

Basic GPA Calculator

Section: A1+A2

Time: 40 minutes

Your task is to implement a simple Student Grade and GPA Calculation System using Java. The number of courses and students are supplied as command line arguments.

Requirements: See sample I/O link below for more details.

1. **Classes to Implement:** Implement `Student.java`, `Course.java` and `Main.java`.
2. **Course Input:** Takes details for multiple courses, including each course's name and associated credit hours.
3. **Student Input:** Collects student information, including name and marks for each course. Ensure that marks stay within 0 and 100. Otherwise take the input for marks again.
4. **Grade Calculation:** Calculates each student's grade per course based on a predefined grading scale:
Grade 4.00: 80-100
Grade 3.75: 70-79
Grade 3.5: 60-69
Grade 3.0: 50-59
Grade 2.5: 40-49
Grade F (0.0): Below 40
5. **GPA Calculation:** Computes the GPA for each student using the weighted average of grades based on course credits.
6. **User interaction:** After taking all the input, user can enter three commands (see sample I/O for details):
 - **display** X: Show details for student X. Details include: name, grades for each course and the overall GPA. If the user inputs "all", display details for all students.
 - **delete** X: Delete information for student X. You may use a new array to store the updated student information.
 - **exit:** Terminate the program.

$$\text{GPA} = \frac{\sum_{i=1}^n C_i \times G_i}{\sum_{i=1}^n C_i}.$$

Note: The grade for each course and the overall GPA should be calculated within the Student class. Use appropriate getters and setters to access and modify class fields. The Main class will only parse and process the user input.

Sample I/O: <https://pastebin.com/0BUXUd4H> [Save this before the internet connection is turned off]

Submission: Create a directory with your ID and include only the .java files. For example:

```
2305010/  
├── Course.java  
├── Student.java  
└── Main.java
```

You would then submit 2305010.zip.