

Algorithm for StudentForm grade manager app.

Initialize Application:

- Create an empty list of StudentForm objects to store student data.

Add StudentForm:

- Input: StudentForm name and ID.
- Action: Create a new StudentForm object with the provided name and ID, and add it to the list.
- Output: Update the GUI to display the new student.

Add courseGrade:

- Input: StudentForm ID, subject name, and grade score.
- Action:
  - Find the student with the matching ID in the list.
  - Add a new courseGrade object to the student's grade list.
- Output: Update the GUI to display the new grade for the student.

Calculate Average courseGrade:

- Action:
  - For each student in the list:
    - Calculate the average of their grades (sum of grades / number of grades).
    - Handle division by zero by throwing an ArithmeticException if the student has no grades.
- Output: Update the GUI to display the average grade for each student.

Write Data to File:

- Action:
  - Open or create a file named "students.txt" using BufferedWriter.
  - Write each student's data to the file in the format: name,ID,subject1,score1,subject2,score2,...
  - Handle IOException for any file-related errors.
- Output: Display a confirmation message on successful write operation.

Read Data from File:

- Action:
  - Open the file "students.txt" using BufferedReader.
  - Read each line and parse it to create StudentForm and courseGrade objects.
  - Add the parsed students to the list.
  - Handle FileNotFoundException if the file does not exist.
  - Handle IOException for any other file-related errors.
  - Handle NumberFormatException for invalid numeric data in the file.
- Output: Update the GUI to display the read student data.

Exception Handling:

- Handle FileNotFoundException when attempting to read from a file that does not exist.
- Handle IOException for general input/output errors.
- Handle NumberFormatException for invalid numeric input (e.g., non-numeric grade).
- Handle ArithmeticException for division by zero during average grade calculation.

