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// Case Study 9.1: Student class

public class Student {

    private String name;
    private int[] tests;

    // Default: Name is "" and 3 scores are 0
    public Student(){
        this("");
    }

    // Name is nm and 3 scores are 0
    public Student(String nm){
        this(nm, 3);
    }

    // Name is nm and n scores are 0
    public Student(String nm, int n){
        name = nm;
        tests = new int[n];
        for (int i = 0; i < tests.length; i++)
            tests[i] = 0;
    }

    // Name is nm and scores are in t
    public Student(String nm, int[] t){
        name = nm;
        tests = new int[t.length];
        for (int i = 0; i < tests.length; i++)
            tests[i] = t[i];
    }

    // Builds a copy of s
    public Student(Student s){
        this(s.name, s.tests);
    }

    public int getNumberOfTests(){
        return tests.length;
    }

    public void setName (String nm){
        name = nm;
    }

    public String getName (){
        return name;
    }

    public void setScore (int i, int score){
        tests[i - 1] = score;
    }

    public int getScore (int i){
        return tests[i - 1];
    }
}

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public int getAverage(){
    int sum = 0;
    for (int score : tests)
        sum += score;
    return sum / tests.length;
}

public int getHighScore(){
    int highScore = 0;
    for (int score : tests)
        highScore = Math.max (highScore, score);
    return highScore;
}

public String toString(){
    String str = "Name:      " + name  + "\n";
    for (int i = 0; i < tests.length; i++)
        str += "test " + (i + 1) + ":  " + tests[i] + "\n";
    str += "Average: " + getAverage();
    return str;
}

//Returns null if there are no errors else returns
//an appropriate error message.
public String validateData(){
    if (name.equals ("")) return "SORRY: name required";
    for (int score : tests){
        if (score < 0 || score > 100){
            String str = "SORRY: must have "+ 0
                + " <= test score <= " + 100;
            return str;
        }
    }
    return null;
}
}

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