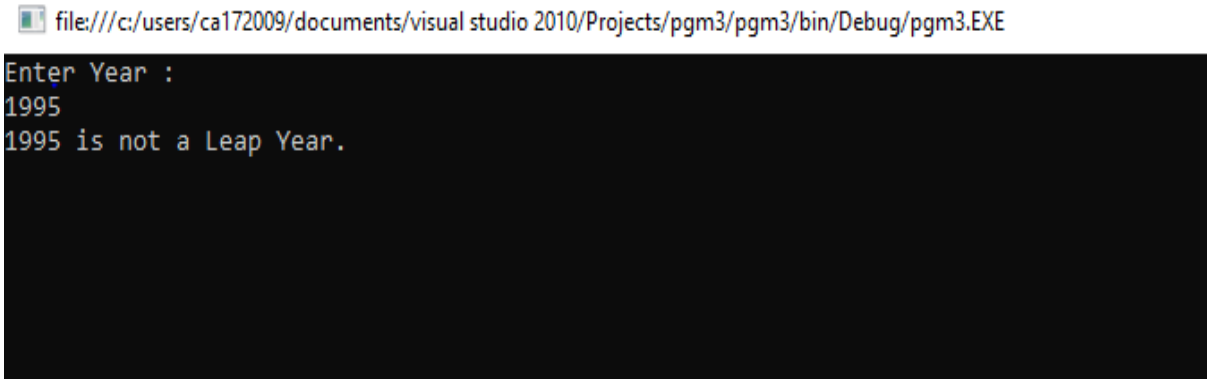
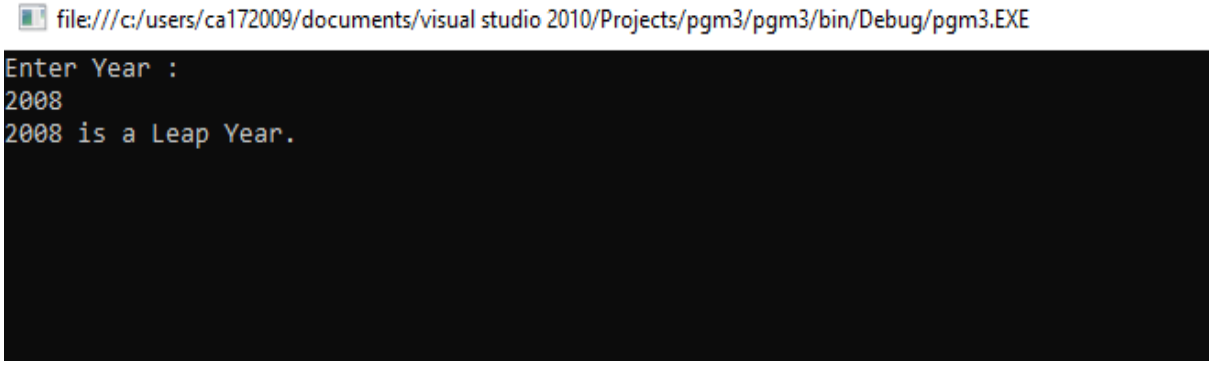
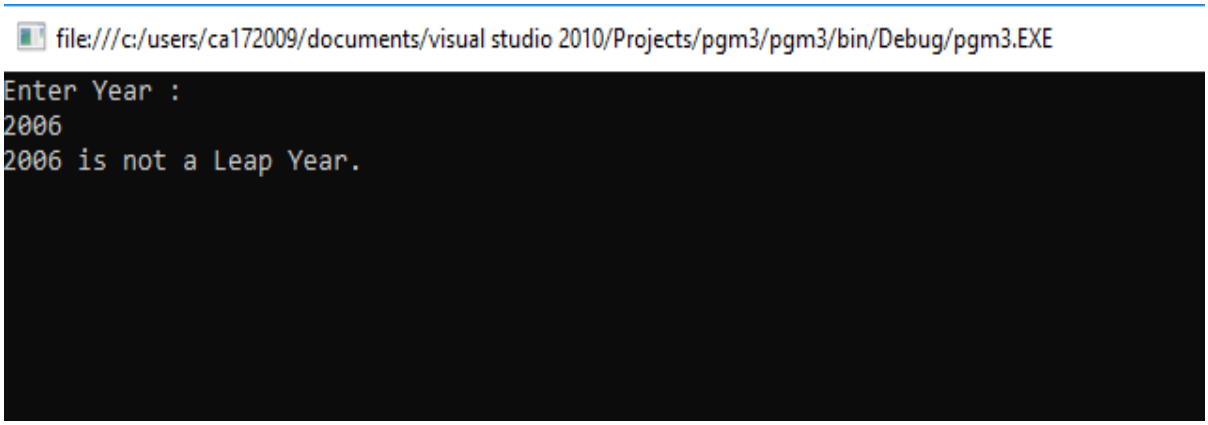
1) Check Whether the Entered Year is a Leap Year or No.

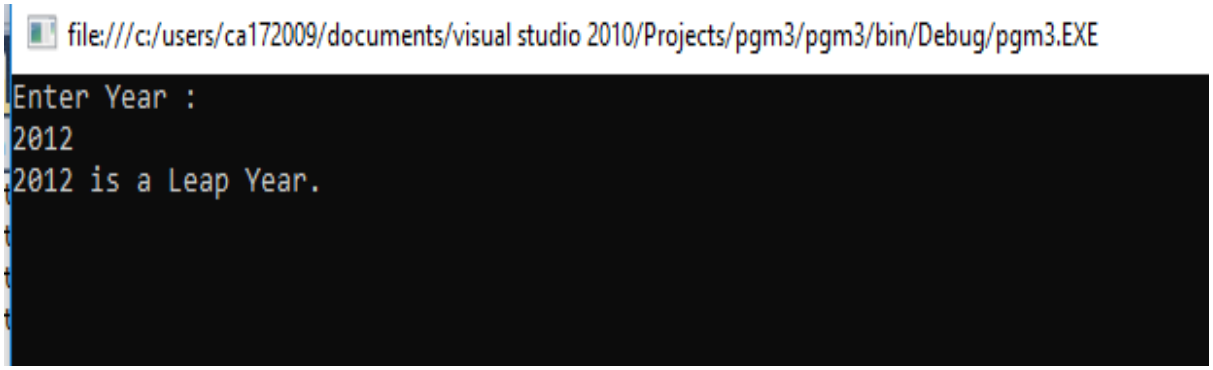
```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;

namespace pgm3
{
   class Program
   {
      static void Main(string[] args)
      {
         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.ReadLine();
      }
   }
}
```

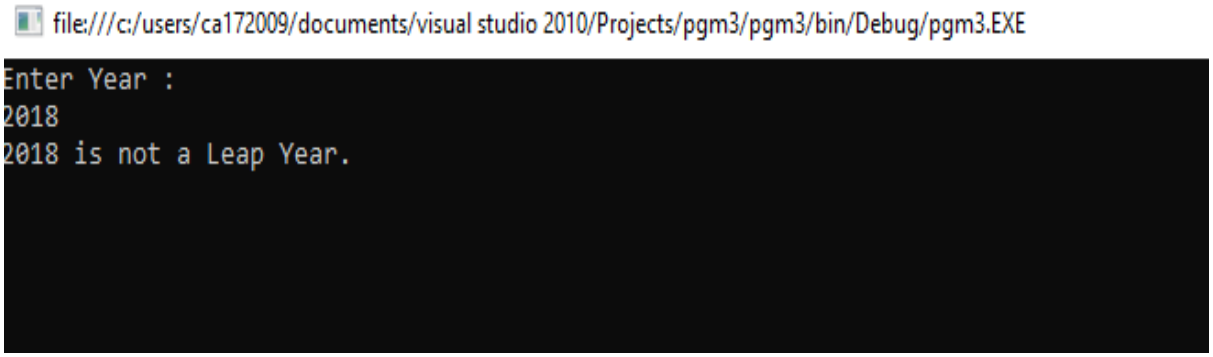
OUTPUT


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.

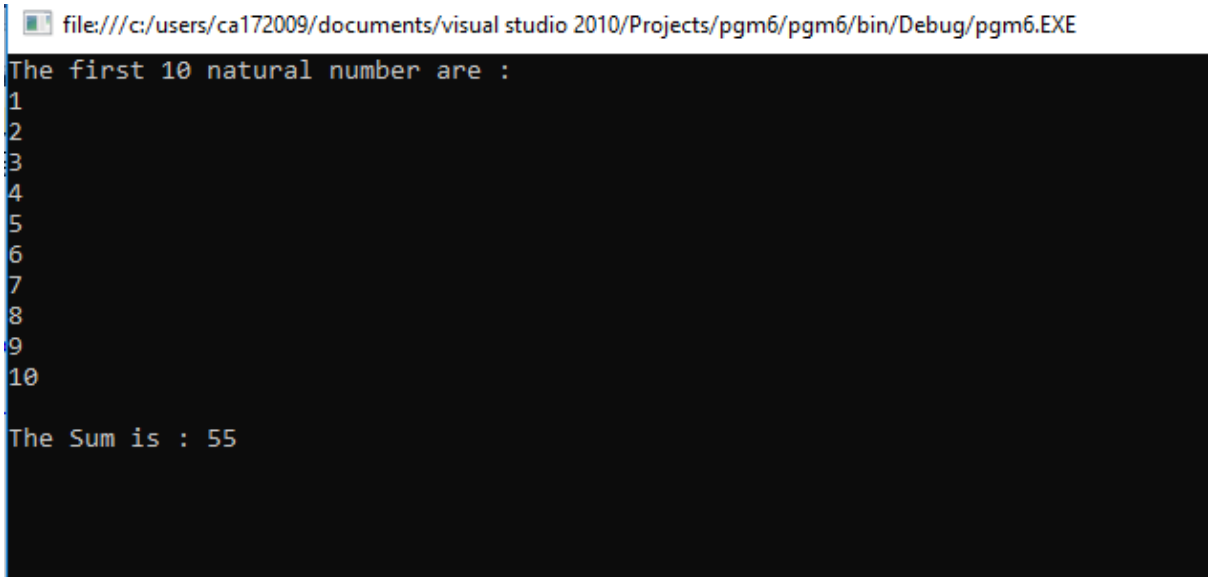

file:///c:/users/ca172009/documents/visual studio 2010/Projects/pgm3/pgm3/bin/Debug/pgm3.EXE
Enter Year :
2012
2012 is a Leap Year.


file:///c:/users/ca172009/documents/visual studio 2010/Projects/pgm3/pgm3/bin/Debug/pgm3.EXE
Enter Year :
2018
2018 is not a Leap Year.

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.Write("The first 10 natural number are :\n");
          for (j = 1; j <= 10; j++)
         {
            sum = sum + j;
            Console.Write("{0} ",j);
            Console.Write("\n");
         }
         Console.Write("\nThe Sum is : {0}\n", sum);
         Console.ReadLine();
       }
      }
   }
```

OUTPUT

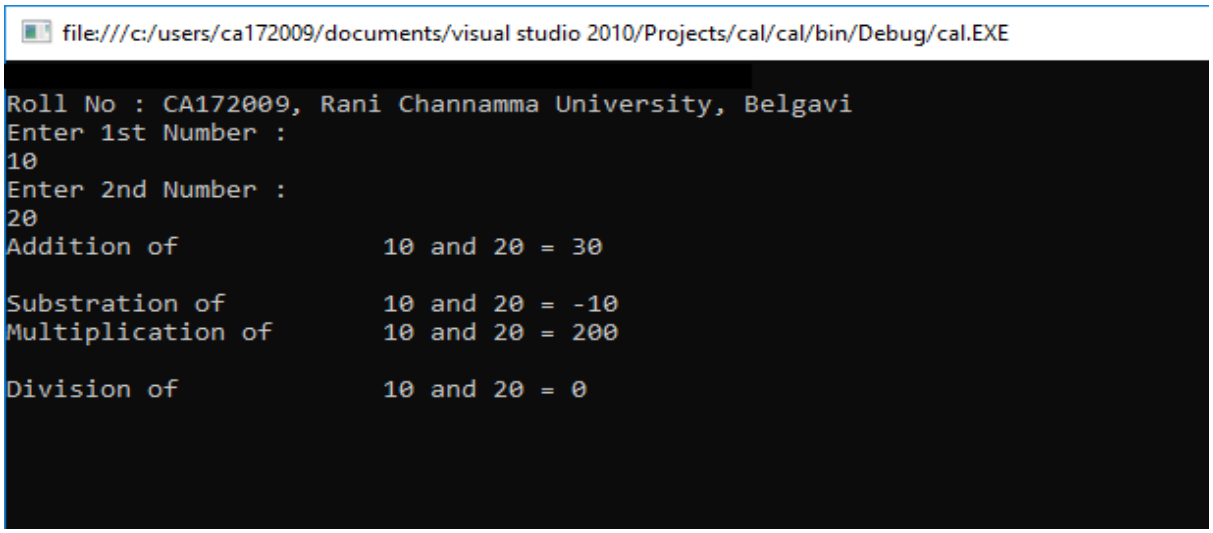

file:///c:/users/ca172009/documents/visual studio 2010/Projects/pgm6/pgm6/bin/Debug/pgm6.EXE
The first 10 natural number are :
1
2
3
4
5
6
7
8
9
10
The Sum is : 55

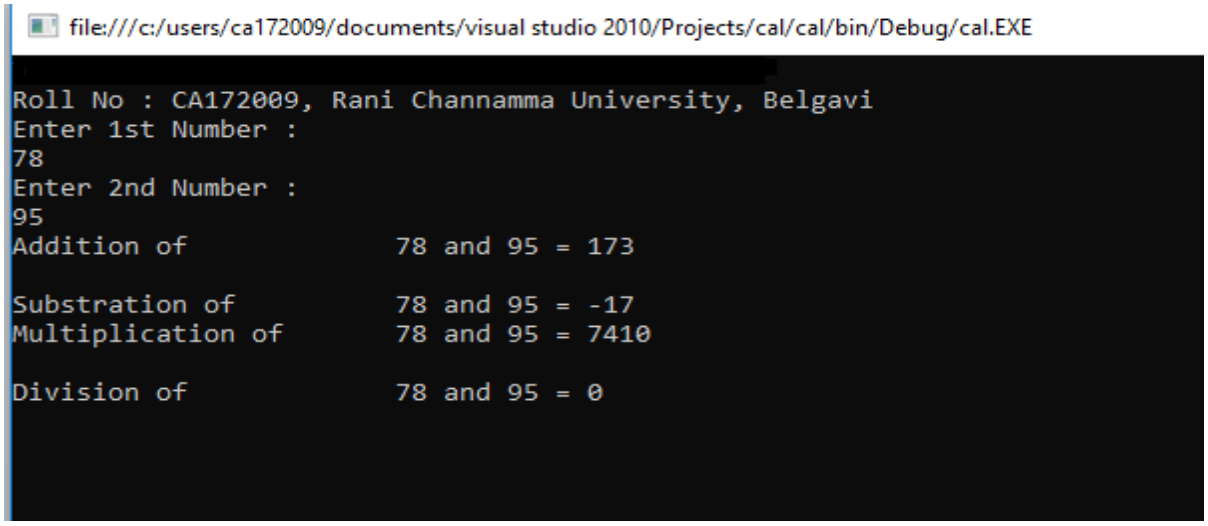
3) Program to display the addition, subtraction, multiplication and division of two number using console applications.

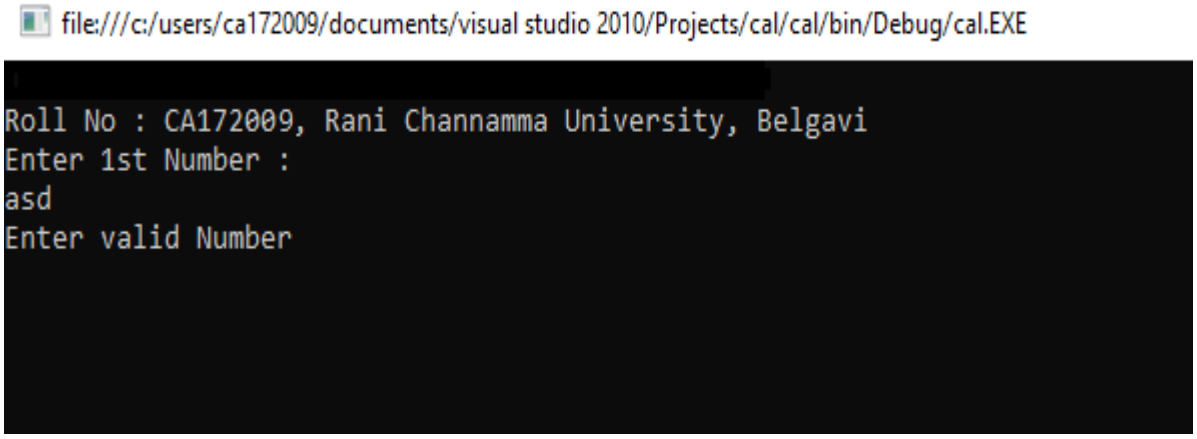
```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;

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);
         }
```

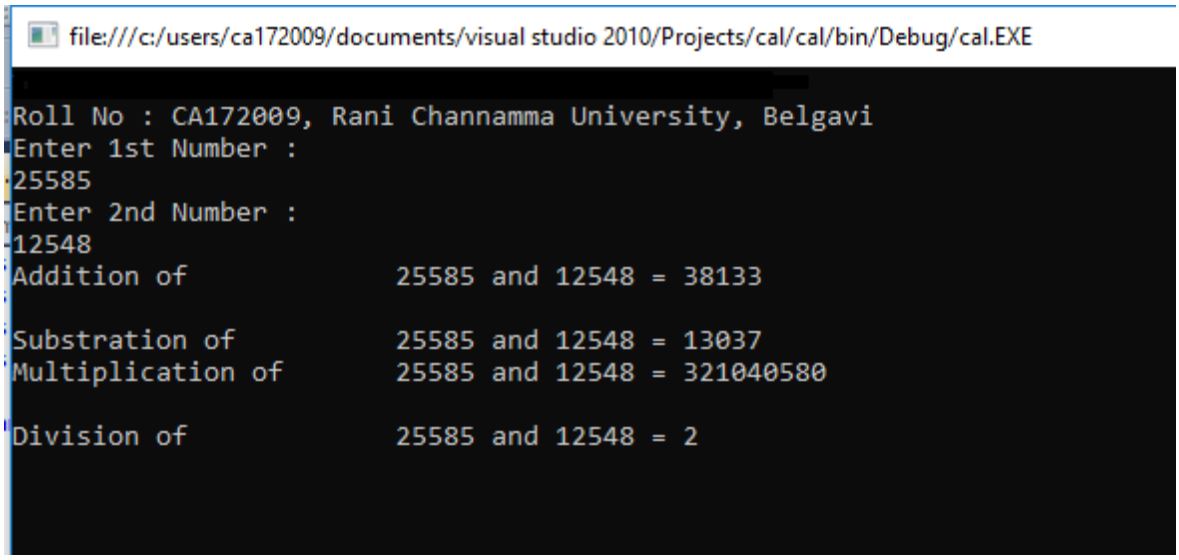
```
catch (Exception ex)
{
   Console.WriteLine("Enter valid Number");
}
Console.ReadKey();
      }
   }
}
```

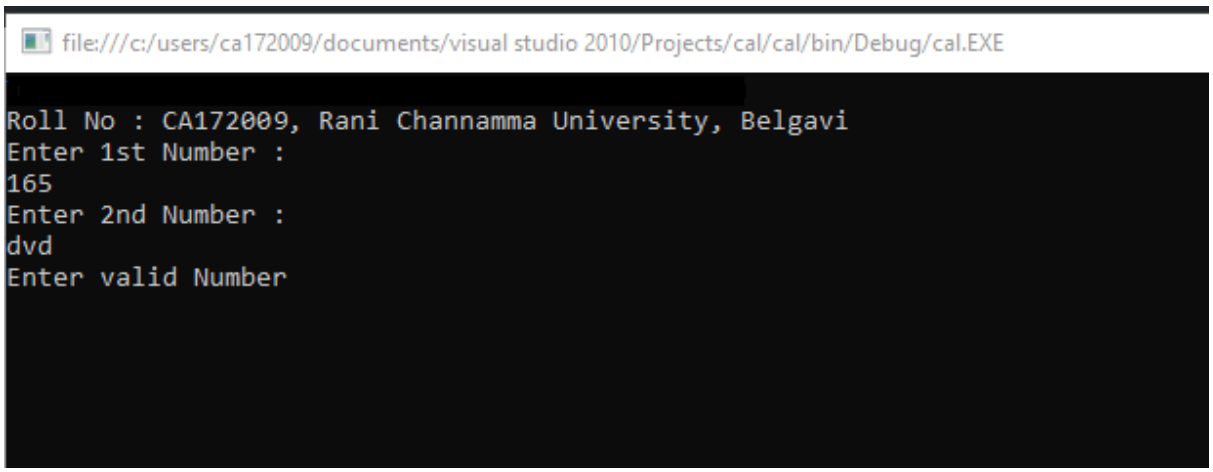
OUTPUT


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
Substration 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
Substration 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

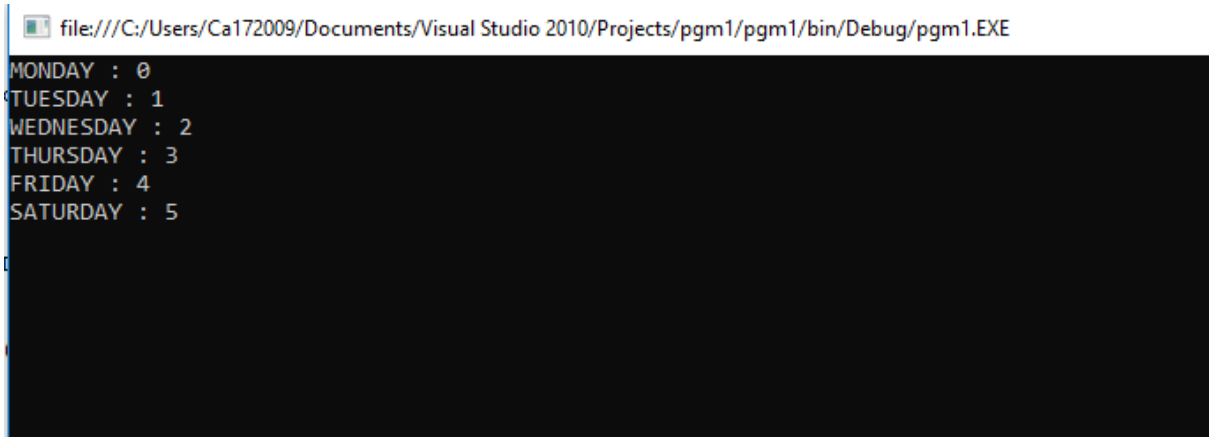

file:///c:/users/ca172009/documents/visual studio 2010/Projects/cal/cal/bin/Debug/cal.EXE
Roll No : CA172009, Rani Channamma University, Belgavi
Enter 1st Number :
25585
Enter 2nd Number :
12548
Addition of 25585 and 12548 = 38133
Substration of 25585 and 12548 = 13037
Multiplication of 25585 and 12548 = 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();
      }
   }
}
```

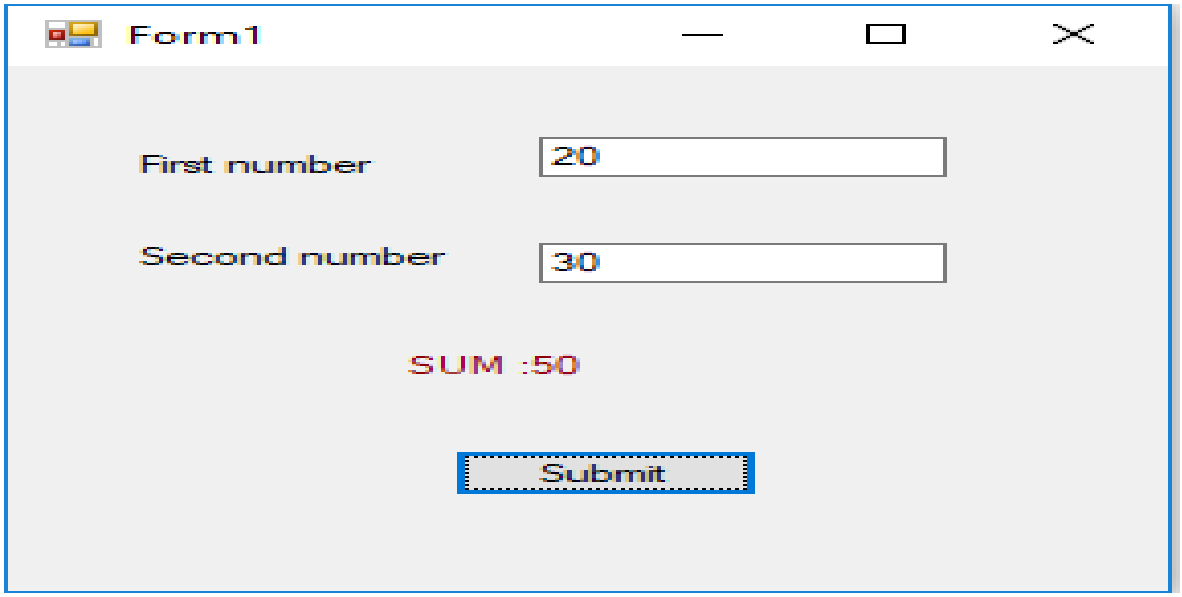
OUTPUT

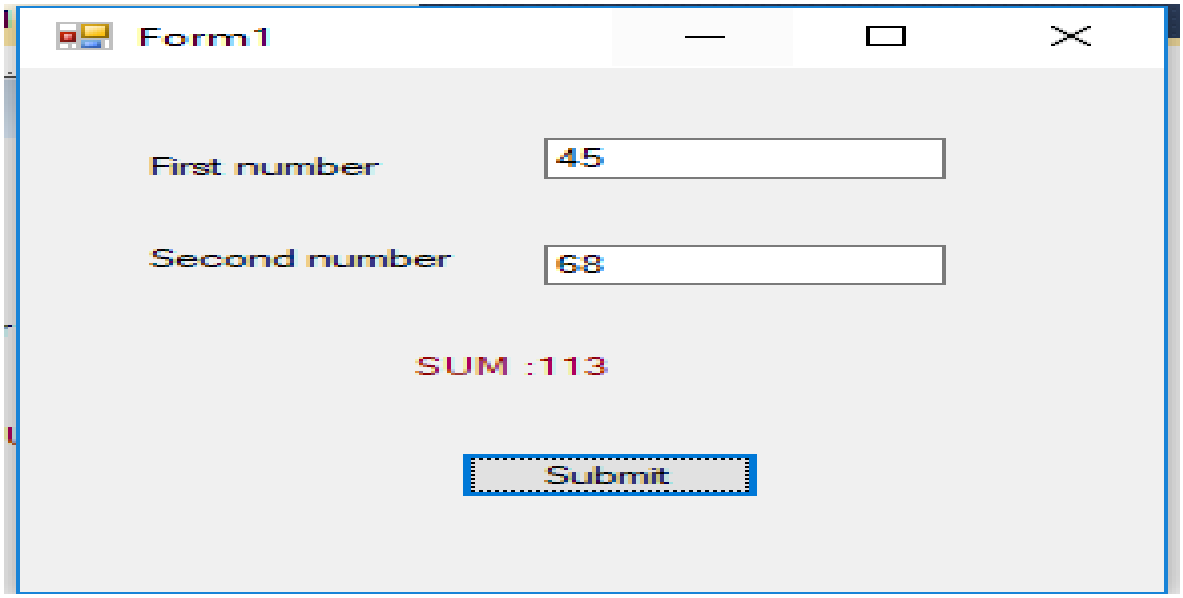

file:///C:/Users/Ca172009/Documents/Visual Studio 2010/Projects/pgm1/pgm1/bin/Debug/pgm1.EXE
MONDAY : 0
TUESDAY : 1
WEDNESDAY : 2
THURSDAY : 3
FRIDAY : 4
SATURDAY : 5

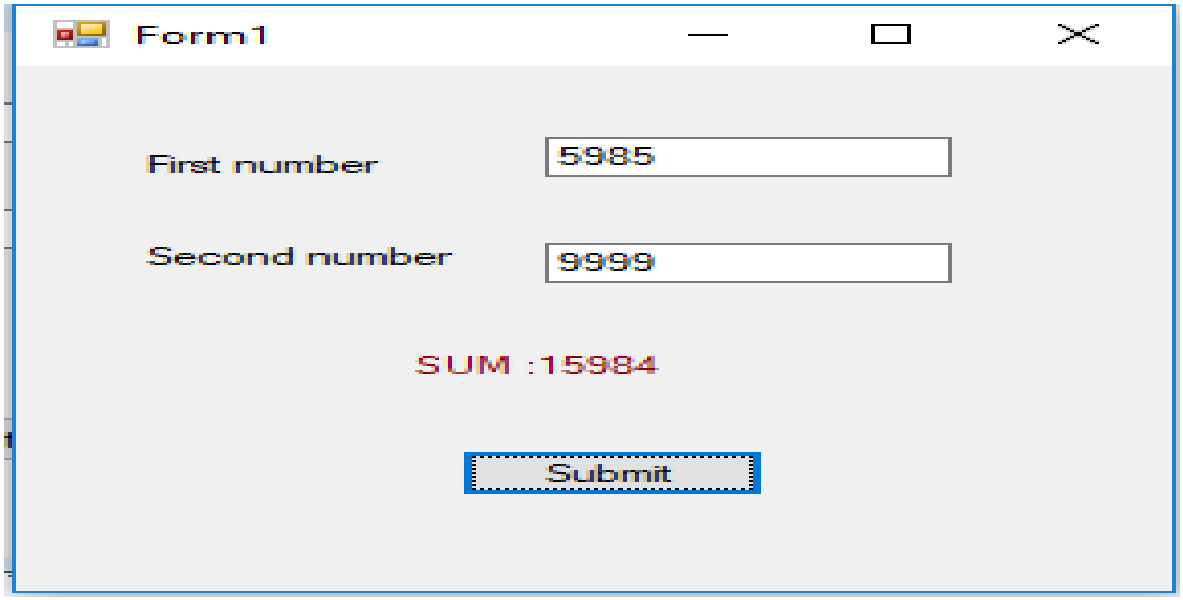
5) Program to display the addition using the windows application.

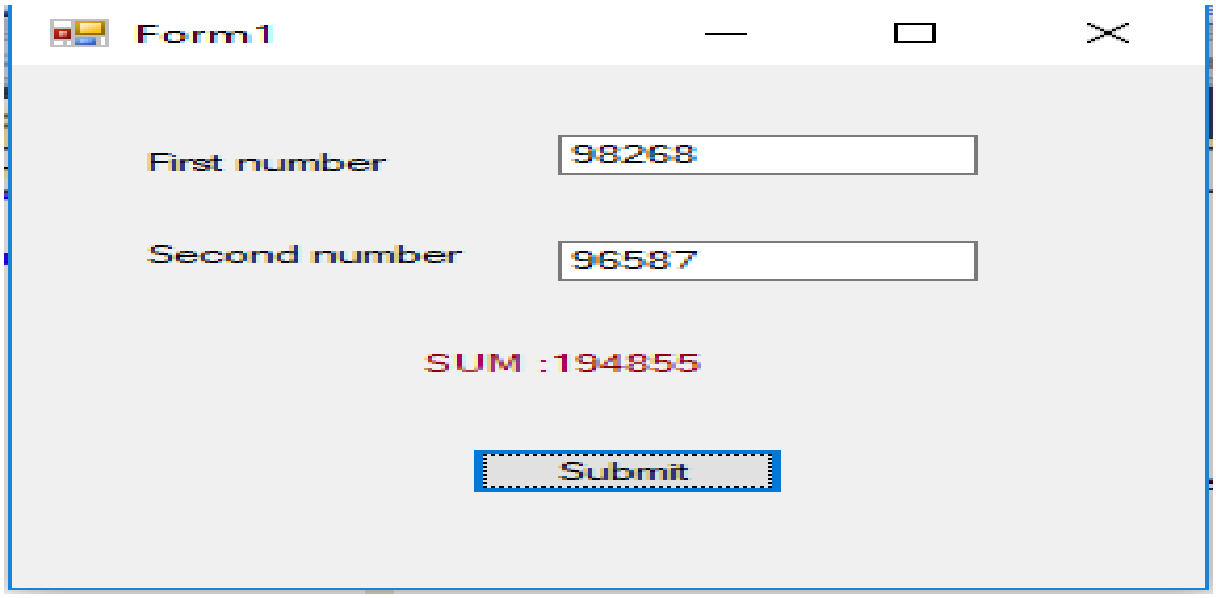
```
using System;
using System.Collections.Generic;
using System.ComponentModel;
using System.Data;
using System.Drawing;
using System.Linq;
using System.Text;
using System.Windows.Forms;

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;
         label3.Text = "SUM :" + c;
      }
   }
}
```

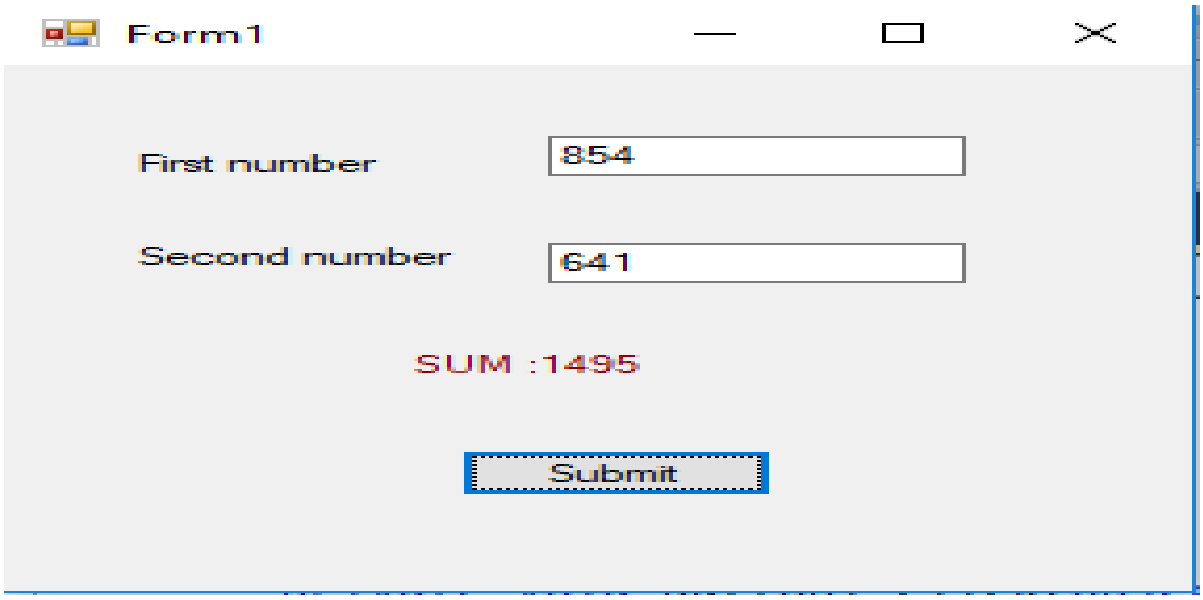
OUTPUT


Form1
First number
20
Second number
30
SUM :50
Submit


Form1
First number
45
Second number
68
SUM :113
Submit


Form1
First number
5985
Second number
9999
SUM :15984
Submit


Form1
First number
98268
Second number
96587
SUM :194855
Submit

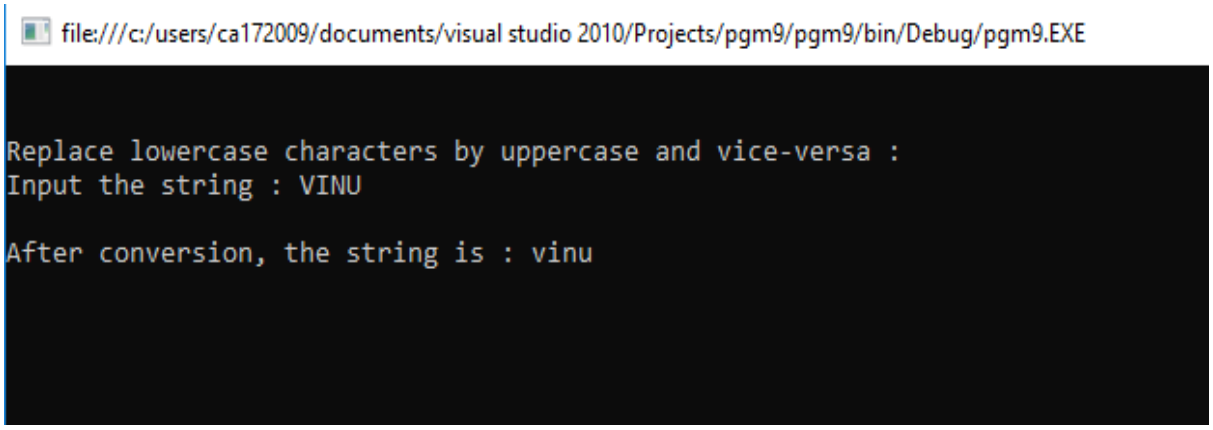

Form1
First number
854
Second number
641
SUM :1495
Submit

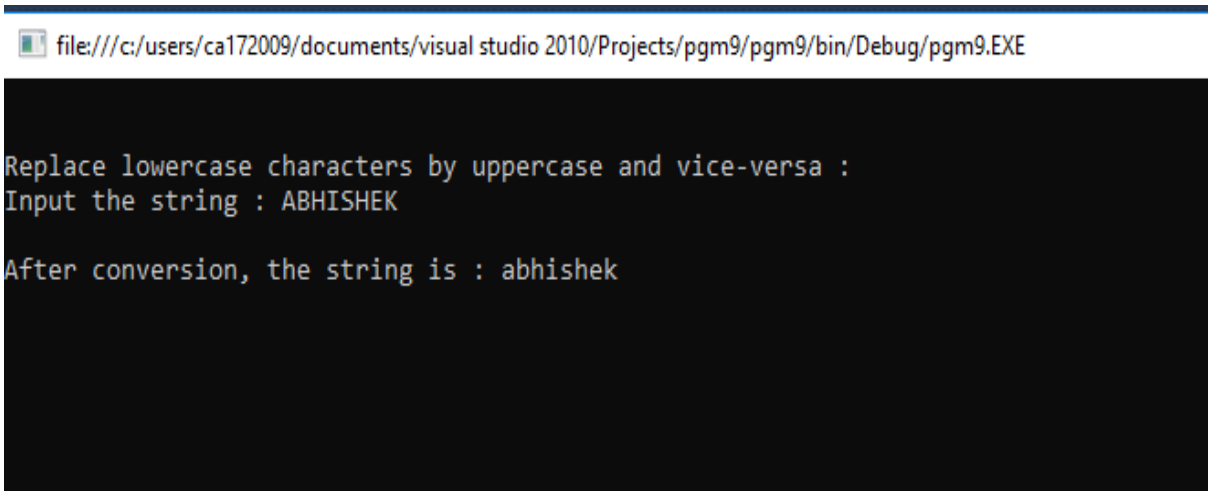
6) Write a program to convert input string from lower to upper and upper to lower case.

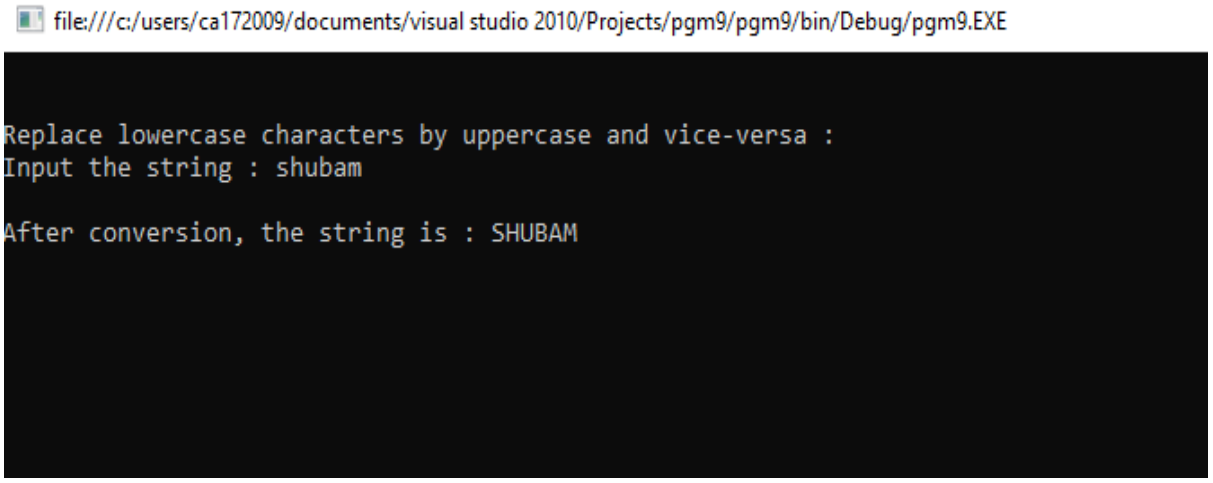
```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
namespace LowUpp
{
   public class Exercise15
   {
      public static void Main()
      {
         string str1;
         char[] arr1;
         int l, i;
         l = 0;
         char ch;
         Console.Write("\n\nReplace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

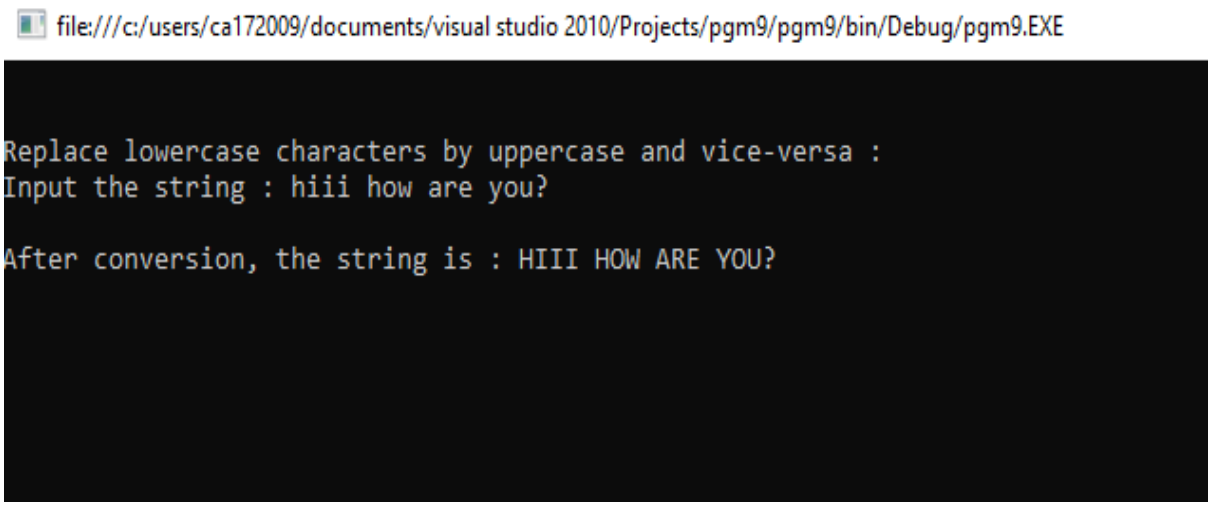
```
            Console.Write("\n\n");

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

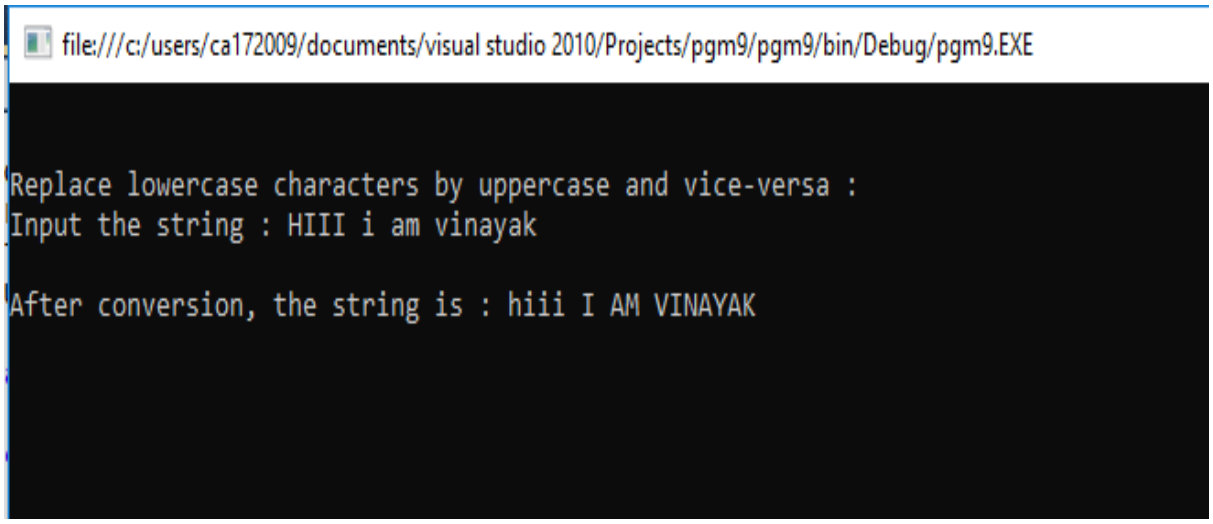
OUTPUT


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

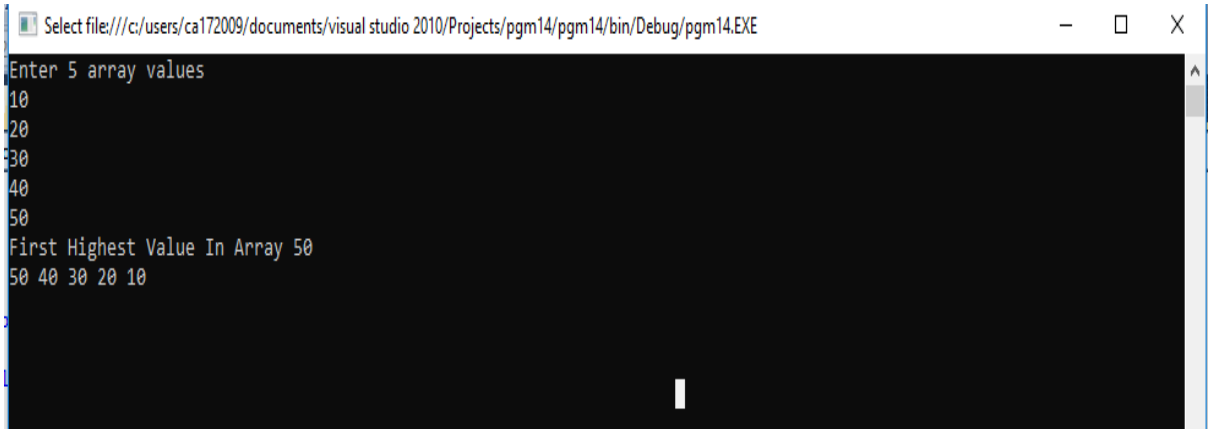

file:///c:/users/ca172009/documents/visual studio 2010/Projects/pgm9/pgm9/bin/Debug/pgm9.EXE
Replace lowercase characters by uppercase and vice-versa :
Input the string : hiii how are you?
After conversion, the string is : HIII HOW ARE YOU?

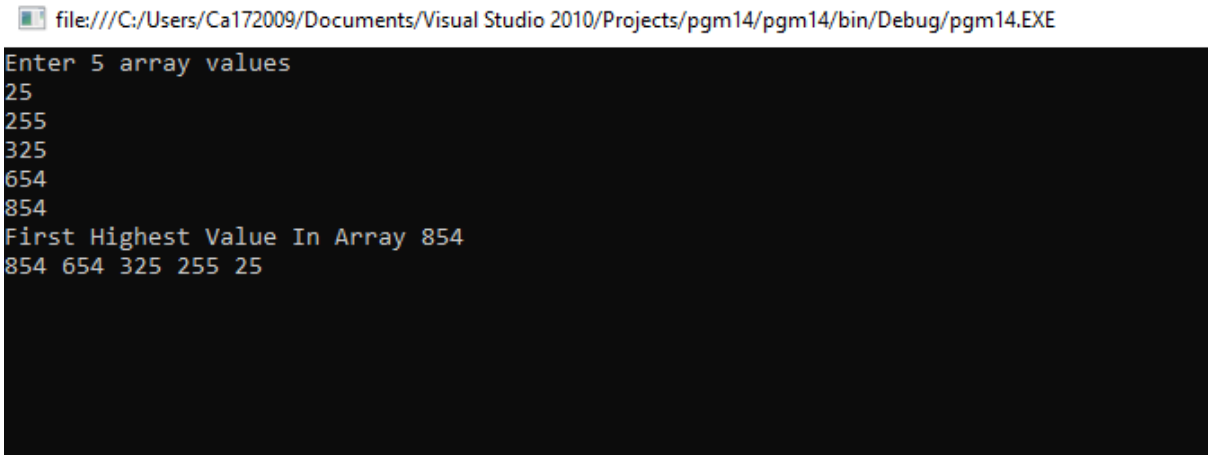

file:///c:/users/ca172009/documents/visual studio 2010/Projects/pgm9/pgm9/bin/Debug/pgm9.EXE
Replace lowercase characters by uppercase and vice-versa :
Input the string : HIII i am vinayak
After conversion, the string is : hiii I AM VINAYAK

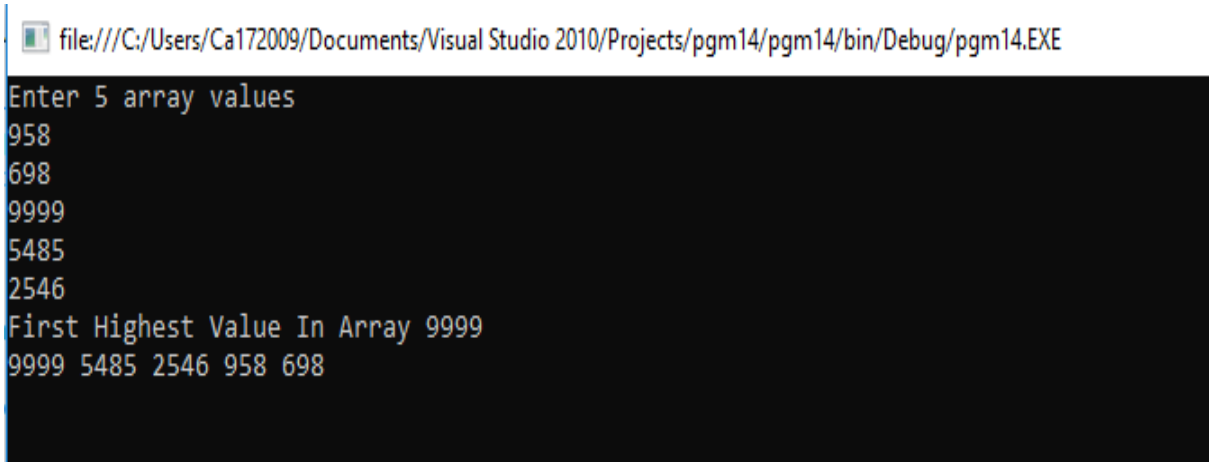
7) Find the second largest element in a single dimensional array.

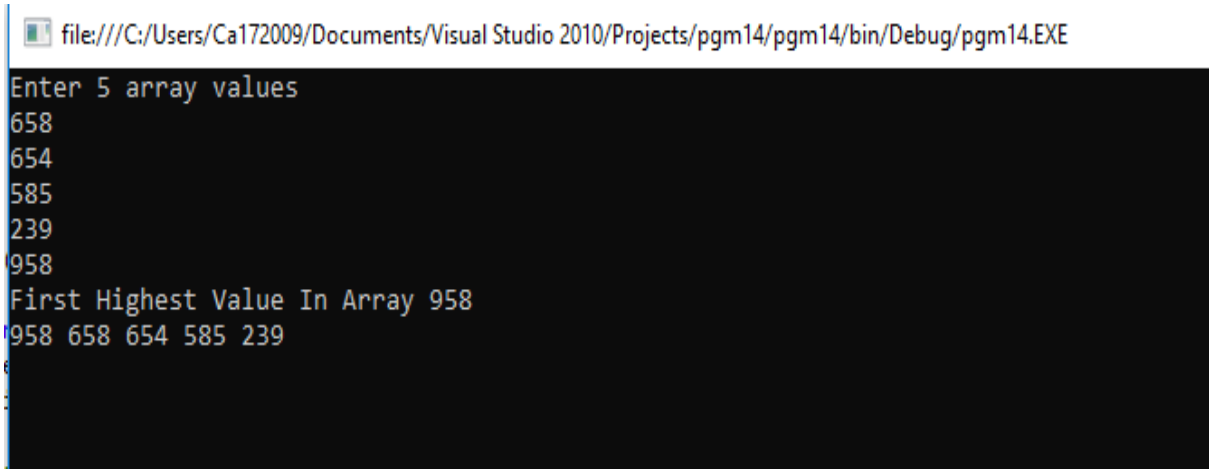
```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;

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();
      }
   }
}
```

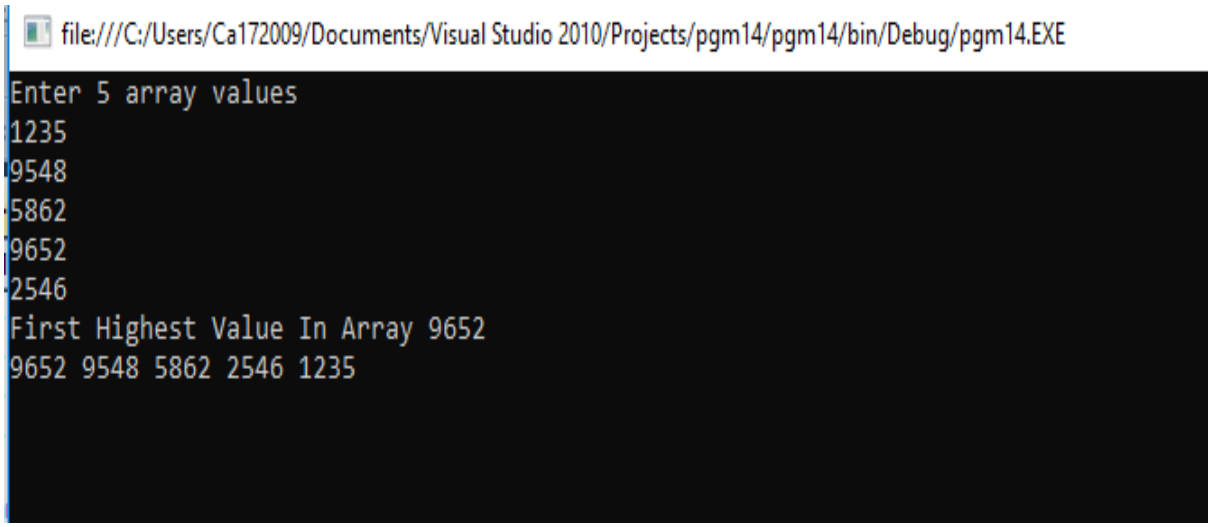
OUTPUT


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

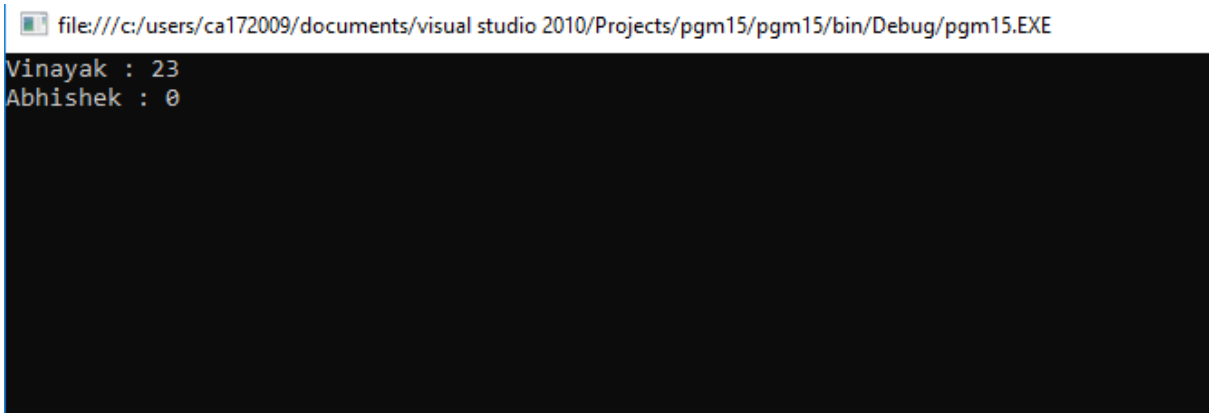

file:///C:/Users/Ca172009/Documents/Visual Studio 2010/Projects/pgm14/pgm14/bin/Debug/pgm14.EXE
Enter 5 array values
1235
9548
5862
9652
2546
First Highest Value In Array 9652
9652 9548 5862 2546 1235

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();
    }
  }
}
```

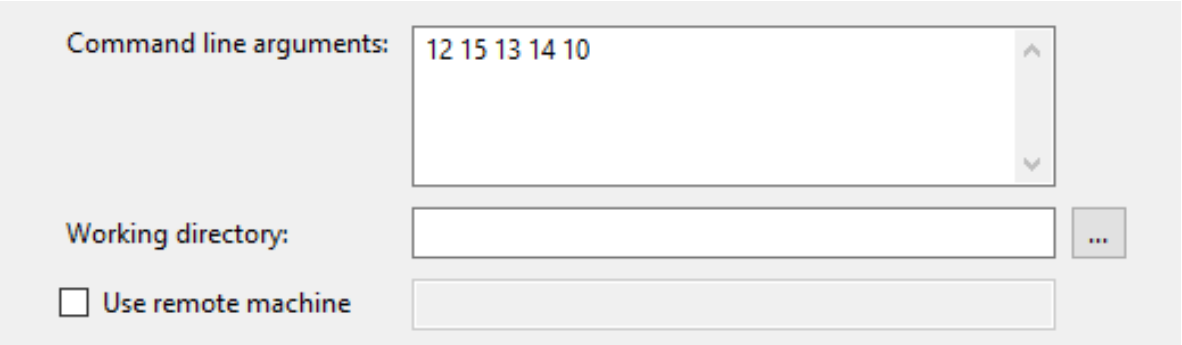
OUTPUT

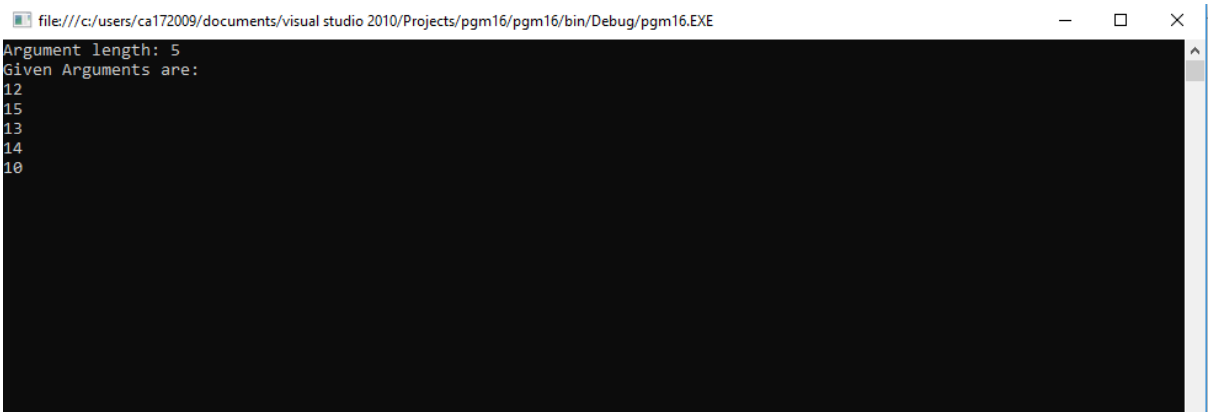

file:///c:/users/ca172009/documents/visual studio 2010/Projects/pgm15/pgm15/bin/Debug/pgm15.EXE
Vinayak : 23
Abhishek : 0

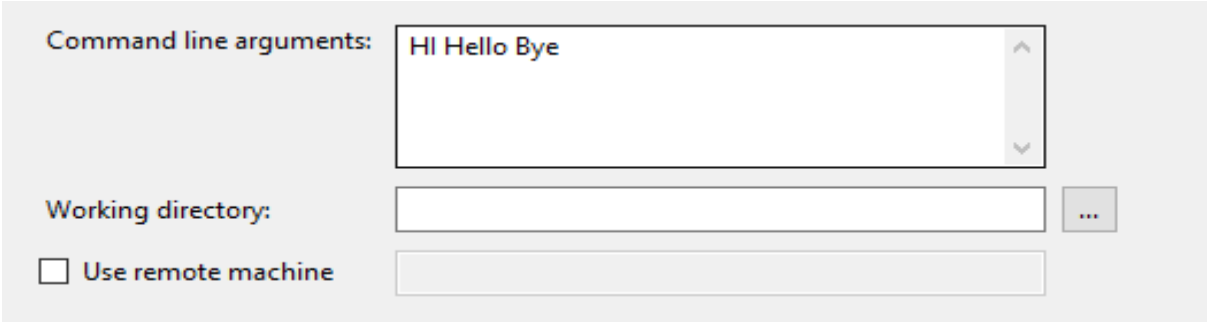
9) Demonstrate Command line arguments processing.

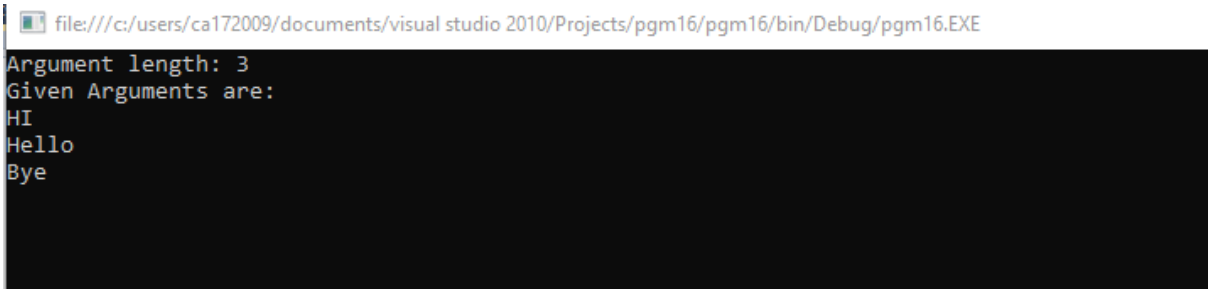
```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;

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();
      }
   }
}
```

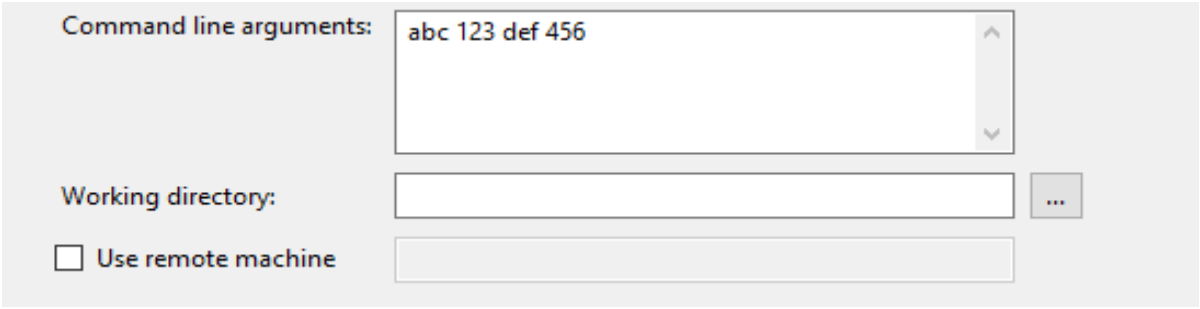
OUTPUT

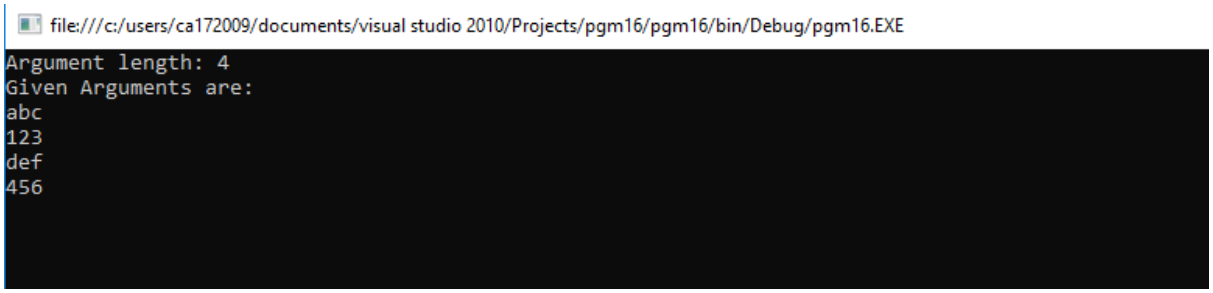

Command line arguments:
12 15 13 14 10
Working directory:
...
Use remote machine

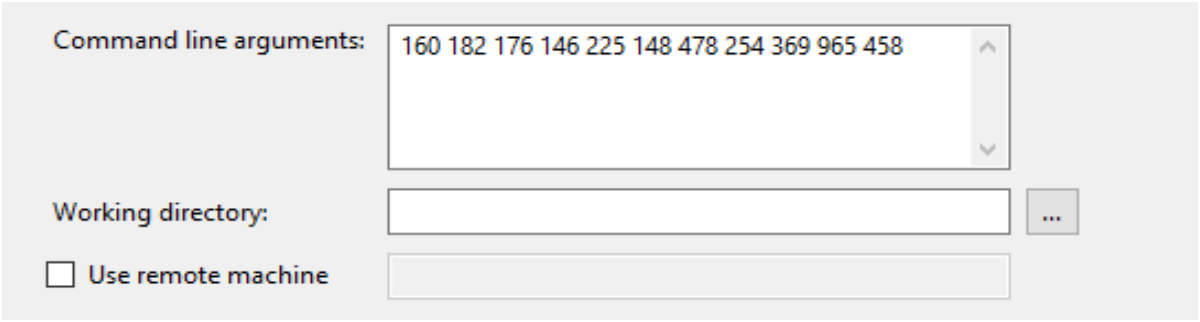

file:///c:/users/ca172009/documents/visual studio 2010/Projects/pgm16/pgm16/bin/Debug/pgm16.EXE
Argument length: 5
Given Arguments are:
12
15
13
14
10

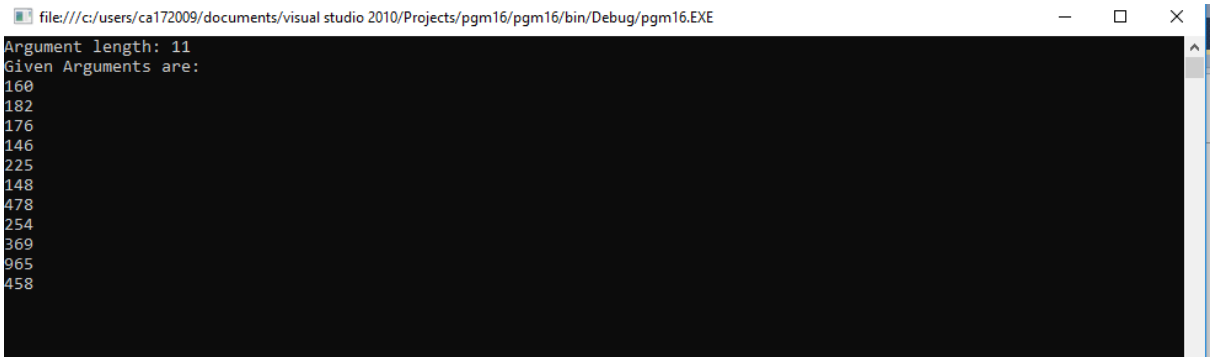

Command line arguments:
HI Hello Bye
Working directory:
...
Use remote machine

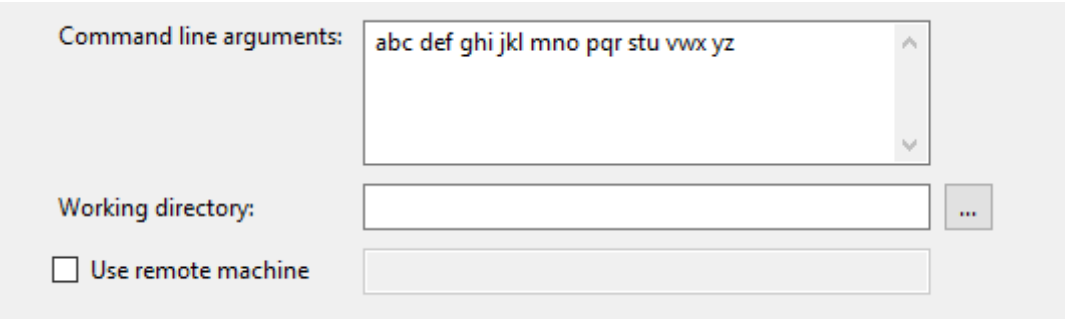

file:///c:/users/ca172009/documents/visual studio 2010/Projects/pgm16/pgm16/bin/Debug/pgm16.EXE
Argument length: 3
Given Arguments are:
HI
Hello
Bye


Command line arguments:
abc 123 def 456
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:
160 182 176 146 225 148 478 254 369 965 458
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:
abc def ghi jkl mno pqr stu vwx yz
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