In-Class Group Project: Python Lists and Data Processing

# Project Context

You are part of a development team in a company building a prototype of a student grade management system. The prototype will use Python lists to store, update, and process student grades. The goal is to demonstrate your understanding of Python lists, including creating, modifying, passing lists to functions, and performing basic data processing operations.

# Learning Goals

- Understand how lists work in Python.  
- Write Python code to manipulate lists.  
- Understand how lists behave when passed as function parameters.  
- Apply lists to solve a real-world-inspired problem.

# Project Description

Your team will create a Python script to manage a list of student names and their corresponding grades. The program should allow adding new students, updating grades, removing students, and calculating basic statistics.

# Project Requirements

Your program must include the following:  
1. A list `students` to store student names.  
2. A list `grades` to store corresponding grades (integer values between 0 and 100).  
3. A function `add\_student(students, grades, name, grade)` to add a student and their grade.  
4. A function `remove\_student(students, grades, name)` to remove a student and their grade.  
5. A function `update\_grade(students, grades, name, new\_grade)` to update a student's grade.  
6. A function `average\_grade(grades)` to calculate and return the average grade.  
7. A function `highest\_grade(students, grades)` to find and return the student with the highest grade.  
8. Print the list of students and grades at key stages to observe the changes.

# Guiding Directions

- Use lists appropriately to store and manage student data.  
- Write clean, modular code by using functions.  
- Demonstrate how lists are modified when passed to functions.  
- Test all functions with different inputs.  
- Collaborate effectively; ensure all group members understand each function.  
- Time management is crucial; plan your tasks to complete within 1 hour 30 minutes.

# Evaluation Criteria

Total: 10 points  
  
1. Correct use of lists for storing student names and grades (2 points)  
2. Implementation of required functions with correct logic (4 points)  
3. Demonstration of list behavior as parameters (1 point)  
4. Clear and structured code (1 point)  
5. Group collaboration and equal participation (1 point)  
6. Completion within the allocated time (1 point)