Beep Beep Lettuce APCS pd1
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Final Project Proposal

Gradebook

Our project will execute the functions of a Gradebook website. It will allow three types of users--Teachers, Students, and Parents--to log in and interact with a range of functions specific to their account type.

Student Account Attributes

First Name
Middle Initial
Last Name
Student ID
Sex
Birth Date
Age (if month and date of Birth Date before current month and date then subtract …)
Graduating Year
Current Teacher List
Email

Student Account Functions

View Assignment Grades; options to view all 4 types of assignments:
- -Homework
- -Tests
- -Quizzes
- -Projects

Input desired average and calculate grade needed on next assignment for desired average
- -type of Assignment may be specified

Comment on assigned Assignments
Email Teacher
Sort Assignments
- -alphabetical (name of assignment)
- -grades high to low
- -grade low to high

Teacher Account Attributes

First Name

Last Name
Class List
-Each class contains list of students
-Each class has a different period number
Email

Teacher Account Functions

May interact with functions via list of randomly generated student grades or enter new list of grades

Stats of Default class of students provides
Or create
Input Grades for Students
View Class mean, median, standard deviation, mode, min, max on specified Assignment
Adjust Class mean and standard deviation on specified Assignment to inputted mean and standard deviation
View Histogram of grades on specified Assignment
Assign Assignments
Grade Assignments
Email Student/Email Classes
Comment on individual Assignment grade
Print Sorted Classes
-by average GPA
-by Class Period
Print Sorted Students
-by ID
-alphabetically (Student name)
-by GPA
-low to high
-high to low

Parent Account Attributes
Child First Name
Child Middle Initial
Child Last Name
Parent First Name
Parent Middle Initial
Parent Last Name

Email

Parent Account Functions
View Student Grades--all will be 100s :)

Super Stats Class
- Calculates mean, mode, median, max, min, standard deviation
- Adjusts list of grades to desired mean and standard deviation via linear transformation
- Calculates outliers
- Prints histogram of grades to terminal
    - Takes assignment
- Generates list of random student grades
  <u>Overloaded method:</u>
    Case 1: takes assignment type, minimum grade and maximum grade
    Case 2: takes assignment type, minimum grade, maximum grade, and mean grade
    Case 3: takes assignment type, minimum grade, maximum grade, and standard deviation of grades
    Case 4: takes assignment type, minimum grade, maximum grade, mean grade, and standard deviation of grades

Sorts Class
- Can take arrays of both words and numbers (overloaded method)
    - For words, we will use ASCII value to sort alphabetically
- Implements merge Sort

Search Class
- Can search arrays for desired value or return prompt saying desired value does not exist
- Input value may be both words and numbers

To-Do List
1. Create and finish the Student and Teacher classes
    a. Make sure to implement the ability to read from file input
2. Create Assignment class and associated Interfaces
3. Create Class class that stores a list of Students and other information for the class, along with the class name, period number, and a collection of methods that allows you to add students to an exist class, import a data file that contains a class, and remove students. Also allows you to modify each variable of the Students.
4. In each class, implement ways to display information

    a. Modify toString methods
    b. Create PrintData class that allows us to print information of each student
5. Create Login system
    a. Create directory to store encrypted password and other data
    b. Create class Login that takes in user input and attempts to run it through and verify