Credit Name: CSE 2120 Data Structures 1

Assignment Name: CourseGrades

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

```
public static void getGrades(){

    for (int s = 0; s < students; s ++) {

        System.out.println(" ");
        System.out.println(" ");
        System.out.println("Please enter the following test grades for student # " + (s + 1) + " :");
        System.out.println(" ");

        for (int g = 0; g < tests; g ++ ) {
            System.out.println("Test " + (s + 1) + ":");
            grades[s][g] = input.nextInt();
        }
    }
}
```

```
Please enter the following test grades for student # 1 :

Test 1:
44
Test 1:
33
Test 1:
22
Test 1:
5
Test 1:
55


Please enter the following test grades for student # 2 :

Test 2:
23
Test 2:
234
Test 2:
54
Test 2:
23
Test 2:
44
```

The test headers for each test under each student are all the same as the student number.

```
public static void getGrades(){

    for (int s = 0; s < students; s ++) {

        System.out.println(" ");
        System.out.println(" ");
        System.out.println("Please enter the following test grades for student # " + (s + 1) + " :");
        System.out.println(" ");

        for (int g = 0; g < tests; g ++ ) {
            System.out.println("Test " + (g + 1) + ":");
            grades[s][g] = input.nextInt();
        }
    }
}
```

```
Please enter the following test grades for student # 1 :

Test 1:
44
Test 1:
33
Test 1:
22
Test 1:
5
Test 1:
55


Please enter the following test grades for student # 2 :

Test 2:
23
Test 2:
234
Test 2:
54
Test 2:
23
Test 2:
44
```

Fixed by adjusting the (s+1) into (g+1) in the "tests" for loop, since we are counting for test #, not student #.

```
Student # 1 :

Test 1: [I@13221655
Test 1: [I@7229724f
Test 1: [I@4c873330
Test 1: [I@119d7047
Test 1: [I@776ec8df


Student # 2 :

Test 2: [I@13221655
Test 2: [I@7229724f
Test 2: [I@4c873330
Test 2: [I@119d7047
Test 2: [I@776ec8df


Student # 3 :

Test 3: [I@13221655
Test 3: [I@7229724f
Test 3: [I@4c873330
Test 3: [I@119d7047
Test 3: [I@776ec8df
```

```
public static void showGrades() {

    System.out.println("Class Grades:");
    System.out.println(" ");

    for (int s = 0; s < students; s ++) {

        System.out.println(" ");
        System.out.println(" ");
        System.out.println("Student # " + (s + 1) + " :");
        System.out.println(" ");

        for (int g = 0; g < tests; g++ ) {
            System.out.println("Test " + (s + 1) + ": " + (grades[g]));
        }
    }
}
```

The test averages came out to random numbers and symbols

, instead of actual numbers relative to the "grades" array elements

This error occured because the element from the 2-d array was not properlly retrieved.

both coloums and rows of the 2-d array have to be known to retrieve proper element

```
Student # 1 :

Test 1: 2%
Test 2: 2%
Test 3: 2%
Test 4: 2%
Test 5: 2%


Student # 2 :

Test 1: 2%
Test 2: 2%
Test 3: 2%
Test 4: 2%
Test 5: 2%


Student # 3 :

Test 1: 2%
Test 2: 2%
Test 3: 22%
Test 4: 2%
Test 5: 22%
```

```
public static void showGrades() {

    System.out.println("Class Grades:");
    System.out.println(" ");

    for (int s = 0; s < students; s ++) {

        System.out.println(" ");
        System.out.println(" ");
        System.out.println("Student # " + (s + 1) + " :");
        System.out.println(" ");

        for (int g = 0; g < tests; g++ ) {
            System.out.println("Test " + (s + 1) + ": " + (grades[s][g]));
        }
    }
}
```

Fixed by adding [s] to (grades[g]) to properly retrieve the element from the correct position.

```
public static double testAvg(int testNumber) {

    double avg = 0;

    for (int s = 0; s < students; s ++) {
        avg = avg + (grades[s][(testNumber - 1)]);
    }

    return (avg/tests);
}
```

```
Average test grade for each student:

Test 1: 9.8
Test 2: 18.2
Test 3: 13.8
Test 4: 11.8
Test 5: 11.0
9
```

Please note header was inaccurate since code was in middle of devleopment. The average test grades among all students were not correct. This was because the sum of all the test grades were divided by the number of tests, instead of the number of students.

```
public static double testAvg(int testNumber) {

    double avg = 0;

    for (int s = 0; s < students; s ++) {
        avg = avg + (grades[s][(testNumber - 1)]);
    }

    return (avg/students);
}
```

```
Class average for each test:

Test 1: 02.00%
Test 2: 02.00%
Test 3: 05.33%
Test 4: 02.00%
Test 5: 03.67%
```

Fixed by dividing by the number of students, instead of the number of tests.