Final Project Report Submitted to

The Department of Computer Science

Faculty of Computer and Information Technology

Jordan University of Science and Technology

In Partial Fulfillment of the Requirements for the Degree of Bachelors of Science in

Computer Science

By

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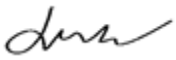
UNDERTAKING

This is to declare that the project entitled " Dalelak " is an original work done by undersigned, in partial fulfillment of the requirements for the degree "Bachelor in Computer Science " at Computer Science Department, College of Computer and Information Technology, Jordan University of Science and Technology. All the analysis, design and system development have been accomplished by the undersigned. Moreover, this project has not been submitted to any other college or university.

Student 1: Mohammad amin al-khatib.

Student 2: Ahmad nawaf ahmad kanaan.



Student 3: Zaid emad mohammad al-jarah.

ABSTRACT

The Dalelak System project, which began in 2020, aims to provide a seamless learning experience under the circumstances we are exposed to due to the Corona pandemic, based on what the present time is witnessing of a great intersection between the educational process and new technology, this led to the emergence of the term e-learning.

E-learning is an integral part of smart education. There are many e-learning systems that are widely available to educational institutions. The challenge is to easily integrate the e-learning system into a smart educational environment based on the requirements of the users. The e-learning services rely on a software system that allows access to all the materials for the educational process and makes them electronically available to all the students on the Internet whenever they need and wherever they are. The design and development of e-learning system is a critical part of the educational process as it reflects on the usage of the system.

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CHAPTER 1: Introduction

1.1 Overview

The number of smartphones, PC, LAPTOP is steadily increasing in recent years, especially as they have become more accessible and useful in everyday life. It is almost impossible to imagine life Without the help of these devices.

The most popular operating systems at the moment are Android, iOS, and Windows. The increase in the speed of data transfer on these operating systems has led to an increase in the use of mobile phones, computers, and laptops, and this development will certainly continue in the future.

Web learning delivers resources that are available from anywhere and may provide an outstanding research system, rich interactivity, and comprehensive support for successful learning and performance evaluation.

In today's age of internet technology, which is becoming more accessible and affordable, In the fields of communication, entertainment, and education, electronic devices, particularly Android and website platforms, play an essential role. It has drastically altered the world's performance, including the learning process.

1.2 Project Motivation

From our knowledge of the defects of the current system so that the provision of learning materials and the necessary explanations for the materials and that the student's absence from one lecture of the course is enough to completely distance him from the general concept of the course, we saw that it is our duty as students of the Department of Computer Science to help in the work of a system that contributes to solving current problems.

1.3 Problem Statement

Covid-19 pandemic flipped education from face-to-face education to online platforms. With all its upsides, downsides come along, as the systems created a barrier that prevents the student-teacher interaction, helping them resolve their doubts and questions.

1.4 Project Aim and Objectives

The main objective of this project is to bring all the required materials to the student. our application will break the barrier created by the current education systems and will strengthen the relationship between the student and the teacher.

1.5 Project Software and Hardware Requirements

1. Hardware requirement:
   - ❖ Smart gates
   - ❖ Smartphone
   - ❖ PC

2. Software Requirement:
   - ❖ VS code
   - ❖ Android studio
   - ❖ Adobe XD
   - ❖ Cloud Server

1.6 Project Limitations

- ❖ The teacher can’t see the previous student's average.
- ❖ the student can't know his classmates.
- ❖ the system can't prevent third-party cheating.

1.7 Project, product, and schedule risks

- ❖ Failure of the owners of school to accept the idea of having new E-learning System.
- ❖ One of the team members faced an emergency to prevent him from continuing his tasks.
- ❖ Change in the requirement in the implantation phase.
- ❖ Lack of experience in the team might lead to exceeding the time limit.
- ❖ Cost risk:
  Usually, increasing of project costs due to poor cost estimating accuracy.
- ❖ Schedule risk:
  Unrealistic scheduling could be an example as it may lead into skipping some report sections or phases of the project to meet the deadline.
- ❖ External risk:
  Causing to the epidemiological situation we may be limited.

1.8 Project Schedule

Project Initiation	**10 days**	**Sat 2/20/21**	**Thu 3/4/21**
Overview & Scope of wo	4 days	Sat 2/20/21	Wed 2/24/21
Objective & expected output	6 days	Thu 2/25/21	Thu 3/4/21
Project planning	**14 days**	**Fri 3/5/21**	**Mon 3/22/21**
Develop Mobile application	6 days	Fri 3/5/21	Fri 3/12/21
Project Scheduling	4 days	Sat 3/13/21	Wed 3/17/21
Risk Analysis	3 days	Thu 3/18/21	Sat 3/20/21
Requirments Engineering	**23 days**	**Sat 3/20/21**	**Fri 4/16/21**
Define project requirement	7 days	Sat 3/20/21	Sat 3/27/21
Develop use cases	8 days	Sun 3/28/21	Tue 4/6/21
writing use cases description	8 days	Wed 4/7/21	Fri 4/16/21

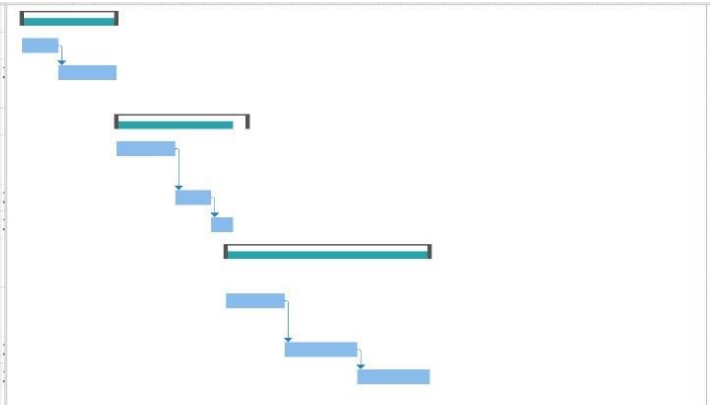

Figure 1-1: Project schedule (Gantt chart)

CHAPTER 2: REVIEW OF RELATED LITERATURE

2.1 Introduction

Since there are many e-learning websites, we decided to study them and develop a website dedicated to facilitating the process of education in Jordan by implementing many of its pros and avoiding its cons.

2.2 Existing Systems

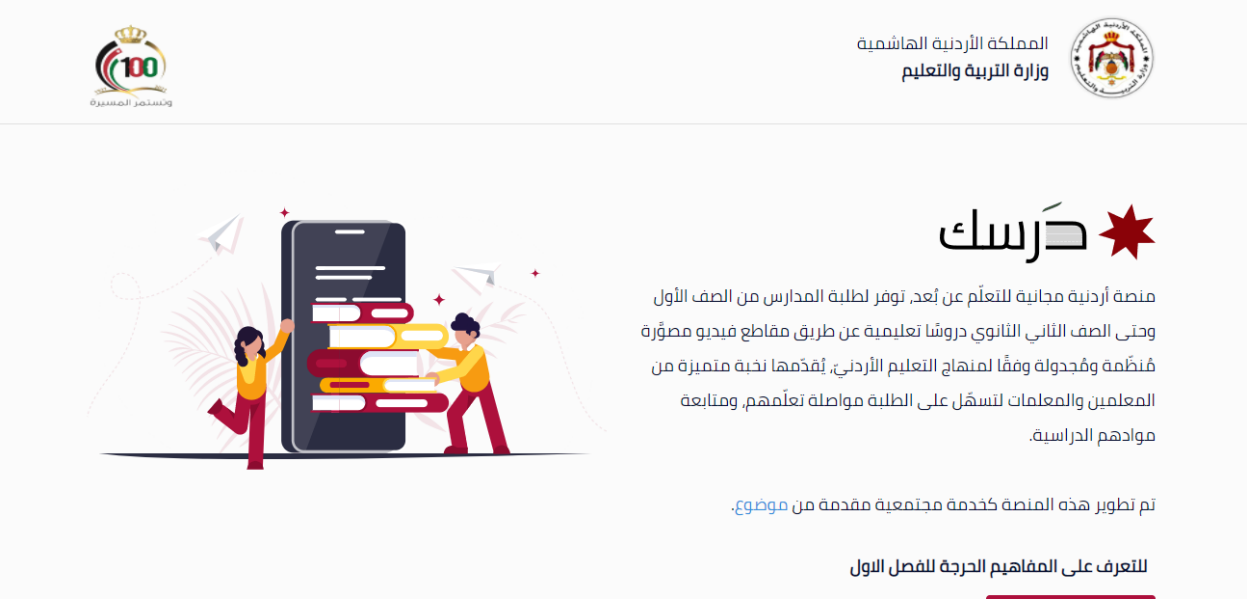

Figure 2-1: Existing systems (darsk.gov.jo)

Figure 2-2: Existing systems (Login)

2.3 Overall Problem of Existing Systems

There is no direct or indirect communication between the teacher and the student, and the teacher cannot communicate with the student except through social networking sites or the phone number, and the student cannot make any question or comment on the subject.

2.4 Overall Solution Approach

We aim to solve these problems through several methods, such as the availability of messages, online meeting, and chat box.

CHAPTER 3 : ANALYSIS AND DESIGN

3.1 Stakeholders

Our intended platform stakeholders will consist of administrators responsible for managing data on the website, users that will interact with the system's functions and features, developers who will develop the system and update it when necessary, and anyone who affects the system or effected by the system

3.2 Use Case

3.2.1 Use Case Diagram

Figure 3-1: use case diagram

3.2.2 Use Case Description:

1.Login:

Login	
Actor(s)	User, Admin.
Precondition	System is idle, displaying login page.
Normal flow	1. The user enters email and password. 2. The System shall verify the email and password. 3. The system shall open the main screen.
Postcondition	The user has been authenticated and logged in successfully.
Alternative(s)	1. If the user enters wrong email or password, the system shall ask the user to enter it again. 2. If the user enters wrong email/password more than three times, the system shall ask the user to wait 5 minutes to enter it again.

2.Communication:

Communication	
Actor(s)	User, Admin.
Precondition	The user is successfully logged in. (1-Login).
Normal flow	1. Select the type of communication. 2. choose the person to communicate with. 3. Start the communication process.
Postcondition	N/A.
Alternative(s)	N/A.

3.Saved video:

Saved	
Actor(s)	Student.
Precondition	1. The user is successfully logged in. (1-Login).
Normal flow	1. Select the saved video button .
Postcondition	The video was well added to the save list.
Alternative(s)	N/A.

4. open library:

Open library	
Actor(s)	Student.
Precondition	The user is successfully logged in. (1-Login).
Normal flow	Select library button.
Postcondition	N/A.
Alternative(s)	N/A.

5. Add video:

Add video	
Actor(s)	Teacher.
Precondition	The user is successfully logged in. (1-Login).
Normal flow	1. Select add video button. 2. Select class and suction. 3. Upload video.
Postcondition	The video was added to the section video list.
Alternative(s)	N/A.

6. add quiz:

Add quiz	
Actor(s)	Teacher.
Precondition	1. The user is successfully logged in. (1-Login). 2. The quiz well shown on the calendar.
Normal flow	1. Select add quiz button. 2. Select class and suction. 3. Upload quiz.
Postcondition	1. The quiz is submission. 2. The mark is well shown on the grade button.
Alternative(s)	N/A.

7. manage user:

Manage user	
Actor(s)	Admin.
Precondition	The user is successfully logged in. (1-Login).
Normal flow	1. Select manage user button. 2. choose the type of operation (add, delate, update).
Postcondition	the data well update after executing the operation.
Alternative(s)	N/A.

8. manage section:

Manage section	
Actor(s)	Admin.
Precondition	The user is successfully logged in. (1-Login).
Normal flow	1. Select manage section button. 2. choose the type of operation (add, delate, update).
Postcondition	the data well update after executing the operation.
Alternative(s)	N/A.

3.3 Uml sequence Diagram

1. Login diagrams:

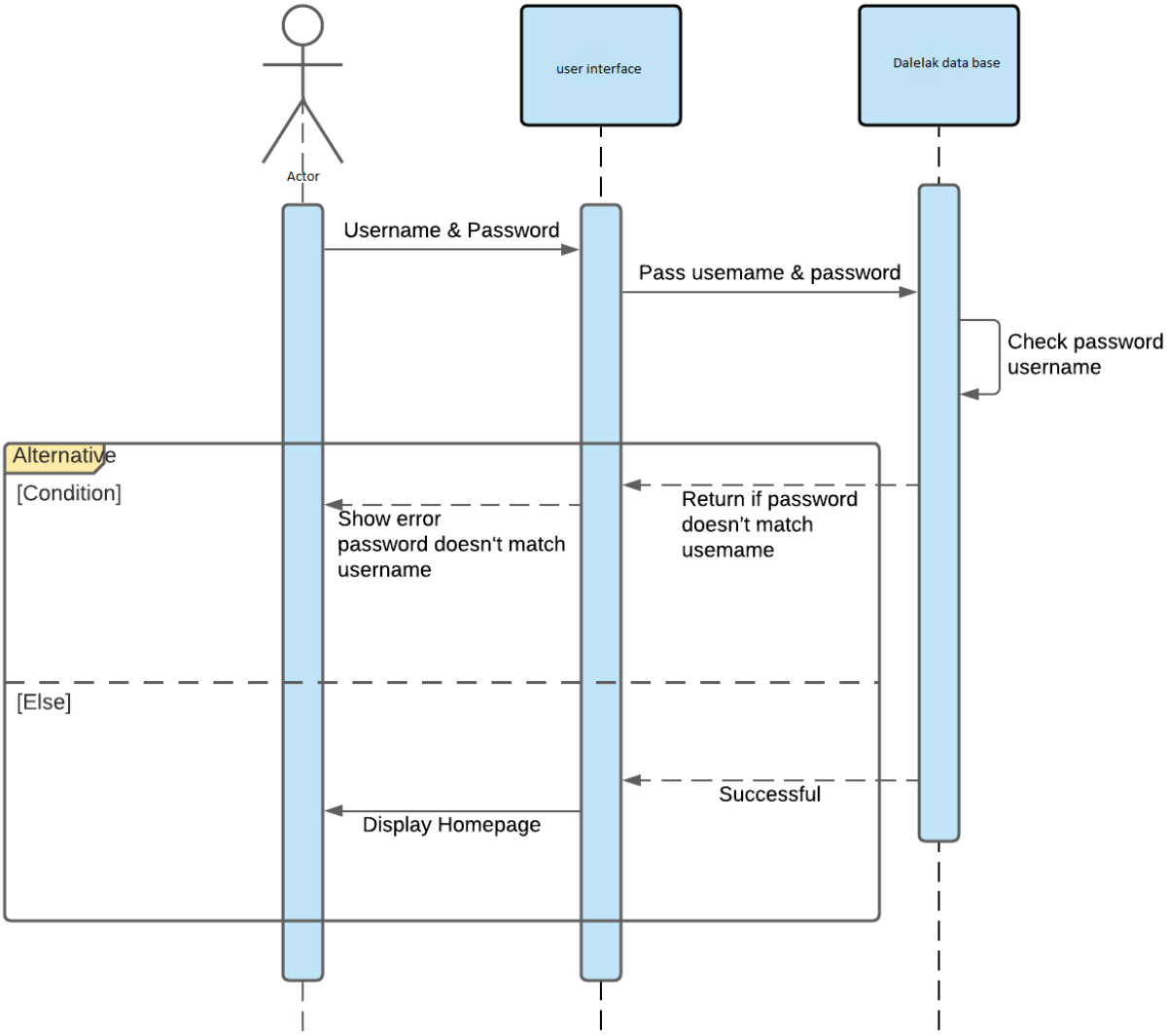

Figure 3-2: Login sequence diagram

2.Saved:

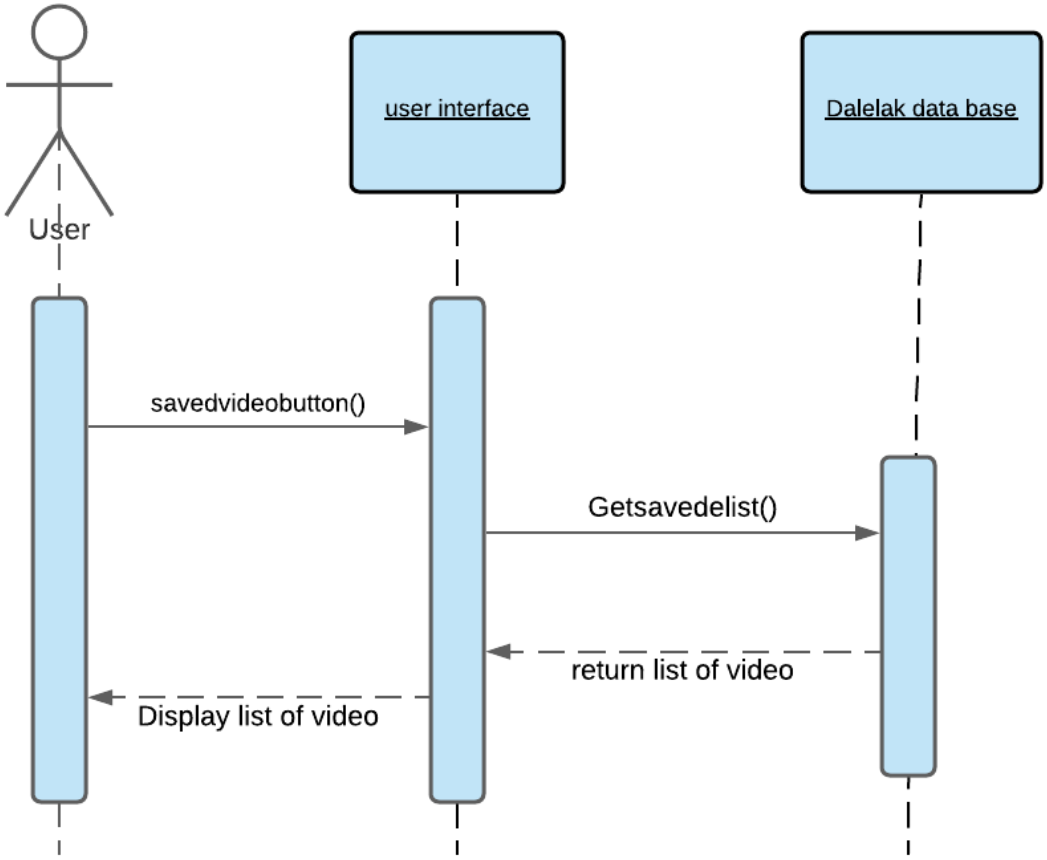

Figure 3-3: saved sequence diagram

3. open library:

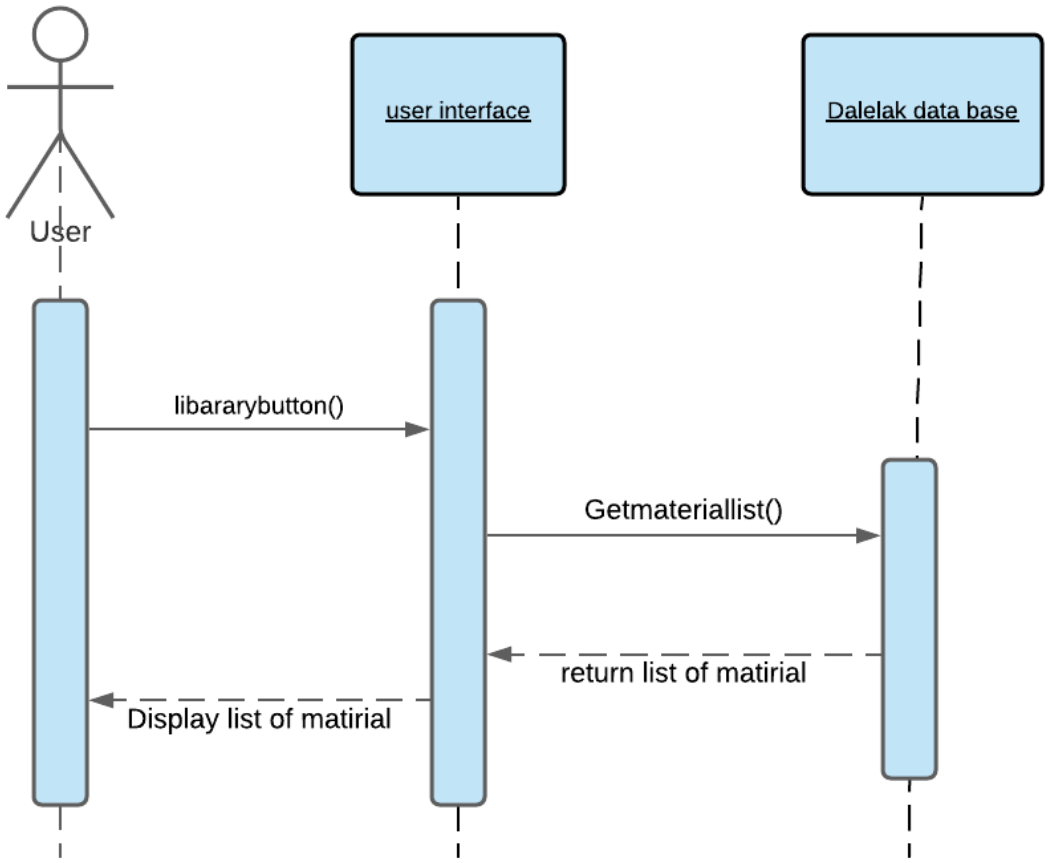

Figure 3-4: open library sequence diagram

4.Add video:

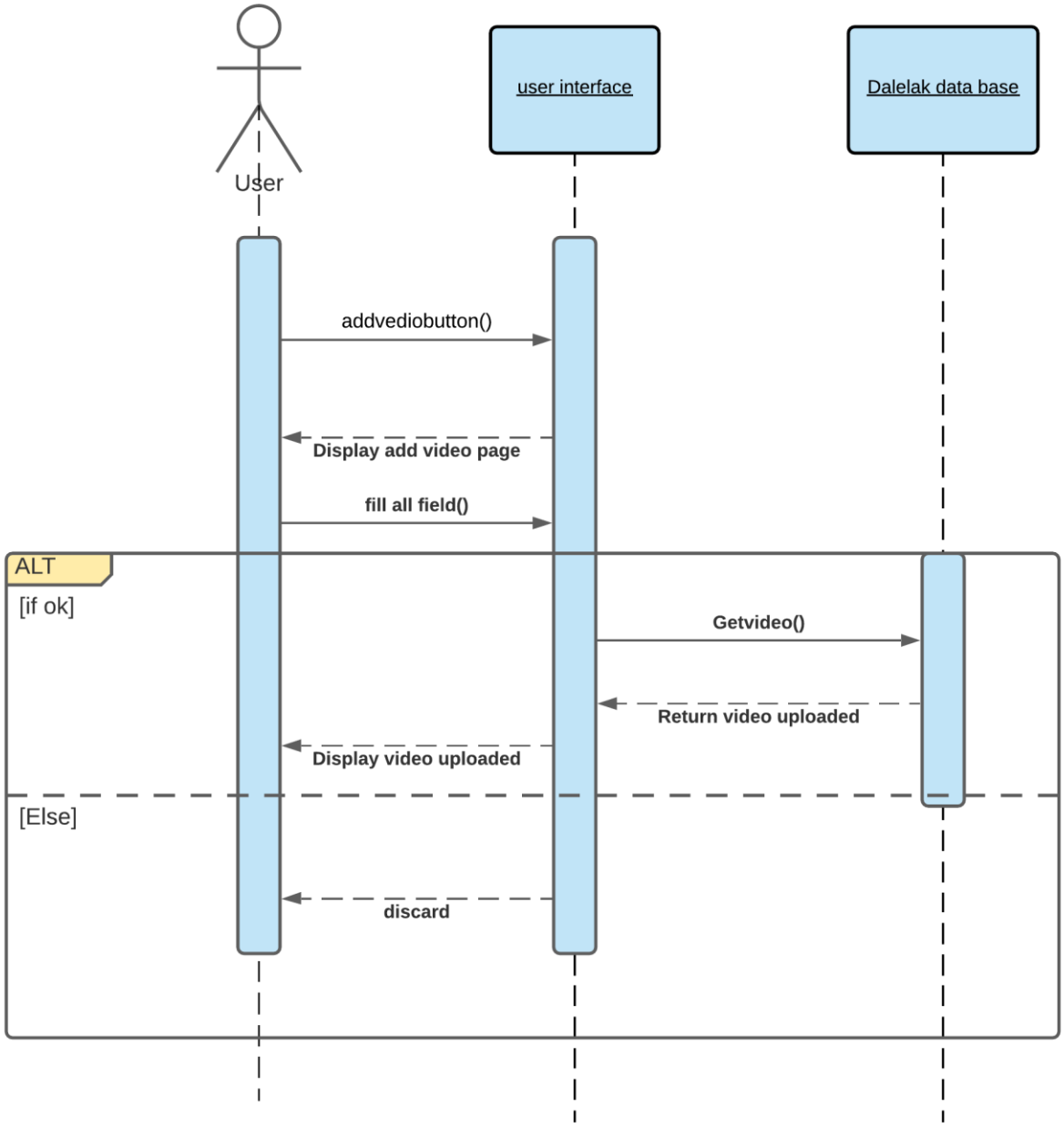

Figure 3-5: Add video sequence diagram

5.Add quiz:

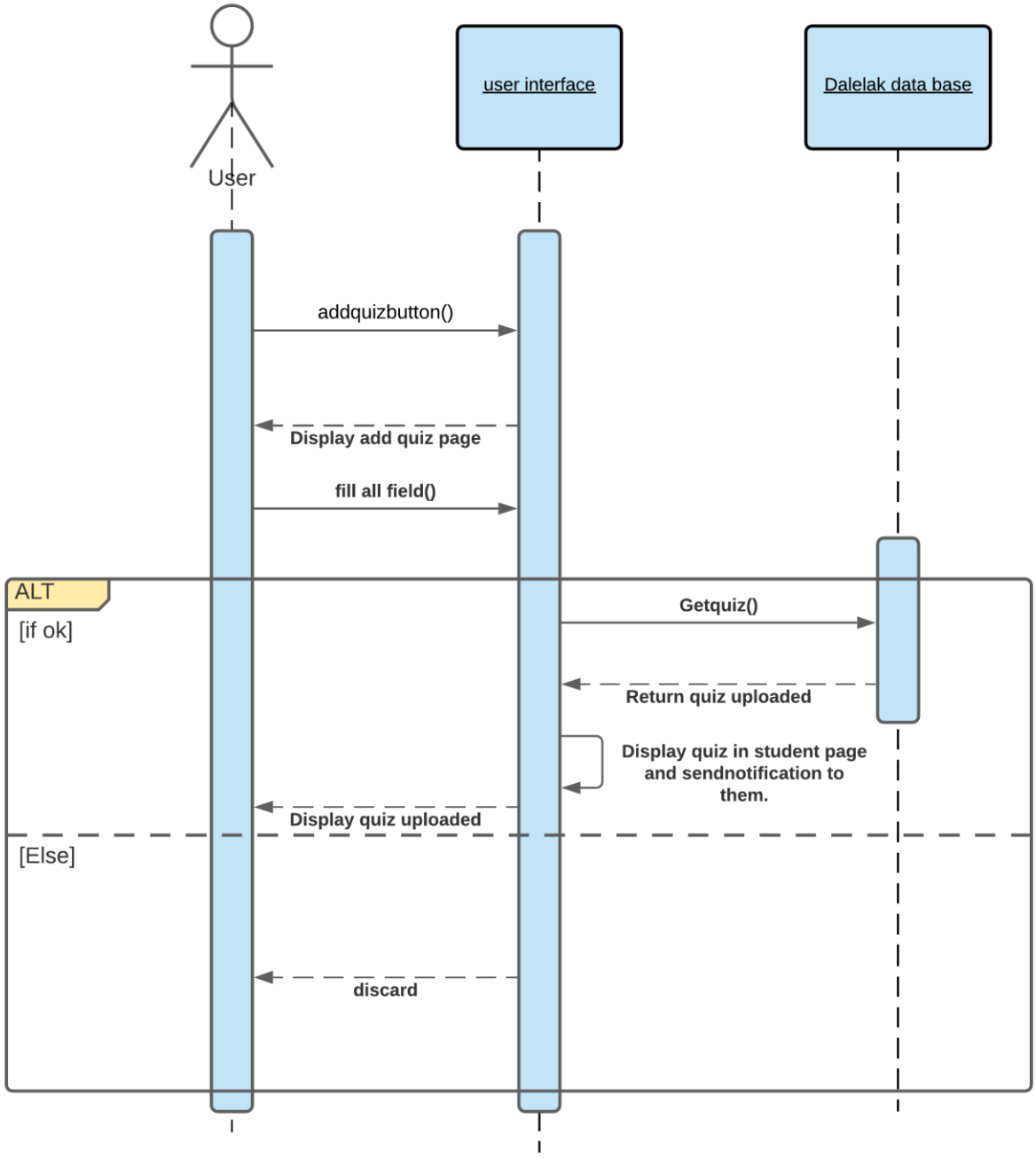

Figure 3-6: Add quiz sequence diagram

6.Add user:

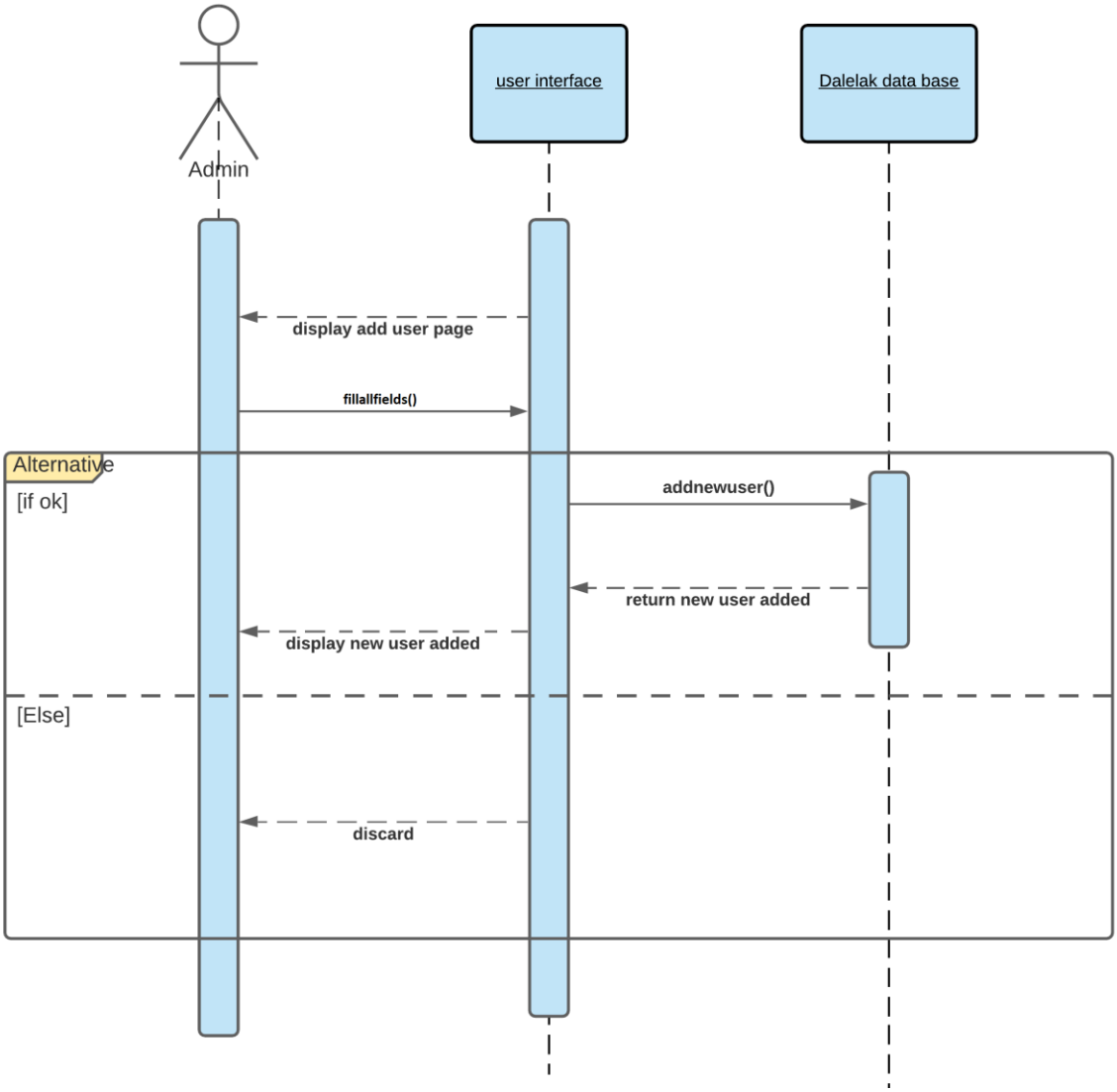

Figure 3-7: Add user sequence diagram

7.Update user:

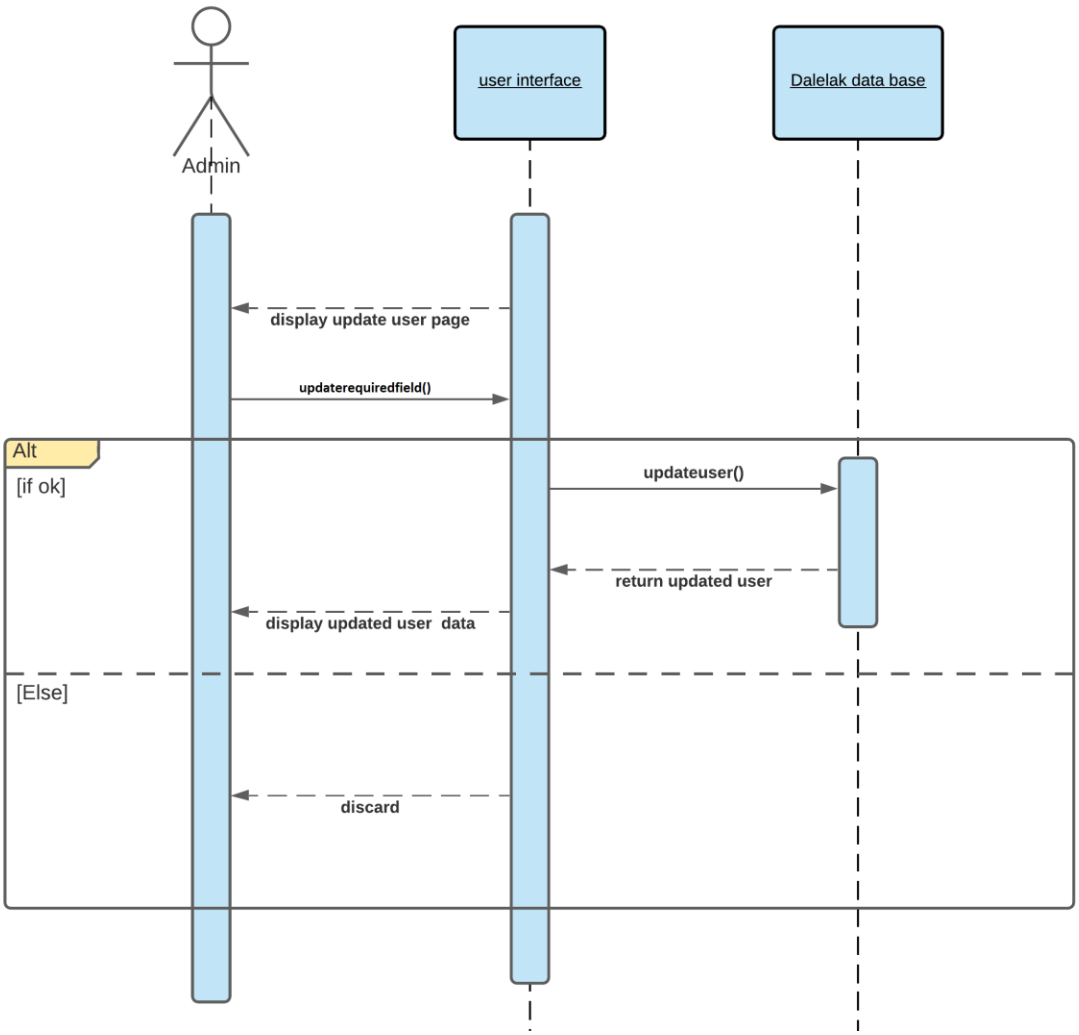

Figure 3-8: Update user sequence diagram

8.Delete user:

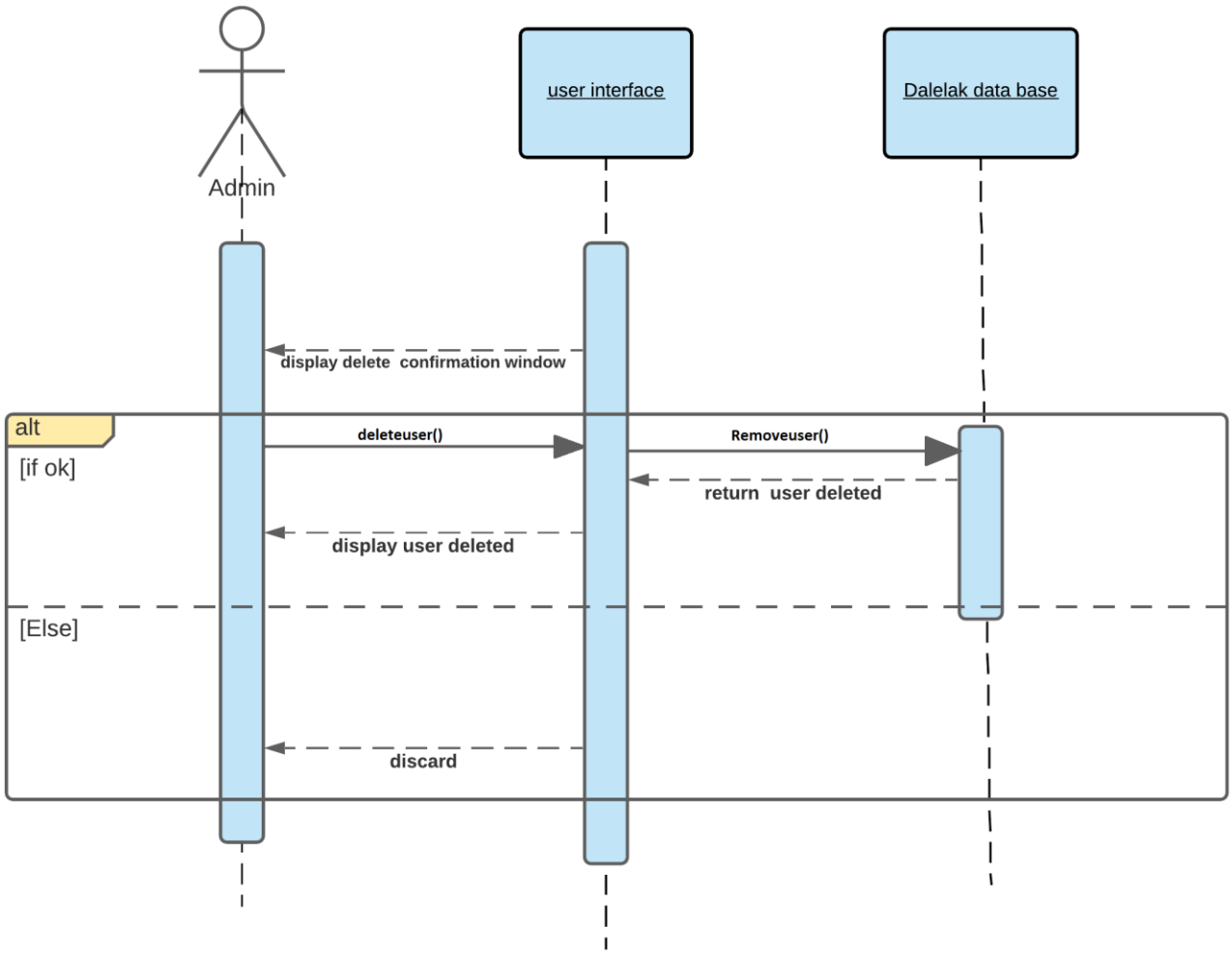

Figure 3-9: Delete user sequence diagram

9.Manage user:

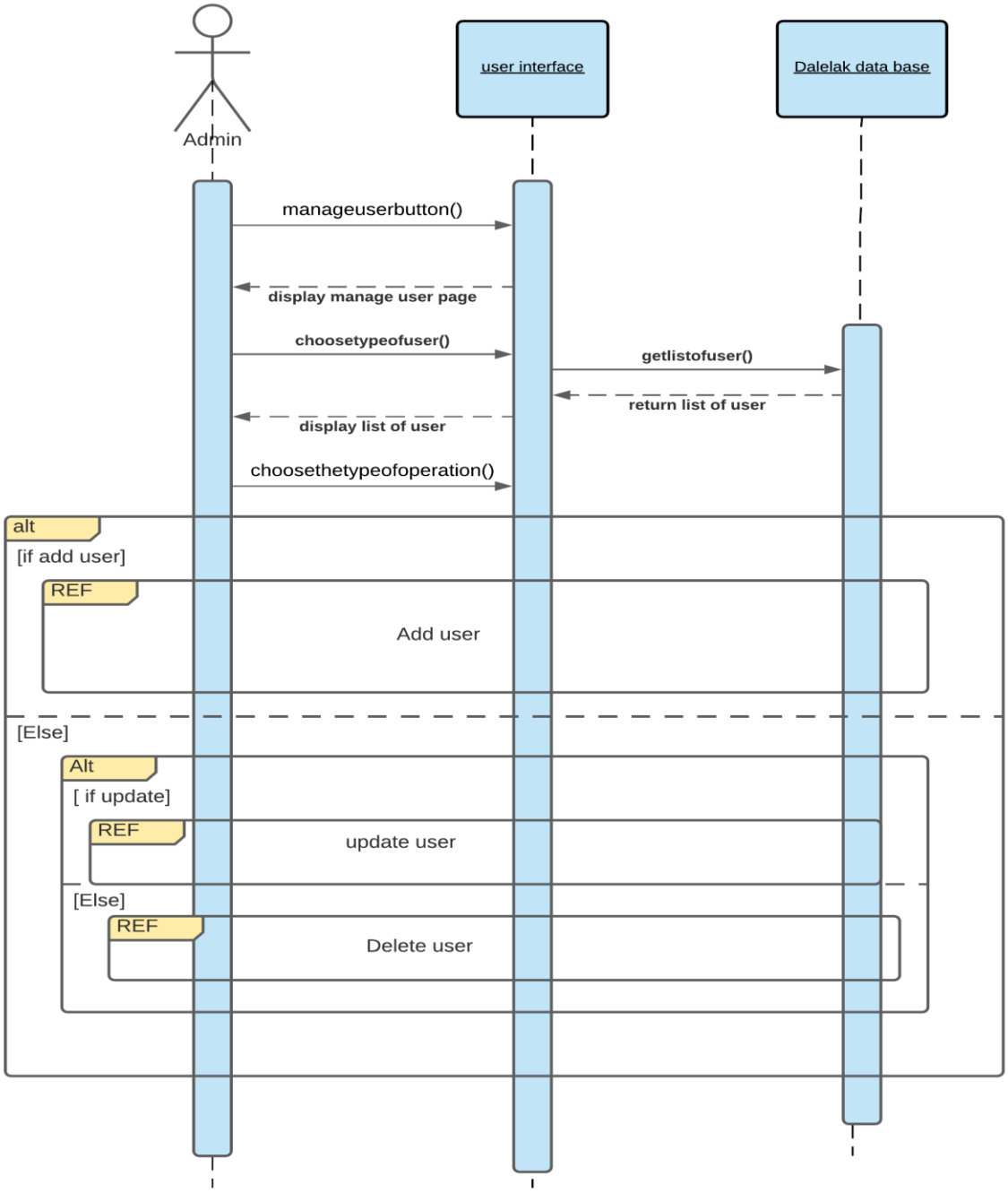

Figure 3-10: manage user sequence diagram

10.Add section:

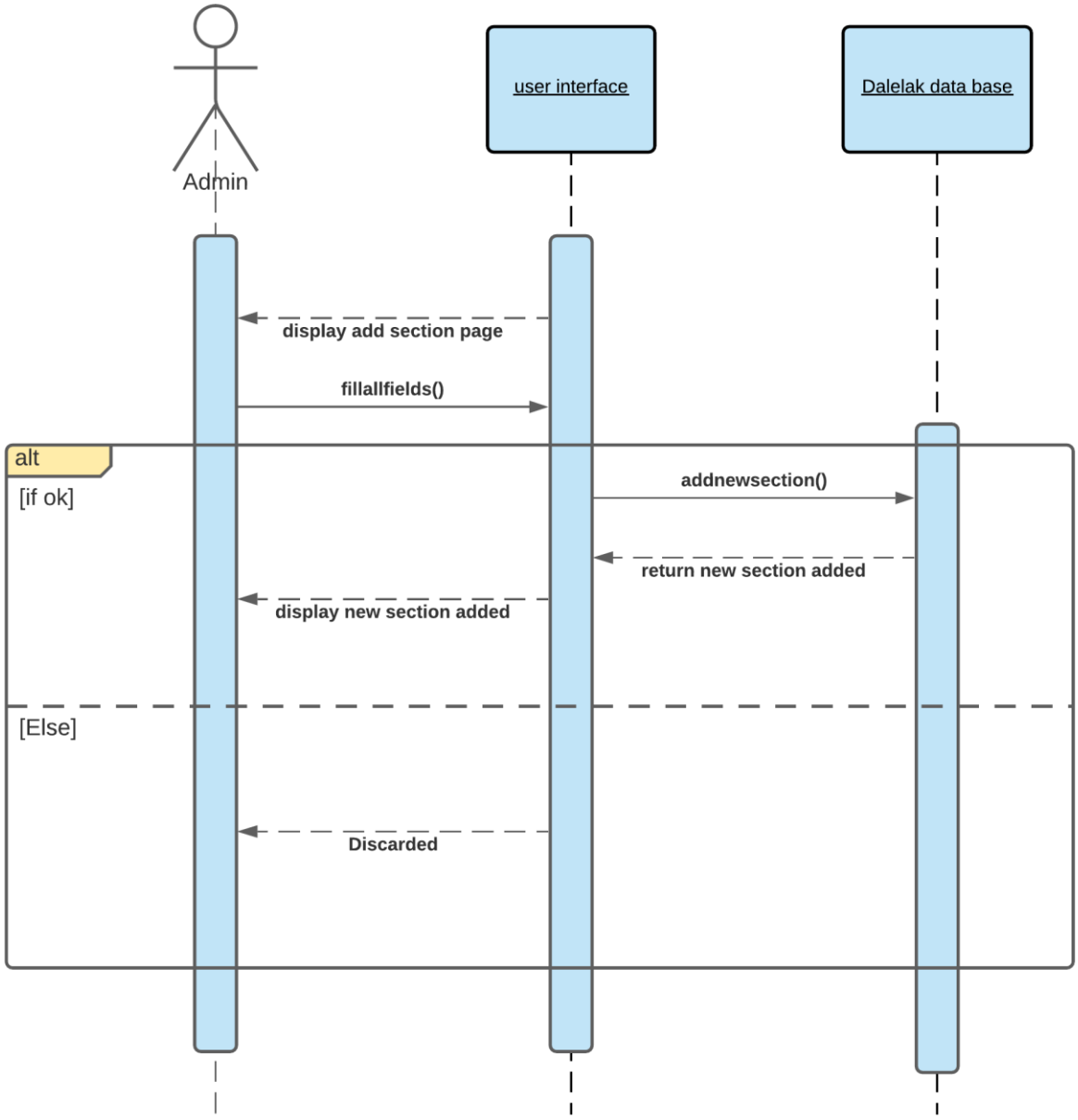

Figure 3-11: add section sequence diagram

11.update section:

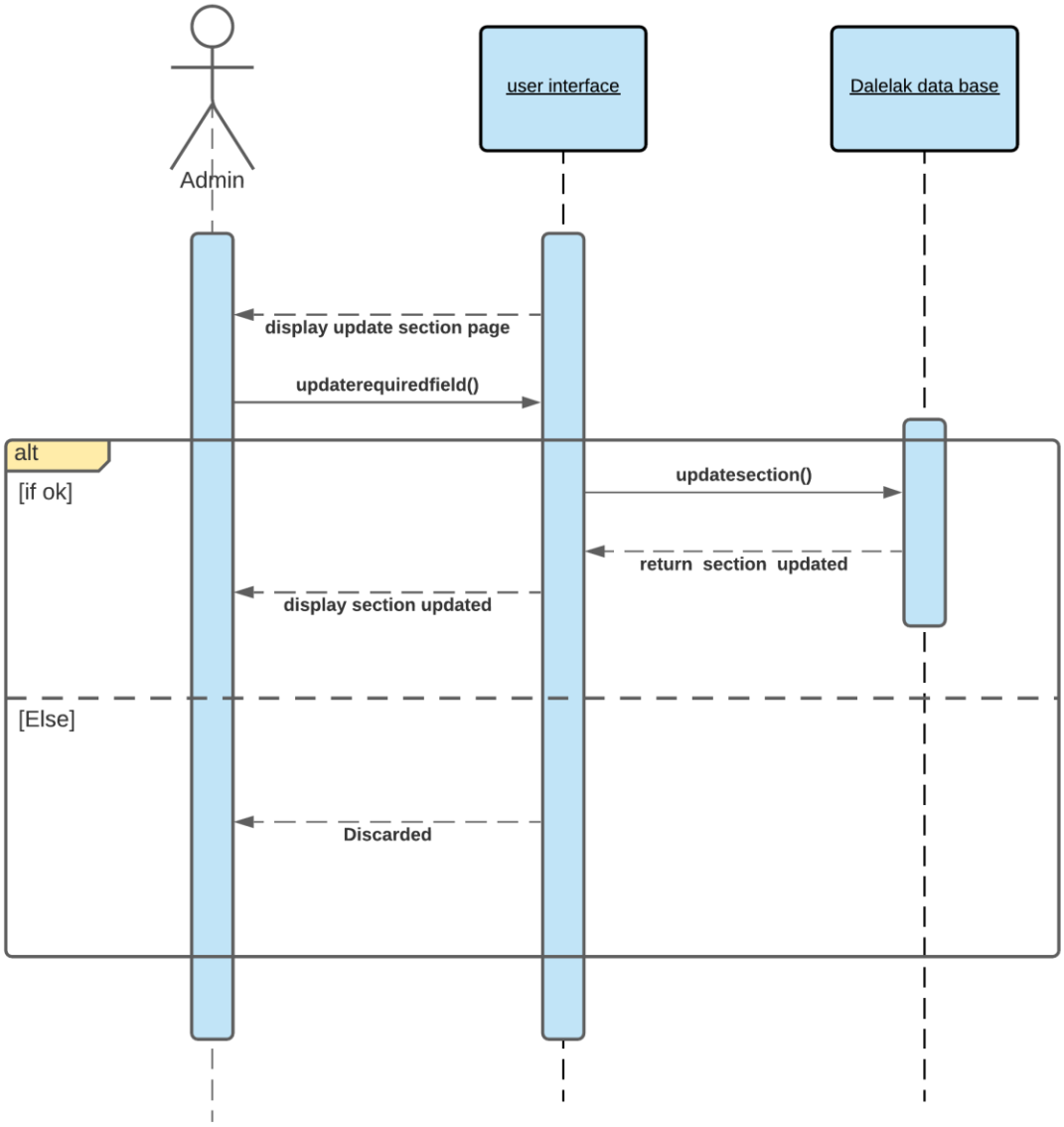

Figure 3-12: update section sequence diagram

12.delete suction:

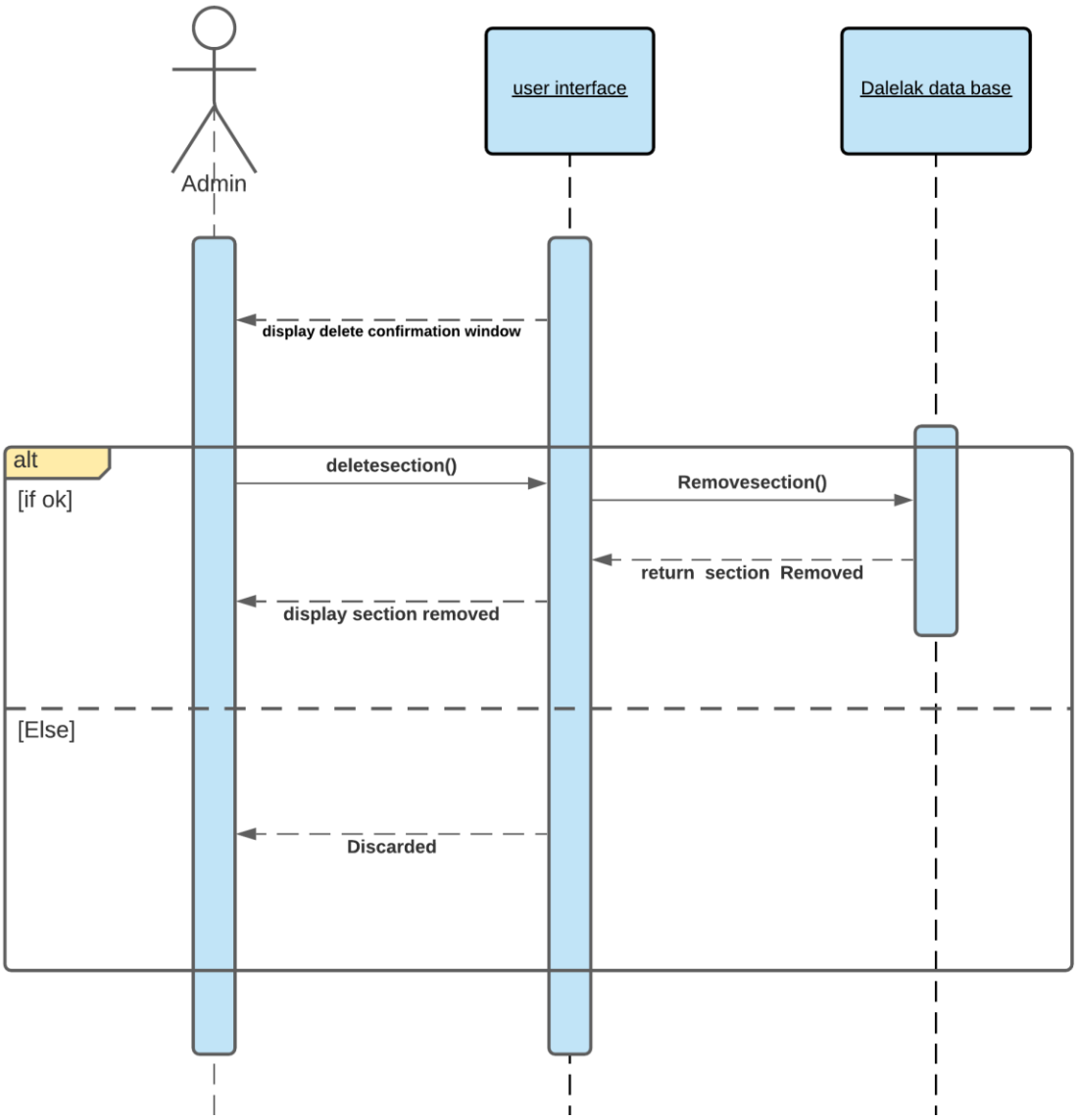

Figure 3-13: delete section sequence diagram

13.manage section:

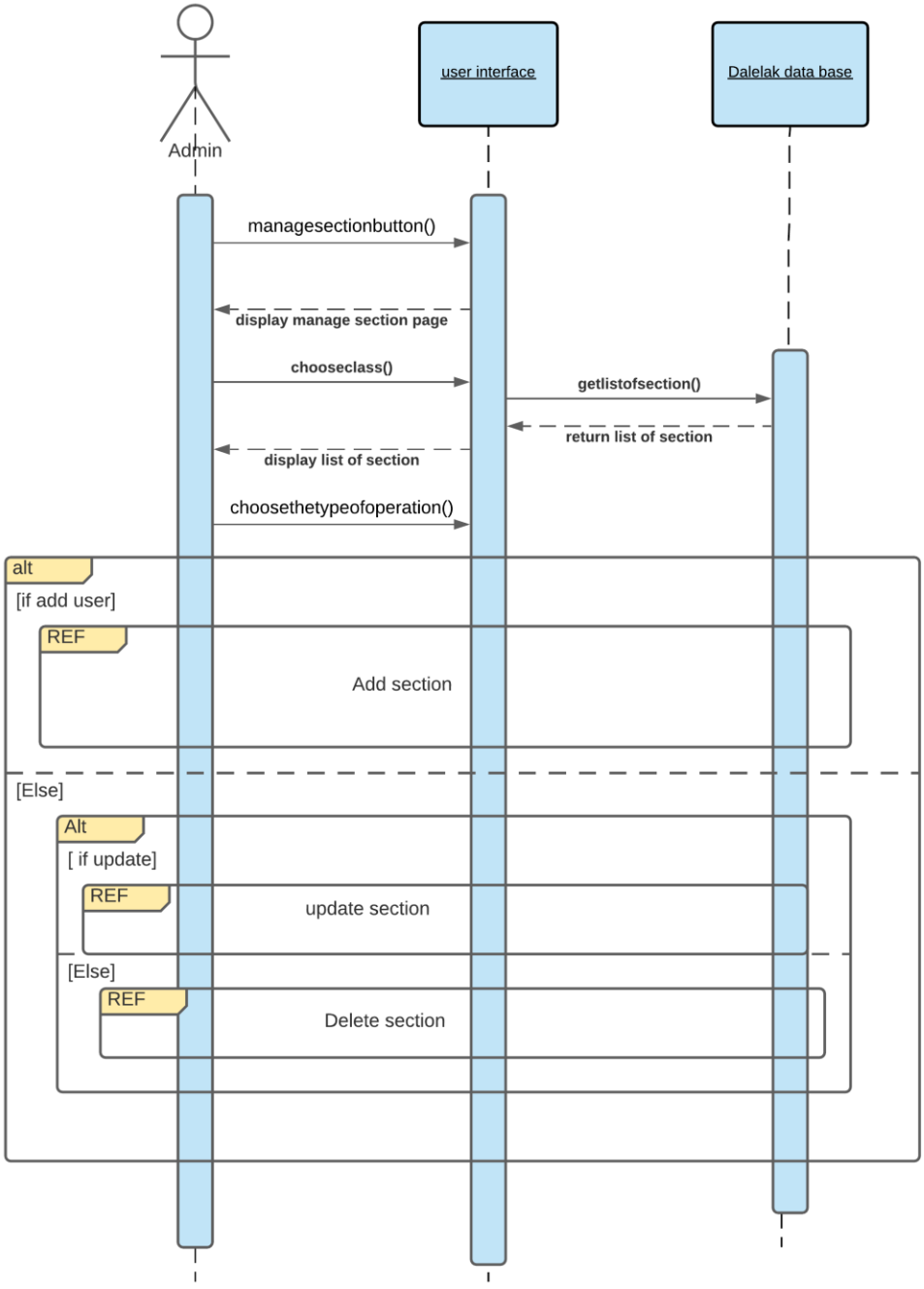

Figure 3-14: manage section sequence diagram

14. Communication:

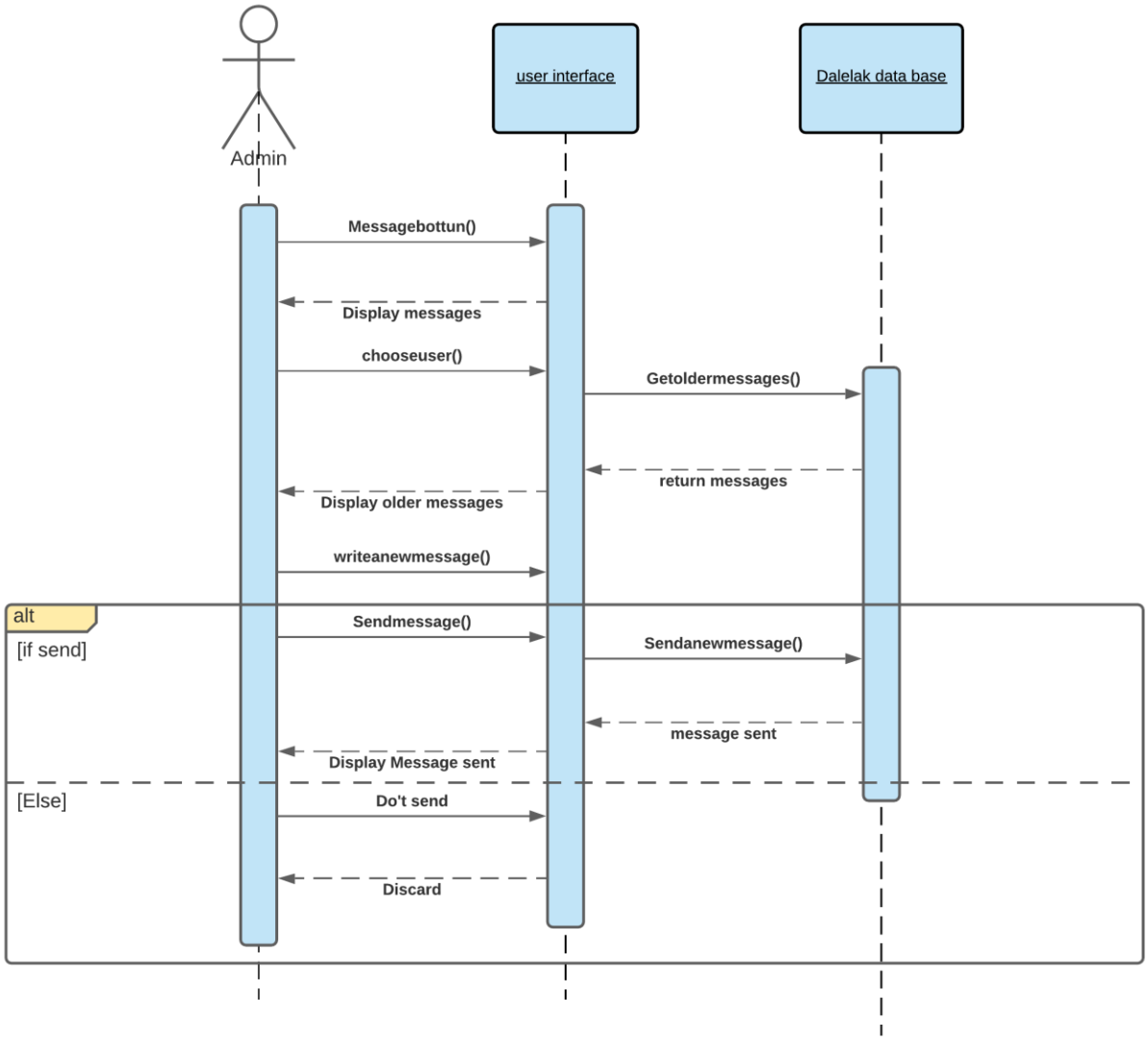

Figure 3-15: Communication sequence diagram

3.4 Class Diagram

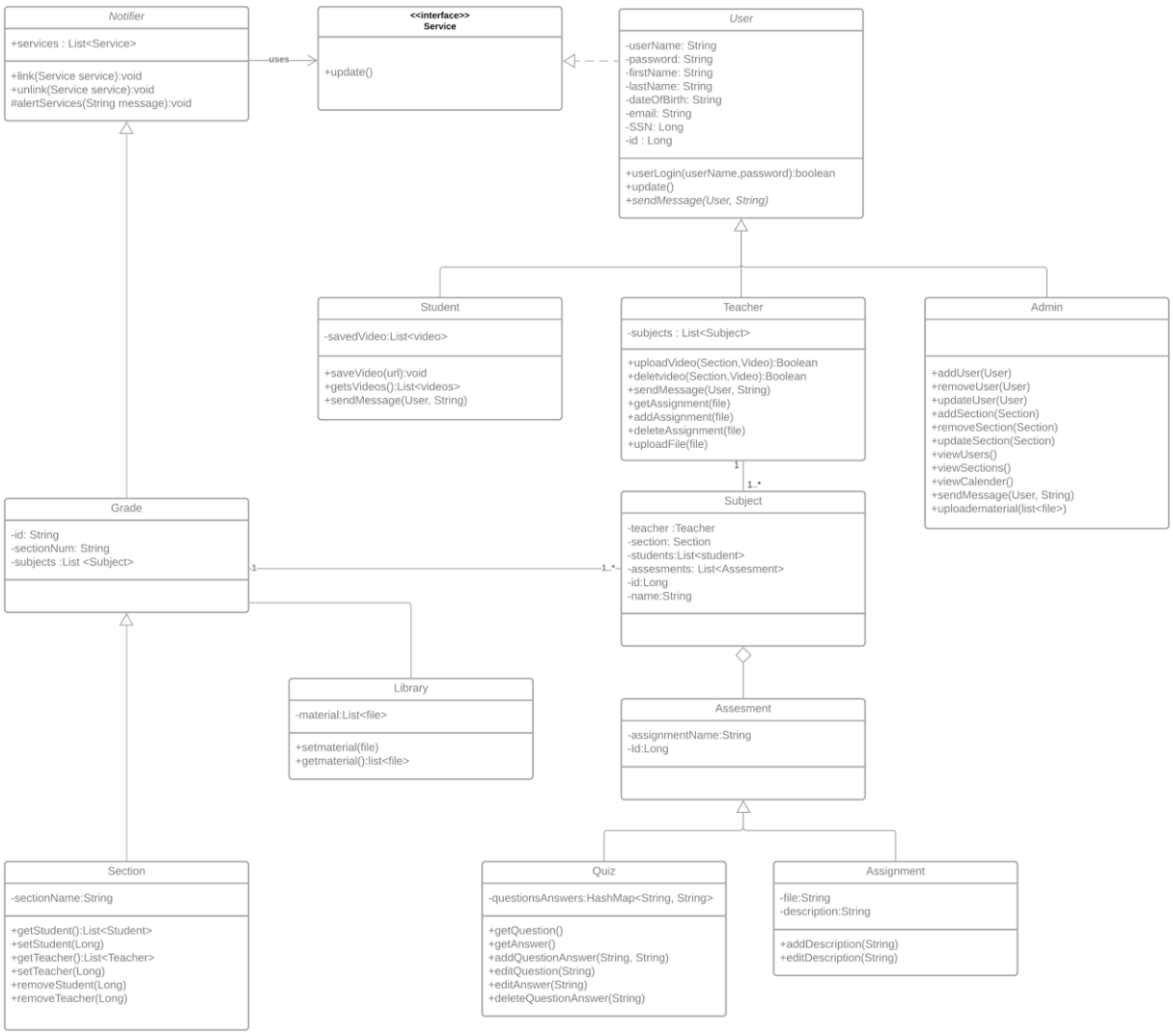

Figure 3-16: Class diagram

3.5 ER Diagram

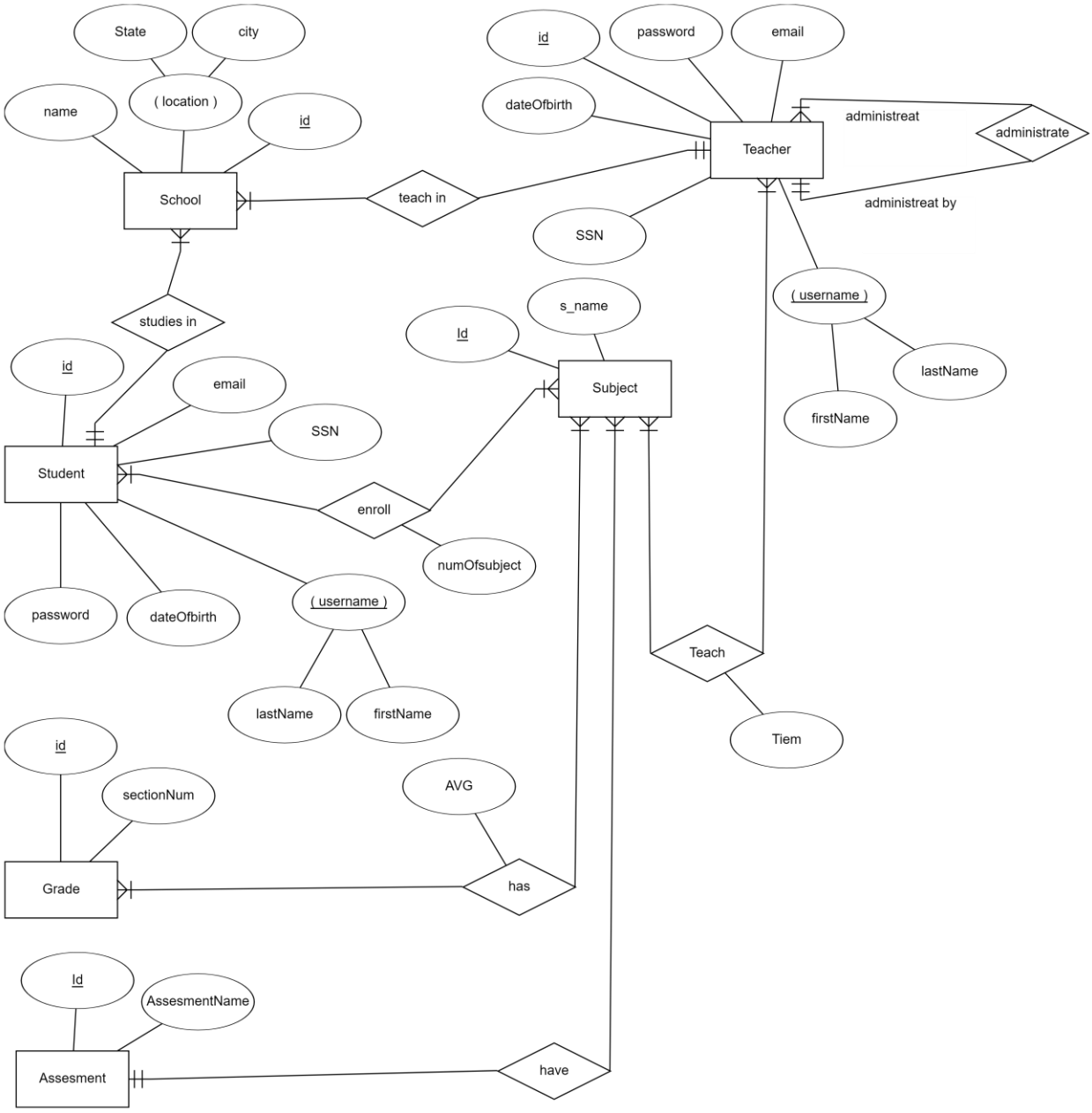

Figure 3-17: ER diagram

3.6 User Interface Design

3.4.1 log in page

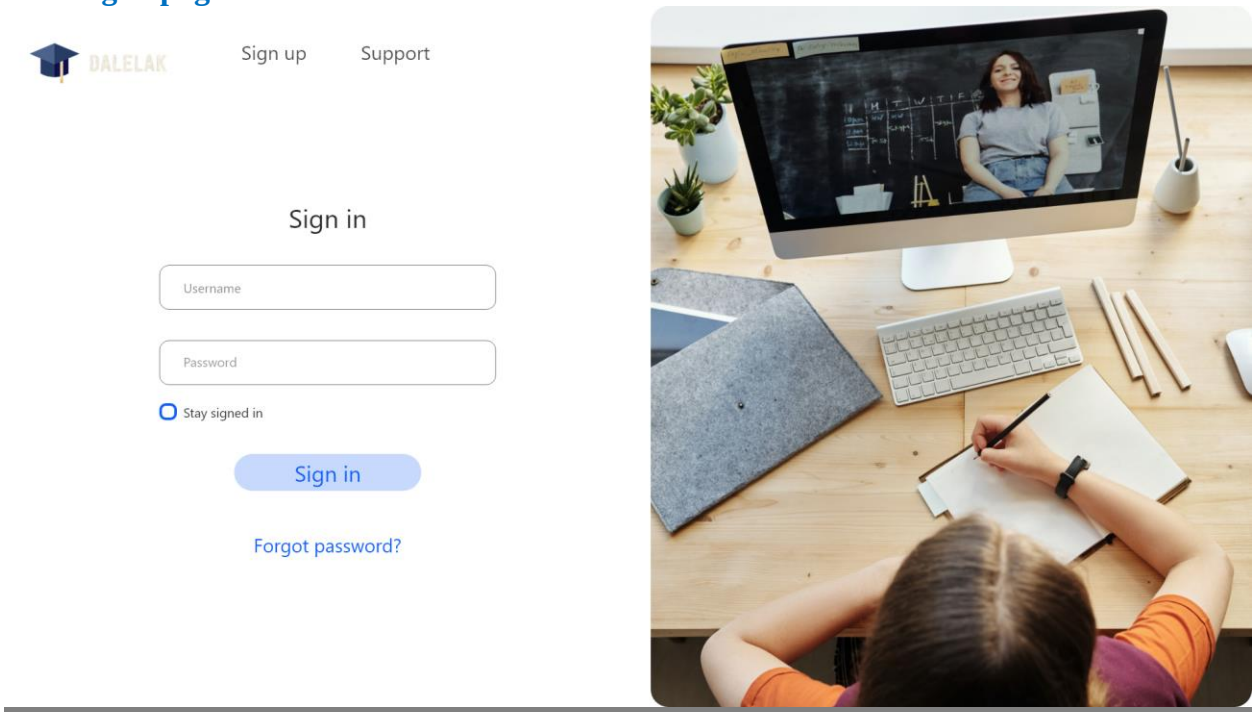

Figure 3-18: Log in page

3.4.2 Teacher page

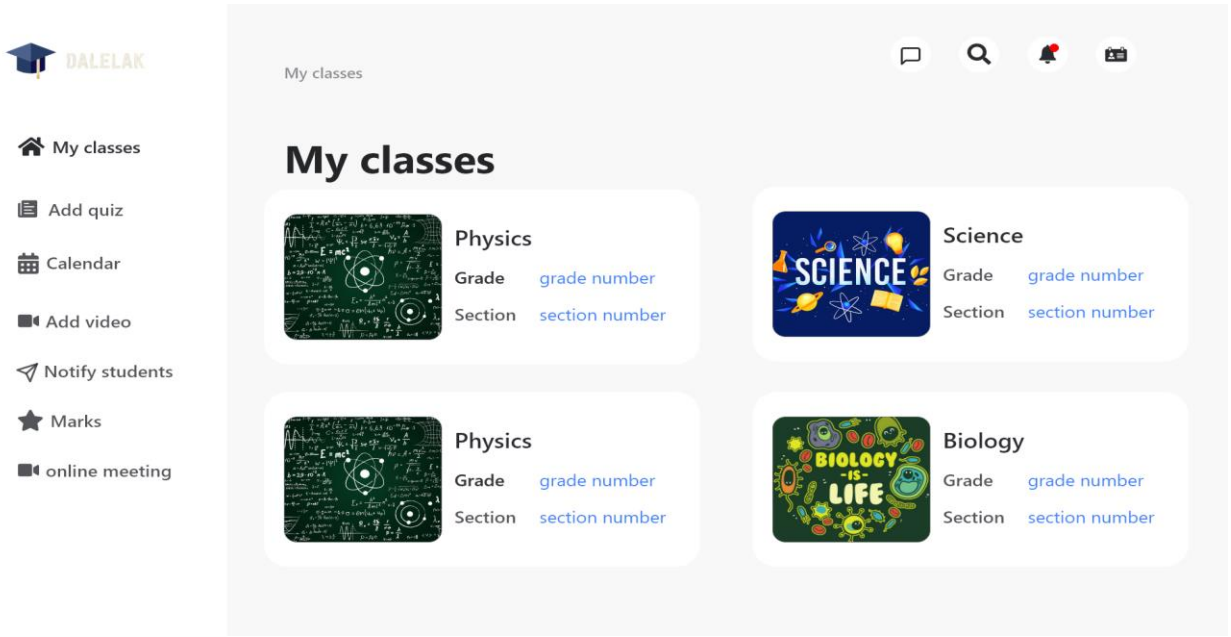

Figure 3-19: Teacher page

3.4.3 student page

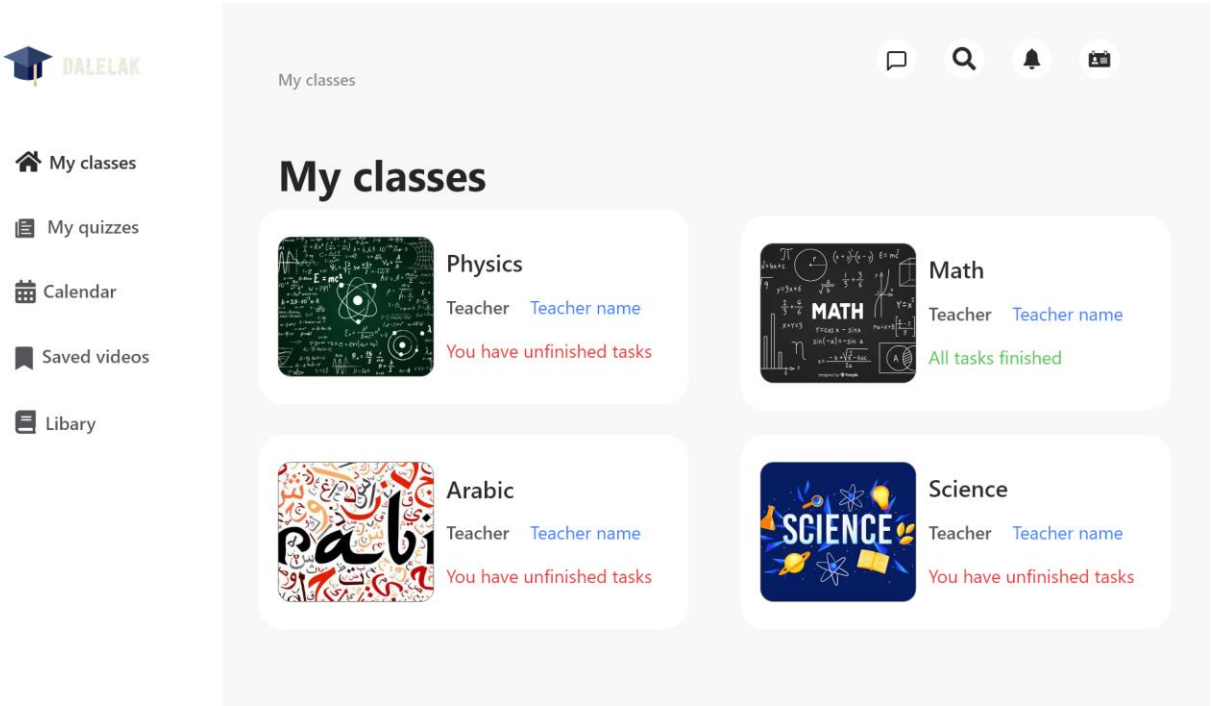

Figure 3-20: Student page.

CHAPTER 5 Testing Plan:

We do the test of the web application manually and by using the automation test We use cypress framework as an integration testing.

Type	Description	Test Step	Expected Result	Status
Functionality	Create Video Meeting	Create a video meeting and add students to it	The meeting will be created and the students can join the meeting	Pass
	Create, Update, delete and manage sections	Create a section then update it and then delete it	The section will be created, updated then deleted	
	Create Quiz	Create a quiz for the students	The quiz will be published and the students can take the quiz	Pass
Security	Assert Login is working	Log into the system	The user will login successfully if Username and Password are correct	Pass
	Verify password rules are working	Create new password	Password will be accepted if it follows the rules	Pass
		Forgot Password	Password will reset after verifying the user	Pass
Usability	Assert all UI components are understandable	Have users test all UI components	The UI components are easy to understand and to remember, also all links and buttons will work as intended	Pass
	Ensure all UI components are working as intended			Pass

CHAPTER 6 References & CONCLUSION:

CONCLUSION:

In conclusion, this project hopes to create a new, innovative, and futuristic way of learning. By providing the student the free well of when to study and what to study with no human-interaction and minimal waste of time. Hoping that our Dalelak site will leave a positive mark in the industry by providing better results than any other traditional learning systems by minimizing the time wasted, having fewer expenses, and overall a better student experience

REFERENCES:

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- **https://darsak.gov.jo**
- **https://www.lucidchart.com/pages/**