```csharp
1  using System;
2  using System.Collections.Generic;
3  using System.IO;
4  using System.Linq;
5  using System.Text;
6
7  namespace Algorithms
8  {
9      public class Sequential_Search
10     {
11         public static void Main()
12         {
13             new Sequential_Search().Run(Console.In, Console.Out);
14         }
15         public void Run(TextReader reader, TextWriter writer)
16         {
17             int[] array = { 12, 43, 589, 323, 45, 23, 99, 238, 344, 596, 3482,
                   2039 };
18             int key = 596;
19
20             var result = SequentialSearch(array, key);
21
22             writer.WriteLine(result);
23             reader.ReadLine();
24         }
25         public Sequential_Search()
26         {
27
28         }
29         /// <summary>
30         /// Searches for a given value in a given array by sequential search
31         /// </summary>
32         /// <param name="A">An array A[0..n-1]</param>
33         /// <param name="K">search key K</param>
34         /// <returns>The index of the first element of A that matches K or -1 if
                   there are no matching elements</returns>
35         public int SequentialSearch(int[] A, int K)
36         {
37             int i = 0;
38             while (i < A.Length && A[i] != K)
39                 i++;
40
41             if (i < A.Length) return i;
42             else return -1;
43         }
44     }
45 }
46
```