Software Requirements Specification

for

DegreeOverview

Version 1.1 approved

Prepared by Bohui WU, Xuan WANG, Fuhao RUAN, Yu WU

Lily

03/23/2021

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Revision History

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| --- | --- | --- | --- |
| **Name** | **Date** | **Reason For Changes** | **Version** |
| Bohui WU,  Xuan WANG,  Yu WU,  Fuhao RUAN | 03/16/2021 | The first version. | 1.0 |
| Bohui WU,  Xuan WANG,  Yu WU,  Fuhao RUAN | 03/22/2021 | The second version:  1). Corrected mistakes in SRS v1.0 according to feedback.  2). Updated version number in the cover;  3). Section 3.1 and 3.2;  4). UI design from 1-7. | 1.1 |

# Introduction

## Purpose

The software requirement specification (SRS) is for the project “DegreeOverview” from Lily. This document is designed to describe the whole system.

## Document Conventions

This document uses the font “Arial” as the font for heading 1, heading 2, and the contents. The font sizes are 18, 14, and 11, respectively.

In this document, all dates will be written using the date and time notation in the United States, which is MM/dd/yyyy.

In this document, **bold text** indicates the content is of great significance, and the reader should pay more attention to it. *Italic text* is used when company names and product names are mentioned.

## Intended Audience and Reading Suggestions

The intended readers of the document and their reading suggestions are as follows:

* Product managers: section 1 to section 3;
* System architects: section 2 and section 3;
* Software developers: from section 1 to section 6;
* Testers: section 2 to section 6.

## Project Scope

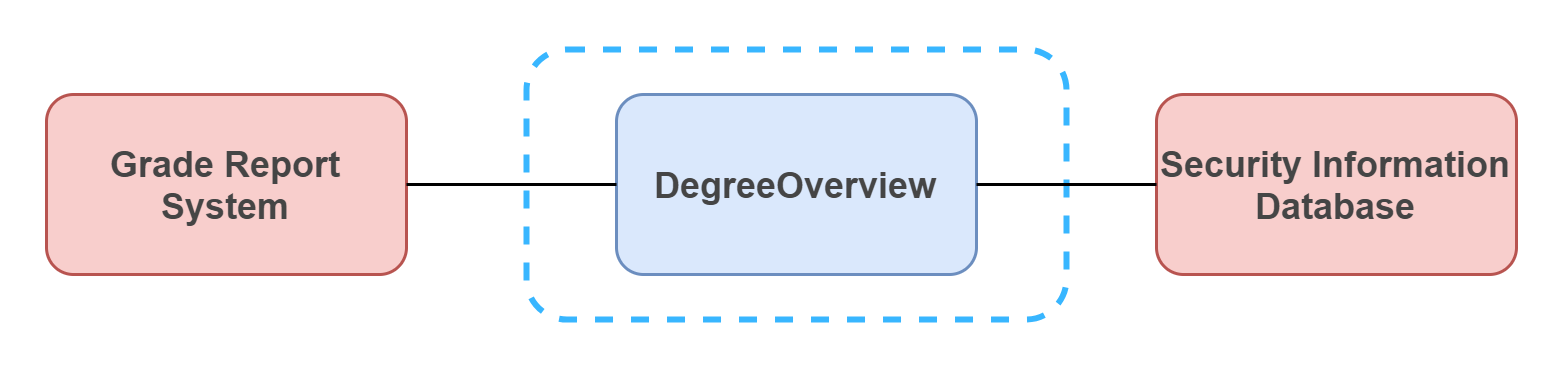
DegreeOverview is a course definition system that aims to help course designers better plan and design university courses and enables both the lecturers and students to understand and visualize the relationships between courses and their intended learning outcome.

## References

Software Development Workshop III Project V3

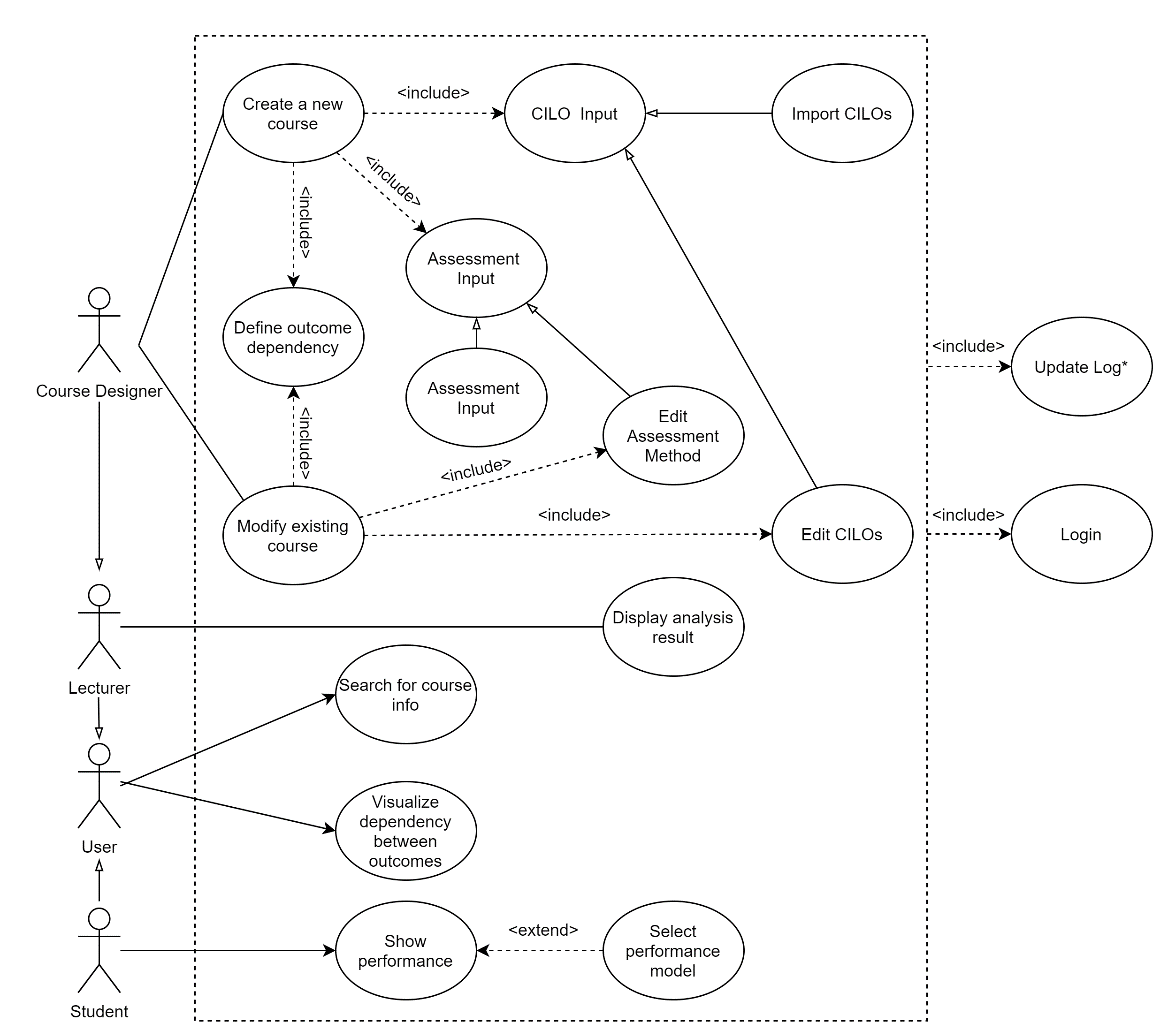
# Overall Description

## Product Perspective



DegreeOverview is a software designed to deploy to a server running Windows Server. However, to function properly, some of the data may come from other independent systems within the campus. In this case, DegreeOverview needs to be connected to the university’s Security Information Database and the Grade Report System.

## Product Features



The following description is directly quoted from the *Software Development Workshop III Project V3* after correcting some grammatical mistakes.

**For Lecturers (Course Designer)**

* Search for information about any course available in the system.
* Input or import, edit the CILOs of a course (refer to the syllabus sample document)
* Input or import, edit assessment methods of a course (refer to the syllabus sample document).
* Define the dependencies between CILOs of courses (CILOs of a course can depend on some CILOs of its prerequisite courses).
* Define the relationships between the learning outcomes (CILOs) and the course assessment and their percentages (refer to the syllabus document.
* Visualize the dependencies between learning outcomes across a degree.
* See what courses offer a particular learning outcome.

**For Normal Lectures (Non-Course Designer)**

* Search for information about any course available in the system.
* See the analysis results (not a MUST function).
* The lecturer can check the CILO achievements for a course (e.g., students’ average performance in one year on a CILO, comparing average performance for different years on a CILO).

**For Students**

* Visualize the dependencies between learning outcomes across a degree.
* See what courses offer a particular learning outcome.
* See his or her performance on various learning outcomes.

## User Classes and Characteristics

There are three classes of users, lecturers (course designers), regular lecturers (non-course designers), and students. They all come from the same university. The division of their classes is based on their role in the university. For the subset of functions allowed, please refer to section 2.2. They all have access to the Internet and are equipped with basic knowledge about how to use a browser on a computer.

## Operating Environment

**Back-end**

* Operating system: Windows 7 or above.

**Front-end**

* Chrome 89.0.4389.82 or above.

## Design and Implementation Constraints

This software system has no design and implementation constraint.

## User Documentation

No user manual or online help is provided.

## Assumptions and Dependencies

The server should be connected to the network where it will be accessible by the end-users. The users must be able to connect to the network that the server can be reached. The course designers should have access to Microsoft Excel, Google Sheets, Numbers, or other similar spreadsheet applications.

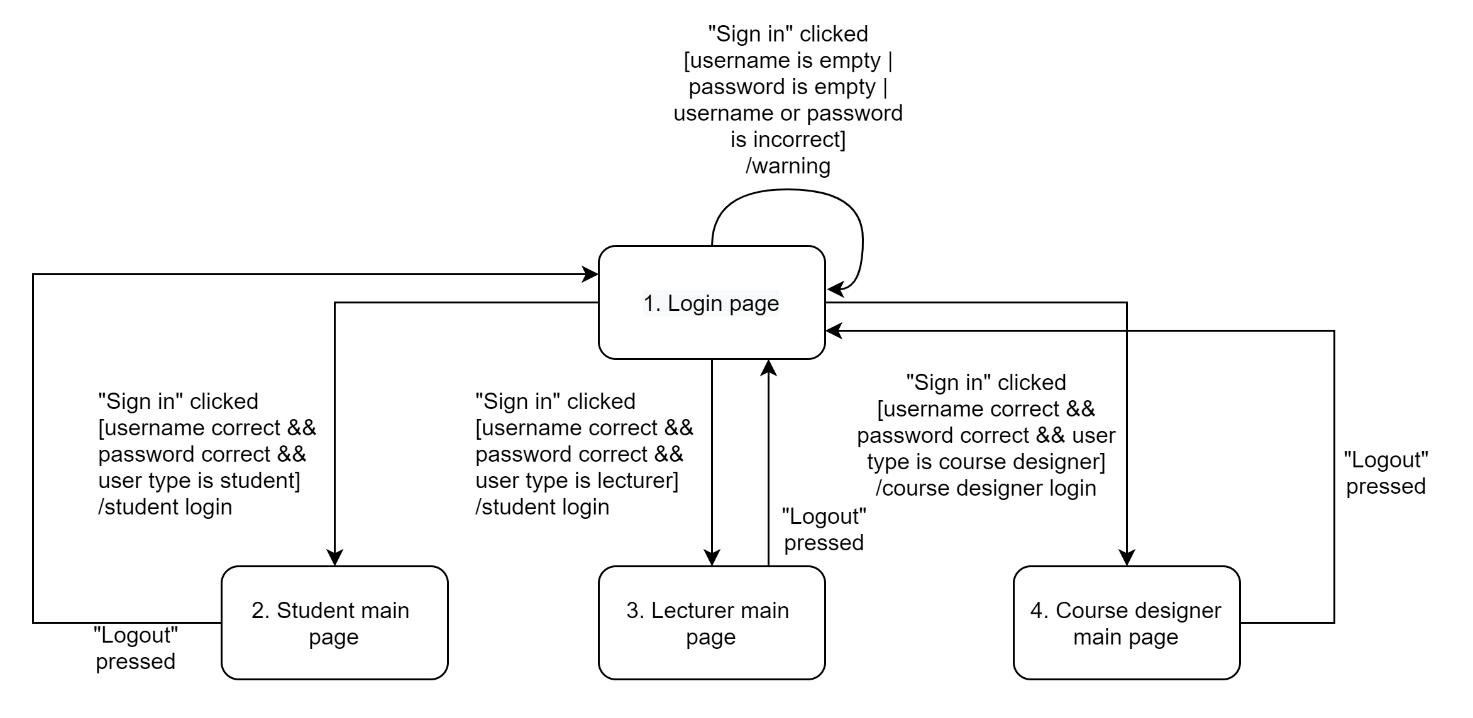
# System Features

## Login

3.1.1 Description and Priority

Users can log in to the system through the login page. This feature should have the highest priority since the user can perform no actions without logging into the system.

3.1.2 Stimulus/Response Sequences



3.1.3 Functional Requirements

REQ-1: The username and password are stored and queried from the university’s security information database.

REQ-2: The user must enter the correct username and password to login into the system.

REQ-3: If the username or password field is empty, a warning message will be shown to the user.

REQ-4: If the user inputted the wrong username or password, a warning message will be shown to the user.

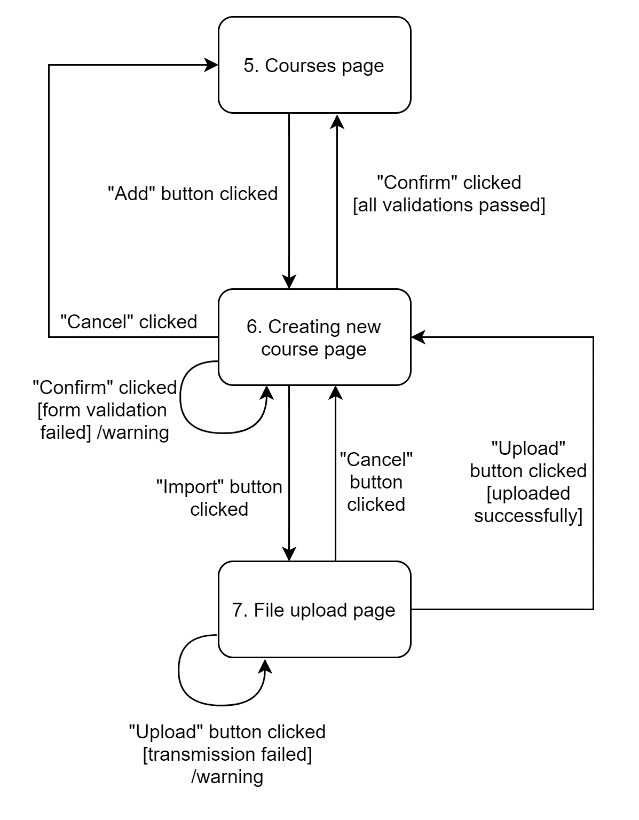
REQ-5: If the username and password are correct, the user will be taken to the appropriate page. For example, if the system identified the user as a student, it will take the user to the student’s main page.

REQ-6: The logged-in user can click on the logout button from the dropdown menu at the top-right corner to log out of the system. After logging out, the user will be taken back to the login page.

## Create a New Course

3.2.1 Description and Priority

Course designers can create new courses using this feature. This feature is of high priority.

3.2.2 Stimulus/Response Sequences

3.2.3 Functional Requirements

REQ-1: The course designer can get to the creating new course page through the “+” button at the upper-left corner of the course page.

REQ-2: Course designers can edit the CILOs and assessment methods.

REQ-3: Upon clicking on the “Confirm” button, if any field is validated invalid, the course designer will receive a warning message. Otherwise, the course will be added to the database, and the user will be redirected back to the course page.

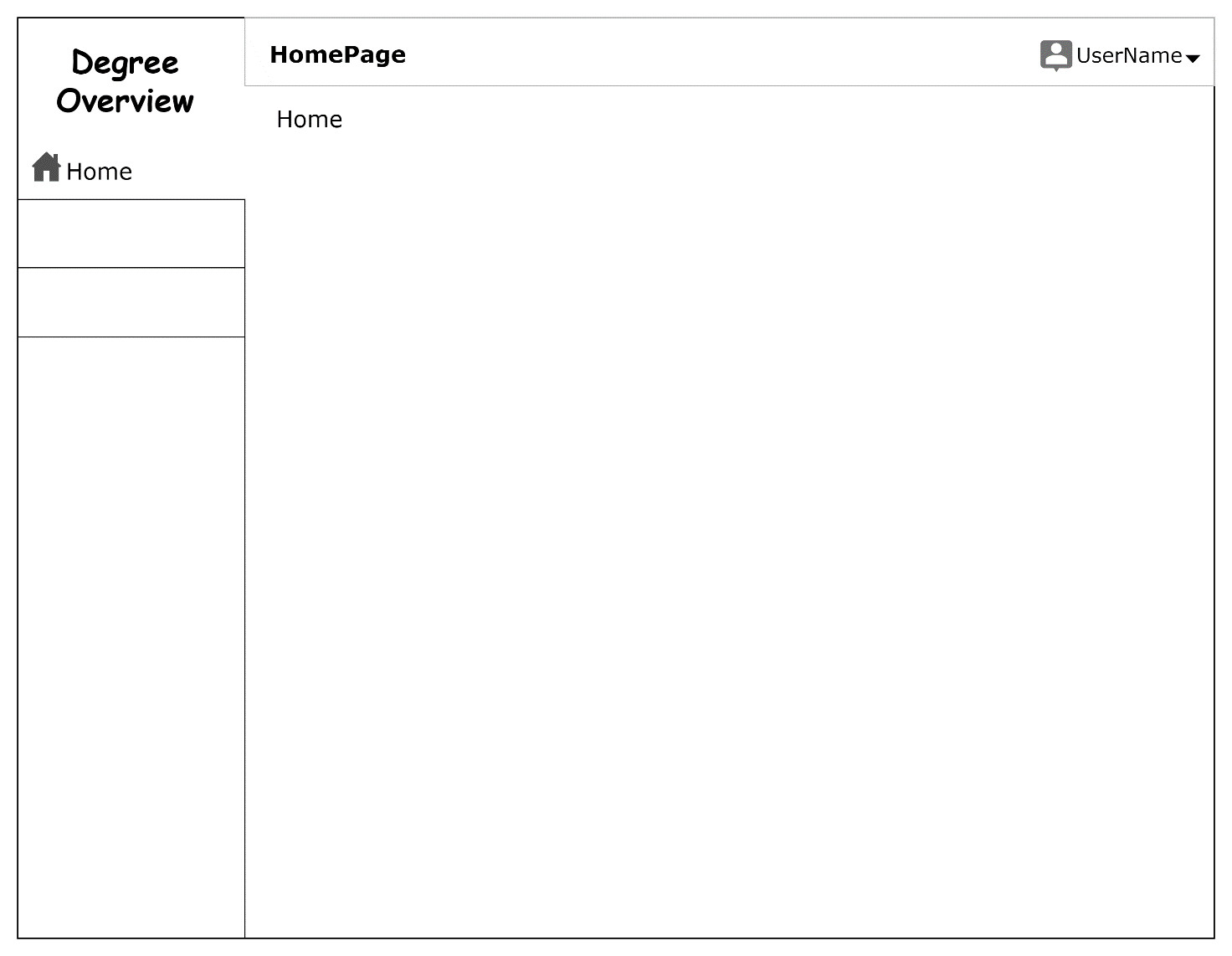
REQ-4: Course designers can upload an excel file to fill in the CILOs and the assessment methods automatically.

REQ-5: Upon the user clicking on the “Import” button, a modal will be shown. Within the modal, the user can choose a file to upload. After selecting a file, the user can click on the “Upload” button. If the file transmission is successful, the modal will be hidden. If the transmission fails, a warning message will be shown. If the “Cancel” button was clicked, the modal will be hidden.

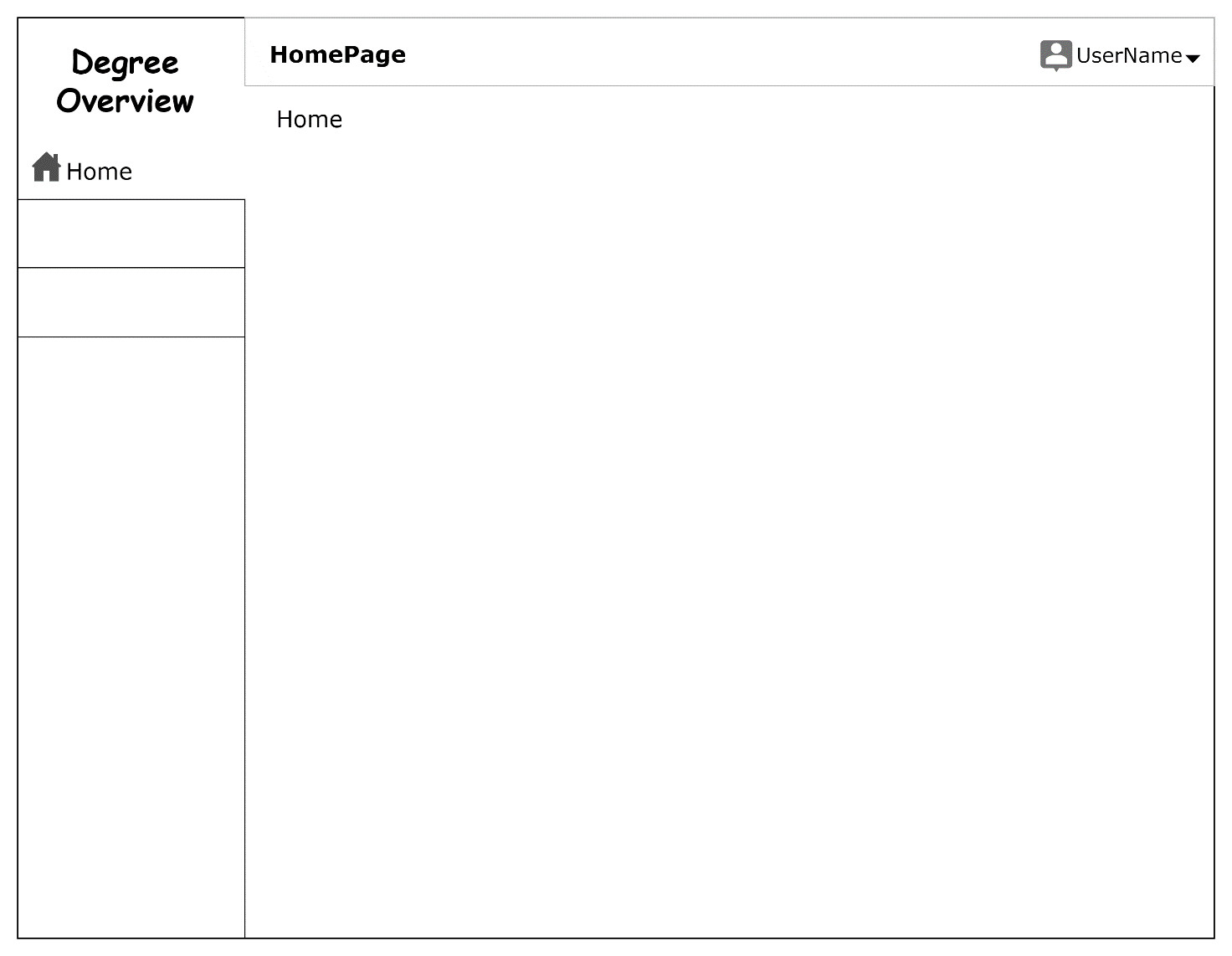
# External Interface Requirements

## User Interfaces

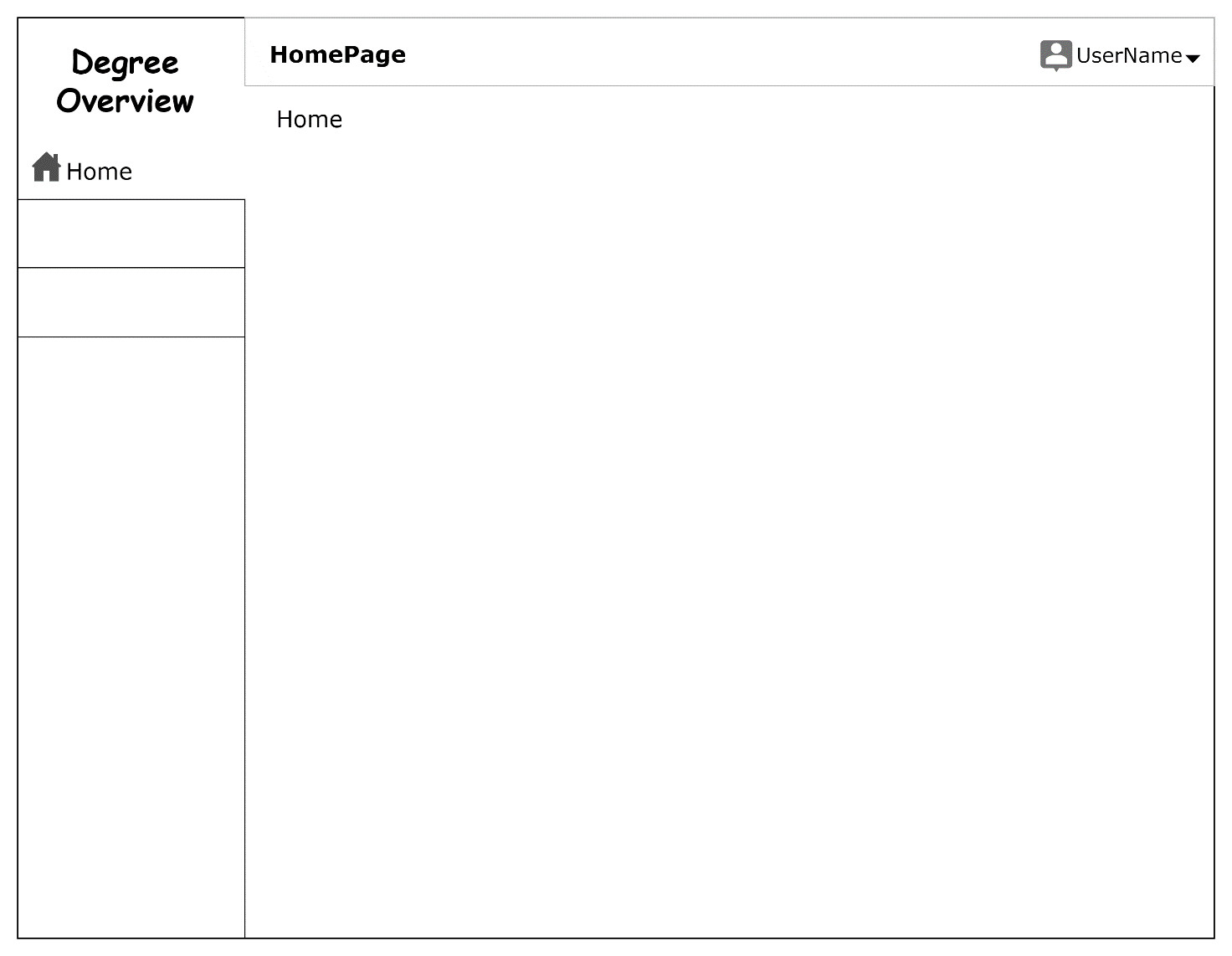
1. Login page

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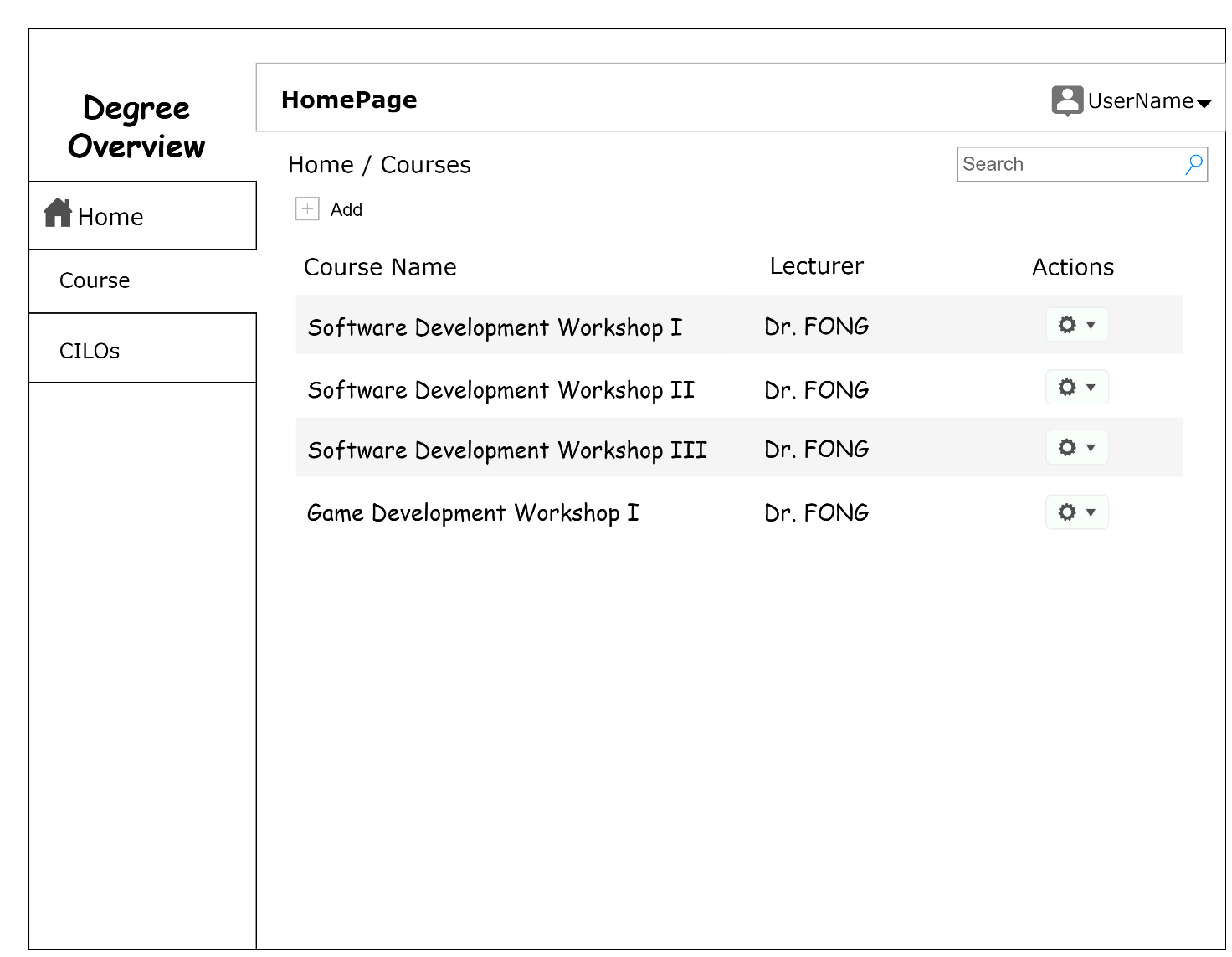
2. Student main page



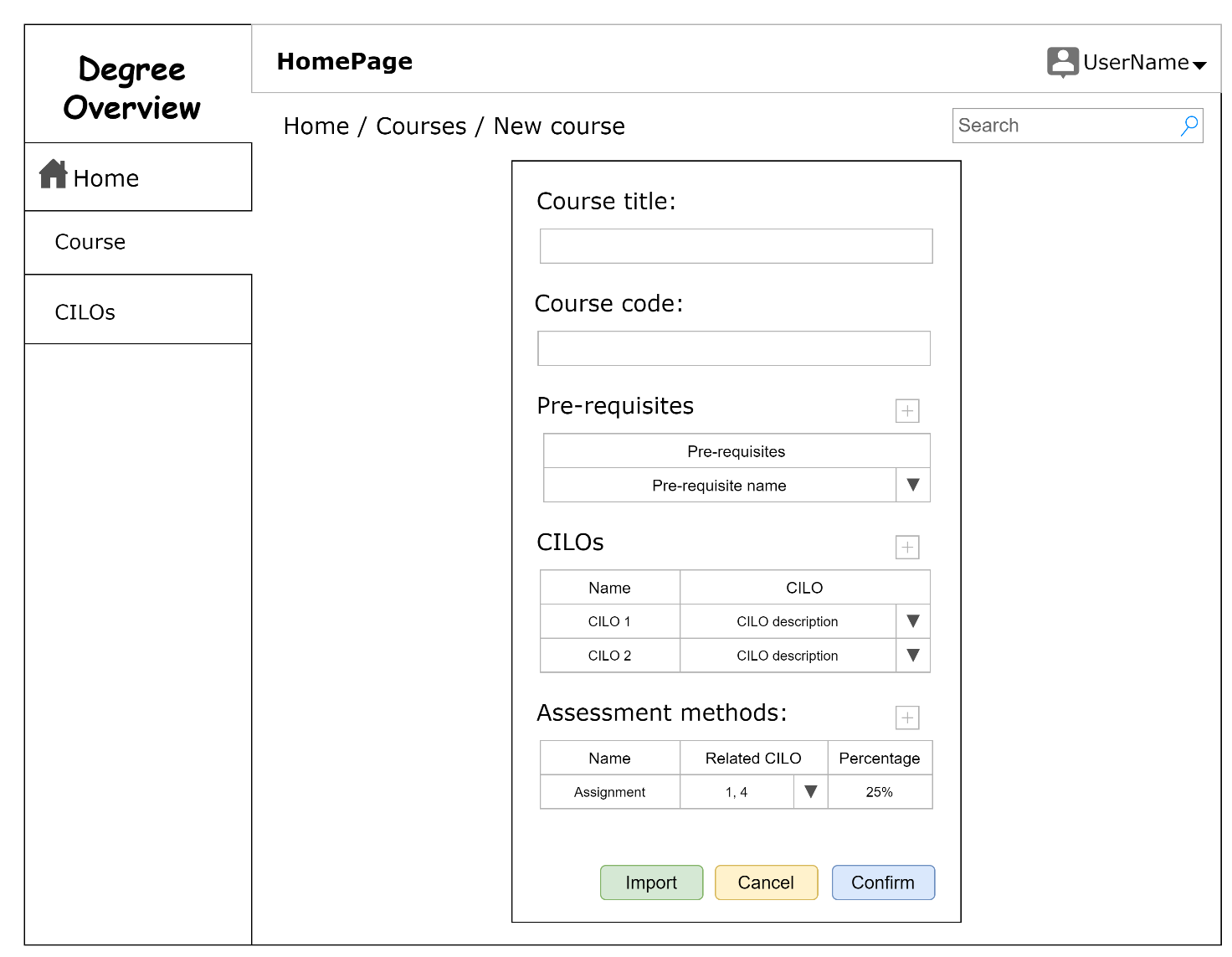
3. Lecturer main page



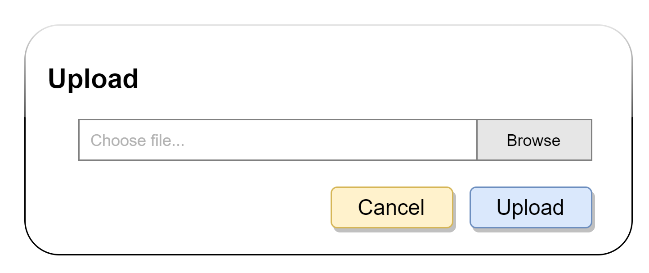
4. Course designer page



5. Course page



6. Creating new course page



7. File upload page

## Hardware Interfaces

The software does not interact directly with any physical devices.

## Software Interfaces

**Database**

* The software requires a relational database to store all the information enclosed within the software. In this case, MySQL is preferred.

**Grade Report System**

* MySQL default socket interface.

**Security Information System**

* MySQL default socket interface.

**Web Server**

* The web server (e.g., Apache or Nginx), will forward traffic from port 80 or 443 to the desired running port of the software, and receive traffic from the application port.

## Communications Interfaces

Users can access the front-end via HTTP or HTTPS.

# Other Nonfunctional Requirements

## Performance Requirements

All operations should take less than one second to complete (ignoring network congestion).

## Safety Requirements

The system does not have any safety requirements.

## Security Requirements

The system should allow the user to configure TLS certificates on their own to secure all network traffic between the server and the users.

The system strictly separates all the interfaces which can be used by the front-end with the actual manipulation of the database to avoid malicious operations from the users.

## Software Quality Attributes

**Easy to use**

* The software must provide a friendly and easy-to-use graphical user interface.

**Scalability**

* The structure of the software must be modular enough that it is easy for any further developments.

**Security**

* The system should prevent unauthorized users or users without a particular privilege to access any information they are not supposed to access.

**Ethical**

* When accessing information of another system (e.g., the *security information database*), the software should only access the information it needs.
* The development team should have no access to the system once it is delivered.
* The development team should receive no statistics and collect no user data from the deployed system.

# Other Requirements

The system has no other requirements.

Appendix A: Glossary

HTTP: Hypertext Transfer Protocol

HTTPS: Hypertext Transfer Protocol Secure

Appendix B: Analysis Models

TO BE ADDED.

Appendix C: Issues List

None.