**Ex No.5 Exercise using Linq**

**1) Source Code:**

namespace IENumerable{  
class MainClass{  
public static void Main (string[] args){  
int max = 0;  
int[] arr = new int[5];  
Console.WriteLine("Enter Array Elements:");  
for (int i = 0; i < 5; i++) {  
arr[i] = Convert.ToInt32 (Console.ReadLine());}  
IEnumerable<int> ienum = from a in arr orderby a select a;  
Console.WriteLine("The Arrray is:");  
foreach(int i in ienum){max=i;  
Console.WriteLine(i);}  
Console.WriteLine("The Largest Number: "+max);}}}

**2) Source Code:-**

namespace VarClass{  
Class MainClass{  
public static void Main(string[] args){  
int min = 0;Console.WriteLine ("Enter the size of an array:");  
int n = Convert.ToInt32 (Console.ReadLine ());  
int[] arr = new int[n];  
Console.WriteLine ("Enter your number:");  
for (int i = 0; i < n; i++){  
arr [i] = Convert.ToInt32 (Console.ReadLine ());}  
var mylist = from a in arr orderby a select a;  
Console.WriteLine ("The List is ");  
foreach (int i in mylist.Reverse()) {min = i;

Console.WriteLine(i);}  
Console.WriteLine ("The Smallest number is: "+min)}}}

**3) Source Code:**

namespace Binary\_Search{  
Class MainClass{  
public static void Main (string[] args){  
int low, mid, high;  
Console.Write("Enter the size of an array:");  
int n = Convert.ToInt32(Console.ReadLine());  
Console.WriteLine("Enter the array elements:");  
int[] arr = new int[n];  
for (int i=0; i<n; i++){  
arr [i] = Convert.ToInt32 (Console.ReadLine());}  
Array.Sort(arr);   
Console.Write("Enter the item to be searched:");  
int item = Convert.ToInt32 (Console.ReadLine());  
Console.WriteLine("The sorted array is:");  
foreach(int i in arr){Console.WriteLine(i);}  
low = 0;high = (n - 1);  
while (low <= high){  
mid = (low + high) / 2;  
if (item < arr [mid])  
high = mid - 1;  
else if (item > arr [mid])  
low = mid + 1;  
else if (item == arr [mid]) {  
Console.WriteLine("Element {0} found at location {1}", item, mid );break;}}  
if(low>high){  
Console.WriteLine ("Element is not found in the array");}}}}

**4) Source Code:**

namespace Student\_Batch{  
class MainClass{  
protected enum GradeLevel { FirstYear = 1, SecondYear, ThirdYear };  
protected class Student{  
public string name { get; set; }  
public GradeLevel Year;  
public List<int> ExamScores;}  
protected static List<Student> students = newList<Student>{  
new Student {name = "Terry",   
Year = GradeLevel.SecondYear,   
ExamScores = new List<int>{ 99, 82, 81, 79}} ,  
new Student {name = "Fadi",  
Year = GradeLevel.ThirdYear,  
ExamScores = new List<int>{ 99, 86, 90, 94}} ,  
new Student {name = "Hanying",   
Year = GradeLevel.FirstYear,   
ExamScores = new List<int>{ 93, 92, 80, 87}} ,  
new Student {name= "Cesar",   
Year = GradeLevel.ThirdYear,  
ExamScores = new List<int>{ 97, 89, 85, 82}  
protected static int GetPercentile(Student s){  
double avg = s.ExamScores.Average();  
return avg > 0 ? (int)avg / 10 : 0;}  
Private static void TotalsByGradeLevel()  
{var categories =from student in students group student by student.Year into studentGroup  
select new { GradeLevel = studentGroup.Key,   
TotalScore = studentGroup.Sum(s => s.ExamScores.Sum()) };  
Console.WriteLine("\ t\tYEAR \ t\t TOTAL SCORE");  
Console.WriteLine("\ t\t---- \ t\t -----------");  
foreach (var cat in categories){  
Console.WriteLine("\ tKey = { 0} \ t TOTAL= { 1}", cat.GradeLevel, cat.TotalScore);}}  
public static void Main (string[] args){  
TotalsByGradeLevel ();}}}

**Output:**

1)

Enter Array Elements:

45

56

89

42

55

The Arrray is:

42

45

55

56

89

The Largest Number: 89

**2) Output:-**

Enter the size of an array:

4

Enter your number:

15

26

53

88

The List is

88

53

26

15

The Smallest number is: 15

**3) Output**

Enter the size of an array:4

Enter the array elements:

45

68

95

23

Enter the item to be searched:68

The sorted array is:

23

45

68

95

Element 68 found at location 2

**4) Output**

YEAR TOTAL SCORE

Key = SecondYear TOTAL= 341

Key = ThirdYear TOTAL= 722

Key = FirstYear TOTAL= 352