Doornail Technologies, Inc.

System Requirement Specifications for the Grade Book System

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Assumptions:

1. The professor is the only person who administers the grade book application.
2. Data encryption and decryption techniques are not required.

Section I: System Requirements

1. General
2. The program must run on Windows XP, Vista, and 7 Operating systems.
3. The program must import and export all data in CSV format for use with Microsoft Excel.
4. The program must be able to support multiple grade books, each for a specific course.
5. The program must use a local configuration file for preferences, and the program must allow the user to specify the location of saved CSV files.
6. The program must be able to email students regarding new assignments and individual student scores.
7. For privacy reasons, the program must give the user the option to select which columns to view or export, i.e. omit student ID or other notes about the students.

Section II: Functional Requirements

1. Grade Book Functional Requirements
2. A grade book must have the instructor’s name as a required field.
3. A grade book must have a course ID as a required field, i.e. "CS 3300".
4. A grade book must be able to support zero or more assignments.
5. A grade book must allow the ability to add/remove a student to/from the student list.
6. In case a student has the same name as another student, a grade book must also contain a column of each student’s ID that corresponds to the student in order to differentiate between the same names.
7. Assignment Functional Requirements
8. An assignment must have an ID, title, and points available as required fields.
9. An assignment may have a description, type, and due date as optional fields.
10. An assignment must be editable, i.e. the title or point value can be changed manually.
11. Student Functional Requirements
12. A student must have an ID, email, first and last name as required fields.
13. A student may have a degree (undergraduate or graduate) and notes about the student as optional fields.
14. A student’s score will be maintained in a table of key and value pairs (assignment ID’s and points earned).
15. A student’s overall score will be represented by points earned divided by points available.

Section III: External Interface Requirements

1. Grade Book External Interface Requirements
2. A grade book must contain a list of all the students enrolled in the course in a single column.
3. A grade book must contain a column for each assignment and exam
4. A grade book must contain columns for the user created formulas, which can be used to calculate the intermediate and final grades.
5. A grade book must allow the ability to add/remove an assignment column or formula column.
6. The user will be able to omit the student ID column from view.
7. GUI (Graphical User Interface) External Interface Requirements
8. When the grade book application is first opened, the GUI must be blank. In other words, no grade books or CSV files will be displayed.
9. The GUI must contain a File tab for options such as:
   1. Creating a new grade book layout, which initially consists of one column.
   2. Saving a grade book layout.
   3. Opening a previously created grade book layout, which will open a dropdown box containing the list of previously created grade book layouts.
   4. Deleting a previously created grade book layout, which will open a dropdown box containing the list of previously created grade book layouts.
10. The GUI must contain a View tab for allowing the user to select which columns of the grade book to view.
11. The GUI must contain the traditional Close tab in the upper right hand corner, where upon being clicked will close the application.
12. The GUI must contain a tab for opening CSV files in order to choose which name list CSV file to import into the grade book.
13. The GUI must contain a GENERATE button that will, upon being clicked, import the student names from the name list CSV file that the user opened into the grade book layout.
14. A grade book layout and a CSV file must both be opened in the GUI in order for the GENERATE button to work.
15. Only one CSV file can be opened at a time in the GUI.
16. Only one grade book layout can be opened at a time in the GUI.

Section IV: Performance Requirements

1. Grade Book Performance Requirements
2. The grade book table data must load within 10 seconds.
3. When the application is first executed, it must load within 10 seconds.
4. Excel data importing must finish within 10 seconds.
5. Excel data exporting must finish within 10 seconds.
6. Network Performance Requirements
7. Emails regarding new assignments must be sent to all students within 10 seconds.