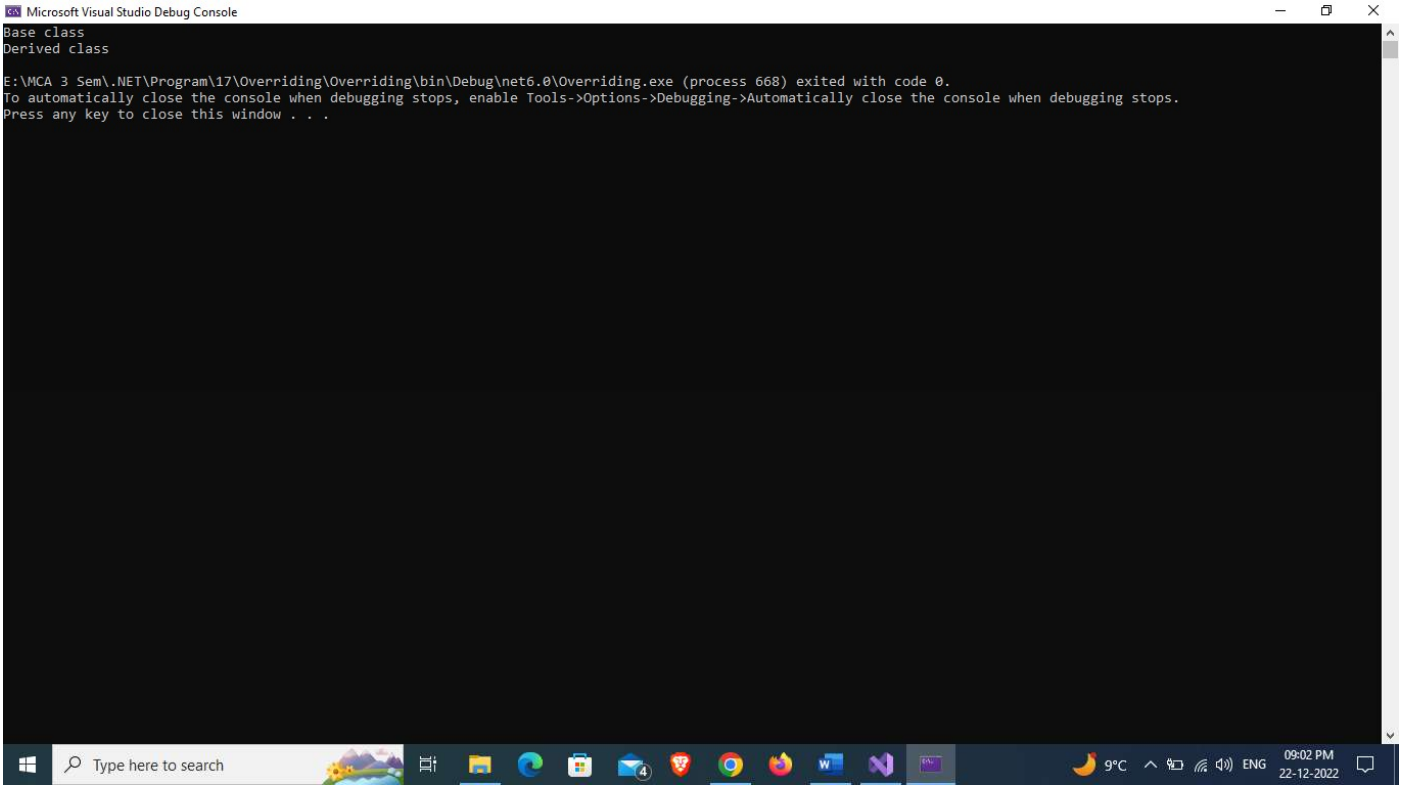
Objective: To learn polymorphism concept in C#.

Description: Polymorphism means "many forms", and it occurs when we have many classes that are related to each other by inheritance.

Code:

```
using System;

class baseClass
{
   public virtual void show()
   {
      Console.WriteLine("Base class");
   }
}
class derived : baseClass
{
   public override void show()
   {
      Console.WriteLine("Derived class");
   }
}

class Overriding
{
   public static void Main()
   {

      baseClass obj = new baseClass();
      obj.show();
      obj = new derived();
      obj.show();

   }
}
```

Output:


Microsoft Visual Studio Debug Console
Base class
Derived class
E:\MCA 3 Sem\.NET\Program\17\Overriding\Overriding\bin\Debug\net6.0\Overriding.exe (process 668) exited with code 0.
To automatically close the console when debugging stops, enable Tools->Options->Debugging->Automatically close the console when debugging stops.
Press any key to close this window . . .
Type here to search
9°C
ENG
09:02 PM
22-12-2022

Problem Statement 18: Write a program to create properties in C# having get and set accessor with the following business rule (CA6)

- ID should always be non-negative numbers
- Name cannot be set to null
- If student name is missing "No name should be returned"
- Passmarks should be read only

Objective: To learn properties concept in C#.

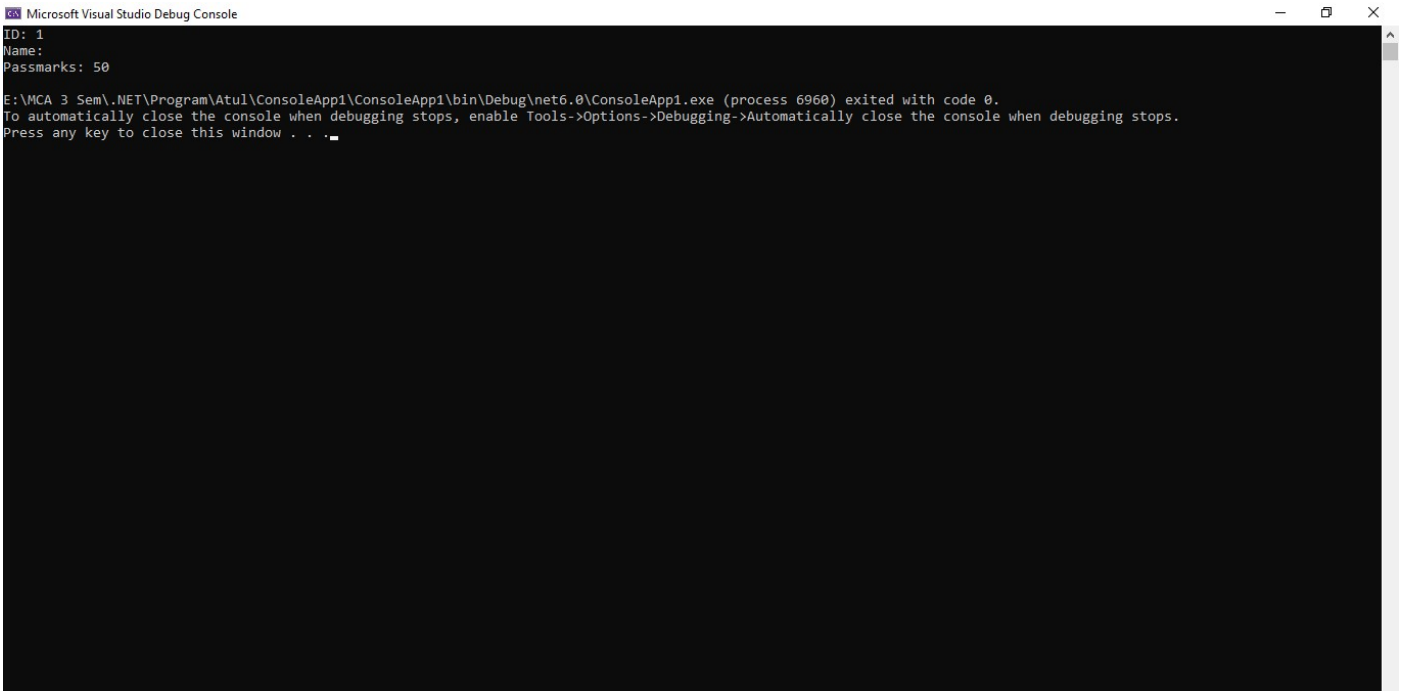
Description: You learned from the previous chapter that private variables can only be accessed within the same class (an outside class has no access to it). However, sometimes we need to access them - and it can be done with properties. A property is like a combination of a variable and a method, and it has two methods: a get and a set method:

Code:

```
public class Student
{
   // Property for the student's ID
   public int ID { get; set; }

   // Property for the student's name
   private string _name;
   public string Name
   {
      get { return _name; }
      set
      {
         if (value == null)
         {
            throw new ArgumentNullException("Name cannot be set to null");
         }
         _name = value;
      }
   }

   // Property for the student's pass marks
   private int _passMarks;
   public int PassMarks
   {
      get { return _passMarks; }
   }

   // Constructor for the Student class
   public Student(int id, string name, int passMarks)
   {
      if (id < 0)
      {
```

```
            throw new ArgumentException("ID must be a non-negative number");
        }
        ID = id;
        Name = name;
        _passMarks = passMarks;
    }
    static void Main(String[] args)
    {
        Student student = new Student(1, null, 50);

        // Set the student's ID
        // student.ID = 2;

        // Set the student's name
        //student.Name = "Jane Doe";

        // Get the student's pass marks
        //int passMarks = student.PassMarks;

        // Print the student's pass marks
        //Console.WriteLine(passMarks);

        Console.WriteLine("ID: " + student.ID);
        Console.WriteLine("Name: ", student.Name);
        Console.WriteLine("Passmarks: " + student.PassMarks);

    }
}
```

Output:



Problem Statement 19: Write a Program in C# to demonstrate the automation of Unit Testing by creating 4 methods and test cases in visual studio test project.

Objective: To learn how to demonstrate unit testing in C#.

Description: Unit testing breaks the program down into the smallest bit of code, usually function-level, and ensures that the function returns the value one expects. By using a unit testing framework, the unit tests become a separate entity which can then run automated tests on the program as it is being built.

1. Create a project and under this project crate a class SumMethodClass. Write a function named Add in that class.

Code:

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

namespace Sum
{
   public class SumMethodClass
   {
      public int Add(int a, int b)
      {
         return a + b;
      }
   }
}
```

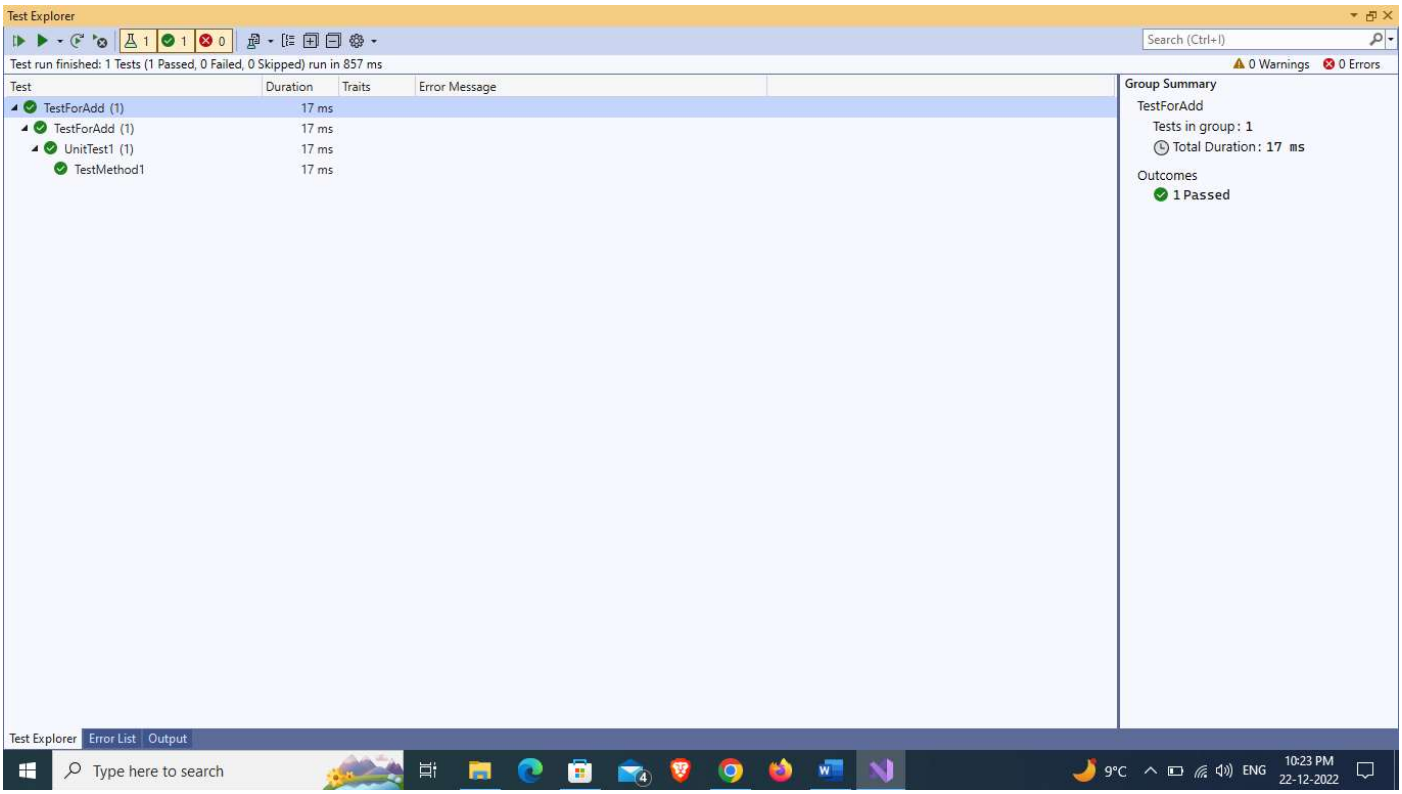
2. Create another project and under this project create a unit test file to test above function.

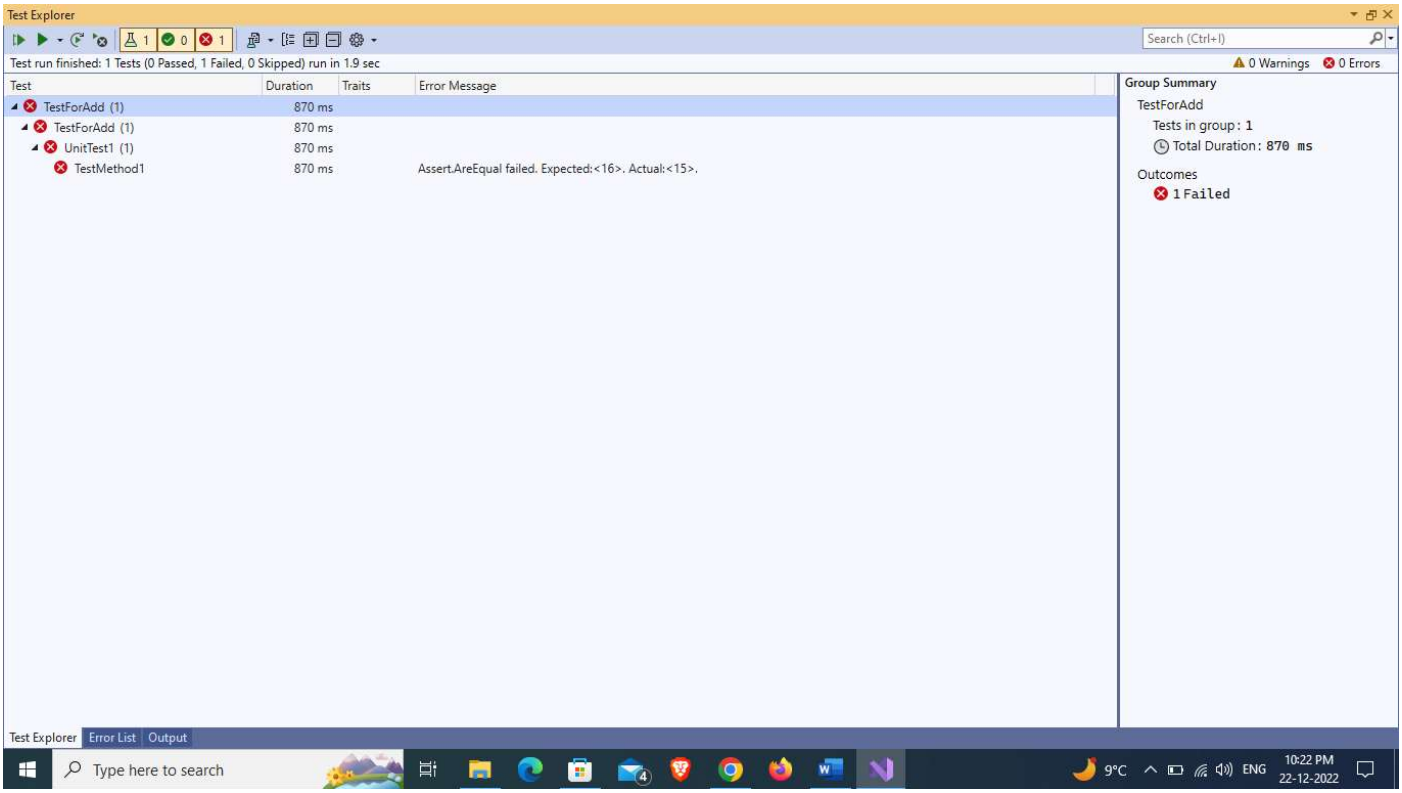
Code:

```
using Microsoft.VisualStudio.TestTools.UnitTesting;
using Sum;
using System;

namespace TestForAdd
{
   [TestClass]
   public class UnitTest1
   {
      SumMethodClass obj = new SumMethodClass();
      [TestMethod]
      public void TestMethod1()
      {
         int a = 5;
         int b = 10;
         int sum = a + b;
         int fail = a + b + 1;
         int ans = obj.Add(a, b);
         Assert.AreEqual(sum, ans);
```

```
            Assert.AreEqual(fail, ans);

        }
    }
}
```

Output:





Problem Statement 20: Write a Program in C# to demonstrate exception handling in C# by creating two operands and one operator for performing basic mathematical operations using switch case having two conditions:
A) if operator is / and operand2 is 0 then throw divide by zero exception.
B) if selection of operator is wrong then throw an exception of bad operation or invalid operator selected (nesting of exceptions).

Objective: To learn the concept of exception handling in C#.

Description: An exception is a problem that arises during the execution of a program. A C# exception is a response to an exceptional circumstance that arises while a program is running, such as an attempt to divide by zero. Exceptions provide a way to transfer control from one part of a program to another. C# exception handling is built upon four keywords: try, catch, finally, and throw

Code: if operator is / and operand2 is 0 then throw divide by zero exception

```
using System;
class ExceptionHandling
{
   static void Main(string[] args)
   {
      Console.Write("Please enter a number to divide 100: ");

      try
      {
         int num = int.Parse(Console.ReadLine());

         int result = 100 / num;

         Console.WriteLine("100 / {0} = {1}", num, result);
      }
      catch (DivideByZeroException ex)
      {
         Console.Write("Cannot divide by zero. Please try again." + ex);
      }

   }

}
```

Output:

Microsoft Visual Studio Debug Console

```
Please enter a number to divide 100: 10
100 / 10 = 10

E:\MCA 3 Sem\.NET\Program\20\Exception Handleing\Exception Handleing\bin\Debug\net6.0\Exception Handleing.exe (process 11572) exited with code 0.
To automatically close the console when debugging stops, enable Tools->Options->Debugging->Automatically close the console when debugging stops.
Press any key to close this window . . .
```

Microsoft Visual Studio Debug Console

```
Please enter a number to divide 100: 0
Cannot divide by zero. Please try again.System.DivideByZeroException: Attempted to divide by zero.
   at ExceptionHandling.Main(String[] args) in E:\MCA 3 Sem\.NET\Program\20\Exception Handleing\Exception Handleing\Program.cs:line 12
E:\MCA 3 Sem\.NET\Program\20\Exception Handleing\Exception Handleing\bin\Debug\net6.0\Exception Handleing.exe (process 4936) exited with code 0.
To automatically close the console when debugging stops, enable Tools->Options->Debugging->Automatically close the console when debugging stops.
Press any key to close this window . . .
```

Code: if selection of operator is wrong then throw an exception of bad operation or invalid operator selected (nesting of exceptions).

```
using System;
namespace CustomExceptionHandling
{
   class CustomException
   {
      static void Main(string[] args)
      {
         try
         {
            string s = OperatCheck();
            Console.WriteLine(s);
            Console.ReadLine();
         }
         catch (Operat ex)
         {

            Console.WriteLine(ex.Message);
         }
      }
      static string OperatCheck()
      {
         Console.Write("Enter Operator: ");
         String s = Console.ReadLine();
         if (s != "+" || s != "-" || s != "*" || s != "/" || s != "%")
         {
            throw new Exception("Operator not valid for operate two integer");
         }
         return s;
      }
   }
   public class Operat : Exception
   {
      public Operat(String s):base(s)
      {

      }
   }
}
```

Output:

```
Enter Operator: 6
Unhandled Exception:
System.Exception: Operator not valid for operate two integer
  at CustomExceptionHandling.CustomException.OperatCheck () [0x00059] in <c46a10cf33bf4e3f83469dea6b521260>:0
  at CustomExceptionHandling.CustomException.Main (System.String[] args) [0x00002] in <c46a10cf33bf4e3f83469dea6b521260>:0
[ERROR] FATAL UNHANDLED EXCEPTION: System.Exception: Operator not valid for operate two integer
  at CustomExceptionHandling.CustomException.OperatCheck () [0x00059] in <c46a10cf33bf4e3f83469dea6b521260>:0
  at CustomExceptionHandling.CustomException.Main (System.String[] args) [0x00002] in <c46a10cf33bf4e3f83469dea6b521260>:0
```

Problem Statement 21 (A): Create Master Page and Design pages with ASP.NET controls, Styling sites with ASP.NET themes:

Objective: To learn the single master page concept in ASP.NET.

Description: A master page is an ASP.NET file with the extension. master (for example, MySite. master) with a predefined layout that can include static text, HTML elements, and server controls. The master page is identified by a special @ Master directive that replaces the @ Page directive that is used for ordinary .aspx pages.

Code: Master Page

```
<%@ Master Language="C#" AutoEventWireup="true" CodeBehind="Site1.master.cs" Inherits="masterpage.Site1" %>

<!DOCTYPE html>

<html xmlns="http://www.w3.org/1999/xhtml">
<head>
        <title>Graphic Era Home Page</title>
        <link rel="stylesheet" type="text/css" href="css/my.css"/>
</head>
<body>
<header id="header">
<h1>Graphic Era Deemed to be University</h1>
</header>
<nav id="nav">
        <ul>
                <li><a href="home.aspx">Home</a></li>
                <li><a href="About.aspx">About</a></li>
                <li><a href="Article/Article.aspx">Article</a></li>
                <li><a href="#">Contact</a></li>
        </ul>
</nav>
<aside id="side">
        <h1>news</h1>
        <a href="#"><p>how to create website</p></a>
        <a href="#"><p>how to create master pages</p></a>
        <a href="#">walkthrough ASP.NET</a>
</aside>


  <div id="con">
    <asp:ContentPlaceHolder ID="ContentPlaceHolder1" runat="server">
    </asp:ContentPlaceHolder>
  </div>


<footer id="footer">
```

```
        copyright @Graphic Era Deemed to be University</footer>
</body>
</html>
  <form id="form1" runat="server">

  </form>
```

Code: Home Page

```
<%@ Page Title="" Language="C#" MasterPageFile="~/Site1.Master" AutoEventWireup="true" CodeBehind="home.aspx.cs" Inherits="masterpage.home" %>

<asp:Content ID="Content1" ContentPlaceHolderID="ContentPlaceHolder1" runat="server">
  <h1>Home page</h1>
</asp:Content>
```

Code: About us

```
<%@ Page Title="" Language="C#" MasterPageFile="~/Site1.Master" AutoEventWireup="true" CodeBehind="About.aspx.cs" Inherits="masterpage.About" %>

<asp:Content ID="Content1" ContentPlaceHolderID="ContentPlaceHolder1" runat="server">
  <h1>About - Graphic Era (Deemed to be University), Dehradun</h1>
  <p>
    In 1993 a young man with just twenty nine thousand and loads of determination embarked on a mission to transform the higher education landscape of the Doon valley. Graphic Era Deemed to be University is the culmination of the vision of its founder, Prof (Dr) Kamal Ghanshala, who had the dream to change the destiny of thousands of youth, through quality and holistic education and his vision took a concrete shape in the form of Graphic Era Institute in 1996.

 In 2008, the Institute was accorded the status of Deemed University under Section 3 of the UGC Act, 1956 vide Notification F.9-48/2007-U.3 (A) dated August 14, 2008 and approved by Ministry of Human Resource Development, Government of India.  In 2015 Graphic Era University was accredited by NAAC with grade 'A'.

University has acquired transnational dimensions through student exchange and knowledge sharing programs with many foreign universities and has been acclaimed and honored at international forums for its brilliance in upholding the highest standards of education. With recognition from prestigious institutions, Graphic Era University is setting new benchmarks in education. It has taken big initiative in engineering programs by getting into Partnerships with Tata Technologies and IBM to create next age Engineering Professionals through Industry Collaborations. Graphic Era hosts Technology Business Incubator that provides support for technology-based entrepreneurship. At present, Graphic Era has innumerable students on its rolls, pursuing education in different disciplines, ranging from engineering, science, business, management, commerce, hospitality to humanities and social sciences. The alumni of Graphic Era can be encountered worldwide in marquee brands like Apple, Google, Microsoft, HSBC, to name a few and in the service of the nation in all wings of the Armed forces.
```

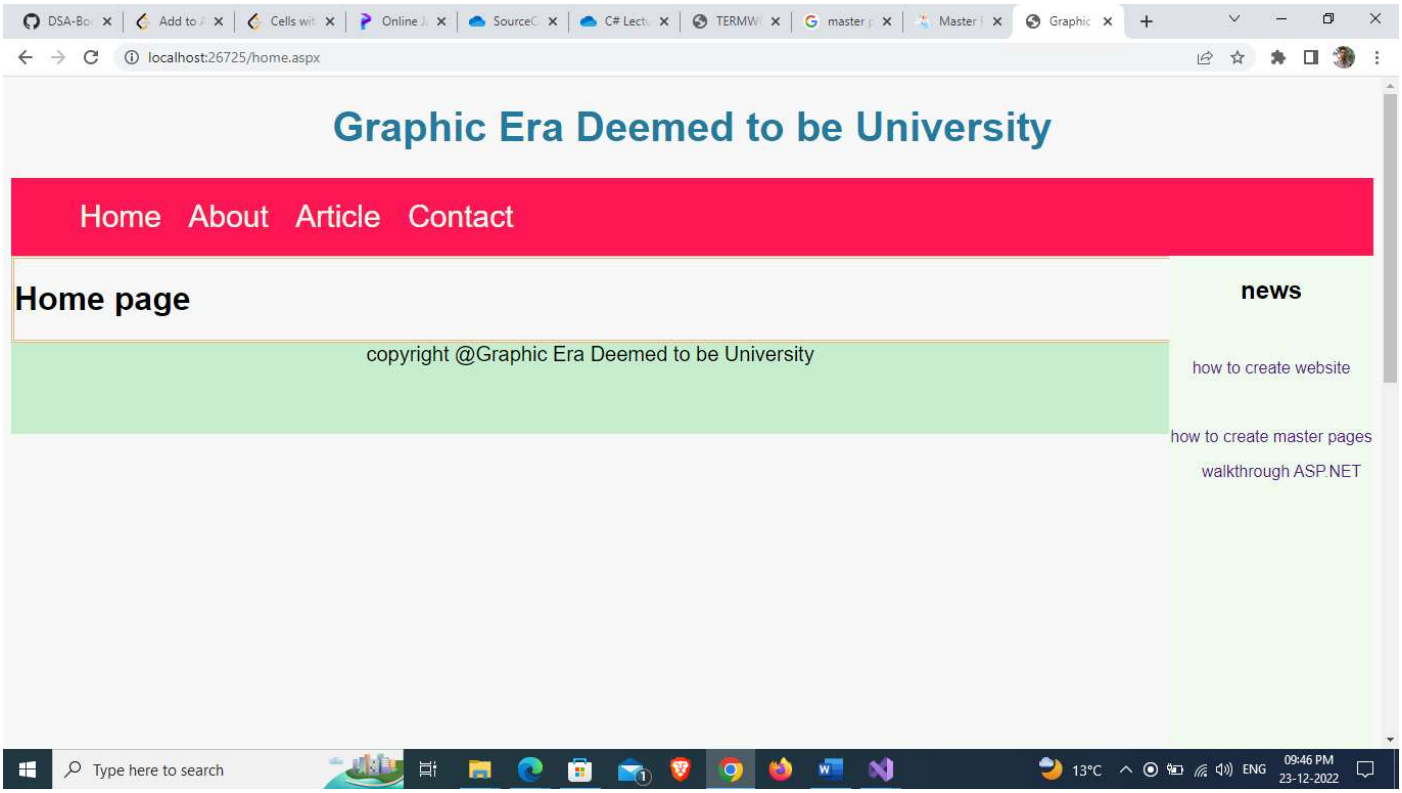
```
Graphic Era (Deemed to be University) has been conferred All-India NIRF Rank 89 in the Engineering
Category, thus being accorded as the highest-ranked Engineering University in Uttarakhand, after IIT
Roorkee, in the MHRD NIRF (National Institutional Ranking Framework) Rankings in June 2020. The
University has also been awarded All India Rank 97 in the University Category, establishing GEU as
the highest-ranked university in Uttarakhand amongst all Government and Private universities in the
state.
   </p>
</asp:Content>
```

Code: CSS File

```
#header{
        color: #247BA0;
        text-align: center;
        font-size: 20px;
}
#nav{
        background-color:#FF1654;
        padding: 5px;
}
ul{

        list-style-type: none;
}
li a {
   color: #F1FAEE;
font-size: 30px;
column-width: 5%;
   }
   li
  {
        display: inline;
        padding-left: 2px;
        column-width: 20px;
  }
  a{
 text-decoration: none;
 margin-left:20px
        }
  li a:hover{
        background-color: #F3FFBD;
        color: #FF1654;
        padding:1%;
  }
  #side{
        text-align: center;
        float: right;
        width: 15%;
        padding-bottom: 79%;
        background-color: #F1FAEE;
```

```
    }
    #article{
        background-color: #EEF5DB;
        padding: 10px;
        padding-bottom: 75%;
    }
    #footer{
        background-color: #C7EFCF;
        text-align:center;
        padding-bottom: 5%;
        font-size: 20px;
}
    #con{
      border:double;
      border-color:burlywood;
    }
```

Output:



Problem Statement 21 (B): Create Master Page and Design pages with ASP.NET controls, Styling sites with ASP.NET themes:

Objective: To learn the multiple master page concept in ASP.NET.

Description: A master page is an ASP.NET file with the extension. master (for example, MySite. master) with a predefined layout that can include static text, HTML elements, and server controls. The master page is identified by a special @ Master directive that replaces the @ Page directive that is used for ordinary .aspx pages.

Code: First Master Page

```
<%@ Master Language="C#" AutoEventWireup="true" CodeBehind="Firstmasterpage.master.cs"
Inherits="MasterDemo.Firstmasterpage" %>

<!DOCTYPE html>

<html xmlns="http://www.w3.org/1999/xhtml">
<head runat="server">
   <title></title>

   <link href="style.css" type="text/css" rel="stylesheet" />

</head>
<body>
   <form id="form1" runat="server">
      <div id="header">
          <div id="heimg"></div>


      </div>
       <div id="menu">
          <ul>
          <li><a href="Home.aspx">Home</a></li>
           <li><a href="technology.aspx">Technology</a></li>
           <li><a href="#">Recent Posts</a></li>

           <li><a href="#">Abouts</a></li>
           <li><a href="#">Login</a></li>
             </ul>
       </div>


      <div id="center">
      <asp:ContentPlaceHolder ID="ContentPlaceHolder1" runat="server">

      </asp:ContentPlaceHolder>
   </div>
       <div id="footer">
```

```
            <h5>copyrights all reserved Graphic Era 2020</h5>
        </div>

    </form>
</body>
</html>
```

Code: Second Master Page

```
<%@ Master Language="C#" AutoEventWireup="true" CodeBehind="Secondmasterpage.master.cs"
Inherits="MasterDemo.Secondmasterpage" %>

<!DOCTYPE html>

<html xmlns="http://www.w3.org/1999/xhtml">
<head runat="server">
    <title></title>
    <link href="style.css" type="text/css" rel="stylesheet" />

</head>
<body>
    <form id="form1" runat="server">

        <div id="first">

            <h1>ASP.NET</h1>
        </div>
        <div id="menuone">
            <ul>
            <li><a href="Home.aspx">Home</a></li>
             <li><a href="#">Technology</a></li>
             <li><a href="#">Article</a></li>
             <li><a href="#">Blogs</a></li>
             <li><a href="#">Abouts</a></li>
             <li><a href="#">Login</a></li>
                </ul>
        </div>
        <div id="second">
            <h3>Welcome to ASP.NET page!!!!!!!!!</h3>

            <div id="imageset"></div>
            <div id="data">
                <h3>C-sharp</h3>
                <h3>ASP.NET</h3>
                <h3>XAMARIN</h3>
                <h3>Android</h3>
                <h3>VisualStudio 2019</h3>

            </div>
             <div>
```

```
        <asp:ContentPlaceHolder ID="ContentPlaceHolder1" runat="server">

        </asp:ContentPlaceHolder>
    </div>

        </div>
        <div id="footer">
            <h5>copyrights all reserved Graphic Era 2020</h5>
        </div>

    </form>
</body>
</html>
```

Code: Home Page

```
<%@ Page Title="" Language="C#" MasterPageFile="~/Firstmasterpage.Master" AutoEventWireup="true" CodeBehind="Home.aspx.cs" Inherits="MasterDemo.Home" %>
<asp:Content ID="Content1" ContentPlaceHolderID="ContentPlaceHolder1" runat="server">
    <h1>Home</h1>
    <p>Your homepage is an essential tool for your business and often serves as the first impression to potential customers. There are many important components of effective web design, like white space, font selection, color schemes, and layout, but the core of a website is its content, not its design.</p>
</asp:Content>
```

Code: Technology.aspx

```
<%@ Page Title="" Language="C#" MasterPageFile="~/Secondmasterpage.Master" AutoEventWireup="true" CodeBehind="Technology.aspx.cs" Inherits="MasterDemo.Technology" %>
<asp:Content ID="Content1" ContentPlaceHolderID="ContentPlaceHolder1" runat="server">
    <h1>Technology</h1>
    <p>A version of the image is everywhere: a family is gathered together—at the kitchen table, in the living room, in the car—and each face is aglow in the light of a screen. There is, of course, a name for it. Technoference refers to the interruptions in interpersonal communication caused by attention paid to personal technological devices. In other words, it's that thing where you're looking at your phone or tablet and don't hear the question your kid or your friend or your mom or your boyfriend asked you. Even though you were totally listening.</p>
</asp:Content>
```

Code: Style.css

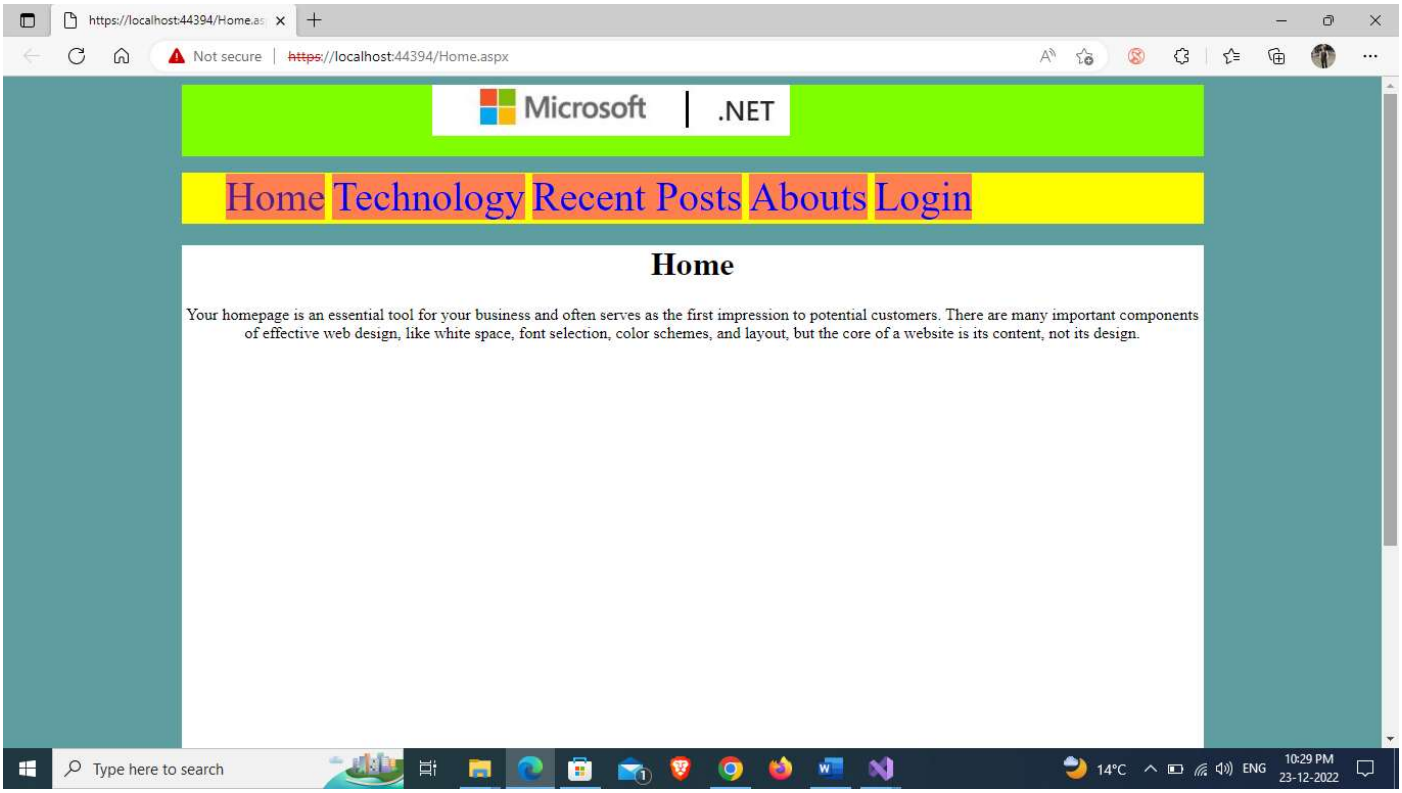
```
body {
   background-color: cadetblue;
}

#header {
   background-color: chartreuse;
   border-image-width: 50px;
   text-align: center;
   width: 1000px;
   height: 70px;
   margin-left: auto;
   margin-right: auto;
}

#heimg {
   background-image: url("photo/cssss.jpg");
   width: 510px;
   height: 50px;
   margin-left: auto;
   margin-right: auto;
   background-repeat:no-repeat;
}

#heimgone {
   background-image: url("photo/cssss.jpg");
   width: 510px;
   height: 50px;
   margin-left: auto;
   margin-right: auto;
}

#menu {
   background-color: yellow;
   width: 1000px;
   height: 50px;
   margin-left: auto;
   margin-right: auto;

}

ul {
   list-style-type: none;
}

li a {
   background-color: coral;
   font-size: 40px;
}
```

```
li {
   display: inline;
   padding-left: 3px;
   column-width: 15px;
}

a {
   text-decoration: none;
   margin-left: auto;
}

li a:hover {
   background-color: crimson;
   padding: 1px;
}

#center {
   background-color: white;
   text-align: center;
   width: 1000px;
   height: 700px;
   margin-left: auto;
   margin-right: auto;
}

#img {
   background-image: url("photo/cssss.jpg");
   width: 700px;
   height: 50px;
   margin-left: auto;
   margin-right: auto;
}

#footer {
   background-color: brown;
   width: 1000px;
   height: 30px;
   margin-left: auto;
   margin-right: auto;
}

#footer {
   text-align: center;
}

#first {
   background-color: burlywood;
   text-align: center;
   width: 1000px;
```

```
    height: 70px;
    margin-left: auto;
    margin-right: auto;
}

#menuone {
    background-color: burlywood;
    width: 1000px;
    height: 40px;
    margin-left: auto;
    margin-right: auto;
}

#second {
    background-color: antiquewhite;
    text-align: center;
    width: 1000px;
    height: 700px;
    margin-left: auto;
    margin-right: auto;
}

#imageset {
    background-image: url("photo/unnamed.png");
    width: 300px;
    height: 300px;
    margin-left: auto;
    margin-right: auto;
    background-repeat:no-repeat;
}



#last {
    background-color: burlywood;
    text-align: center;
    width: 1000px;
    height: 30px;
    margin-left: auto;
    margin-right: auto;
}

#imgone {
    background-image: url("photo/unnamed.png");
    width: 300px;
    height: 300px;
    margin-left: auto;
    margin-right: auto;
    background-repeat: no-repeat;
}
```

```
#ceimg {
   background-image: url("photo/unnamed.png");
   width: 300px;
   height: 300px;
   margin-left: auto;
   margin-right: auto;
   background-repeat: no-repeat;
}

#data {
   text-align: left;
}
```

Output:




https://localhost:44394/technolo
Not secure
https://localhost:44394/technology.aspx
ASP.NET
Home Technology Article Blogs Abouts Login
Welcome to ASP.NET page!!!!!!!!!
C-sharp
ASP.NET
XAMARIN
Type here to search
14°C
ENG
10:30 PM
23-12-2022

Problem Statement 22: Create a registration form and show the working of all the validation controls used in it.

Objective: To learn the implementation of form validation concept in ASP.NET.

Description: An important aspect of creating ASP.NET Web pages for user input is to be able to check that the information users enter is valid. ASP.NET provides a set of validation controls that provide an easy-to-use but powerful way to check for errors and, if necessary, display messages to the user.

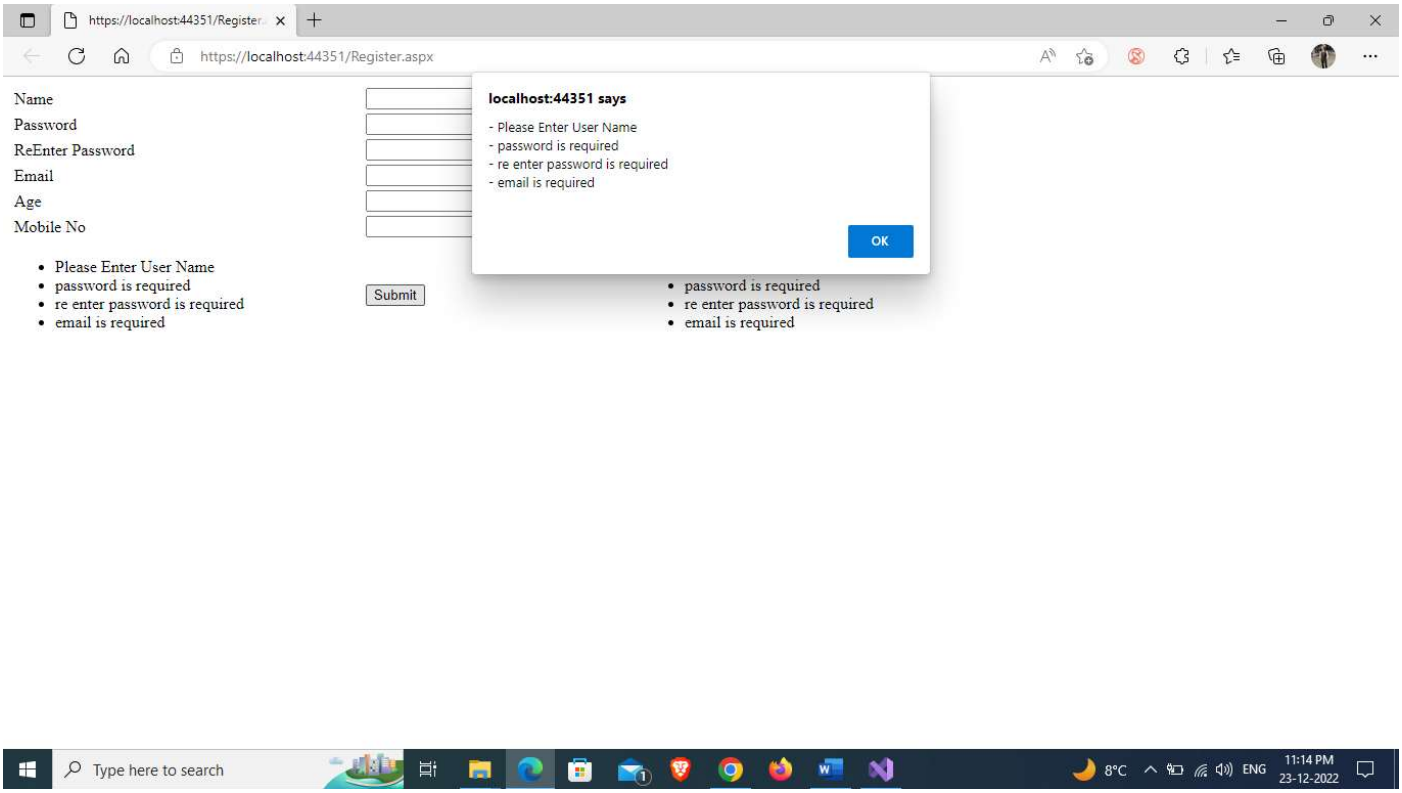
Code:

```
<%@ Page Language="C#" AutoEventWireup="true" CodeBehind="Register.aspx.cs" Inherits="ValidationControlDemo1.Register" %>

<!DOCTYPE html>

<html xmlns="http://www.w3.org/1999/xhtml">
<head runat="server">
   <title></title>
</head>
<body>
   <form id="form1" runat="server">
      <div>
         <table style="width:100%;">
            <tr>
               <td>Name</td>
               <td>
                  <asp:TextBox ID="txtname" runat="server"></asp:TextBox>
               </td>
               <td>
                  <asp:RequiredFieldValidator ID="RequiredFieldValidator1" runat="server" ControlToValidate="txtname" ForeColor="Red" ErrorMessage="Please Enter User Name"></asp:RequiredFieldValidator>
               </td>
            </tr>
            <tr>
               <td>Password</td>
               <td>
                  <asp:TextBox ID="txtpass" runat="server" TextMode="Password"></asp:TextBox>
               </td>
               <td>
                  <asp:RequiredFieldValidator ID="RequiredFieldValidator2" runat="server" ForeColor="Red" ControlToValidate="txtpass" ErrorMessage="password is required"></asp:RequiredFieldValidator>
               </td>
            </tr>
            <tr>
               <td>ReEnter Password</td>
               <td>
```

```
                <asp:TextBox ID="txtrepass" TextMode="Password" runat="server"></asp:TextBox>
            </td>
            <td>
                <asp:RequiredFieldValidator ID="RequiredFieldValidator3" runat="server"
ForeColor="Red" ControlToValidate="txtrepass" ErrorMessage="re enter password is
required"></asp:RequiredFieldValidator>
                <asp:CompareValidator ID="CompareValidator1" runat="server" ForeColor="Yellow"
ControlToCompare="txtpass" ControlToValidate="txtrepass" ErrorMessage="password and re enter
password doesnt match"></asp:CompareValidator>
            </td>
        </tr>
        <tr>
            <td>Email</td>
            <td>
                <asp:TextBox ID="txtemail" runat="server"></asp:TextBox>
            </td>
            <td>
                <asp:RequiredFieldValidator ID="RequiredFieldValidator4" runat="server"
ControlToValidate="txtemail" ForeColor="Red" ErrorMessage="email is
required"></asp:RequiredFieldValidator>
                <asp:RegularExpressionValidator ID="RegularExpressionValidator1" runat="server"
ForeColor="Green" ControlToValidate="txtemail" ValidationExpression="\w+([-+.']\w+)*@\w+([-
.]\w+)*\.\w+([-.]\w+)*" ErrorMessage="email format is
incorrect"></asp:RegularExpressionValidator>
            </td>
        </tr>
        <tr>
            <td>Age</td>
            <td>
                <asp:TextBox ID="txtAge" runat="server"></asp:TextBox>
            </td>
            <td>
                <asp:RangeValidator ID="RangeValidator1" Type="Integer" runat="server"
ForeColor="Pink" ControlToValidate="txtAge" MinimumValue="1" MaximumValue="120"
ErrorMessage="enter valid age"></asp:RangeValidator>
            </td>
        </tr>
        <tr>
            <td>Mobile No</td>
            <td>
                <asp:TextBox ID="txtPhoneNumber" runat="server"></asp:TextBox>
            </td>
            <td>
                <asp:CustomValidator ID="CustomValidator1" Display="Dynamic" runat="server"
ErrorMessage="CustomValidator"
OnServerValidate="CustomValidator1_ServerValidate"></asp:CustomValidator>
            </td>
        </tr>
        <tr>
            <td>
```

```
            <asp:ValidationSummary ID="ValidationSummary2" ShowMessageBox="true" runat="server" />
          </td>
          <td>
            <asp:Button ID="btnsubmit" CausesValidation="true" runat="server" Text="Submit" />
          </td>
          <td>
            <asp:ValidationSummary ID="ValidationSummary1" runat="server" />
          </td>
        </tr>
      </table>
    </div>
  </form>
</body>
</html>
```

Output:



Problem Statement 23: Demonstrate how to render user control in web form.

Objective: To learn the implementation of form validation concept in ASP.NET.

Description: C# user control is defined as an implementation in programming language of C# to provide an empty control and this control can be leveraged to create other controls. This implementation provides additional flexibility to re-use controls in a large-scale web project.

Code: UserControl.ascx

```
<%@ Page Language="C#" AutoEventWireup="true" CodeBehind="Test.aspx.cs" Inherits="UserControlDemo.Test" %>

<%@ Register src="NameUserControl.ascx" tagname="NameUserControl" tagprefix="uc1" %>

<!DOCTYPE html>

<html xmlns="http://www.w3.org/1999/xhtml">
<head runat="server">
   <title></title>
</head>
<body>
   <form id="form1" runat="server">
      <div>
         <uc1:NameUserControl ID="NameUserControl1" runat="server" />
      </div>
   </form>
</body>
</html>
```

Code: Home.aspx

```
<%@ Page Language="C#" AutoEventWireup="true" CodeBehind="Home.aspx.cs" Inherits="UserControlDemo.Home" %>

<%@ Register src="NameUserControl.ascx" tagname="NameUserControl" tagprefix="uc1" %>

<!DOCTYPE html>

<html xmlns="http://www.w3.org/1999/xhtml">
<head runat="server">
   <title></title>
</head>
<body>
   <form id="form1" runat="server">
      <div>
```

```
        <uc1:NameUserControl ID="NameUserControl1" runat="server" />
      </div>
    </form>
  </body>
  </html>
```

Code: Test.aspx

```
<%@ Page Language="C#" AutoEventWireup="true" CodeBehind="Test.aspx.cs" Inherits="UserControlDemo.Test" %>

<%@ Register src="NameUserControl.ascx" tagname="NameUserControl" tagprefix="uc1" %>

<!DOCTYPE html>

<html xmlns="http://www.w3.org/1999/xhtml">
<head runat="server">
  <title></title>
</head>
<body>
  <form id="form1" runat="server">
    <div>
      <uc1:NameUserControl ID="NameUserControl1" runat="server" />
    </div>
  </form>
</body>
</html>
```

Output:

Problem Statement 24: Use ADO.NET to

a. Establish connection and create a table
b. Insert Data into the Table
c. Retrieve Record
d. Deleting Record

Objective: To learn the implementation of ADO.NET in C#.

Description: ADO.NET is a data access technology from the Microsoft .NET Framework that provides communication between relational and non-relational systems through a common set of components. ADO.NET is a set of computer software components that programmers can use to access data and data services from a database.

Code:

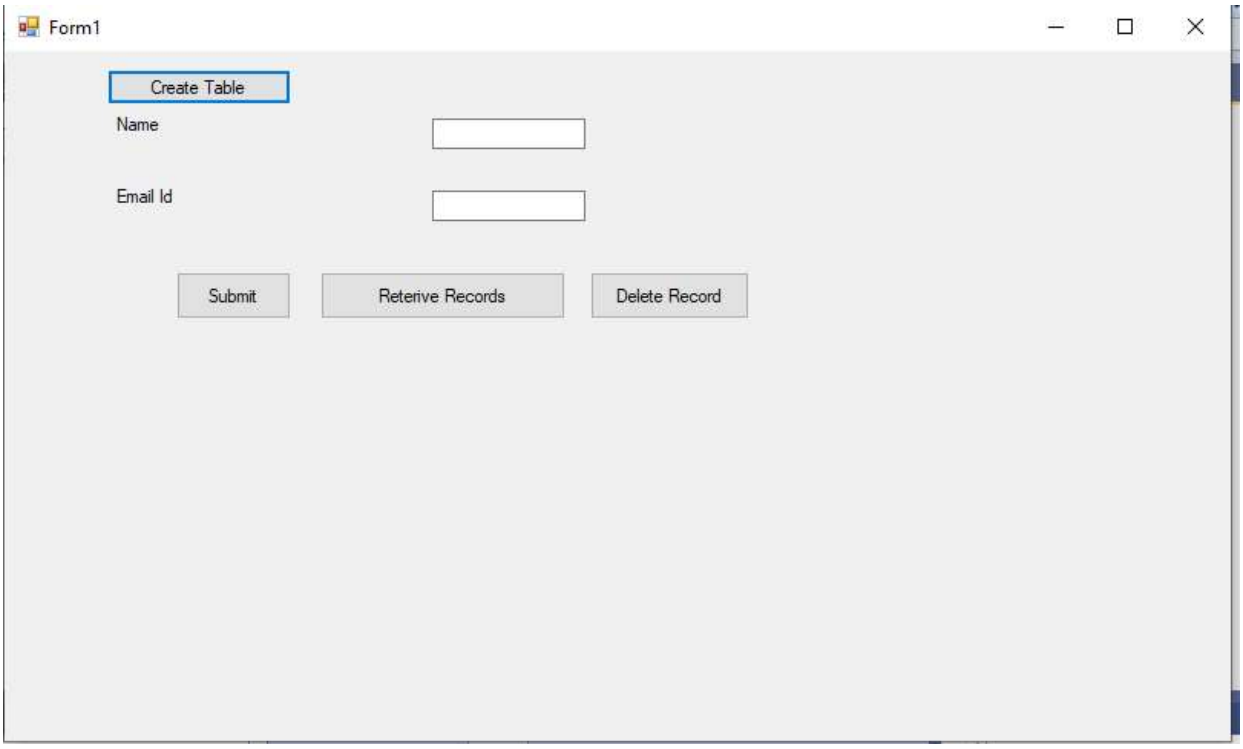
```
using System;
using System.Collections.Generic;
using System.ComponentModel;
using System.Data;
using System.Data.SqlClient;
using System.Drawing;
using System.Linq;
using System.Text;
using System.Threading.Tasks;
using System.Windows.Forms;

namespace WindowsFormsApp1
{
   public partial class Form1 : Form
   {
      public Form1()
      {
         InitializeComponent();
         dataGridView1.Visible = false;
      }
      private SqlConnection getConnection()
      {
         string constr = @"Data Source=(localdb)\mssqllocaldb;Initial Catalog=TestDB;Integrated
Security=True";
         SqlConnection con = null;
         try
         {
            con = new SqlConnection(constr);
            con.Open();

         }catch(Exception ex)
         {
            Console.WriteLine(ex.Message);
         }
```

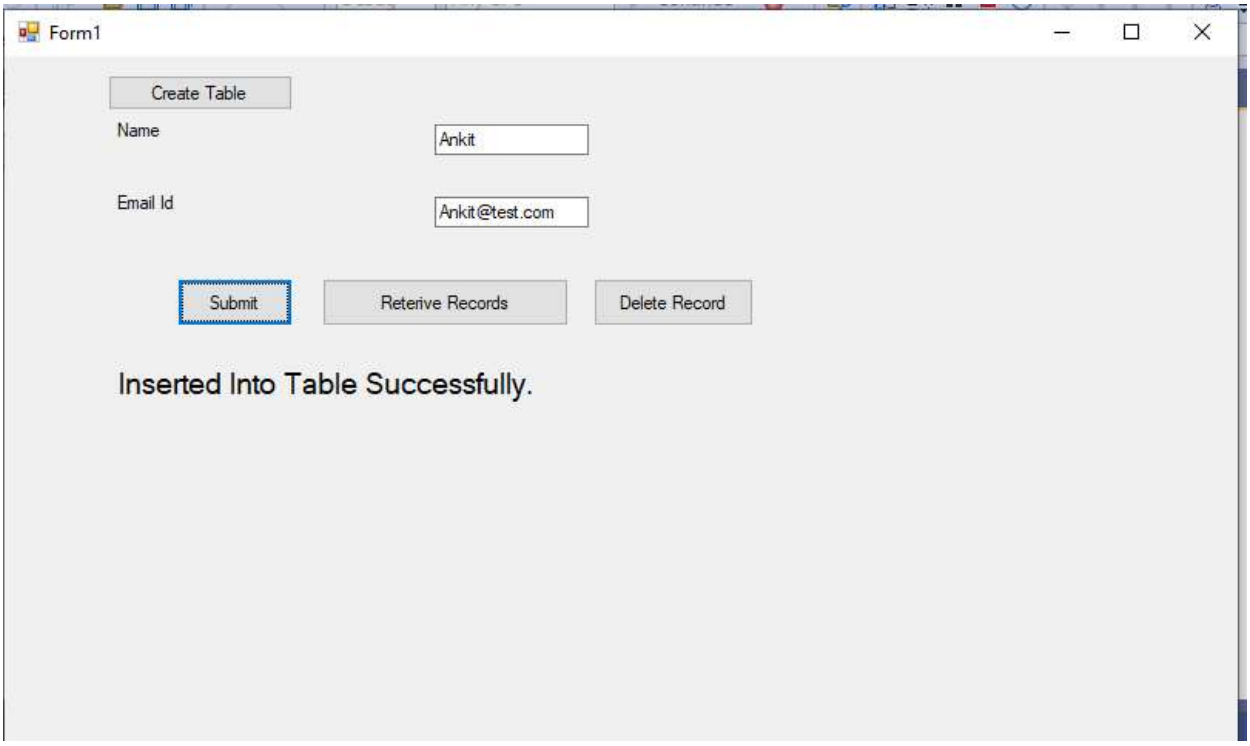
```
    return con;
}

private void button1_Click(object sender, EventArgs e)
{
    SqlConnection con = getConnection();
    string query = @"CREATE TABLE dbo.UserTable
        (
            ID int IDENTITY(1,1) NOT NULL,
            Name nvarchar(50) NULL,
            Email nvarchar(100) NULL,
            CONSTRAINT pk_id PRIMARY KEY (ID)
        );";
    SqlCommand cmd = new SqlCommand(query, con);
    try
    {
        cmd.ExecuteNonQuery();
        label3.Text="Table Created.";
    }
    catch(Exception ex)
    {
        Console.WriteLine(ex.Message);
    }
    finally
    {
        con.Close();
    }

}

private void button2_Click(object sender, EventArgs e)
{
    string name = textBox1.Text;
    string email = textBox2.Text;
    SqlConnection con = getConnection();
    string query = @"INSERT INTO UserTable (Name,Email) VALUES (@Name,@Email)";
    SqlCommand cmd = new SqlCommand(query, con);

    //cmd.Parameters.AddWithValue("@ID", id);
    cmd.Parameters.AddWithValue("@Name", name);
    cmd.Parameters.AddWithValue("@Email", email);
    try
    {
        cmd.ExecuteNonQuery();
        label3.Text = "Inserted Into Table Successfully.";
    }catch(Exception ex)
    {
        Console.WriteLine(ex.Message);
    }
```

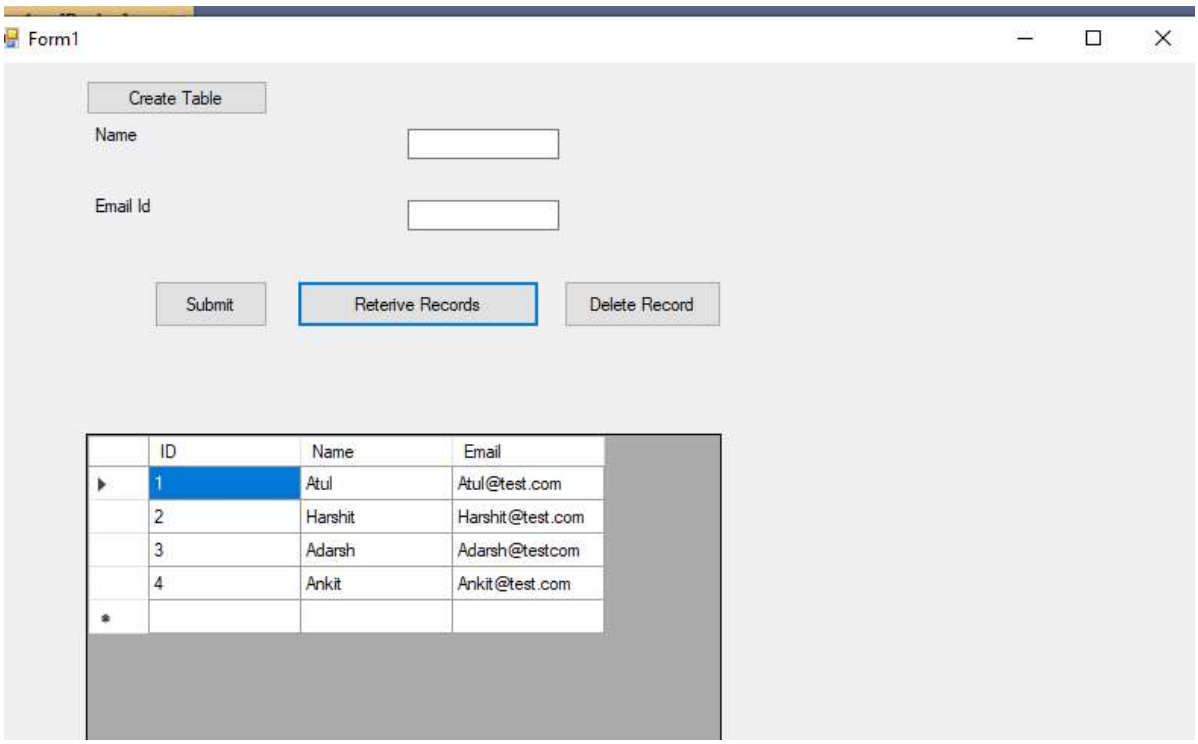
```
    finally
    {
        con.Close();
    }
}

private void button3_Click(object sender, EventArgs e)
{
    SqlConnection con = getConnection();

    string query = "SELECT * FROM UserTable";

    SqlCommand cmd = new SqlCommand(query, con);
    try
    {
        SqlDataAdapter sdt = new SqlDataAdapter(cmd);
        DataTable dt = new DataTable();
        sdt.Fill(dt);
        dataGridView1.DataSource =dt;
        dataGridView1.Visible = true;
    }
    catch(Exception ex)
    {
        Console.WriteLine(ex.Message);
    }
    finally
    {
        con.Close();
    }
}

private void button4_Click(object sender, EventArgs e)
{
    SqlConnection con = getConnection();
    string query = "DELETE FROM UserTable";
    SqlCommand cmd = new SqlCommand(query, con);
    try
    {
        cmd.ExecuteNonQuery();
        label3.Text = "Record deleted.";
        dataGridView1.Visible = false;
    }catch(Exception ex)
    {
        Console.WriteLine(ex.Message);
    }
    finally
    {
        con.Close();
    }
}
```

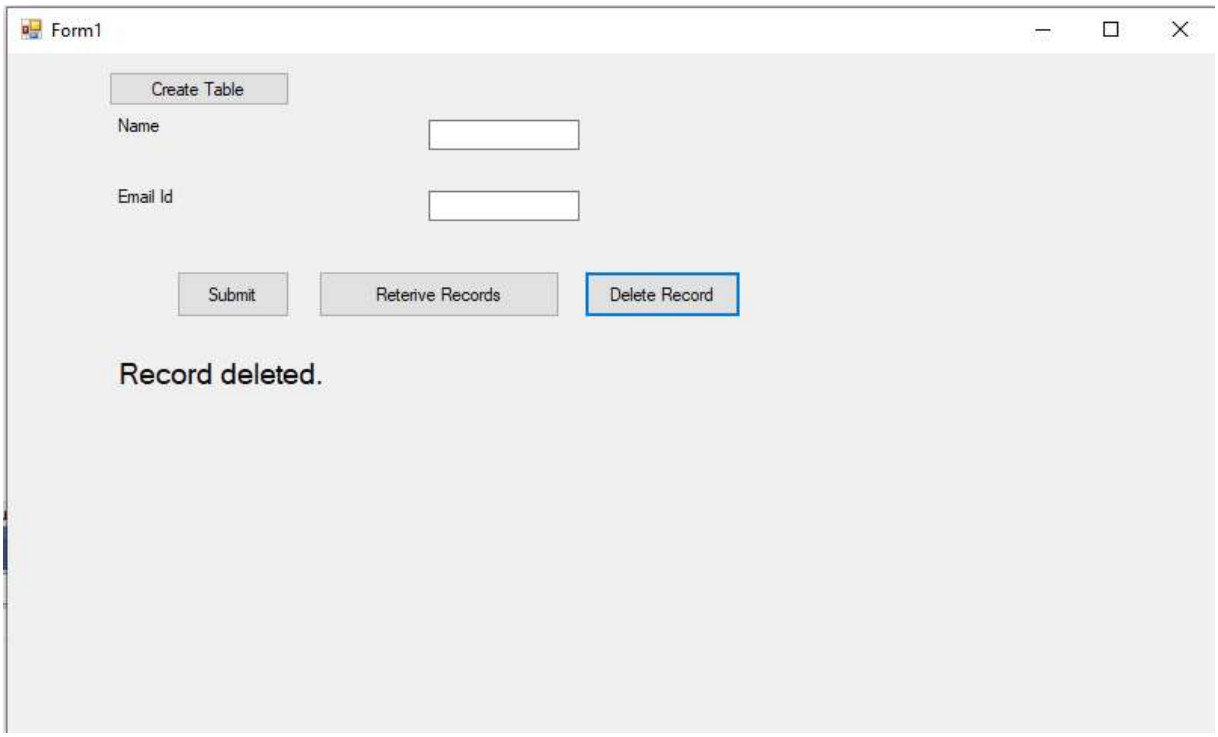
```
    }
}
```

Output:


Form1
Create Table
Name
Email Id
Submit
Reterive Records
Delete Record


Form1
Create Table
Name
Ankit
Email Id
Ankit@test.com
Submit
Reterive Records
Delete Record
Inserted Into Table Successfully.


Form1
Create Table
Name
Email Id
Submit
Reterive Records
Delete Record
ID
Name
Email
1
Atul
Atul@test.com
2
Harshit
Harshit@test.com
3
Adarsh
Adarsh@testcom
4
Ankit
Ankit@test.com


Form1
Create Table
Name
Email Id
Submit
Reterive Records
Delete Record
Record deleted.

Problem Statement 25: Retrieve Data in GridView Control in ASP.Net

Objective: To learn the implementation of Grid View in ASP.NET.

Description: GridView is a control used to display data in tables on a web page. It displays data in both rows and columns, where each column represents a field, and each row represents a record. GridView helps to perform key activities like Insert, Delete, Sorting, and Paging.

Code: home.aspx.cs

```
using System;
using System.Collections.Generic;
using System.Data;
using System.Data.SqlClient;
using System.Linq;
using System.Web;
using System.Web.UI;
using System.Web.UI.WebControls;
namespace WebApplication1
{
   public partial class WebForm1 : System.Web.UI.Page
   {
      protected void Page_Load(object sender, EventArgs e)
      {
         string constr = @"Data Source=(localdb)\mssqllocaldb;Initial Catalog=TestDB;Integrated
Security=True";
         SqlConnection con = new SqlConnection(constr);
         try
         {
            con.Open();
            string query = "SELECT * FROM UserTable";

            SqlCommand cmd = new SqlCommand(query, con);
            SqlDataAdapter sdt = new SqlDataAdapter(cmd);
            DataTable dt = new DataTable();
            sdt.Fill(dt);
            gv1.DataSource = dt;
            gv1.DataBind();
         }catch(Exception ex)
         {
            Console.WriteLine(ex.Message);
         }
         finally
         {
            con.Close();
         }
      }
   }
}
```

Code: home.aspx

```
<%@ Page Language="C#" AutoEventWireup="true" CodeBehind="home.aspx.cs" Inherits="WebApplication1.WebForm1" %>

<!DOCTYPE html>

<html xmlns="http://www.w3.org/1999/xhtml">
<head runat="server">
  <title></title>
</head>
<body>
  <form id="form1" runat="server">
    <div>
      <asp:GridView runat="server" ID="gv1" AutoGenerateColumns="false">
        <Columns>
          <asp:BoundField DataField="Name" HeaderText="Student Name" />
          <asp:BoundField DataField="Email" HeaderText="Student Email" />
        </Columns>
      </asp:GridView>
    </div>
  </form>
</body>
</html>
```

Output: