1. Write a C# Sharp program that stores elements in an array and prints them.

```
using System;

namespace Ayushi_Tutorials
{
   internal class T2AQ1
   {
      public static void Main(String[] args)
      {
         int[] a1 = { 5, 10, 15, 20, 25 };
         Console.WriteLine("Elements of array a1 :");
         for(int i = 0; i<a1.Length; i++)
         {
            Console.WriteLine(a1[i] + " ");
         }
      }
   }
}
```

```
D:\.NET\Ayushi_Tutorials>T2AQ1
Elements of array a1 :
5
10
15
20
25
```

2. Write a program of sorting an array. Declare single dimensional array and accept 5 integer values from the user. Then sort the input in ascending order and display output.

```
using System;

namespace Ayushi_Tutorials
{
   internal class T2AQ2
   {
      public static void Main(String[] args)
```

```
        {
            int[] a1 = new int[5];
            Console.WriteLine("Enter any 5 numbers : ");
            for (int i = 0; i < a1.Length; i++)
            {
                a1[i] = Int32.Parse(Console.ReadLine());
            }
            // Sorting
            for (int i = 0; i < a1.Length; i++)
            {
                for (int j = i + 1; j < a1.Length; j++)
                {
                    if (a1[i] > a1[j])
                    {
                        int temp = a1[i];
                        a1[i] = a1[j];
                        a1[j] = temp;
                    }
                }}
            // Displaying in ascending order.
            Console.WriteLine("The numbers in ascending order are :");
            foreach (int num in a1)
            {
                Console.WriteLine(num);
            }
        }
    }
}
```

```
D:\.NET\Ayushi_Tutorials>T2AQ2
Enter any 5 numbers :
100
5
14
68
90
The numbers in ascending order are :
5
14
68
90
100
```

3. Write a C# Sharp program to read n values in an array and display them in reverse order.

```
using System;
namespace Ayushi_Tutorials
{
   internal class T2AQ3
   {
      public static void Main(String[] args)
      {
         Console.WriteLine("Enter number of elements.");
         int n = Int32.Parse(Console.ReadLine());
         int[] a1 = new int[n];

         Console.WriteLine("Enter the elements : ");
         for(int i = 0; i < a1.Length; i++)
         {
              a1[i] = Int32.Parse(Console.ReadLine());
         }

         Console.WriteLine("Elements in reverse order : ");
         for(int i = a1.Length - 1; i >= 0; i--)
         {
            Console.WriteLine(a1[i]);
         }
      }}}
```

```
D:\.NET\Ayushi_Tutorials>T2AQ3
Enter number of elements.
4
Enter the elements :
14
50
100
20
Elements in reverse order :
20
100
50
14
```

4. Write a C# Sharp program to copy the elements of one array into another array.

```
using System;

namespace Ayushi_Tutorials
{
   internal class T2AQ4
   {
      public static void Main(String[] args)
      {
         int[] a1 = new int[5];
         int[] c1 = new int[5];
         Console.WriteLine("Enter any 5 numbers : ");
         for(int i = 0; i < a1.Length; i++)
         {
            a1[i] = Int32.Parse(Console.ReadLine());
         }
         // Copying elements from a1 to c1
         for(int i = 0; i < a1.Length; i++)
         {
            c1[i] = a1[i];
         }
         Console.WriteLine("Elements of c1 array : ");
         for(int i = 0; i < c1.Length; i++)
         {
            Console.WriteLine(c1[i]);
         }}}}
```

```
D:\.NET\Ayushi_Tutorials>T2AQ4
Enter any 5 numbers :
45
20
89
50
10
Elements of c1 array :
45
20
89
50
10
```

5. Write a C# Sharp program to count duplicate elements in an array.

```
using System;

namespace Ayushi_Tutorials
{
   internal class T2AQ5
   {
      public static void Main(String[] args)
      {
         int[] a1 = { 1, 2, 2, 5, 3, 5, 10, 2, 5, 1, 20 };
         int dc = 0;
         for (int i = 0; i < a1.Length; i++)
         {
            bool isD = false;
            for (int j = i+1; j < a1.Length; j++)
            {
               if (a1[i] == a1[j])
               {
                  isD = true;
                  break;
               }
            }
            if (isD)
            {
               bool alreadyCounted = false;
               for(int k = 0; k < i; k++)
               {
                  if (a1[i] == a1[k])
                  {
                     alreadyCounted = true;
                     break;
                  }}
               if (!alreadyCounted)
               {
                  dc++;
               }}}
         Console.WriteLine("The total number of duplicate elements in the array is : " + dc);         }}}
```

```
D:\.NET\Ayushi_Tutorials>T2AQ5
The total number of duplicate elements in the array is : 3
```

6. Write a C# Sharp program to find the maximum and minimum elements in an array.

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

namespace Ayushi_Tutorials
{
   internal class T2AQ6
   {
      public static void Main(string[] args)
      {
         int[] ary = new int[5];
         Console.WriteLine("Enter array elements : ");
         for (int i = 0; i < ary.Length; i++)
         {
            ary[i] = Int32.Parse(Console.ReadLine());
         }

         // To find maximum element in array.
         int max = ary[0];
         for (int i = 0; i < ary.Length; i++)
         {
            if (ary[i] > max)
            {
               max = ary[i];
            }
         }
         Console.WriteLine("Maximum element in array: " + max);
      }}}
```

```
D:\.NET\Ayushi_Tutorials>T2AQ6
Enter array elements :
15
50
99
45
20
Maximum element in array: 99
```

7. Write a program in C# Sharp to separate odd and even integers into separate arrays.

```
using System;
namespace Ayushi_Tutorials
{
   internal class T2AQ7
   {
      public static void Main(String[] args)
      {
         int[] a1 = { 2, 5, 14, 20, 12, 10, 21, 25, 29, 30 };
         int[] even = new int[a1.Length];
         int[] odd = new int[a1.Length];

         int ec = 0, oc = 0;
         for(int i=0; i < a1.Length; i++)
         {
            if (a1[i] %2 == 0)
            {
               even[ec] = a1[i];
               ec++;
            }
            else
            {
               odd[oc] = a1[i];
               oc++;
            }
         }
         Console.WriteLine("Even Array :");
         for(int i = 0; i<ec; i++)
         {
            Console.Write(even[i]+ ",");
         }
         Console.WriteLine();
         Console.WriteLine("Odd Array : ");
         for(int i = 0; i<oc; i++)
         {
            Console.Write(odd[i]+ ",");
         }
         Console.WriteLine();
      }
   }}
```

```
D:\.NET\Ayushi_Tutorials>T2AQ7
Even Array :
2,14,20,12,10,30,
Odd Array :
5,21,25,29,
```

8. Write a C# Sharp program to sort array elements in descending order.

```
using System;

namespace Ayushi_Tutorials
{
   internal class T2AQ8
   {
      public static void Main(String[] args)
      {
         int[] a1 = new int[5];
         Console.WriteLine("Enter any 5 numbers : ");
         for (int i = 0; i < a1.Length; i++)
         {
            a1[i] = Int32.Parse(Console.ReadLine());
         }
         // Sorting
         for (int i = 0; i < a1.Length; i++)
         {
            for (int j = i + 1; j < a1.Length; j++)
            {
               if (a1[i] < a1[j])
               {
                  int temp = a1[i];
                  a1[i] = a1[j];
                  a1[j] = temp;
               }
            }
         }
         // Displaying in descending order.
         Console.WriteLine("The numbers in ascending order are :");
         foreach (int num in a1)
```

```
        {
            Console.WriteLine(num);
        }}}}
```

```
D:\.NET\Ayushi_Tutorials>T2AQ8
Enter any 5 numbers :
12
150
98
4
5
The numbers in ascending order are :
150
98
12
5
4
```

9. Write a C# Sharp program to delete an element at the desired position from an array.

```
using System;

namespace Ayushi_Tutorials
{
    internal class T2AQ9
    {
        public static void Main(String[] args)
        {
            int[] a1 = { 10, 50, 20, 5, 30, 1 };
            int n = a1.Length;
            Console.WriteLine("Array : ");
            for(int i = 0; i<n; i++)
            {
                Console.Write(a1[i] + ",");
            }
            Console.WriteLine();
            Console.WriteLine("Enter position to delete element.");
            int pos = Convert.ToInt32(Console.ReadLine());

            for(int i = pos-1; i<n-1; i++)
            {
                a1[i] = a1[i + 1];
```

```
            }
            n--;

            Console.WriteLine("Array after deletion : ");
            for(int i = 0; i < n; i++)
            {
               Console.Write(a1[i] + ",");
            }
            Console.WriteLine();
        }
    }
}
```

```
D:\.NET\Ayushi_Tutorials>T2AQ9
Array :
10,50,20,5,30,1,
Enter position to delete element.
3
Array after deletion :
10,50,5,30,1,
```

10. Write a C# Sharp program for adding two matrices of the same size.

```
using System;

namespace Ayushi_Tutorials
{
   internal class T2AQ10
   {
      public static void Main(string[] args)
      {
         int[,] ary1 = new int[2, 2];    // Declare Array1
         Console.WriteLine("Enter the elements of first 2x2 array:");
         for (int i = 0; i < ary1.GetLength(0); i++)
         {
            for (int j = 0; j < ary1.GetLength(1); j++)
            {
               ary1[i, j] = Convert.ToInt32(Console.ReadLine());
            }
         }
```

```
int[,] ary2 = new int[2, 2];    // Declare Array2
Console.WriteLine("Enter the elements of second 2x2 array:");
for (int i = 0; i < ary2.GetLength(0); i++)
{
   for (int j = 0; j < ary2.GetLength(1); j++)
   {
      ary2[i, j] = Convert.ToInt32(Console.ReadLine());
   }
}

Console.WriteLine("First Array:");
for (int i = 0; i < ary1.GetLength(0); i++)
{
   for (int j = 0; j < ary1.GetLength(1); j++)
   {
      Console.Write(ary1[i, j] + " ");
   }
   Console.WriteLine();
}

Console.WriteLine("Second Array:");
for (int i = 0; i < ary2.GetLength(0); i++)
{
   for (int j = 0; j < ary2.GetLength(1); j++)
   {
      Console.Write(ary2[i, j] + " ");
   }
   Console.WriteLine();
}

Console.WriteLine("Sum of Arrays:");
int[,] sum = new int[2, 2];
for (int i = 0; i < sum.GetLength(0); i++)
{
   for (int j = 0; j < sum.GetLength(1); j++)
   {
      sum[i, j] = ary1[i, j] + ary2[i, j];
      Console.Write(sum[i, j] + " ");
   }
   Console.WriteLine();
```

```
            }
        }
    }
}
```

```
D:\.NET\Ayushi_Tutorials>T2AQ10
Enter the elements of first 2x2 array:
12
6
5
2
Enter the elements of second 2x2 array:
4
9
8
10
First Array:
12 6
5 2
Second Array:
4 9
8 10
Sum of Arrays:
16 15
13 12
```