**Design Doc of Grading System**

**1) Object Design Specification:**

For each class, I listed 3 essential points of our design:

**1.** purpose of the class

**2.** benefit of this class to the existing design

**3.** benefit of this class, if any to a future grading system

* **Assignment**

1. This class is used as the assignment for each class.
2. The class contains all the information relating with an assignment, such as assigned date, belonged criteria and the proportion, belonged course, name, sub-assignments if exist, parent assignment if exists, total points and the percentage grade for each student.
3. For the future, this class can be used anywhere an assignment is needed. People can extend the class to add some more attributes to the assignment.

* **Comment**

1. This class is used as the comment for each student.
2. The class contains the information of each comment for one student. It helps us to easily maintain the comment for each student.
3. For the future, this class can be used anywhere a comment is needed.

* **Config**

1. This class is used to store some configuration information for the system.
2. The class contains all information used as configuration. It helps us to use the configuration variables as parameters or judging criteria.
3. For the future, more configuration information can be added here.

* **Course**

1. This class is used as the course information for the grading system.
2. The class contains all information relating with a course, such as the name, the semester, the year, the criteria the course has, the assignment the course has, the students the course has and the status of the course.
3. For the future, the class can be used anywhere a course is needed. And more attributes could be added by extending this course class to other class.

* **Credit**

1. This class is used to store the credit information for each assignment.
2. The class help the system to store the credit value for each assignment and the sub-assignments.
3. For the future, any system needs a credit information can use this class.

* **Criteria**

1. This class is used as a single criterion for each course.
2. The class contains all information relating with a criterion, the name of the criterion, the course the criterion belonging to, the percentage the criteria take for the whole course.
3. For the future, any system needs a criterion information can use this class.

* **Curve**

1. This class is used to store the curve information of each class.
2. This class help us to maintain the curve information of the class.
3. For the future, more attributes and methods relating with curve can be added here.

* **DatabaseDAO**

1. The database class.
2. This class maintain all apis relating with database.
3. For the future, more apis relating with database could be added here.

* **Date**

1. This class save the information of a specific date.
2. The class help the system store the information of the assigned date of an assignment and the due date of the assignment.
3. For future, any system needs a class to save the data information can be added here.

* **Email**

1. This class store the information of the email for a student.
2. The class save the email information for each student.
3. For the future, more methods such as sending email from current email address could be added in this class.

* **GradingSystem**

1. The grading system.
2. The class maintain the information relating with the grading system such as active courses, inactive courses and the templates.
3. For the future, more methods could be added in this class.

* **Id**

1. The class store the information for a student.
2. The class is used as the key value for each student.
3. For the future, any system needs an id attribute can use this class and more information relating with id could be added here.

* **Name**

1. The class store the information of the name for a student.
2. The class store the information such as first name and last name. And provides methods to operate that information.
3. For the future, more attributes such as mid name could be added to this class.

* **Password**

1. The class store the password information for the grading system.
2. The class provides methods to encrypted the password to MD5 string and decrypted them to check the password correct or not.
3. For the future, more methods to encrypted password in different ways could be added here.

* **Percentage**

1. The class store the information of a percentage.
2. The class in current system is used to save the percentage proportion of an assignment to the criteria or to its’ parent assignment. And the class could be used as store the students’ percentage version score.
3. For the future, any system needs a percentage information could use this class.

* **Semester**

1. The class store the information of the semester for a course.
2. The class in current system helps us store the semester information for a course. And provides methods to operate that information.
3. For the future, any system needs a semester could use this class.

* **Statistical**

1. The class provides methods to calculate the statistical numbers.
2. In this class, we provide many static methods to calculate the statistical numbers for the assignment.
3. For the future, more methods relating different methods could be added here.

* **Status**

1. The class provides the status information.
2. The class in current system is used to save the status of each course and the status for each student.
3. For the future, any class needs maintain a status information could use this class.

* **Student**

1. The class save the information of each student for the grading system.
2. The class save the information relating with a student, such as name, status, kind, email and id.
3. For the future, more information relating with a student could be added here.

* **Template**

1. The class save the information of a template for the grading system.
2. The class save the name and the relating course information of a template.
3. For the future, more information such as password relating to a template could be added here.

* **Year**

1. The class provide the information of year information.
2. The class in current system is used to save the information of the year of a course and the kind of the students.
3. For the future, more information relating with year could be added here.

**2) The structure of the class design**

grading.pdf

**3) The structure of the database design**

db.pdf

**4) A general workflow of the grading system**

1. Login
2. Create a course
3. Choose the course
4. Add one criteria
5. Delete one criteria
6. Save as template
7. Load students from CSV file
8. Edit the information of a student
9. Sort by name
10. Sort by id
11. Sort by email
12. Delete a student
13. Assign two single part assignments
14. Assign two multi parts assignments
15. Click by name to grading page
16. Give grade to four assignments
17. Give bonus for one student
18. Give comments
19. See the comments
20. See all grades filter by criteria
21. Sort by name
22. See all grades filter by criteria and assignments
23. Sort by grade
24. Add a new student
25. Click student’s name to the score distribution of that student
26. Show the comment of ‘lately enrolled’
27. Go to statistical page
28. Filter by undergraduate
29. Filter by graduate
30. Unselect some student
31. Go to archive page
32. Click students with highlight to show comment
33. Give letter grade
34. Click save
35. Click archive
36. Save the template
37. Close the system and reopen
38. Go to inactive course
39. Choose the course and see the final grade
40. Go back to main menu
41. Create a course based on the template