

Technical Story Card

Revision History

Version No.	Date	Prepared by / Modified by	Significant Changes
1	6 Oct 2022	Tran Quang Huy Tran Hung Trong	Draft version
2	10 Oct 2022	Tran Quang Huy Tran Hung Trong	Add Introduction. Completed Use-Case, Sequence, ERD, Class Diagram.

Glossary

Abbreviation	Description
BSC	Business Story Card
TSC	Technical Story Card
CRU	Create Read Update
CRUD	Create Read Update Delete

Table of Contents

Introduction	3
Scope of Change	3
List of impacted modules	3
Design and Detailed technical updates	4
Process model	4
Use case Model	4
Sequence diagram	43
Doctor	43
Department	46
Medicine	49
Illness	52
Patient	55
Test	58
Admission	61
Test Form	64
Architecture Diagram	67
Other Technical changes	69
CI / Build relates tasks	69
Non-functional related changes	69
Additional details	69
Open Questions / clarifications / Assumptions	69
Additional notes to technical team	69
References	69

1 Introduction

Hospitals are an essential part of our lives, providing best medical facilities to people suffering from various ailments. It is necessary for the hospitals to keep track of its day-to-day activities and records of its patient, doctor that keep the hospital running smoothly & successfully.

However, keeping track of all the activities and their records on paper is very cumbersome and error prone. The number of documents will increase with time. Recording and maintaining all of these is highly unreliable.

The “Hospital Management System” project aims at providing a paperless hospital. It also aims at providing low-cost reliable automation of the existing system.

2 Scope of Change

Change will not be entertained and whatever specifications mentioned in this document is final.

3 List of impacted modules

All the functional modules will be created from scratch.

Admin:

- Can access all functions.

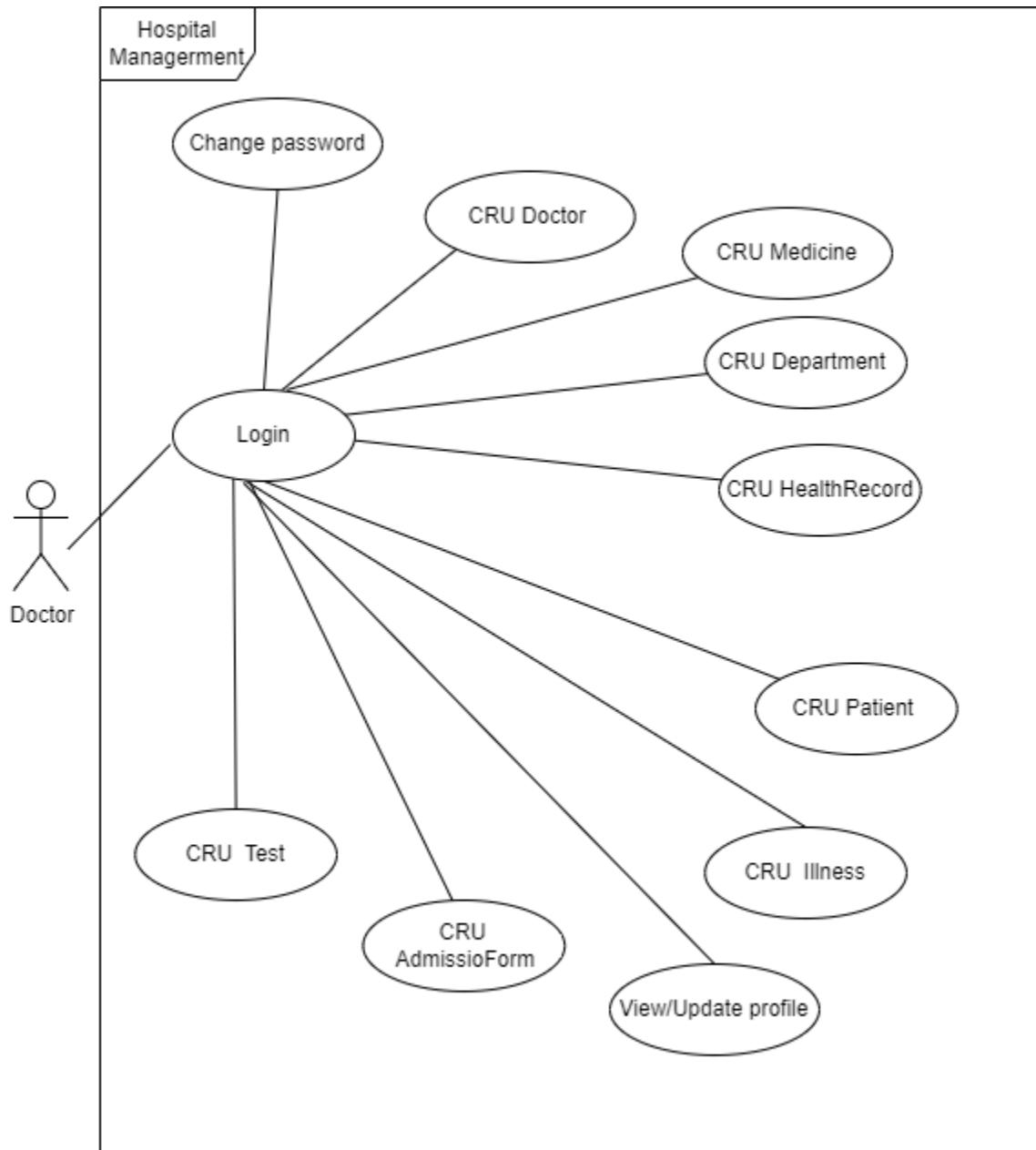
Doctor:

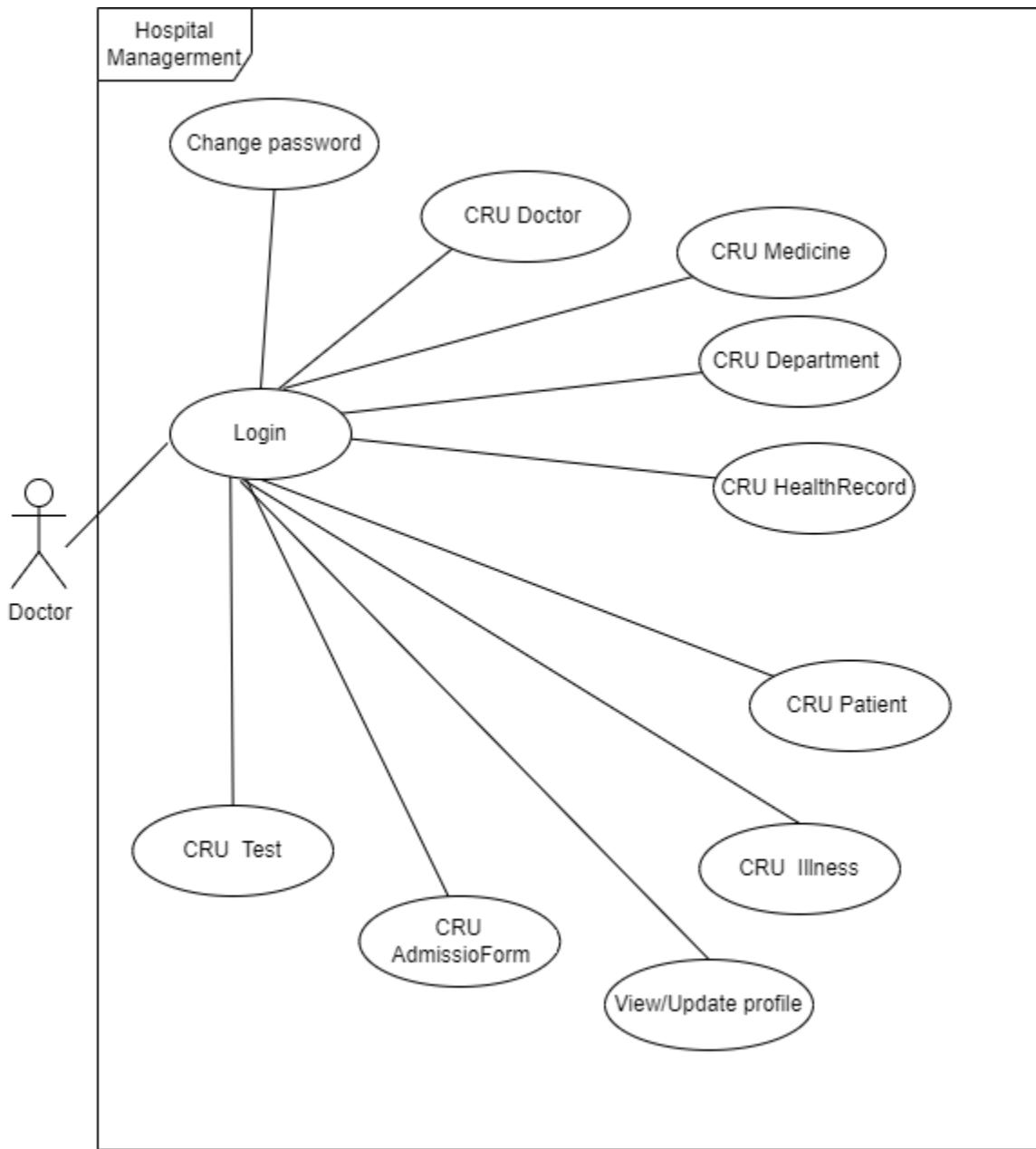
- Can not delete any resources.
- Can access create/view/update Patients.
- Can access create/view/update Admission Form.
- Can access create/view/update TestForm.
- Can access create/view/update HealthRecord.

4 Design and Detailed technical updates

4.1 Process model

4.1.1 Use case Model





Brief Description	Login
Basic Flow	<p>This use case describes how a user login in to the system</p> <ol style="list-style-type: none"> 1. The client has an account inside the system. 2. After the successful login, user will be taken to the appropriate landing page. 3. The following information is required to login. <ul style="list-style-type: none"> • username • password
Alternate Flow	<ol style="list-style-type: none"> 1. The system will validate the credentials provided. If credentials are invalid, login form will be redirected again with error message.
Validation	<ol style="list-style-type: none"> 1. Valid username 2. Valid password
Pre-Conditions	User should have network access and Browser with latest updates.
Post-Conditions	Landing page has to be displayed.

MEMBER LOGIN

HOSPITAL MANAGEMENT
Higher standards of care every day.

Brief Description	Create Doctor (Admin)
Basic Flow	<p>This use case describes how admin insert a doctor into the system.</p> <ol style="list-style-type: none"> 1. The client has to login into the system. 2. The following information is required to insert a doctor. <ul style="list-style-type: none"> • Doctor Name • Doctor Gender • Doctor Phone Number • Doctor Address • Doctor Date Of Birth • Department (nullable)
Alternate Flow	<ol style="list-style-type: none"> 1. The system will validate the information provided. If any invalid data is found, the input form will be redirected with error message.
Validation	<ol style="list-style-type: none"> 1. Doctor name should not be null. 2. Doctor gender should not be null. 3. Doctor Phone Number should be valid. 4. Doctor Address should not be null. 5. Doctor Date Of Birth should not be null.
Pre-Conditions	User should have already logged into the system.
Post-Conditions	Success message should be shown.

The screenshot shows a web application interface for 'Hospital Management'. At the top, there is a navigation bar with icons for Contact, Settings, and Profile. Below the navigation bar, a modal dialog box is centered on the screen with a light blue background. The dialog has a title 'Insert Doctor Form' at the top. It contains five input fields arranged in two rows: 'Doctor name' (with placeholder 'Eg: John Doe'), 'Gender' (dropdown menu showing 'Male'), 'Day of Birth' (text input field with placeholder 'dd/mm/yyyy'), 'Phone Number' (text input field with placeholder 'Eg: 0918464495'), 'Address' (text input field), and 'Department' (dropdown menu with placeholder 'Please select department'). At the bottom right of the dialog, there are two buttons: 'Save' (blue) and 'Back'.

Brief Description	View Doctor (Admin/Doctor)
Basic Flow	<p>This use case describes how a client can view a list of doctors.</p> <ol style="list-style-type: none"> 1. The admin/doctor has to login into the system. 2. The following information has to be displayed. <ul style="list-style-type: none"> • ID • Full Name • Address • Phone Number • Date of birth
Alternate Flow	Not Applicable
Validation	Not Applicable
Pre-Conditions	Users should have already logged into the system.
Post-Conditions	Not Applicable

#	Full Name	Address	Phone Number	Date of birth	
1009	Armando Smith	Woodrow Wilson Bridge, National Harbor, Prince George's County, Maryland, 23242, United States	3698970311	Nov 9, 1970	
1024	Armando Smith	Woodrow Wilson Bridge, National Harbor, Prince George's County, Maryland, 23242, United States	3698970311	Nov 9, 1970	
1001	Christa Hand	Moonachie Avenue, Moonachie, Bergen County, New Jersey, 07074, United States	0987654316	Dec 31, 1980	
1016	Christa Hand	Moonachie Avenue, Moonachie, Bergen County, New Jersey, 07074, United States	0987654316	Dec 31, 1980	
1004	Dan Charles Benjamin	Buckhorn Road, Au Train Township, Alger County, Michigan, United States	0987654324	May 7, 1962	
1019	Dan Charles Benjamin	Buckhorn Road, Au Train Township, Alger County, Michigan, United States	0987654324	May 7, 1962	
1000	Dick Bradley Clayton	Clark County, Idaho, United States	0987654321	Nov 11, 1980	
1015	Dick Bradley Clayton	Clark County, Idaho, United States	0987654321	Nov 11, 1980	
1014	Gilberto Sargent	Plumas County, California, United States	7125685338	Nov 26, 1960	
1029	Gilberto Sargent	Plumas County, California, United States	7125685338	Nov 26, 1960	

Page 1 among 3 page(s) 1 2 3 >

ABOUT US
 Something about hospital management

INFORMATION
 Lorem Ipsum 132 xyz Lorem Ipsum
 123@gmail.com
 12 34 56 78 90

FOLLOW US

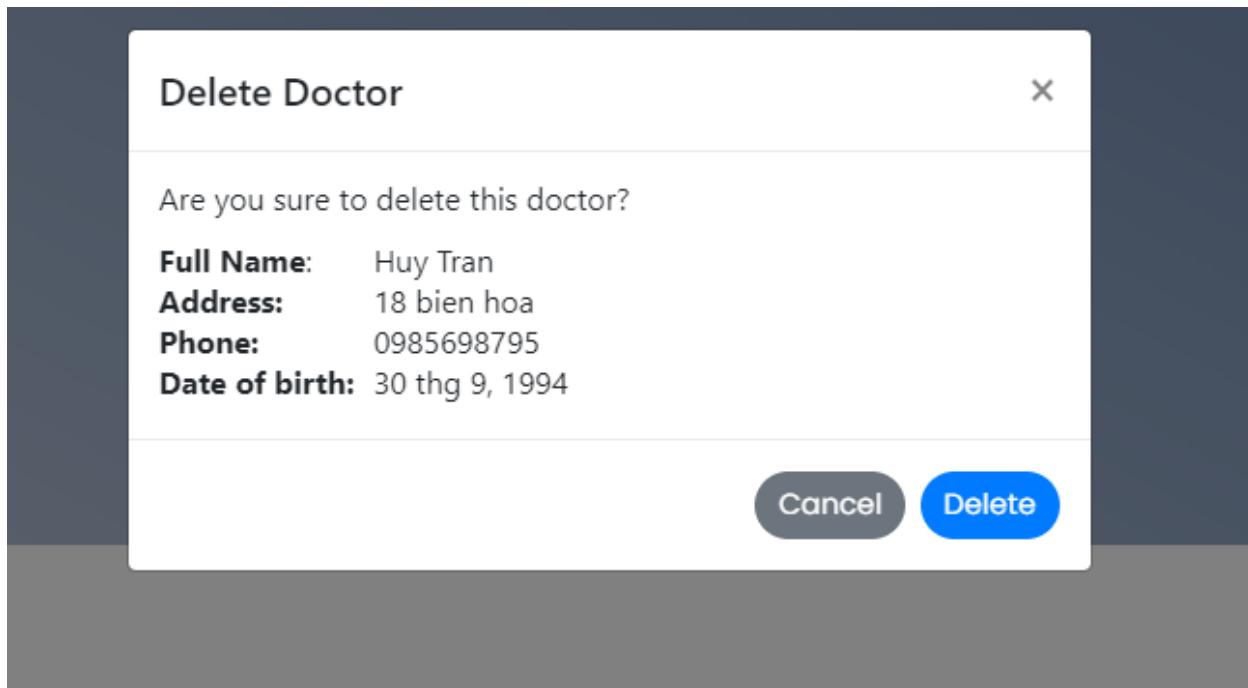
Brief Description	Update Doctor (Admin)
Basic Flow	<p>This use case describes how admin updates a doctor in the system.</p> <ol style="list-style-type: none"> 1. The client has to login into the system. 2. The following information is required to insert a doctor. <ul style="list-style-type: none"> • Doctor ID • Doctor Name • Doctor Gender • Doctor Phone Number • Doctor Address • Doctor Date Of Birth • Department (nullable)
Alternate Flow	<ol style="list-style-type: none"> 1. The system will validate the information provided. If any invalid data is found, the input form will be redirected with error message.
Validation	<ol style="list-style-type: none"> 1. Doctor ID should not be null. 2. Doctor name should not be null. 3. Doctor gender should not be null. 4. Doctor Phone Number should be valid. 5. Doctor Address should not be null. 6. Doctor Date Of Birth should not be null.
Pre-Conditions	User should have already logged into the system.
Post-Conditions	Success message should be shown.

The screenshot shows a modal dialog titled "Update Doctor Form". The form includes the following fields:

- Doctor name: Armando Smith
- Gender: Male
- Day of Birth: 09/11/1970
- Phone Number: 3698970311
- Address: Woodrow Wilson Bridge, National Harbor, Prince C
- Department: Please select department

At the bottom right of the form are two buttons: "Save" and "Back".

Brief Description	Delete Doctor (Admin)
Basic Flow	This use case describes how an admin can delete a doctor. 1. The admin has to login into the system. 2. Select a doctor. 3. Decided to delete
Alternate Flow	Not Applicable
Validation	Doctor id should be null.
Pre-Conditions	Users should have already logged into the system.
Post-Conditions	Doctor is removed from the list.



Brief Description	Create Patient (Admin/Doctor)
Basic Flow	<p>This use case describes how admin/doctor inserts a patient into the system.</p> <ol style="list-style-type: none"> 1. The client has to login into the system. 2. The following information is required to insert a doctor. <ul style="list-style-type: none"> • Patient Name • Patient Gender • Patient Phone Number • Patient Address • Patient Date Of Birth • Department (nullable)
Alternate Flow	<ol style="list-style-type: none"> 1. The system will validate the information provided. If any invalid data is found, the input form will be redirected with error message.
Validation	<ol style="list-style-type: none"> 1. Patient name should not be null. 2. Patient gender should not be null. 3. Patient Phone Number should be valid. 4. Patient Address should not be null. 5. Patient Date Of Birth should not be null.
Pre-Conditions	User should have already logged into the system.
Post-Conditions	Success message should be shown.

The screenshot shows a mobile-style form titled "Insert Patient Form". The form is contained within a white rounded rectangle on a blue background. It includes fields for Patient name (text input with placeholder "Eg: John Doe"), Gender (dropdown menu with "Male" selected), Day of Birth (text input with placeholder "dd/mm/yyyy"), Phone Number (text input with placeholder "Eg: 0918464495"), and Address (large text input field). At the bottom right of the form are two buttons: a blue "Save" button and a white "Back" button.

Brief Description	View Patient (Admin/Doctor)
Basic Flow	<p>This use case describes how a client can view a list of patients.</p> <ol style="list-style-type: none"> 3. The admin/doctor has to login into the system. 4. The following information has to be displayed. <ul style="list-style-type: none"> • Patient ID • Patient Full Name • Patient Address • Patient Phone Number • Patient Date of birth
Alternate Flow	Not Applicable
Validation	Not Applicable
Pre-Conditions	Users should have already logged into the system.
Post-Conditions	Not Applicable

Hospital Management

Contact Settings Profile ▾

List Patient

#	Full Name	Address	Phone Number	Date of birth	
2	Patient One	Ho Chi Minh city	0987654321	Feb 1, 1990	
21	Tran Hung Trong	Dong Thap province	0939946728	Dec 21, 2000	
22	Nguyen Huy Quyen	Ho Chi Minh city	0937825673	Dec 11, 1999	
24	Thieu Ngoc Tram	Ha Noi	0939943213	Feb 1, 1998	
46	Huynh Quang Anh	Thanh Hoa province	0987762810	Dec 12, 1999	

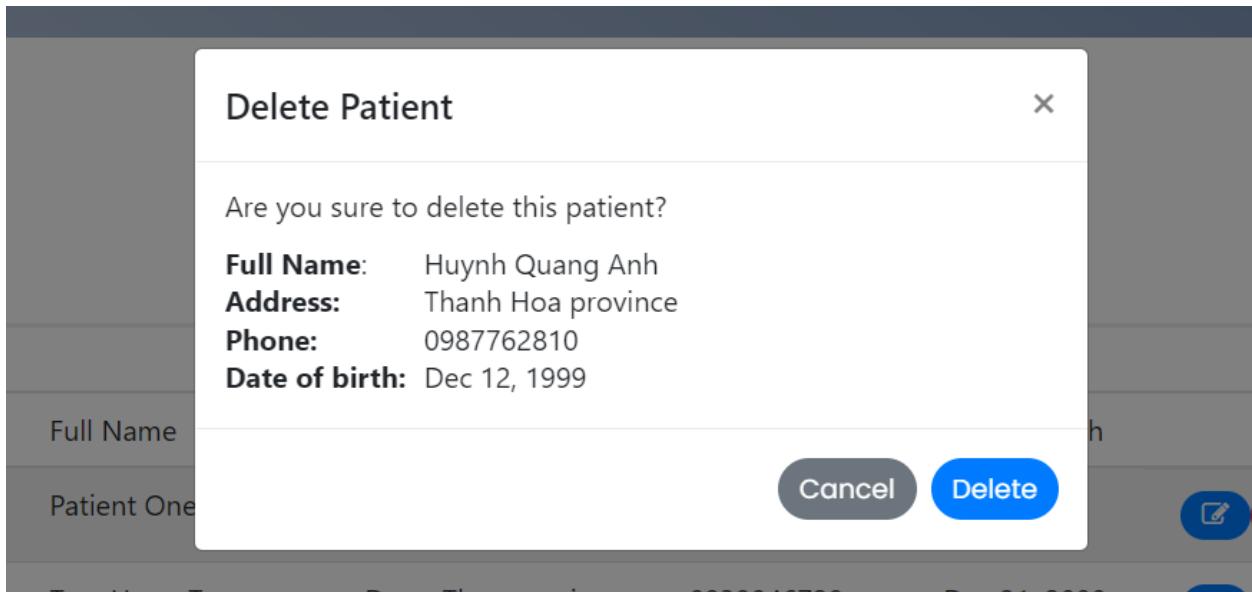
Page 1 among 1 page(s) 1

Brief Description	Update Patient (Admin/Doctor)
Basic Flow	<p>This use case describes how admin updates a patient in the system.</p> <ol style="list-style-type: none"> 1. The client has to login into the system. 2. The following information is required to insert a doctor. <ul style="list-style-type: none"> • Patient ID • Patient Name • Patient Gender • Patient Phone Number • Patient Address • Patient Date Of Birth • Department (nullable)
Alternate Flow	The system will validate the information provided. If any invalid data is found, the input form will be redirected with error message.
Validation	<ol style="list-style-type: none"> 1. Patient ID should not be null. 2. Patient name should not be null. 3. Patient gender should not be null. 4. Doctor Phone Number should be valid. 5. Patient Address should not be null. 6. Patient Date Of Birth should not be null.
Pre-Conditions	User should have already logged into the system.
Post-Conditions	Success message should be shown.

Update Patient Form

Patient name	Gender
Doreen Wilkinson	Female
Day of Birth	Phone Number
12/07/1950	4089093803
Address	
Browners Levee Road, Weakley County, West Tennessee, Tennessee, 38229, United States	
<input type="button" value="Save"/> <input type="button" value="Back"/>	

Brief Description	Delete Patient (Admin/Doctor)
Basic Flow	This use case describes how an admin can delete a patient. 4. The admin has to login into the system. 5. Select a patient. 6. Decided to delete
Alternate Flow	Not Applicable
Validation	Patient id should be null.
Pre-Conditions	Users should have already logged into the system.
Post-Conditions	Patient is removed from the list.



Brief Description	Create Department (Admin)
Basic Flow	<p>This use case describes how admin inserts a department into the system.</p> <ol style="list-style-type: none"> 1. The client has to login into the system. 2. The following information is required to insert a doctor. <ul style="list-style-type: none"> • Department Name • Department Description
Alternate Flow	The system will validate the information provided. If any invalid data is found, the input form will be redirected with error message.
Validation	Department Name should not be null.
Pre-Conditions	User should have already logged into the system.
Post-Conditions	Success message should be shown.

The image shows a wireframe of an 'Insert Department Form'. The form is titled 'Insert Department Form'. It has two input fields: 'Department name' with a placeholder 'Eg: Medical Department' and 'Description' with a placeholder 'Enter department's description'. At the bottom right of the form are two buttons: 'Save' and 'Back'.

Brief Description	View Department (Admin/Doctor)
Basic Flow	<p>This use case describes how a client can view a list of departments.</p> <ol style="list-style-type: none"> 1. The admin/doctor has to login into the system. 2. The following information has to be displayed. <ul style="list-style-type: none"> • Department ID • Department Name • Department Description
Alternate Flow	Not Applicable
Validation	Not Applicable
Pre-Conditions	Users should have already logged into the system.
Post-Conditions	Not Applicable

The screenshot shows the 'List Department' page of a hospital management application. The page has a header with a logo, contact links, settings, and profile options. Below the header is a search bar and a large title 'List Department'. A green 'Create+' button is located at the top right of the table area. The table itself has columns for '#', 'Department Name', and 'Description'. Each row contains a unique ID, the department name, and a detailed description. To the right of each row are two small circular icons with icons inside, likely for edit and delete functions. At the bottom of the table, there are navigation links for page 1 of 3.

#	Department Name	Description
1000	Accident and Emergency Department	Accident and Emergency departments were established to treat minor accidents and provide care for patients who were taken suddenly ill.
1012	Accident and Emergency Department	Accident and Emergency departments were established to treat minor accidents and provide care for patients who were taken suddenly ill.
1002	Inpatient department	
1014	Inpatient department	
1006	Medical Department	The medical department has within it the various clinical services.
1018	Medical Department	The medical department has within it the various clinical services.
1003	Neurology department	
1015	Neurology department	
1001	Nursing Department	The nursing department is the organizational structure through which nurses provide nursing care for clients under the jurisdiction of the institution.
1013	Nursing Department	The nursing department is the organizational structure through which nurses provide nursing care for clients under the jurisdiction of the institution.

Page 1 among 3 page(s) 1 2 3 »

Brief Description	Update Department (Admin)
Basic Flow	<p>This use case describes how admin updates a department in the system.</p> <ol style="list-style-type: none"> 1. The client has to login into the system. 2. The following information is required to insert a department. <ul style="list-style-type: none"> • Department Name • Department Description
Alternate Flow	The system will validate the information provided. If any invalid data is found, the input form will be redirected with error message.
Validation	Department Name should not be null.
Pre-Conditions	User should have already logged into the system.
Post-Conditions	Success message should be shown.

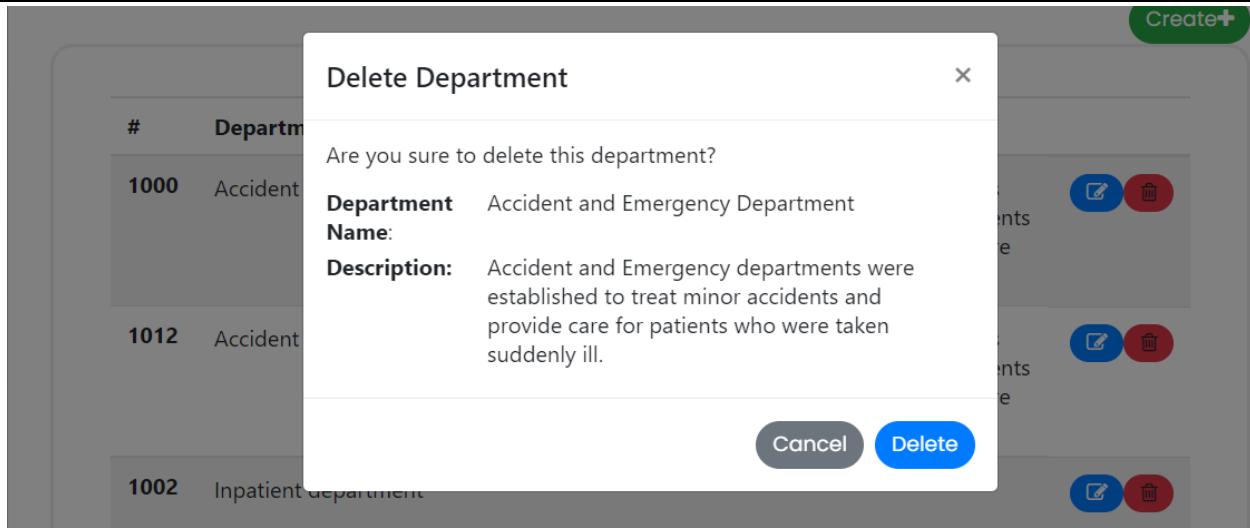
Update Department Form

Department name
Accident and Emergency Department

Description
Accident and Emergency departments were established to treat minor accidents and provide care for patients who were taken suddenly ill.

Save Back

Brief Description	Delete Department (Admin)
Basic Flow	<p>This use case describes how an admin can delete a department.</p> <ol style="list-style-type: none"> 1. The admin has to login into the system. 2. Select a department. 3. Decided to delete.
Alternate Flow	Not Applicable
Validation	Department id should be null.
Pre-Conditions	Users should have already logged into the system.
Post-Conditions	Department is removed from the list.



Brief Description	Create Medicine (Admin)
Basic Flow	<p>This use case describes how admin inserts a medicine into the system.</p> <ol style="list-style-type: none"> 1. The client has to login into the system. 2. The following information is required to insert a medicine. <ul style="list-style-type: none"> • Medicine Name • Medicine Unit • Medicine Description
Alternate Flow	The system will validate the information provided. If any invalid data is found, the input form will be redirected with error message.
Validation	<p>Medicine Name should not be null.</p> <p>Medicine pellet should not be null.</p>
Pre-Conditions	User should have already logged into the system.
Post-Conditions	Success message should be shown.

The screenshot shows a mobile-style application interface titled "Insert Medicine". The form contains three fields: "Medicine name" (with placeholder "Eg: Acetaminophen"), "Unit" (with placeholder "Eg: pellet"), and "Instruction" (with placeholder "Add the instruction"). At the bottom right of the form are two buttons: "Save" (blue) and "Back".

Brief Description	Update Medicine (Admin)
Basic Flow	<p>This use case describes how admin updates a medicine in the system.</p> <ol style="list-style-type: none"> 1. The client has to login into the system. 2. The following information is required to insert a medicine. <ul style="list-style-type: none"> • Medicine ID • Medicine Name • Medicine Unit • Medicine Description
Alternate Flow	The system will validate the information provided. If any invalid data is found, the input form will be redirected with error message.
Validation	<p>Medicine ID should not be null.</p> <p>Medicine Name should not be null.</p> <p>Medicine Name should not be null.</p>
Pre-Conditions	User should have already logged into the system.
Post-Conditions	Success message should be shown.

The image shows a wireframe of a mobile application interface titled "Update Medicine". The interface consists of a white rectangular card with rounded corners, centered on a blue background. The card contains the following elements:

- A title "Update Medicine" at the top center.
- Two input fields side-by-side: "Medicine name" containing "Acetaminophen" and "Unit" containing "pellet".
- A larger input field below labeled "Instruction" with the placeholder text "Add the instruction".
- At the bottom right of the card, there are two buttons: a blue "Save" button and a grey "Back" button.

Brief Description	View Medicine (Admin/Doctor)
Basic Flow	<p>This use case describes how a client can view a list of medicines.</p> <ol style="list-style-type: none"> 1. The admin/doctor has to login into the system. 2. The following information has to be displayed. <ul style="list-style-type: none"> • Medicine ID • Medicine Name • Medicine Unit • Medicine Description
Alternate Flow	Not Applicable
Validation	Not Applicable
Pre-Conditions	Users should have already logged into the system.
Post-Conditions	Not Applicable

The screenshot shows a web-based hospital management system. At the top, there is a navigation bar with icons for Contact, Settings, and Profile. The main content area is titled "List Medicine". Below the title is a table with the following data:

#	Medicine Name	Unit	Instruction
100	Acetaminophen	pellet	
101	Adderall	pellet	
102	Bacitracin	pellet	
103	Candesartan	pellet	
104	Denosumab	pellet	
105	Esomeprazole	pellet	
106	Estradiol	pellet	
107	Fludrocortisone	pellet	
108	Glutathione	pellet	
109	Halobetasol	pellet	

At the bottom left, it says "Page 1 among 2 page(s)". At the bottom right, there are buttons for "1", "2", and "»".

Brief Description	Delete Medicine (Admin)
Basic Flow	This use case describes how an admin can delete a medicine. <ol style="list-style-type: none">1. The admin has to login into the system.2. Select a medicine.3. Decided to delete.
Alternate Flow	Not Applicable
Validation	Medicine id should be null.
Pre-Conditions	Users should have already logged into the system.
Post-Conditions	Medicine is removed from the list.

Brief Description	Create Test (Admin)
Basic Flow	<p>This use case describes how admin inserts a test into the system.</p> <ol style="list-style-type: none"> 1. The client has to login into the system. 2. The following information is required to insert a test. <ul style="list-style-type: none"> • Test Name • Test Normal Result • Test Description
Alternate Flow	The system will validate the information provided. If any invalid data is found, the input form will be redirected with error message.
Validation	<p>Test Name should not be null.</p> <p>Test pellet should not be null.</p>
Pre-Conditions	User should have already logged into the system.
Post-Conditions	Success message should be shown.

Brief Description	Update Test (Admin)
Basic Flow	<p>This use case describes how admin updates a test in the system.</p> <ol style="list-style-type: none"> 1. The client has to login into the system. 2. The following information is required to insert a test. <ul style="list-style-type: none"> • Test ID • Test Name • Test Normal Result • Test Description
Alternate Flow	The system will validate the information provided. If any invalid data is found, the input form will be redirected with error message.
Validation	<p>Test ID should not be null.</p> <p>Test Name should not be null.</p> <p>Test Name should not be null.</p>
Pre-Conditions	User should have already logged into the system.
Post-Conditions	Success message should be shown.

The image shows a wireframe of a user interface for updating a test. The main title is "Update Test". It contains three input fields: "Test name" with the value "Epinephrine tolerance test," "Normal Result" with the value "40–60 mg per 100 ml", and a "Description" field with the placeholder text "Add the description". At the bottom right, there are "Save" and "Back" buttons.

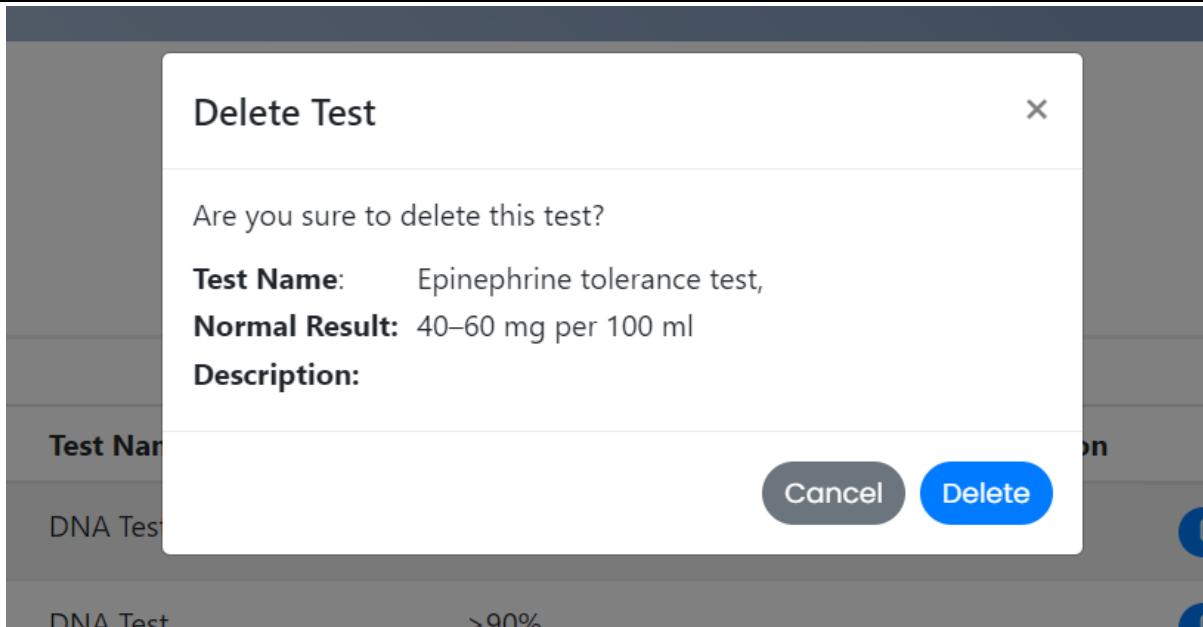
Brief Description	View Test (Admin/Doctor)
Basic Flow	<p>This use case describes how a client can view a list of tests.</p> <ol style="list-style-type: none"> 1. The admin/doctor has to login into the system. 2. The following information has to be displayed. <ul style="list-style-type: none"> • Test ID • Test Name • Test Normal Result • Test Description
Alternate Flow	Not Applicable
Validation	Not Applicable
Pre-Conditions	Users should have already logged into the system.
Post-Conditions	Not Applicable

The screenshot shows a user interface titled "List Test". At the top right is a green "Create+" button. Below the title is a table with the following columns: #, Test Name, Normal Result, and Description. The table contains 15 rows of data, each with a "Edit" icon (blue square with white pencil) and a "Delete" icon (red square with white minus sign). The data is as follows:

#	Test Name	Normal Result	Description
1008	DNA Test	>90%	(Edit icon) (Delete icon)
1020	DNA Test	>90%	(Edit icon) (Delete icon)
1009	Epinephrine tolerance test,	40–60 mg per 100 ml	(Edit icon) (Delete icon)
1021	Epinephrine tolerance test,	40–60 mg per 100 ml	(Edit icon) (Delete icon)
1010	Glucose tolerance test	1 gram of glucose per kilogram	(Edit icon) (Delete icon)
1022	Glucose tolerance test	1 gram of glucose per kilogram	(Edit icon) (Delete icon)
1003	Haematocrit	3.5-5.0	(Edit icon) (Delete icon)
1015	Haematocrit	3.5-5.0	(Edit icon) (Delete icon)
1002	Haemoglobin	4.5-5.5	(Edit icon) (Delete icon)
1014	Haemoglobin	4.5-5.5	(Edit icon) (Delete icon)

At the bottom left is the text "Page 1 among 3 page(s)". At the bottom right are page navigation icons: 1, 2, 3, >.

Brief Description	Delete Test (Admin)
Basic Flow	This use case describes how an admin can delete a test. 1. The admin has to login into the system. 2. Select a test. 3. Decided to delete.
Alternate Flow	Not Applicable
Validation	Test id should be null.
Pre-Conditions	Users should have already logged into the system.
Post-Conditions	Test is removed from the list.



Brief Description	Create Admission (Admin/Doctor)
Basic Flow	<p>This use case describes how admin inserts a admission into the system.</p> <ol style="list-style-type: none"> 1. The client has to login into the system. 2. The following information is required to insert a admission. <ul style="list-style-type: none"> • Patient ID • Date In • Date Out
Alternate Flow	The system will validate the information provided. If any invalid data is found, the input form will be redirected with error message.
Validation	Patient ID should not be null. Date in should not be null.
Pre-Conditions	User should have already logged into the system.
Post-Conditions	Success message should be shown.

Create Admission Form

Patient name: Eg: John Doe

Gender: Male

Day of Birth: dd/mm/yyyy

Phone Number: Eg: 0918464495

Address:

Day In: dd/mm/yyyy

Day Out: dd/mm/yyyy

Buttons: Save, Back

Brief Description	Update Admission (Admin/Doctor)
Basic Flow	<p>This use case describes how admin updates an admission in the system.</p> <ol style="list-style-type: none"> 1. The client has to login into the system. 2. The following information is required to insert an admission. <ul style="list-style-type: none"> • Admission ID • Patient ID • Date In • Date Out
Alternate Flow	The system will validate the information provided. If any invalid data is found, the input form will be redirected with error message.
Validation	<p>Admission ID should not be null.</p> <p>Patient ID should not be null.</p> <p>Date in should not be null.</p>
Pre-Conditions	User should have already logged into the system.
Post-Conditions	Success message should be shown.

Update Admission Form

Patient name: Doreen Wilkinson | Gender: Female | CHANGE

Day of Birth: 12/07/1950 | Phone Number: 4089093803

Address: Brawners Levee Road, Weakley County, West Tennessee, Tennessee, 38229, United States

Day In: 01/09/2022 | Day Out: 13/09/2022

Save | Back

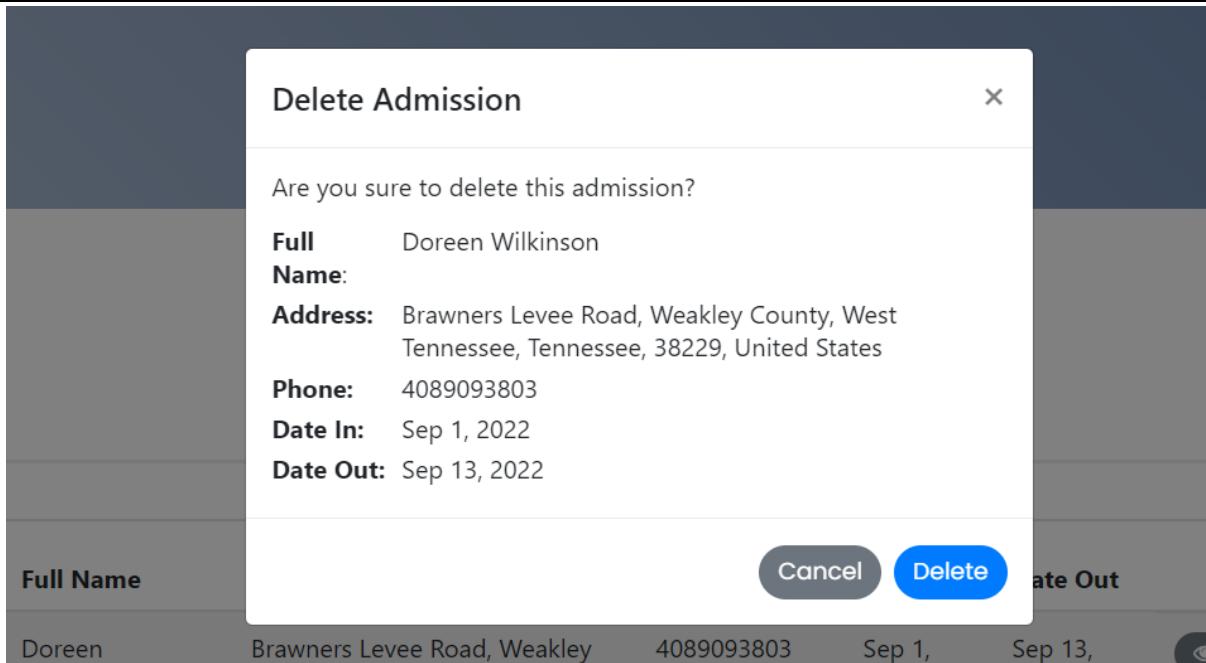
Brief Description	View Admission (Admin/Doctor)
Basic Flow	<p>This use case describes how a client can view a list of admissions.</p> <ol style="list-style-type: none"> 1. The admin/doctor has to login into the system. 2. The following information has to be displayed. <ul style="list-style-type: none"> • Admission ID • Patient ID • Date In • Date Out
Alternate Flow	Not Applicable
Validation	Not Applicable
Pre-Conditions	Users should have already logged into the system.
Post-Conditions	Not Applicable

The screenshot shows a user interface titled "List Admission". At the top right is a green "Create+" button. Below the title is a table with 10 rows of admission data. The columns are labeled: #, Full Name, Address, Phone Number, Date In, Date Out, and three small circular icons (eye, edit, delete). The data in the table is as follows:

#	Full Name	Address	Phone Number	Date In	Date Out	Actions
1000	Doreen Wilkinson	Brawners Levee Road, Weakley County, West Tennessee, Tennessee, 38229, United States	4089093803	Sep 1, 2022	Sep 13, 2022	
1001	Shah Khada	Barren Island, United States	8024868256	Sep 2, 2022	Aug 12, 2022	
1002	Nguyen Huy Quyen	Ho Chi Minh city	0937825673	Sep 3, 2022	Sep 10, 2022	
1003	Bui Thuy Duong	Ho Chi Minh city	0987654321	Sep 4, 2022	Sep 14, 2022	
1004	Tran Hung Trong	Dong Thap province	0939946728	Sep 5, 2022	Sep 20, 2022	
1005	Thieu Ngoc Tram	Ha Noi	0939943213	Sep 5, 2022	Sep 15, 2022	
1006	Doreen Wilkinson	Brawners Levee Road, Weakley County, West Tennessee, Tennessee, 38229, United States	4089093803	Sep 1, 2022	Sep 13, 2022	
1007	Shah Khada	Barren Island, United States	8024868256	Sep 2, 2022	Aug 12, 2022	
1008	Nguyen Huy Quyen	Ho Chi Minh city	0937825673	Sep 3, 2022	Sep 10, 2022	
1009	Bui Thuy Duong	Ho Chi Minh city	0987654321	Sep 4, 2022	Sep 14, 2022	

At the bottom left is the text "Page 1 among 2 page(s)". At the bottom right are page navigation buttons: "1", "2", and "»".

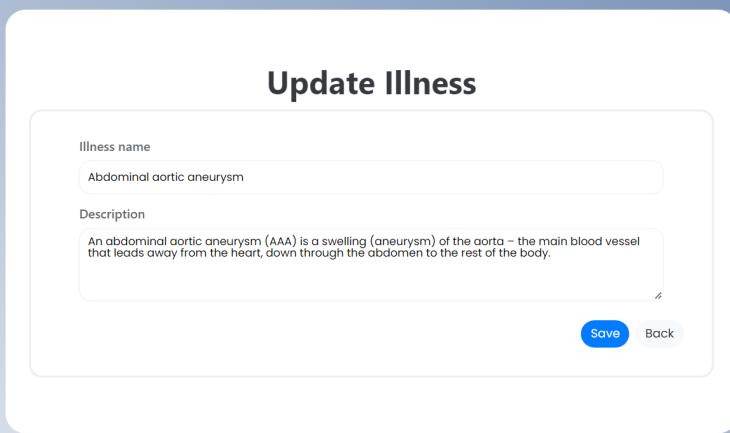
Brief Description	Delete Admission (Admin/Doctor)
Basic Flow	<p>This use case describes how an admin can delete an admission.</p> <ol style="list-style-type: none"> 1. The admin has to login into the system. 2. Select an admission. 3. Decided to delete.
Alternate Flow	Not Applicable
Validation	Admission id should be null.
Pre-Conditions	Users should have already logged into the system.
Post-Conditions	Admission is removed from the list.



Brief Description	Create Illness (Admin/Doctor)
Basic Flow	<p>This use case describes how admin inserts an illness into the system.</p> <ol style="list-style-type: none"> 1. The client has to login into the system. 2. The following information is required to insert an illness. <ul style="list-style-type: none"> • Illness Name • Illness Description
Alternate Flow	The system will validate the information provided. If any invalid data is found, the input form will be redirected with error message.
Validation	<p>Illness Name should not be null.</p> <p>Illness Description should not be null.</p>
Pre-Conditions	User should have already logged into the system.
Post-Conditions	Success message should be shown.

The screenshot shows a user interface for inserting an illness. The title 'Insert Illness' is at the top. Below it are two input fields: 'Illness name' (with placeholder 'Eg: Acetaminophen') and 'Description' (with placeholder 'Eg: Acetaminophen'). At the bottom right are 'Save' and 'Back' buttons.

Brief Description	Update Illness (Admin/Doctor)
Basic Flow	<p>This use case describes how admin updates an illness in the system.</p> <ol style="list-style-type: none"> 1. The client has to login into the system. 2. The following information is required to insert an illness. <ul style="list-style-type: none"> • Illness ID • Illness Name • Illness Description
Alternate Flow	The system will validate the information provided. If any invalid data is found, the input form will be redirected with error message.
Validation	Illness ID should not be null. Illness Name should not be null. Illness Description should not be null.
Pre-Conditions	User should have already logged into the system.
Post-Conditions	Success message should be shown.



The screenshot shows a mobile-style application interface titled "Update Illness". The main screen has a light blue header bar. Below it is a white rectangular form with rounded corners. At the top of the form is the title "Update Illness" in bold black font. The form contains two input fields: "Illness name" with the placeholder "Abdominal aortic aneurysm" and "Description" with the placeholder "An abdominal aortic aneurysm (AAA) is a swelling (aneurysm) of the aorta – the main blood vessel that leads away from the heart, down through the abdomen to the rest of the body.". At the bottom right of the form are two buttons: a blue "Save" button and a grey "Back" button.

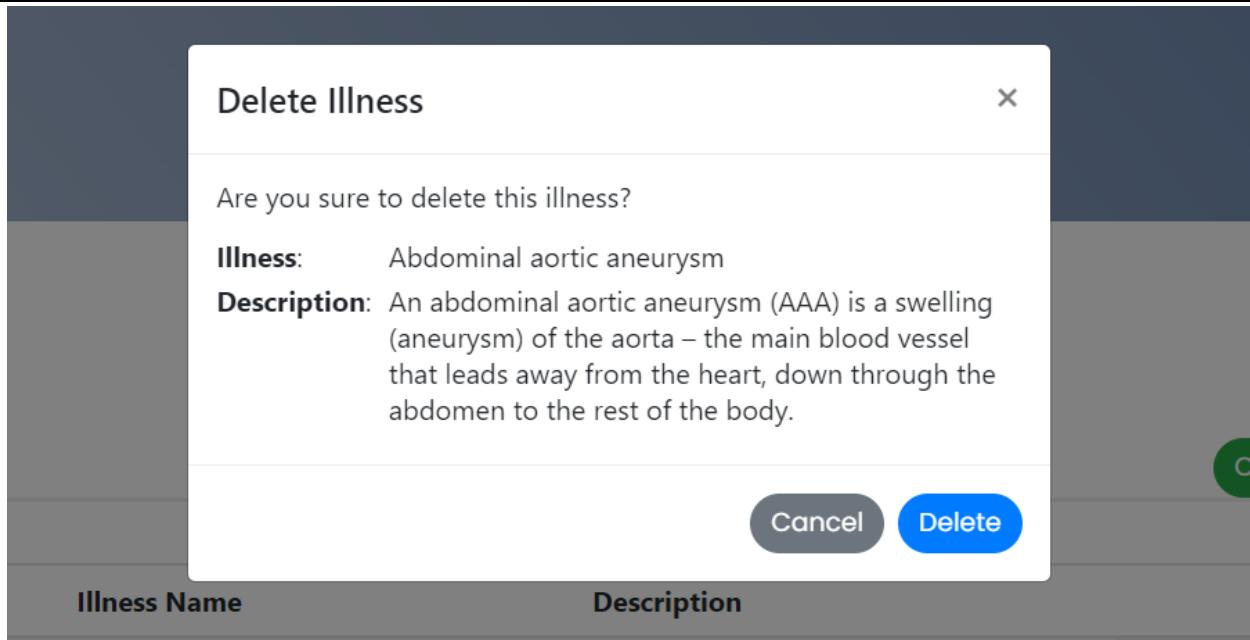
Brief Description	View Illness (Admin/Doctor)
Basic Flow	<p>This use case describes how a client can view a list of illnesses.</p> <ol style="list-style-type: none"> 1. The admin/doctor has to login into the system. 2. The following information has to be displayed. <ul style="list-style-type: none"> • Illness ID • Patient ID • Date In • Date Out
Alternate Flow	Not Applicable
Validation	Not Applicable
Pre-Conditions	Users should have already logged into the system.
Post-Conditions	Not Applicable

The screenshot shows a mobile application interface titled "List Illness". At the top right is a green "Create+" button. Below the title is a table with columns for "#", "Illness Name", and "Description". The table contains 17 rows of data, each with a small icon bar at the end. The data is as follows:

#	Illness Name	Description
1000	Abdominal aortic aneurysm	An abdominal aortic aneurysm (AAA) is a swelling (aneurysm) of the aorta – the main blood vessel that leads away from the heart, down through the abdomen to the rest of the body.
1013	Abdominal aortic aneurysm	An abdominal aortic aneurysm (AAA) is a swelling (aneurysm) of the aorta – the main blood vessel that leads away from the heart, down through the abdomen to the rest of the body.
1001	Acute cholecystitis	The main symptom of acute cholecystitis is a sudden sharp pain in the upper right side of your tummy (abdomen) that spreads towards your right shoulder.
1014	Acute cholecystitis	The main symptom of acute cholecystitis is a sudden sharp pain in the upper right side of your tummy (abdomen) that spreads towards your right shoulder.
1002	Acute lymphoblastic leukaemia	Leukaemia is cancer of the white blood cells. Acute leukaemia means the condition progresses rapidly and aggressively and requires immediate treatment.
1015	Acute lymphoblastic leukaemia	Leukaemia is cancer of the white blood cells. Acute leukaemia means the condition progresses rapidly and aggressively and requires immediate treatment.
1003	Benign prostate enlargement	Benign prostate enlargement (BPE), also known as benign prostatic hyperplasia (BPH), is a condition that affects older men and anyone with a prostate.
1016	Benign prostate enlargement	Benign prostate enlargement (BPE), also known as benign prostatic hyperplasia (BPH), is a condition that affects older men and anyone with a prostate.
1004	Bile duct cancer (cholangiocarcinoma)	Bile duct cancer (cholangiocarcinoma) is a rare but aggressive type of cancer.
1017	Bile duct cancer (cholangiocarcinoma)	Bile duct cancer (cholangiocarcinoma) is a rare but aggressive type of cancer.

At the bottom left is the text "Page 1 among 3 page(s)". At the bottom right are navigation buttons: 1, 2, 3, >>.

Brief Description	Delete Illness (Admin/Doctor)
Basic Flow	<p>This use case describes how an admin can delete an illness.</p> <ol style="list-style-type: none"> 1. The admin has to login into the system. 2. Select a illness. 3. Decided to delete.
Alternate Flow	Not Applicable
Validation	Illness id should be null.
Pre-Conditions	Users should have already logged into the system.
Post-Conditions	Department is removed from the list.



Brief Description	Create Health Record (Admin/Doctor)
Basic Flow	<p>This use case describes how admin inserts a health record into the system.</p> <ol style="list-style-type: none"> 1. The client has to login into the system. 2. The following information is required to insert a health record. <ul style="list-style-type: none"> • Doctor ID • Patient ID • Date In • Date Out
Alternate Flow	The system will validate the information provided. If any invalid data is found, the input form will be redirected with error message.
Validation	<p>Doctor ID should not be null.</p> <p>Patient ID should not be null.</p> <p>Date In should not be null.</p>
Pre-Conditions	User should have already logged into the system.
Post-Conditions	Success message should be shown.

The screenshot shows a mobile application titled "Create Health Record". The interface is divided into several sections:

- Doctor Information:** Contains fields for "Doctor name" (placeholder: Eg: John Doe) and "Phone number" (placeholder: Eg: 0918464495). A "CHANGE" button is located at the top right.
- Patient Information:** Contains fields for "Patient name" (placeholder: Eg: John Doe), "Gender" (set to "Male"), "Day of Birth" (placeholder: dd/mm/yyyy), "Phone Number" (placeholder: Eg: 0918464495), and "Address" (placeholder: Eg: Ho Chi Minh city, Viet Nam). A "CHANGE" button is located at the top right.
- Health Record Details:** Contains fields for "Creation Date" (set to 09/10/2022) and "Re Date" (placeholder: dd/mm/yyyy). A "CHANGE" button is located at the top right.
- Illness Name:** Placeholder: Nothing to show.
- Description:** Placeholder: Nothing to show.
- Prescription Details:** Contains fields for "Medicine Name", "Quantity", and "Unit". A "CHANGE" button is located at the top right.
- Bottom Buttons:** "Save" and "Back" buttons.

Brief Description	Update Health Record (Admin/Doctor)
Basic Flow	<p>This use case describes how admin updates a health record in the system.</p> <ol style="list-style-type: none"> 1. The client has to login into the system. 2. The following information is required to insert a health record. <ul style="list-style-type: none"> • Health Record ID • Doctor ID • Patient ID • Date In • Date Out
Alternate Flow	The system will validate the information provided. If any invalid data is found, the input form will be redirected with error message.
Validation	<p>Health Record ID should not be null.</p> <p>Doctor ID should not be null.</p> <p>Patient ID should not be null.</p> <p>Date In should not be null.</p>
Pre-Conditions	User should have already logged into the system.
Post-Conditions	Success message should be shown.

Update Health Record

Doctor Information

Doctor name	Phone number
Naomi Garner	7860281026

Patient Information

Patient name	Gender
Tran Hung Trong	Male
Day of Birth	Phone Number
21/12/2000	0939946728
Address	Dong Thap province

Health Record Details

Creation Date	Re Date
09/10/2022	14/10/2022

Illness Name **Description**

Acute lymphoblastic leukaemia	Leukaemia is cancer of the white blood cells. Acute leukaemia means the condition progresses rapidly and aggressively and requires immediate treatment.	X
Acute lymphoblastic leukaemia	Leukaemia is cancer of the white blood cells. Acute leukaemia means the condition progresses rapidly and aggressively and requires immediate treatment.	X

Prescription Details

Medicine Name	Quantity	Unit	ADD
Adderall	12	pellet	X
Denosumab	12	pellet	X

Save
Back

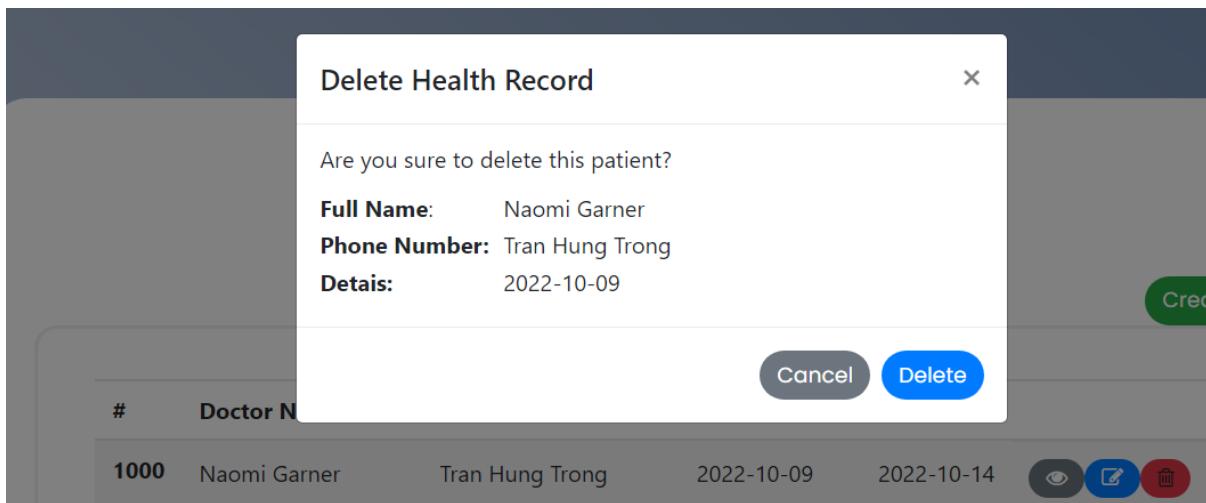
Brief Description	View Health Record (Admin/Doctor)
Basic Flow	<p>This use case describes how a client can view a list of health records.</p> <ol style="list-style-type: none"> 1. The admin/doctor has to login into the system. 2. The following information has to be displayed. <ul style="list-style-type: none"> • Health Record ID • Patient ID • Date In • Date Out
Alternate Flow	Not Applicable
Validation	Not Applicable
Pre-Conditions	Users should have already logged into the system.
Post-Conditions	Not Applicable

The screenshot shows a mobile application interface titled "List Health Record". The table data is as follows:

#	Doctor Name	Patient Name	Creation Date	Re Date
1000	Naomi Garner	Tran Hung Trong	2022-10-09	2022-10-14
1001	Naomi Garner	Shah Khada	2022-09-02	
1002	Naomi Garner	Gerry Cody Fitch	2022-09-02	
1003	Dick Bradley Clayton	Huynh Quang Anh	2022-10-01	
1004	Dick Bradley Clayton	Helen Johanna Pineda	2022-10-02	
1005	Naomi Garner	Tran Hung Trong	2022-10-09	2022-10-14
1006	Naomi Garner	Shah Khada	2022-09-02	
1007	Naomi Garner	Gerry Cody Fitch	2022-09-02	
1008	Dick Bradley Clayton	Huynh Quang Anh	2022-10-01	
1009	Dick Bradley Clayton	Helen Johanna Pineda	2022-10-02	

At the bottom left, it says "Page 1 among 1 page(s)". At the bottom right, there is a small number "1".

Brief Description	Delete Health Record (Admin/Doctor)
Basic Flow	<p>This use case describes how an admin can delete a health record.</p> <ol style="list-style-type: none"> 1. The admin has to login into the system. 2. Select a health record. 3. Decided to delete.
Alternate Flow	Not Applicable
Validation	Health Record id should be null.
Pre-Conditions	Users should have already logged into the system.
Post-Conditions	Health Record is removed from the list.



Brief Description	Create Account (Admin/Doctor)
Basic Flow	<p>This use case describes how an admin inserts an account into the system.</p> <ol style="list-style-type: none"> 1. The client has to login into the system. 2. The following information is required to insert an account. <ul style="list-style-type: none"> • Username • Doctor ID
Alternate Flow	The system will validate the information provided. If any invalid data is found, the input form will be redirected with error message.
Validation	Username must not be null. Doctor ID should not be null.
Pre-Conditions	User should have already logged into the system.
Post-Conditions	Success message should be shown.

Create Account

User name

Enter username

Doctor name

Eg: John Doe

Gender

Male

Day of Birth

dd/mm/yyyy

Phone Number

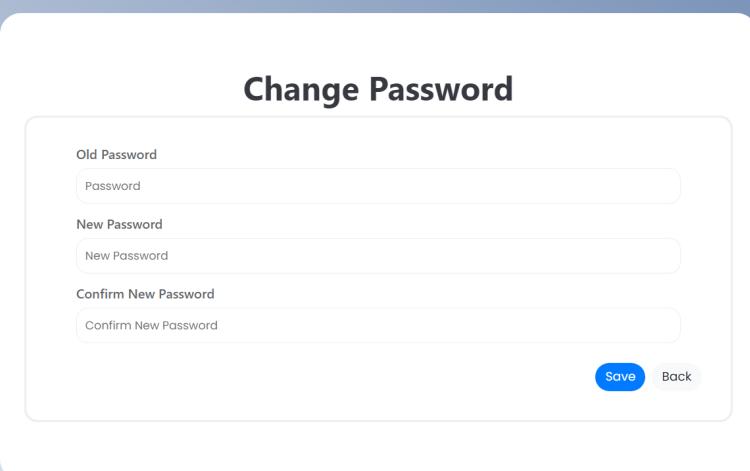
Eg: 0918464495

Address

Eg: Ho Chi Minh city, Viet Nam

Save Back

Brief Description	Change Password (Admin/Doctor)
Basic Flow	<p>This use case describes how admin updates an account in the system.</p> <ol style="list-style-type: none"> 1. The client has to login into the system. 2. The following information is required to insert an account. <ul style="list-style-type: none"> • Old password • New password • Confirm new password
Alternate Flow	The system will validate the information provided. If any invalid data is found, the input form will be redirected with error message.
Validation	Old password should not be null. New password should not be null. Confirm new password should not be null. Old password must be at least 6 characters. New password must be at least 6 characters. Confirm new password must be at least 6 characters.
Pre-Conditions	User should have already logged into the system.
Post-Conditions	Success message should be shown.

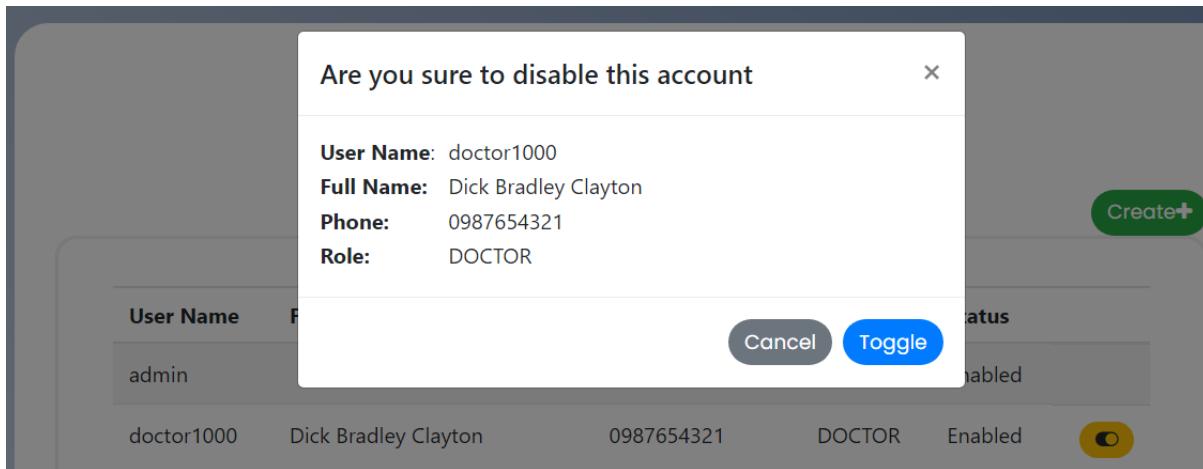


Brief Description	View Account (Admin/Doctor)
Basic Flow	<p>This use case describes how a client can view a list of accounts.</p> <ol style="list-style-type: none"> 1. The admin/doctor has to login into the system. 2. The following information has to be displayed. <ul style="list-style-type: none"> • Account ID • Patient ID • Date In • Date Out
Alternate Flow	Not Applicable
Validation	Not Applicable
Pre-Conditions	Users should have already logged into the system.
Post-Conditions	Not Applicable

User Name	Full Name	Phone Number	Role	Status
admin			ADMIN	Enabled
doctor1000	Dick Bradley Clayton	0987654321	DOCTOR	Enabled
doctor1001	Christa Hand	0987654316	DOCTOR	Enabled
doctor1002	Kenneth Martin Valenzuela	4649921169	DOCTOR	Enabled
doctor1003	Luke Wallace Werner	0987654632	DOCTOR	Enabled
doctor1004	Dan Charles Benjamin	0987654324	DOCTOR	Enabled
doctor1010	Naomi Garner	7860281026	DOCTOR	Enabled

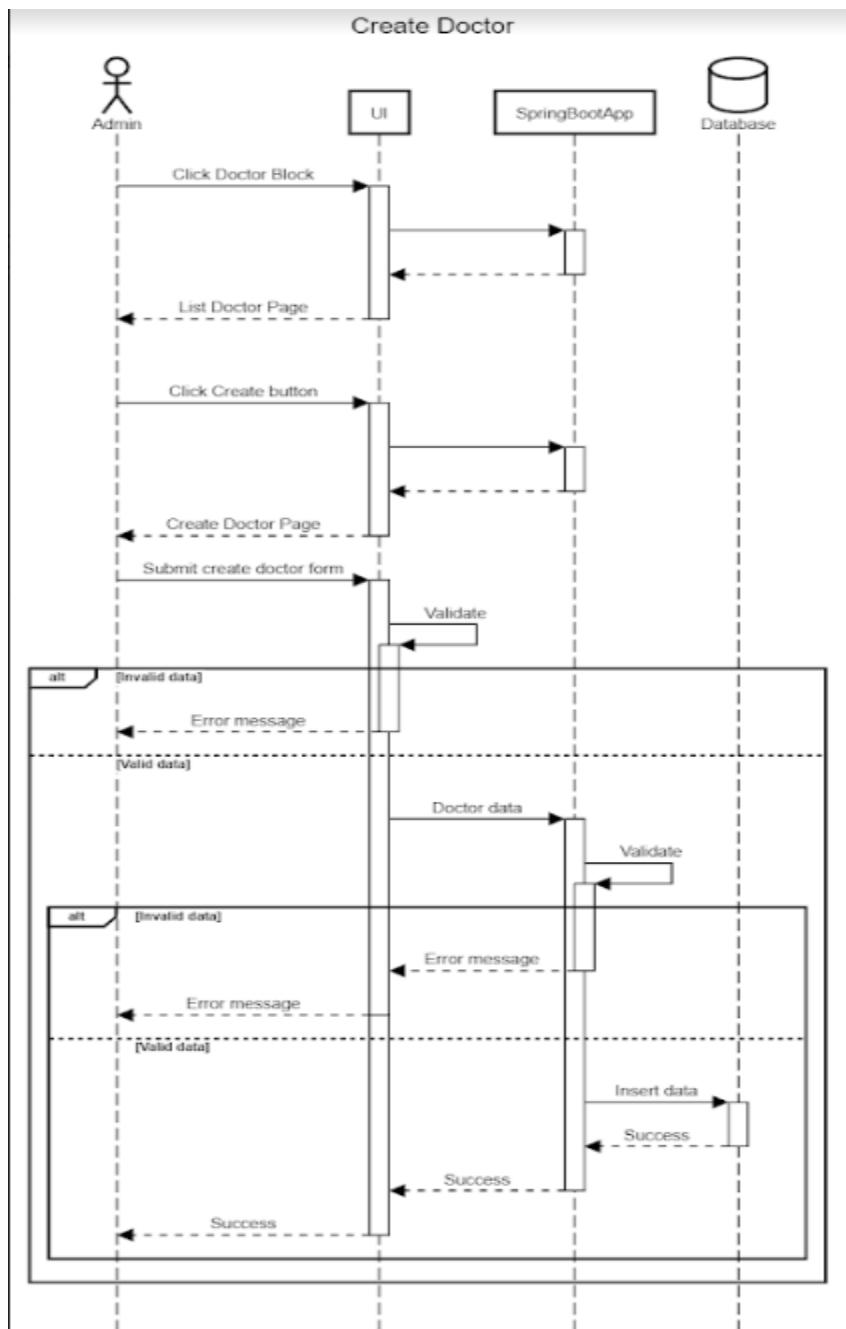
Page 1 among 1 page(s) 1

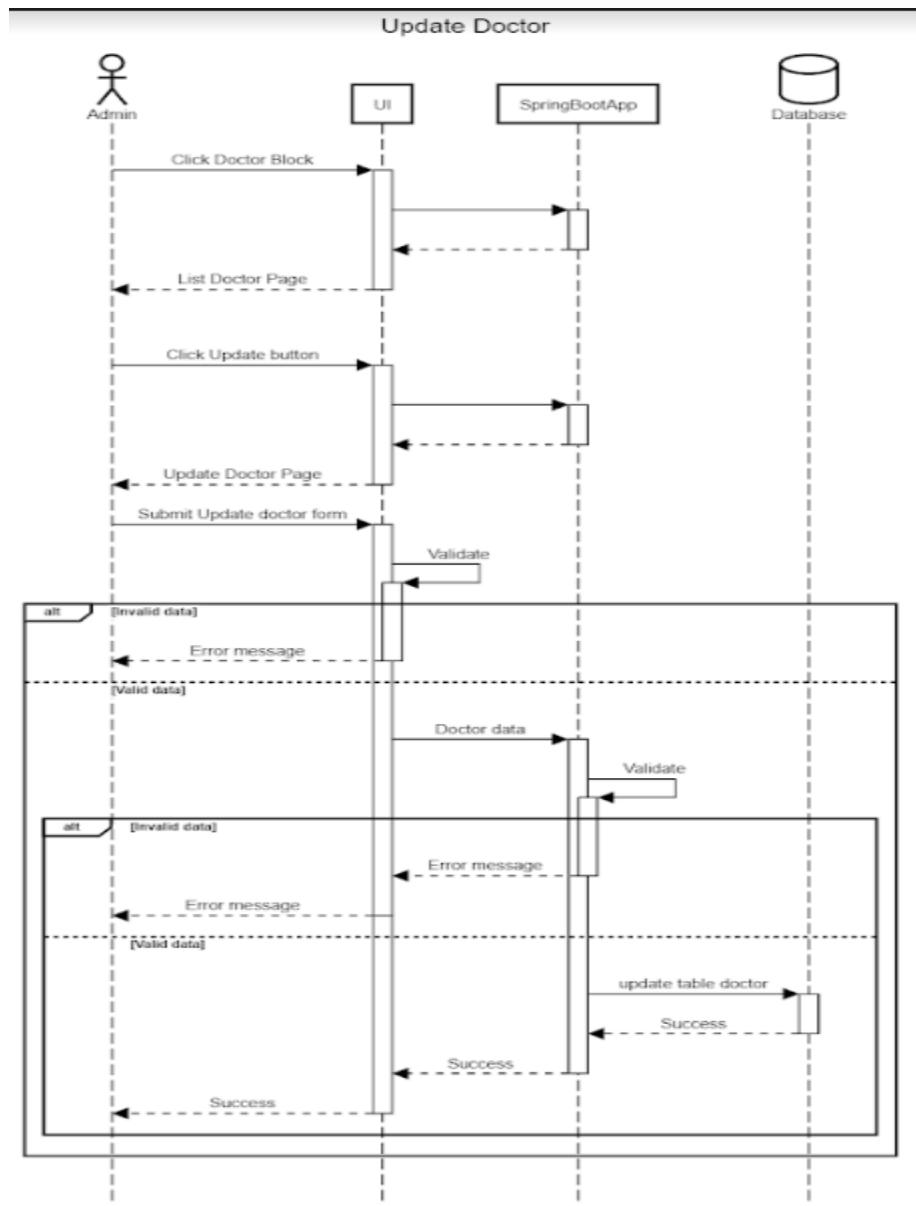
Brief Description	Toggle Status Account (Admin/Doctor)
Basic Flow	<p>This use case describes how an admin can delete an account.</p> <ol style="list-style-type: none"> 1. The admin has to login into the system. 2. Select an account. 3. Decided to toggle status.
Alternate Flow	Not Applicable
Validation	Username should be null.
Pre-Conditions	Users should have already logged into the system.
Post-Conditions	Account is removed from the list.



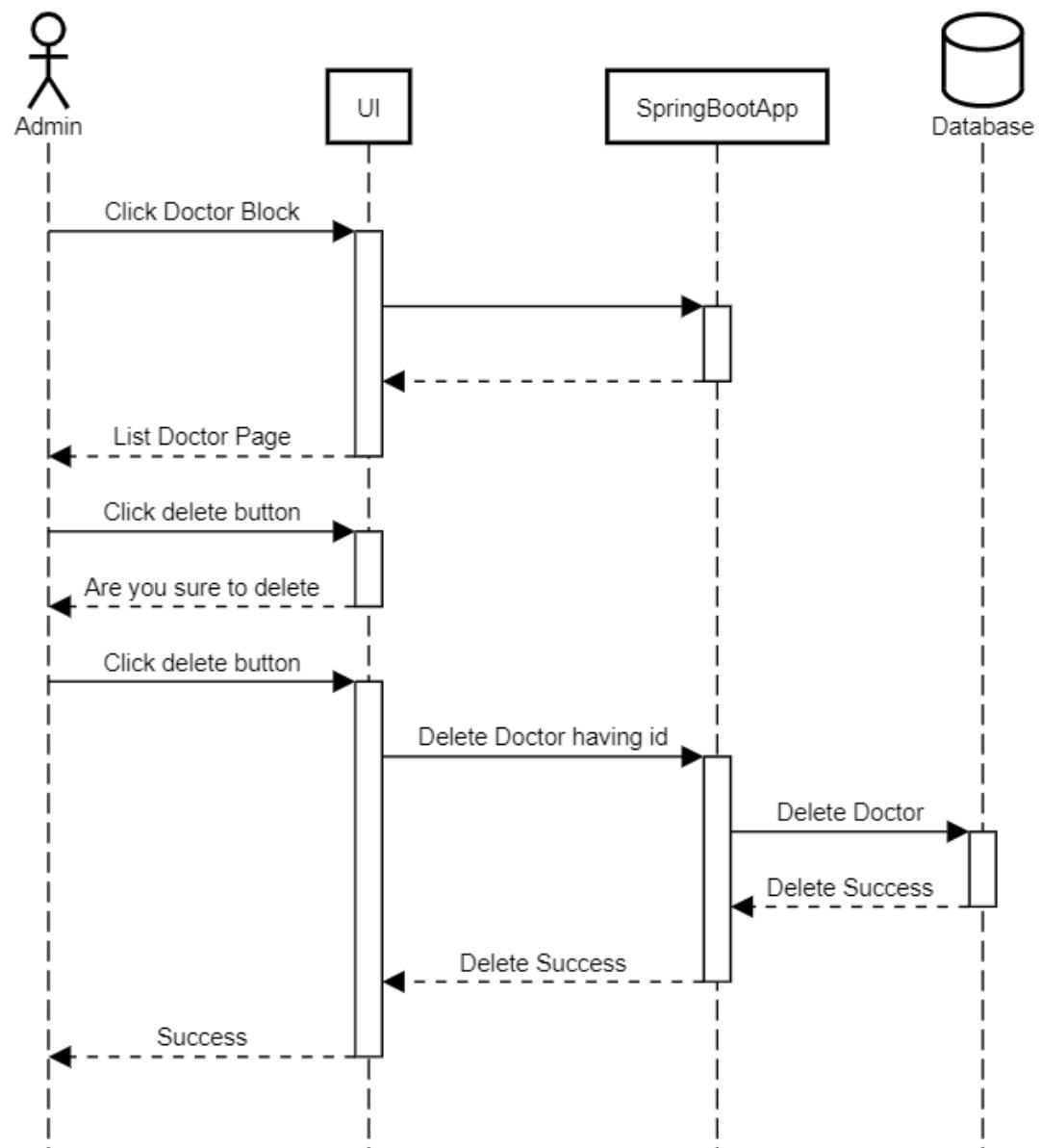
4.1.2 Sequence diagram

4.1.2.1 Doctor

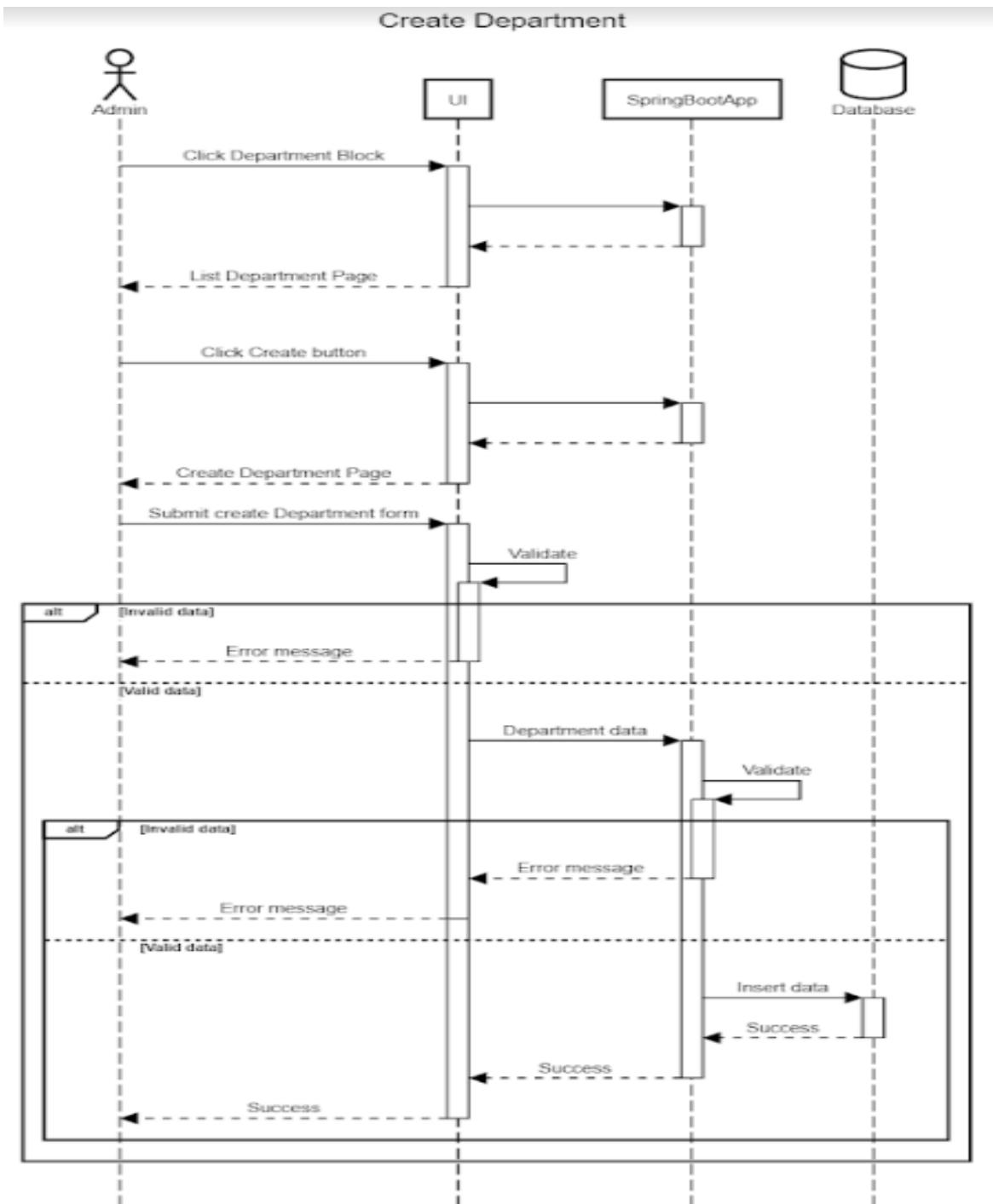


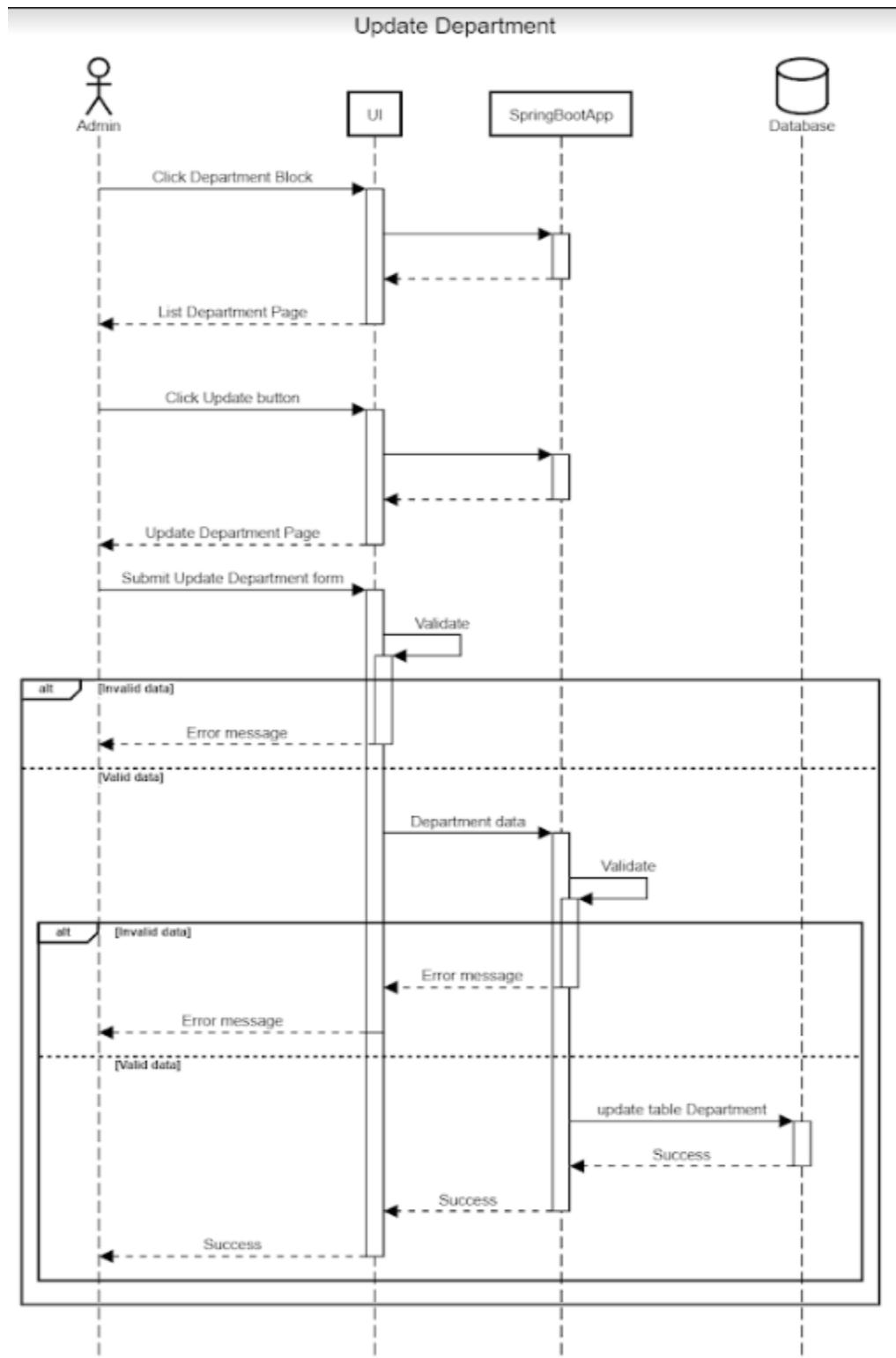


Delete Doctor

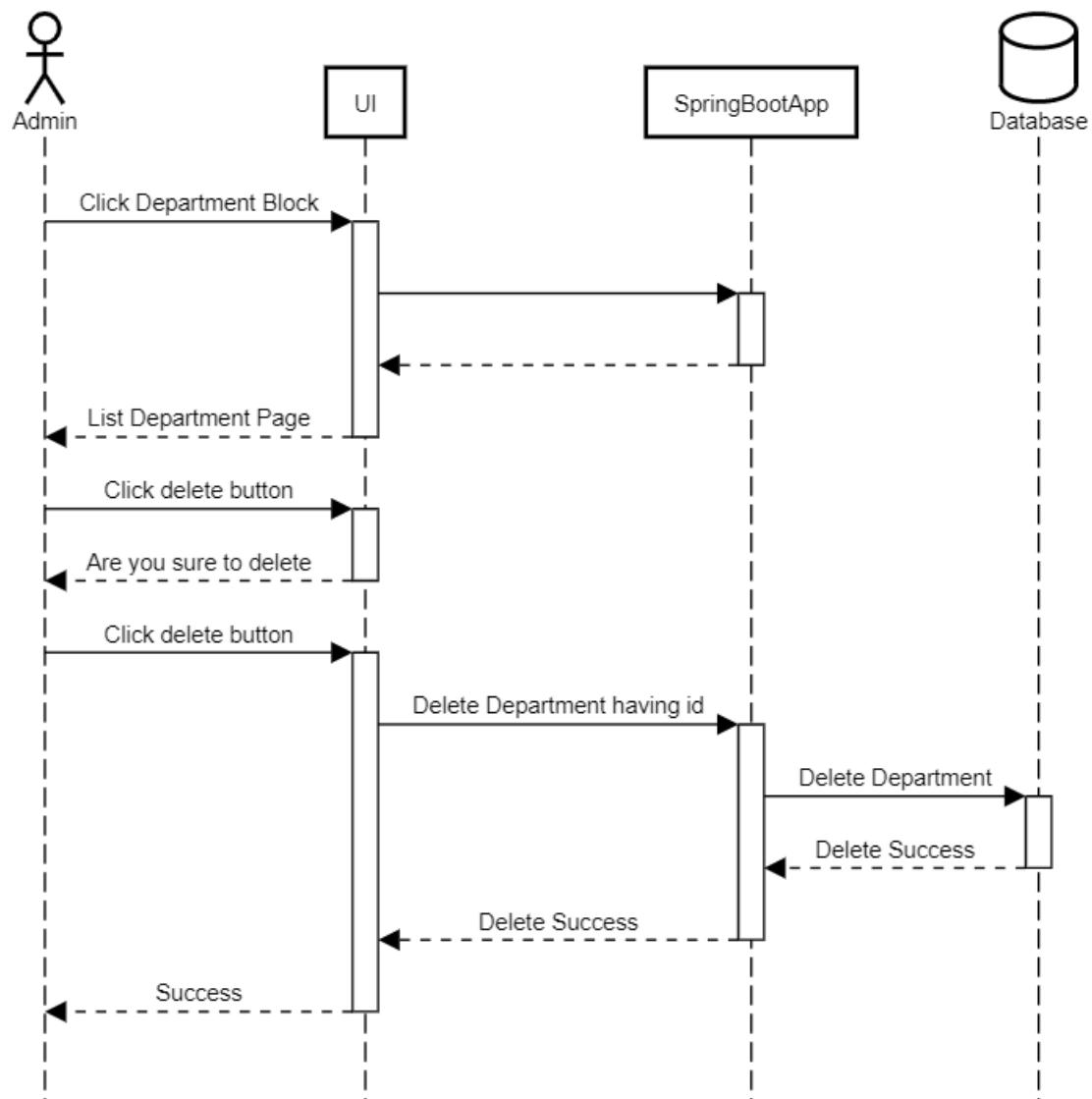


4.1.2.2 Department

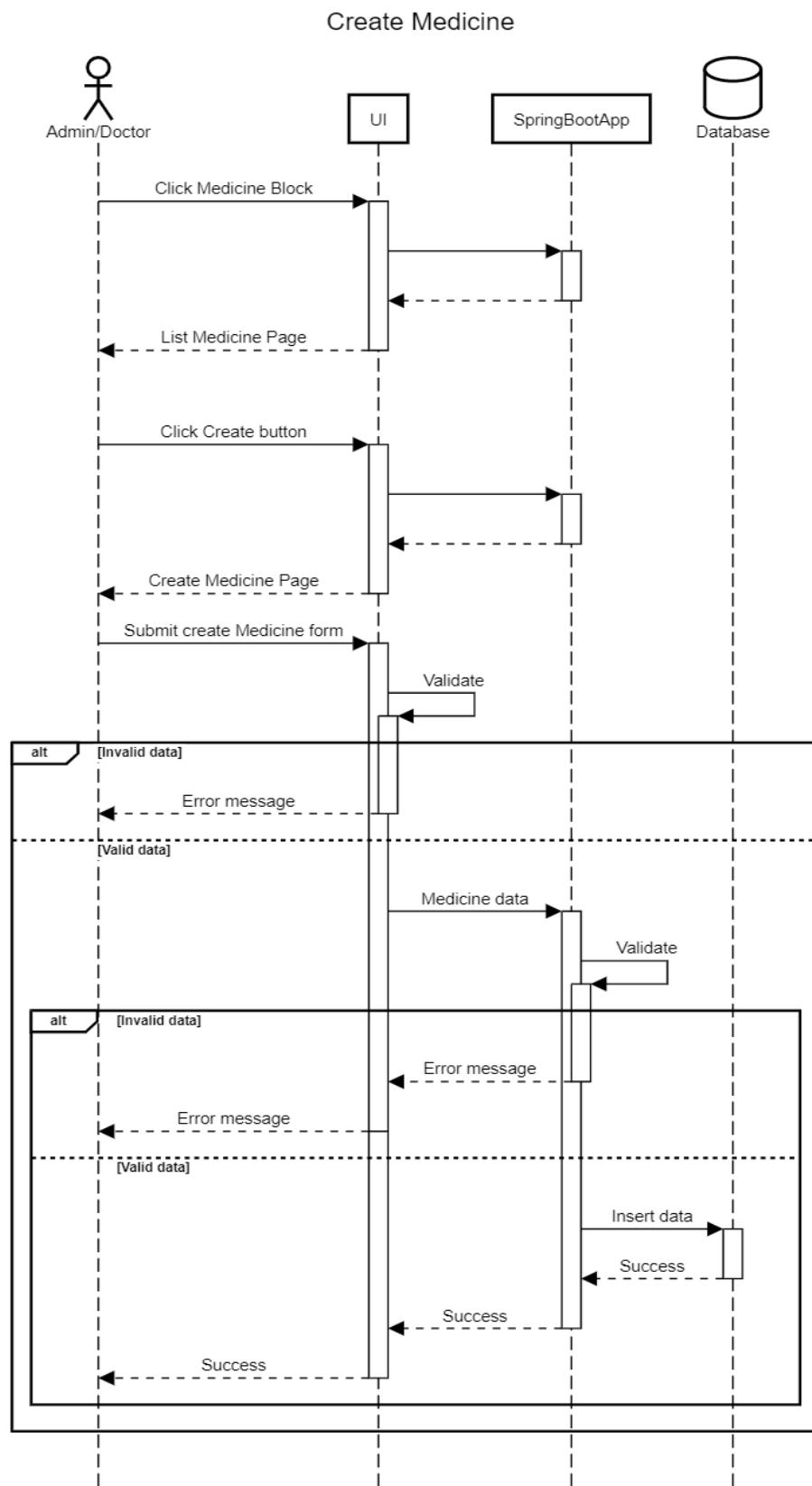




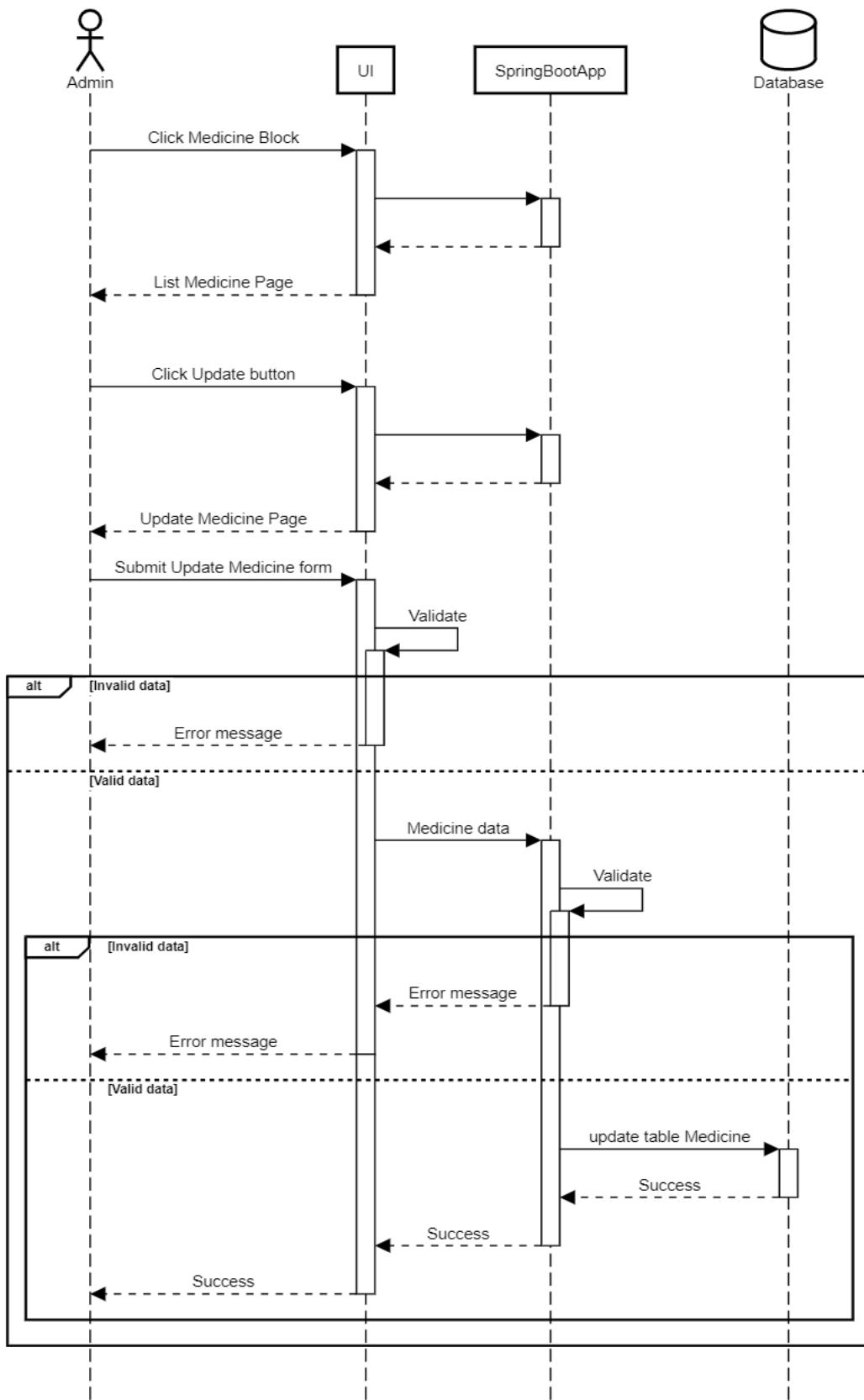
Delete Department



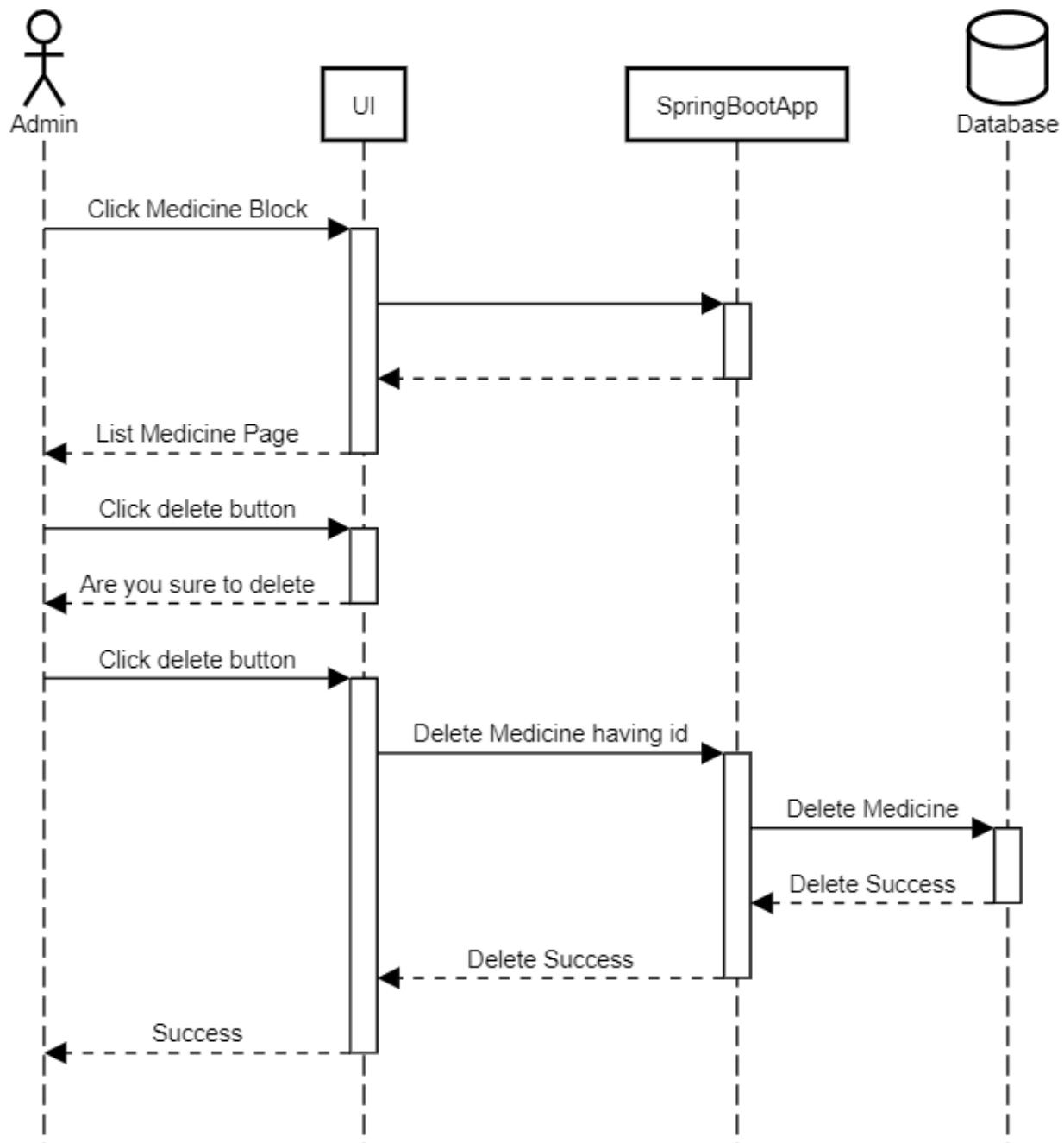
4.1.2.3 Medicine



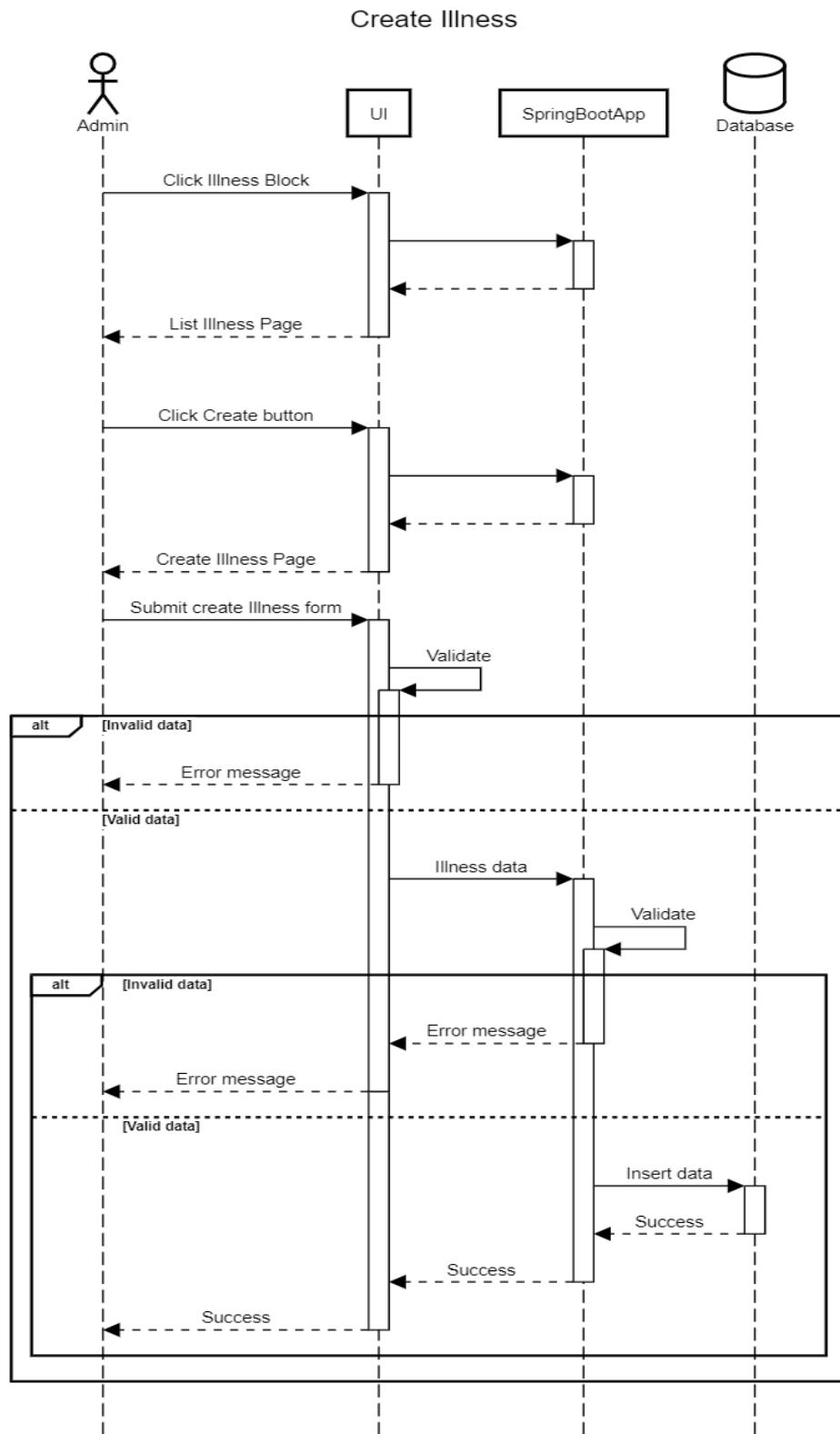
Update Medicine



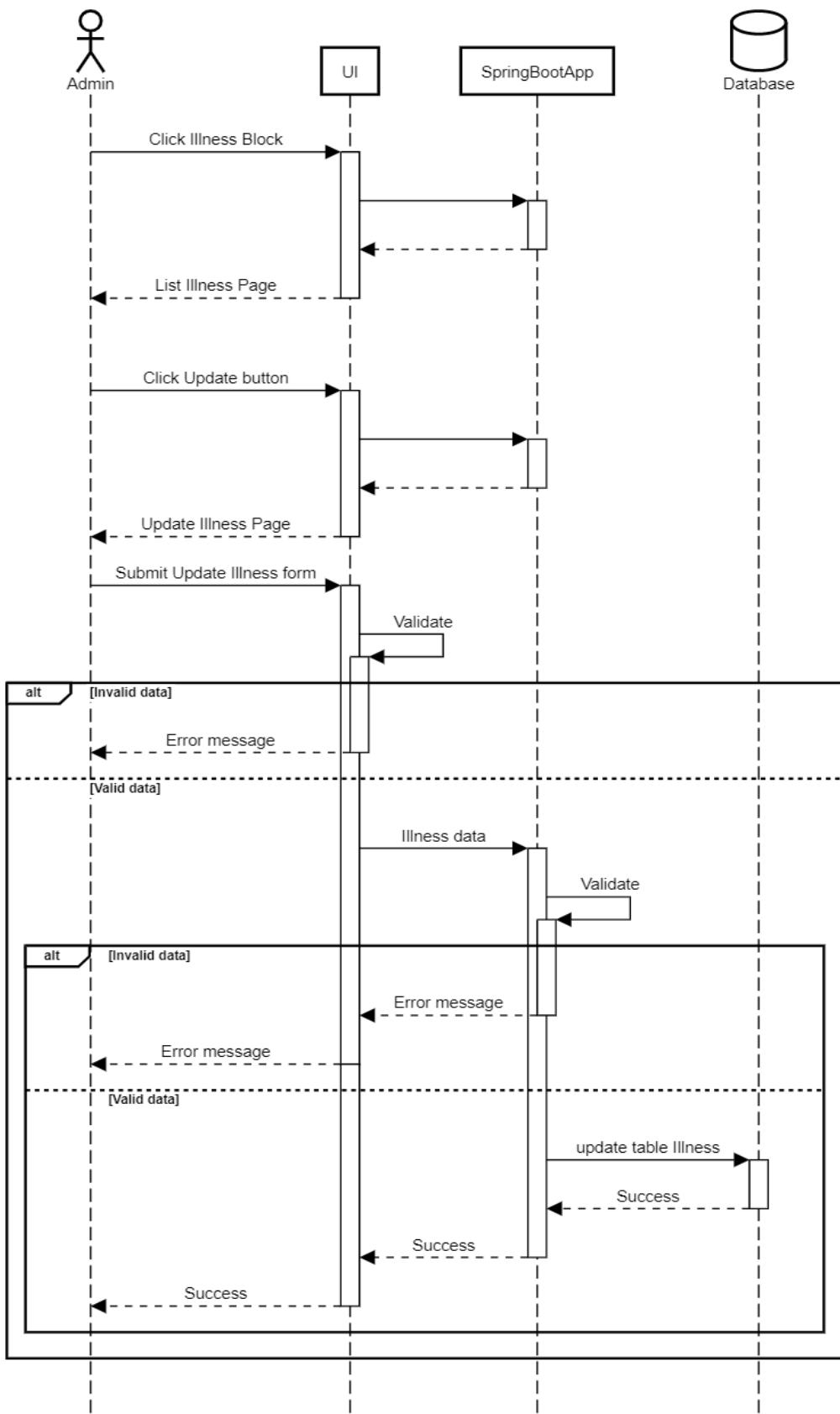
Delete Medicine



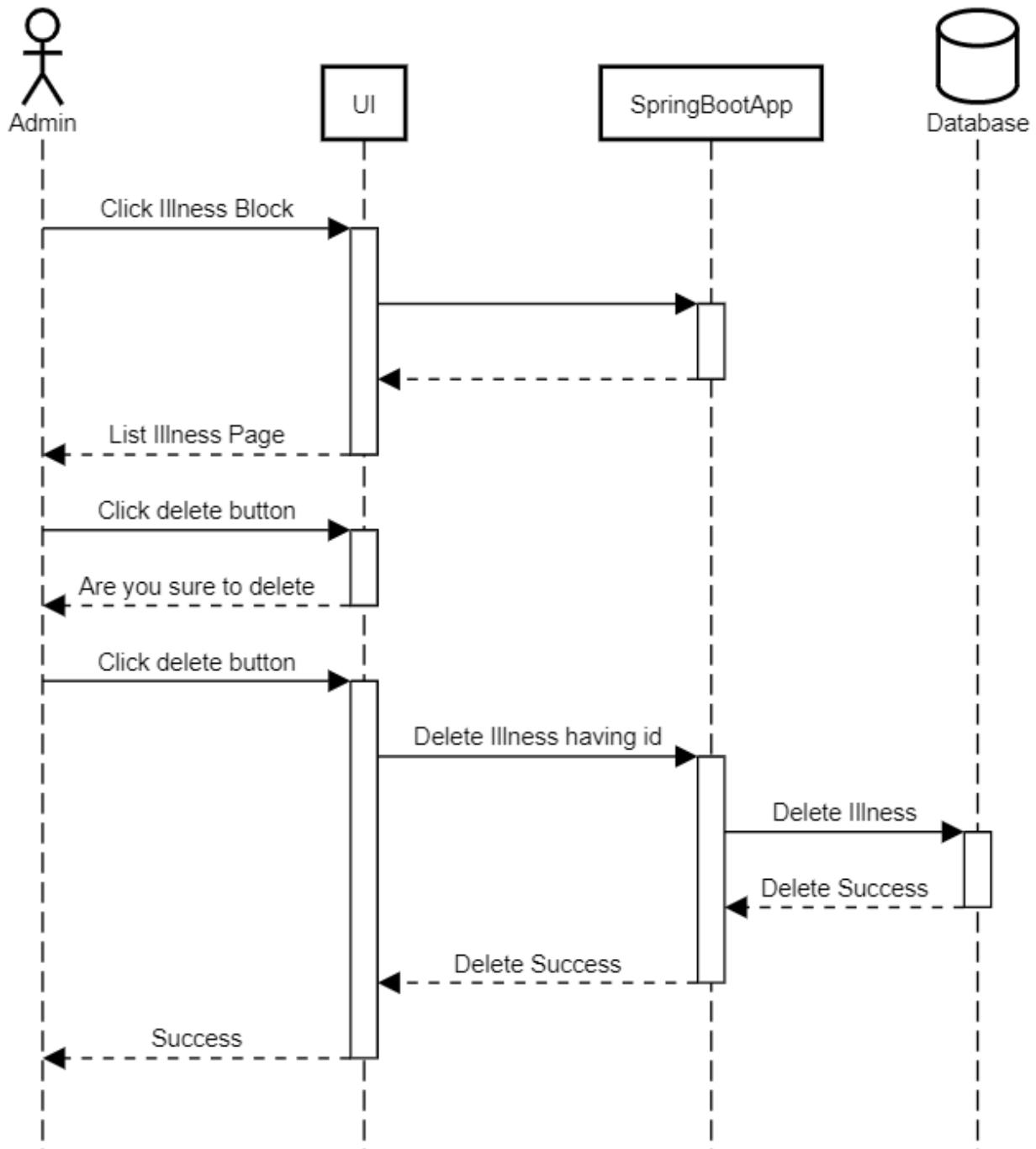
4.1.2.4 Illness



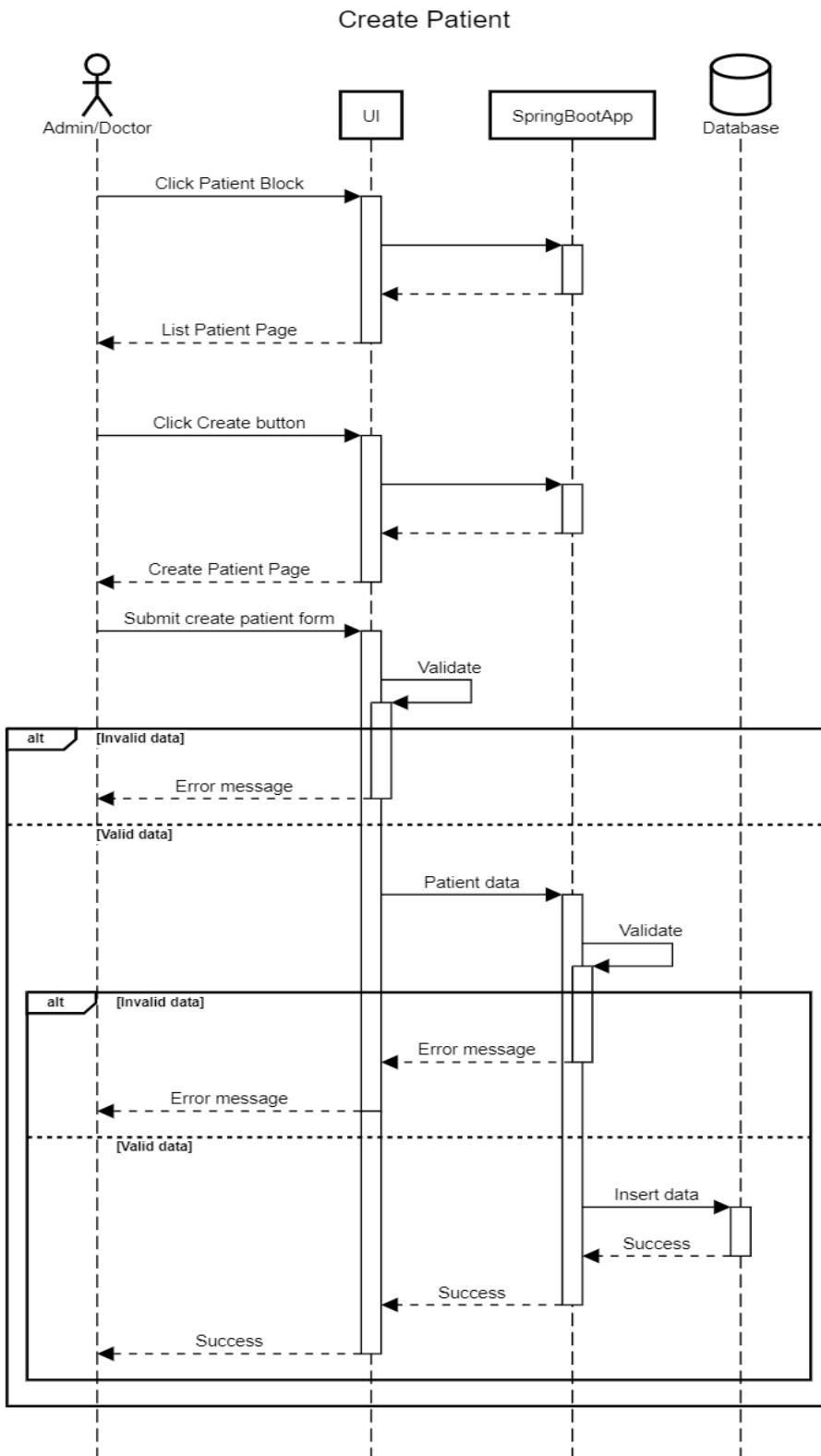
Update Illness



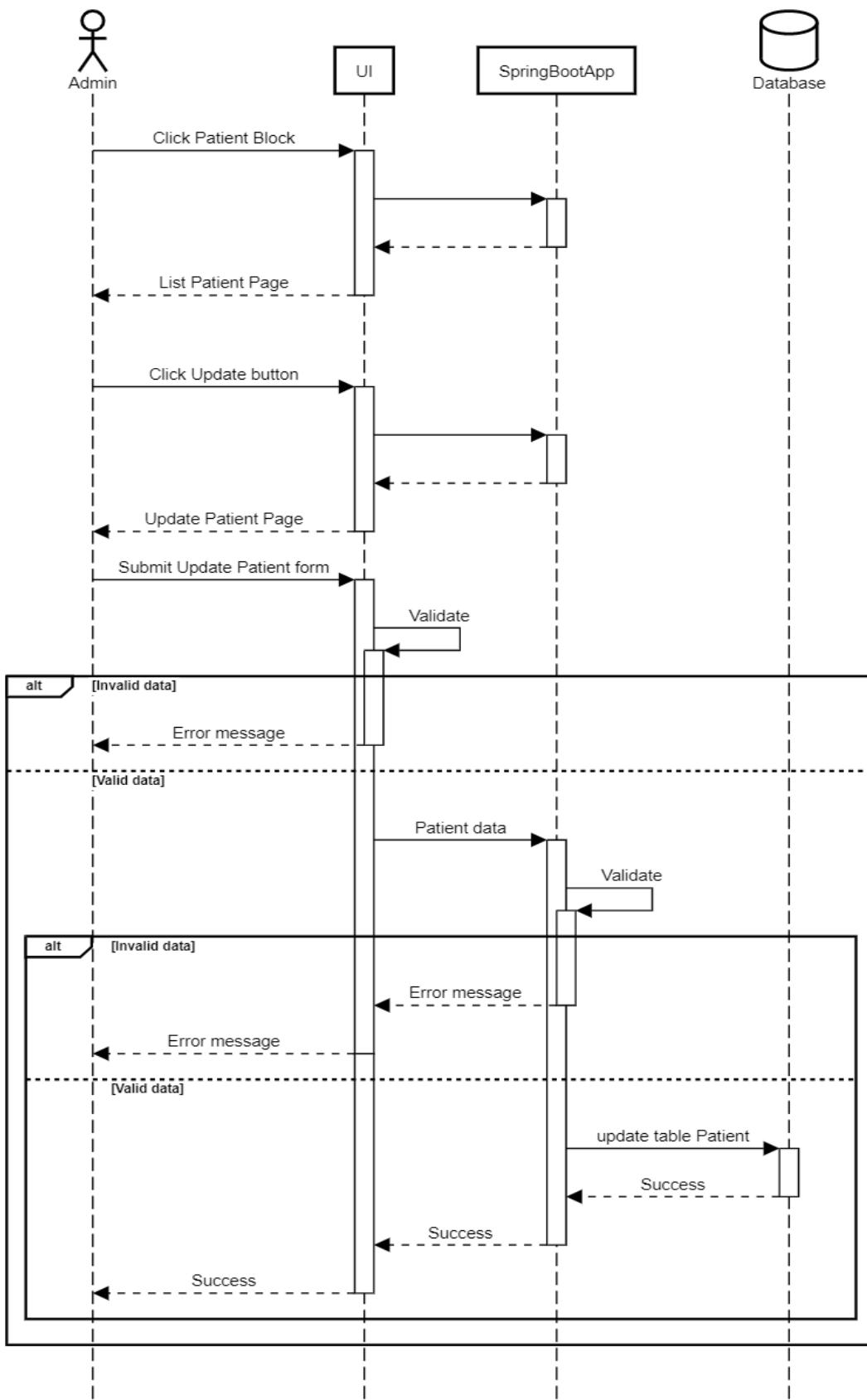
Delete Illness



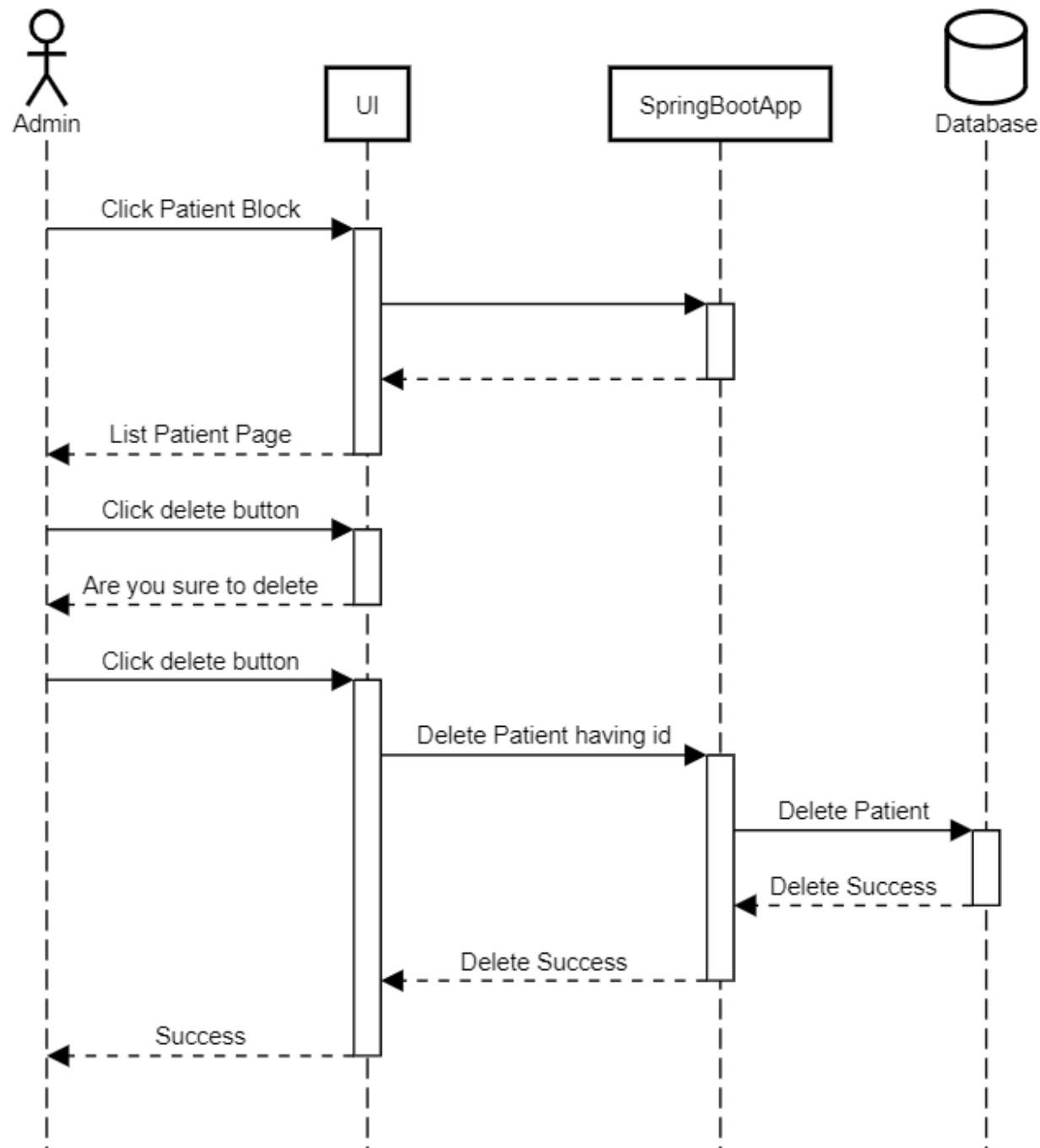
4.1.2.5 Patient



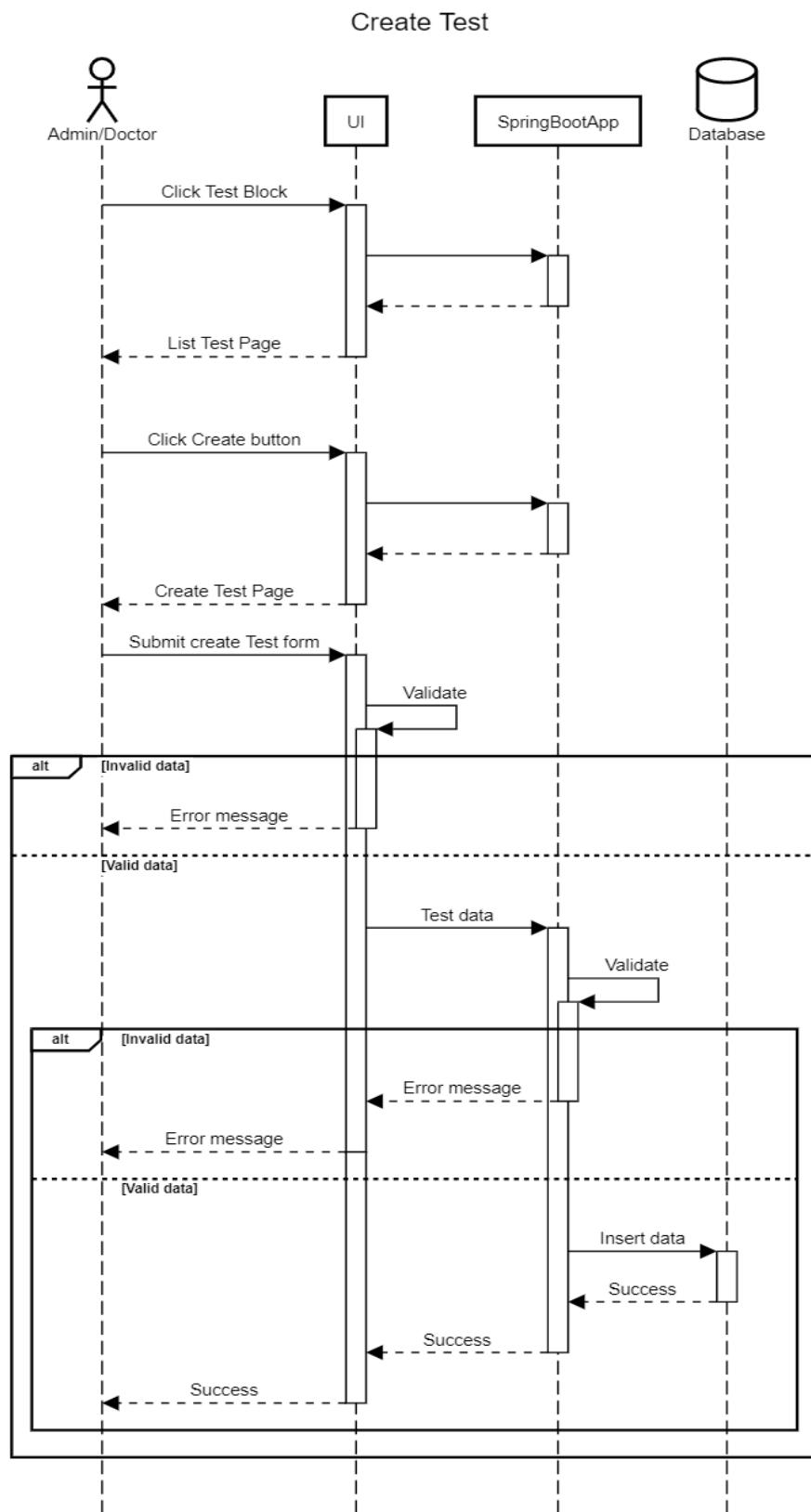
Update Patient



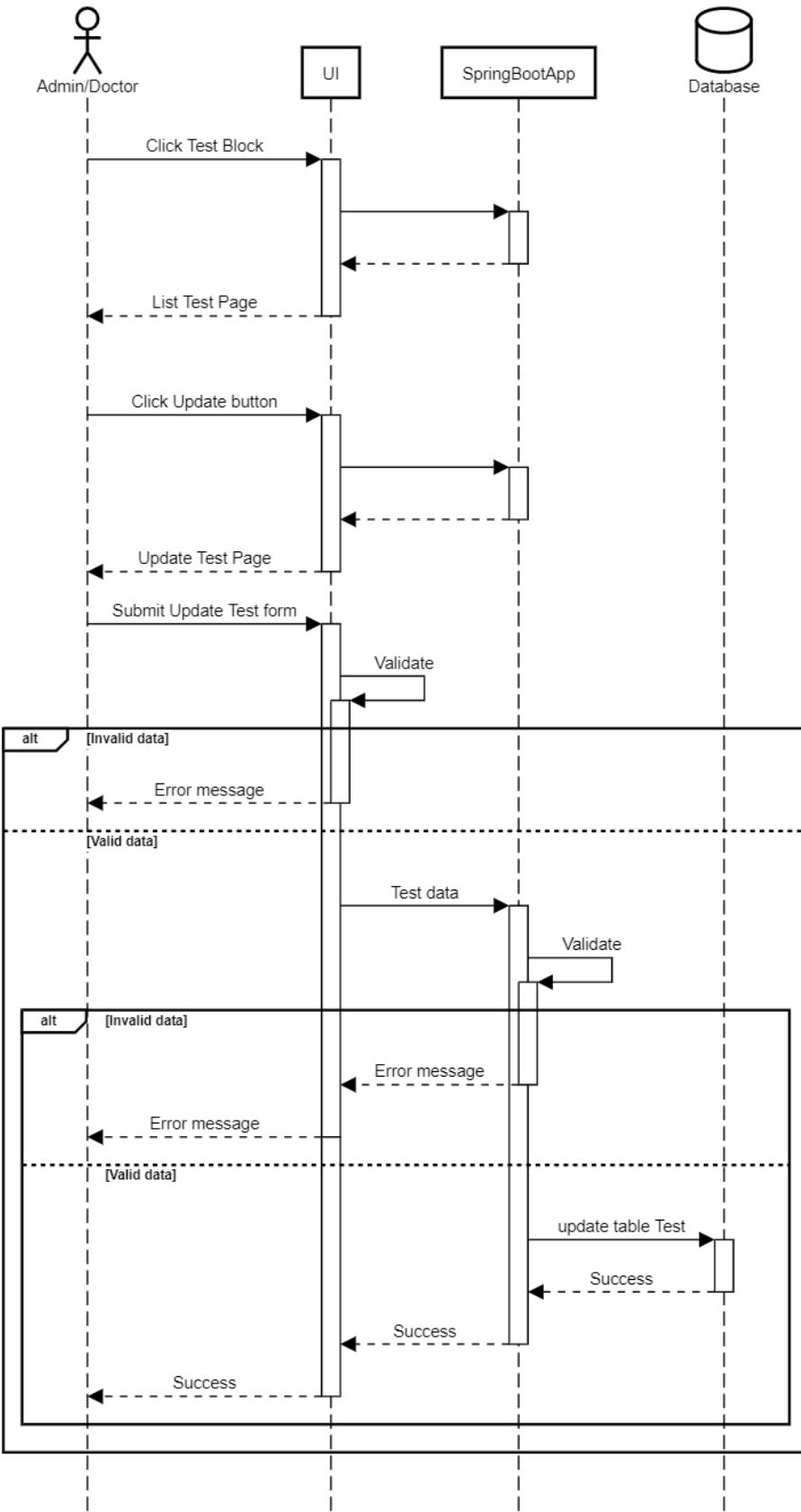
Delete Patient



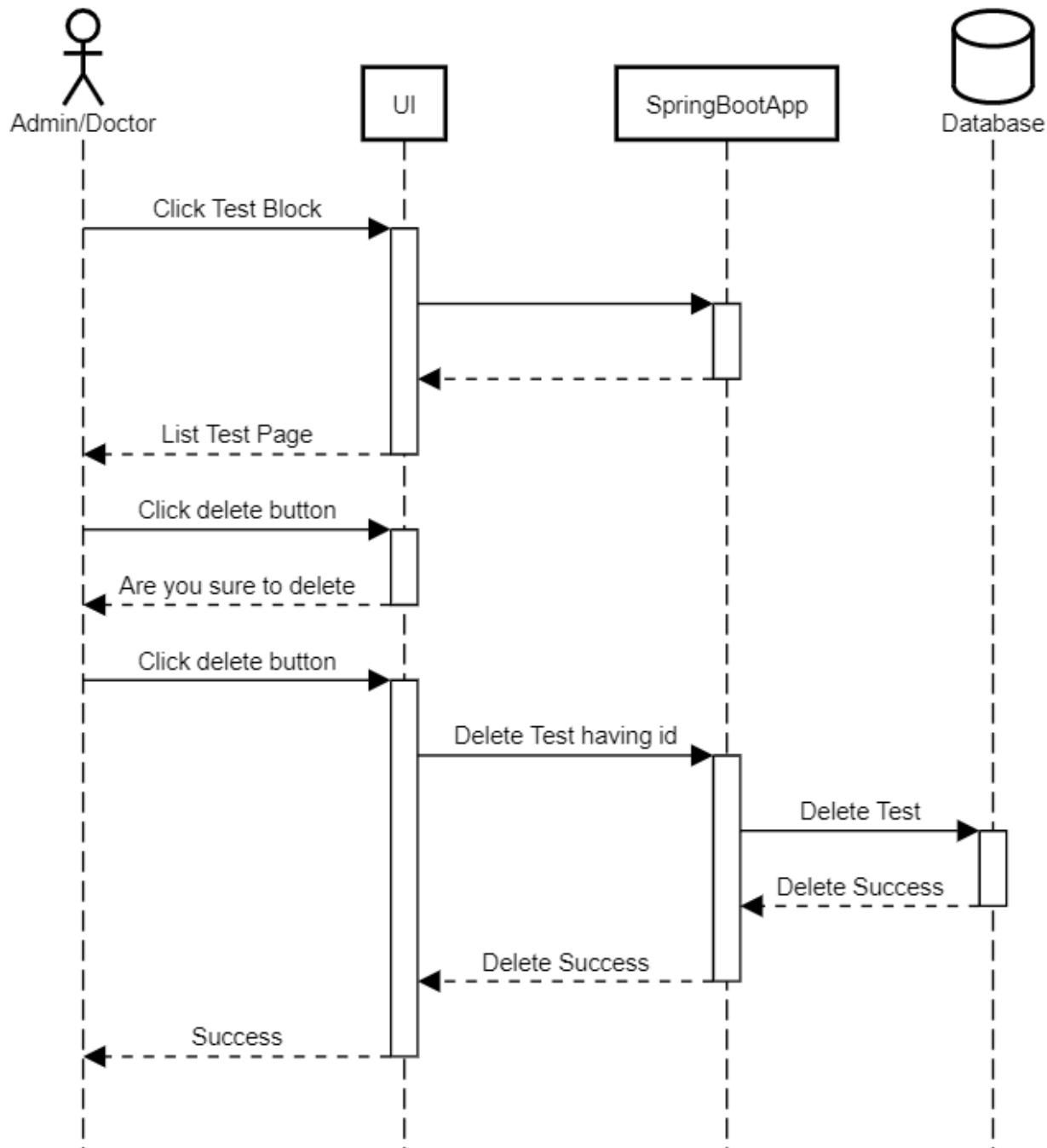
4.1.2.6 Test



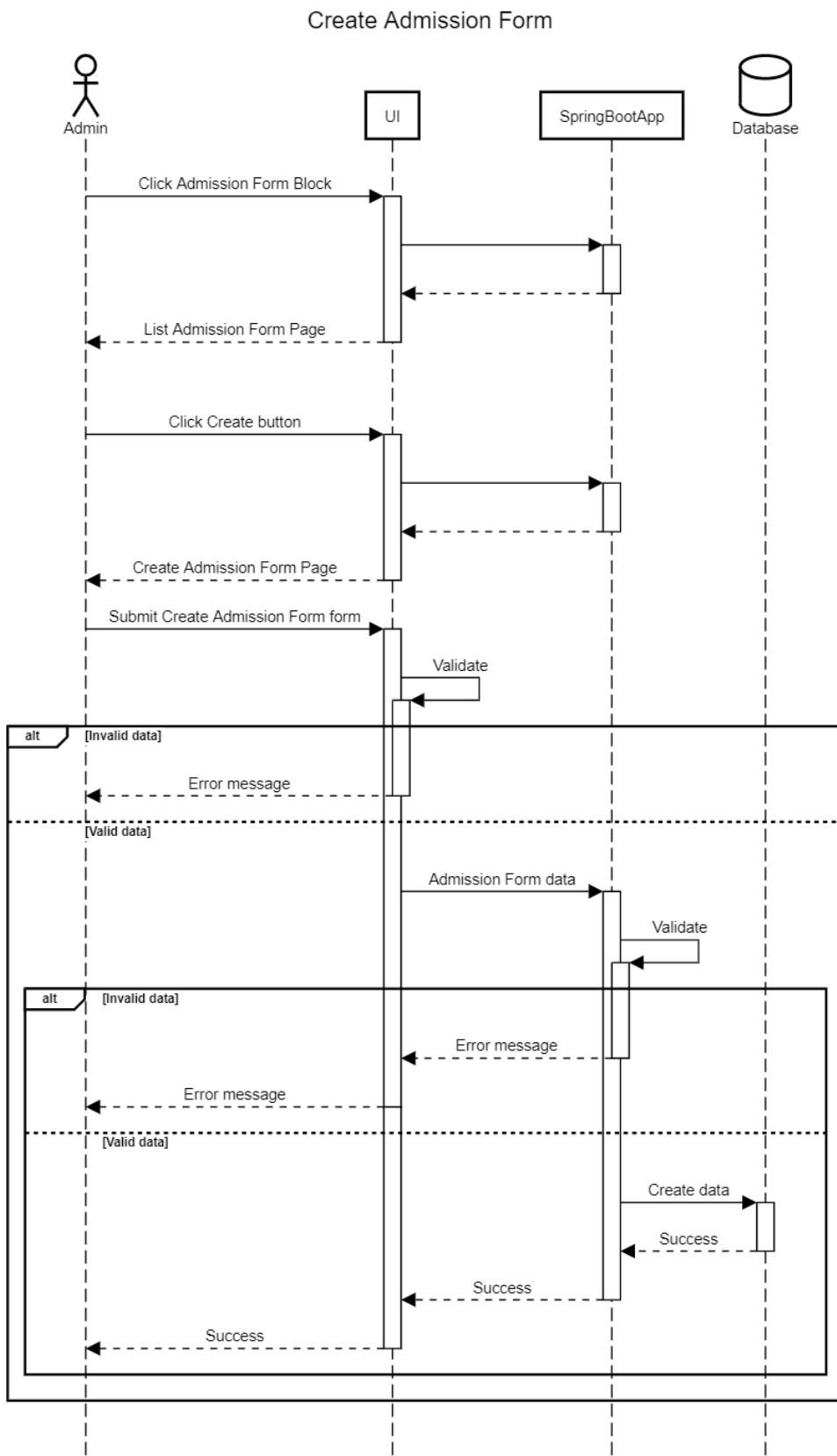
Update Test



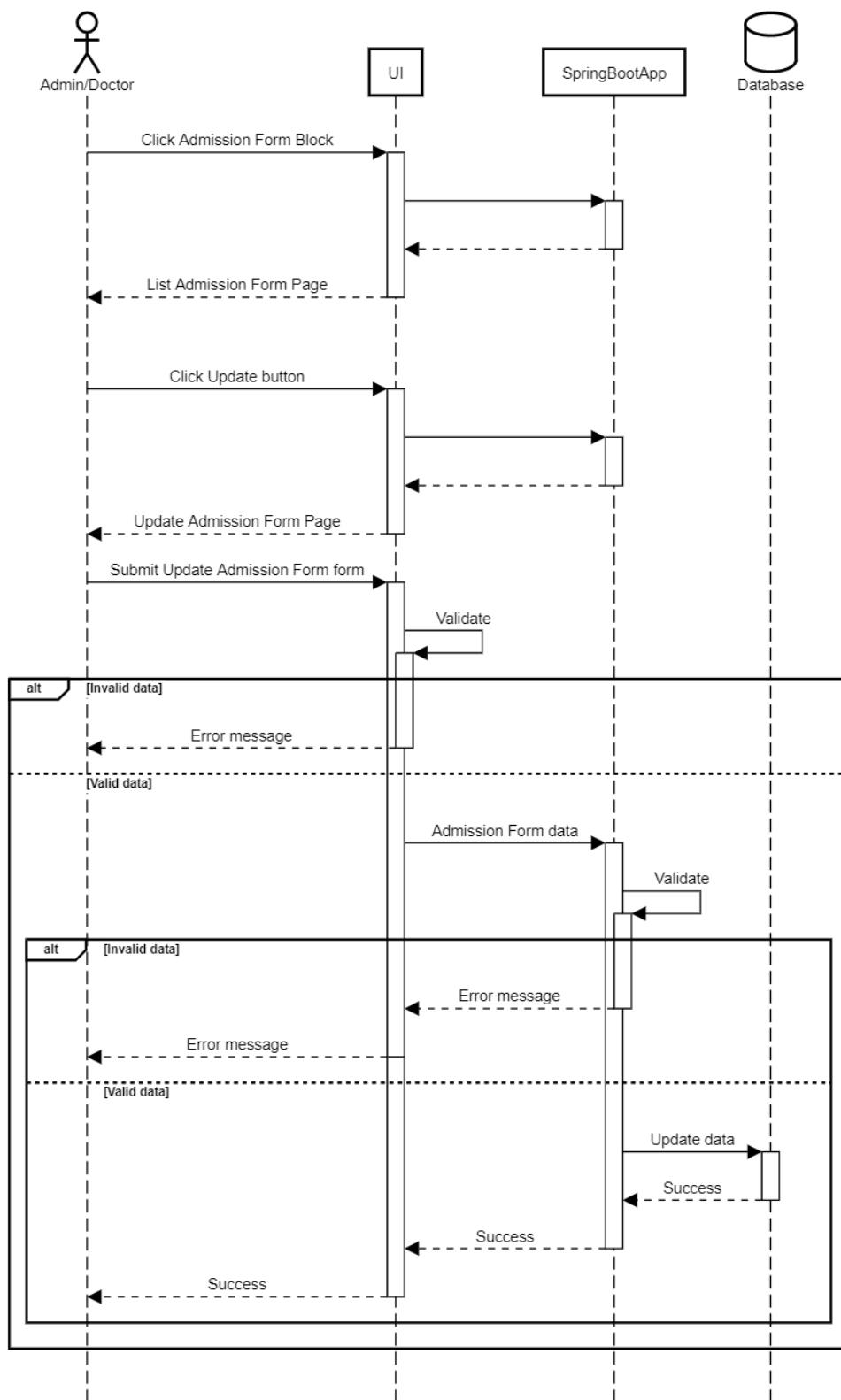
Delete Test



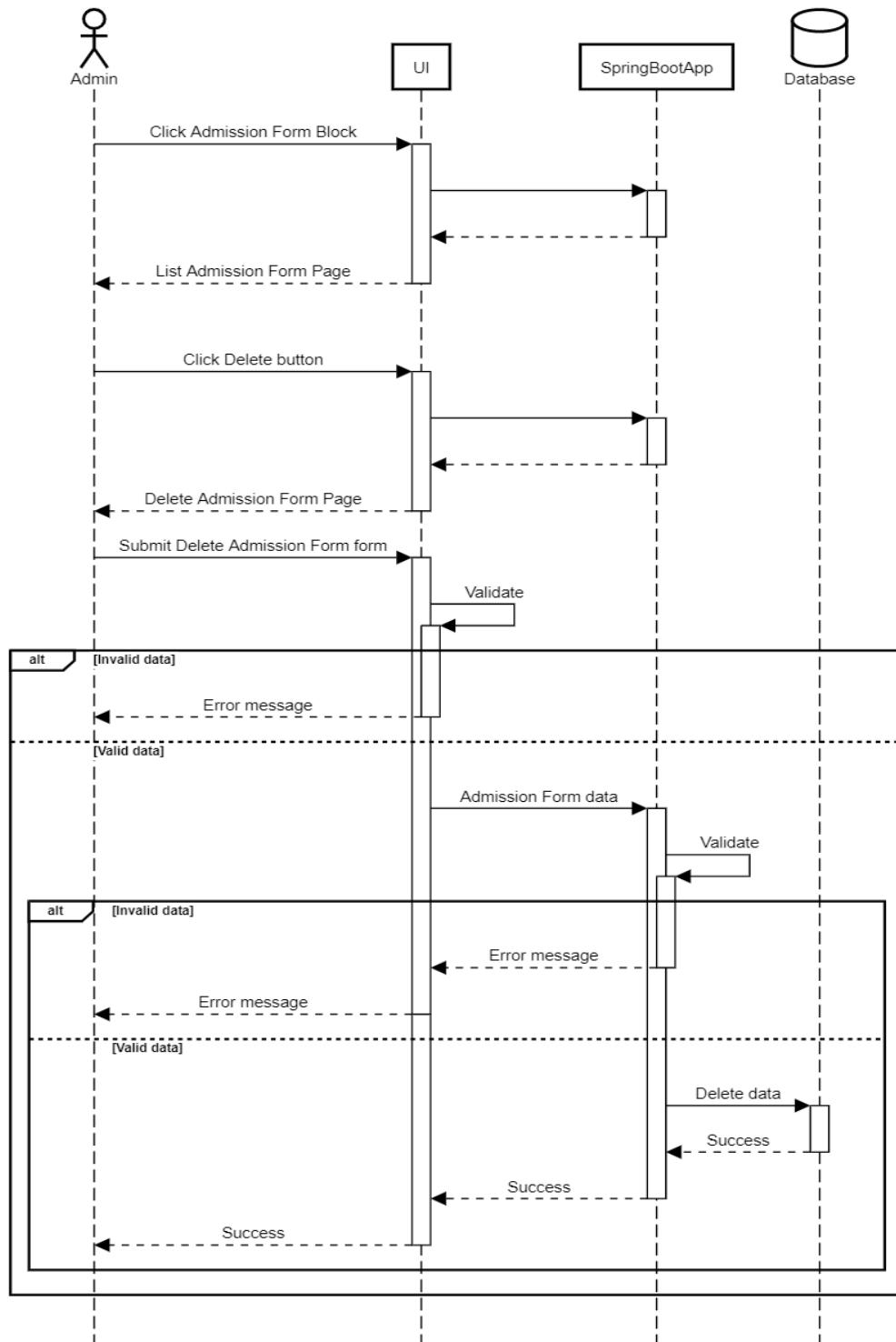
4.1.2.7 Admission



Update Admission Form

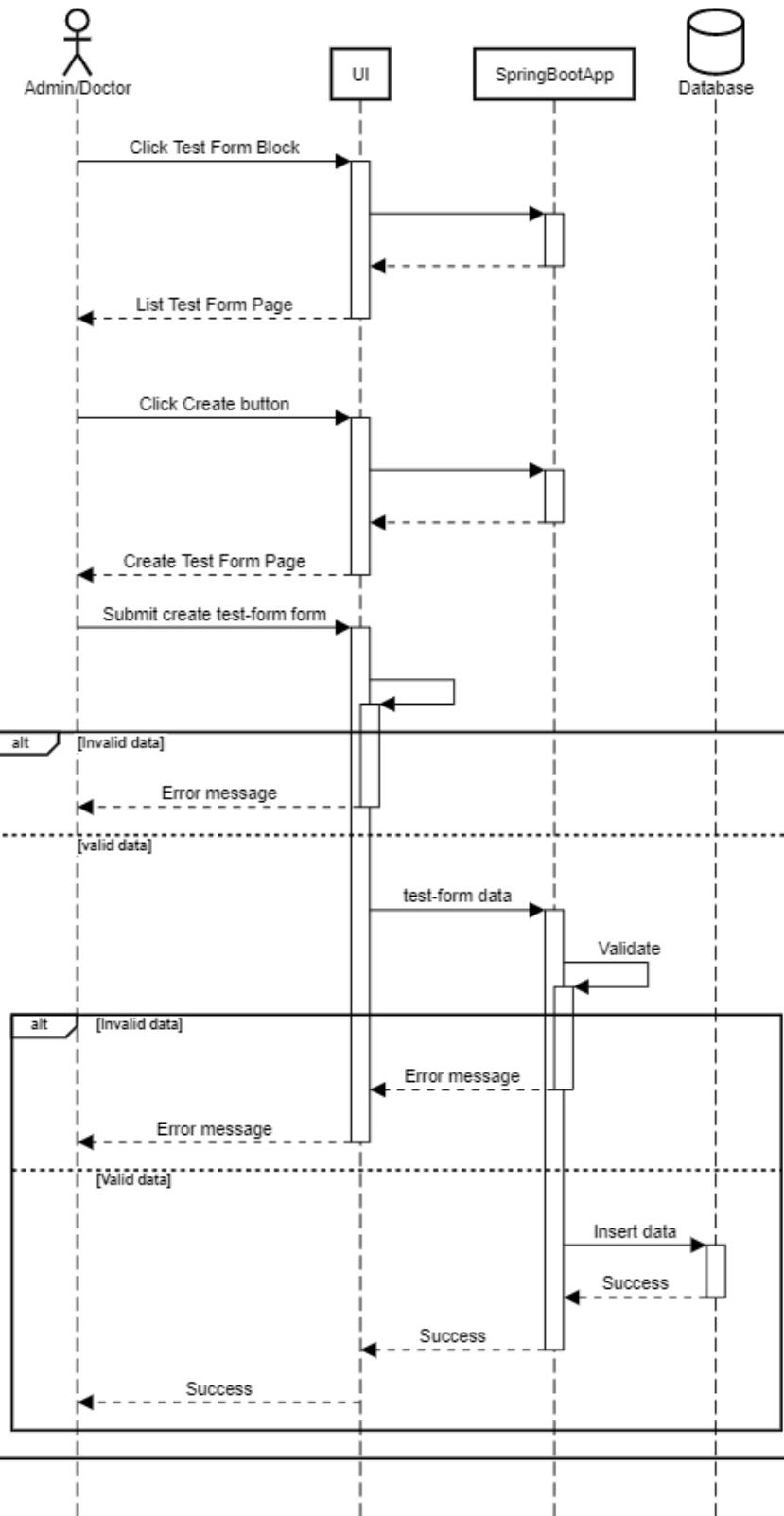


Delete Admission Form

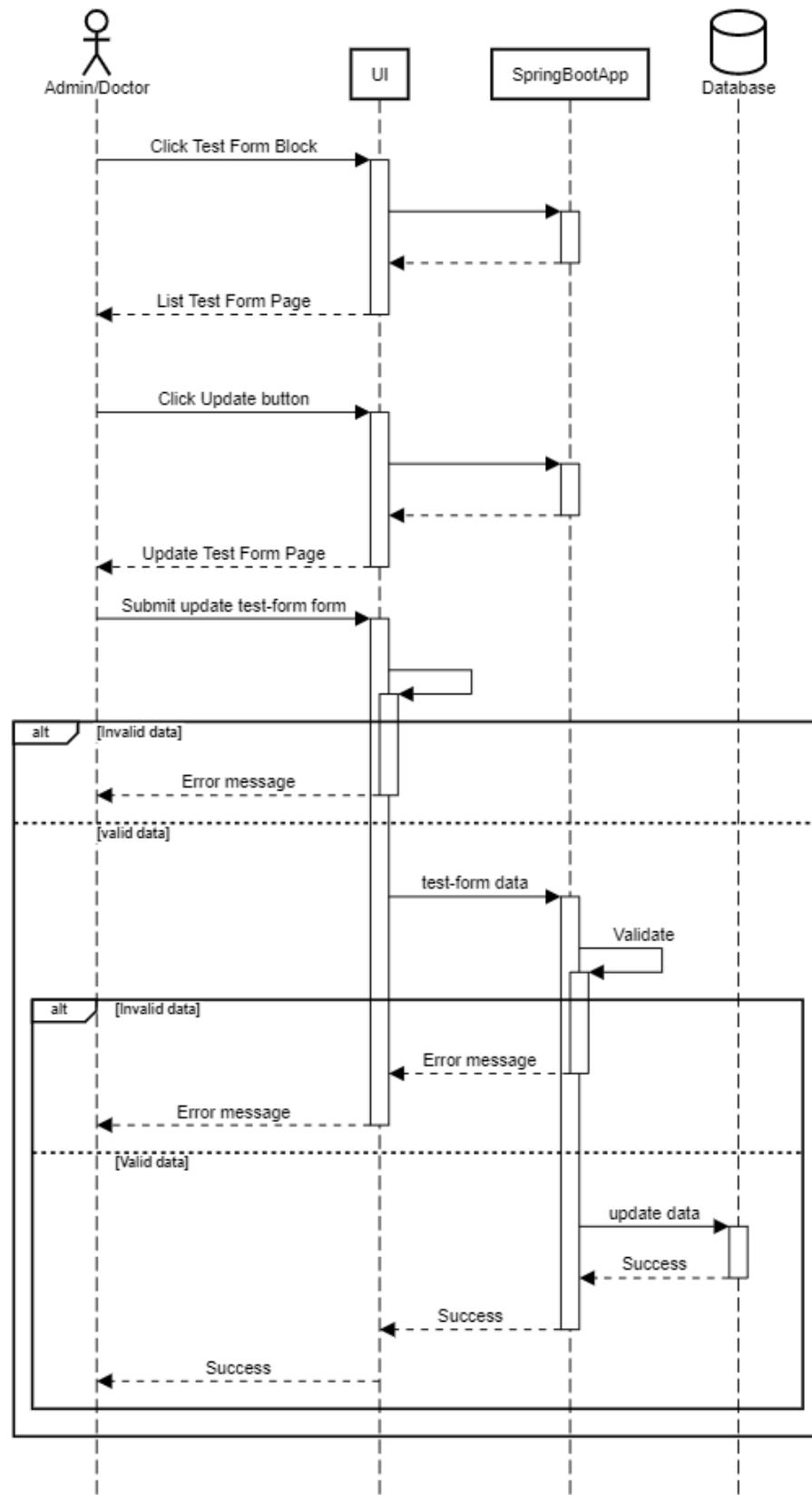


4.1.2.8 Test Form

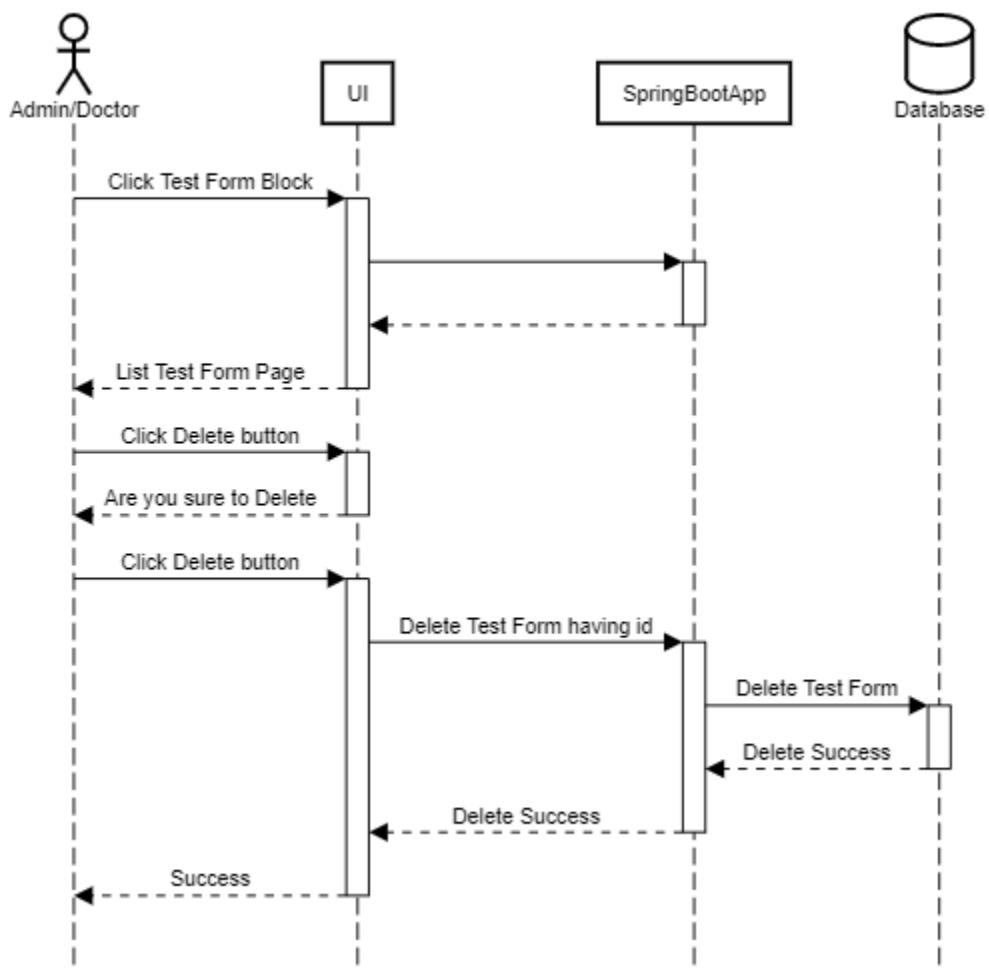
Create Test Form



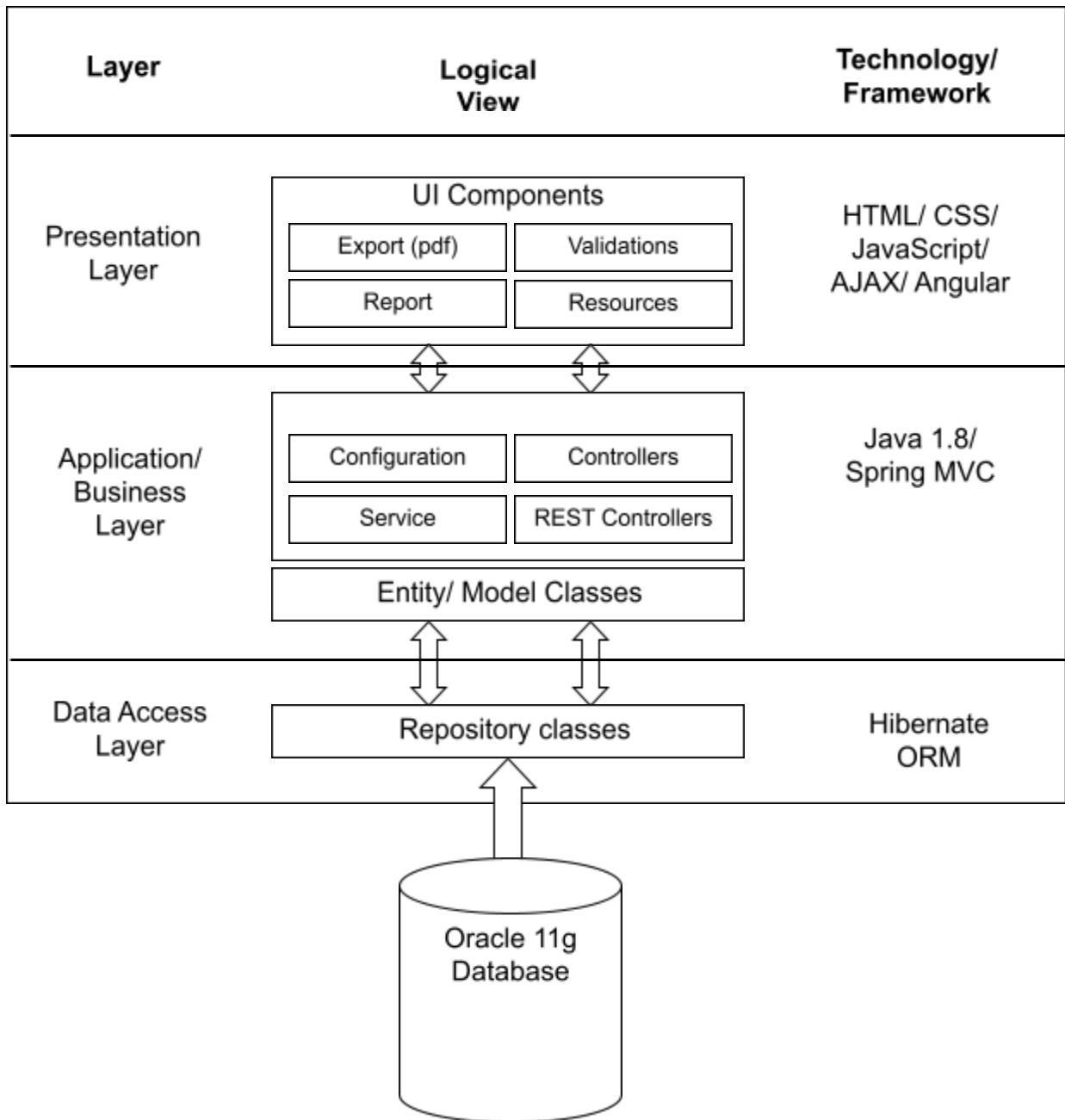
Update Test Form



Delete Test Form



4.2 Architecture Diagram



Presentation Layer:

This layer consists of all UI components.

- Service: Call REST API and handle response from Spring Application.
- Alert and Model component: Show success message or error message.
- Validation component: All basic level data validations should be done at UI level.
- Resources: All HTML/CSS/ images, which are required for the page design.

Application Layer:

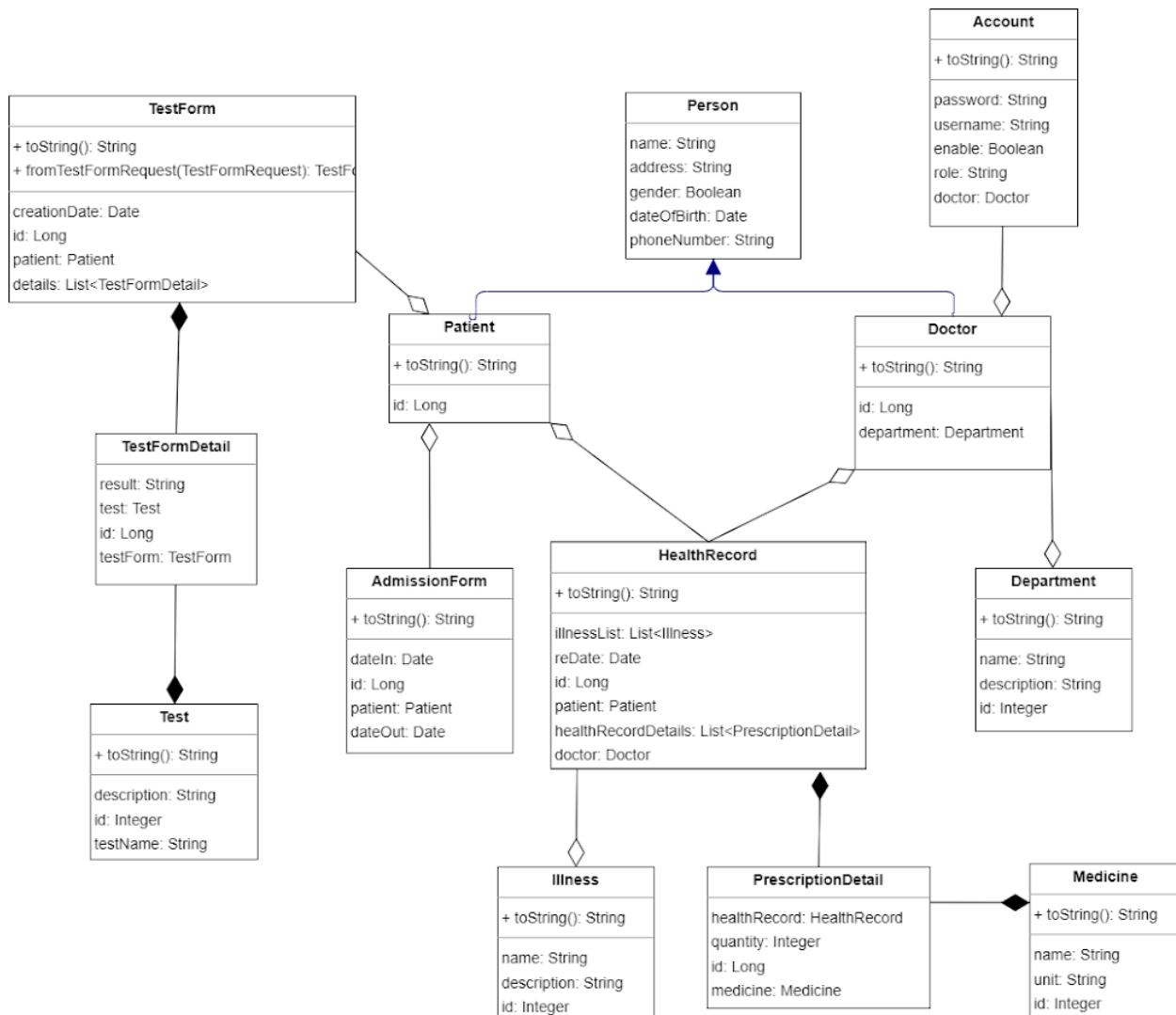
This layer comprises all server and business classes.

- Configuration settings (XML or Class based) will define the application and server configuration.
- Spring Controllers define the server classes, which are required to process the incoming http requests.
- REST Controllers to process the HTTP AJAX requests.
- Service classes are required to perform the required business services.
- Model classes are used to define the functions of the entities present in the system.

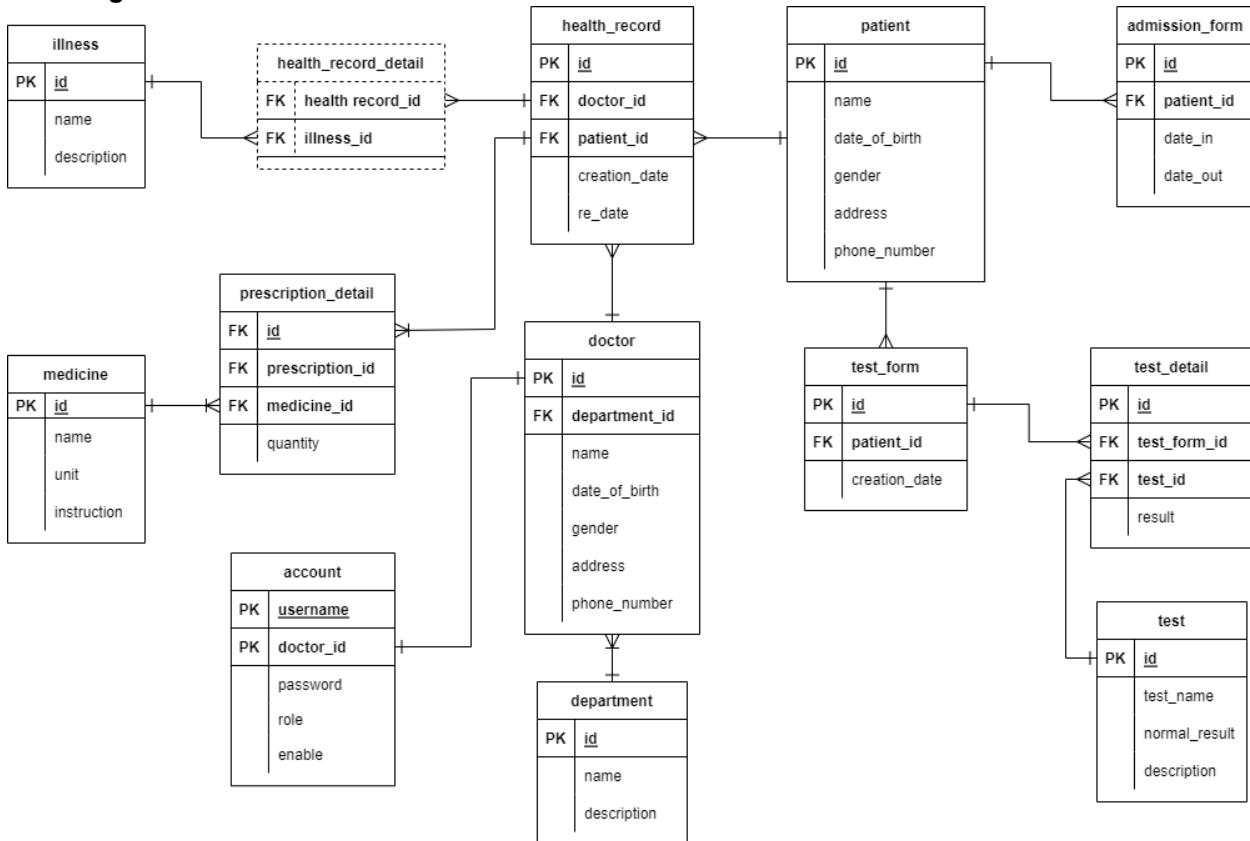
Data Layer:

Data layer is implemented through Spring ORM. It will contain the repository classes, which provide an interface to the table.

Class Diagram



ERD Diagram:



5 Other Technical changes

5.1 CI / Build relates tasks

<If the story requirements are about implementation of continuous integration or build, update the details to be done here>

5.2 Non-functional related changes

<Non-functional requirements related to response time, System load or Network load>

6 Additional details

6.1 Open Questions / clarifications / Assumptions

<Mention the details of any open technical questions/clarifications or assumptions made, pertaining to story >

6.2 Additional notes to technical team

<provide details if any>

7 References

< Provide reference details if any >