Final Mini-Assignment (15 minutes)

Title: Mini Grade Analyzer

Goal:
Create a small, multi-module Python program that combines object-oriented and functional programming approaches. Your task is to build a simple system that analyzes a list of students and their exam scores.

Project Requirements

You will create a mini project consisting of three files:
1. functions.py – contains small functional utilities (pure functions)
2. models.py – contains an object-oriented class that uses those functions
3. main.py – runs the logic and prints the final summary

Functional Goals (in functions.py)

Write small, stateless functions that:
- Extract all scores from the dataset.
- Calculate the average score of the group.
- Filter and return only students who passed (scored above or equal to a given threshold).
- (Optional) Create a helper to compute the median or failing students.

Each function should use functional tools such as map, filter, or lambda.
No loops or global variables should be used.

Object-Oriented Goals (in models.py)

Create a class (e.g. GradeReport) that:
- Stores the dataset in its constructor.
- Uses the functional helpers to:
  * Compute statistics (average score, number of passed students).
  * Generate a readable summary of the class results.
  * Optionally, show the top 3 students ranked by score.

The class should not perform raw calculations — only coordinate and format the output.

Execution (in main.py)

In the main file:
1. Prepare a small dataset — a list of 4–6 students with names and scores.
2. Create an instance of your class.
3. Call a method (e.g. summary()) that prints a simple text report, including:
   - Total number of students
   - Average score

- Number of students who passed (above the threshold)
- Top 3 best scores

Key Concepts to Demonstrate

- Using functional programming for data transformation
- Applying object-oriented programming for program structure
- Building a multi-module Python project (importing between files)
- Writing readable and reusable code

Time limit: 15 minutes

You can work individually or in pairs. Focus on clarity and correct structure rather than perfection. After the exercise, you will present your code and explain:

- How you used map() and filter()
- What your class is responsible for
- How your program could be extended in a real scenario