Mastery CourseGrades Error Log

Credit Name: CSE 2120 Data Structures 1
Assignment Name: Mastery CourseGrades

Describe the errors you've encountered while working on this assignment. What caused the error and how do you overcome the error?

Error

The error I made in this code was related to getting the total variable value for studentAvg() and testAvg(). In these methods I originally didn't subtract one (-1) from the student or test I was trying to find as you can see. The reason you need to subtract 1 is because the studentNumber is in base 1 (it begins at 1) whereas grades array is in base 0 (starts at 0), so when retrieving the tests grades for a student or the student for a test you need to subtract 1 from the variable so that studentNumber or testNumber becomes base 0 so it matches the grades array (Ex. without -1: studentNumber = 12, there is not 12 in the grades array because it's 0-11 for the 12 students)

```
total += grades[studentNumber][i];
```

```
total += grades[i][testNumber]
```

This gave me an error if I was trying to select the 12th students grades or if I was trying to see the average grade of test 5.

Option 3: (entered12)
```
2. Show all grades
3. View student average
4. View test average
5. Quit
3
Enter student number (1-12): 12
Exception in thread "main" java.lang.ArrayIndexOutOfBoundsException: Index 12 out of bounds for length 12
        at Chapter9/nine.GradeBook.studentAvg(GradeBook.java:117)
        at Chapter9/nine.CourseGrades.main(CourseGrades.java:63)
```

Option 4: (entered 5)

```
2. Show all grades
3. View student average
4. View test average
5. Quit
4
Enter test number (1-5): 5
Exception in thread "main" java.lang.ArrayIndexOutOfBoundsException: Index 5 out of bounds for length 5
        at Chapter9/nine.GradeBook.testAvg(GradeBook.java:139)
        at Chapter9/nine.CourseGrades.main(CourseGrades.java:75)
```

To fix this I simply subtracted the studentNumber variable and the testNumber variable by 1 so that it matched the 0 based grades array.

```
total += grades[studentNumber - 1][i];

total += grades[i][testNumber - 1];
```

This fixed the error and my output now looked like this:

Option 3: (entered 12)

```
CourseGrades [Java Application] C:\Users\nieet\.p2\poo
2. Show all grades
3. View student average
4. View test average
5. Quit
3
Enter student number (1-12): 12
Student 12's average grade is: 58.20
```

Option 4: (entered 5)

```
Select an option:
1. Enter student grades
2. Show all grades
3. View student average
4. View test average
5. Quit
4
Enter test number (1-5): 5
Average grade for Test 5: 58.17
```