Laboratory Assignment AND Assessment Requirements Specification

Version 1.0

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Version History

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# Introduction

The application is written in Java and is designated for monitoring student’s laboratory assignments.

## Purpose

The application allows the user to to monitor the assignment and assessment of the MAP discipline.

## Scope

The scope of the document is to give information about the system: regarding the users, functionalities, purpose, usability, data management and user scenarios.

## Definitions, Acronyms, and Abbreviations

CRUD: “create, read, update, delete”

MAP: “Metode Avansate de Programare”

hardest theme: the average of the grades on the theme is the smallest

- 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.

- There is a grade of 1 to 10 for each laboratory theme.

## Document Overview

The document is organized in chapters and subchapters describing the general purpose and scope of the document, the product description and requirements such as functional and user interface requirements.

# Product/Service Description

This product is designed to ease the process of managing student’s lab assignments. It provides multiple features such as CRUD on students, grades and assignments, reports based on the existing data and data filtering.

## Product Context

The product is independent and self-contained.

## User Characteristics

Users that will be using this product are the teachers from the Babes Bolyai University.

# Requirements

## Functional Requirements

List the functional requirements (FR) of the system.

| Section/ Requirement ID | Requirement Definition |
| --- | --- |
| FR1.0 | The system shall allow the user to perform CRUD operations on the Student entity. |
| FR2.0 | The system shall allow the user to add a new laboratory theme. |
| FR2.1 | The system shall notify all the students via email when a new laboratory theme was added. |
| FR2.1.1 | The system shall allow unsubscribing from the above-mentioned notifications. |
| FR2.2 | The system shall allow the user to extend the term of delivery for an existing subject. |
| FR2.2.1 | The system shall validate that the current week is less than or equal to the number of weeks of the assignment deadline. |
| FR2.3 | The system shall notify all the students via email when a laboratory deadline was altered. |
| FR2.3.1 | The system shall allow unsubscribing from the above-mentioned notifications. |
| FR3.0 | The system shall allow the user to grade a particular student on a laboratory topic. |
| FR3.0.1 | The system shall automatically compute any deductions caused by delays and set the given grade accordingly. |
| FR3.0.2 | The system shall verify that the student has only one grade per laboratory theme. |
| FR3.0.3 | The system shall allow the user to specify the week in which the subject was delivered. |
| FR3.0.4 | The system shall not consider delays if the given student has doctor’s notes for the dates which would have caused the delay. |
| FR4.0 | The system shall allow the user to filter entities based on criteria. |
| FR5.0 | The system shall allow the user to generate various reports: |
| FR5.0.1 | The system shall allow the user to view the laboratory grade for each student. |
| FR5.0.1.1 | The system shall compute the grade using the formula:  grade = the weighted average of grades from the lab topics;  weight share = number of weeks allocated to the topic |
| FR5.0.2 | The system shall allow the user to view the hardest theme. |
| FR5.0.3 | The system shall allow the user to view the students who can enter the exam. |
| FR5.0.3.1 | The system shall verify which students have an average grade greater than or equal to 4. |
| FR5.0.4 | The system shall allow the user to view the students who have delivered all the themes on time. |

## User Interface Requirements

The system should provide a friendly menu of options the user can choose from, clear written requests when user input data is required and it should inform the user about the error that have been encountered while processing their request.

## Usability

* The user documentation and help should be complete
* The help should be context sensitive and explain how to achieve common tasks
* The system should be easy to learn.

## Data Management

The data persistence is done by saving all the relevant data into the file “NameStudent.txt” after adding a grade. The grades are an exception.

Each member is saved in the file as follows:

* "Theme:" ThemeNumber
* "Delivered in the week:" NumberOfTheDeliveredWeek (number)
* "Deadline:" NumberOfDeadlineWeek (number)
* "Feedback:" feedback, suggestions, and explanations in connection with the reduction made regarding the grade.

Grades are persisted into the file “Catalog.txt“.

The data regarding laboratory topics is loaded from the file “Assignment.txt “. Its format is the following:

* Laboratory number (unique identifier)
* Brief description of the requirement (string)
* The deadline week (number between 1 and 14)
* The week in which the theme was received (number between 1 and 14)

# User Scenarios/Use Cases

The 3 major Use Scenarios are:

* User adds a new student
  + Enters the add a new student option
  + Inputs data regarding the new student (id, name, group, email, teacher)
  + Receives an error message if the input data is invalid
  + Receives an error if the id already exists
  + Otherwise the user is notified that the action was completed successfully
* User adds a new laboratory theme
  + Enters the add a new laboratory theme option
  + Inputs the data regarding the new laboratory theme (id, description, deadline, turn in week)
  + Receives an error message if the input data is invalid
  + Receives an error if the id already exists
  + Otherwise the user is notified that the action was completed successfully
* User grades a student at a laboratory theme
  + Enters the add a new grade option
  + Inputs the data regarding the new grade (id, student’s id, theme’s id, value, week number)
  + Receives an error message if the input data is invalid
  + Receives and error message if the student’s id does not exist
  + Receives and error message if the theme’s id does not exist
  + Otherwise the user is notified that the action was completed successfully