**Technical Design**

**Name:** Livia Augusto Razera

**Date Created:** July 6, 2025

**Program Description:**

This program allows an instructor to enter multiple students’ first names, last names, and three exam grades. The program stores this information in a file named grades.csv. It also allows the user to read and display the file contents in a formatted table. The program includes a text-based menu interface and handles file input/output using the csv module.

**1. Function Name: write\_grades**

**Description:** Prompts the instructor to enter student names and exam grades, then writes each record to grades.csv using the csv module.

**Parameters:** none

**Variables:**

filename (string): The name of the file to write to.

num\_students (int): Number of students to input.

first\_name, last\_name (string): Input for student names.

exam1, exam2, exam3 (int): Exam scores.

writer (csv writer): Object used to write rows to the file.

**Logical Steps:**

1. Open grades.csv in writing mode.
2. Write the header row with field names.
3. Ask the user how many students enter.
4. Loop through each student
5. Confirm data was saved.

**Returns:** none

**2. Function Name: read\_grades**

**Description:** Reads student records from grades.csv and display them in a formatted table.

**Parameters:** None

**Variables:**

filename (string): Name of the CSV file.

reader (csv reader): CSV reader object.

header (list): The first row (column names).

row (list): Each student’s record.

**Logical Steps:**

1. Try to open grades.csv in read mode.
2. Read the header and print it formatted.
3. Loop through each row in the file and print it.
4. If the file does not exist, display an error.

**Returns:** None

**3. Function Name: main**

**Description:** Handles user interaction via a simple text menu. Allow the user to enter new grades, view grades, or exit the program.

**Parameters:** None

**Variables:** choice (string): User’s menu selection.

**Logical Steps:**

1. Display a repeating menu with 3 options.
2. If the user selects option 1, call write\_grades().
3. If option 2, call read\_grades().
4. If option 3, print exit message and end loop.
5. Handle invalid inputs.

**Returns:** None

**Logical Steps:**

1. The program starts by calling the main() function.
2. User sees a menu and selects an option.
3. If entering data, the program calls write\_grades() to collect and save input.
4. If viewing data, the program calls read\_grades() to display the CSV content.
5. The menu repeats until the user exits.

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

**Output Screenshot:**

**A screenshot of a computer program

AI-generated content may be incorrect.**