

cs171: Introduction to Programming
Programming Assignment 2

Due Date: Monday, February 6

Points: 40

The purpose of this program is to practice conditionals such as if statements and switch statements.

- This program will read four letter grades from a student's semester, compute their semester GPA, and print a message corresponding to their GPA.
- Declare four `char` variables to hold the four course grades. There is no `keyboard.nextChar()` statement. Instead you will have to use the following code to read in a character:

```
String s;  
s = keyboard.next();  
char c = s.charAt(0);
```

The first line declares a `String` variable. Declare this variable only once in your program. The second line reads an entire string from the user's typed input. Store this string in your `s` variable. The third line extracts the first character (position 0) from that string and returns it as a `char` value. You can make repeated calls of the last two lines to read additional characters. Before writing your whole program, test this code out in a separate small program to be sure you can read characters.

You can assume that all letter grades are single letters (a,b,c,d,f or A,B,C,D,F). There are no pluses or minuses. You can assume that your user will enter correct values; you do not need to have your program check for incorrect values at this point. For example, you can assume your user will never enter a 'Z' as a letter grade.

But you do need to have your program accept both upper and lower case letters (a or A) as valid grades.

- Declare a variable to hold the student's gpa. Select an appropriate type for this variable.

- For each of the four course letter grades, you will have to convert them to a numeric score: (a = 4.0, b = 3.0, c = 2.0, d = 1.0, f = 0.0).

Use two switch statements to convert the first two letter grades to GPA scores. Then use nested if statements to convert the last two grades to GPA scores. Normally you would probably use one or the other (nested if's or switches), but we'll use both in order to practice each.

- Add up the GPA numeric points from the switch statements and divide by 4 to find the semester's average GPA. Print a message on a separate line with this GPA as follows:

```
GPA = 3.25
```

For now don't worry about formatting the number of decimal places.

- Then print exactly one of the following three messages depending on the value of the GPA:
 1. If the GPA is at or above 3.4 print "dean's list"
 2. If the GPA is below 2.0 print "academic probation"
 3. otherwise print "good academic standing"

Be sure to follow the exact spelling/punctuation listed above.

- Name your main class `GPACalculator`. Email me this java source file before the start of class on Monday, February 6.

Be sure to follow proper commenting conventions including a comment header at the top and appropriate in-line code comments as well. Also follow proper formatting conventions for readability.

I will grade the programs on Monday evening and return them on Tuesday in class.