



Subject Name: Software Engineering -1	First Semester 2022-2023	Level: 3	Lab Exam
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Software Engineering Project

Team Name	TEST
Project Title	Learning Management System
Department	IS

No.	Student Name	Role
1	Mohammed Shaaban Ali	Sequence diagram
2	Hisham Mahmoud Khirallah	Sequence diagram
3	Mahmoud Ezzat	Activity Diagram
4	Noura Abd El Rahman Zakaria	Class Diagram
5	Sahar Gamal Tawfik	Use Case
6	Omnia Mohammed Tawfik	Activity Diagram

1-Problem Statement

The issue or challenges that we may face :

- Technical limitations:** The current E-learning management system is not user-friendly and has limited functionality, making it difficult for students to navigate and access course materials.
- **Lack of student engagement:** Students are not actively participating in the course, leading to low completion rates and poor learning outcomes.
- Time management:** Students are struggling to manage their time effectively, leading to missed deadlines and incomplete assignments.
- Lack of social interactions:** The absence of social interactions between students and instructors is leading to a lack of motivation and engagement.



2.Introduction

2.1 Purpose

Enhance the learning experience, Make education more accessible,
The availability to access the course anytime, anywhere, without needing to
step foot in a classroom,
Create tons engagement and discussion and
reduce learning cost.

2.2 Definition

E-learning is the use of Internet technology for learning outside of classroom.

E learning management system is software solutions that enable automation,
administration and training over the Internet and comprise learning management
systems (LMSs), virtual classrooms, courseware and learning content management
systems .

2.2 Overview

This project centers on the creation of an e-learning platform designed to deliver online
educational services to school students. Upon logging in, users attain comprehensive access
to the platform, unlocking features such as downloading course materials and viewing
educational videos through course subscriptions.

Platform functionality encompasses user interactions like course registration, deletion,
studying video or PDF lessons, taking tests, and participating in online assessments.

Administrators possess the capability to generate reports for assessing student
performance within enrolled courses. The system maintains detailed records of user
progress and course performance, including information about registered courses and
examination dates, facilitating effective course management for users.



Instructors are equipped with the ability to record courses and organize content into sections, with each section containing multiple lessons. Each lesson includes educational videos and PDF documents. Following the completion of each lesson, students are required to take a quiz, assessing their comprehension of the lesson content. This structured approach ensures a systematic and comprehensive presentation of educational materials, integrating multimedia elements with assessments to enrich the learning experience.

Upon completion of tests, the application calculates and displays results to users, concurrently notifying administrators for result updates. The administrator can then update results and proficiency levels and recognize outstanding achievements with awards and rewards.

Comprehensive user-related data is systematically recorded, enabling the generation of graphical reports illustrating average user performance.

To promote user engagement, registered users actively contribute to forums, participate in discussions, view posts from peers, and contact the administrator with any inquiries. An innovative feature includes offering discounts on upcoming courses to individuals who excel in exams, providing an incentive for exceptional performance.

To ensure the security and integrity of the content, measures will be implemented to protect videos from unauthorized downloading or recording. Additionally, safeguards will be in place to prevent users from registering the same account on more than one device. These security features aim to maintain the confidentiality of the educational materials and enhance the overall integrity of the e-learning platform.

2.2 Process Model

1. **Analysis:** In this phase, the requirements are collected which identifies the learning needs of its students and determines the goals and objectives of the training program.
2. **Design:** In this phase, starting to designs the course content and determines the design of interface and database .
3. **Development:** In this phase, starting to develops the course content and creates the learning materials, such as videos, quizzes, and assessments.
4. **Implementation:** In this phase, deploys the LMS and delivers the course content to the learners.
5. **Evaluation:** In this phase , evaluate the effectiveness of the system and make improvement based on the feedback received from the learner

2. Software Requirement Specification

Overall Description (Product perspective)

Defining required different interfaces and constraints . in details >>

Product perspective

Learner interface: This interface provides learners access to view the learning materials, submit quizzes and assignments, and track their own progress.

Administrator interface: This is where a training manager performs the core, back-office tasks to organize their company's learning programs. This is where they create, manage and deliver courses, add learners, analyze feedback, automate notifications.

Hardware interface : LMS compatible with phones ,tablets and desktop.

Software interface : LMS compatible with different browser and operating system.

Memory constraints: LMS able to handle memory requirement for courses and users data.



Product functions

View home page and courses material.
Uploading, downloading, and playing courses.
Take quizzes and show score information.
Managing students and instructors.
Managing accounts, courses, quizzes, feedbacks and videos.

User characteristics

Personalized Flexibility : It's flexible and scalable with different users.

Reliability/Consistency: Ex navigation controls should still be simple and consistent.

Intuitive UI Design: User Interface is a crucial component of the LMS user experience , UI must be easy to master and user-centered.

Easily Accessible: Ex get the information they need or make the necessary content modifications quickly

General Constraints

Safety and security considerations.
Physical/mental considerations.
Parallel operation.

Assumptions and Dependencies

Dependencies:

The availability of the LMS vendor or developer to provide technical support and maintenance.

The completion of the content development and quality assurance before uploading to the LMS.

The feedback and approval of the stakeholders and users before launching the LMS.



Assumptions:

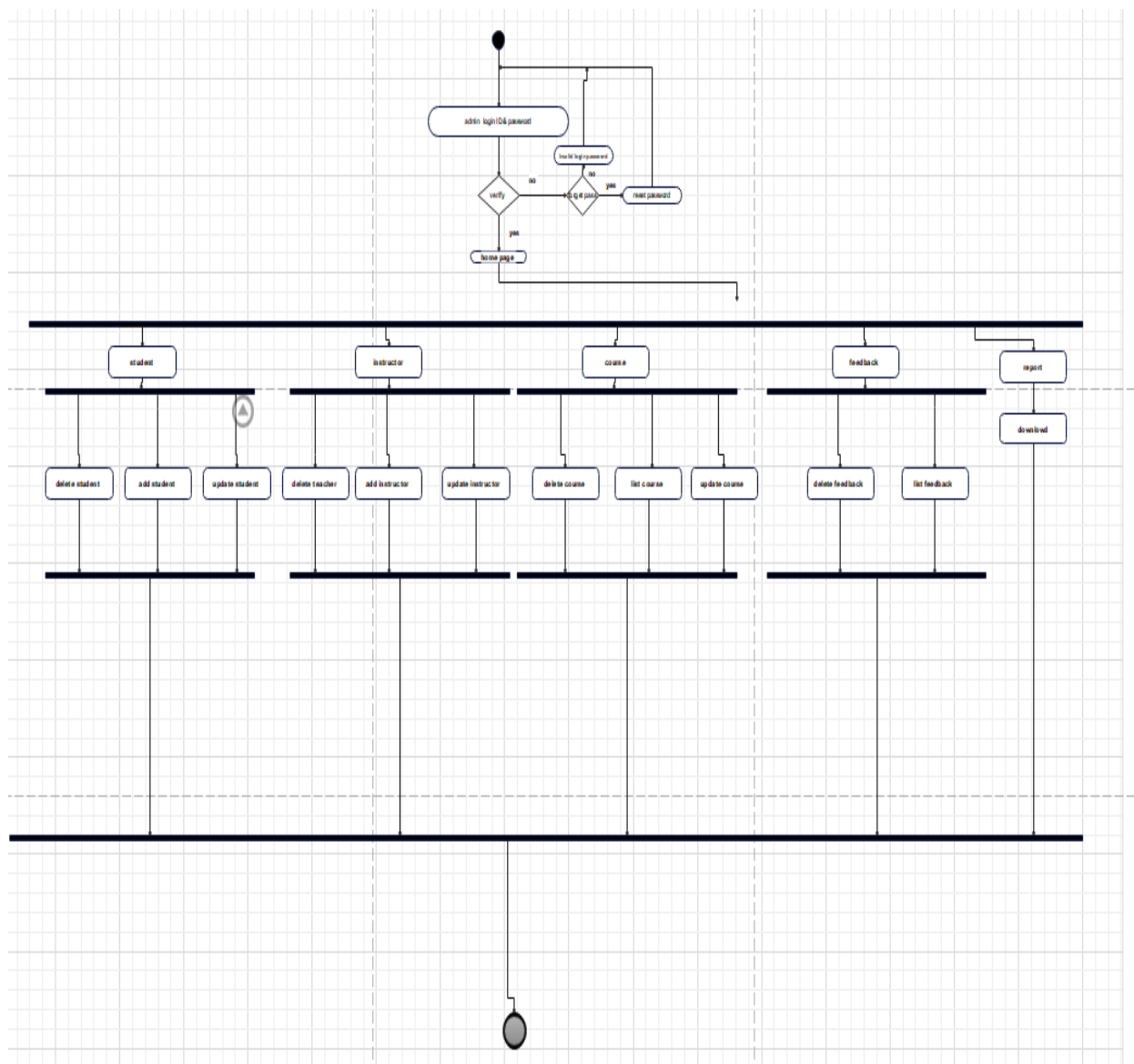
The target learners have adequate internet access and devices to use the LMS.

The LMS will be compatible with the existing systems and standards of the organization.

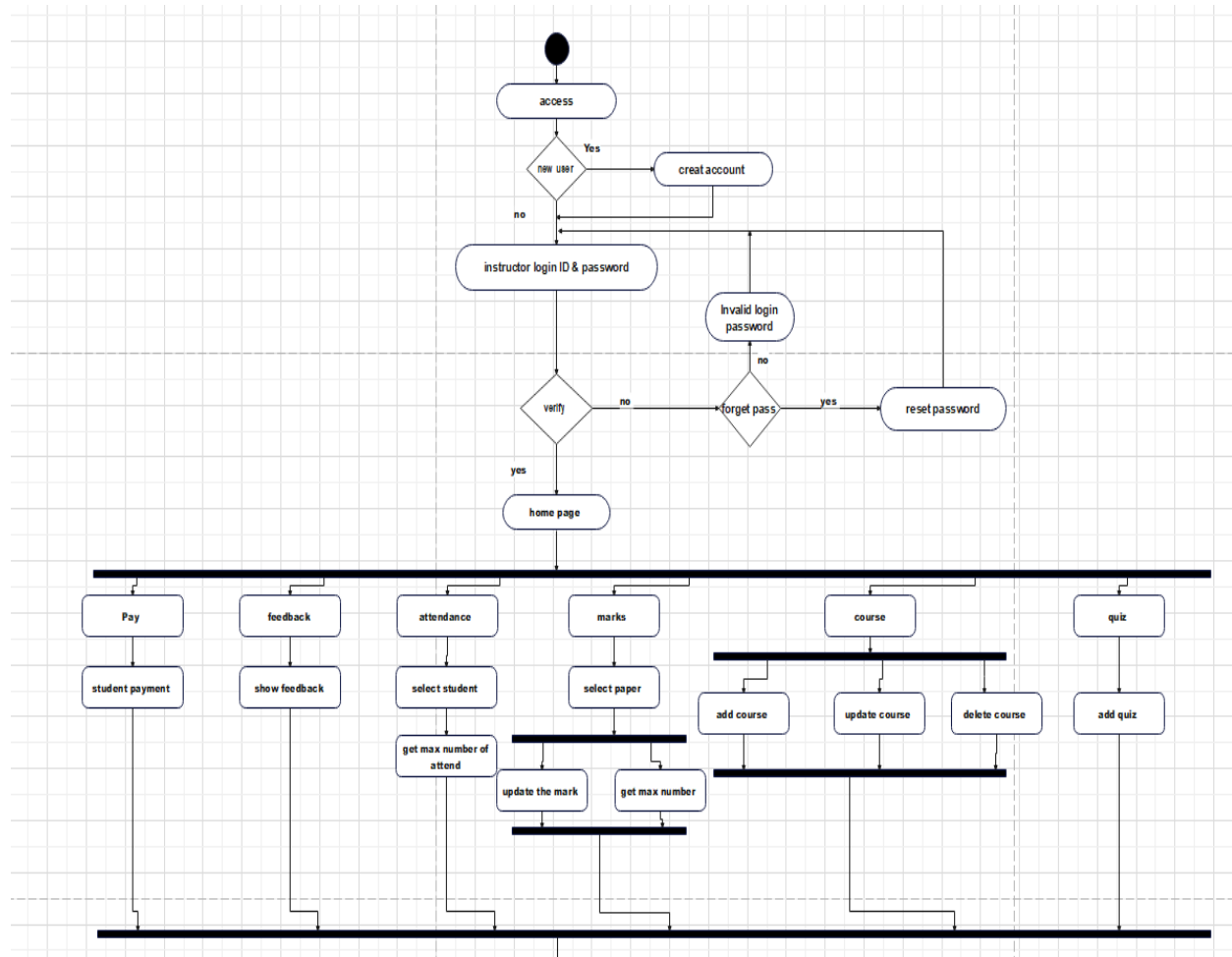
The LMS will have sufficient security and privacy features to protect the data of the users.

4.Activity Diagram

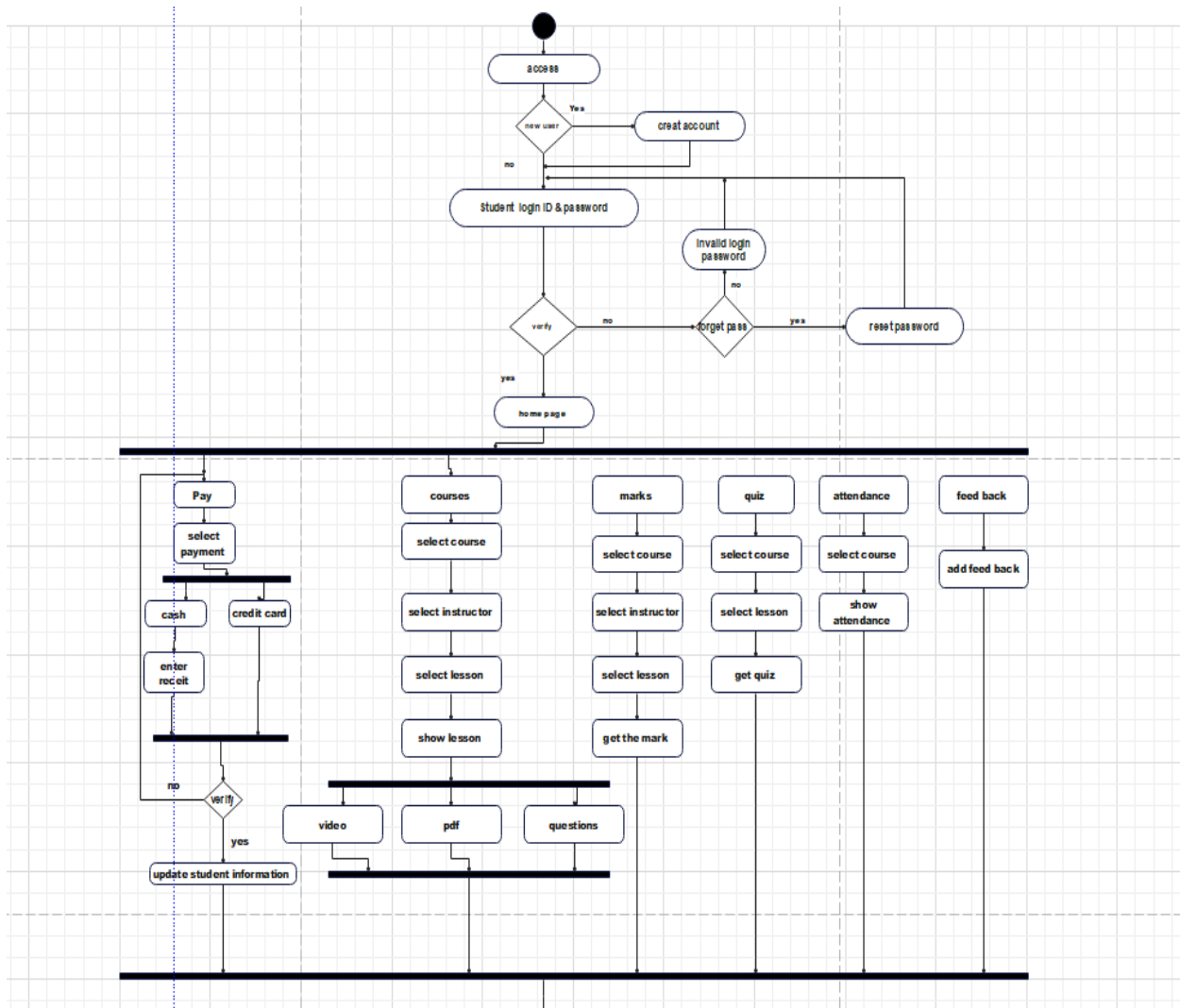
1)Admin



2)Instructor



3)Student

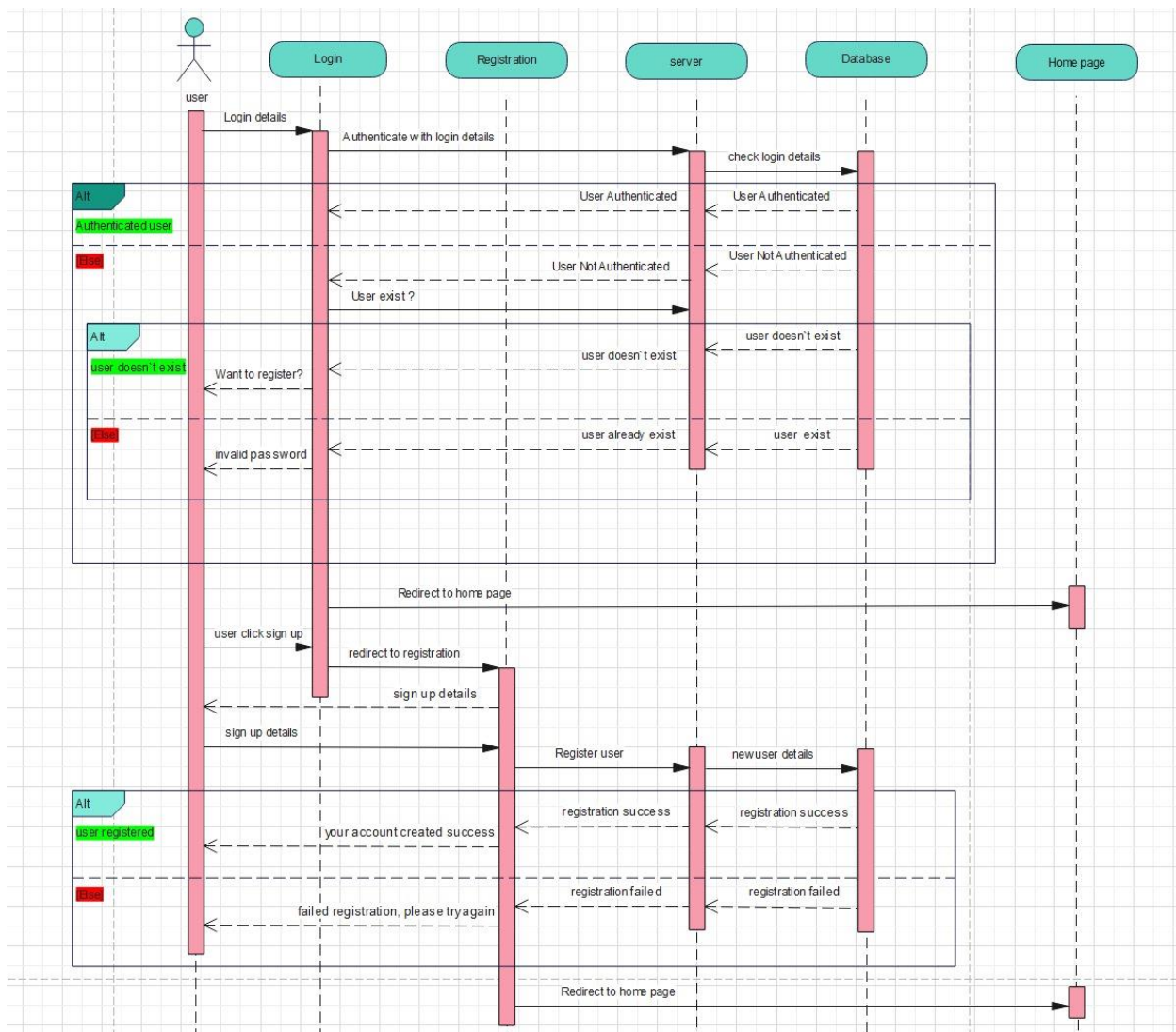


5. Use Case Diagram

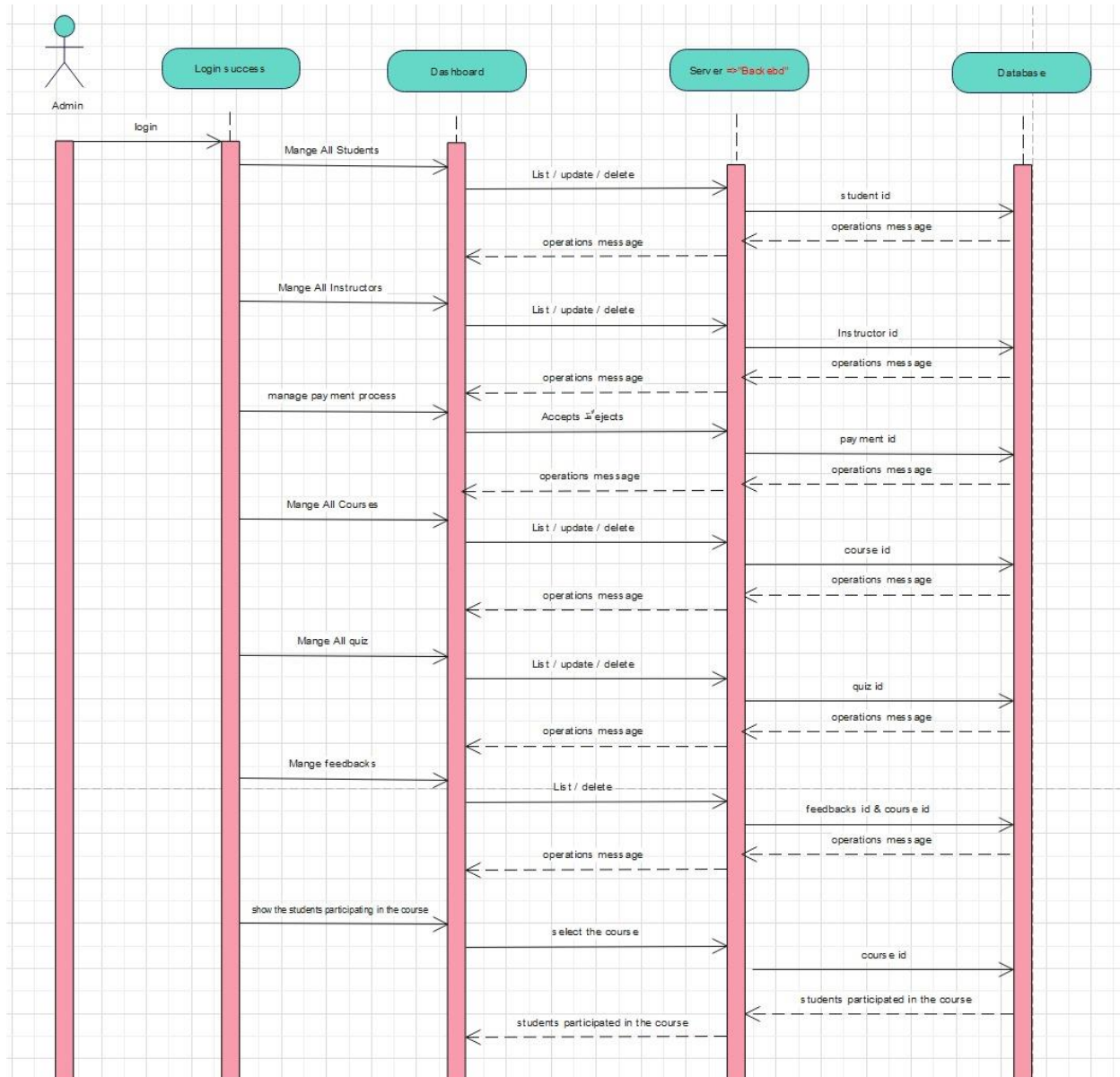


6.Sequence Diagram

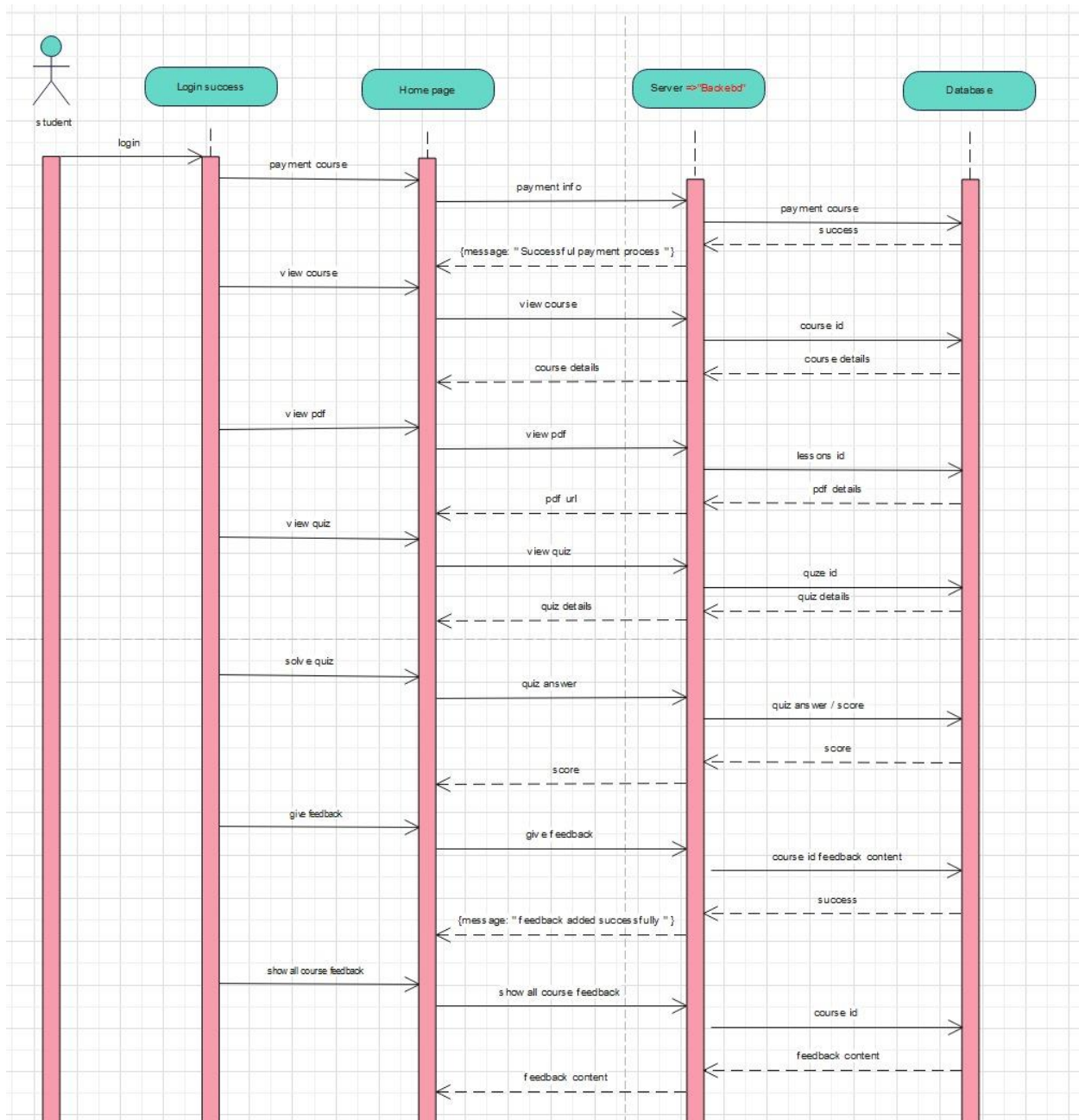
1)Login



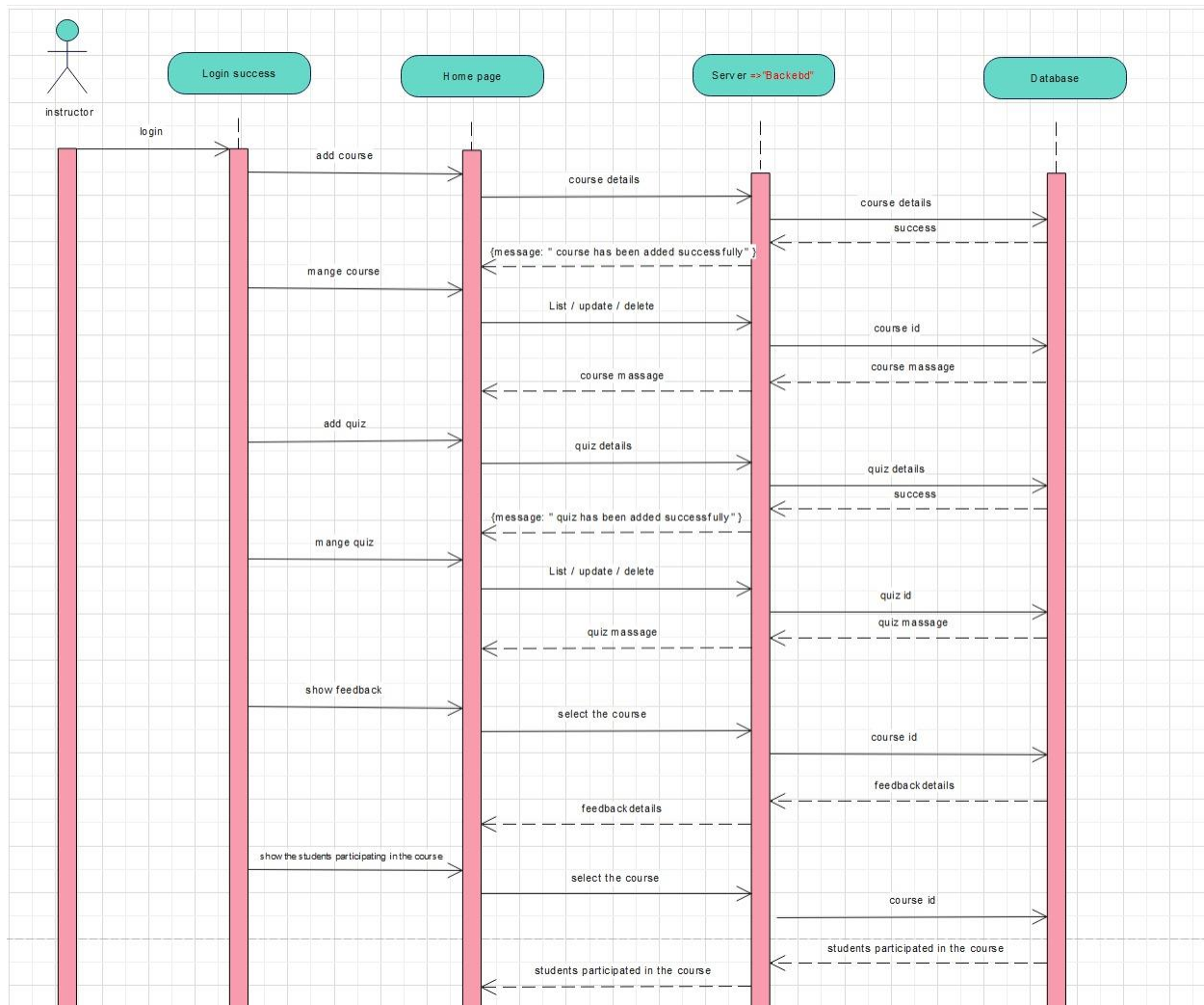
2)Admin



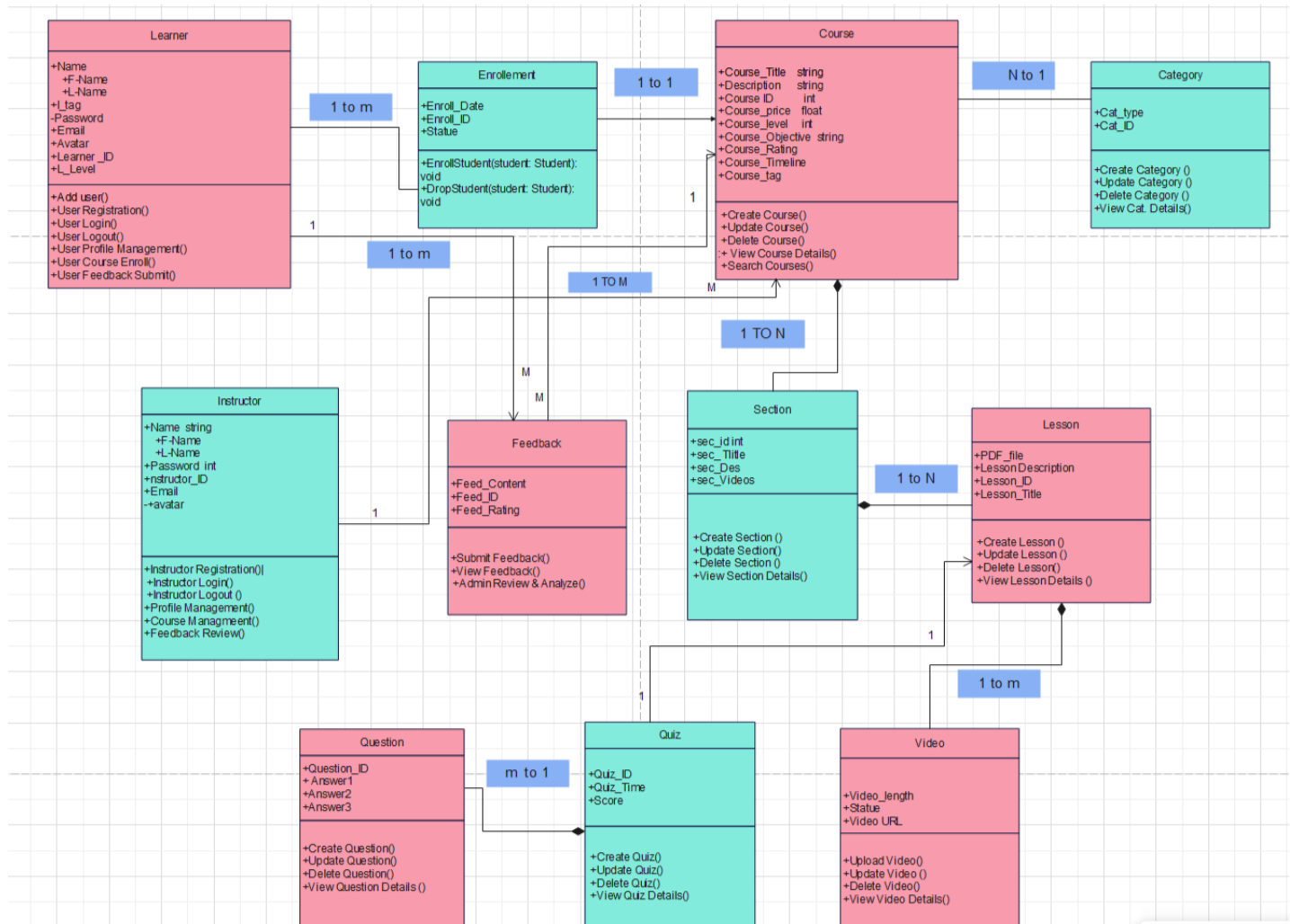
3)Student



4)Instructor



7. Class Diagram





Implementation or GUI

Due to time constraints, I wasn't able to complete the entire project as a web page, but we finished the backend part.

[Backend Link](#)