Solving simple problems using modular programming

Objectives

Using Python to solve simple problems

- Implement simple programs using Python
- Solve simple problems using read/write instructions, conditional, loops
- Implement functions, use test-driven development
- Use modular programming

Requirements

Write an application to manage a list of students.
Implement functions to read data, process data and display output results. Write functions and test them using assertions.

Each student has a name (string) and a grade (int).

The application should provide a menu type interface.

Requirements:

1. Print all students
2. Add a student
3. Find a student by name
4. Delete student by name
5. Show students with grades greater than a given value
6. Find a student with the maximal grade
7. Split the application into modules
8. Find all students with the name starting with a given letter or substring
9. Remove all students with the grade smaller than 5
10. Delete students for which the name is a palindrome
11. Determine the frequency of a given name in student list
12. Compute the average grade of all students having the grade higher than 5
13. Sort students according to their grade (descending)
14. Find the top students according to their grade (example: top 3 students)