Question 1: Student Management System

PART-1

You are in charge of creating a student management system in your school. The school maintains 3 records of the students: their id(int), name(String), and GPA(double). The school wants a persistent record management system where the student records are stored in files. The school should be able to add a new student through user input. The new record will then be added to the students.txt file where all the students will be stored in the file row-by-row in the following format:

id,name,gpa

An example of how the records will be stored in files.txt:

1,John,3.45
2,James,4.5
3,Johnathan,5

where each row corresponds to 1 student. Your task is to implement such a system where the school takes in the id, name, and GPA as user input and writes to the student.txt file to store it, ensuring other data are not erased. Do this in a Java file.

PART-2

The school wants an extra functionality. The school wants to keep track of another records file where the best performing students by GPA are at the top (sorted in descending order of GPA). Their records will be stored in a deans_list.txt file. You plan to read the existing students.txt file, sort the records, and then write all of them to the deans_list.txt file. Implement this in another Java file.

HINT 1: How are you going to store all the line-by-line records of students in-code(not in file) to then sort them?
HINT 2: You need to create a Student class for PART-2 of this problem. How can you use it?

PTO for Question 2

Question 2: Implementing a simple online judge

You have been recruited by IMDb to create a system that takes in a list of movies from their datastore and creates multiple datastores that are sorted by year and rating. They store 4 attributes for all of their movies: title(String), year(int), genre(String), and rating(double - out of 10). These movies are stored in a movies.txt file. An example of the movies.txt file would look like this:

Inception,2010,Sci-Fi,8.8
The Dark Knight,2008,Action,9.0
Interstellar,2014,Sci-Fi,8.6
The Prestige,2006,Drama,8.5

Where each row corresponds to 1 movie. You are to take these movies, sort them by ascending order of year to create a sorted_by_year.txt file, and sort them by descending order of rating to create a sorted_by_rating.txt file. Note that regardless of the different sorting for both files, **they will always be sorted by alphabetical order of title**. Implement this in one Java file, using another Java class to implement the Movies class.

HINT 1: Since you are writing to two files, how can you handle this scenario? Can you create two writer resources or redeclare the same resource?
HINT 2: We know, that by default, we can sort by title. But how will you handle the other two sorting criteria?