



# **CAPSTONE PROJECT REPORT**

## **Report 4 – Software Design Document**

**– Ho Chi Minh, July 2021 –**

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# **I. Software Design Description**

## **1. Overall Description**

### **1.1. Assumptions**

The system is designed based on the following assumptions:

- Windows 10
- Chrome 65
- SQL Server 2014
- End-user: Mumbi Staff and every user in Ho Chi Minh city

### **1.2. Design Constraints**

The system should be compiled with the following items:

- End-user environment:
  - o Mumbi Staff in Windows 10 with Chrome browser version 65 or higher.
  - o Users: in Chrome browser version 65.
- Security requirement: prevent a user from cheating as much as possible.
- Network communication: this system depends on the network connection.

## 2. System Architecture Design

### 2.1. Overall Architecture

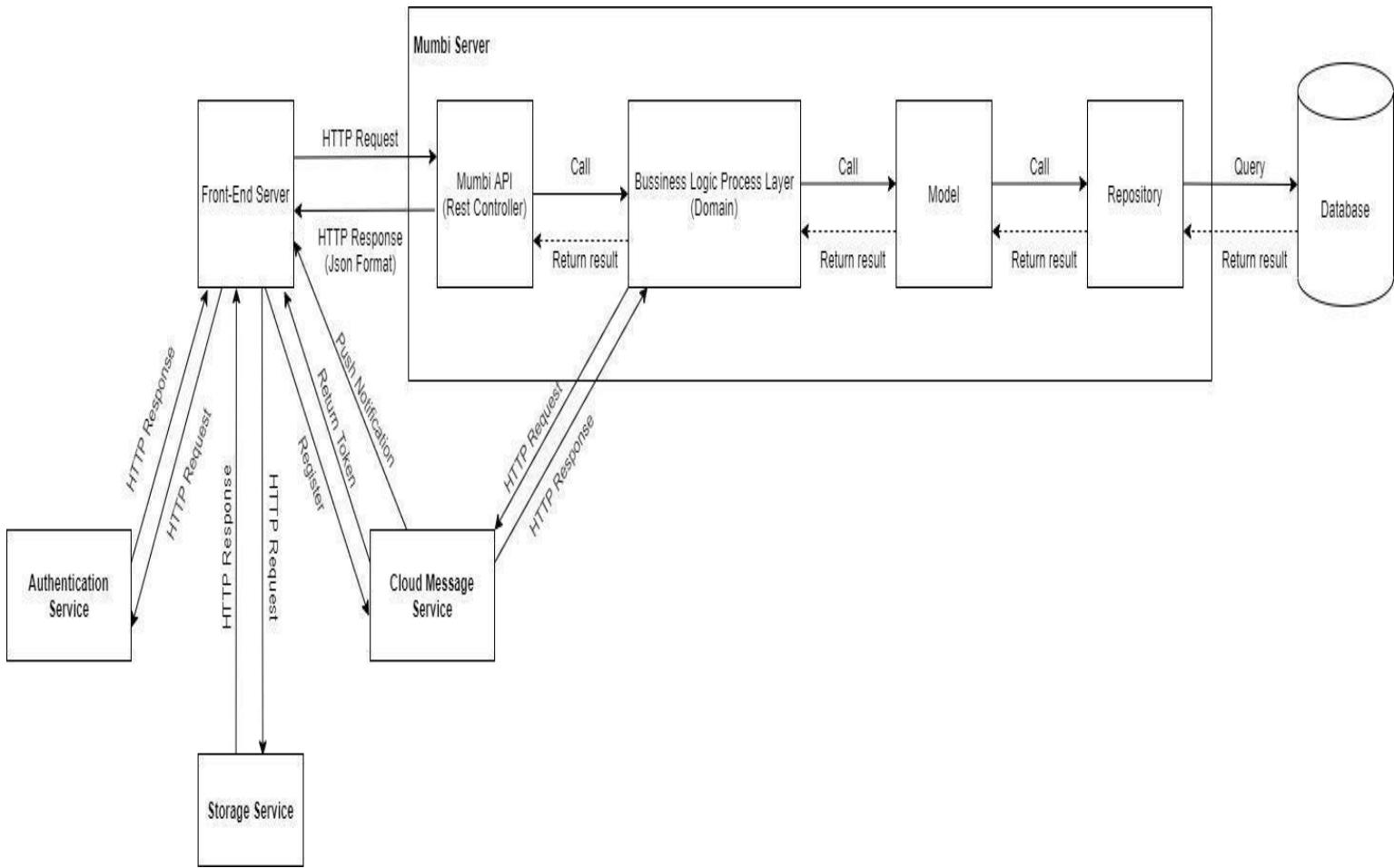


Figure 50 - System Overall Architecture Diagram

No.	Name	Description
1	Front-End Server	<p>Client component to render and display data from the server. Client component provides functions:</p> <ul style="list-style-type: none"> <li>- For staff: manage users, manage news, approve posts, manage guidebook, manage guidebook type, manage news type, manage pregnancy activity.</li> <li>- For user: update phone number, receive vaccination schedule, follow development milestone</li> </ul>
2	Storage Service	Storage service to store resources of users and staff. The resources such as images.

<b>3</b>	Cloud Message Service	Service to notify messages from the system to users.
<b>4</b>	Mumbi API	It handles requests from the Front End and responses from the system.
<b>5</b>	Business logic process layer (Domain)	It handles the business logic of the system.
<b>6</b>	Model	It supports the system to handle data.
<b>7</b>	Repository	It handles reading and writing data in the system.
<b>8</b>	Database	It stores the data of the system.
<b>9</b>	Authentication Service	This service is in charge of authenticating 3 <sup>rd</sup> party account of the staff and user and then send the result to our system.

*Table 55 - Architecture Diagram Dictionary*

## 2.2. Package Diagram

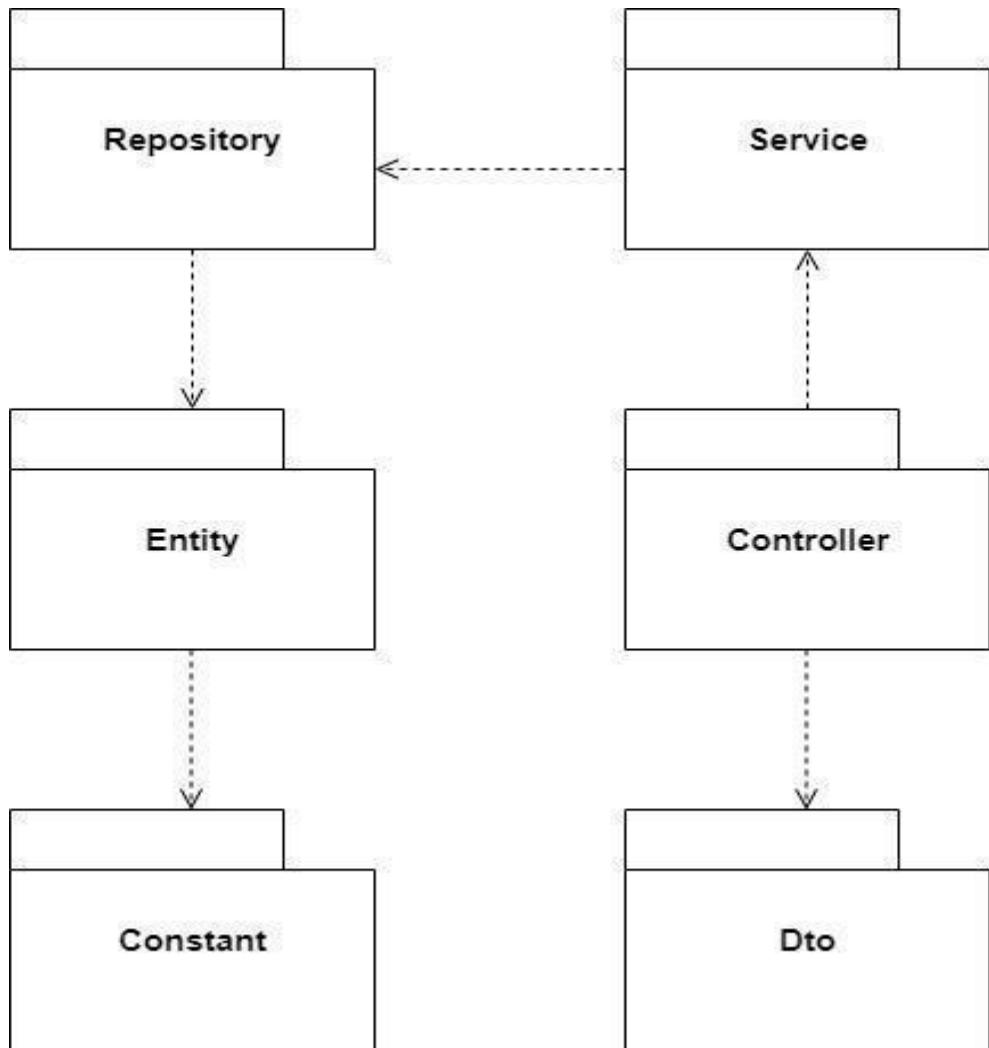


Figure 51 - Package Diagram

No.	Name	Description
1	Repository	For database calls. It keeps the interface classes that implement code to access the data layer.
2	Service	For business logic. It keeps the interface of service classes and implementation of it.
3	Entity	For mapping with database tables.
4	Constant	For constant variables.
5	Controller	For the request mapping.
6	Dto	For data transfer.

*Table 56 - Component Diagram Dictionary*

### **3. System Detailed Design**

#### **3.1. Class Diagram**

##### **3.1.1 Class Diagram**

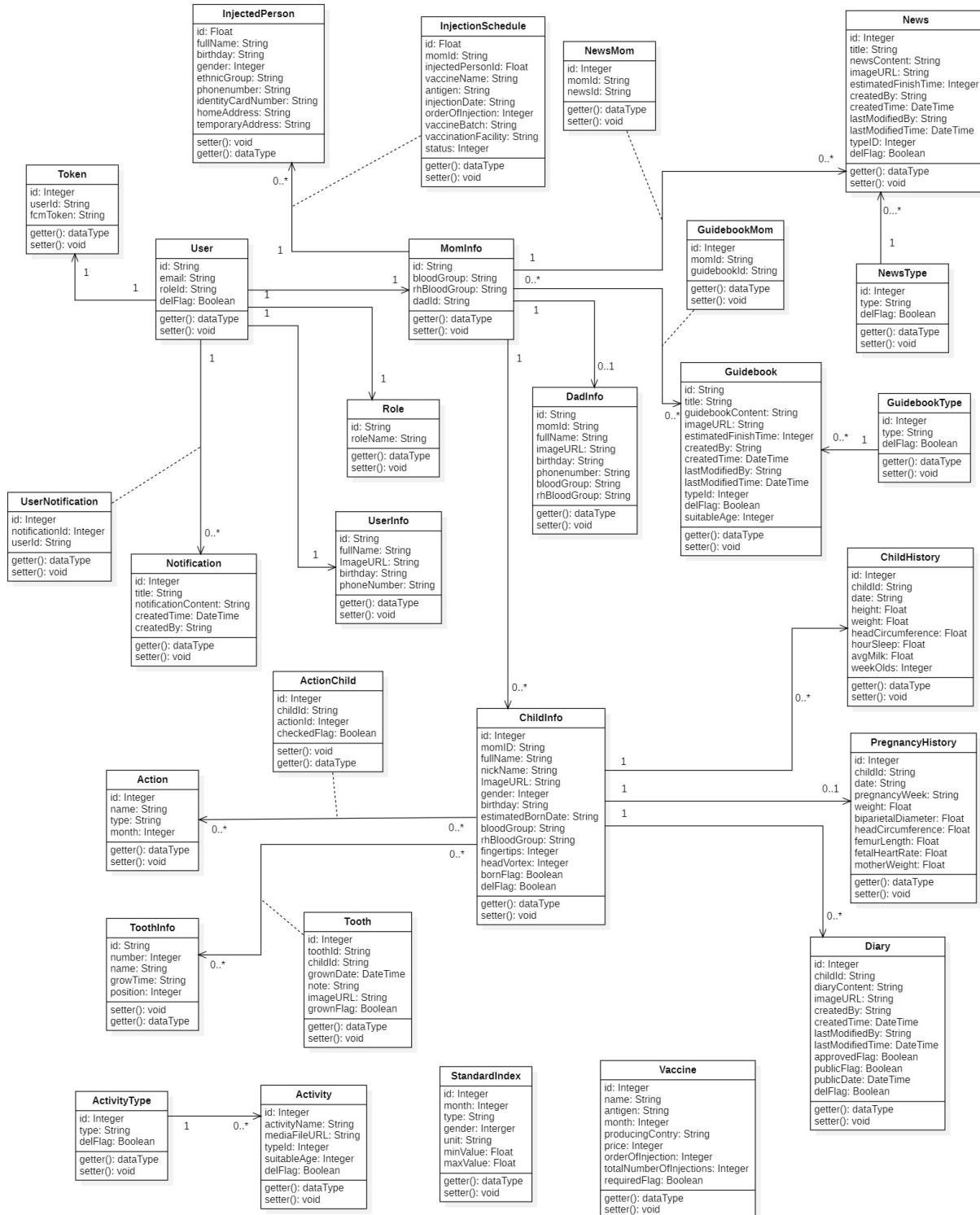


Figure 52 - Class Diagram

### 3.1.2. Class Specifications

#### **UserInfo**

No.	Attribute	Data Type	Visibility	Description
1	id	Int	Private	Unique identifier of user
2	fullName	String	Private	The full name of user
3	imageURL	DateTime	Private	The image of user
4	birthday	String	Private	The birthday of user
5	phoneNumber	Boolean	Private	The phone number of user

Table 57 - <Class Specification> User

#### **MomInfo**

No.	Attribute	Data Type	Visibility	Description
1	id	String	Private	Unique identifier of mom
2	bloodGroup	String	Private	The blood group of mom
3	rhBloodGroup	String	Private	The rh blood group of mom
4	dadId	String	Private	Unique identifier of dad

Table 58 - <Class Specification> MomInfo

#### **DadInfo**

No.	Attribute	Data Type	Visibility	Description
1	id	String	Private	Unique identifier of dad
2	momId	String	Private	Unique identifier of mom
3	phoneNumber	String	Private	The phone number of a father
4	bloodGroup	String	Private	The blood group of a father
5	rhBloodGroup	String	Private	The rh blood group of a father
6	birthday	String	Private	The birthday of a father

<b>7</b>	fullName	String	Private	The full name of a dad
<b>8</b>	imageURL	String	Private	The image of a dad

Table 59 - <Class Specification> DadInfo

## News

No.	Attribute	Data Type	Visibility	Description
<b>1</b>	idd	Int	Private	Unique identifier of a news
<b>2</b>	title	String	Private	The title of a news
<b>3</b>	imageURL	String	Private	The image of a news
<b>4</b>	newsContent	String	Private	The news content of a news
<b>5</b>	typeID	Integer	Private	Unique identifier of type
<b>6</b>	estimatedFinishTime	Integer	Private	The estimated finish time of a news
<b>7</b>	createdBy	String	Private	The estimated finish time of a news
<b>8</b>	createdTime	DateTime	Private	The estimated finish time of a news
<b>9</b>	lastModifiedBy	String	Private	The user last modified of a news
<b>10</b>	lastModifiedTime	DateTime	Private	The last modified time of a news
<b>11</b>	delFlag	Boolean	Private	The status delete of news

Table 60 - <Class Specification> News

## Token

No.	Attribute	Data Type	Visibility	Description
<b>1</b>	id	Integer	Private	Unique identifier of token
<b>2</b>	userId	String	Private	Unique identifier of a User
<b>3</b>	fcmToken	String	Private	The fcm token of a token

Table 61 - <Class Specification> Token

## Injection Schedule

No.	Attribute	Data Type	Visibility	Description

<b>1</b>	id	Integer	Private	Unique identifier of a Injection Schedule
<b>2</b>	momId	String	Private	Unique identifier of a mom
<b>3</b>	injectedPersonId	String	Private	Unique identifier of a injected person
<b>4</b>	vaccineName	String	Private	The vaccine name of a vaccine in injection schedule
<b>5</b>	antigen	String	Private	The antigen of a vaccine in injection schedule
<b>6</b>	injectionDate	String	Private	The injection date of a vaccine in injection schedule
<b>7</b>	orderOfInjection	String	Private	The order of injection of a vaccine in injection schedule
<b>8</b>	vaccineBatch	String	Private	The vaccine batch of a vaccine in injection schedule
<b>9</b>	vaccineFacility	String	Private	The vaccine facility of a vaccine in injection schedule
<b>10</b>	status	String	Private	The status of a vaccine in injection schedule

Table 62 - <Class Specification> Injection Schedule

## Tooth

No.	Attribute	Data Type	Visibility	Description
<b>1</b>	id	Integer	Private	Unique identifier of tooth
<b>2</b>	toothId	String	Private	Unique identifier of tooth
<b>3</b>	childId	String	Private	Unique identifier of child
<b>4</b>	grownDate	DateTime	Private	The grown date of tooth
<b>5</b>	note	String	Private	The note of tooth
<b>6</b>	imageURL	String	Private	The image of tooth
<b>7</b>	grownFlag	Boolean	Private	The status grown of tooth

Table 63 - <Class Specification> Tooth

## NewsType

No.	Attribute	Data Type	Visibility	Description
1	id	Integer	Private	Unique identifier of a news type
2	type	String	Private	The type of a news type
3	delFlag	Boolean	Private	The status delete of a news type

Table 64 - <Class Specification> NewsType

## Role

No.	Attribute	Data Type	Visibility	Description
1	id	String	Private	Unique identifier of a role
2	roleName	String	Private	The name of a role

Table 65 - <Class Specification> Role

## ChildInfo

No.	Attribute	Data Type	Visibility	Description
1	gender	Integer	Private	The gender of a child
2	fingertips	String	Private	The fingertips of a child
3	headVortex	Float	Private	The head vortex of a child
4	bloodGroup	String	Private	The blood group of a child
5	rhBloodGroup	String	Private	The rh blood group of a child
6	fullName	String	Private	The full name of a child
7	nickName	String	Private	The nickname of a child
8	imageURL	String	Private	The image of a child
9	birthday	DateTime	Private	The birthday of a child
10	id	Integer	Private	Unique identifier of a child
11	momID	String	Private	Unique identifier of a mom
12	estimatedBornDate	String	Private	The estimated born date of a child

<b>13</b>	bornFlag	Boolean	Private	The status born of child
<b>14</b>	delFlag	Boolean	Private	The status delete of child

Table 66 - <Class Specification> ChildInfo

## Diary

No.	Attribute	Data Type	Visibility	Description
<b>1</b>	id	Integer	Private	Unique identifier of a diary
<b>2</b>	diaryContent	String	Private	The content of a diary
<b>3</b>	imageURL	String	Private	The image of a diary
<b>4</b>	approvedFlag	Boolean	Private	The status approved of diary
<b>5</b>	childId	String	Private	Unique identifier of a child
<b>6</b>	publicFlag	Boolean	Private	The status public of diary
<b>7</b>	createdBy	String	Private	The estimated finish time of a diary
<b>8</b>	createdTime	DateTime	Private	The estimated finish time of a diary
<b>9</b>	lastModifiedBy	String	Private	The user last modified of a diary
<b>10</b>	lastModifiedTime	DateTime	Private	The last modified time of a diary
<b>11</b>	delFlag	Boolean	Private	The status delete of diary
<b>12</b>	publicDate	DateTime	Private	The public date of diary

Table 67 - <Class Specification> Diary

## PregnancyHistory

No.	Attribute	Data Type	Visibility	Description
<b>1</b>	id	Integer	Private	Unique identifier of a pregnancy history
<b>2</b>	childId	String	Private	Unique identifier of a child
<b>3</b>	headCircumference	Float	Private	The head circumference of a pregnancy in pregnancy history
<b>4</b>	femurLength	Float	Private	The femur length of a pregnancy in

				pregnancy history
<b>5</b>	fetalHeartRate	String	Private	The fetal heart rate of a pregnancy in pregnancy history
<b>6</b>	pregnancyWeek	String	Private	The week of a pregnancy in pregnancy history
<b>7</b>	weight	Float	Private	The weight of a pregnancy in pregnancy history
<b>8</b>	pregnancyType	Float	Private	The type a pregnancy
<b>9</b>	date	String	Private	The date of a pregnancy in pregnancy history
<b>10</b>	biparietalDiameter	Float	Private	The biparietal diameter of a pregnancy in pregnancy history
<b>11</b>	motherWeight	Float	Private	The mother weight of a pregnancy in pregnancy history

Table 68 - <Class Specification> PregnancyHistory

## Activity

No.	Attribute	Data Type	Visibility	Description
<b>1</b>	id	Integer	Private	Unique identifier of a activity
<b>2</b>	activityName	String	Private	Unique identifier of a child
<b>3</b>	mediaFileURL	String	Private	The media file of a activity
<b>4</b>	suitableAge	Integer	Private	The suitable age of a activity
<b>5</b>	typeId	String	Private	Unique identifier of a type
<b>6</b>	delFlag	Boolean	Private	The status delete of activity

Table 69 - <Class Specification> Activity

## Vaccine

No.	Attribute	Data Type	Visibility	Description
<b>1</b>	id	Int	Private	Unique identifier of a vaccine

<b>2</b>	name	String	Private	The name of a vaccine
<b>3</b>	totalNumberOfInjections	Integer	Private	The total number of injections of a vaccine
<b>4</b>	price	Float	Private	The price of a vaccine
<b>5</b>	producingCountry	String	Private	The producing country of a vaccine
<b>6</b>	antigen	String	Private	The antigen of a vaccine
<b>7</b>	month	Integer	Private	The month of a vaccine
<b>8</b>	requiredFlag	Boolean	Private	The status required of a vaccine
<b>9</b>	orderOfInjection	Integer	Private	The order of injection of a vaccine

Table 70 - <Class Specification> Vaccine

## ChildHistory

No.	Attribute	Data Type	Visibility	Description
<b>1</b>	id	Integer	Private	Unique identifier of a child history
<b>2</b>	childId	String	Private	Unique identifier of a child
<b>3</b>	headCircumference	Float	Private	The head circumference of a child in child history
<b>4</b>	hourSleep	Float	Private	The hour sleep of a child in child history
<b>5</b>	avgMilk	Float	Private	The average milk of a child in child history
<b>6</b>	weekOlds	Integer	Private	The week old of a child in child history
<b>7</b>	weight	Float	Private	The weight of a child in child history
<b>8</b>	date	String	Private	The date of a pregnancy in pregnancy history
<b>9</b>	height	Float	Private	The height of a child in child history

Table 71 - <Class Specification> Vaccine History

## GuidebookType

No.	Attribute	Data Type	Visibility	Description
1	id	Integer	Private	Unique identifier of a guidebook type
2	type	String	Private	The type of a guidebook type
3	delFlag	Boolean	Private	The status delete of a guidebook type

Table 72 - <Class Specification> GuidebookType

## ActivityType

No.	Attribute	Data Type	Visibility	Description
1	id	Integer	Private	Unique identifier of a activity type
2	type	String	Private	The type of a activity type
3	delFlag	Boolean	Private	The status delete of a activity type

Table 73 - <Class Specification> ActivityType

## GuidebookMom

No.	Attribute	Data Type	Visibility	Description
1	id	Integer	Private	Unique identifier of a guidebook mom
2	momId	String	Private	Unique identifier of a mom
3	guidebookId	String	Private	Unique identifier of a guidebook

Table 74 - <Class Specification> GuidebookMom

## NewsMom

No.	Attribute	Data Type	Visibility	Description
1	id	Integer	Private	Unique identifier of a news mom

<b>2</b>	momId	String	Private	Unique identifier of a mom
<b>3</b>	newsId	String	Private	Unique identifier of a news

Table 75 - <Class Specification> NewsMom

## Guidebook

No.	Attribute	Data Type	Visibility	Description
<b>1</b>	id	Integer	Private	Unique identifier of a guidebook
<b>2</b>	title	String	Private	The title of a guidebook
<b>3</b>	imageURL	String	Private	The image of a guidebook
<b>4</b>	guidebookContent	String	Private	The news content of a guidebook
<b>5</b>	typeID	Integer	Private	Unique identifier of type
<b>6</b>	estimatedFinishTime	Integer	Private	The estimated finish time of a guidebook
<b>7</b>	createdBy	String	Private	The estimated finish time of a guidebook
<b>8</b>	createdTime	DateTime	Private	The estimated finish time of a guidebook
<b>9</b>	lastModifiedBy	String	Private	The user last modified of a guidebook
<b>10</b>	lastModifiedTime	DateTime	Private	The last modified time of a guidebook
<b>11</b>	delFlag	Boolean	Private	The status delete of guidebook
<b>12</b>	suitableAge	Integer	Private	The suitable age of a guidebook

Table 76 - <Class Specification> Guidebook

## User

No.	Attribute	Data Type	Visibility	Description
1	id	Integer	Private	Unique identifier of user
2	email	String	Private	The email of user
3	roleId	DateTime	Private	Unique identifier of role
4	delFlag	Boolean	Private	The status delete of user

Table 77 - <Class Specification> User

## UserNotification

No.	Attribute	Data Type	Visibility	Description
1	id	Integer	Private	Unique identifier of user notification
2	notificationId	Integer	Private	Unique identifier of notification
3	userId	String	Private	Unique identifier of user

Table 78 - <Class Specification> UserNotification

## Notification

No.	Attribute	Data Type	Visibility	Description
1	id	Integer	Private	Unique identifier of notification
2	title	String	Private	The title of notification
3	notificationContent	String	Private	The notification content of notification
4	createdBy	String	Private	The estimated finish time of a notification
5	createdTime	DateTime	Private	The estimated finish time of a notification

Table 79 - <Class Specification> Notification

## **InjectedPerson**

No.	Attribute	Data Type	Visibility	Description
1	id	Float	Private	Unique identifier of injected person
2	gender	Integer	Private	The gender of a person in injected person
3	phonenumer	String	Private	The phone number of a person in injected person
4	ethnicGroup	String	Private	The ethnic group of a person in injected person
5	identityCardNumber	String	Private	The identity card number of a person in injected person
6	birthday	String	Private	The birthday of a person in injected person
7	fullName	String	Private	The fullname of a person in injected person
8	homeAddress	String	Private	The home address of a person in injected person
9	temporaryAddress	String	Private	The temporary address of a person in injected person

Table 80 - <Class Specification> InjectedPerson

## **StandardIndex**

No.	Attribute	Data Type	Visibility	Description
1	id	Integer	Private	Unique identifier of standard index
2	month	Integer	Private	The month of standard index
3	type	String	Private	The type of standard index

<b>4</b>	gender	Integer	Private	The gender of standard index
<b>5</b>	unit	String	Private	The unit of standard index
<b>6</b>	minValue	Float	Private	The min value of standard index
<b>7</b>	maxValue	Float	Private	The max value of standard index

Table 81 - <Class Specification> InjectedPerson

## Action

No.	Attribute	Data Type	Visibility	Description
<b>1</b>	id	Integer	Private	Unique identifier of action
<b>2</b>	month	Integer	Private	The month of action
<b>3</b>	type	String	Private	The type of action
<b>4</b>	name	String	Private	The name of action

Table 82 - <Class Specification> Action

## ActionChild

No.	Attribute	Data Type	Visibility	Description
<b>1</b>	id	String	Private	Unique identifier of action child
<b>2</b>	childId	String	Private	Unique identifier of child
<b>3</b>	actionId	String	Private	Unique identifier of action
<b>4</b>	checkedFlag	Boolean	Private	The status checked of action child

Table 83 - <Class Specification> ActionChild

## ToothInfo

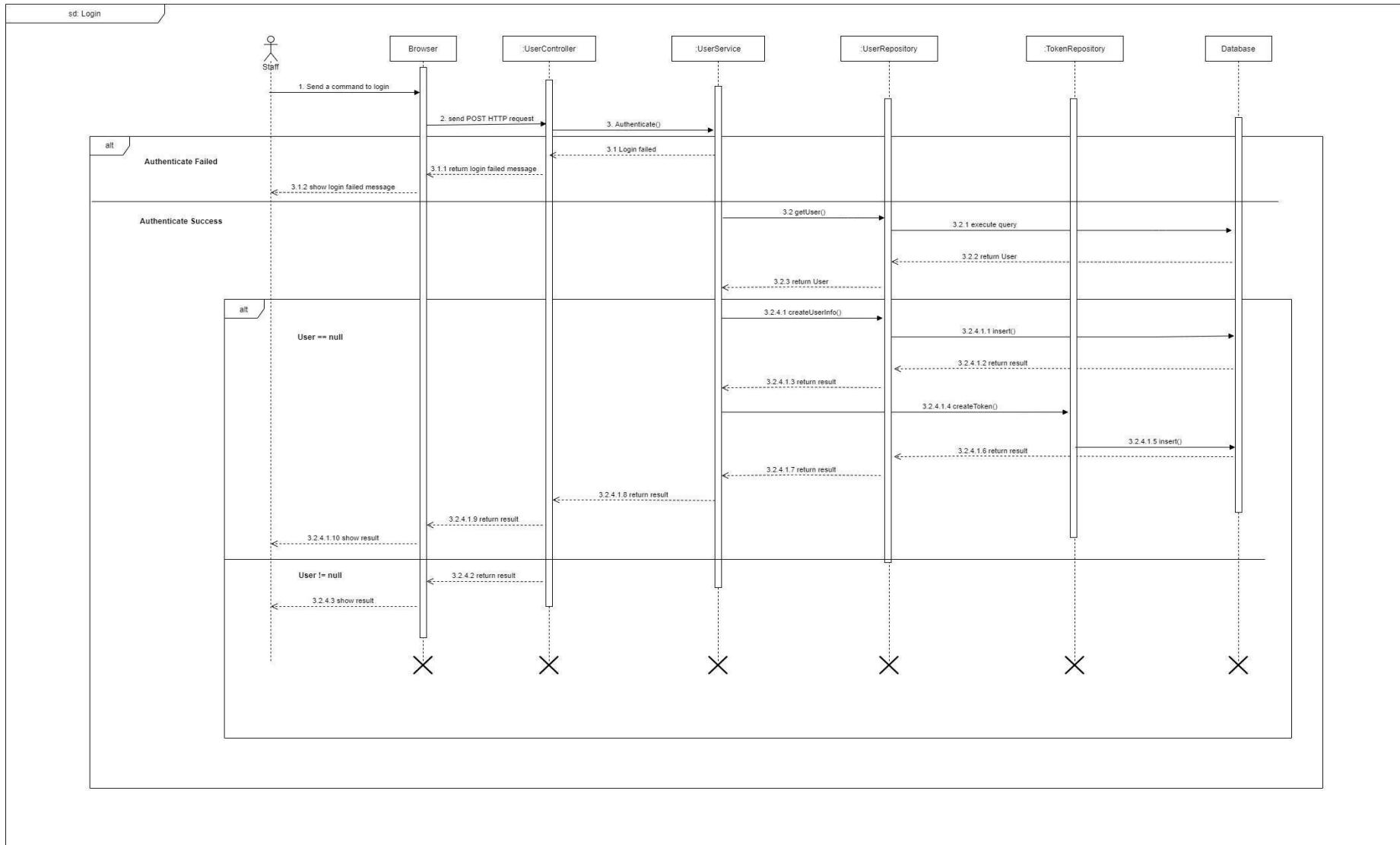
No.	Attribute	Data Type	Visibility	Description
1	id	String	Private	Unique identifier of tooth info
2	number	Integer	Private	The number of tooth info
3	growTime	String	Private	The grow time of tooth info
4	name	String	Private	The name of tooth info
5	position	Integer	Private	The position of tooth info

Table 84 - <Class Specification> ToothInfo

### 3.2. Sequence Diagram

#### 3.2.1. Login

*Summary:* This diagram shows the process for the actor login into the system



*Figure 53 - <Sequence Diagram> Login*

### **3.2.2. Get all news**

**Summary:** This diagram shows the process for the actor to get all News.

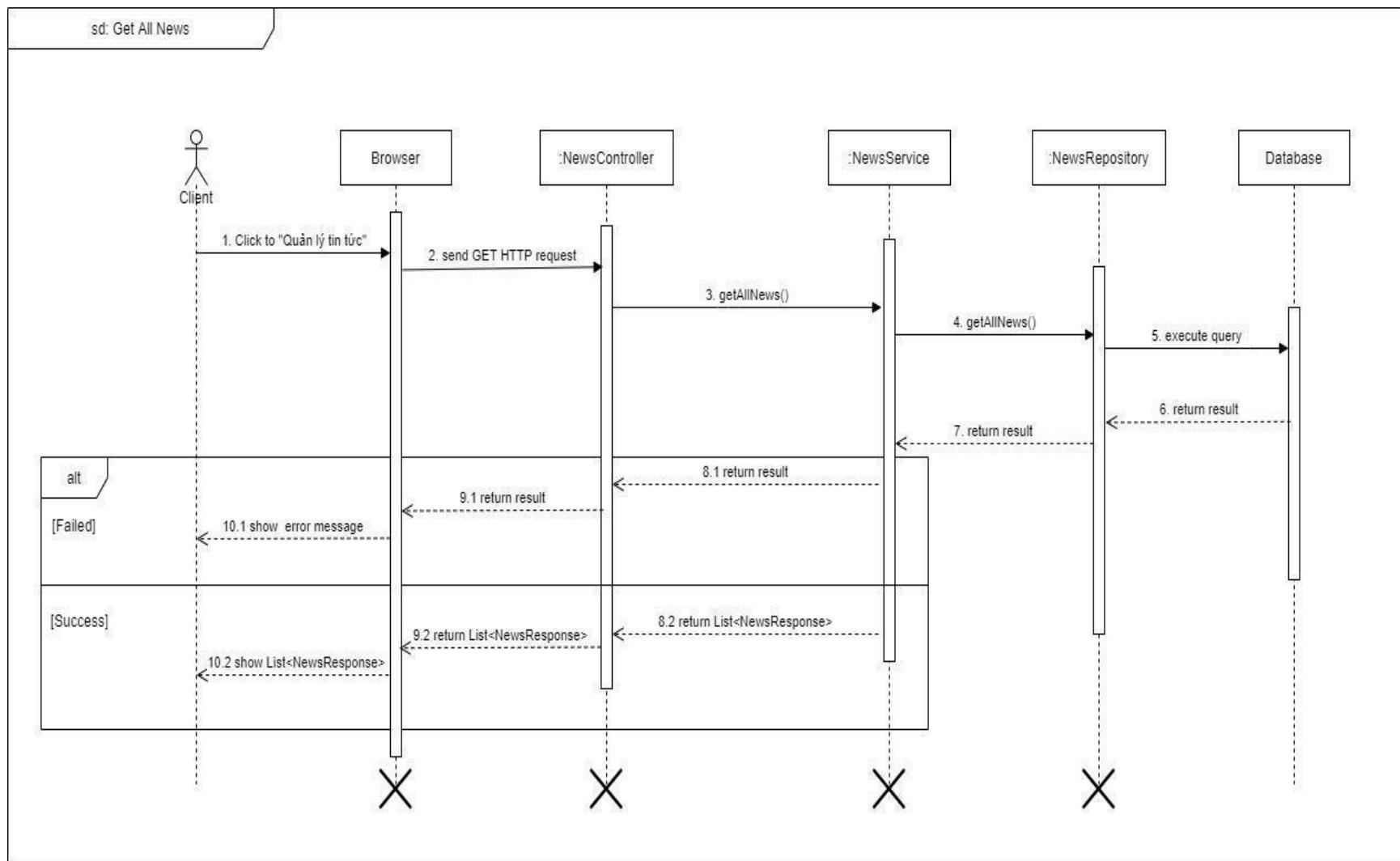


Figure 54 - <Sequence Diagram> Get all News

### 3.2.3. Create news

**Summary:** This diagram shows the process for the actor to create news.

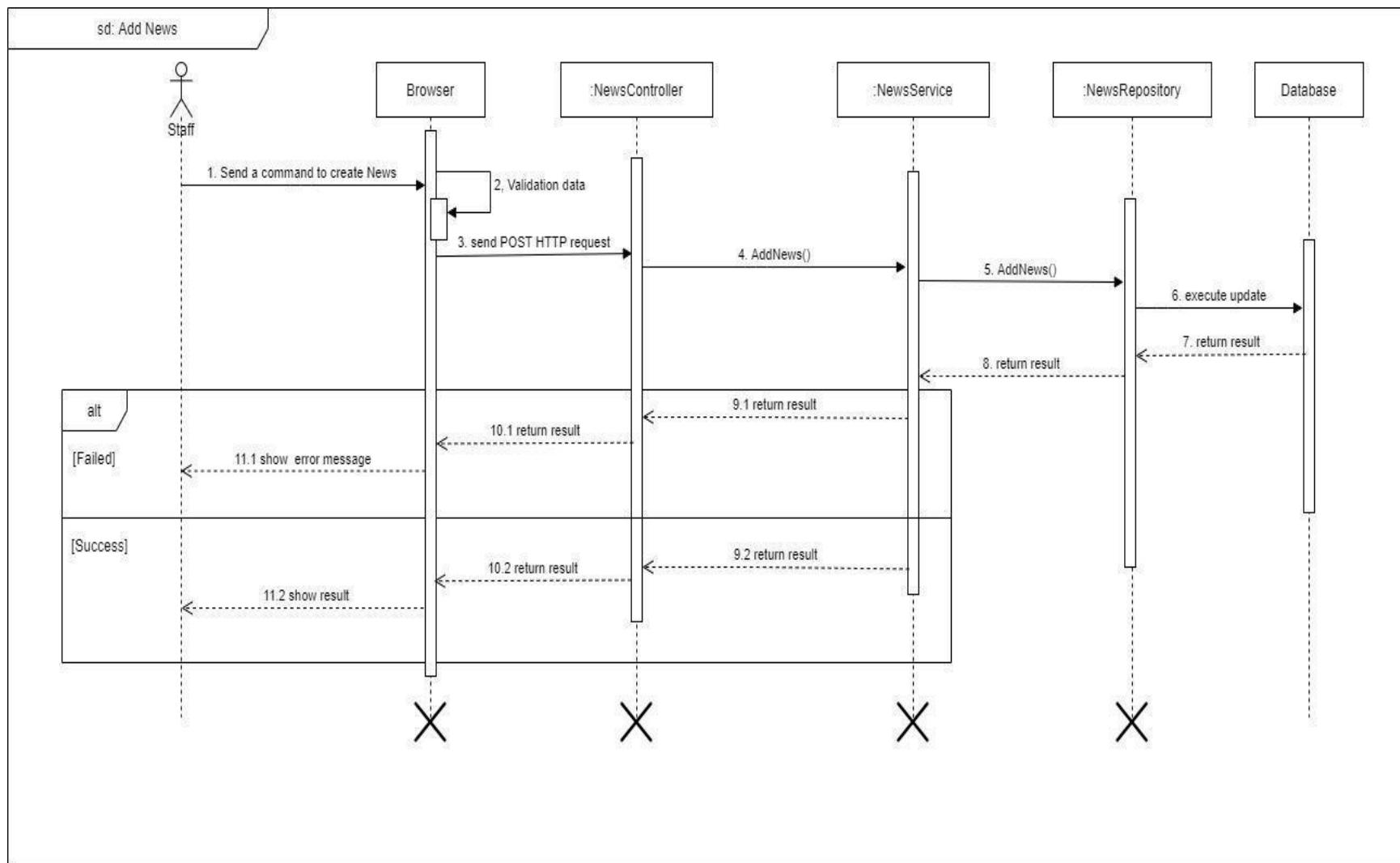


Figure 55 - <Sequence Diagram> Create News

### 3.2.4. Update news

**Summary:** This diagram shows the process for the actor to update news.

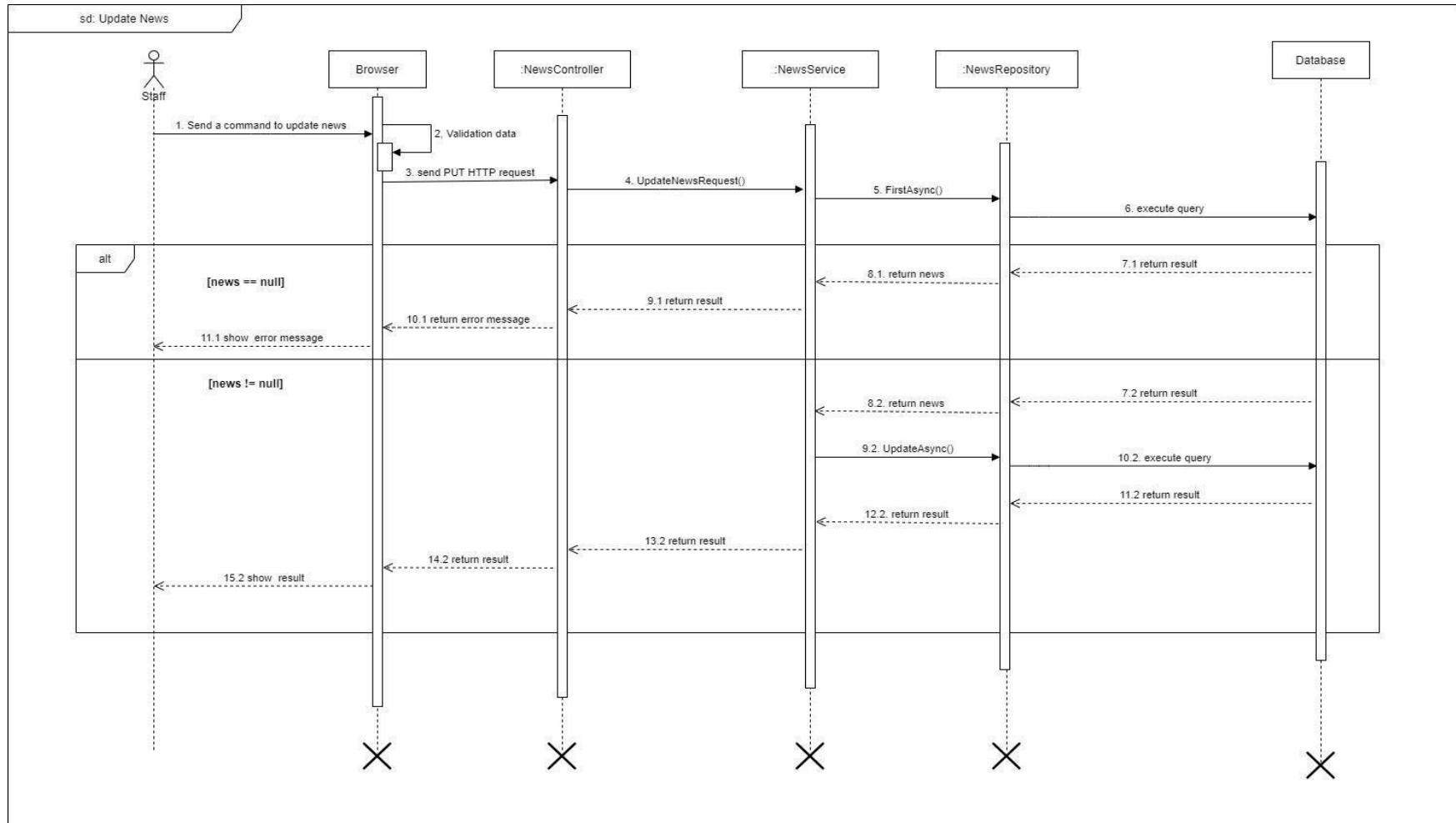


Figure 56 - <Sequence Diagram> Update news

### 3.2.5. Delete news

**Summary:** This diagram shows the process for the actor to delete news.

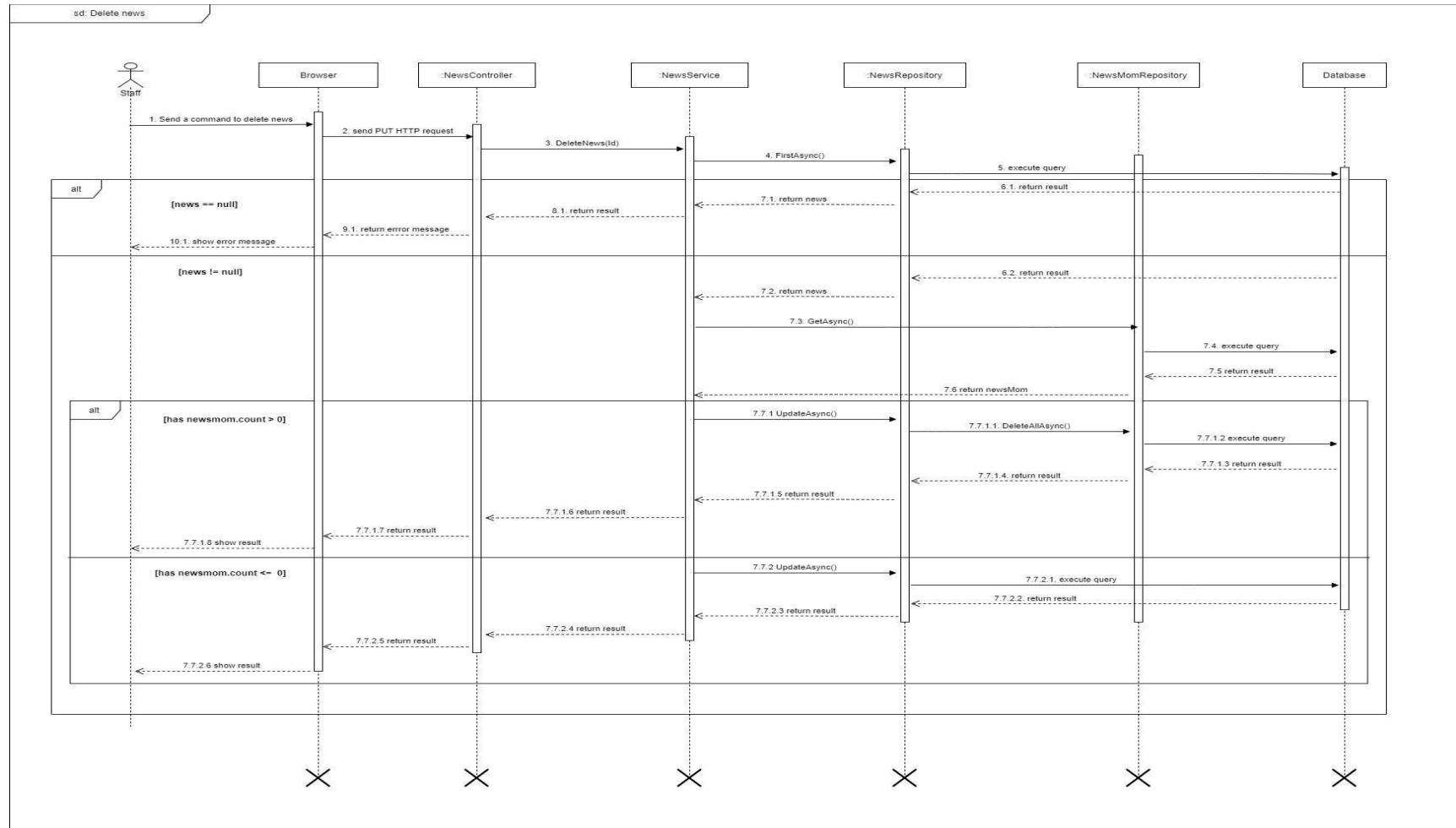
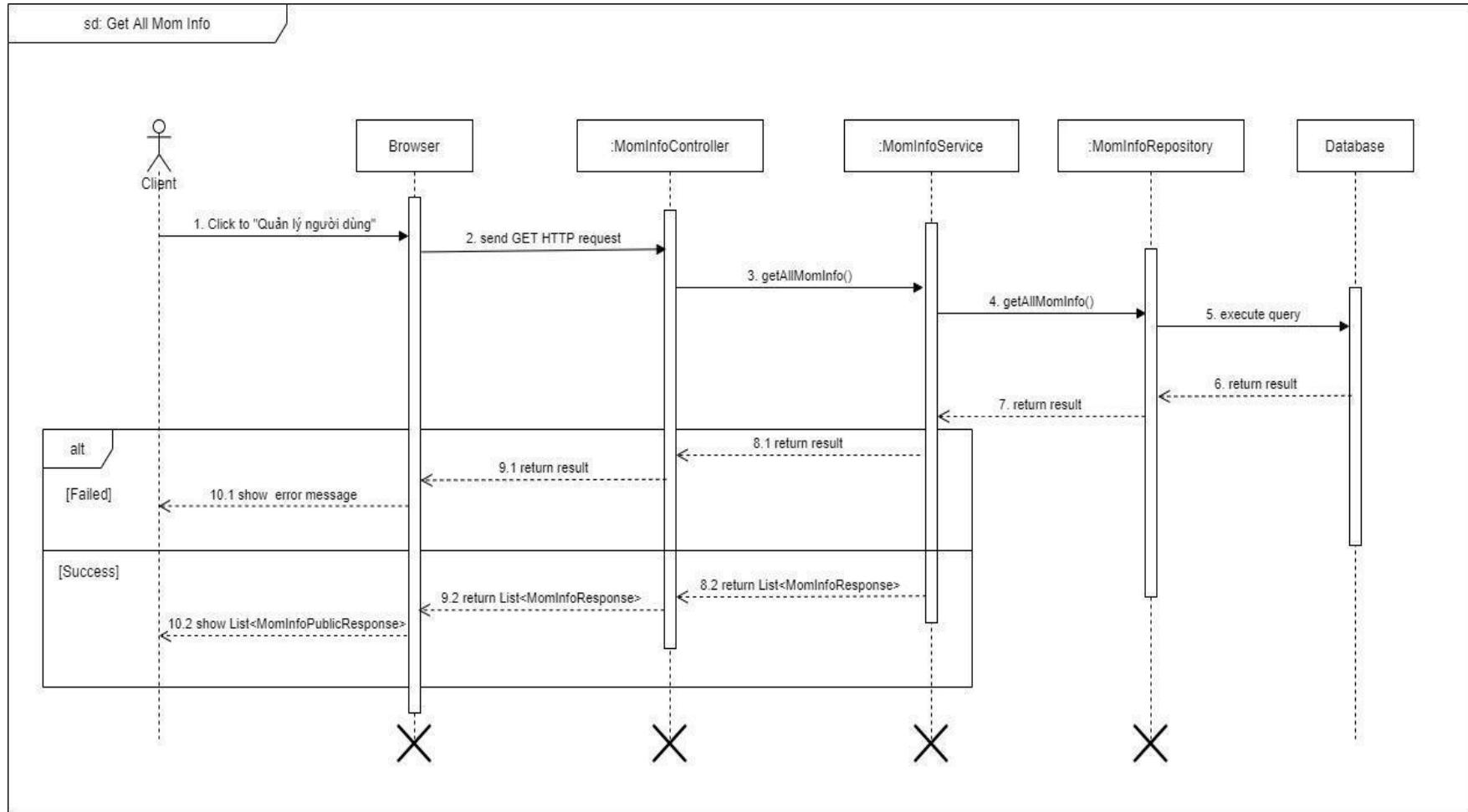


Figure 57 - <Sequence Diagram> Delete news

### 3.2.6. Get all user info

**Summary:** This diagram shows the process for the actor get all user information.



*Figure 58 - <Sequence Diagram> Get all user info*

### **3.2.7. Delete user**

**Summary:** This diagram shows the process for the actor delete user.

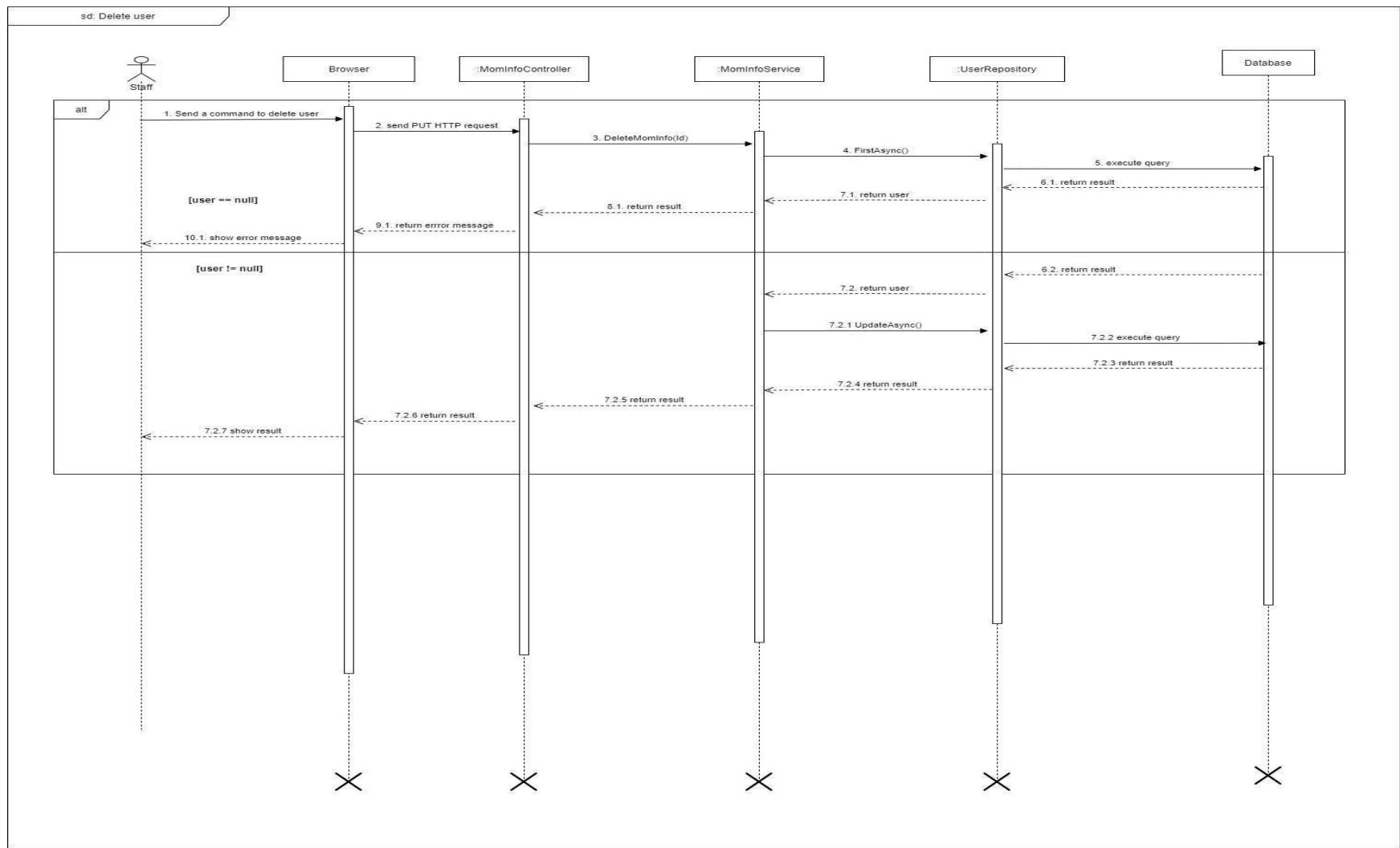


Figure 59 - <Sequence Diagram> Delete user

### 3.2.8. Create guidebook

**Summary:** This diagram shows the process for the actor create guidebook.

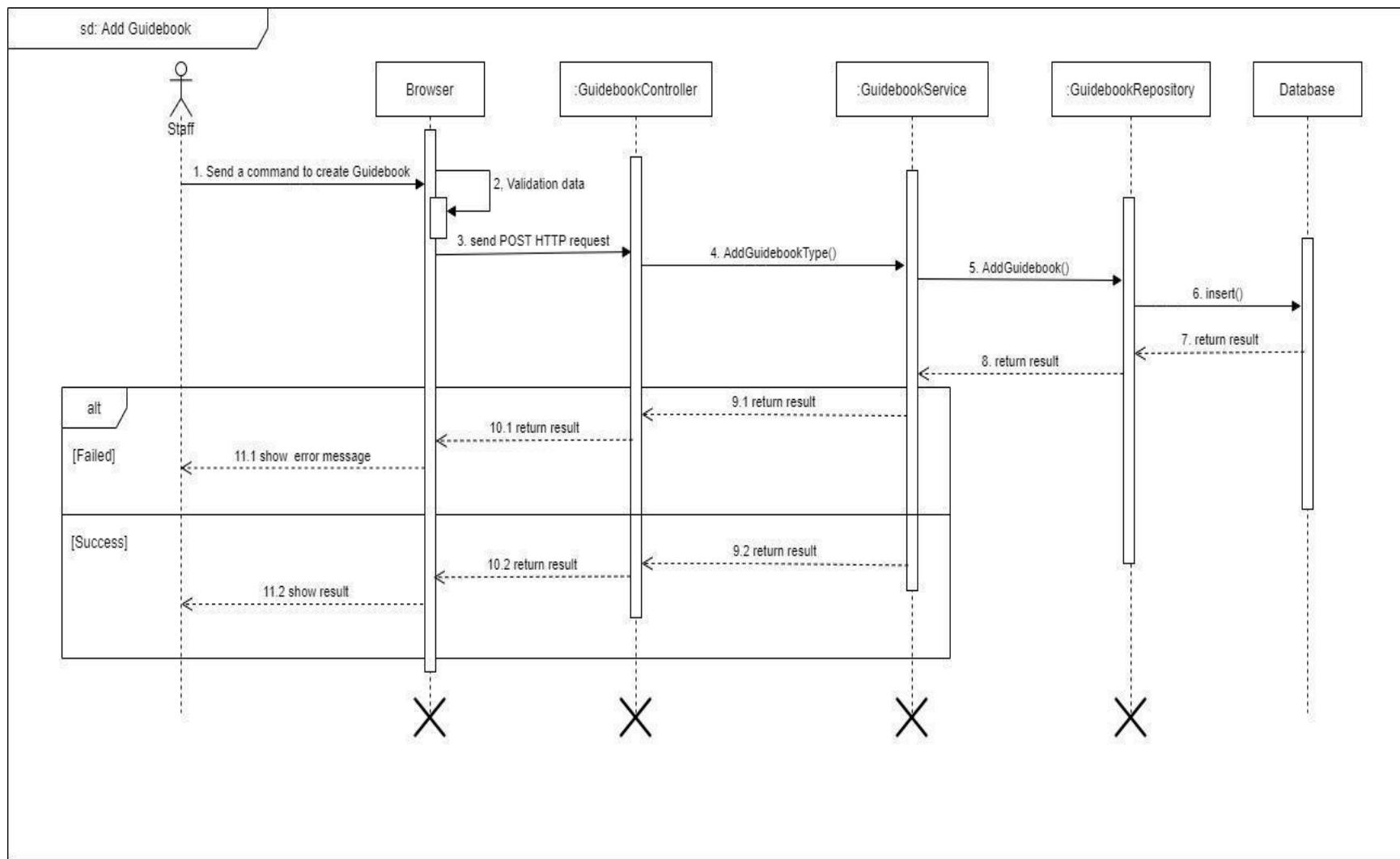


Figure 60 - <Sequence Diagram> Create guidebook

### 3.2.9. Update guidebook

**Summary:** This diagram shows the process for the actor update guidebook.

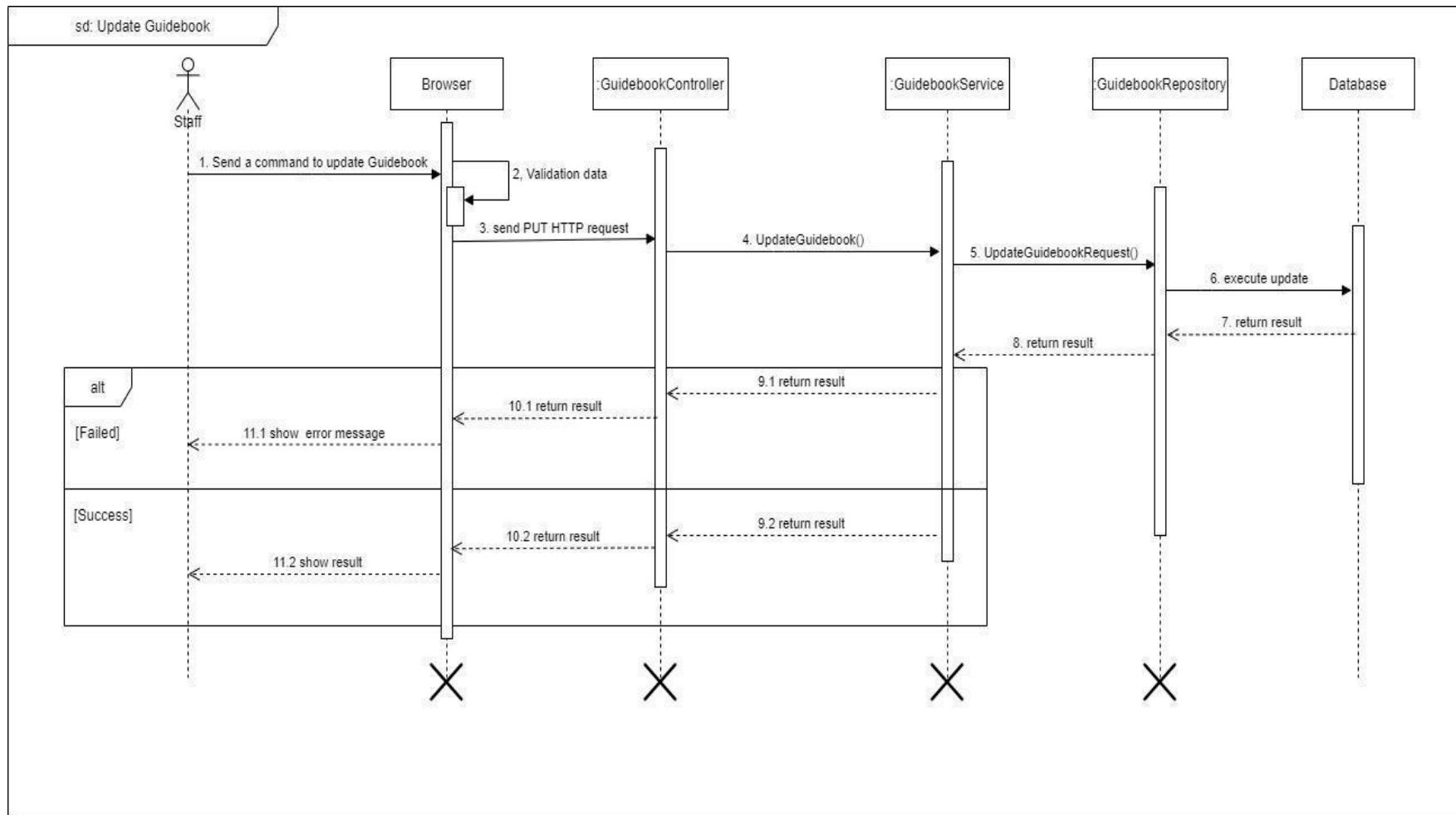
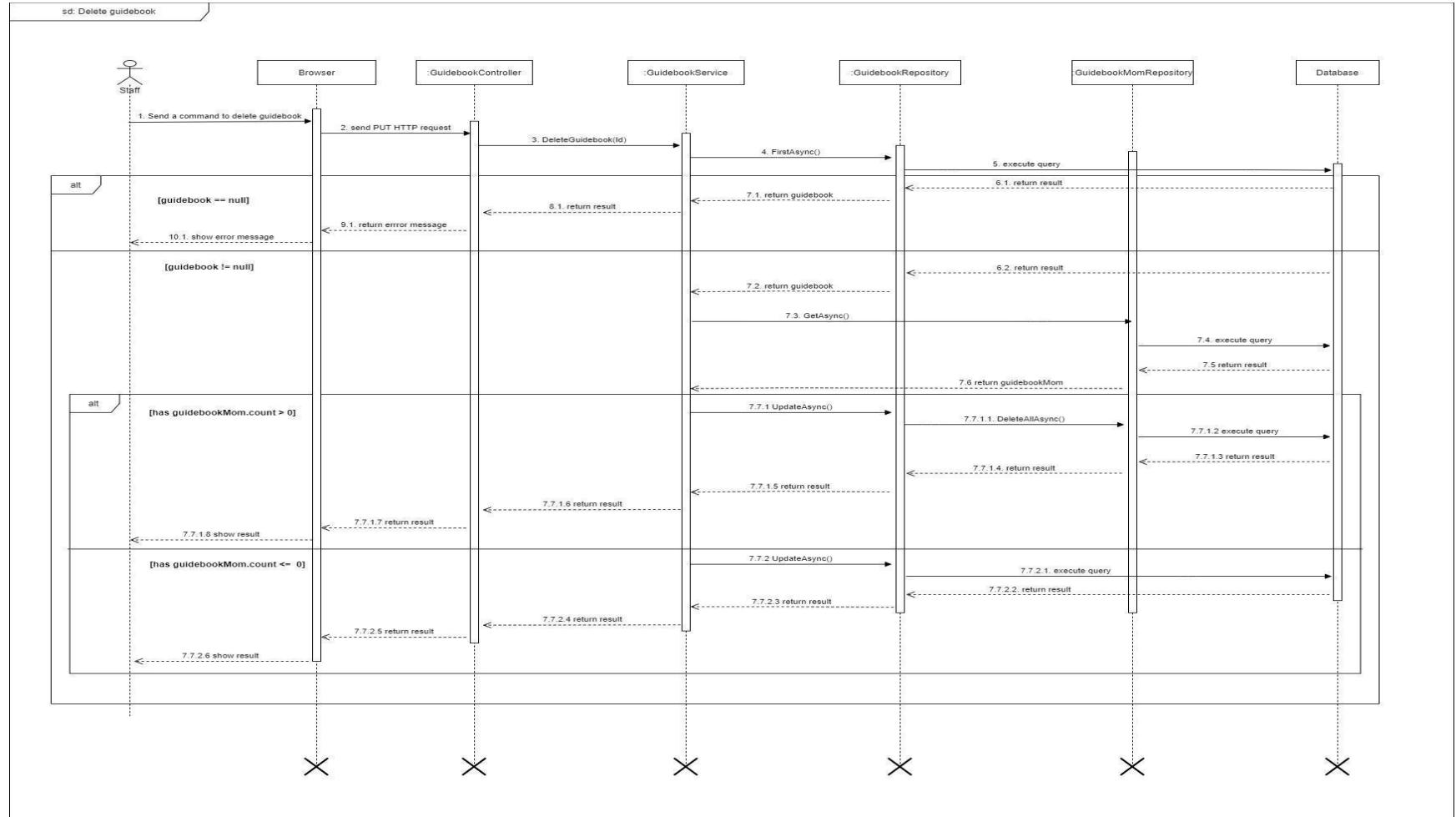


Figure 61 - <Sequence Diagram> Update guidebook

### 3.2.10. Delete guidebook

*Summary:* This diagram shows the process for the actor delete guidebook.



*Figure 62 - <Sequence Diagram> Delete guidebook*

**3.2.11. Create guidebook type**

**Summary:** This diagram shows the process for the actor to create a guidebook type.

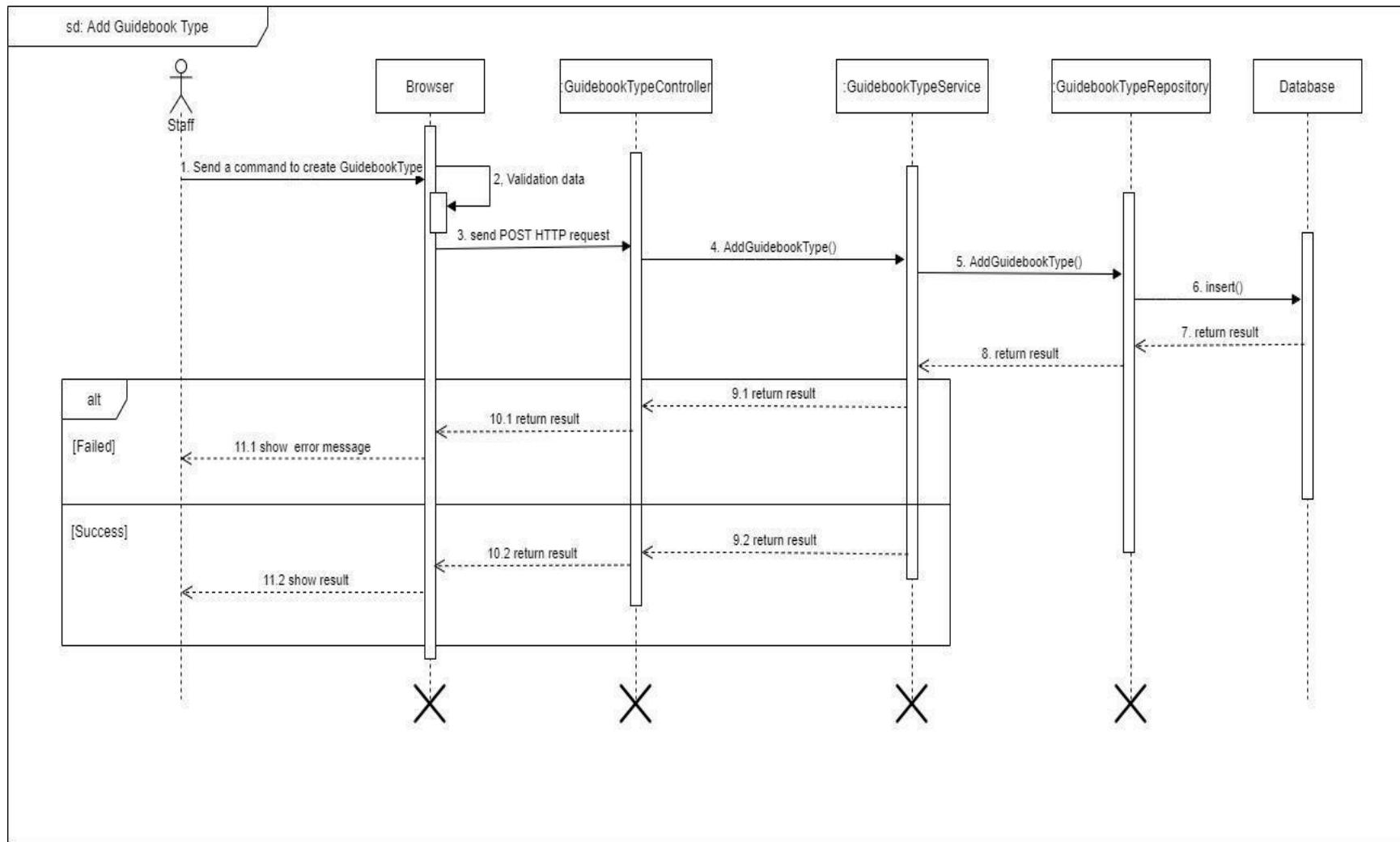
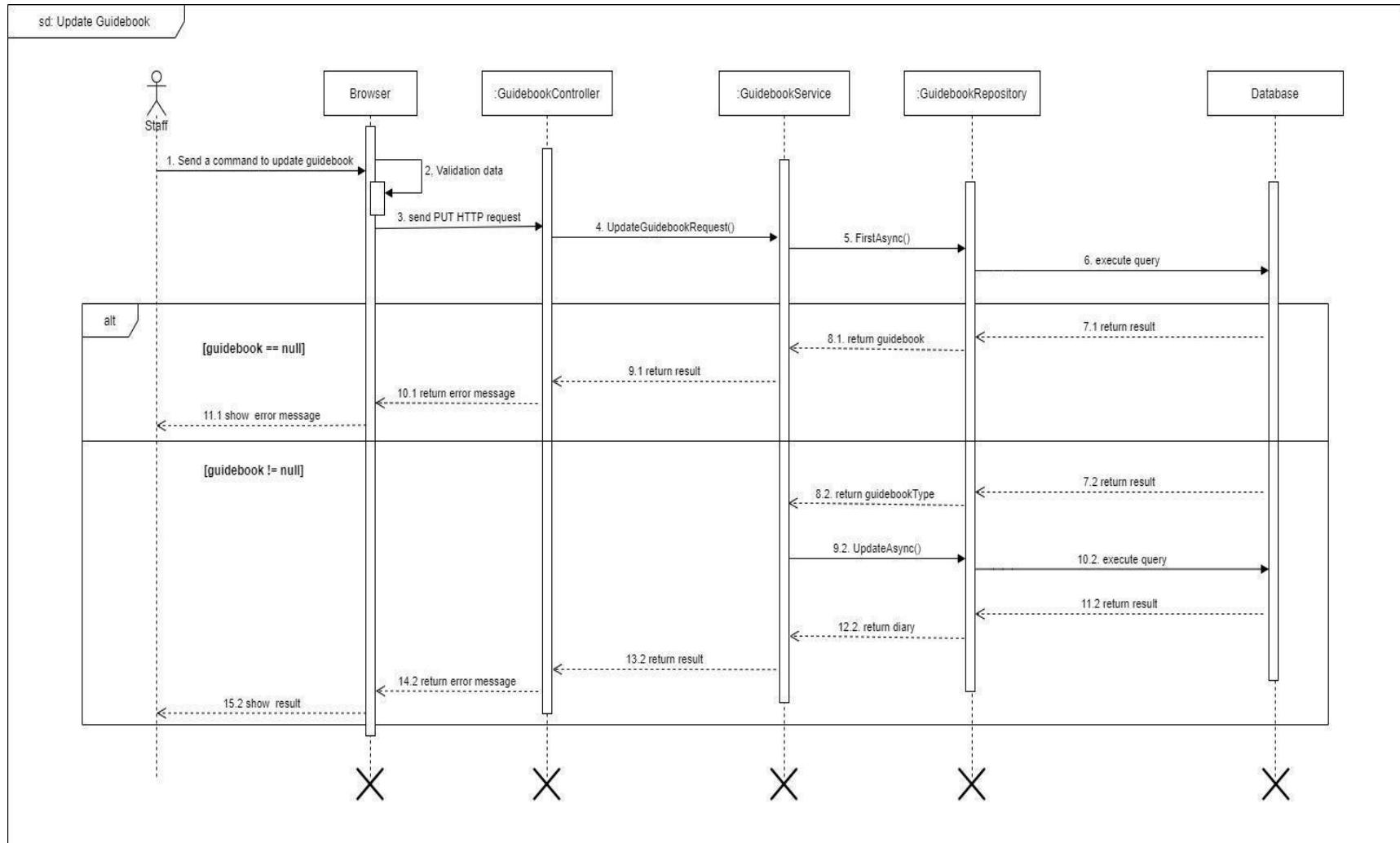


Figure 63 - <Sequence Diagram> Create guidebook type

### 3.2.12. Update guidebook type

**Summary:** This diagram shows the process for the actor update guidebook type.



*Figure 64 - <Sequence Diagram> Update guidebook type*

### ***3.2.13. Delete guidebook type***

**Summary:** This diagram shows the process for the actor delete guidebook type.

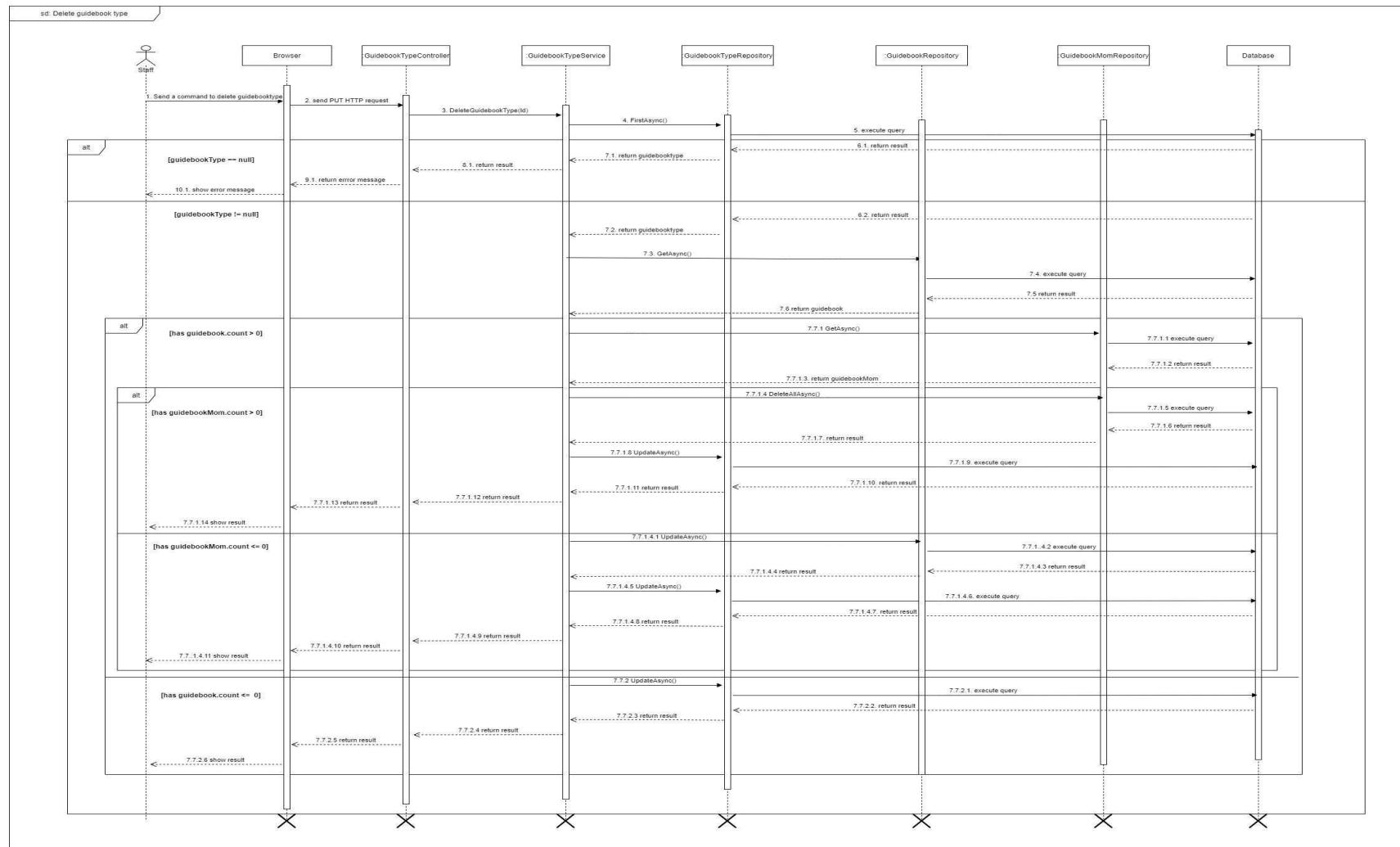
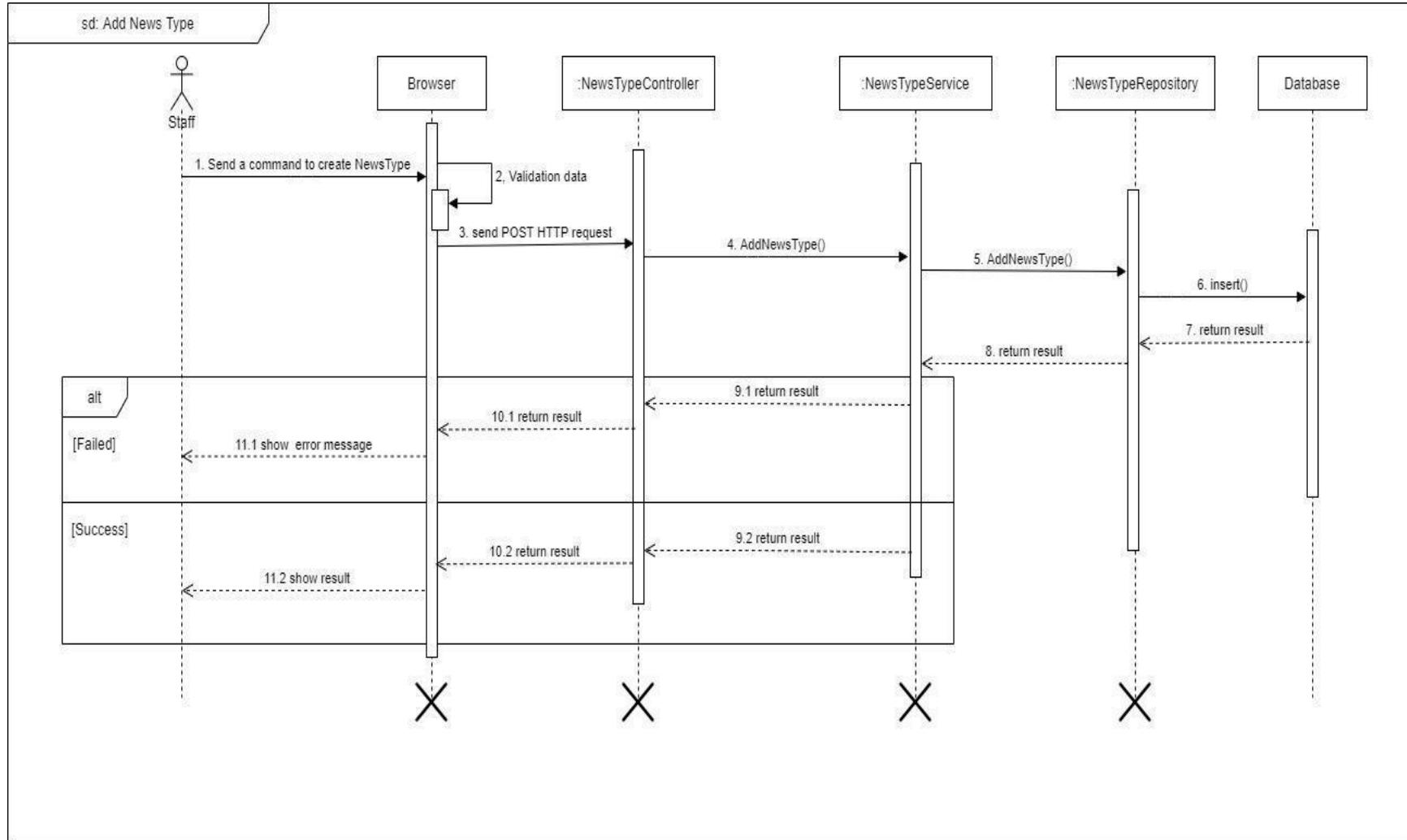


Figure 65 - <Sequence Diagram> Delete guidebook type

### 3.2.14. Create news type

*Summary:* This diagram shows the process for the actor to create news type.



*Figure 66 - <Sequence Diagram> Create news type*

**3.2.15. Update news type**

**Summary:** This diagram shows the process for the actor update news type.

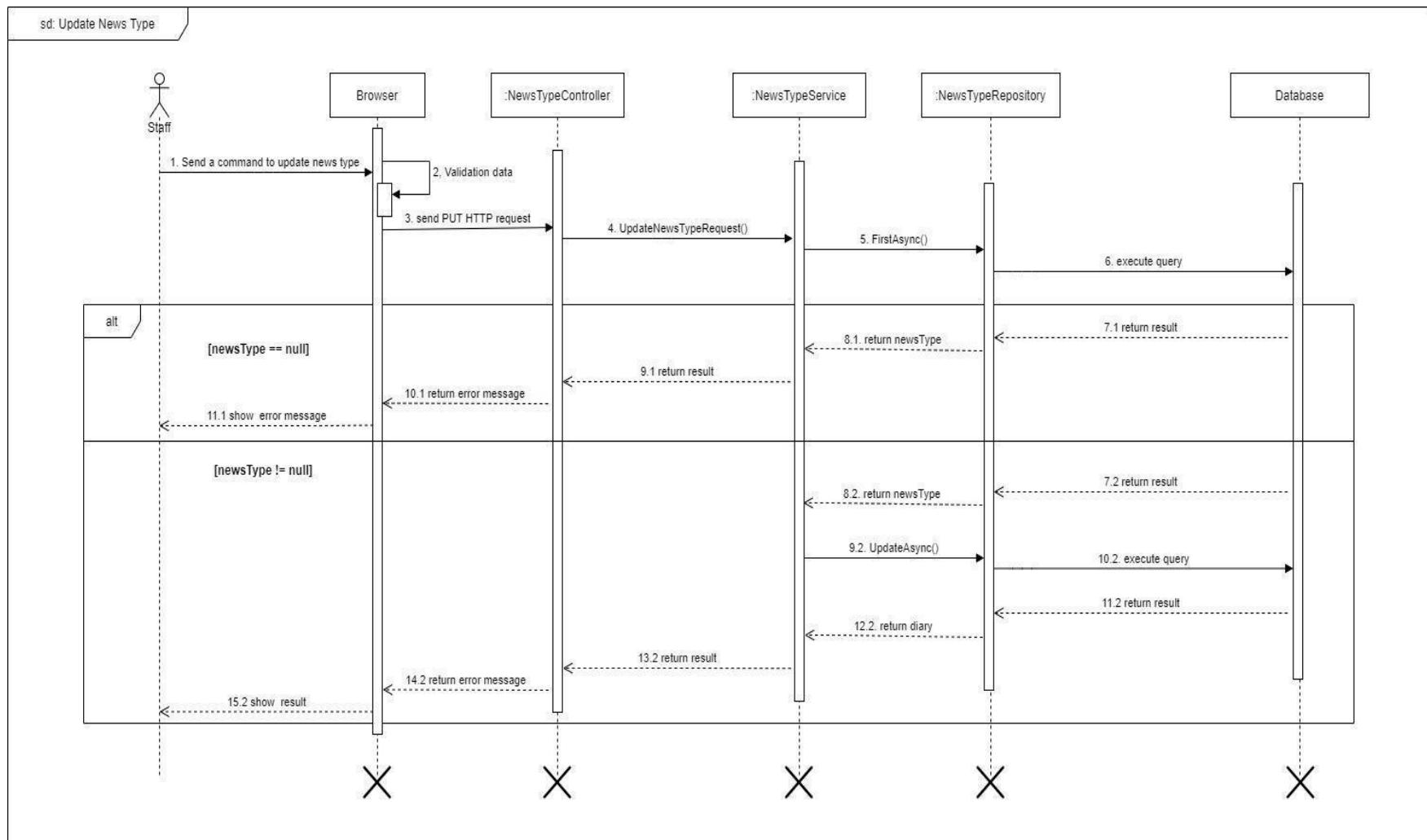


Figure 67 - <Sequence Diagram> Update news type

### 3.2.16. Delete news type

**Summary:** This diagram shows the process for the actor to delete news type.

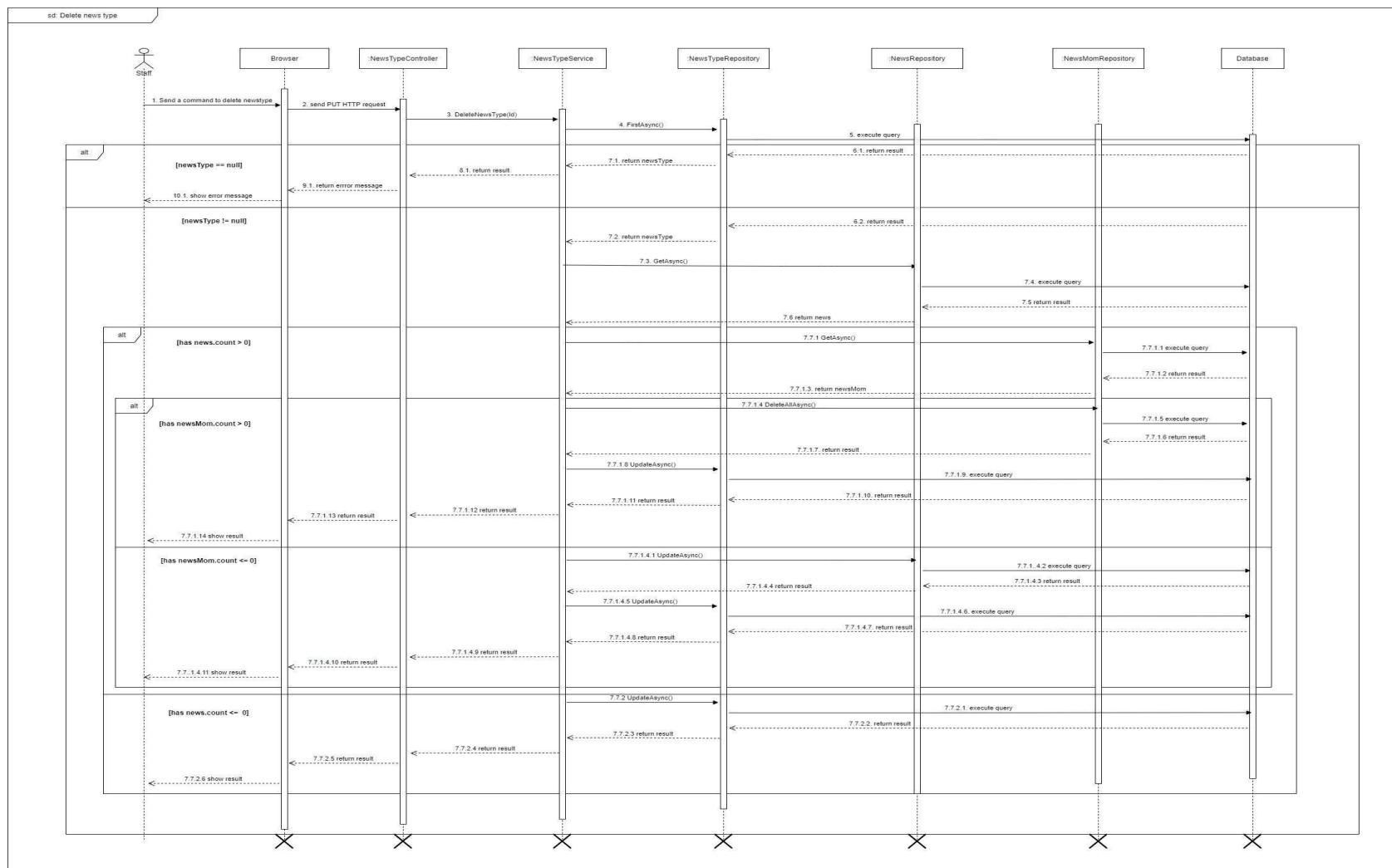
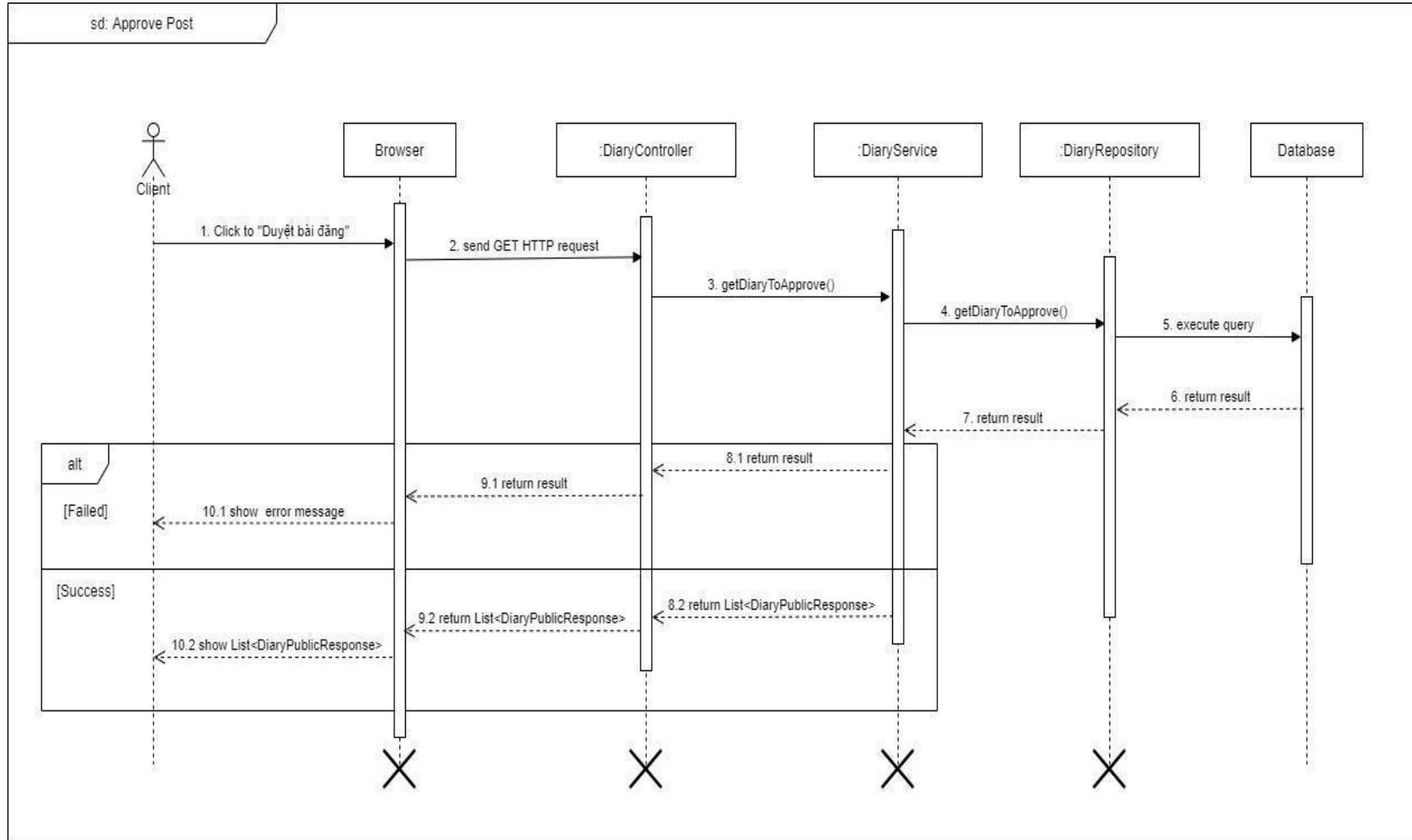


Figure 68 - <Sequence Diagram> Delete news type

### 3.2.17. Approve post

**Summary:** This diagram shows the process for the actor to approve post.



*Figure 69 - <Sequence Diagram> Approve post*

**3.2.18. Update diary**

**Summary:** This diagram shows the process for the actor's update diary.

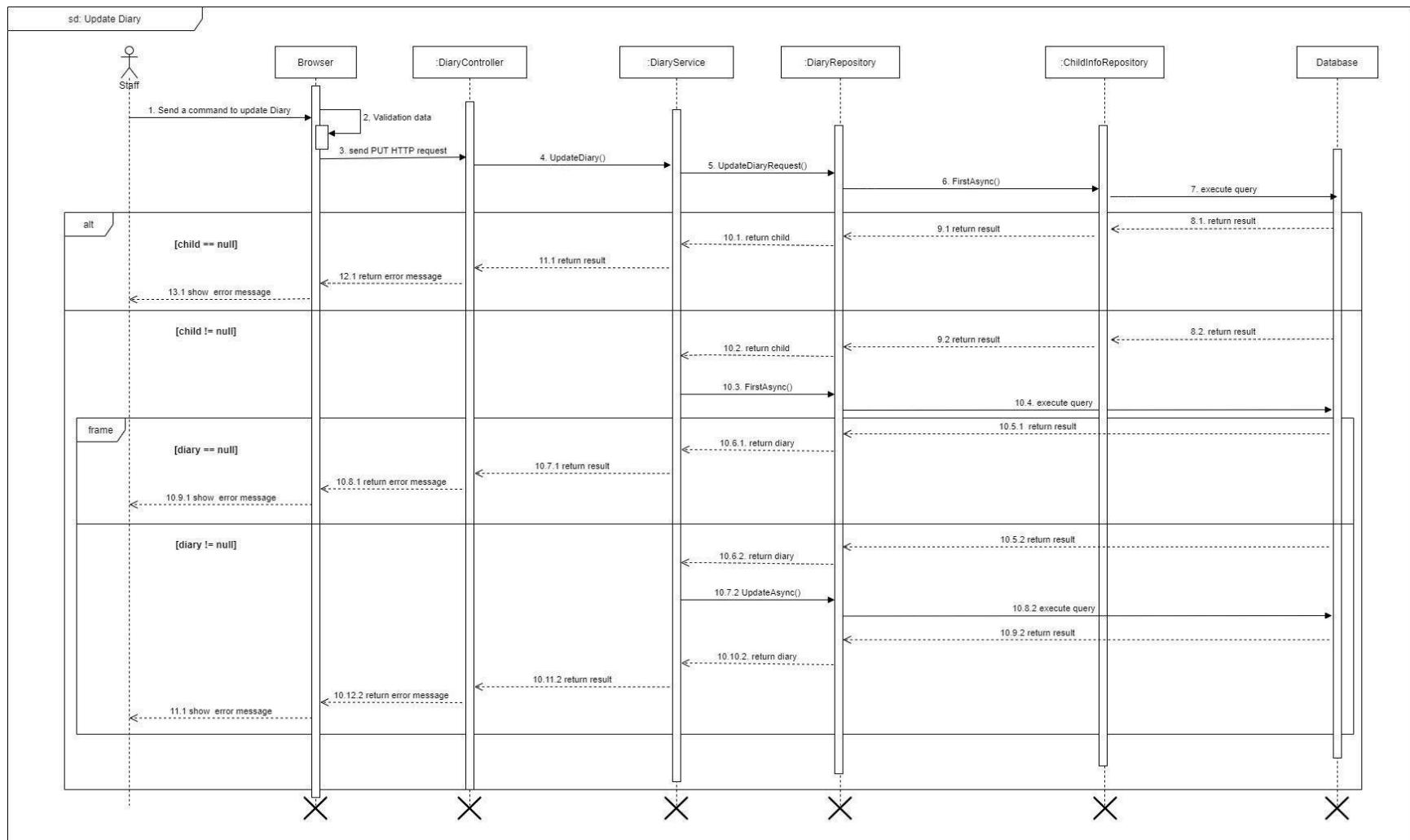


Figure 70 - <Sequence Diagram> Update diary

### 3.2.19. Get profile

**Summary:** This diagram shows the process for the actor to get profile.

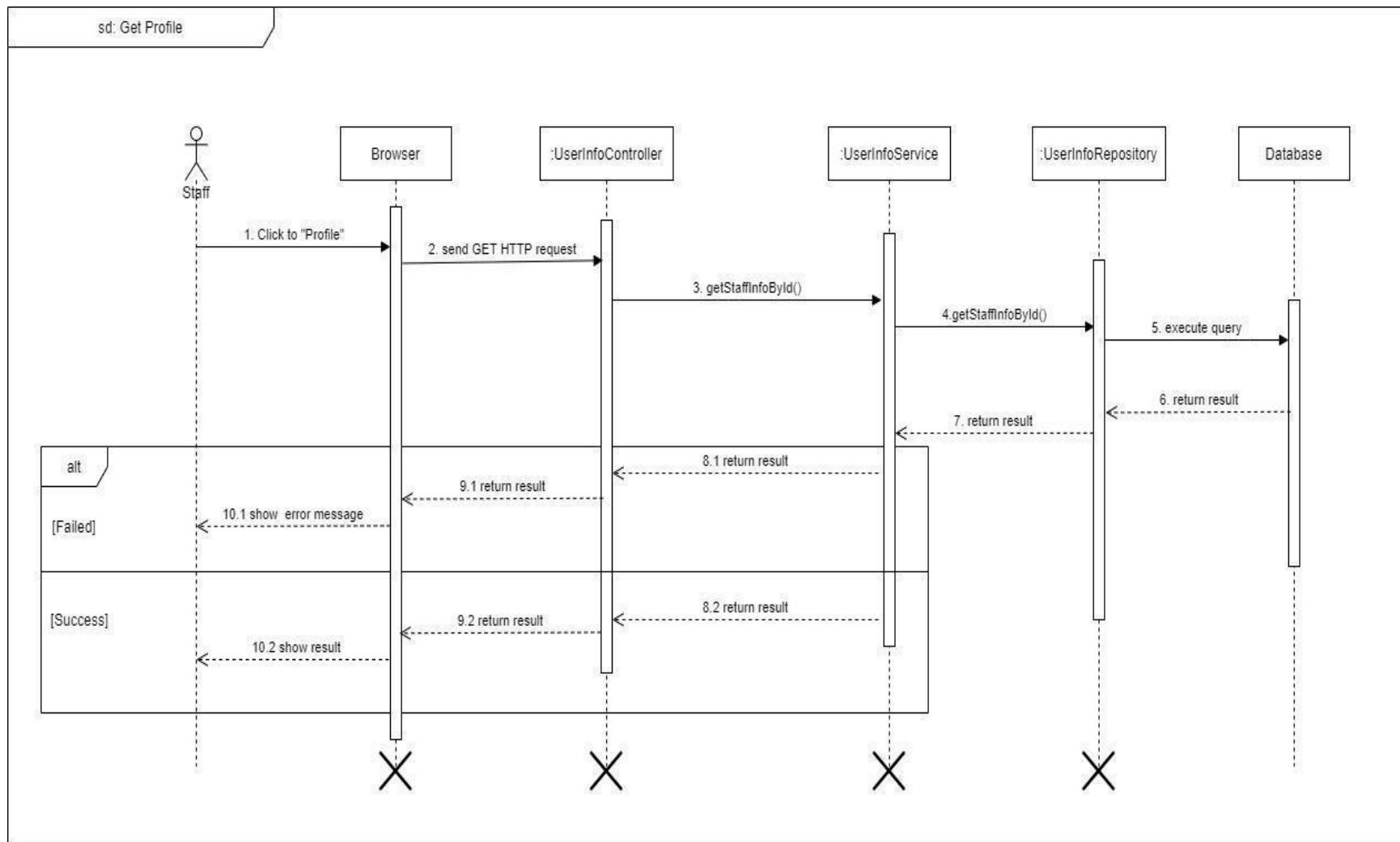
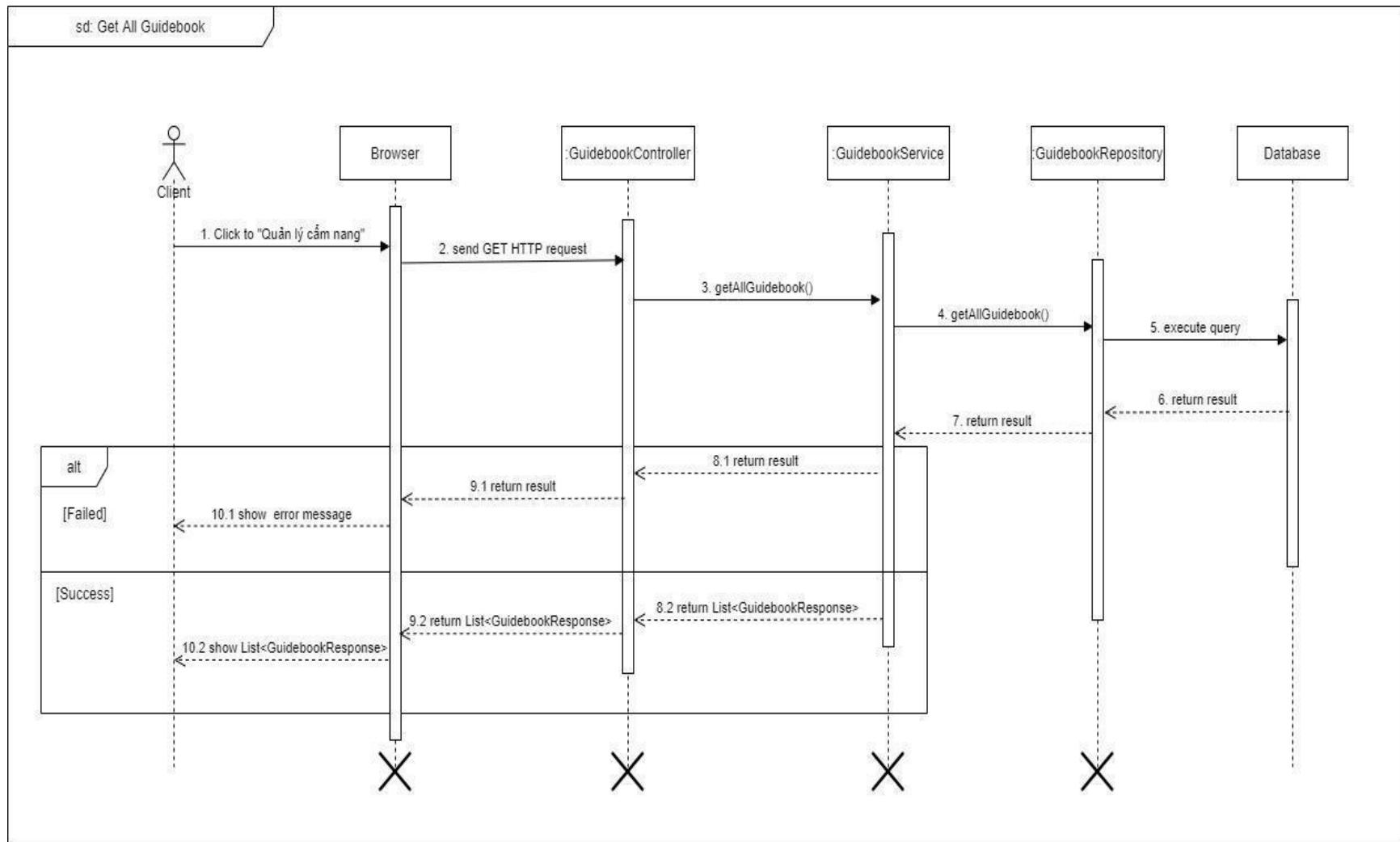


Figure 71 - <Sequence Diagram> Get profile

### 3.2.20. Get all guidebook

**Summary:** This diagram shows the process for the actor to get all the guidebooks.



*Figure 72 - <Sequence Diagram> Get all guidebook*

**3.2.21. Get all guidebook type**

**Summary:** This diagram shows the process for the actor to get all the guidebooks.

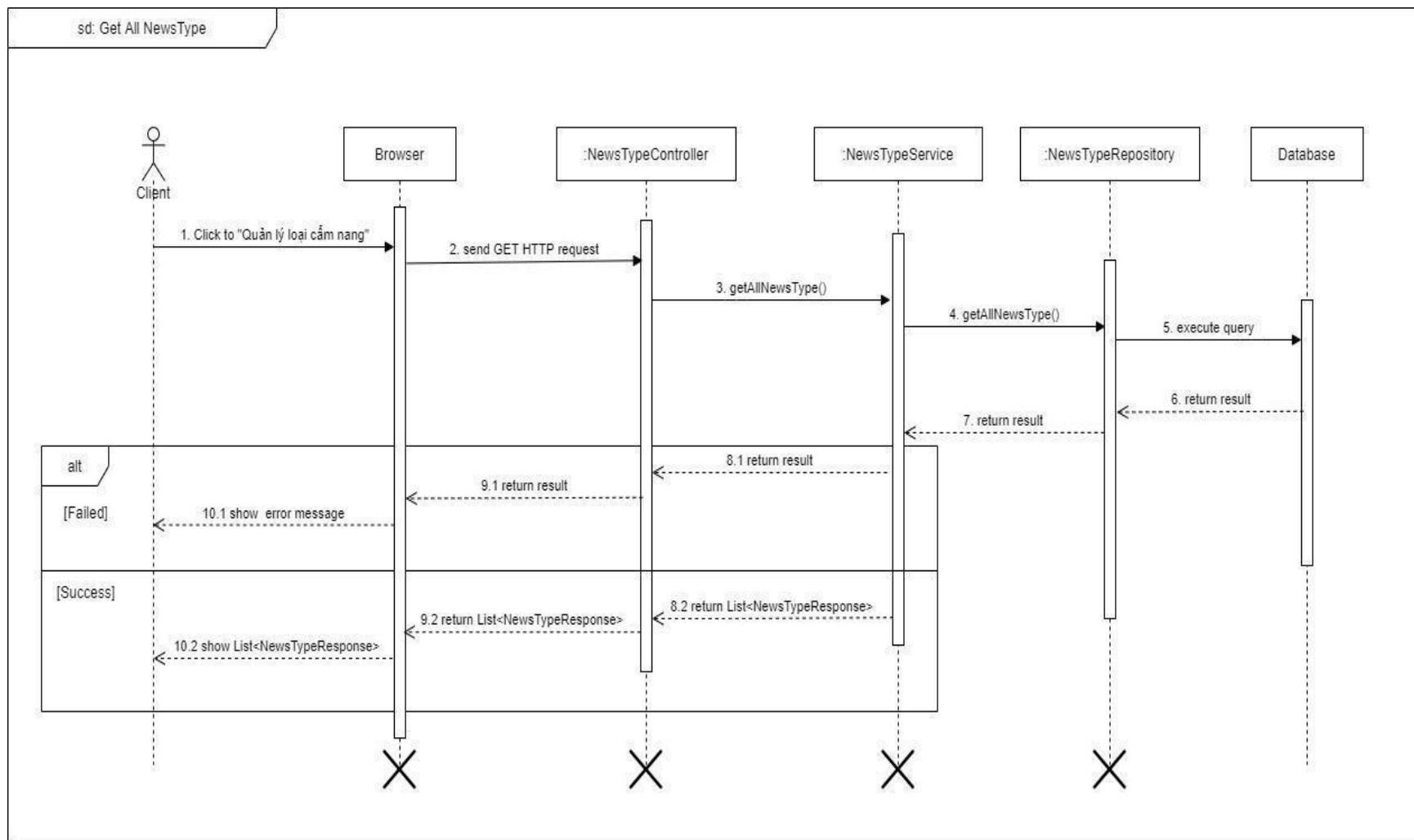


Figure 73 - <Sequence Diagram> Get all guidebook type

### 3.2.22. Get all news type

**Summary:** This diagram shows the process for the actor to get all news type.

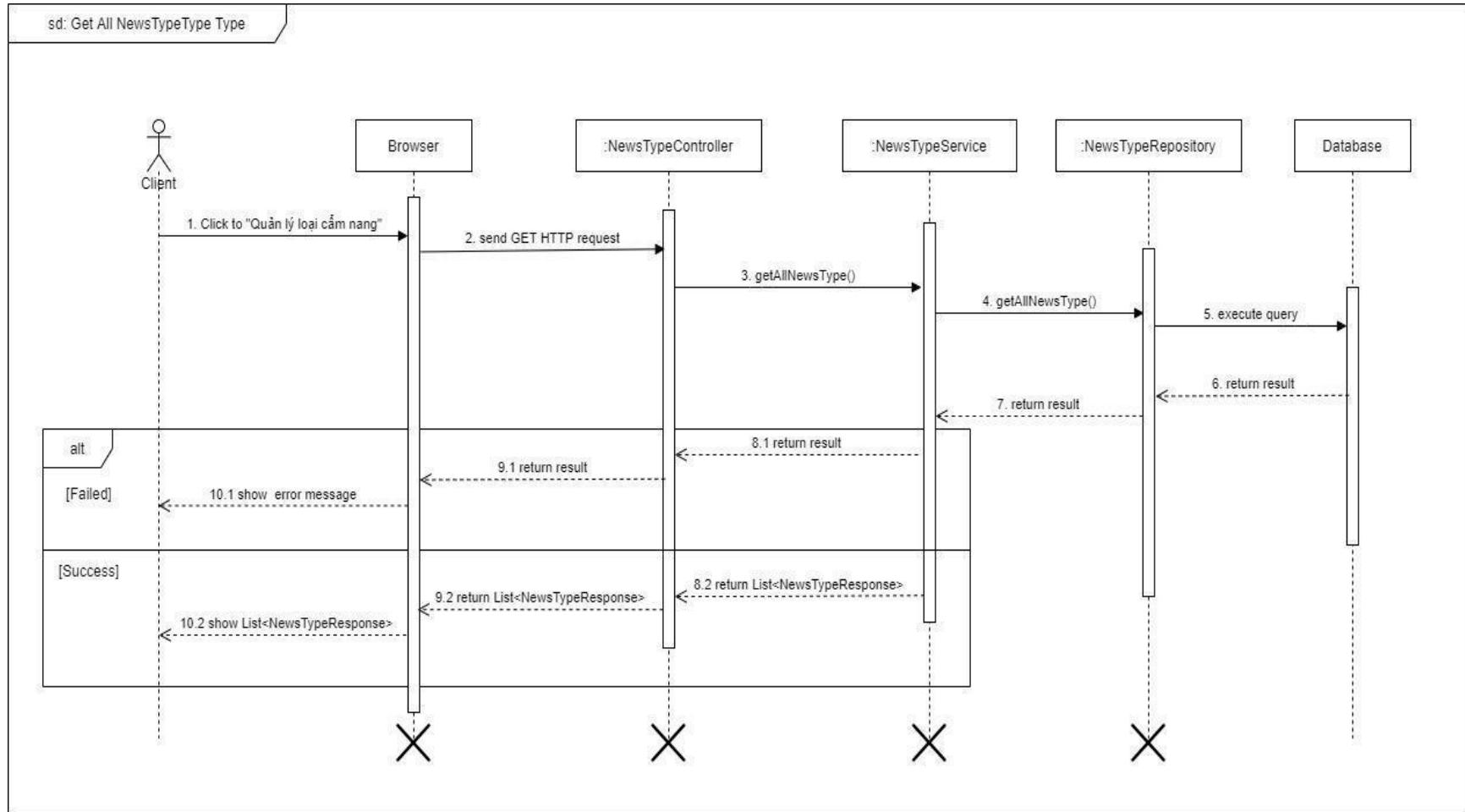


Figure 74 - <Sequence Diagram> Get all news type

### **3.3. Activity Diagram**

#### **3.3.1. View news detail**

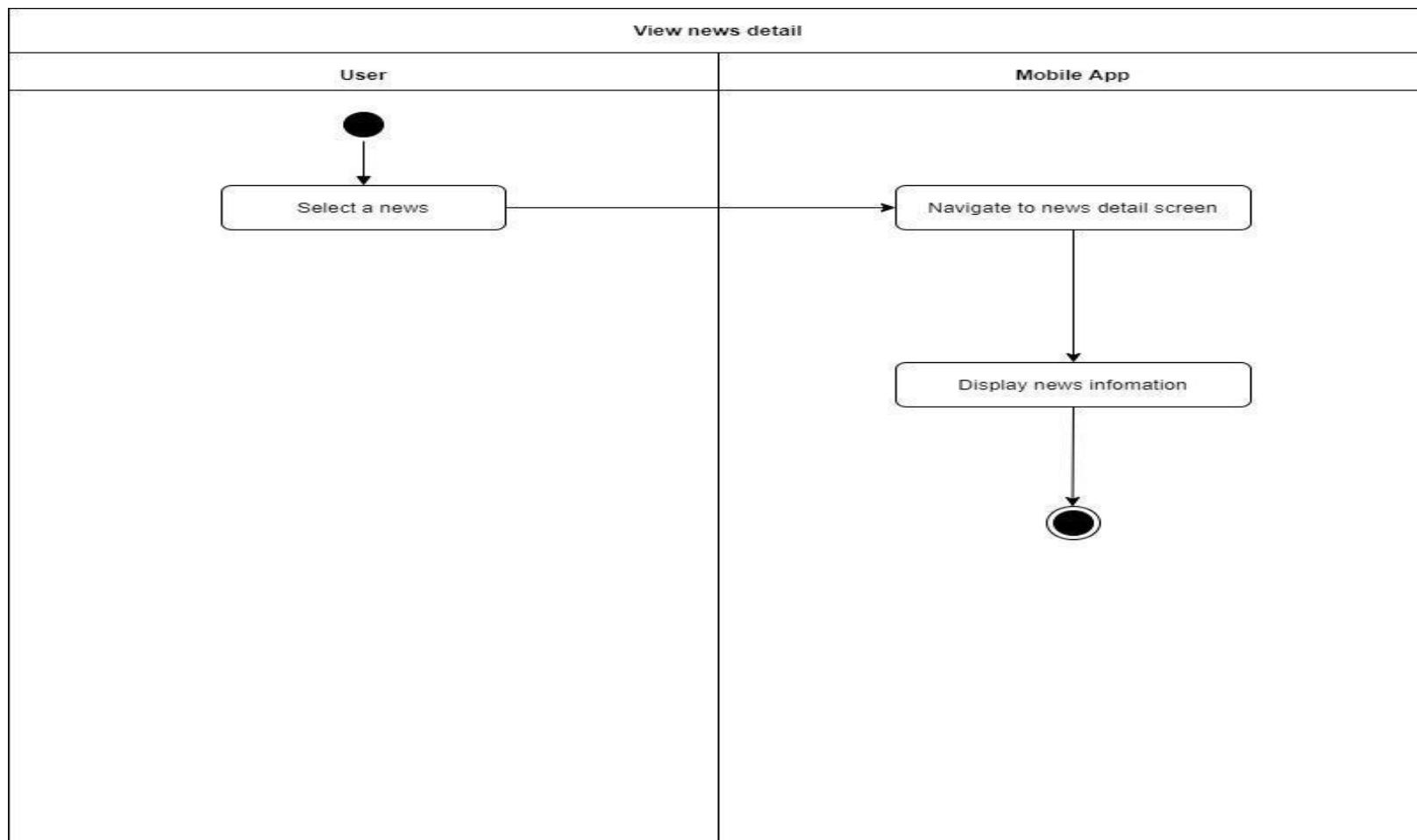


Figure 75 - <Activity Diagram> View news detail

### 3.3.2. Add diary

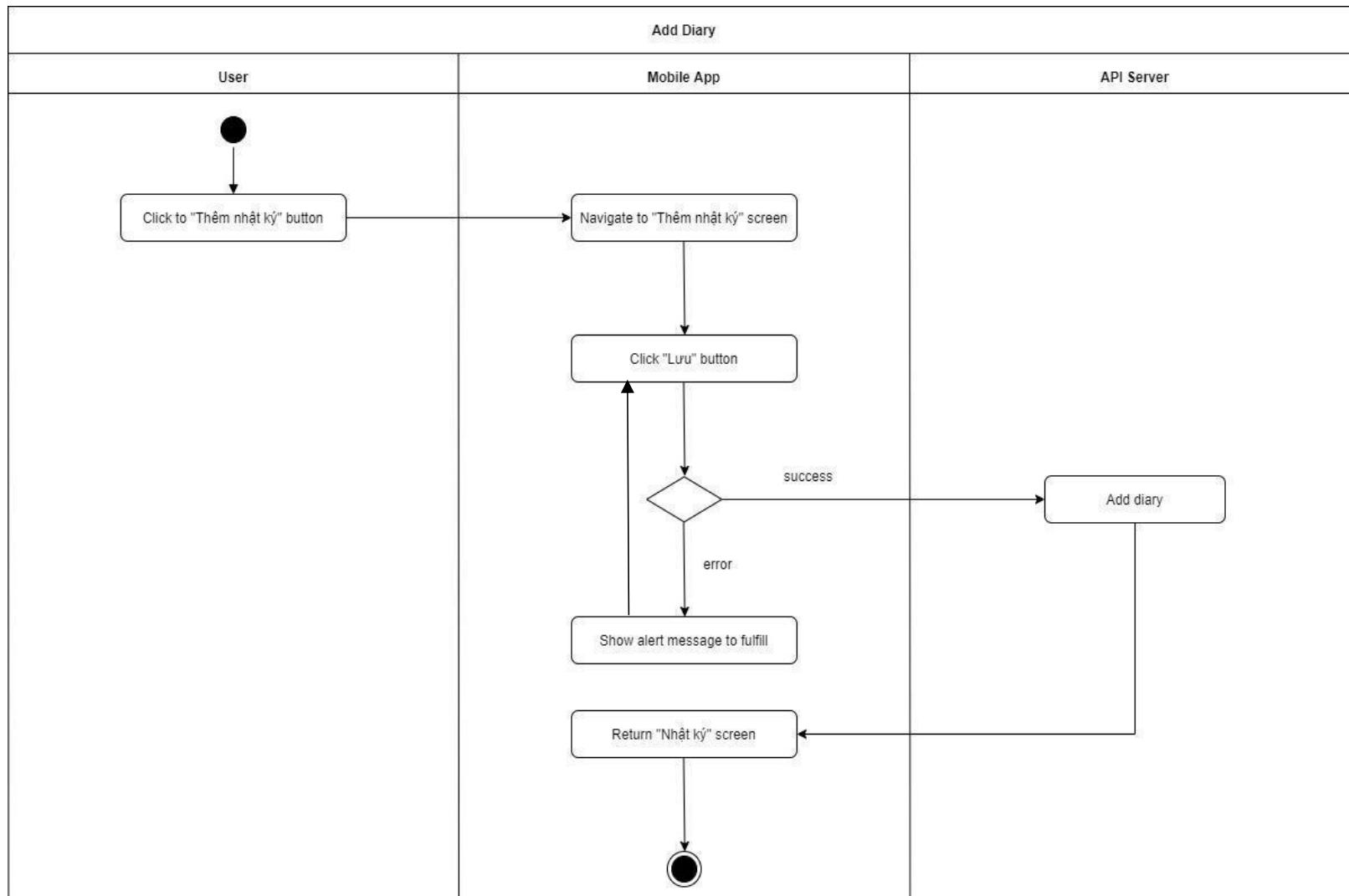
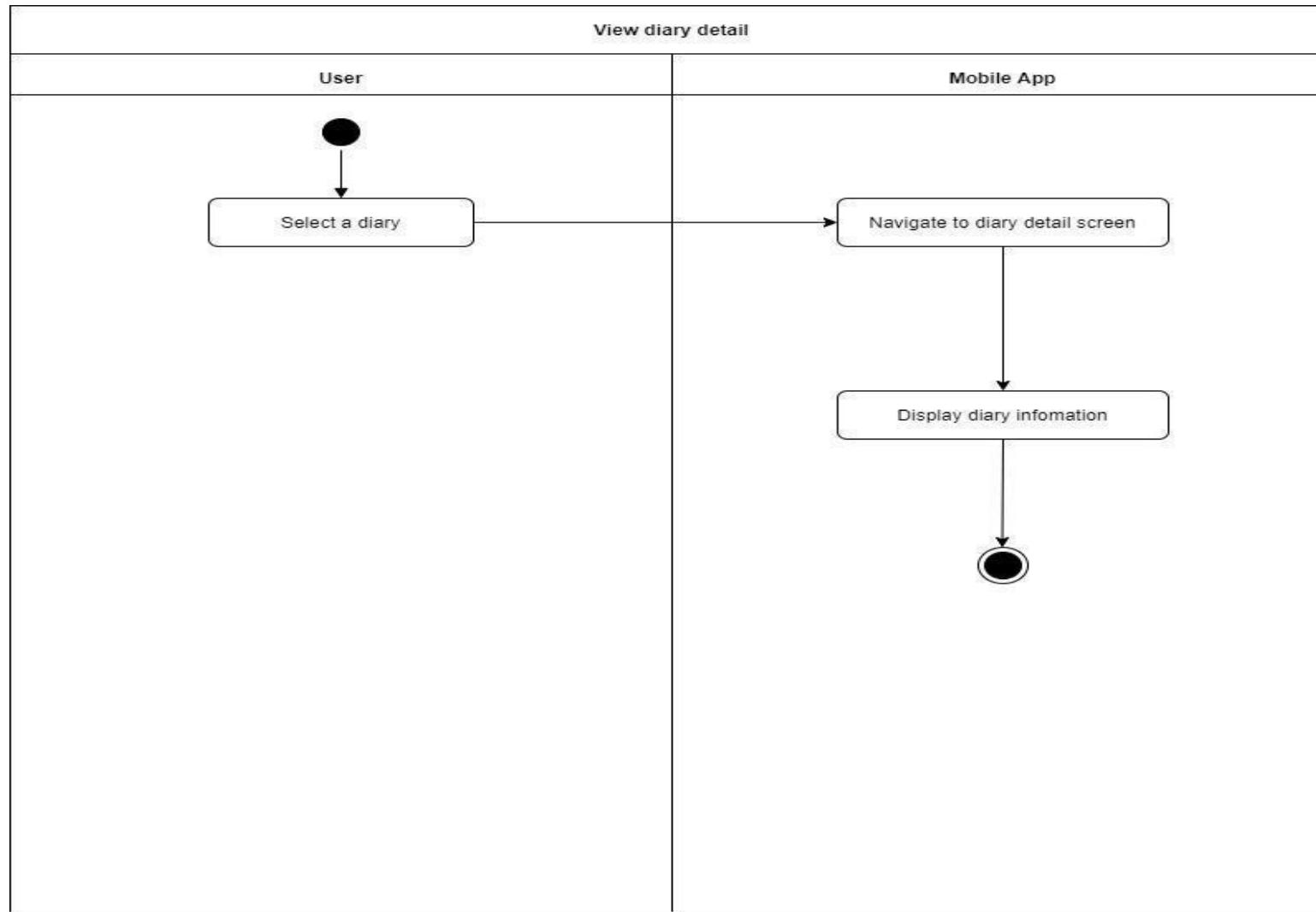


Figure 76 - <Activity Diagram> Add diary

### 3.3.3. View diary detail



*Figure 77 - <Activity Diagram> View diary detail*

### **3.3.4. Edit diary**

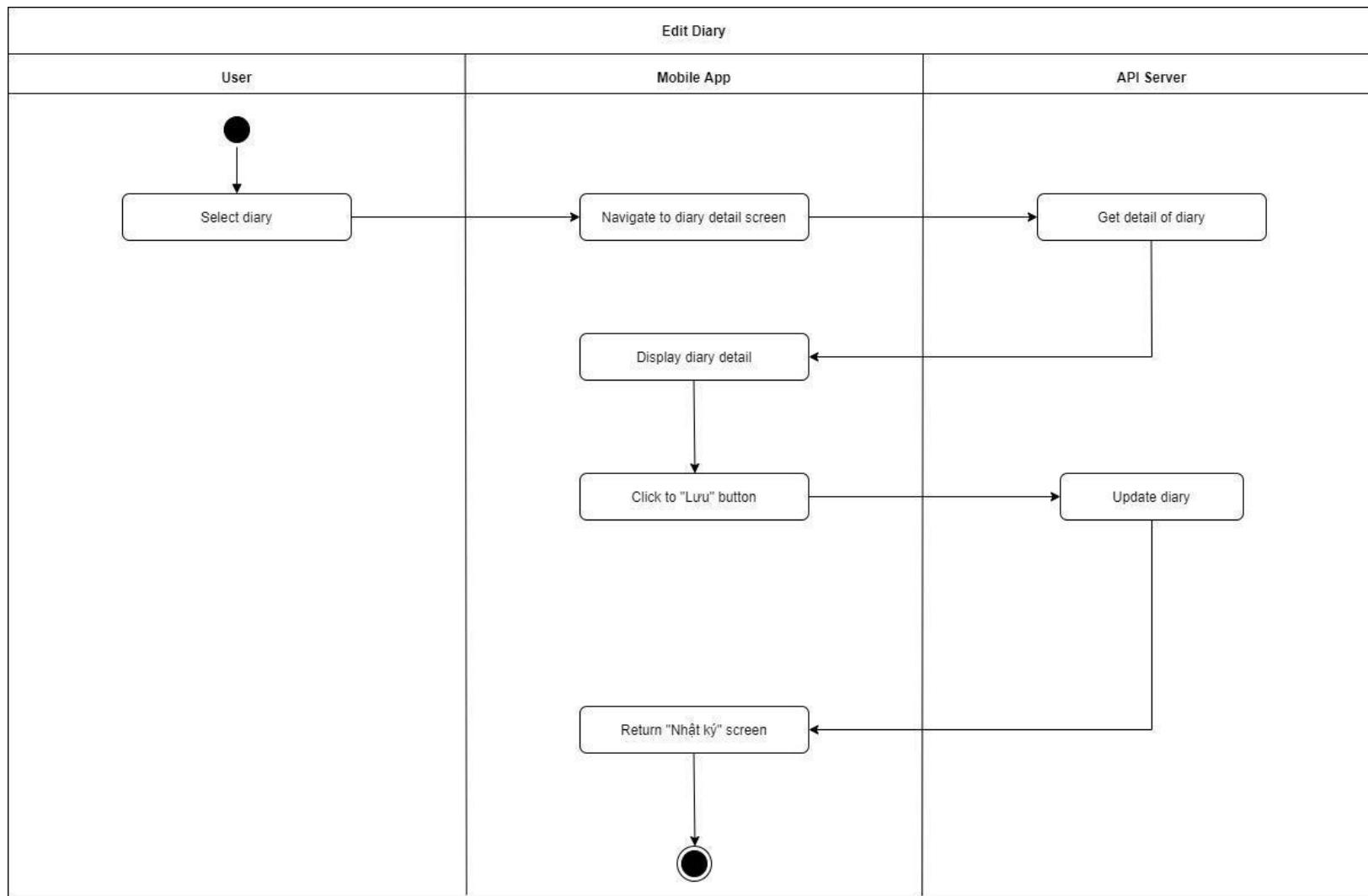


Figure 78 - <Activity Diagram> Edit diary

### 3.3.5. View vaccine schedule

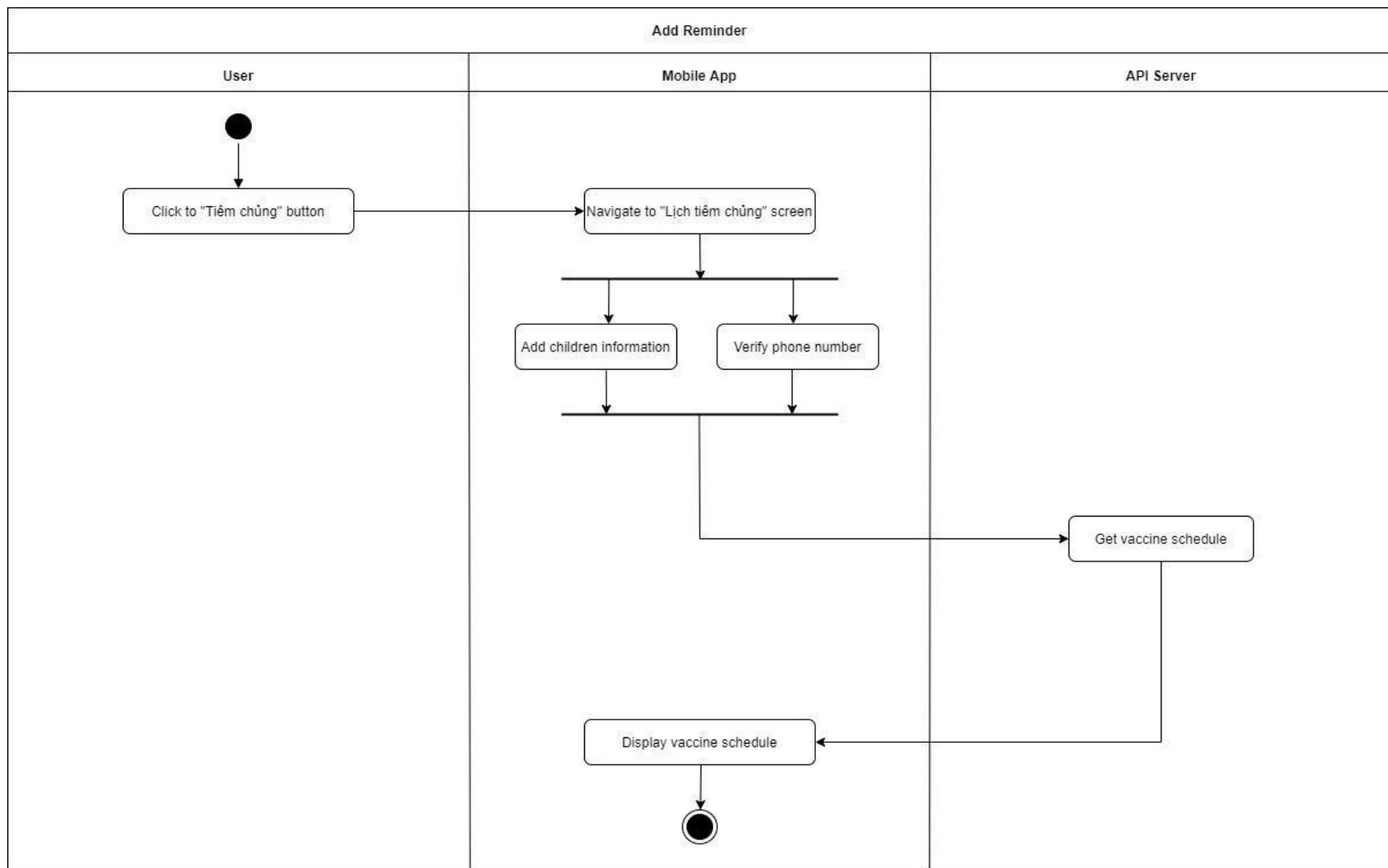


Figure 79 - <Activity Diagram> View vaccine schedule

### 3.3.6. View vaccine schedule detail

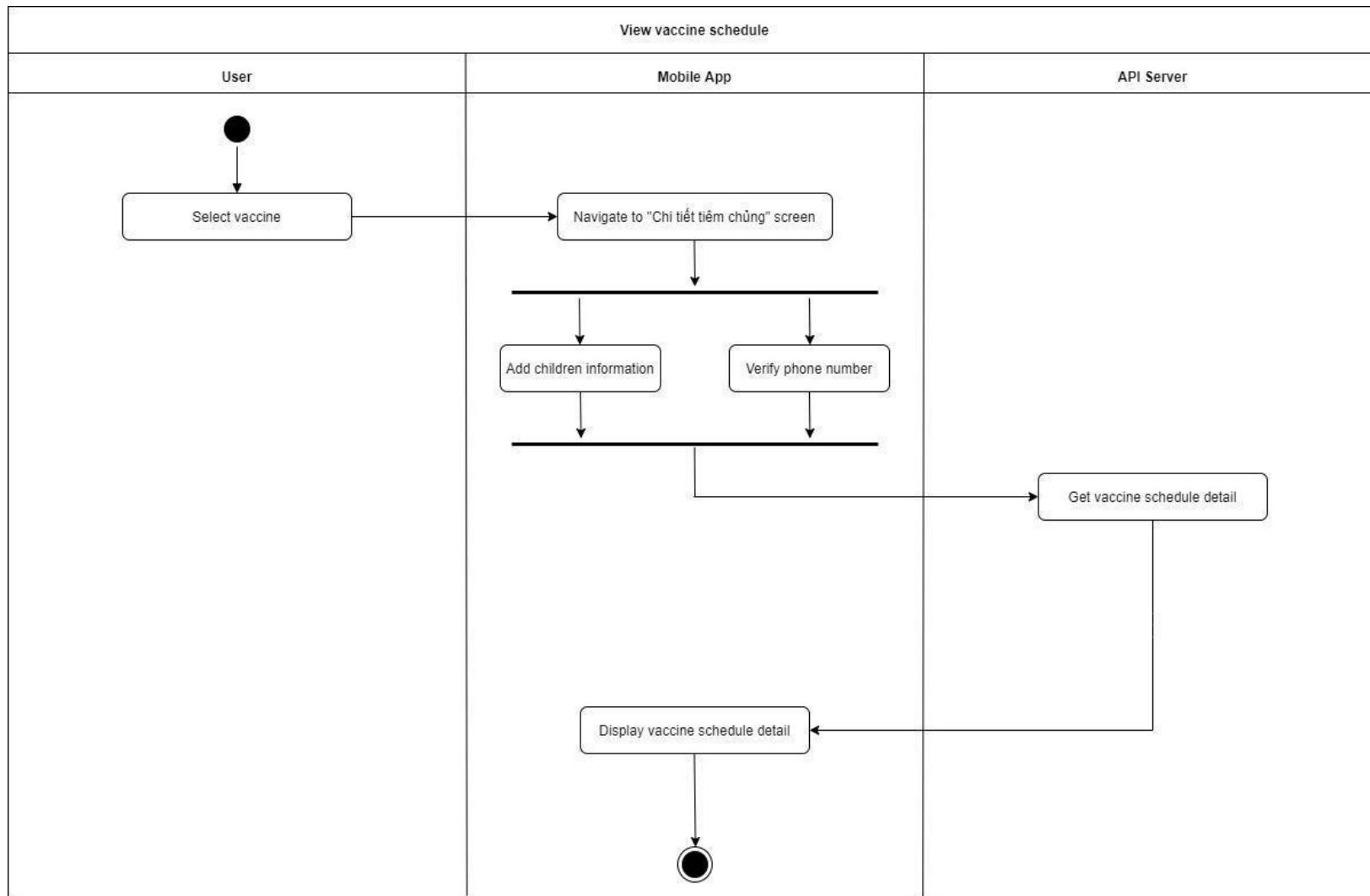


Figure 80 - <Activity Diagram> View vaccine schedule detail

### 3.3.7. Add children information

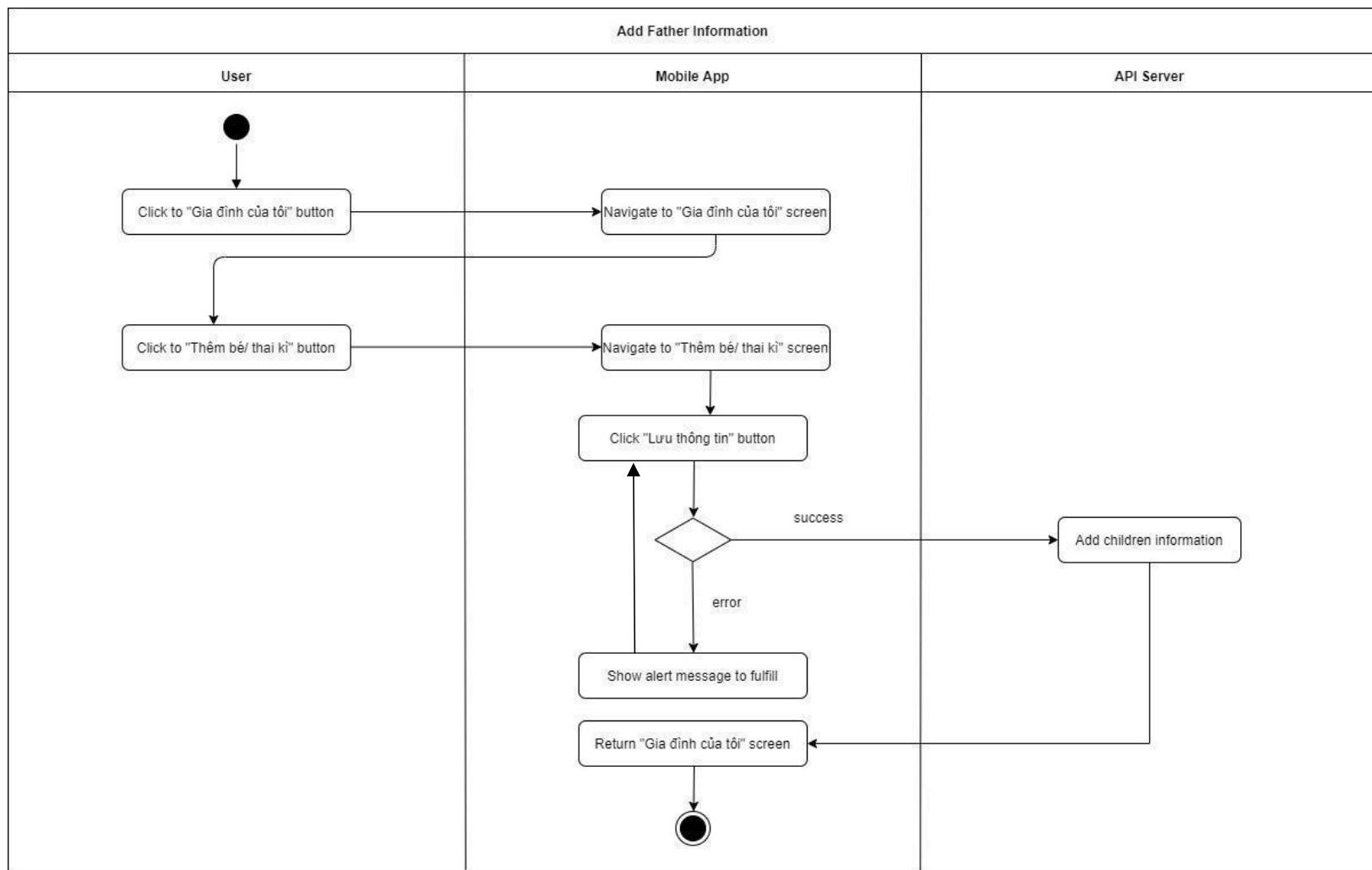


Figure 81 - <Activity Diagram> Add children information

### 3.3.8. Add father information

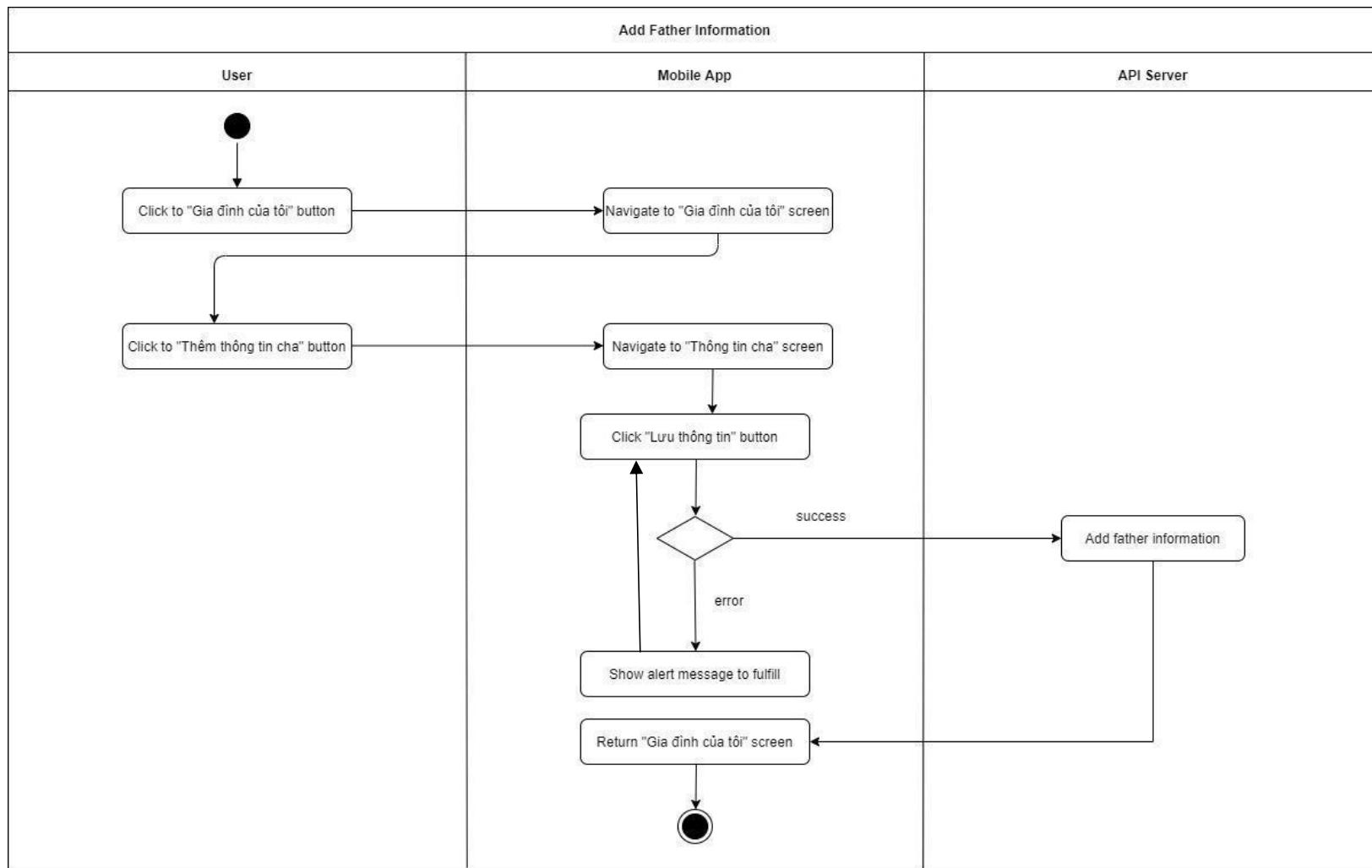
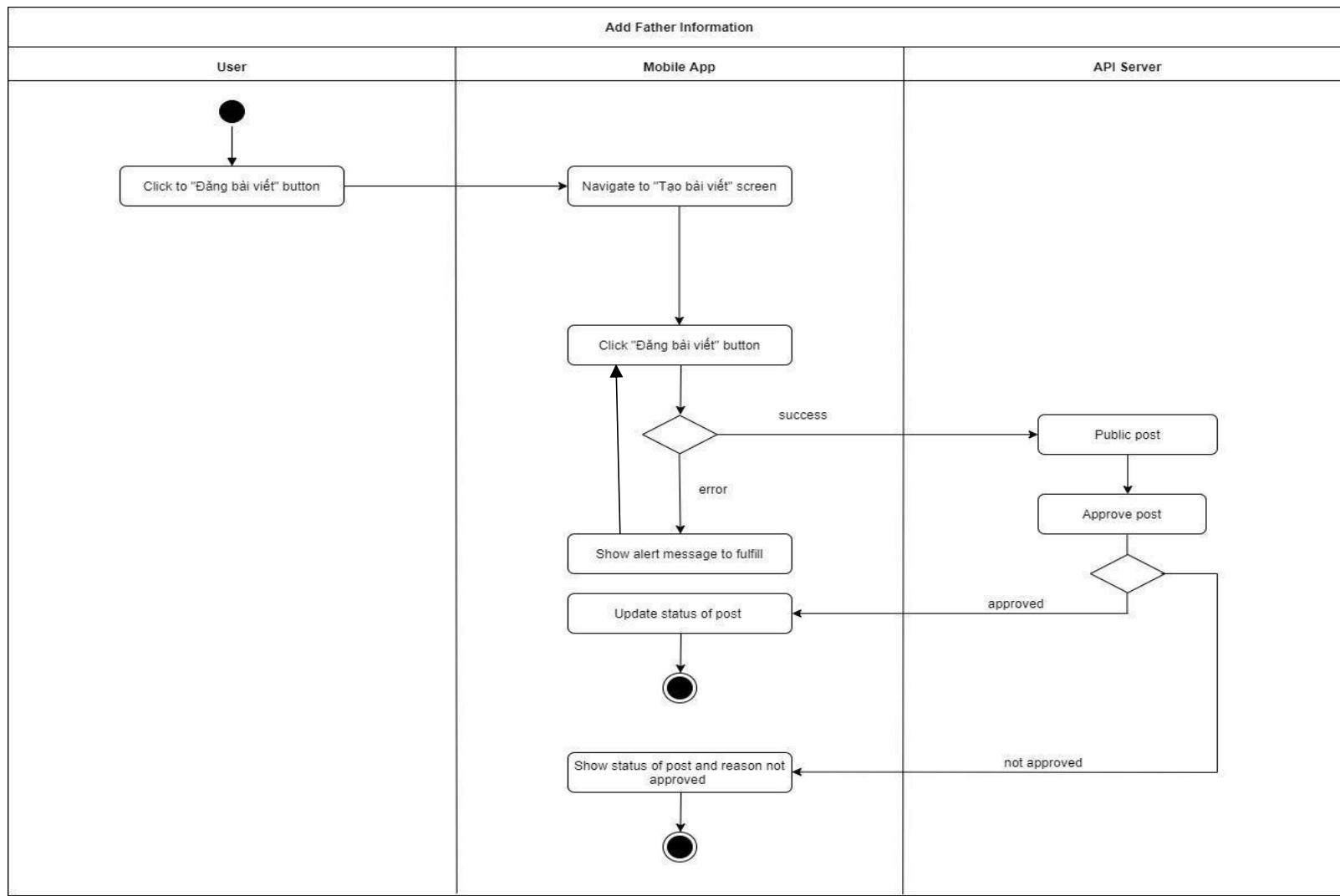


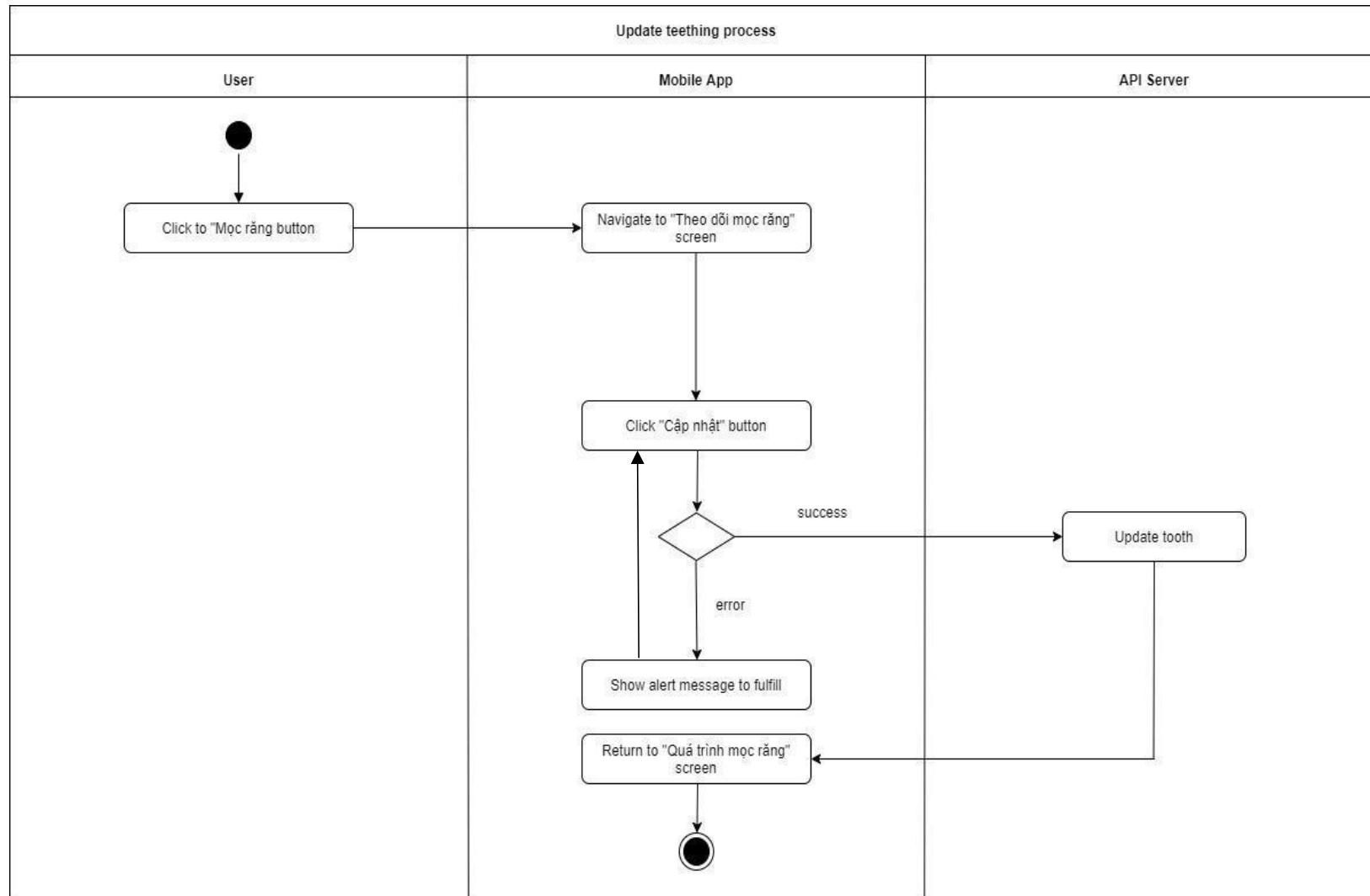
Figure 82 - <Activity Diagram> Add children information

### 3.3.9. Public post to community



*Figure 83 - <Activity Diagram> Public post to community*

### 3.3.10. Update teething process



*Figure 84 - <Activity Diagram> Update teething process*

### **3.3.11. View guidebook detail**

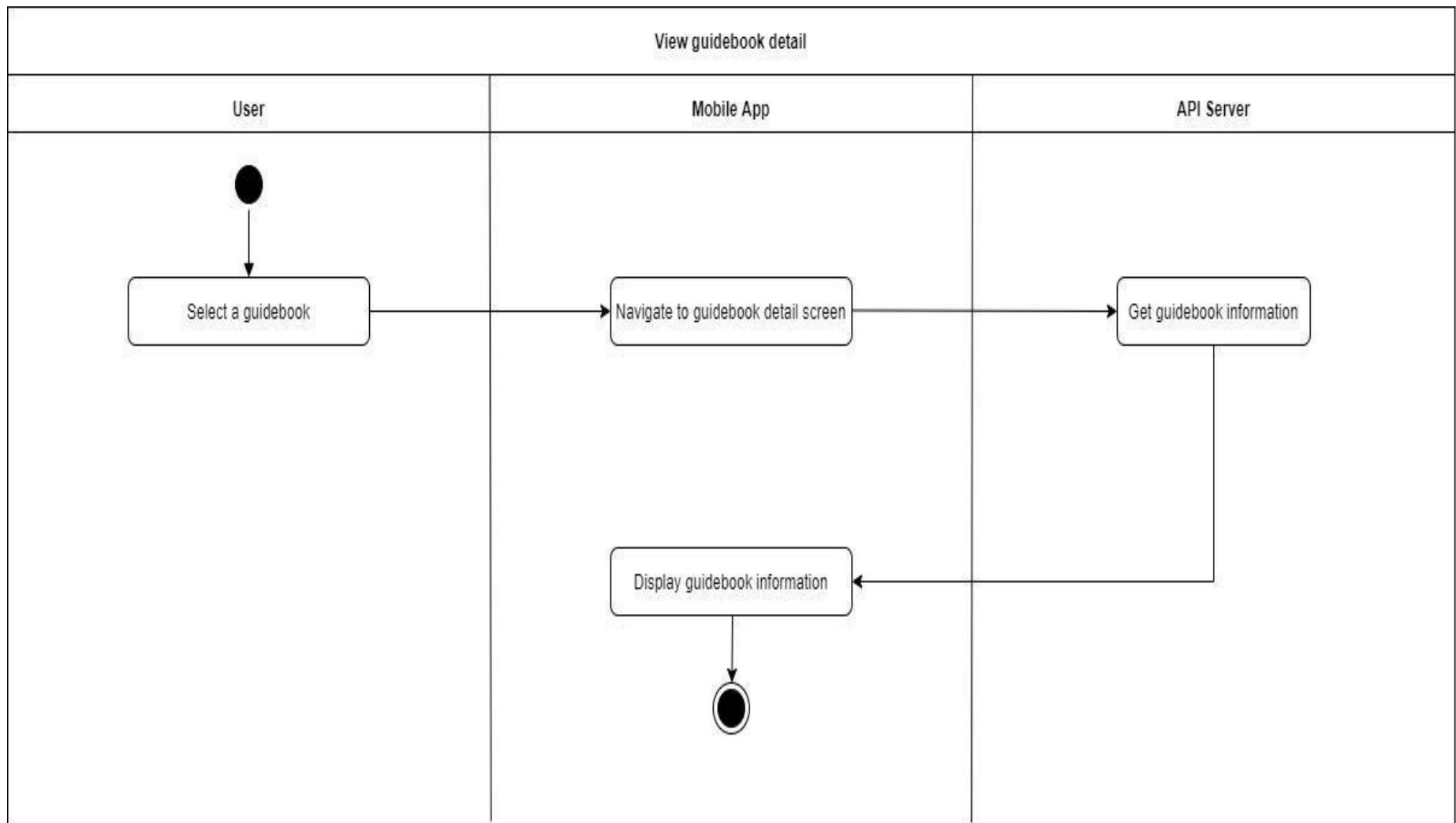


Figure 85 - <Activity Diagram> View guidebook detail

### 3.3.12. Update children information

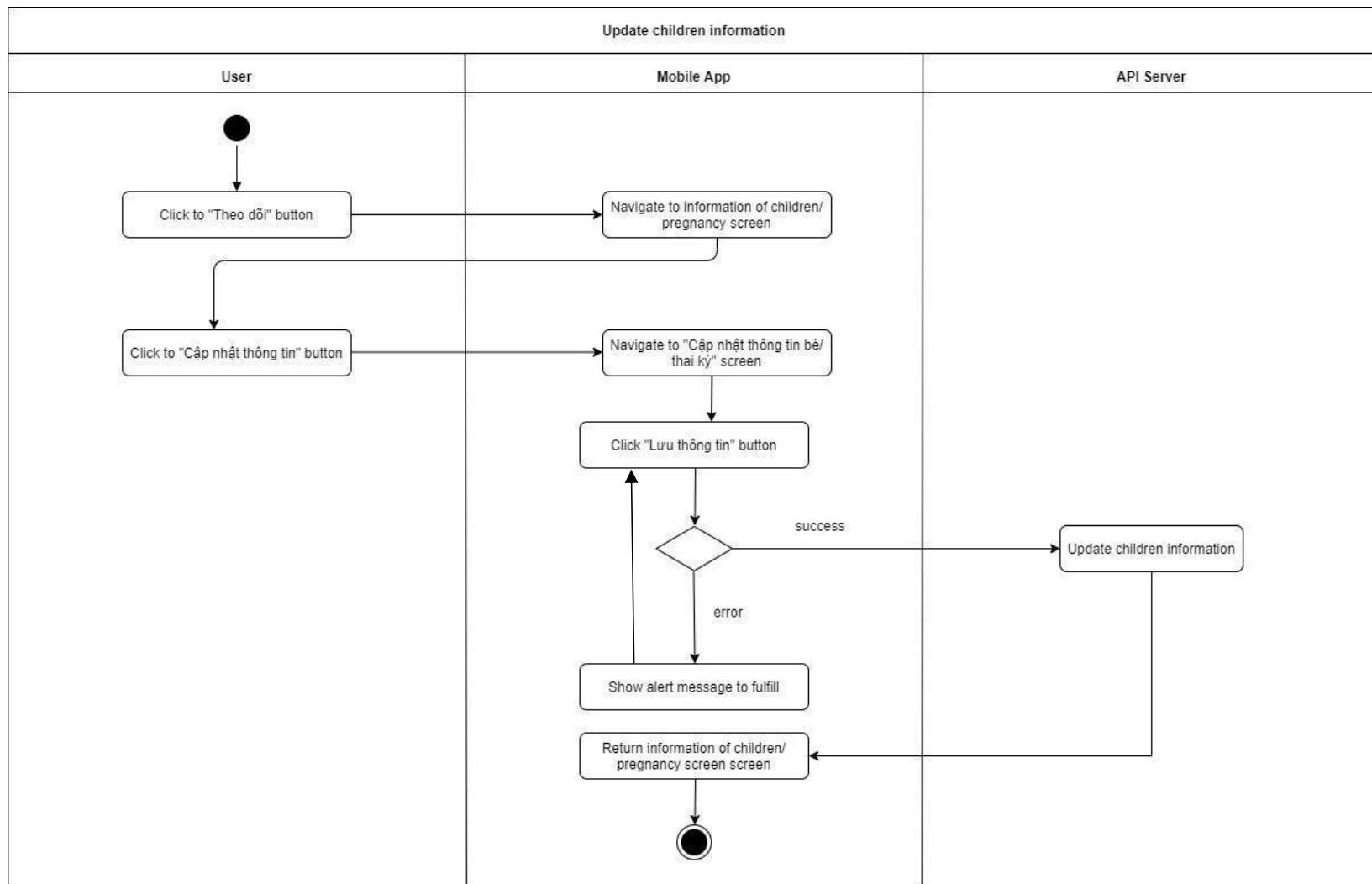


Figure 86 - <Activity Diagram> Update children information

## 4. Data & Database Design

### 4.1. Table Relationships

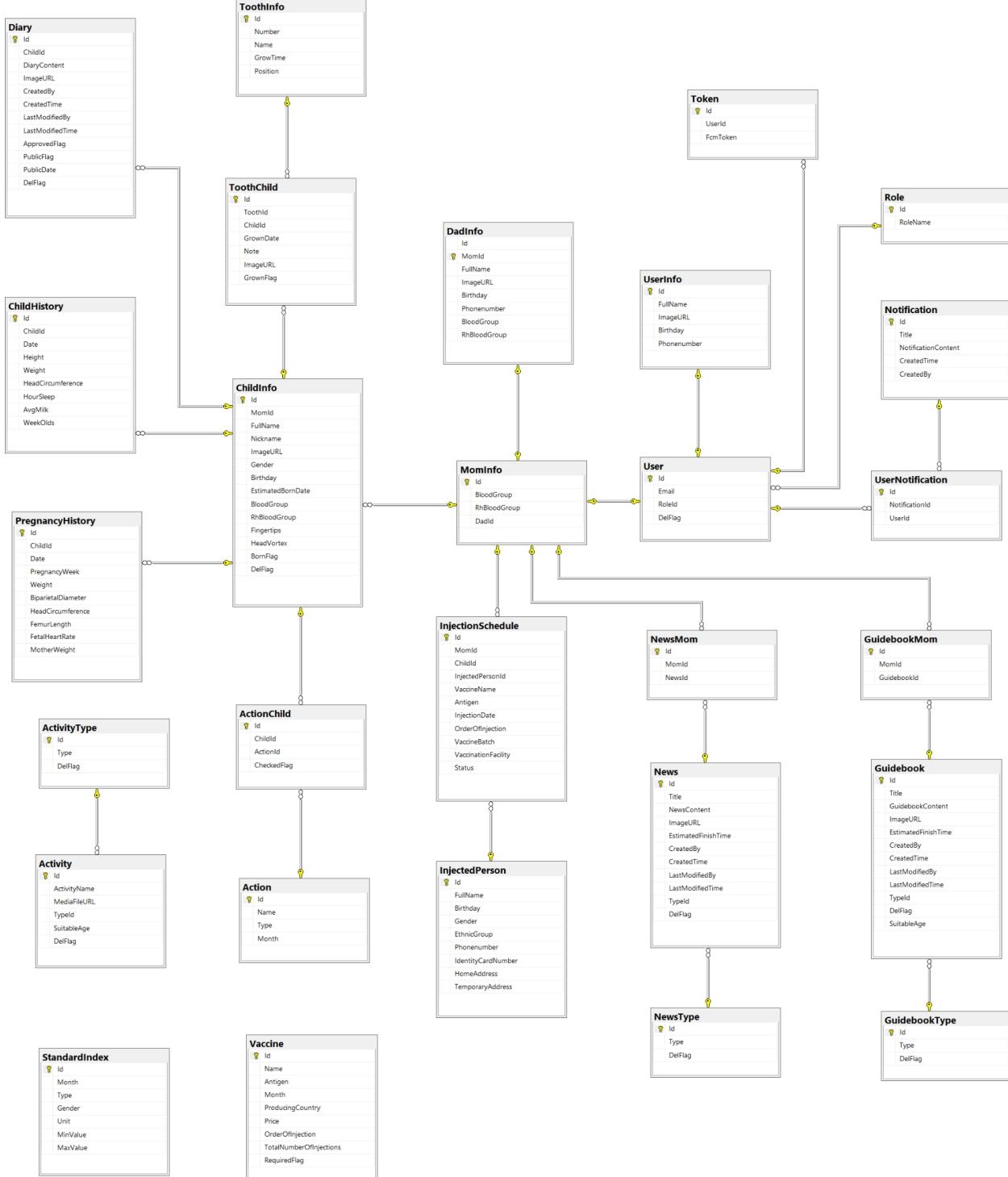


Figure 87 - Physical Diagram

### 4.2. Data dictionary

#### UserInfo

Field name	Type	Size(bytes)	Unique	Not Null	PK/FK	Notes
Id	varchar	100	Yes	Yes	PK	Unique identifier of user
FullName	nvarchar	200	No	Yes		The full name of user
ImageURL	varchar	max	No	No		The image of user
Birthday	varchar	50	No	No		The birthday of user
PhoneNumber	varchar	10	No	No		The phone number of user

Table 85 - <Data dictionary> UserInfo

### MomInfo

Field name	Type	Size(bytes)	Unique	Not Null	PK/FK	Notes
Id	varchar	100	Yes	Yes	PK	Unique identifier of mom
BloodGroup	varchar	10	No	No		The blood group of mom
RhBloodGroup	varchar	10	No	No		The rh blood group of mom
DadId	varchar	50	No	No		Unique identifier of dad

Table 86 - <Data dictionary> MomInfo

### DadInfo

Field name	Type	Size(bytes)	Unique	Not Null	PK/FK	Notes

Id	varchar	50	Yes	Yes	PK	Unique identifier of dad
MomId	varchar	100	No	Yes	FK	Unique identifier of mom
Phonenumber	varchar	10	No	No		The phone number of a father
BloodGroup	varchar	10	No	No		The blood group of a father
RhBloodGroup	varchar	10	No	No		The rh blood group of a father
Birthday	varchar	50	No	No		The birthday of a father
FullName	nvarchar	200	No	Yes		The full name of a dad
ImageURL	varchar	max	No	No		The image of a dad

Table 87 - <Data dictionary> DadInfo

## News

Field name	Type	Size(bytes)	Unique	Not Null	PK/FK	Notes
Id	varchar	50	Yes	Yes	PK	Unique identifier of a News
Title	nvarchar	200	No	Yes		The title of a news
ImageURL	varchar	max	No	No		The image of a news

NewsContent	nvarchar	max	No	Yes		The news content of a news
TypeId	int		No	No	FK	Unique identifier of type
EstimatedFinishTime	smallint		No	No		The estimated finish time of a news
CreatedBy	nvarchar	100	No	No		The estimated finish time of a news
CreatedTime	datetime		No	No		The estimated finish time of a news
LastModifiedBy	nvarchar	100	No	No		The user last modified of a news
LastModifiedTime	datetime		No	No		The last modified time of a news
DelFlag	bit		No	Yes		The status delete of news

Table 88 - <Data dictionary> News

### Token

Field name	Type	Size(bytes)	Unique	Not Null	PK/FK	Notes
Id	int		Yes	Yes	PK	Unique identifier of token
UserId	varchar	100	No	Yes	FK	Unique identifier of a

						User
FcmToken	varchar	max	No	Yes		The fcm token of a token

Table 89 - <Data dictionary> Token

### Injection Schedule

Field name	Type	Size(bytes)	Unique	Not Null	PK/FK	Notes
Id	float		Yes	Yes	PK	Unique identifier of a Injection Schedule
MomId	varchar	100	No	No		Unique identifier of a mom
InjectedPersonId	float		No	No		Unique identifier of a injected person
VaccineName	nvarchar	100	No	No		The vaccine name of a vaccine in injection schedule
Antigen	nvarchar	50	No	No	FK	The antigen of a vaccine in injection schedule
InjectionDate	varchar	50	No	No		The injection date of a vaccine in injection schedule
OrderOfInjection	tinyint		No	No		The order of injection of a vaccine in

						injection schedule
VaccineBatch	varchar	30	No	No		The vaccine batch of a vaccine in injection schedule
VaccineFacility	nvarchar	100	No	No		The vaccine facility of a vaccine in injection schedule
Status	tinyint		No	Yes		The status of a vaccine in injection schedule

Table 90 - <Data dictionary> Injection Schedule

### NewsType

Field name	Type	Size(bytes)	Unique	Not Null	PK/FK	Notes
Id	int		Yes	Yes	PK	Unique identifier of a news type
Type	nvarchar	100	No	Yes		The type of a news type
DelFlag	bit		No	Yes		The status delete of a news type

Table 91 - <Data dictionary> NewsType

### Role

Field name	Type	Size(bytes)	Unique	Not Null	PK/FK	Notes

Id	int		Yes	Yes	PK	Unique identifier of a Role
RoleName	nvarchar	100	No	Yes		The name of a Role

Table 92 - <Data dictionary> Role

### ChildInfo

Field name	Type	Size(bytes)	Unique	Not Null	PK/FK	Notes
Gender	tinyint		No	No		The gender of a child
Fingertips	tinyint		No	No		The fingertips of a child
HeadVortex	tinyint		No	No		The head vortex of a child
BloodGroup	nvarchar	10	No	No		The blood group of a child
RhBloodGroup	nvarchar	10	No	No		The rh blood group of a child
FullName	nvarchar	200	No	Yes		The full name of a child
NickName	nvarchar	200	No	No		The nickname of a child
ImageURL	varchar	max	No	No		The image of a child
Birthday	nvarchar	50	No	No		The birthday of a child
Id	varchar	50	No	Yes	PK	Unique identifier of a child

MomId	varchar	100	No	Yes	FK	Unique identifier of a mom
EstimatedBornDate	varchar	50	No	No		The estimated born date of a child
BornFlag	bit		No	Yes		The status born of child
DelFlag	bit		No	Yes		The status delete of child

Table 93 - <Data dictionary> ChildInfo

## Diary

Field name	Type	Size(bytes)	Unique	Not Null	PK/FK	Notes
Id	int		Yes	Yes	PK	Unique identifier of a diary
DiaryContent	nvarchar	max	No	Yes		The content of a diary
ImageURL	varchar	max	No	No		The image of a diary
ApprovedFlag	bit		No	Yes		The status approved of diary
ChildId	varchar	50	No	Yes	FK	Unique identifier of a child
PublicFlag	bit		No	Yes		The status public of diary
CreatedBy	nvarchar	100	No	No		The estimated finish time of a diary
CreatedTime	datetime		No	No		The estimated

						finish time of a diary
LastModifiedBy	nvarchar	100	No	No		The user last modified of a diary
LastModifiedTime	datetime		No	No		The last modified time of a diary
DelFlag	bit		No	Yes		The status delete of diary
PublicDate	datetime		No	No		The public date of diary

Table 94 - <Data dictionary> Diary

### PregnancyHistory

Field name	Type	Size(bytes)	Unique	Not Null	PK/FK	Notes
Id	int		Yes	Yes	PK	Unique identifier of a pregnancy history
ChildId	varchar	50	No	Yes	FK	Unique identifier of a child
HeadCircumference	float	max	No	No		The head circumference of a pregnancy in pregnancy history
FemurLength	float		No	No		The femur length of a pregnancy in pregnancy history
FetalHeartRate	varchar	50	No	No		The fetal heart

						rate of a pregnancy in pregnancy history
PregnancyWeek	smallint		No	No		The week of a pregnancy in pregnancy history
Weight	float		No	No		The weight of a pregnancy in pregnancy history
PregnancyType	float		No	No		The type a pregnancy
Date	varchar	50	No	Yes		The date of a pregnancy in pregnancy history
BiparietalDiameter	float		No	No		The biparietal diameter of a pregnancy in pregnancy history
MotherWeight	float		No	No		The mother weight of a pregnancy in pregnancy history

Table 95 - <Data dictionary> PregnancyHistory

## Activity

Field name	Type	Size(bytes)	Unique	Not Null	PK/FK	Notes
Id	Integer		Yes	Yes	PK	Unique identifier of a

						activity
ActivityName	nvarchar	200	No	No		Unique identifier of a child
MediaFileURL	varchar	max	No	No		The media file of a activity
SuitableAge	tinyint		No	No		The suitable age of a activity
TypeId	int		No	Yes	FK	Unique identifier of a type
DelFlag	bit		No	Yes		The status delete of activity

Table 96 - <Data dictionary> Activity

## Vaccine

Field name	Type	Size(bytes)	Unique	Not Null	PK/FK	Notes
Id	int		Yes	Yes	PK	Unique identifier of a vaccine
Name	nvarchar	200	No	No		The name of a vaccine
TotalNumberOfInjections	tinyint		No	No		The total number of injections of a vaccine
Price	float		No	No		The price of a vaccine
ProducingCountry	nvarchar	100	No	No		The producing

						country of a vaccine
Antigen	nvarchar	50	No	No		The antigen of a vaccine
Month	tinyint		No	No		The month of a vaccine
RequiredFlag	bit		No	No		The status required of a vaccine
OrderOfInjection	tinyint		No	No		The order of injection of a vaccine

Table 97 - <Data dictionary> Vaccine

### ChildHistory

Field name	Type	Size(bytes)	Unique	Not Null	PK/FK	Notes
Id	int		Yes	Yes	PK	Unique identifier of a child history
ChildId	varchar	50	No	Yes	FK	Unique identifier of a child
HeadCircumference	float		No	No		The head circumference of a child in child history
HourSleep	float		No	No		The hour sleep of a child in child history
AvgMilk	float		No	No		The average milk of a child in child

						history
WeekOlds	tinyint		No	No		The week old of a child in child history
Weight	float		No	No		The weight of a child in child history
Date	varchar	50	No	No		The date of a pregnancy in pregnancy history
Height	float		No	No		The height of a child in child history

Table 98 - <Data dictionary> Vaccine History

### GuidebookType

Field name	Type	Size(bytes)	Unique	Not Null	PK/FK	Notes
Id	int		Yes	Yes	PK	Unique identifier of a child history
Type	nvarchar	100	No	Yes		Unique identifier of a child
DelFlag	bit		No	Yes		The head circumference of a child in child history

Table 99 - <Data dictionary> GuidebookType

### ActivityType

Field name	Type	Size(bytes)	Unique	Not Null	PK/FK	Notes

Id	int		Yes	Yes	PK	Unique identifier of a activity type
Type	nvarchar	100	No	Yes		The type of a activity type
DelFlag	bit		No	Yes		The status delete of a activity type

Table 100 - <Data dictionary> ActivityType

### GuidebookMom

Field name	Type	Size(bytes)	Unique	Not Null	PK/FK	Notes
Id	int		Yes	Yes	PK	Unique identifier of a activity type
MomId	varchar	50	No	Yes	FK	The type of a activity type
GuidebookId	varchar	50	No	Yes	FK	The status delete of a activity type

Table 101 - <Data dictionary> GuidebookMom

### NewsMom

Field name	Type	Size(bytes)	Unique	Not Null	PK/FK	Notes
Id	int		Yes	Yes	PK	Unique identifier of a news mom
MomId	varchar	50	No	Yes	FK	Unique identifier of a mom
NewsId	varchar	50	No	Yes	FK	Unique identifier of a

						news
--	--	--	--	--	--	------

Table 102 - <Data dictionary> NewsMom

## Guidebook

Field name	Type	Size(bytes)	Unique	Not Null	PK/FK	Notes
Id	int		Yes	Yes	PK	Unique identifier of a guidebook
Title	nvarchar	100	No	Yes		The title of a guidebook
ImageURL	nvarchar	max	No	No		The image of a guidebook
GuidebookContent	nvarchar	200	No	Yes		The news content of a guidebook
TypeID	int		No	Yes	FK	Unique identifier of type
EstimatedFinishTime	tinyint		No	No		The estimated finish time of a guidebook
CreatedBy	nvarchar	100	No	No		The estimated finish time of a guidebook
CreatedTime	dateTime		No	No		The estimated finish time of a guidebook
LastModifiedBy	nvarchar	100	No	No		The user last modified of a

						guidebook
LastModifiedTime	dateTime		No	No		The last modified time of a guidebook
DelFlag	bit		No	Yes		The status delete of guidebook
SuitableAge	tinyint		No	No		The suitable age of a guidebook

Table 103 - <Data dictionary> Guidebook

## User

Field name	Type	Size(bytes)	Unique	Not Null	PK/FK	Notes
Id	varchar	100	Yes	Yes	PK	Unique identifier of user
Email	varchar	100	No	Yes		The email of user
RoleId	varchar	10	No	Yes	FK	Unique identifier of role
DelFlag	bit		No	Yes		The status delete of user

Table 104 - <Data dictionary> User

## UserNotification

Field name	Type	Size(bytes)	Unique	Not Null	PK/FK	Notes

Id	int		Yes	Yes	PK	Unique identifier of user notification
NotificationId	int		No	Yes	FK	Unique identifier of notification
UserId	varchar	50	No	Yes	FK	Unique identifier of user notification

Table 105 - <Data dictionary> UserNotification

## Notification

Field name	Type	Size(bytes)	Unique	Not Null	PK/FK	Notes
Id	varchar	50	Yes	Yes	PK	Unique identifier of notification
Title	tinyint		No	Yes		The title of notification
NotificationContent	nvarchar	200	No	Yes		The notification content of notification
CreatedBy	nvarchar	50	No	Yes		The estimated finish time of a notification
CreatedTime	tinyint		No	Yes		The estimated finish time of a notification

Table 106 - <Data dictionary> Notification

## InjectedPerson Table

Field name	Type	Size(bytes)	Unique	Not Null	PK/FK	Notes

Id	float		Yes	Yes	PK	Unique identifier of injected person
Gender	tinyint		No	No		The gender of a person in injected person
Phonenumber	varchar	10	No	No		The phone number of a person in injected person
EthnicGroup	nvarchar	20	No	No		The ethnic group of a person in injected person
IdentityCardNumber	varchar	12	No	No		The identity card number of a person in injected person
Birthday	varchar	50	No	No		The birthday of a person in injected person
FullName	nvarchar	200	No	Yes		The fullname of a person in injected person
HomeAddress	nvarchar	250	No	No		The home address of a person in injected person
TemporaryAddress	nvarchar	250	No	No		The temporary address of a person in injected person

Table 107 - <Data dictionary> InjectedPerson

### StandardIndex

Field name	Type	Size(bytes)	Unique	Not Null	PK/FK	Notes
Id	int		Yes	Yes	PK	Unique identifier of standard index
Month	smallint		No	Yes		The month of standard index

Type	varchar	20	No	Yes		The type of standard index
Gender	tinyint		No	Yes		The gender of standard index
Unit	varchar	10	No	Yes		The unit of standard index
MinValue	Float			Yes		The min value of standard index
MaxValue	float			Yes		The max value of standard index

Table 108 - <Data dictionary> Standard Index

### ToothInfo

Field name	Type	Size(bytes)	Unique	Not Null	PK/FK	Notes
Id	varchar	50	Yes	Yes	PK	Unique identifier of tooth info
Number	tinyint		No	Yes		The number of tooth info
GrowTime	nvarchar	200	No	Yes		The grow time of tooth info
Name	nvarchar	50	No	Yes		The name of tooth info
Position	tinyint		No	Yes		The position of tooth info

Table 109 - <Data dictionary> ToothInfo

### Tooth

Field name	Type	Size(bytes)	Unique	Not Null	PK/FK	Notes
Id	int		Yes	Yes	PK	Unique identifier of tooth
ToothId	varchar	50	No	Yes	FK	Unique identifier

						of tooth
ChildId	varchar	50	No	Yes	FK	Unique identifier of child
GrownDate	datetime		No	No		The grown date of tooth
Note	nvarchar	max	No	No		The note of tooth
ImageURL	varchar	max	No	No		The image of tooth
GrownFlag	bit		No	Yes		The status grown of tooth

Table 110 - <Data dictionary> Tooth