Laboratory Assignment AND Assessment Requirements Specification

Version 1.0

March, 2020

Developed by:

Student X, Student Y

933

Version History

Version	Description of Change	Author	Date
V01	Initial	Student X Student Y	16.03.2020

Contents

Analysis and design Document

1 Functional Requirements

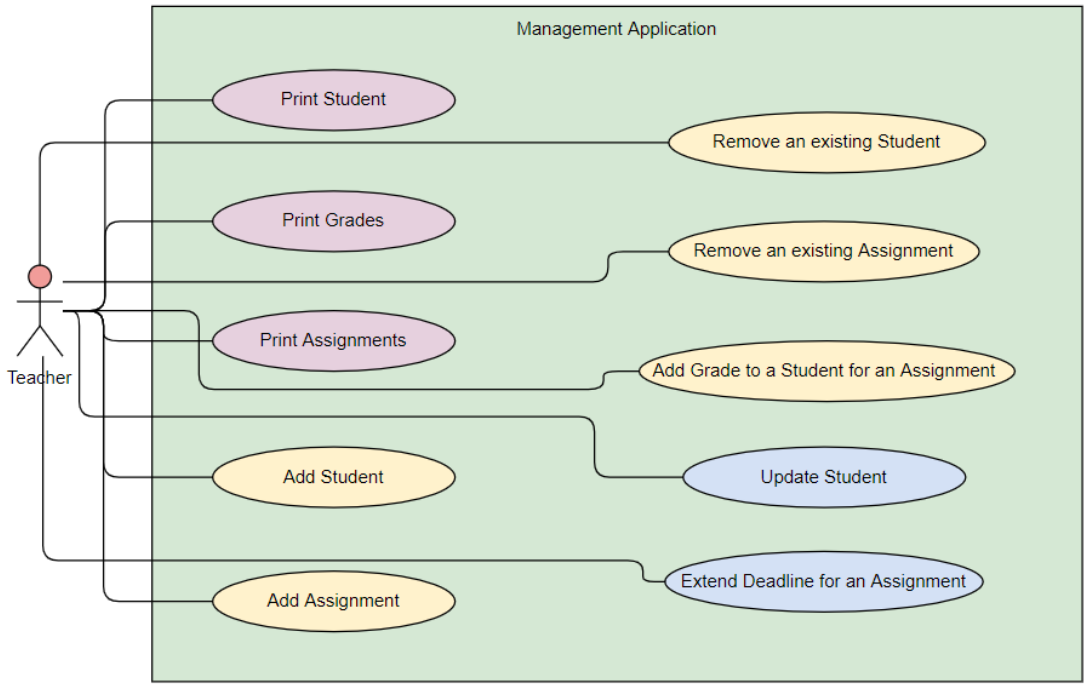
List the functional requirements (FR) of the system.

Section/ Requirement ID	Requirement Definition
FR1.0.	Add a new student
FR1.1	Remove a student
FR1.1.1	Update student

2 Actors

Teacher

3 Use cases – diagram



3.1 Use case number 1 (Description of the use case)

Actors: teacher

Description: create a new student

Precondition: - all fields are specified

Postcondition: - a new student was added in the list

Action	System Response
1 Completes the necessary fields for adding	
	2 Checks if everything is alright, adds a new element in the list if so
	3. If the input is invalid, throws an exception

Exceptions: When the fields aren't filled.

3.2 3.2 Use case number 2 (Description of the use case)

Actors: teacher
Description: delete student
Precondition: - valid id belonging to an existing student is specified
Postcondition: - the student with the specified id is removed from the list

Action	System response
1 Give an id as input	
	2 Checks if it is a valid id and there is a student with that id and deletes the student
	3. If the input is invalid, throws an exception

3.3 3.3 Use case number 3 (Description of the use case)

Actors: teacher
Description: update student
Precondition: - valid id belonging to an existing student and all other fields for student are specified
Postcondition: - the student with the specified id has the data updated

action	System response
1 Give an id and all other fields for the Student entity as input	
	2 Checks if it is a valid id and there is a student with that id, than checks if the rest of the input is valid, and updates the data for that student
	3. If the input is invalid, throws an exception

4 Analysis

4.1 Entities

Student, Assignment, Grade

4.2 Relations between entities

One student can have multiple assignments and one assignment can be assigned to many students. It is a many-to-many relationship between the two classes. Class Grade has as id, a pair consisting of studentId and assignmentId and it is the association class between the Student and Assignment classes.

4.3 Attributes

Student: id, name, group, email, professor name

Assignment: id, description, deadline, assignation date

Grade: id(studentId, assignmentId), value, deliver date, feedback

4.4 System behavior

4.4.1 Use case 1-2-3

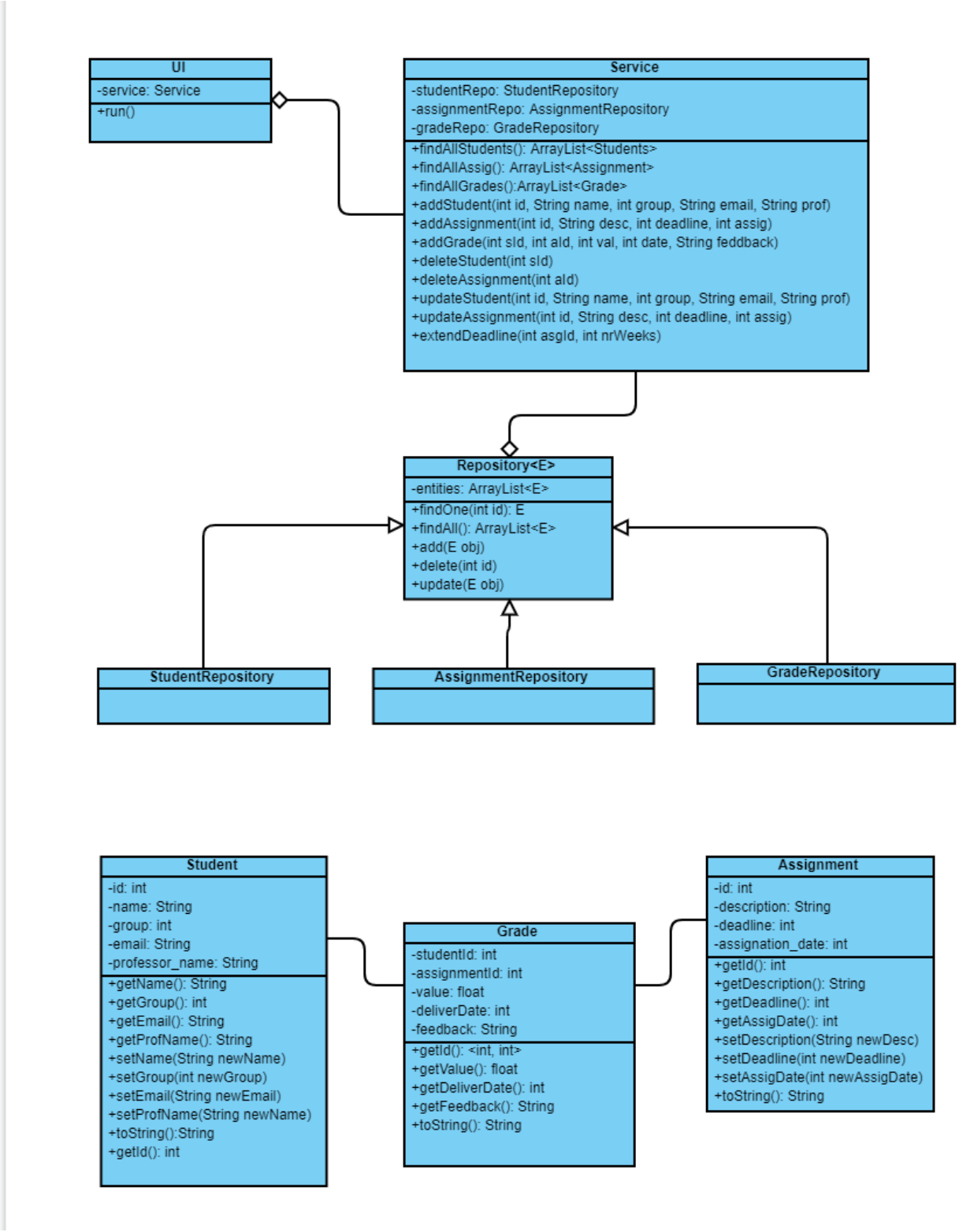
The system will act as a subsystem to a larger environment, in order to speed up a certain process in the company's workflow.

4.5 System events

After each operation a message is shown to the user either if the command terminated succesfully or with an error message.

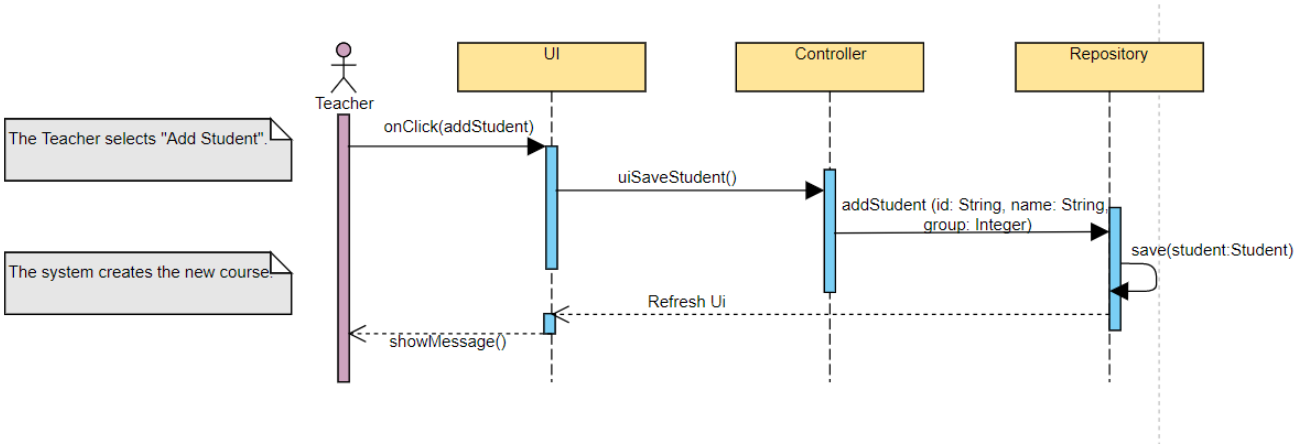
5 Design

5.1 Class diagram

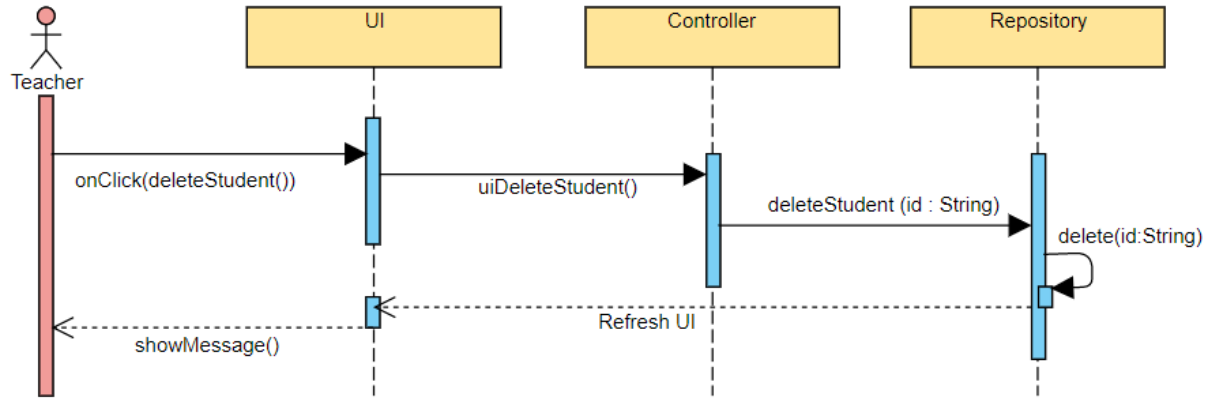


5.2 Sequence diagrams (for each use case)

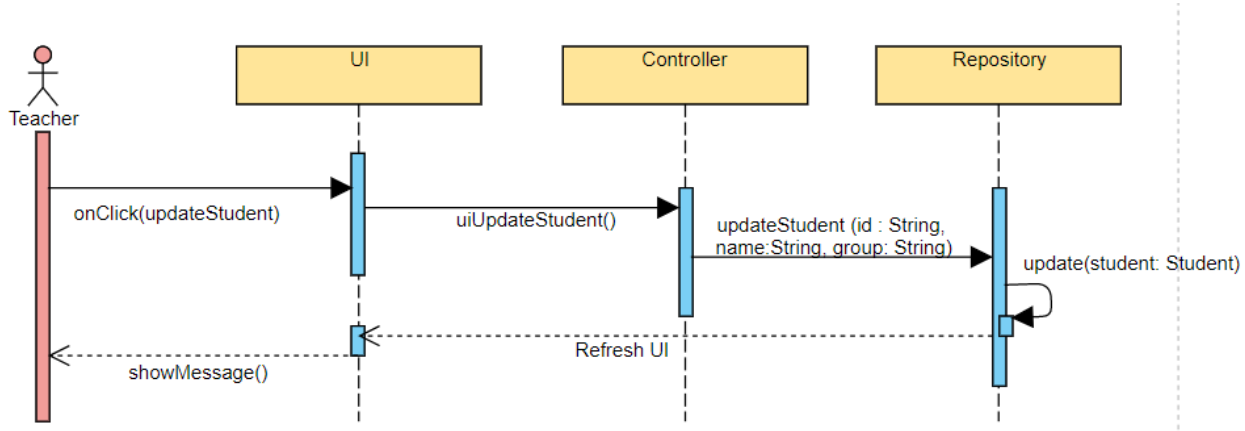
- **Add Student Sequence Diagram**



- **Delete Student Sequence Diagram**



- **Update Student Sequence Diagram**



5.3 GRASP

GRASP is set of exactly 9 **G**eneral **R**esponsibility **A**ssignment **S**oftware **P**atterns:

1. Information Expert
2. Creator
3. Controller
4. Low Coupling
5. High Cohesion
6. Indirection
7. Polymorphism
8. Pure Fabrication
9. Protected Variations