**Technical Design Document**  
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**Program Description:**

This program allows an instructor to store student grade records in a CSV file and retrieve them later for display in a tabular format. The instructor can enter multiple student records, including first name, last name, and three exam grades.

**Functions used in the Program:**

**Function Name:** write\_grades()

**Description:**  
This function prompts the instructor to enter student information and writes it into a CSV file (grades.csv) using the csv module.

**Parameters:**

* None

**Variables:**

* filename (string): Stores the filename (grades.csv).
* num\_students (integer): Number of students entered by the user.
* first\_name (string): The student's first name.
* last\_name (string): The student's last name.
* exam1, exam2, exam3 (integers): The student's three exam grades.

**Logical Steps:**

1. Prompt the user for the number of students.
2. Open grades.csv in write mode and initialize a CSV writer.
3. Write the header row: First Name, Last Name, Exam 1, Exam 2, Exam 3.
4. Loop through the number of students:
   * Prompt the user for first name, last name, and three exam scores.
   * Write the student's data as a new row in the CSV file.
5. Close the file and confirm data has been saved.

**Returns:**

* None

**Function Name:** read\_grades()

**Description:**  
This function reads student grade records from grades.csv and displays them in a tabular format with proper column alignment.

**Parameters:**

* None

**Variables:**

* filename (string): Stores the filename (grades.csv).
* data (list): Stores the contents of the CSV file as a list of rows.

**Logical Steps:**

1. Attempt to open grades.csv in read mode.
2. Use csv.reader() to read file contents into a list.
3. Check if the file contains data; if empty, display a message and exit.
4. Print the header row formatted with column alignment.
5. Loop through the student records and print each row in a formatted table.
6. Handle file errors, such as a missing file.

**Returns:**

* None

**Function Name:** main()

**Description:**  
This function serves as the program’s entry point, allowing the instructor to choose between entering student grades or viewing existing records.

**Parameters:**

* None

**Variables:**

* choice (string): Stores the user's menu selection.

**Logical Steps:**

1. Display a menu with three options:
   * Enter student grades (write to file).
   * Display student grades (read from file).
   * Exit the program.
2. Prompt the user for a choice.
3. If the user selects 1, call write\_grades().
4. If the user selects 2, call read\_grades().
5. If the user selects 3, exit the program.
6. If the input is invalid, prompt the user to enter a valid option.
7. Repeat until the user chooses to exit.

**Returns:**

* None

**Link to your repository:**  
<https://github.com/NMHero1/COP2373>

A black screen with white text

AI-generated content may be incorrect.

A screenshot of a computer

AI-generated content may be incorrect.