

Linq assignment- to find the students courses

Codes:-

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

class Program
{
    static void Main(string[] args)
    {
        // Sample data
        var enrollments = new List<Enrollment>
        {
            new Enrollment { Student = "Alice", Course = "Science"
        },
            new Enrollment { Student = "Alice", Course = "Math" },
            new Enrollment { Student = "Bob", Course = "Science"
        },
            new Enrollment { Student = "Bob", Course = "Math" },
```

```
        new Enrollment { Student = "Charlie", Course =  
"Science" },  
        new Enrollment { Student = "David", Course =  
"Science" },  
        new Enrollment { Student = "David", Course =  
"History" }  
};
```

```
// 1. List of students enrolled in at least three courses
```

```
var studentsInThreeCourses = enrollments
```

```
    .GroupBy(e => e.Student)
```

```
    .Where(g => g.Count() >= 3)
```

```
    .Select(g => g.Key)
```

```
    .ToList();
```

```
Console.WriteLine("List of students enrolled in at least  
three courses:");
```

```
foreach (var student in studentsInThreeCourses)
```

```
{
```

```
    Console.WriteLine(student);
```

```
}
```

// 2. Group students by the number of courses they are enrolled in

```
var groupedStudents = enrollments
    .GroupBy(e => e.Student)
    .GroupBy(g => g.Count())
    .ToDictionary(g => g.Key, g => g.Select(x =>
x.Key).ToList());
```

```
Console.WriteLine("\nGroup students by the number of
courses they are enrolled in:");
```

```
foreach (var group in groupedStudents)
{
    Console.WriteLine($"{group.Key} Course(s):
{string.Join(", ", group.Value)}");
}
```

// 3. Courses with students enrolled in more than one course

```
var coursesWithMultipleStudents = enrollments
    .GroupBy(e => e.Course)
    .Where(g => g.Select(x => x.Student).Distinct().Count()
> 1)
    .Select(g => new
```

```
{
    Course = g.Key,
    Students = g.Select(x => x.Student).ToList()
})
.ToList();
```

```
Console.WriteLine("\nCources with students enrolled in
more than one course:");
```

```
foreach (var course in coursesWithMultipleStudents)
{
    Console.WriteLine($"Course: {course.Course},
Students: {string.Join(", ", course.Students)}");
}
```

```
// 4. Courses sorted by the number of students enrolled
```

```
var sortedCourses = enrollments
```

```
.GroupBy(e => e.Course)
.OrderByDescending(g => g.Count())
.Select(g => new
{
    Course = g.Key,
    Count = g.Count()
```

```
    })
```

```
    .ToList();
```

```
    Console.WriteLine("\nCources sorted by the number of  
students enrolled:");
```

```
    foreach (var course in sortedCourses)
```

```
    {
```

```
        Console.WriteLine($"{course.Course} ({course.Count}  
students)");
```

```
    }
```

```
}
```

```
}
```

```
class Enrollment
```

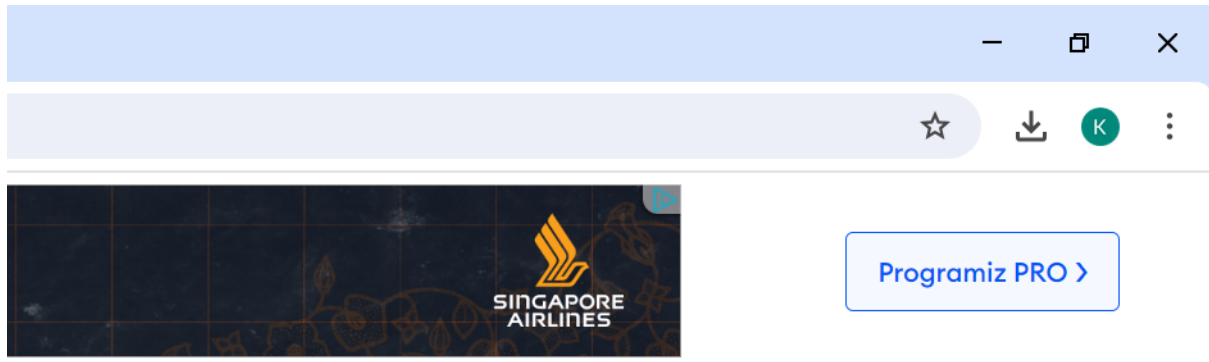
```
{
```

```
    public string Student { get; set; }
```

```
    public string Course { get; set; }
```

```
}
```

Output:-



The screenshot shows a web browser window. At the top, there is a Singapore Airlines banner with the airline's logo and the text "SINGAPORE AIRLINES". To the right of the banner is a button labeled "Programiz PRO >". Below the banner, there is a section titled "Output" with a "Clear" button. The output area contains the following text:

```
^ mono /tmp/1ia1tnsUDi.exe
List of students enrolled in at least three courses:
alice,bob
Group students by the number of courses they are enrolled in:
2 Course(s): Alice, Bob, David
1 Course(s): Charlie

Courses with students enrolled in more than one course:
Course: Science, Students: Alice, Bob, Charlie, David
Course: Math, Students: Alice, Bob

Courses sorted by the number of students enrolled:
Science (4 students)
Math (2 students)
History (1 students)

=== Code Execution Successful ===
```

The bottom of the screenshot shows a Windows taskbar with the following elements: a Google Chrome icon, a weather widget showing "24°C Partly cloudy", a network icon, a battery icon, a volume icon, the text "ENG", the time "05:36", the date "23-08-2024", and a notification icon with the number "1".