

```
1 //using is a directive
2 //System is a name space
3 //name space is a collection of features that our needs to run
4 using System;
5 using System.Linq;
6 using System.Collections.Generic;
7 //public means accessible anywhere
8 //partial means this class is split over multiple files
9 //class is a keyword and think of it as the outermost level of grouping
10 //:System.Web.UI.Page means our page inherits the features of a Page
11
12 public class Student //define student class
13 {
14     public string Name { get; set; }
15     public List<int> Grades;
16 }
17 public partial class _Default : System.Web.UI.Page
18 {
19     protected void Button1_Click(object sender, EventArgs e)
20     {
21         List<Student> students = new List<Student> //create list of students
22         {
23             new Student {Name="Smith, John", Grades=new List<int> {78,98,67,87 } },
24             new Student {Name="Adams, Amy", Grades=new List<int> {91,99,89,93 } },
25             new Student {Name="Smith, Mary", Grades=new List<int> {89,87,84,88 } }
26         };
27         //create query that groups students by first letter of last name
28         //Name is a string, so student.Name[0] means grab the first character for grouping
29         var groupsByFirstLetters = from student in students
30                                     group student by student.Name[0];
31         //the outer loop is needed to display the "Key", which is the first letter
32         //for each group
33         foreach(var studentGroup in groupsByFirstLetters)
34         {
35             sampLabel.Text += $"<br>{studentGroup.Key}";
36             //the inner loop is needed to display the students within each group
37             foreach(var st in studentGroup)
38             {
39                 sampLabel.Text += $"<br>{st.Name}";
40             }
41         }
42     }
43 }
44
45
46
47
48
```