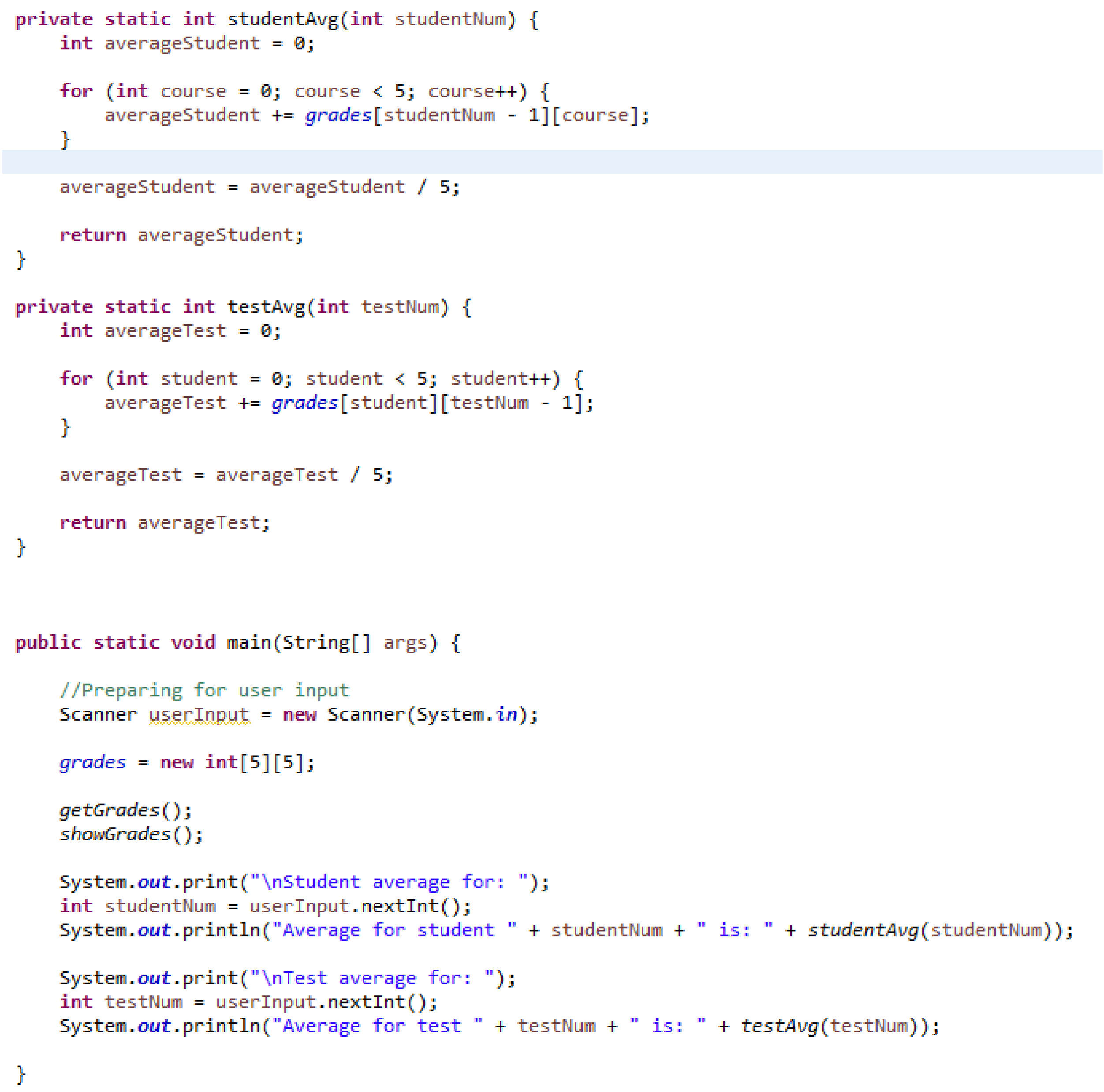
CourseGrades Mastery ErrorLog

The only error encountered was within the testAvg() object. The error occurred when performing integer division, this would remove any remainder, often leading to incorrect results when the remainder should be rounded up.

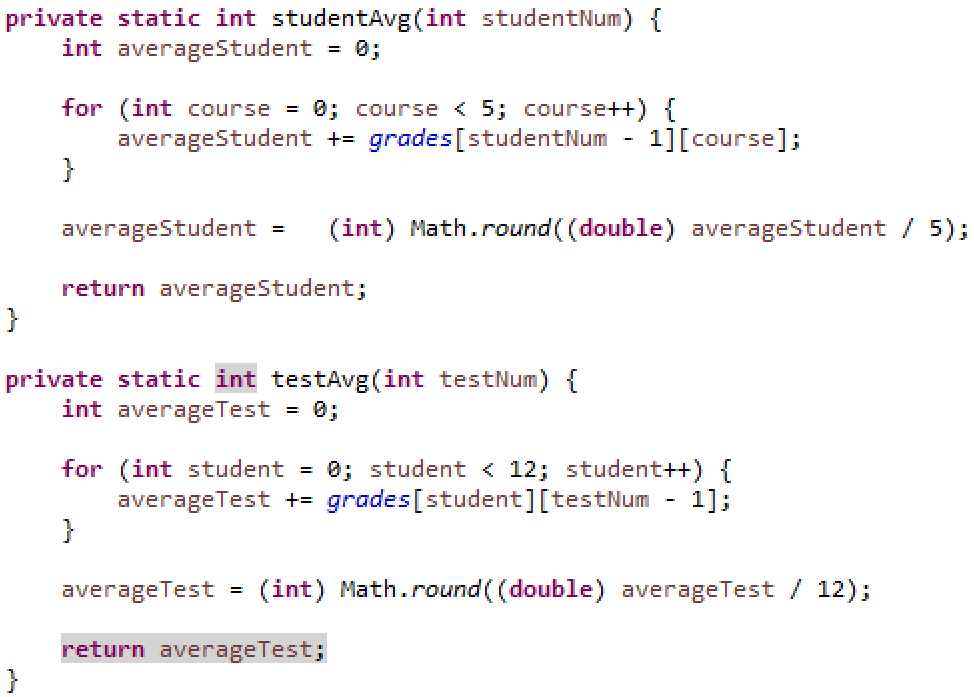
Code with error:



```java
private static int studentAvg(int studentNum) {
    int averageStudent = 0;

    for (int course = 0; course < 5; course++) {
        averageStudent += grades[studentNum - 1][course];
    }

    averageStudent = averageStudent / 5;

    return averageStudent;
}

private static int testAvg(int testNum) {
    int averageTest = 0;

    for (int student = 0; student < 5; student++) {
        averageTest += grades[student][testNum - 1];
    }

    averageTest = averageTest / 5;

    return averageTest;
}


public static void main(String[] args) {

    //Preparing for user input
    Scanner userInput = new Scanner(System.in);

    grades = new int[5][5];

    getGrades();
    showGrades();

    System.out.print("\nStudent average for: ");
    int studentNum = userInput.nextInt();
    System.out.println("Average for student " + studentNum + " is: " + studentAvg(studentNum));

    System.out.print("\nTest average for: ");
    int testNum = userInput.nextInt();
    System.out.println("Average for test " + testNum + " is: " + testAvg(testNum));

}
```

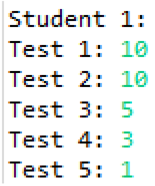
To solve this logic error I type casted the average to a double, then used the Math.round() function to properly account for remainders, then type casted back to int. A revised version of my code is seen below:

Revised code:

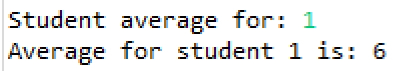


```
private static int studentAvg(int studentNum) {
    int averageStudent = 0;

    for (int course = 0; course < 5; course++) {
        averageStudent += grades[studentNum - 1][course];
    }

    averageStudent =   (int) Math.round((double) averageStudent / 5);

    return averageStudent;
}

private static int testAvg(int testNum) {
    int averageTest = 0;

    for (int student = 0; student < 12; student++) {
        averageTest += grades[student][testNum - 1];
    }

    averageTest = (int) Math.round((double) averageTest / 12);

    return averageTest;
}
```

Example of revised average:



```
Student 1:
Test 1: 10
Test 2: 10
Test 3: 5
Test 4: 3
Test 5: 1
```



```
Student average for: 1
Average for student 1 is: 6
```

Originally this would have returned 5. As 29 / 5 = 5.8. But with the updated rounding it returns 6.

No other errors were encountered during the project.