Create a Student class in a new C++ project with the following private members:  
    first\_ (type string)  
    last\_ (type string)  
    gpa\_ (type float)  
    id\_ (type int)

Note: The use of trailing underscore for these private data member identifiers follows the Google style guide.

and the following public methods:  
    full\_name() const: string  
    id() const: int  
    gpa() const: float  
    print\_info() const: void

// print\_info() should print in the format (GPA has 2 decimal places):

// Chris Jones, GPA: 3.50, ID: 20146  
                                                                                             
Use an initializer list in the Student constructor.

Write a function that returns a vector of failing students (those whose gpa is < 1.0). Here is part of the implementation:

/\*\*

\* Takes a vector of Student objects, and returns a new vector

\* with all Students whose GPA is < 1.0.

\*/  
vector<Student> **find\_failing\_students**(**const** vector<Student> &students) {

vector<Student> failing\_students;

// Iterates through the students vector, appending each student whose gpa is

// less than 1.0 to the failing\_students vector.

**return** failing\_students;

}  
  
Write a function that prints all the students in the supplied vector:

/\*\*

\* Takes a vector of Student objects and prints them to the screen.

\*/  
**void** **print\_students**(**const** vector<Student> &students) {

// Iterates through the students vector, calling print\_info() for each student.

}

Here's the main function, which is to be placed at the bottom of the source file:  
  
/\*\*

\* Allows the user to enter information for multiple students, then

\* find those students whose GPA is below 1.0 and prints them to the

\* screen.

\*/

**int** **main**() {

string first\_name, last\_name;

**float** gpa;

**int** id;

**char** repeat;

vector<Student> students;

**do** {

cout << "Enter student's first name: ";

cin >> first\_name;

cout << "Enter student's last name: ";

cin >> last\_name;

gpa = -1;

**while** (gpa < 0 || gpa > 4) {

cout << "Enter student's GPA (0.0-4.0): ";

cin >> gpa;

}

cout << "Enter student's ID: ";

cin >> id;

students.push\_back(Student(first\_name, last\_name, gpa, id));

cout << "Add another student to database (Y/N)? ";

cin >> repeat;

} **while** (repeat == 'Y' || repeat == 'y');

cout << **endl** << "All students:" << **endl**;

print\_students(students);

cout << **endl** << "Failing students:";

// **TODO**

// Print a space and the word 'None' on the same line if no students are

// failing.

// Otherwise, print each failing student on a separate line.

**return** 0;

}