

Question 57: There is a class of students. Each student has his or her grades. How can this be expressed in C#?

Answer 57: We can convert a situation like this one into an array of arrays.

index=0 Corresponds to first student		index=1 Corresponds to second student		
index=0	index=1	index=0	index=1	index=2
test 1 89	test 2 98	test 1 76	test 2 89	test 3 91

Notation for nested, or jagged, arrays

Grades for first student

```
int[][] studentGrades = {new int[]{ 89,98},
                          new int[]{76,89,91}};
```

Grades for second student

```
using static System.Console;
class Program
```

```
{
    static void Main()
    {
        int[][] studentGrades = {new int[]{ 89,98},
                                new int[]{76,89,91}}; //1. Makes array of arrays

        foreach (var student in studentGrades)//2. Needed to grab each array
        {
            foreach(var grade in student) //3. Needed to access each grade
            {
                // inside an array
                WriteLine($"Grade={grade}");//4. Prints each grade
            }
            WriteLine("-----");//5. Prints separator
        }
    }
}
```

```
Grade=89
Grade=98
-----
Grade=76
Grade=89
Grade=91
-----
```

You can run this code with the debugger using the steps below. To truly know what this code is doing at this point, please run it with the debugger now. It's crucial as a step towards building real comprehension.

Do these steps only once. Press this arrow repeatedly to step through the code.

1. **Debug** 2.  Step Into

3. 

There is more a more detailed discussion on the next page.