

# 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

## Glossary

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

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## **1 Introduction**

## **2 Scope of Change**

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

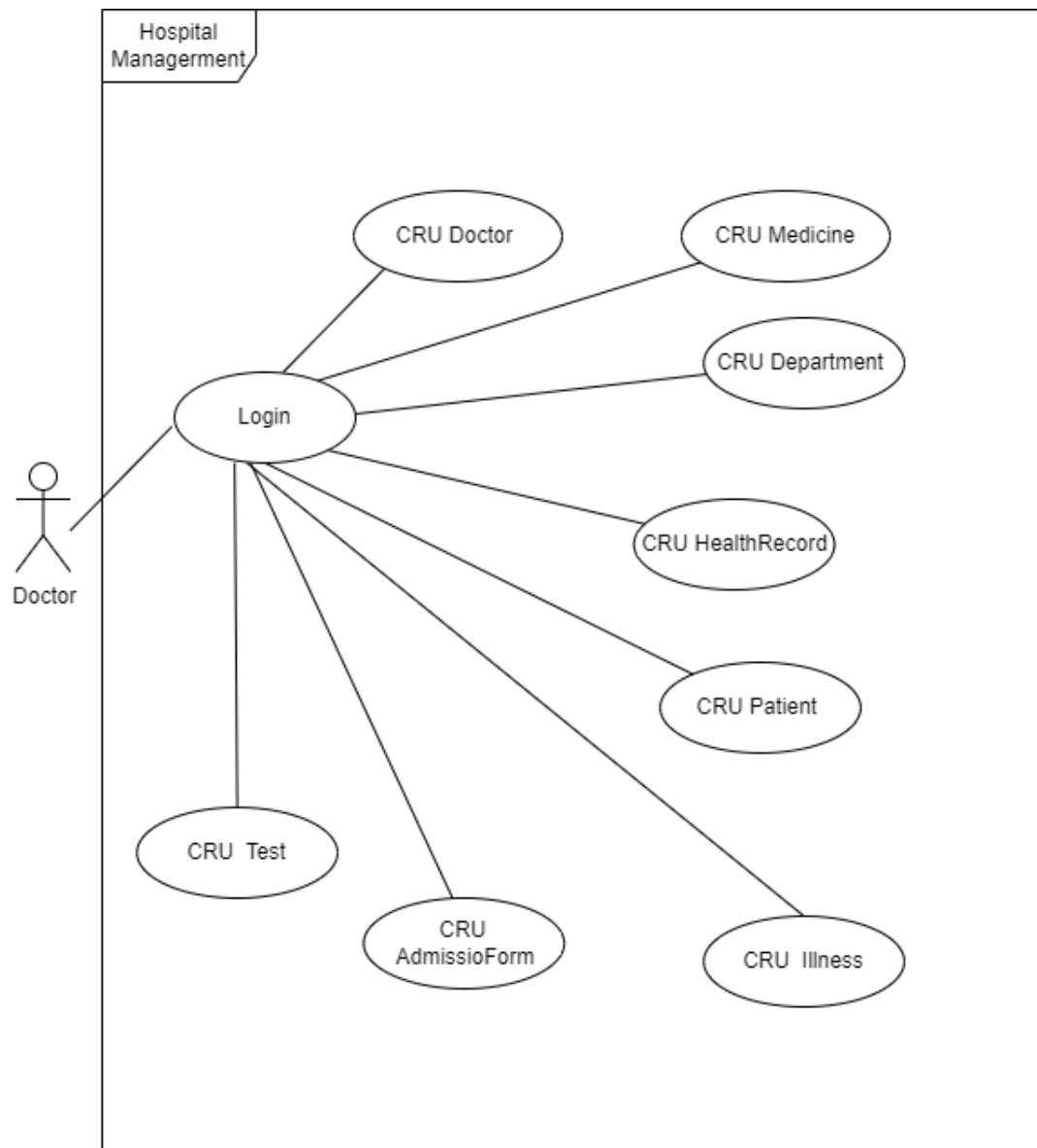
## **3 List of impacted modules**

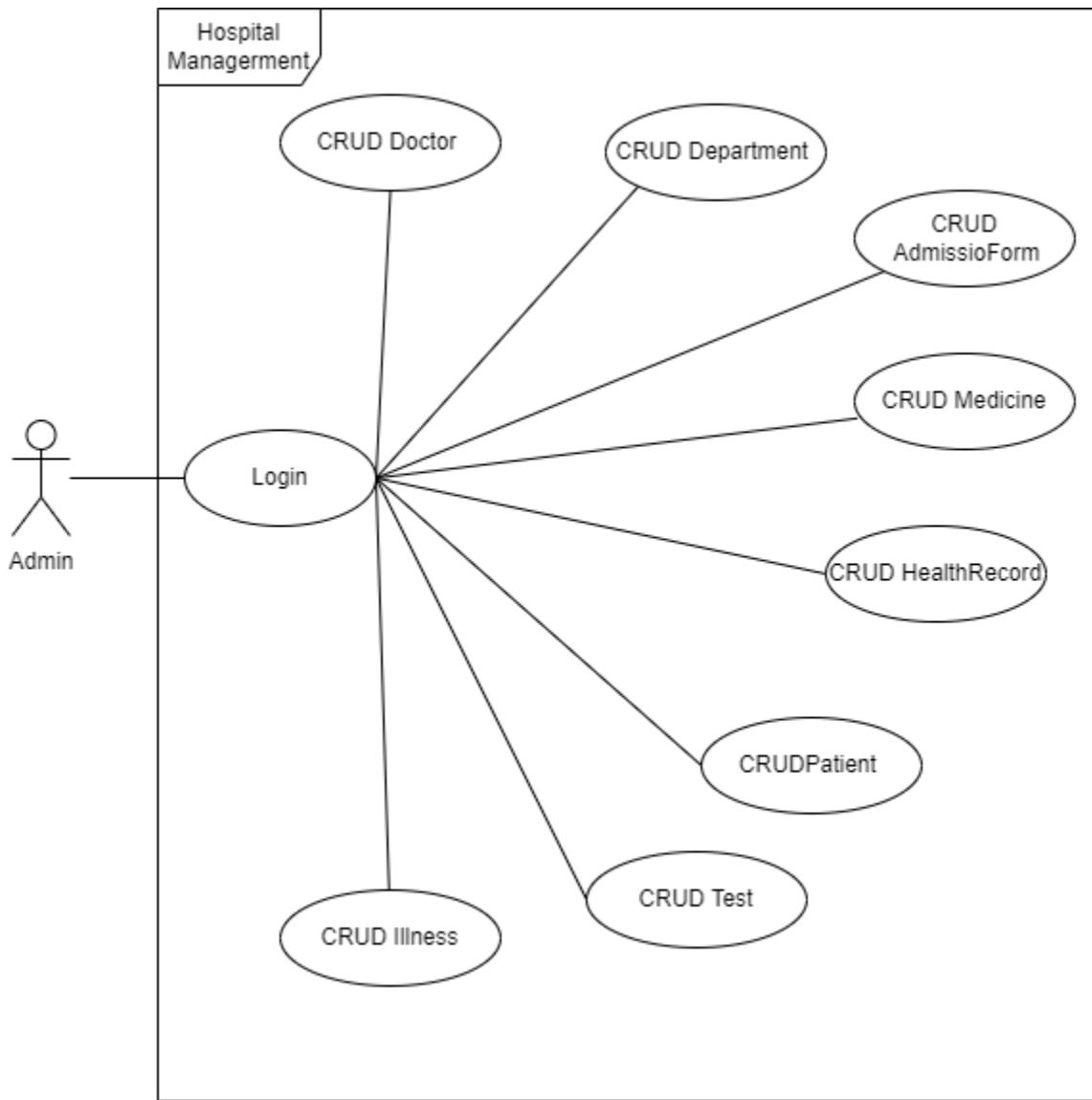
All the functional modules will be created from scratch.

## 4 Design and Detailed technical updates

### 4.1 Process model

#### 4.1.1 Use case Model



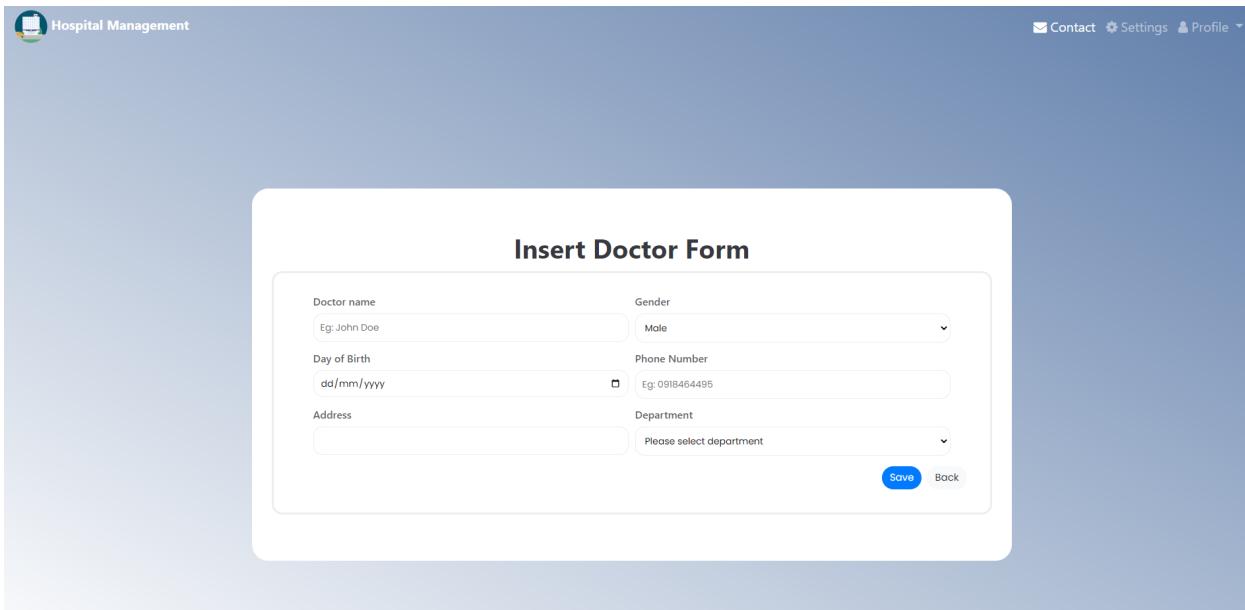


Brief Description	<b>Login</b>
Basic Flow	<p>This use case describes how a user login in to the system</p> <ol style="list-style-type: none"> <li>1. The client has an account inside the system.</li> <li>2. After the successful login, user will be taken to the appropriate landing page.</li> <li>3. The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



The screenshot shows a web-based hospital management system. At the top left is the logo and text "Hospital Management". At the top right are links for "Contact", "Settings", and "Profile". The main area features a white "Insert Doctor Form" dialog box with rounded corners. The form contains the following fields:

- Doctor name: Input field with placeholder "Eg: John Doe".
- Gender: A dropdown menu currently set to "Male".
- Day of Birth: An input field with placeholder "dd/mm/yyyy".
- Phone Number: An input field with placeholder "Eg: 0918464495".
- Address: A text area for entering address details.
- Department: A dropdown menu with placeholder "Please select department".
- Action Buttons: A blue "Save" button and a "Back" button.

Brief Description	<b>View Doctor (Admin/Doctor)</b>
Basic Flow	<p>This use case describes how a client can view a list of doctors.</p> <ol style="list-style-type: none"> <li>1. The admin/doctor has to login into the system.</li> <li>2. The following information has to be displayed. <ul style="list-style-type: none"> <li>• ID</li> <li>• Full Name</li> <li>• Address</li> <li>• Phone Number</li> <li>• Date of birth</li> </ul> </li> </ol>
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
1	Huy Tran	18 bien hoa	0985698795	30 thg 9, 1994
2	John	Mac Dinh Chi	0985698795	5 thg 6, 1996

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

Brief Description	<b>Delete Doctor (Admin)</b>
Basic Flow	<p>This use case describes how an admin can delete a doctor.</p> <ol style="list-style-type: none"> <li>1. The admin has to login into the system.</li> <li>2. Select a doctor.</li> <li>3. Decided to delete</li> </ol>
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.

## Delete Doctor

X

Are you sure to delete this doctor?

**Full Name:** Huy Tran

**Address:** 18 bien hoa

**Phone:** 0985698795

**Date of birth:** 30 thg 9, 1994

Cancel

Delete

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

Hospital Management

Contact Settings Profile

### Add Patient Form

Patient name	Gender
Huynh Quang Anh	Male
Day of Birth	Phone Number
12/12/1999	0987762810
Address	
Thanh Hoa province	
<input type="button" value="Save"/> <input type="button" value="Back"/>	

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

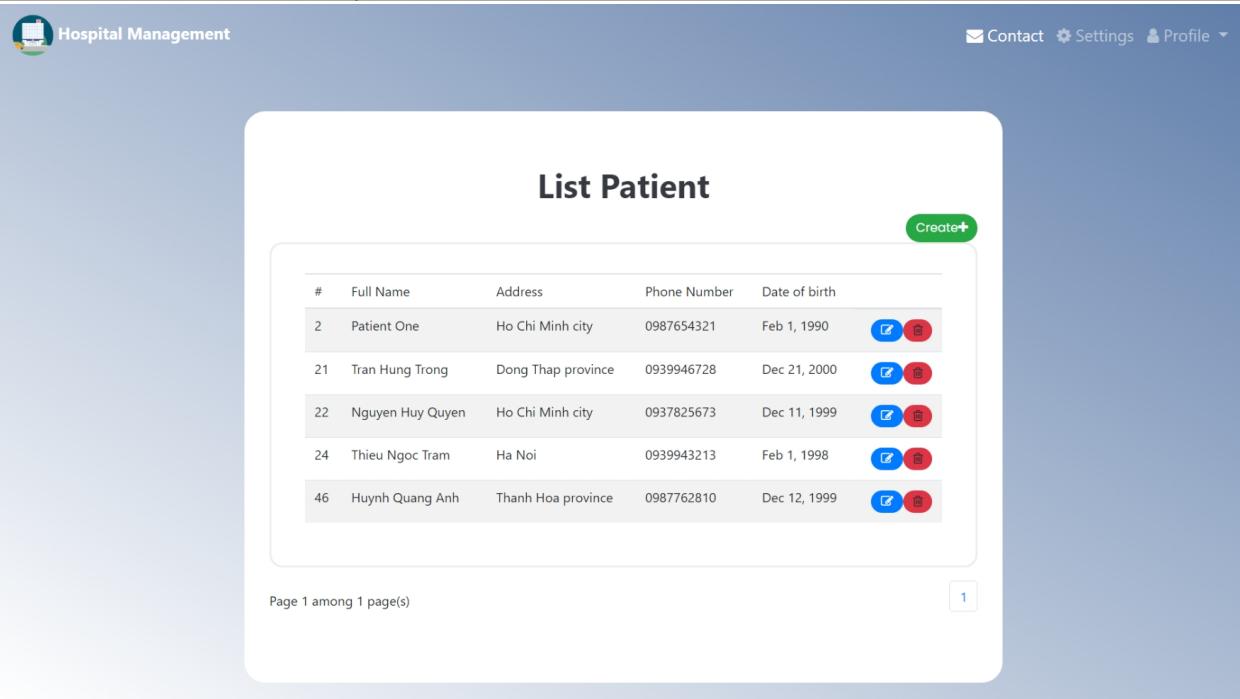
Hospital Management

Contact Settings Profile

### Update Patient Form

Patient name Huynh Quang Anh	Gender Male
Day of Birth 12/12/1999	Phone Number 0987762810
Address Thanh Hoa province	
<a href="#">Save</a> <a href="#">Back</a>	

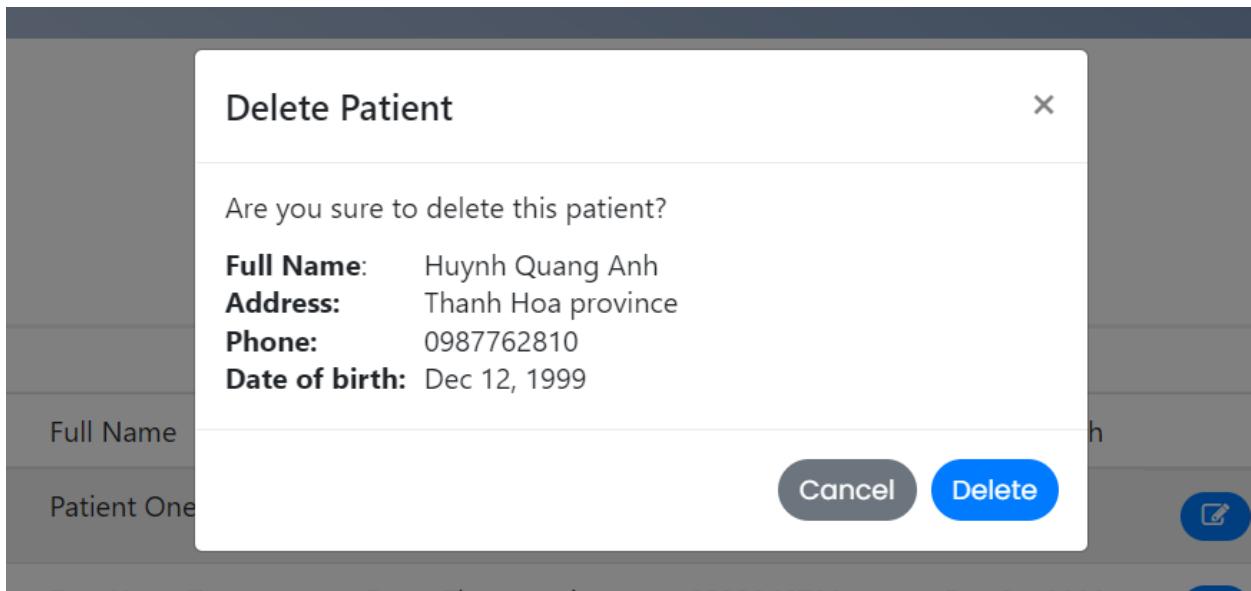
Brief Description	<b>View Patient (Admin/Doctor)</b>
Basic Flow	<p>This use case describes how a client can view a list of patients.</p> <ol style="list-style-type: none"> <li>3. The admin/doctor has to login into the system.</li> <li>4. The following information has to be displayed.           <ul style="list-style-type: none"> <li>• Patient ID</li> <li>• Patient Full Name</li> <li>• Patient Address</li> <li>• Patient Phone Number</li> <li>• Patient Date of birth</li> </ul> </li> </ol>
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 a logo, the text "Hospital Management", and links for "Contact", "Settings", and "Profile". The main content area is titled "List Patient". It features a table with columns: #, Full Name, Address, Phone Number, and Date of birth. Below the table, it says "Page 1 among 1 page(s)" and shows a page number "1".

#	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		

Brief Description	<b>Delete Patient (Admin/Doctor)</b>
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	<b>Create Department (Admin)</b>
Basic Flow	<p>This use case describes how admin inserts a department into the system.</p> <ol style="list-style-type: none"> <li>1. The client has to login into the system.</li> <li>2. The following information is required to insert a doctor.           <ul style="list-style-type: none"> <li>• Department Name</li> <li>• Department Description</li> </ul> </li> </ol>
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.

Hospital Management

Contact Settings Profile

### Create Department Form

Department name  
Medical Department

Description  
The medical department has within it the various clinical services

Save Back

Brief Description	<b>Update Department (Admin)</b>
Basic Flow	<p>This use case describes how admin updates a department in the system.</p> <ol style="list-style-type: none"> <li>1. The client has to login into the system.</li> <li>2. The following information is required to insert a department. <ul style="list-style-type: none"> <li>• Department Name</li> <li>• Department Description</li> </ul> </li> </ol>
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.

Hospital Management

Contact Settings Profile ▾

### Update Department Form

Department name  
Physical Medicine and Rehabilitation Department

Description  
This department deals with clients who have functional disabilities resulting from disease conditions/ir

Save Back

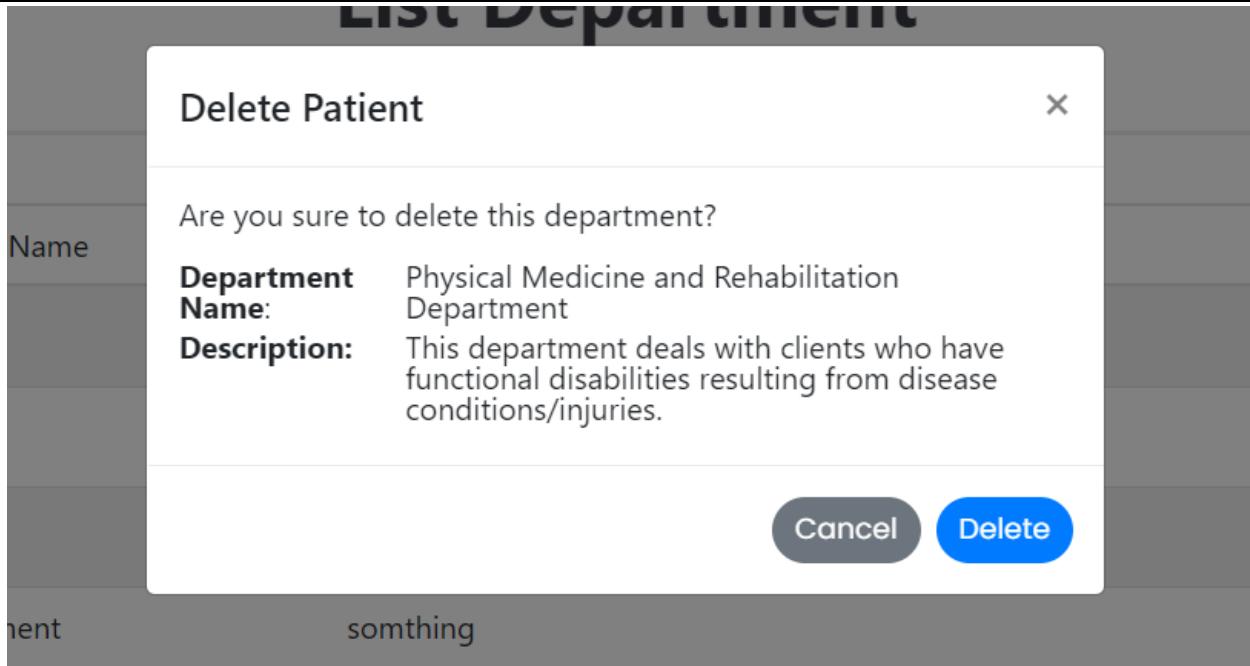
Brief Description	<b>View Department (Admin/Doctor)</b>
Basic Flow	<p>This use case describes how a client can view a list of departments.</p> <ol style="list-style-type: none"> <li>1. The admin/doctor has to login into the system.</li> <li>2. The following information has to be displayed.           <ul style="list-style-type: none"> <li>• Department ID</li> <li>• Department Name</li> <li>• Department Description</li> </ul> </li> </ol>
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 for a hospital management system. At the top, there is a header bar with a logo, the text "Hospital Management", and three navigation icons: "Contact", "Settings", and "Profile". Below the header is a large white card with a rounded rectangular shape, titled "List Department". Inside the card, there is a table with the following data:

#	Department Name	Description	Action Buttons
1	aaa	as	
2	Aqua city	1234	
3	how	sda	
4	Aqua Apartment	somthing	
5	Test department form	as	
6	Aqua Apartment	somthing	
8	new 1	new 1	
10	Physical Medicine and Rehabilitation Department	This department deals with clients who have functional disabilities resulting from disease conditions/injuries.	
11	Medical Department	The medical department has within it the various clinical services.	

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

Brief Description	<b>Delete Department (Admin)</b>
Basic Flow	<p>This use case describes how an admin can delete a department.</p> <ol style="list-style-type: none"> <li>1. The admin has to login into the system.</li> <li>2. Select a doctor.</li> <li>3. Decided to delete.</li> </ol>
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	<b>Create Medicine (Admin)</b>
Basic Flow	<p>This use case describes how admin inserts a medicine into the system.</p> <ol style="list-style-type: none"> <li>1. The client has to login into the system.</li> <li>2. The following information is required to insert a doctor. <ul style="list-style-type: none"> <li>• Medicine Name</li> <li>• Medicine Unit</li> <li>• Medicine Description</li> </ul> </li> </ol>
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	Medicine Name should not be null. Medicine pellet should not be null.
Pre-Conditions	User should have already logged into the system.
Post-Conditions	Success message should be shown.

Hospital Management

Contact Settings Profile ▾

### Create Medicine

Medicine name: Vilazodone      Unit: pellet

Instruction: Add the instruction

Save    Back

Brief Description	<b>Update Medicine (Admin)</b>
Basic Flow	<p>This use case describes how admin updates a medicine in the system.</p> <ol style="list-style-type: none"> <li>1. The client has to login into the system.</li> <li>2. The following information is required to insert a medicine. <ul style="list-style-type: none"> <li>• Medicine ID</li> <li>• Medicine Name</li> <li>• Medicine Unit</li> <li>• Medicine Description</li> </ul> </li> </ol>
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.

Hospital Management

Contact Settings Profile ▾

### Update Medicine

Medicine name	Unit
Vilazodone	pellet
Instruction	Instruction
<input type="button" value="Save"/> <input type="button" value="Back"/>	

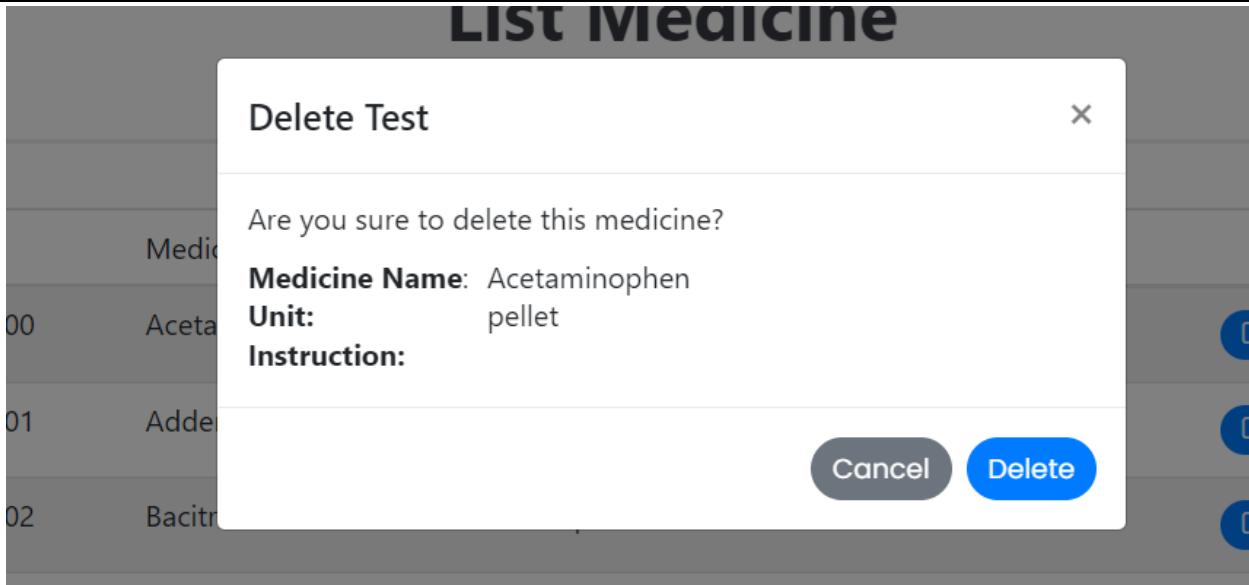
Brief Description	<b>View Medicine (Admin/Doctor)</b>
Basic Flow	<p>This use case describes how a client can view a list of medicines.</p> <ol style="list-style-type: none"> <li>1. The admin/doctor has to login into the system.</li> <li>2. The following information has to be displayed. <ul style="list-style-type: none"> <li>• Medicine ID</li> <li>• Medicine Name</li> <li>• Medicine Unit</li> <li>• Medicine Description</li> </ul> </li> </ol>
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	

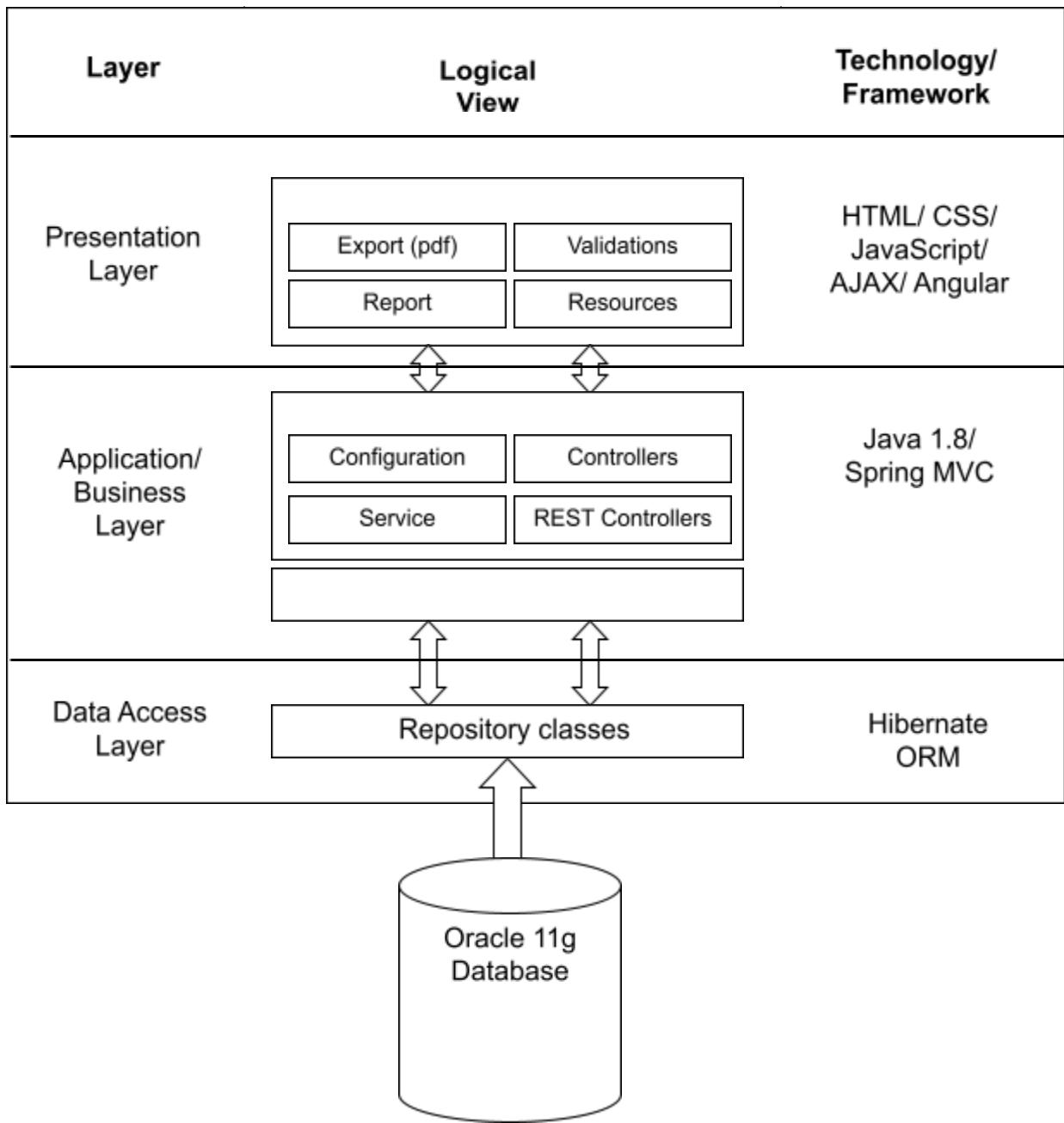
At the bottom left, it says "Page 1 among 2 page(s)". At the bottom right, there are navigation buttons for "1", "2", and "»".

Brief Description	<b>Delete Medicine (Admin)</b>
Basic Flow	<p>This use case describes how an admin can delete a department.</p> <ol style="list-style-type: none"> <li>1. The admin has to login into the system.</li> <li>2. Select a doctor.</li> <li>3. Decided to delete.</li> </ol>
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.



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## Architecture Diagram



### **Presentation Layer:**

This layer consists of all UI components.

- Export component: The plug-in is used to export the reports in pdf format. It helps to reduce the workload on the web/ application server.
- Validation component: All basic level data validations should be done at UI level.
- Report component: All reports to be generated to the user, will be processed and generated at the browser end.
- Resources: All HTML/CSS/ images, which are required for the page design.

### **Application Layer:**

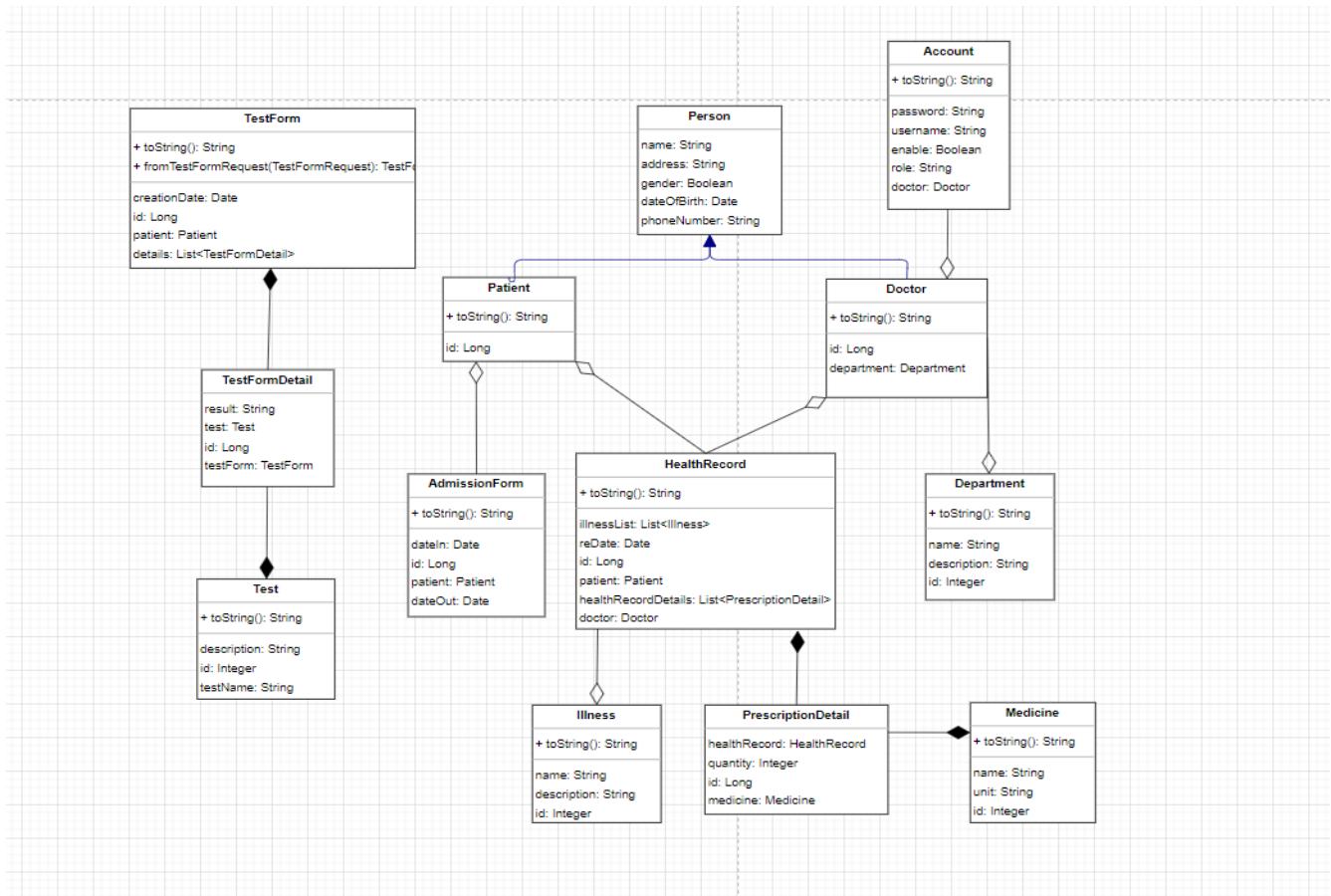
This layer comprises of all server and business classes.

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

### Data Layer:

Data layer is implemented through Hibernate ORM. It will contain the repository classes, which provides interface to the table.

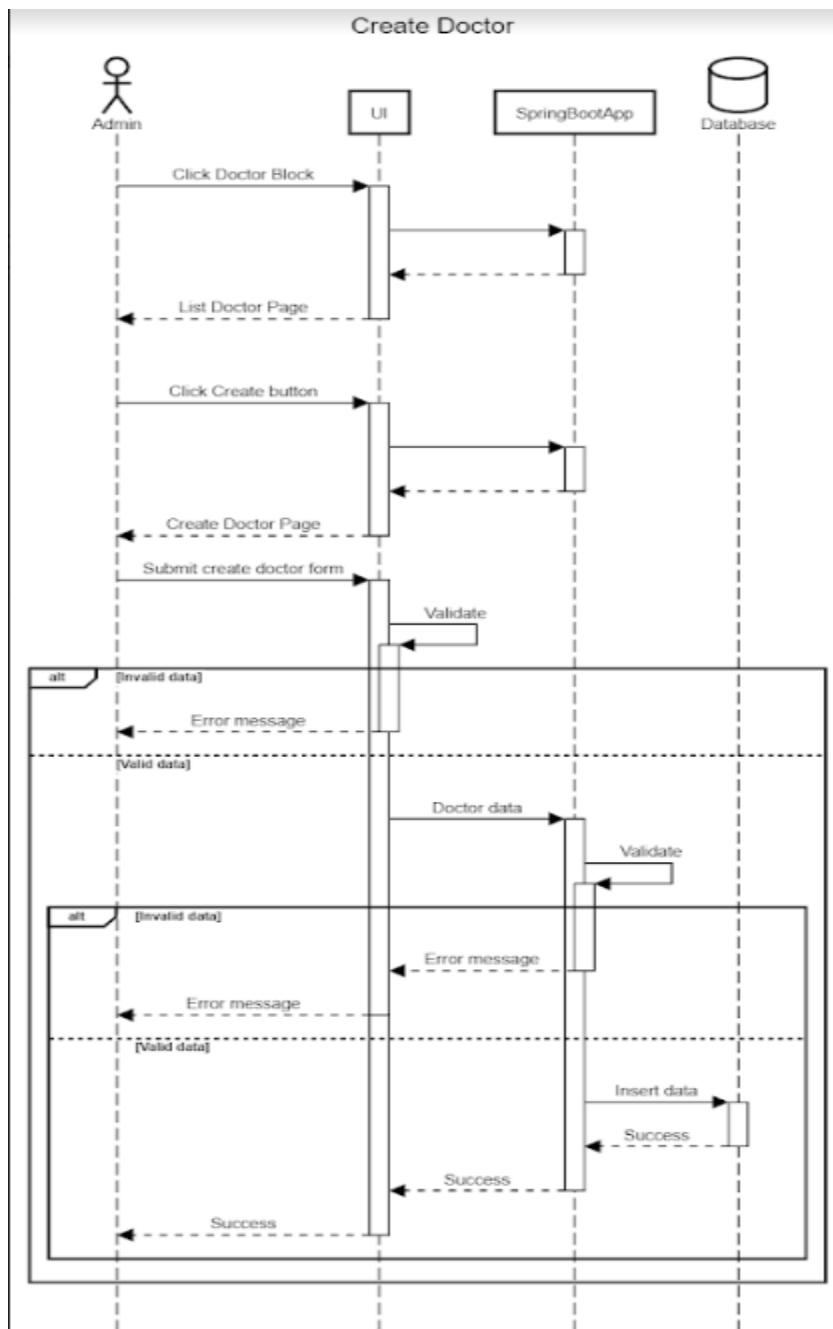
### Class Diagram



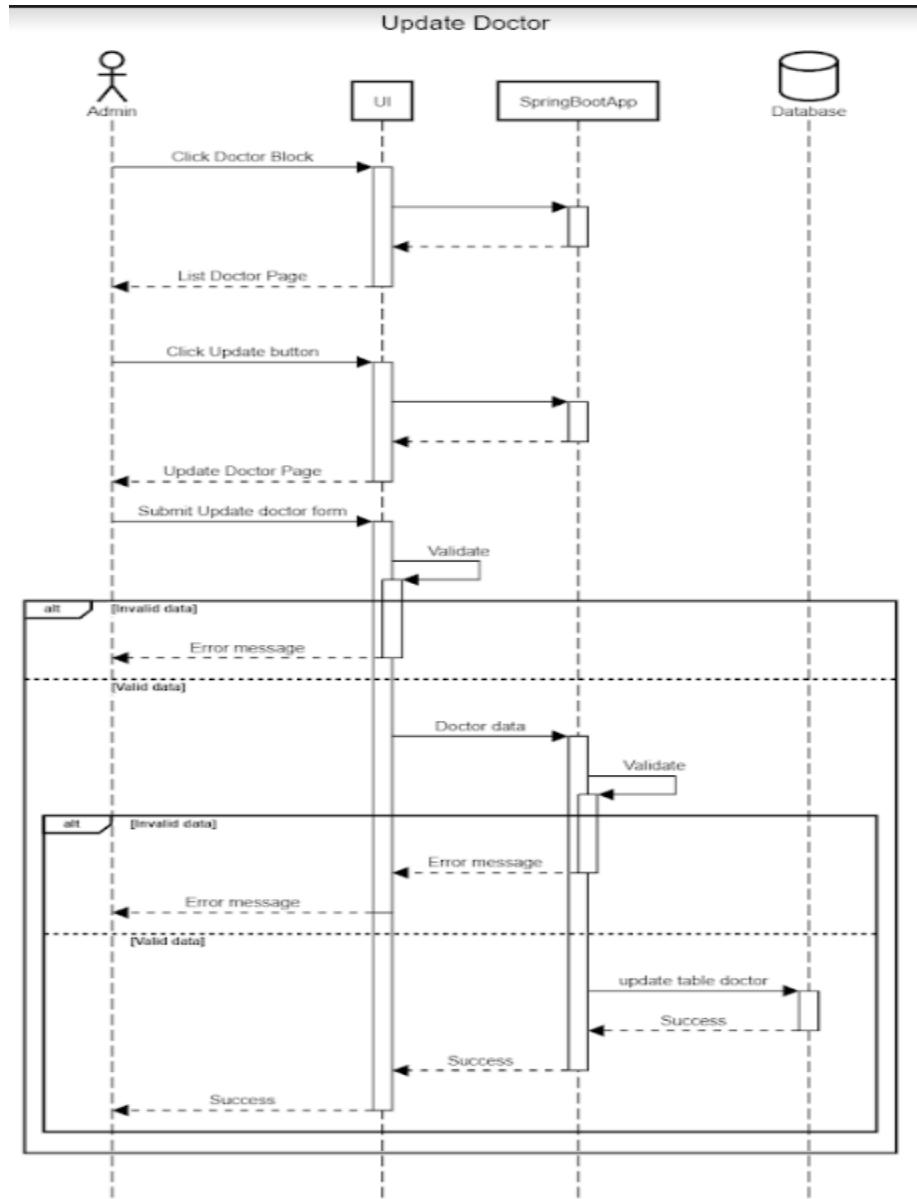
### 4.1.2 Sequence diagram

#### 4.1.2.1 Doctor

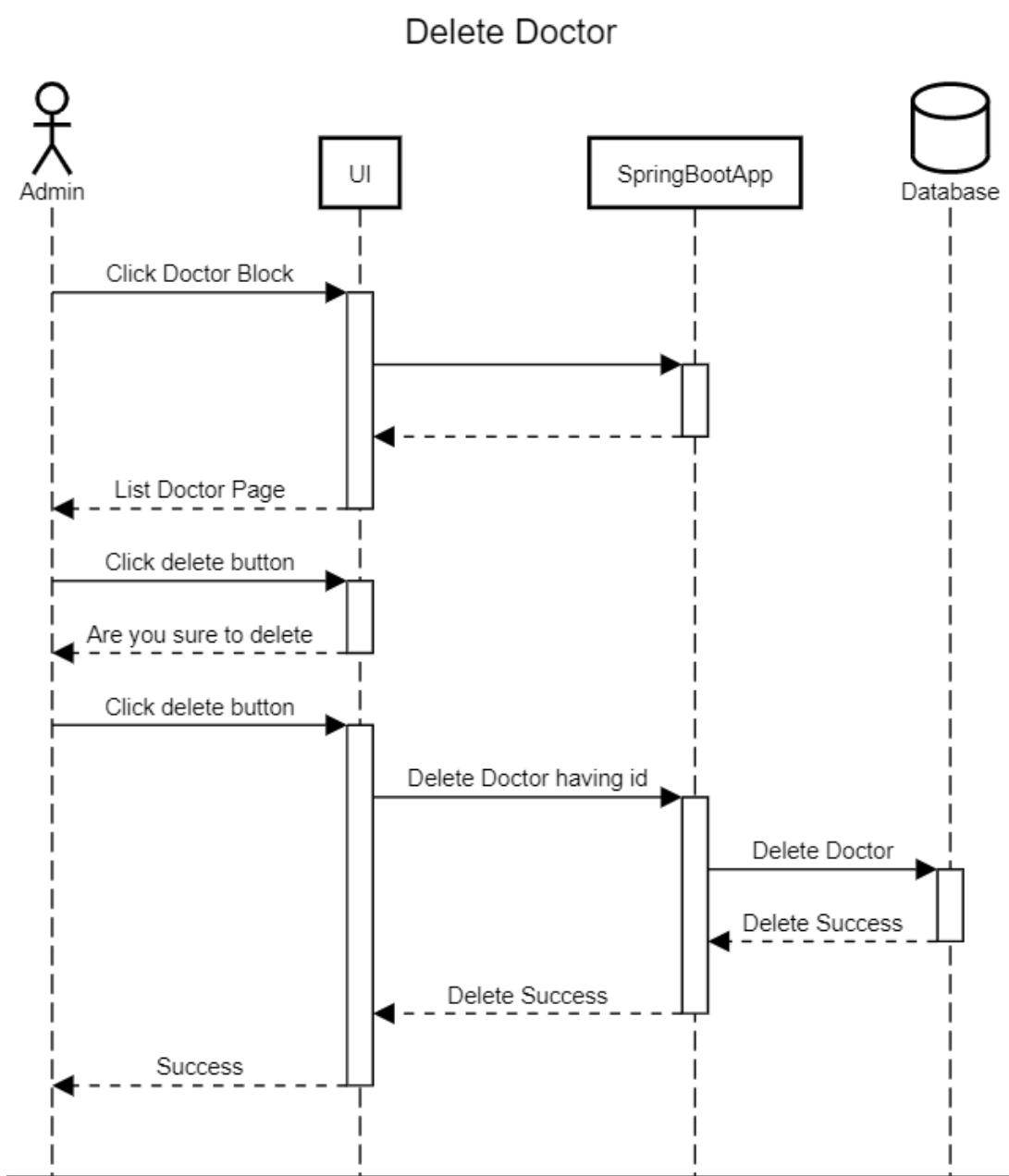
##### 4.1.2.1.1 Create Doctor



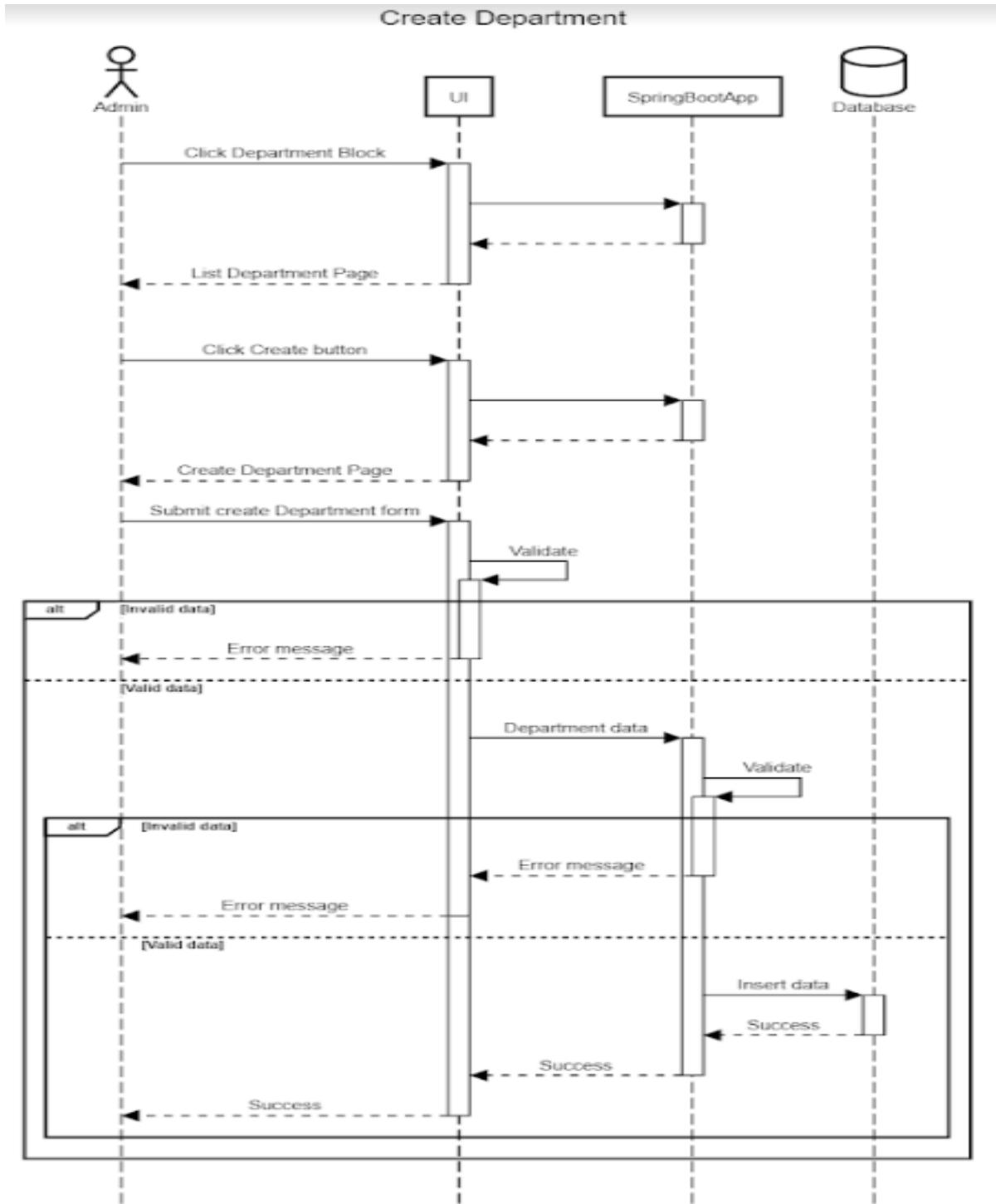
#### 4.1.2.1.2 Update Doctor

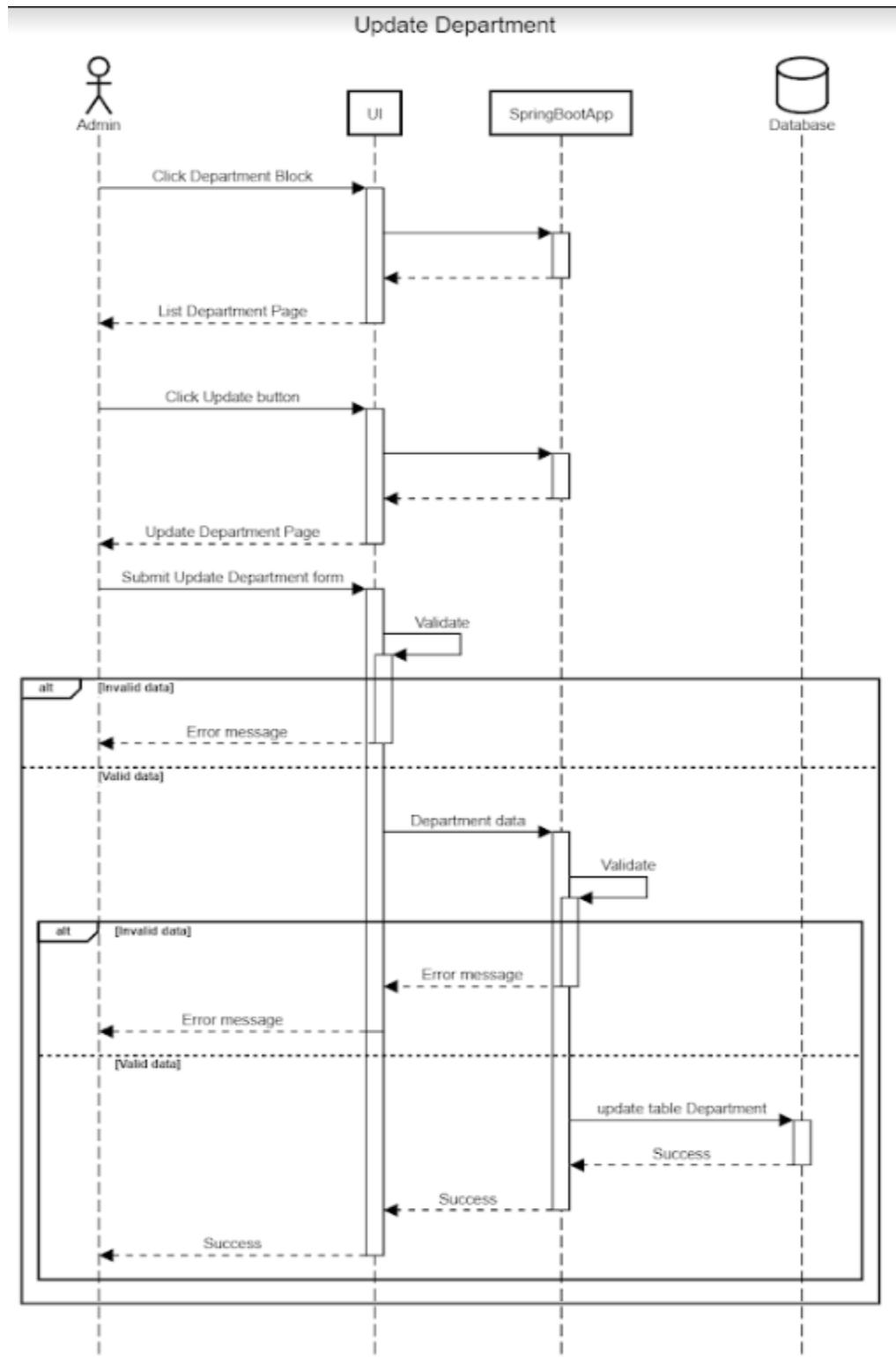


#### 4.1.2.1.3 Delete Doctor



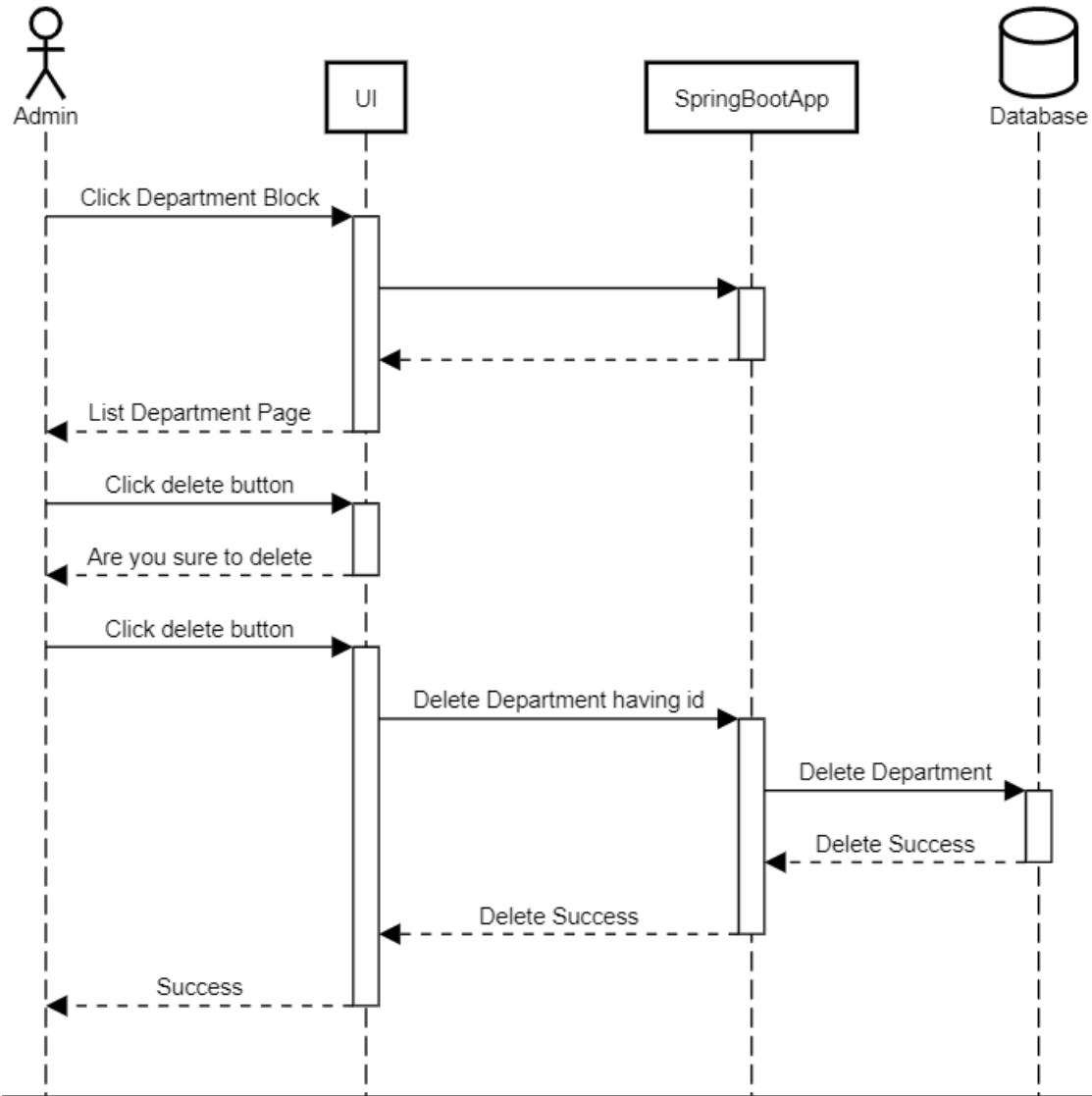
#### 4.1.2.2 Department





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### Delete Department



#### 4.1.2.3 Medicine

##### 4.1.2.3.1 Create Medicine

##### 4.1.2.3.2 Update Medicine

##### 4.1.2.3.3 Delete Medicine

#### 4.1.2.4 Illness

##### 4.1.2.4.1 Create Illness

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**4.1.2.4.2 Update Illness**

**4.1.2.4.3 Delete Illness**

**4.1.2.5 Patient**

**4.1.2.5.1 Create Patient**

**4.1.2.5.2 Update Patient**

**4.1.2.5.3 Delete Patient**

**4.1.2.6 Test**

**4.1.2.6.1 Create Test**

**4.1.2.6.2 Update Test**

**4.1.2.6.3 Delete Test**

**4.1.2.7 Admission**

**4.1.2.7.1 Create Admission**

**4.1.2.7.2 Update Admission**

**4.1.2.7.3 Delete Admission**

**4.1.2.8 Test Form**

**4.1.2.8.1 Create Test Form**

**4.1.2.8.2 Update Test Form**

**4.1.2.8.3 Delete Test Form**

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## **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>

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## **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>

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## **7 References**

< Provide reference details if any >