

## Laboratory Assignment AND Assessment Requirements Specification

Write an app that helps teachers to monitor the assignment and assessment of the MAP discipline.

Student data is read from the **Students.txt** file and includes the following information: **idStudent** (student's number), **name**, **group**, **email**, **name of the professor**.

The data on the **laboratory topics** are read from the **Assignment.txt** file, which contains information such as: **laboratory number (unique identifier)**, **brief description of the requirement**, **deadline - week of the semester (1..14)**, **the week in which the theme was received (1..14)**. The teacher assigns a **grade of 1 to 10 for each laboratory theme**. Delivery of the assignment after the delivery week leads to a reduction of the mark by **2.5 points** for each week of delay. **After 2 weeks of delay** in delivery the assignment, the assignment will be automatically marked with 1.

Information about the **grades** will be saved in the **Catalog.txt** (Register) file.

The application will provide the teacher with the following features:

- F0: Implement CRUD operations for the Student entity
- F1: adding a laboratory theme;
- F2: Extending the term of delivery for an existing **subject** (if the current week number is less than or equal to the number of weeks with the assignment deadline).
- F3: When adding a new laboratory **theme**, as well as modifying the delivery date of a **theme**, all students will be notified by email. The app will offer the ability to unsubscribe from these notifications
- F4: adding a grade for a particular student to a laboratory **topic**; any delays due to delays in delivery of a theme will be automatically calculated, showing the student's **maximum mark** on the topic. Important: A student, on a laboratory theme, has only one grade;
- F5: When adding a grade, the following information will be retained in the NameStudent.txt file: a "Theme:" ThemeNumber
  - "Delivered in the week:" NumberOfTheDeliveredWeek
  - "Deadline:" NumberOfDeadlineWeek
  - "Feedback:" feedback, suggestions, and explanations in connection with the reduced made regarding the grade.
- F6: The NameStudent.txt file (or its content) will be emailed to the student, weekly, with the subject "Feedback laboratory MAP".
- F7: The delays will not be considered if the student has **motivation**. Also, if the teacher did not enter the **notes** in time, it will be possible to specify the week in which the **subject** was delivered.
- F10: Filtering entities based on criteria.
- F11: Reports –
  - Laboratory grade for each student (the weighted average of grades from the lab topics; weight share = number of weeks allocated to the topic).
  - The hardest the theme: the average of the grades on the theme is the smallest.
  - Students who can enter the exam (average greater than or equal to 4).
  - Students who have delivered all the themes on time.

Note: Examples for reports are indicative. You are encouraged to propose other relevant reports.