



**1) Check Whether the Entered Year is a Leap Year or No.**

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

namespace pgm3
{
    class Program
    {
        static void Main(string[] args)
        {
            try
            {
                Console.WriteLine("Enter Year : ");
                int Year = int.Parse(Console.ReadLine());
                if (((Year % 4 == 0) && (Year % 100 != 0)) || (Year % 400 == 0))
                    Console.WriteLine("{0} is a Leap Year.", Year);
                else Console.WriteLine("{0} is not a Leap Year.", Year);
                Console.WriteLine("\n\n");
            }
            catch (Exception ex) {
                Console.WriteLine("Enter valid number");
            }
            Console.ReadLine();
        }
    }
}
```


**OUTPUT** file:///c:/users/ca172009/documents/visual studio 2010/Projects/pgm3/pgm3/bin/Debug/pgm3.EXE

```
Enter Year :  
1995  
1995 is not a Leap Year.
```

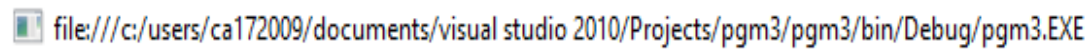
 file:///c:/users/ca172009/documents/visual studio 2010/Projects/pgm3/pgm3/bin/Debug/pgm3.EXE

```
Enter Year :  
2008  
2008 is a Leap Year.
```

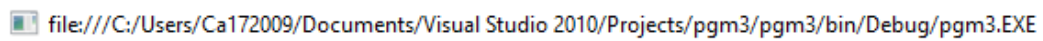
---

 file:///c:/users/ca172009/documents/visual studio 2010/Projects/pgm3/pgm3/bin/Debug/pgm3.EXE

```
Enter Year :  
2006  
2006 is not a Leap Year.
```

A screenshot of a Visual Studio console window. The title bar shows the file path: file:///c:/users/ca172009/documents/visual studio 2010/Projects/pgm3/pgm3/bin/Debug/pgm3.EXE. The console output shows the program asking for a year, receiving '2012', and outputting '2012 is a Leap Year.'

```
Enter Year :  
2012  
2012 is a Leap Year.
```

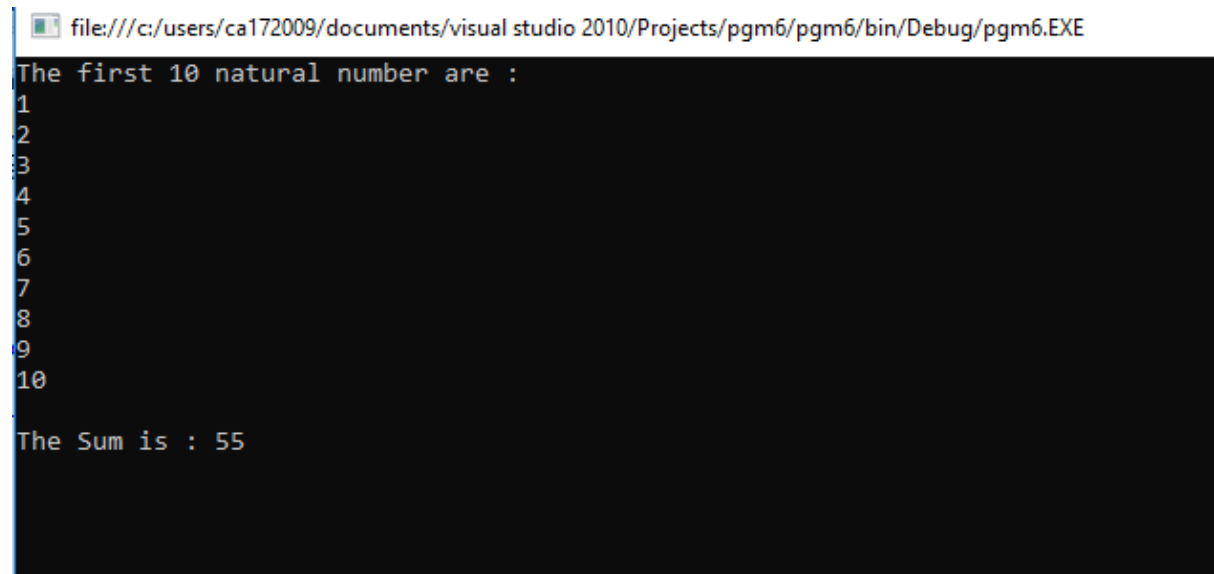
A screenshot of a Visual Studio console window. The title bar shows the file path: file:///C:/Users/Ca172009/Documents/Visual Studio 2010/Projects/pgm3/pgm3/bin/Debug/pgm3.EXE. The console output shows the program asking for a year, receiving 'hdfbv', and outputting 'Enter valid number'.

```
Enter Year :  
hdfbv  
Enter valid number
```

**2) Program to display the first 10 natural numbers and their sum using console application.**

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

namespace pgm6
{
    class Program
    {
        static void Main(string[] args)
        {
            int j, sum = 0;
            Console.WriteLine("The first 10 natural number are :\n");
            for (j = 1; j <= 10; j++)
            {
                sum = sum + j;
                Console.Write("{0} ", j);
                Console.WriteLine();
            }
            Console.WriteLine("\nThe Sum is : {0}\n", sum);
            Console.ReadLine();
        }
    }
}
```

**OUTPUT**


```
file:///c:/users/ca172009/documents/visual studio 2010/Projects/pgm6/pgm6/bin/Debug/pgm6.EXE
The first 10 natural number are :
1
2
3
4
5
6
7
8
9
10
The Sum is : 55
```

**3) Program to display the addition, subtraction, multiplication and division of two number using console applications.**


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

namespace ArthmaticOperation
{
    class Program
    {
        static void Main(string[] args)
        {
            Console.WriteLine("This Program is developed by Shubham Sajannavar");
            Console.WriteLine("Roll No : CA172007, Rani Channamma University, Belgavi");
            int add, sub, mul, num1, num2;
            float div;
            Try
            {
                Console.WriteLine("Enter 1st Number : ");
                num1 = Convert.ToInt32(Console.ReadLine());
                Console.WriteLine("Enter 2nd Number : ");
                num2 = Convert.ToInt32(Console.ReadLine());
                add = num1 + num2;
                sub = num1 - num2;
                mul = num1 * num2;
                div = num1 / num2;
                Console.WriteLine("Addition of \t\t"+num1+"and" + num2 + " = " + add);
                Console.WriteLine("\nSubstration of \t\t"+num1+"and"+num2 + " = " + sub);
                Console.WriteLine("Multiplication of \t"+num1+"and"+ num2 + " = " + mul);
                Console.WriteLine("\nDivision of \t\t" +num1+"and"+num2 + " = " + div);
            }
        }
    }
}
```


```
catch (Exception ex)
{
    Console.WriteLine("Enter valid Number");
}
Console.ReadKey();
    }
}
}
```

**OUTPUT** file:///c:/users/ca172009/documents/visual studio 2010/Projects/cal/cal/bin/Debug/cal.EXE

```
Roll No : CA172009, Rani Channamma University, Belgavi
Enter 1st Number :
10
Enter 2nd Number :
20
Addition of          10 and 20 = 30
Substraction of      10 and 20 = -10
Multiplication of    10 and 20 = 200
Division of          10 and 20 = 0
```

 file:///c:/users/ca172009/documents/visual studio 2010/Projects/cal/cal/bin/Debug/cal.EXE

```
Roll No : CA172009, Rani Channamma University, Belgavi
Enter 1st Number :
78
Enter 2nd Number :
95
Addition of          78 and 95 = 173
Substraction of      78 and 95 = -17
Multiplication of    78 and 95 = 7410
Division of          78 and 95 = 0
```

 file:///c:/users/ca172009/documents/visual studio 2010/Projects/cal/cal/bin/Debug/cal.EXE

```
Roll No : CA172009, Rani Channamma University, Belgavi
Enter 1st Number :
asd
Enter valid Number
```



```
file:///c:/users/ca172009/documents/visual studio 2010/Projects/cal/cal/bin/Debug/cal.EXE

Roll No : CA172009, Rani Channamma University, Belgavi
Enter 1st Number :
25585
Enter 2nd Number :
12548
Addition of          25585 and 12548 = 38133
Substraction of      25585 and 12548 = 13037
Multiplication of    25585 and 12548 = 321040580
Division of          25585 and 12548 = 2
```

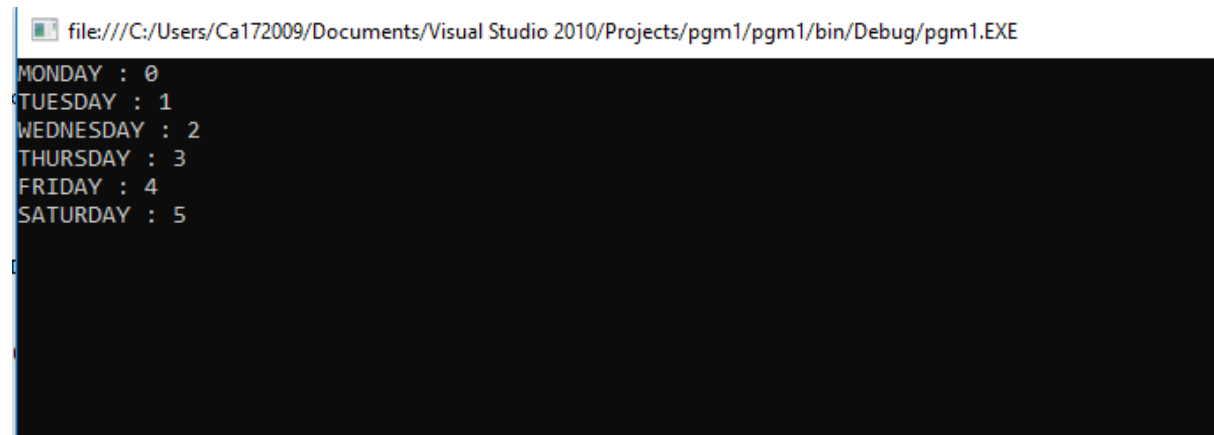
```
file:///c:/users/ca172009/documents/visual studio 2010/Projects/cal/cal/bin/Debug/cal.EXE

Roll No : CA172009, Rani Channamma University, Belgavi
Enter 1st Number :
165
Enter 2nd Number :
dvd
Enter valid Number
```

**4) Describe the enumerations programming constructs, which provides a human-readable form of a series of related constant values in C#.**

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

namespace EnumerationDemo
{
    class ProgramOne
    {
        enum CollegeDays
        {
            MONDAY, TUESDAY, WEDNESDAY, THURSDAY, FRIDAY,
            SATURDAY
        }
        static void Main(string[] args)
        {
            foreach (var day in Enum.GetValues(typeof(CollegeDays)))
            {
                Console.WriteLine("{0} : {1}", day, (int)day);
            }
            Console.Read();
        }
    }
}
```

**OUTPUT**A screenshot of a Visual Studio 2010 debug window showing the output of a C# program. The window title is "file:///C:/Users/Ca172009/Documents/Visual Studio 2010/Projects/pgm1/pgm1/bin/Debug/pgm1.EXE". The output text is as follows:

```
MONDAY : 0
TUESDAY : 1
WEDNESDAY : 2
THURSDAY : 3
FRIDAY : 4
SATURDAY : 5
```

**5) Program to display the addition using the windows application.**

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

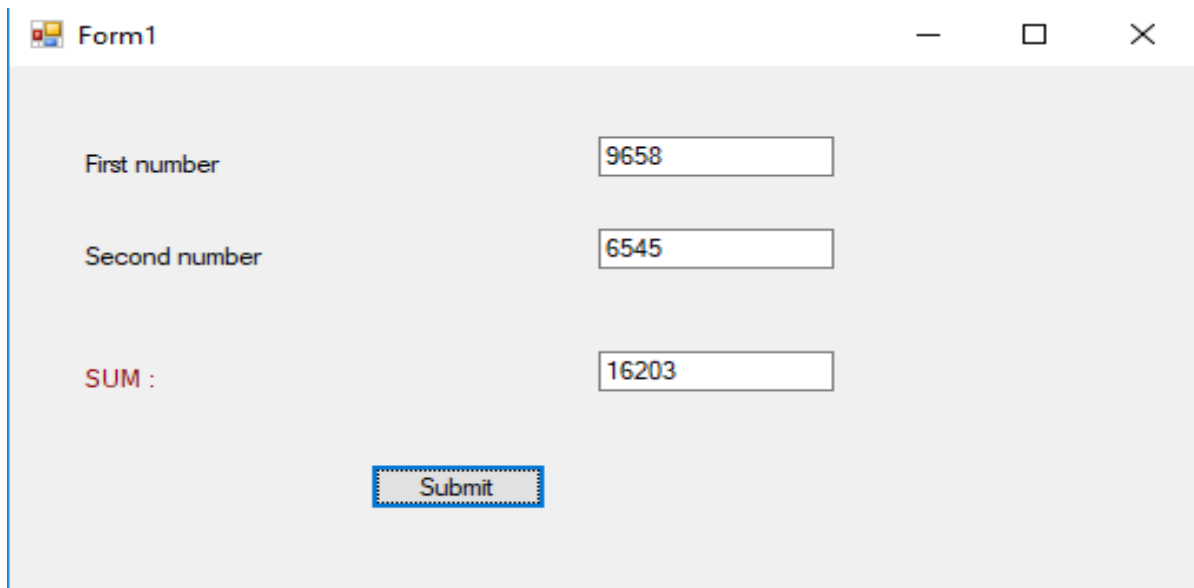
namespace pgm7
{
    public partial class Form1 : Form
    {
        public Form1()
        {
            InitializeComponent();
        }

        private void button1_Click(object sender, EventArgs e)
        {
            float a;
            float b;
            float c;
            a = Convert.ToInt32(textBox1.Text);
            b = Convert.ToInt32(textBox2.Text);
            c = a + b;
            textBox3.Text = c.ToString();
        }
    }
}
```

## OUTPUT

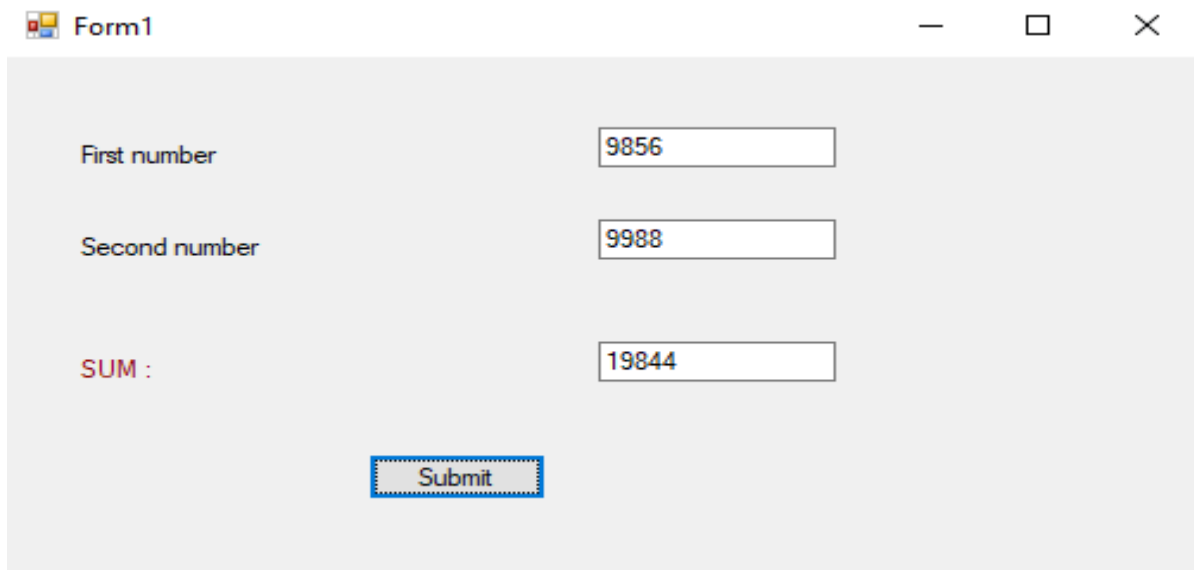
A screenshot of a Windows Form titled "Form1". The form has a light gray background. It contains three text boxes and a button. The first text box is labeled "First number" and contains the value "10". The second text box is labeled "Second number" and contains the value "20". The third text box is labeled "SUM :" in red text and contains the value "30". Below the text boxes is a button labeled "Submit".

A screenshot of the same Windows Form titled "Form1". The form now shows the result of a calculation. The "First number" text box contains "358", the "Second number" text box contains "654", and the "SUM :" text box (in red) contains "1012". The "Submit" button is still present below the text boxes.



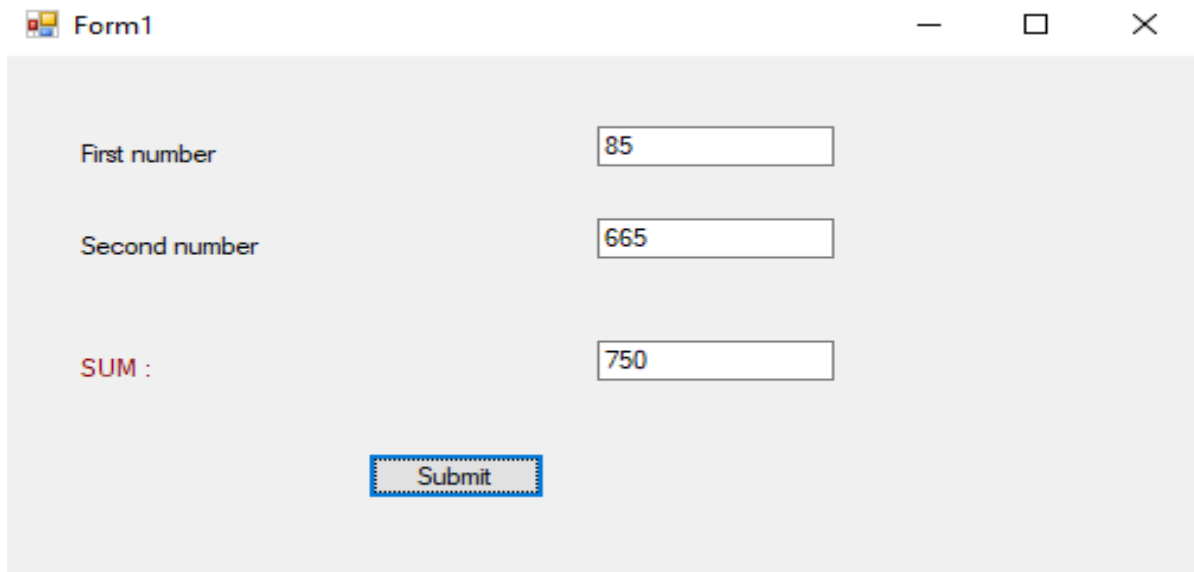
A screenshot of a Windows Form titled "Form1". The form has a light gray background. It contains three text boxes for input and one text box for output. The first text box is labeled "First number" and contains the value "9658". The second text box is labeled "Second number" and contains the value "6545". The third text box is labeled "SUM :" in red text and contains the value "16203". Below the text boxes is a button labeled "Submit".

Input	Value
First number	9658
Second number	6545
SUM :	16203



A screenshot of a Windows Form titled "Form1". The form has a light gray background. It contains three text boxes for input and one text box for output. The first text box is labeled "First number" and contains the value "9856". The second text box is labeled "Second number" and contains the value "9988". The third text box is labeled "SUM :" in red text and contains the value "19844". Below the text boxes is a button labeled "Submit".

Input	Value
First number	9856
Second number	9988
SUM :	19844



Form1

First number 85

Second number 665

SUM : 750

Submit

**6) Write a program to convert input string from lower to upper and upper to lower case.**


```
using System;

using System.Collections.Generic;
using System.Linq;
using System.Text;
namespace LowUpp
{
    public class Exercise15
    {
        public static void Main()
        {
            string str1;
            char[] arr1;
            int l, i;
            l = 0;
            char ch;
            Console.WriteLine("\n\nReplace lowercase characters by uppercase and vice-versa :\n");
            Console.WriteLine("Input the string : ");
            str1 = Console.ReadLine();
            l = str1.Length;
            arr1 = str1.ToCharArray(0, l);
            Console.WriteLine("\n\nAfter conversion, the string is : ");
            for (i = 0; i < l; i++)
            {
                ch = arr1[i];
                if (Char.IsLower(ch))
                    Console.WriteLine(Char.ToUpper(ch));
                else
                    Console.WriteLine(Char.ToLower(ch));
            }
        }
    }
}
```




```
    Console.WriteLine("\n\n");


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

**OUTPUT** file:///c:/users/ca172009/documents/visual studio 2010/Projects/pgm9/pgm9/bin/Debug/pgm9.EXE


```
Replace lowercase characters by uppercase and vice-versa :  
Input the string : VINU  
  
After conversion, the string is : vinu
```

 file:///c:/users/ca172009/documents/visual studio 2010/Projects/pgm9/pgm9/bin/Debug/pgm9.EXE

```
Replace lowercase characters by uppercase and vice-versa :  
Input the string : ABHISHEK  
  
After conversion, the string is : abhishek
```


 file:///c:/users/ca172009/documents/visual studio 2010/Projects/pgm9/pgm9/bin/Debug/pgm9.EXE

```
Replace lowercase characters by uppercase and vice-versa :  
Input the string : shubam  
  
After conversion, the string is : SHUBAM
```

 file:///c:/users/ca172009/documents/visual studio 2010/Projects/pgm9/pgm9/bin/Debug/pgm9.EXE

```
Replace lowercase characters by uppercase and vice-versa :  
Input the string : hiii how are you?
```

```
After conversion, the string is : HIII HOW ARE YOU?
```

 file:///c:/users/ca172009/documents/visual studio 2010/Projects/pgm9/pgm9/bin/Debug/pgm9.EXE

```
Replace lowercase characters by uppercase and vice-versa :  
Input the string : HIII i am vinayak
```

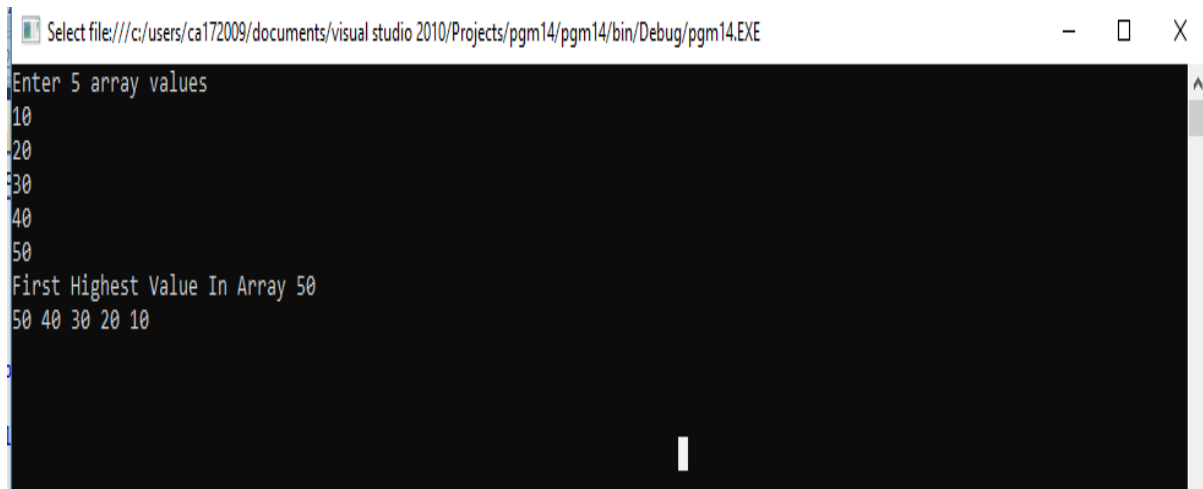
```
After conversion, the string is : hiii I AM VINAYAK
```

**7) Find the second largest element in a single dimensional array.**

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

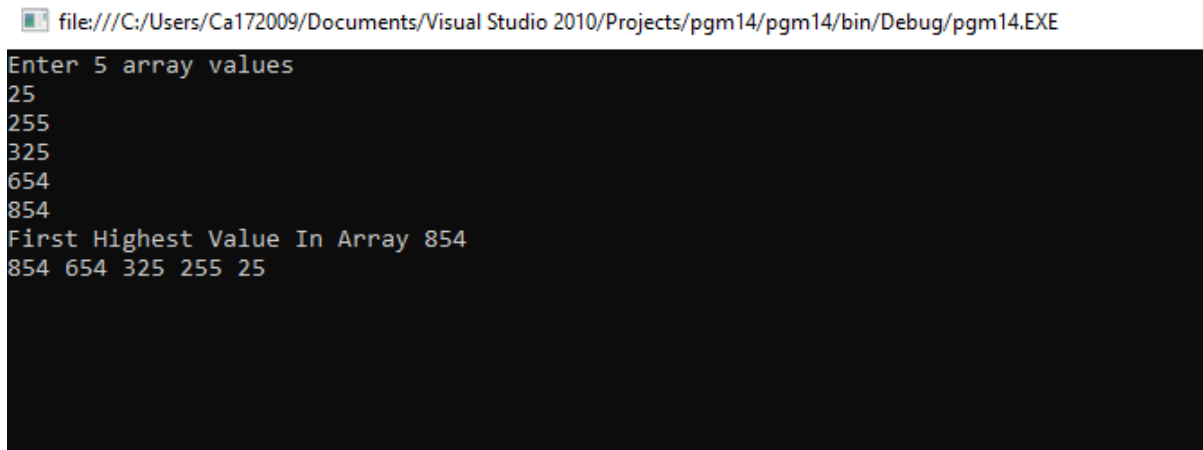
namespace pgm14
{
    class Program
    {
        static void Main(string[] args)
        {
            int[] arr = new int[5];
            Console.WriteLine("Enter 5 array values");
            for(int i=0;i<5;i++)
            {
                //Console.WriteLine(i);
                arr[i] = int.Parse(Console.ReadLine());
            }
            Array.Sort(arr);
            Array.Reverse(arr);
            Console.WriteLine("Second Highest Value In Array " + arr[1]);

            foreach (var result in arr)
            {
                Console.Write(result + " ");
            }
            Console.ReadLine();
        }
    }
}
```

**OUTPUT**

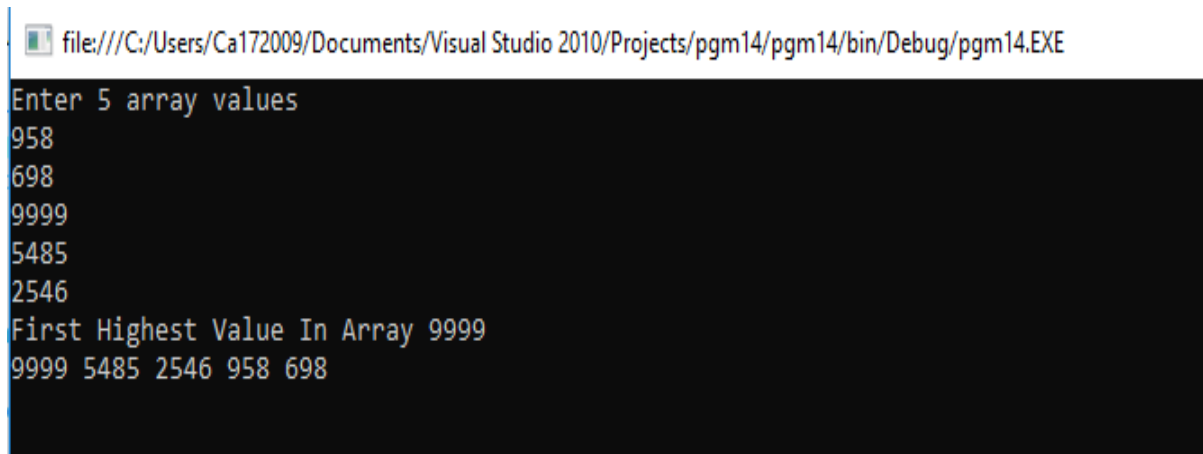
Select file:///c:/users/ca172009/documents/visual studio 2010/Projects/pgm14/pgm14/bin/Debug/pgm14.EXE

```
Enter 5 array values
10
20
30
40
50
First Highest Value In Array 50
50 40 30 20 10
```



file:///C:/Users/Ca172009/Documents/Visual Studio 2010/Projects/pgm14/pgm14/bin/Debug/pgm14.EXE

```
Enter 5 array values
25
255
325
654
854
First Highest Value In Array 854
854 654 325 255 25
```



file:///C:/Users/Ca172009/Documents/Visual Studio 2010/Projects/pgm14/pgm14/bin/Debug/pgm14.EXE

```
Enter 5 array values
958
698
9999
5485
2546
First Highest Value In Array 9999
9999 5485 2546 958 698
```

file:///C:/Users/Ca172009/Documents/Visual Studio 2010/Projects/pgm14/pgm14/bin/Debug/pgm14.EXE

Enter 5 array values

658

654

585

239

958

First Highest Value In Array 958

958 658 654 585 239

file:///C:/Users/Ca172009/Documents/Visual Studio 2010/Projects/pgm14/pgm14/bin/Debug/pgm14.EXE

Enter 5 array values

1235

9548

5862

9652

2546

First Highest Value In Array 9652

9652 9548 5862 2546 1235

**8) Program to illustrate the use of different properties in C#.**

```
using System;

namespace ProgramFifteen
{
    class PropertiesDemo
    {
        private string name;
        private int age;

        public string Name
        {
            set
            {
                name = value;
            }
            get
            {
                return name;
            }
        }

        public int Age
        {
            set
            {
                if (value > 0)
                    age = value;
            }
        }
    }
}
```

```
        get
        {
            return age;
        }
    }

    static void Main(string[] args)
    {
        PropertiesDemo p = new PropertiesDemo();
        p.Name = "Vinayak";
        p.Age = 23;

        PropertiesDemo d = new PropertiesDemo();
        d.Name = "Abhishek";
        d.Age = -1;

        Console.WriteLine("{0} : {1}", p.Name, p.Age);
        Console.WriteLine("{0} : {1}", d.Name, d.Age);
        Console.ReadLine();
    }
}
```



**OUTPUT**file:///c:/users/ca172009/documents/visual studio 2010/Projects/pgm15/pgm15/bin/Debug/pgm15.EXE

```
Vinayak : 23  
Abhishek : 0
```

**9) Demonstrate Command line arguments processing.**

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

namespace pgm16
{
    class Program
    {
        static void Main(string[] args)
        {
            Console.WriteLine("Argument length: " + args.Length);
            Console.WriteLine("Given Arguments are:");
            foreach (Object obj in args)
            {
                Console.WriteLine(obj);
            }
            Console.ReadLine();
        }
    }
}
```

**OUTPUT**

Command line arguments:

Working directory:  ...

☐ Use remote machine

```
file:///c:/users/ca172009/documents/visual studio 2010/Projects/pgm16/pgm16/bin/Debug/pgm16.EXE
Argument length: 5
Given Arguments are:
12
15
13
14
10
```

Command line arguments:

Working directory:  ...

☐ Use remote machine

```
file:///c:/users/ca172009/documents/visual studio 2010/Projects/pgm16/pgm16/bin/Debug/pgm16.EXE
Argument length: 3
Given Arguments are:
HI
Hello
Bye
```

Command line arguments:

Working directory:  ...

☐ Use remote machine

file:///c:/users/ca172009/documents/visual studio 2010/Projects/pgm16/pgm16/bin/Debug/pgm16.EXE

```
Argument length: 4
Given Arguments are:
abc
123
def
456
```

Command line arguments:

Working directory:  ...

☐ Use remote machine

file:///c:/users/ca172009/documents/visual studio 2010/Projects/pgm16/pgm16/bin/Debug/pgm16.EXE

```
Argument length: 11
Given Arguments are:
160
182
176
146
225
148
478
254
369
965
458
```

Command line arguments:

Working directory:  ...

☐ Use remote machine

```
file:///c:/users/ca172009/documents/visual studio 2010/Projects/pgm16/pgm16/bin/Debug/pgm16.EXE
Argument length: 9
Given Arguments are:
abc
def
ghi
jkl
mno
pqr
stu
vwx
yz
```