

In this two part homework (HW2 and HW3), you will implement a simple Gradebook for a course. The Gradebook will consist, basically, of an ArrayList of Students and an ArrayList of Grades of a particular student. Each student will be an instance of the Student class. You will also need to write the Grade class. There is also a data file provided [cs141grades.csv](#) to be used with this assignment. Of course, the grades and IDs are made up (don't take anything personally); you can even change your own grades as you see fit!

### The Data File format

The data file for this assignment consists of a student's last name, first name, id, followed by the number of "grade pairs" for that student. Each "grade pair" consists of the name of the grade (homework, quiz, etc.) followed by the actual grade for that assignment. To keep things simple, assume you have only 4 categories of grades: homeworks (HW1), quizzes (Quiz1), midterm (Midterm) and Final (Final). See [cs141grades.csv](#) to see what all this looks like.

HW3 will be posted later. In this HW2, you will build the followings:

### The Grade Class

The Grade class will represent and store information about a single grade. A grade has two components, a name (stored as a String, e.g., HW1), and the actual grade for that assignment (stored as an int). You will need to write a constructor for this class as well as a few methods (most likely, you will need a method to get a grade's name and actual value, and change an actual grade). You will pass the name and grade as arguments to the constructor.

### The Student Class

The Student class will represent and store information about a single student. A student has two components, a name (stored as a String), and the id (stored as an int). You will need to write a constructor for this class as well as a few methods. You will pass the name and id as arguments to the constructor. We'll later (in HW3) add an ArrayList to hold a list of grades for this student.

### The GradeBook Class

You will need to write the following methods in the GradeBook class:

- GradeBook(String fileName)  
This constructor needs to be modified to read the given cs141grades.csv file and display the results. In particular, you will need to decide how to read lines of Strings from the external file. We'll later (in HW3) add an ArrayList to hold a list of Students.
- Of course, you will also need to test your methods by creating an object of GradeBook from main by passing the csv file as an argument to the GradeBook constructor.

**Submission:** To be submitted as **FirstnameLastname-141-A2.zip** file on Blackboard (under Assignments)

- Grade.java
- GradeBook.java
- Student.java

In addition, each .java file must contain the following information at the top:

```
//Your name
//CS141
//Assignment 2
//Date
```

**Due:** Monday, April 16, 4.00 PM