

Design Problems, HW2 Name: _____ CM: _____

Team Gradebook: You are implementing a grading application for a hypothetical school's class. In this class, each student is a member of one or more teams - each team has a unique name. The teams are assigned grades for the work they submit. A student's average is the average of all the grades earned by each of the teams to which that student is a member. The app will also track each student's absences. There should be a method to get a String representation of the best Team. NOTE that "best team" is different from the team with the best students. The average is for the grades FOR THAT TEAM - not including other grades that students on that team might have.

Solution A

C TeamGradebook
<pre>String handleAddStudent(String studentName) String handleAddAbsence(String studentName) String handleGetAbsences(String studentName) String handleAddTeam(String teamName, ArrayList<String> memberNames) Student getStudentByName(String name) String handleAddGrade(String teamName, double grade) String handleGetAverage(String studentName) String handleGetBestTeam()</pre>

[Source](#)

Solution B


C TeamGradebook
<pre>String handleAddStudent(String studentName) String handleAddAbsence(String studentName) String handleGetAbsences(String studentName) String handleAddTeam(String teamName, ArrayList<String> memberNames) Student getStudentByName(String name) String handleAddGrade(String teamName, double grade) String handleGetAverage(String studentName) String handleGetBestTeam()</pre>

Both of these designs have the worst kind of problem: **they don't function**. For each, please identify the problems with each one (by number, either principle 1a, 1b, or 1c) and explain how it violates that principle. Then propose a new design of your own that works correctly.

Problems With A

Problems With B

Solution

 TeamGradebook
<pre>String handleAddStudent(String studentName) String handleAddAbsence(String studentName) String handleGetAbsences(String studentName) String handleAddTeam(String teamName, ArrayList<String> memberNames) Student getStudentByName(String name) String handleAddGrade(String teamName, double grade) String handleGetAverage(String studentName) String handleGetBestTeam()</pre>