

C# Fundamentals

4. Working with Collections and LINQObjective:Requirements:

- Create a student management console application.
- Define a Student class with properties such as Name, Grade, and Age.
- Populate a collection (e.g., a List<Student>) with sample data.
- Use LINQ to:
 - Filter students who have a grade above a certain threshold.
 - Sort the filtered results by name or grade.
- Display the filtered and sorted list.

Program code:

```
using System;
```

```
using System.Collections.Generic;
```

```
using System.Linq;
```

```
class Student
```

```
{  
    public string Name { get; set; }  
    public int Age { get; set; }  
    public double Grade { get; set; }  
}
```

```
class Program
```

```
{  
    static void Main()  
    {  
        // Sample student data  
        List<Student> students = new List<Student>  
        {  
            new Student { Name = "Ricson", Age = 20, Grade = 85.5 },
```

```

    new Student { Name = "Ojus", Age = 22, Grade = 72.3 },
    new Student { Name = "Sanjhay", Age = 19, Grade = 90.2 },
    new Student { Name = "Rayhan", Age = 21, Grade = 68.4 },
    new Student { Name = "Rohith", Age = 20, Grade = 95.1 }
};

Console.Write("Enter minimum grade threshold: ");
if (double.TryParse(Console.ReadLine(), out double threshold))
{
    // Use LINQ to filter students with grades above the threshold
    var filteredStudents = students
        .Where(s => s.Grade >= threshold) // Filter
        .OrderByDescending(s => s.Grade) // Sort by Grade descending
        .ThenBy(s => s.Name);           // If grades are same, sort by Name ascending

    Console.WriteLine("\nStudents meeting the criteria:");
    foreach (var student in filteredStudents)
    {
        Console.WriteLine($"Name: {student.Name}, Age: {student.Age}, Grade: {student.Grade}");
    }
}
else
{
    Console.WriteLine("Invalid input. Please enter a numeric value.");
}
}

```

Output:

```
Microsoft Visual Studio Debu: X + v
Enter minimum grade threshold: 80

Students meeting the criteria:
Name: Rohith, Age: 20, Grade: 95.1
Name: Sanjhay, Age: 19, Grade: 90.2
Name: Ricson, Age: 20, Grade: 85.5

C:\Rohith\Backup\Desktop\Presidio\Pre-Training\4. C# Fundamentals\Task4\StudentManagementSystem\StudentManagementSystem\
bin\Debug\net8.0\StudentManagementSystem.exe (process 17684) exited with code 0 (0x0).
To automatically close the console when debugging stops, enable Tools->Options->Debugging->Automatically close the conso
le when debugging stops.
Press any key to close this window . . .|
```