User requirements of nutritional theraphy

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Chapter 1: Preface

Nowadays, people suffer more and more diseases that the elderly often have in the past, due to lack of science in their lifestyle, diet, sedentaryism and more and more dangerous diseases such as covid19, ... Healthy is one of everyone's top concerns. Because of that, we have built a daily health care app so that everyone can monitor their health every day. The application can run simultaneously on multiple platforms such as android, ios, window.

Chapter 2: Introduction

2.1 Overall introduction

The main purpose of the application is to check the user's general health based on the criteria: weight, height, heart rate, blood pressure, ... From there, the application will analyze the metrics and give Advice for users about diet, activity, exercise, ...

The app also helps users get in touch with online doctors to inquire about their health issues as well as get advice on their health problems.

2.2 How does it work

First, users need to create an account to log into the system to be able to save user information. Every day, users need to enter the application to enter health indicators such as weight, heart rate, blood pressure, ... through normal machines or users can connect to smart devices like apple. watch, xiaomi's health equipment, ... Next, the system will record information and then give users health advice or warnings about health problems. If the user's health indicators have a serious problem, the application will warn the user and contact the doctor to be able to advise on the user's health problem.

Chapter 3: Glossary

ER	Entity Relationship diagrams
GUI	Graphical User Interface
OS	Operating System
VM	Virtual Machine
XML	Extendable Markup Language
HTML	Hypertext Markup Language
CSS	Cascading Style Sheets
API	Application Programming Interface
UI	User Interface
UML	Unified Modeling Language
OOP	Object Oriented Programming
SDK	Software Development Kit
PC	Personal Computer
DB	Database
ADT	Android Developer Tools

Chapter 4: User requirements definition

4.1.Services provided

Registration

User are enabled to make their own profile under this feature. All their information, their food habits and diet are saved in their profile, therefore, each user should have a distinct profile.

Meal Planning

The application varies from the previous ones in that they monitor their users' calorie intake right before they eat. Users must fill out

information such as target weight, diet, and food preferences in this app.
The app then creates a diet chart for a day, week, or a month according to the data filled.

Notification

Push Notifications are an integral part of every mobile app and they are well-known for retaining customers.
Application use Push Notification function to remind user for their daily workout sessions or meals.

Diet plan /User goal

One of the most basic functions of such an app is to guide its users to a balanced diet and assist them in achieving their objectives. As a result, once consumer defines a target, such as ideal weight, body shape, and favorite foods, the application will recommend a diet that is appropriate for them.

Diet suggestion

This allows the users to seek suggestions regarding their diet from the diet experts.

4.2.Functional requirements

- Registration management

-The system allows user to sign and login to the system

- The system must validate the user's input during sing up process, such as e-mail address and English characters.
- The system must validate the user’s login, so the user can enter valid username and password to login to the system.
- The user can restore his username and password by entering his registered e-mail.

- Scale management

-Show the current user's body shape, and aims to reach him through the use of
application and show also the user's body shape aims to reach it through the use of application.

4.3.Non-functional requirements

- Performance Requirement: The system must be on very high standard servers to accommodate the huge amount of data and requests for access to the server from a large number of users at the same time.
- Safety Requirement: In this system, the database must be located in a special secure server and must be backups to other servers directly at specific times to avoid loss and damage data.
- Usability: Requirement In the system, the user interface must be familiar to user, so that the user can easily do his tasks without any training or help.
- Availability Requirements: The system should be available at all times, meaning the user can access it using a device application.
- Flexibility Requirements: The system must be able to add or delete features because it is based on object-oriented concept.
- Maintainability Requirements: By using the concept of Object-Oriented Programming (OOP) that make us to upgrade of the project and to find the problems easier.

Chapter 5: System architecture

A system architecture is a conceptual model that describes a system's structure, actions, and other views. A systematic definition and representation of a system structured in a way that facilitates thinking about the system's mechanisms and actions is known as an architecture description.

System elements, their publicly observable properties, and the relationships (e.g., behavior) between them may all be included in a system architecture. It will provide a blueprint for obtaining goods and developing processes that will work together to execute the overall structure.

We use a three-tier architecture for mobile development because it is easy

to change without affecting other modules, allows for quick communication, and provides good performance.

Description	The basic concept is that the network layer would house the application's heart. The client layer consists of stuff like Android operations, and the interface to the network and server layers will remain constant. The server layer is where all the magic happens. would abstract interface features such as database access and network access for the network and client layers, and so on. It would be more than just a wrapper for the product.
Component	Clients- user Server- which will host

Chapter 6: System requirements specification

Since we have mobile application and external database server, we need different
hardware and software requirement for each.

Operation requirements:

Operating system: any computer OS.
Android Operating system.
Database: MySQL.

Hardware Requirements:

Hardware requirements which were used during the development processing:
Mobile devise with Android Operating system.

Chapter 7: System models

7.1 Brief Use case description:

Login: Open the project show registration activity to user, required enter data to registration, after registration the user moving to the application.

Register (sing up): After the first step, if a user is not registered in the application should click sign up button, then enter the required data, the system validates user input, and displays interface of that user.

View profile: After registration or login steps the information user profile appear.

Update profile: After registration or login steps the user can view and update profile information like address, phones number, picture, weight, etc.

Analysis the information: After Register and Update profile the system analyzes the information that has been entered by the user.

Select status: After Register, login and Analysis the information the user selects the situation that he wants.

View healthy meals: After select status the application view proper healthy meals for the user according the information that enter it into the system.

Determined calories: After View healthy meals, Order delivery meal, view healthy meals or
order delivery meal then the system ask collect the colliers and Message number of calories appear, the user confirmation message

7.2. User class and characteristic

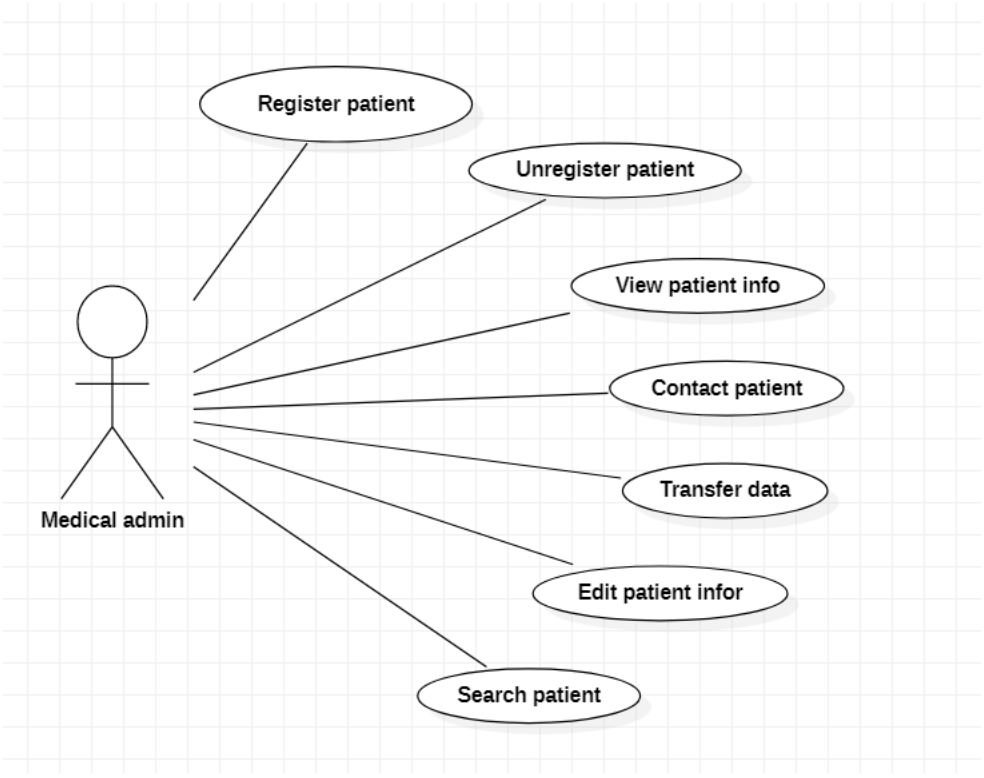
User	
Type	System actor
Role Description	This use case shows the main allowed functions for user actor and how every functions deal with others by include and extend relation.
Actor Goals	Create account, Manage account, View information, View health instructions regarding proper food.
Use Cases	Register (sign up), Analysis the information, Login, View profile ,Update profile, Display text for the

	best clothes, Select status, View character image, View healthy meals, Determined calories.

7.3.Use case diagrams

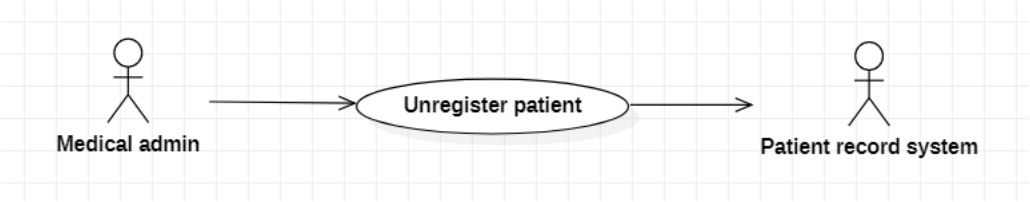
Num	Requirement	Explain in details
1	Enter personal stats data	Get information about users and checking, calculating health
2	Checking healthy status	Comparing with health scale to show healthy status
3	Reminder	Reminding the users to have good health
4	Warning	Warning the users when they have bad signal about healthy status
5	Calorie calculation	Controlling a quantity of food and exercise of users daily
6	User login/logout	Storing information of users
7	Administrator login	Manage, fix, update app
8	Feedback data	Receive comments from users
9	Calendar	Storing healthy status of users day by day
10	Connect with the health equipment	Get personal stats easily and fast without inserting

11	Sending questions, contacting to doctor	Get timely and accurate information on their health status

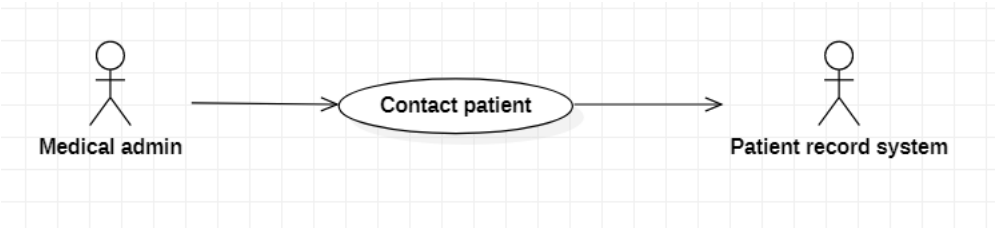


MHC-PMS: Register patient	
Actors	Medical admin, Patient record system
Description	Admin may register patient to information system. It will be let patient to login to application
Data	Patient's username, password
Stimulus	User command issued by medical admin

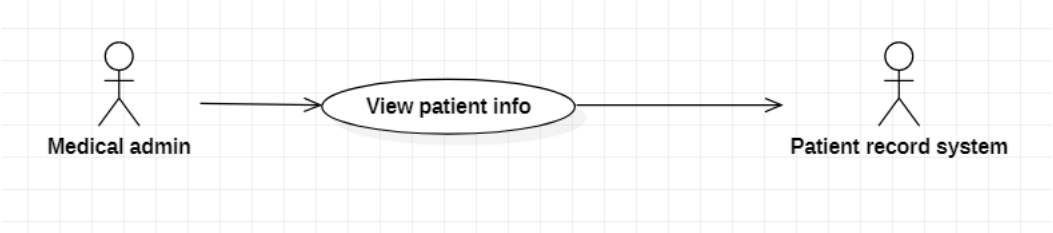
Response	Confirmation that PRS has been updated
Comments	The receptionist must have appropriate security permissions to access the patient information and the PRS.



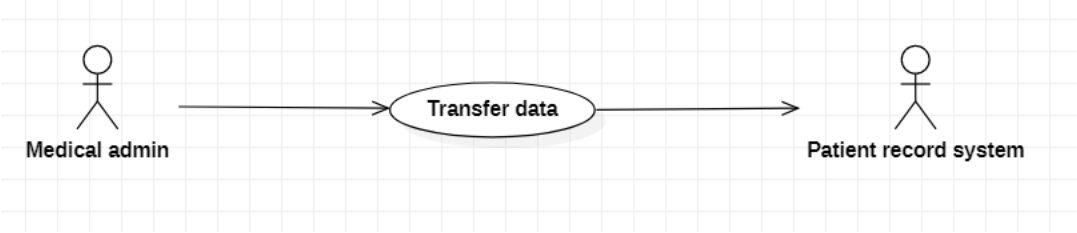
MHC-PMS: Unregister patient	
Actors	Medical admin, Patient record system
Description	Admin may delete user's account from PRS. That command will delete user's account forever in PRS.
Data	Patient's account
Stimulus	User command issued by medical admin
Response	Confirmation that PRS has been updated
Comments	The receptionist must have appropriate security permissions to access the patient information and the PRS.



MHC-PMS: Contact patient	
Actors	Medical admin, Patient record system
Description	Admin may contact patient to notify the information
Data	Patient's contact
Stimulus	PRS may store content of communication
Response	Show contact of user
Comments	The receptionist must have appropriate security permissions to protect information of users

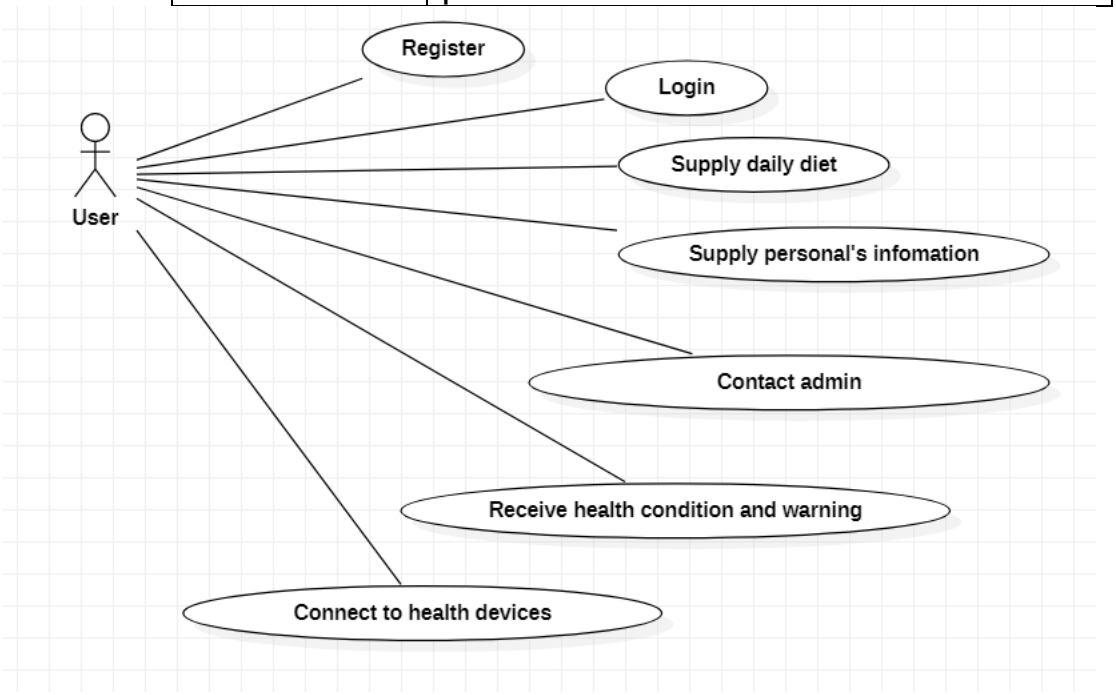


MHC-PMS: View patient info	
Actors	Medical admin, Patient record system
Description	Medical admin may view patient info from PRS to manage user
Data	Patient's personal information
Stimulus	
Response	PRS show info of patient
Comments	The receptionist must have good security system to protect user's info

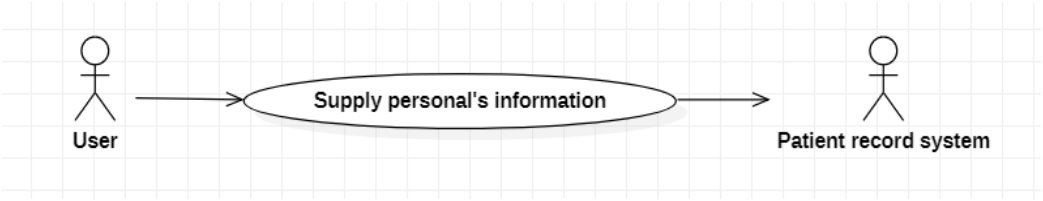


MHC-PMS: Transfer data	
Actors	Medical admin, Patient record system
Description	A receptionist may transfer data from the mentcase system to general patient record database that is maintained by a health authority. The information transferred may either be updated personal information(address, phone number, etc.) or a summary of the patient's diagnosis and treatment.
Data	Patient's personal information, treatment summary
Stimulus	User command issued by medical admin
Response	Confirmation that PRS has been updated
Comments	The receptionist must have appropriate security permissions to access the patient information and the PRS.

MHC-PMS: Search patient	
Actors	Medical admin, Patient record system
Description	A receptionist may search user to manage and make decision (contact, delete, etc.)
Data	Patient's personal information
Stimulus	admin command
Response	Show the searched patient
Comments	The receptionist must have appropriate security permissions to access the patient information and the PRS.



MHC-PMS: Register	
Actors	User, Patient record system
Description	Patient may register account to login health application
Data	Patient’s username and password
Stimulus	Upgrade security system
Response	Confirmation that the account has been created
Comments	The receptionist must have appropriate security permissions to access to PRS.

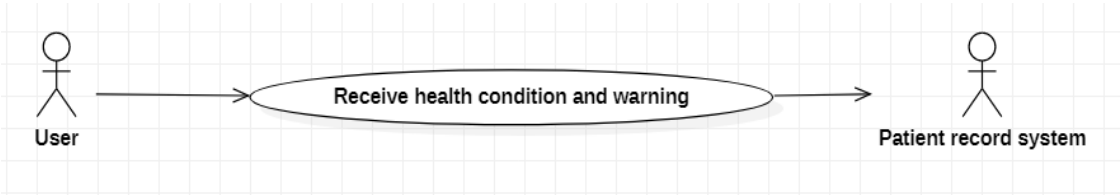


MHC-PMS: Supply personal’s info	
Actors	User, Patient record system
Description	A patient must supply personal’s health information to patient record system. System may execute user’s information and show health condition.
Data	Patient’s personal information
Stimulus	Update daily to receive notify about health
Response	Confirmation that that information be recorded
Comments	The receptionist must have good security system to protect user’s info

MHC-PMS: Supply daily diet	
Actors	User, Patient record system
Description	A patient must supply personal's daily diet to patient record system. System may execute user's information and show health condition.
Data	Patient's daily diet
Stimulus	Update daily to receive notify about diet
Response	Confirmation that that information be recorded
Comments	The receptionist must have good security system to protect user's info

MHC-PMS: Contact admin	
Actors	User, Patient record system
Description	A patient may contact admin to have questions about system and his health.
Data	Admin's contact
Stimulus	The receptionist may operate message system to contact between user and admin.

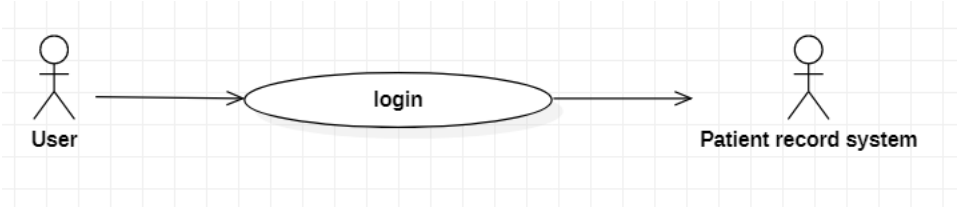
Response	Confirmation to make a contact with admin
Comments	The receptionist must have good security system to protect user's info



MHC-PMS: Receive health condition and warning	
Actors	User, Patient record system
Description	A patient may receive her health condition and warning when bad signal about her health
Data	System's notification
Stimulus	Notifications may show daily
Response	Show healthy condition and warning
Comments	The receptionist must have good security system to protect user's information

MHC-PMS: Connect health device	
Actors	User, Patient record system
Description	A patient may connect to health device to system. RPS will record that

	information of user to execute health condition and notify to users
Data	Patient’s information
Stimulus	Refresh the connection
Response	Confirmation that this device has been connected
Comments	The receptionist must have good security system to protect user’s information

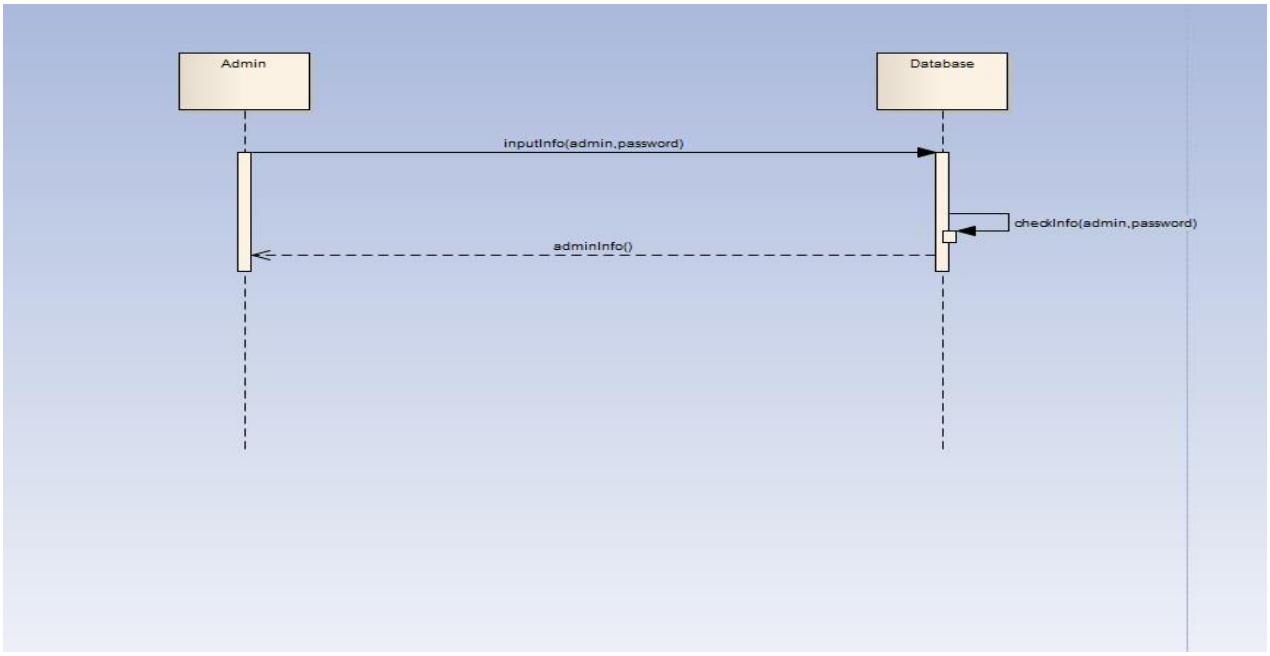


MHC-PMS: Login	
Actors	User, Patient record system
Description	A patient may login to her account to edit personal information, enter health condition, contact admin, etc.
Data	Patient’s username and password
Stimulus	Update password monthly
Response	Confirmation that the user has been logged in
Comments	The receptionist must have good security system to protect user’s info

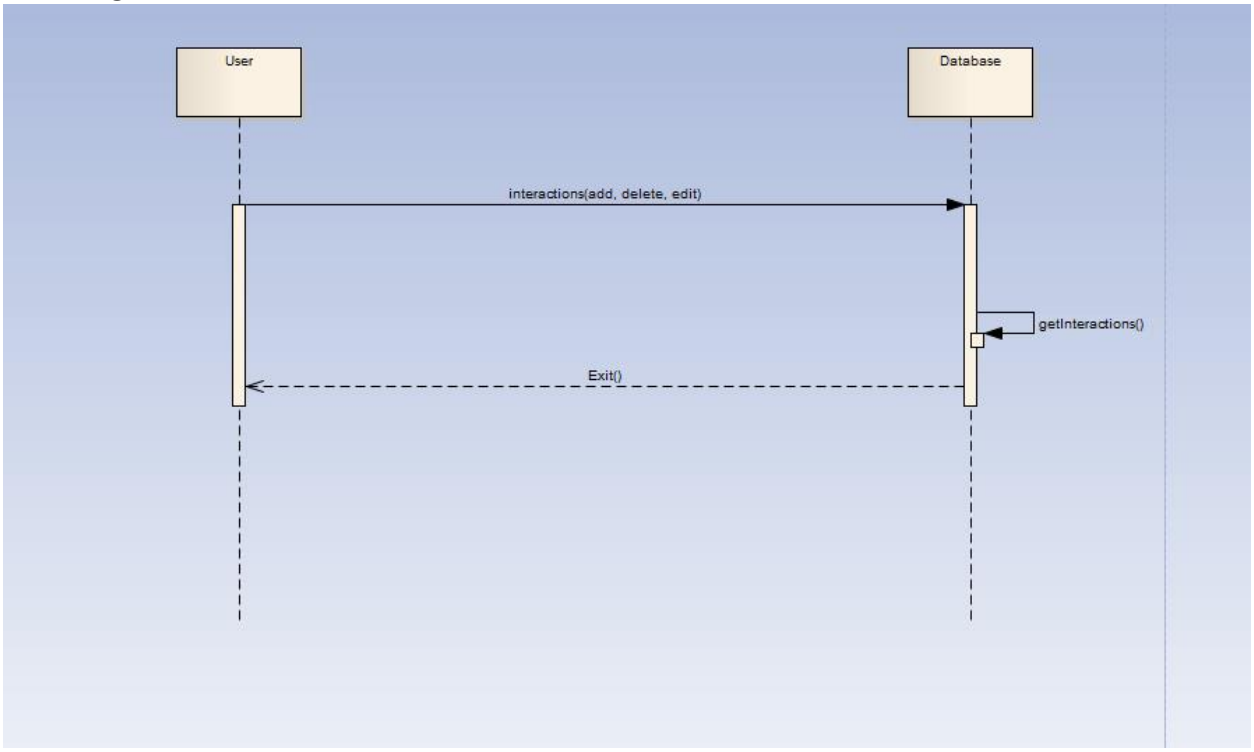
7.5. Sequence diagram

1.Admin

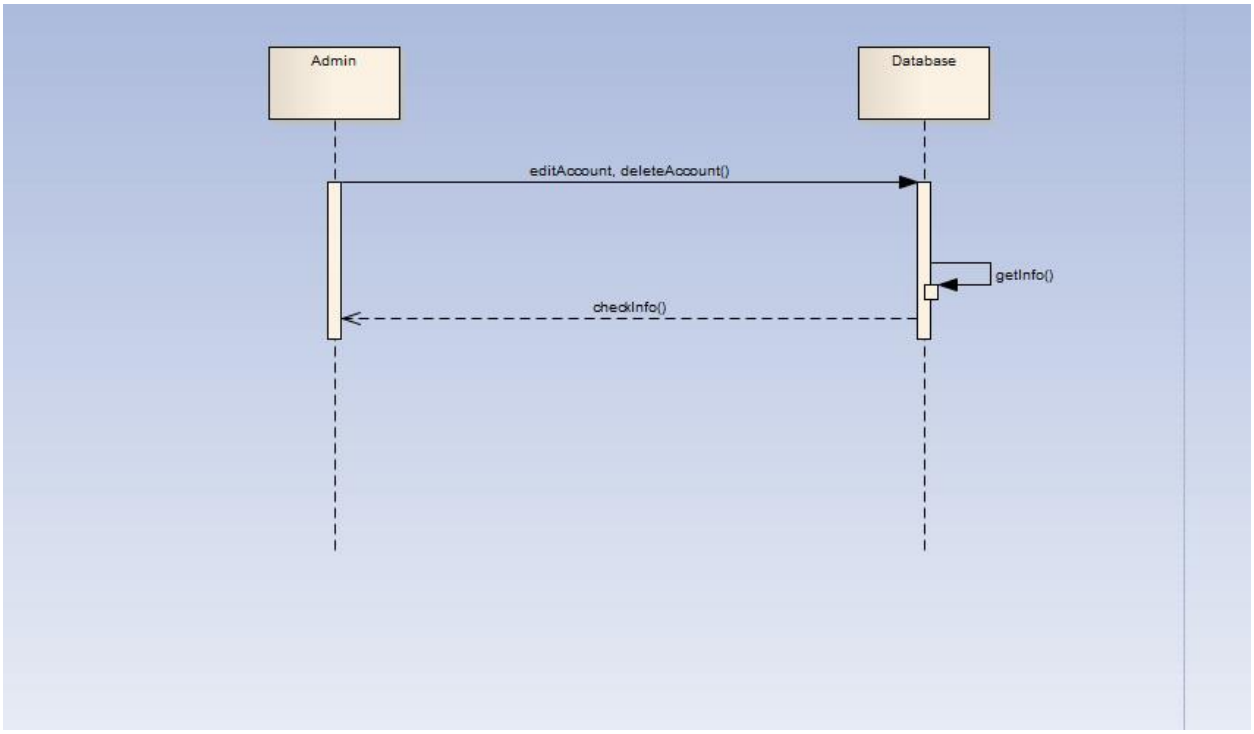
1.1 Login



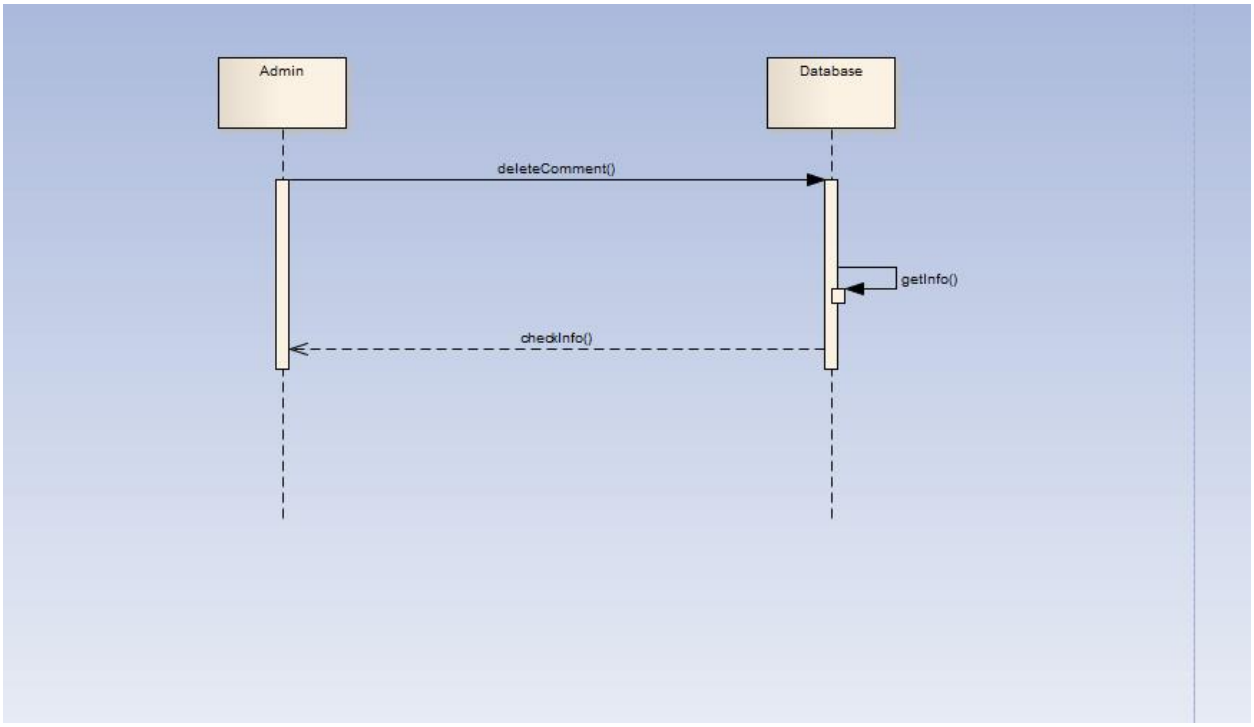
1.2 Logout



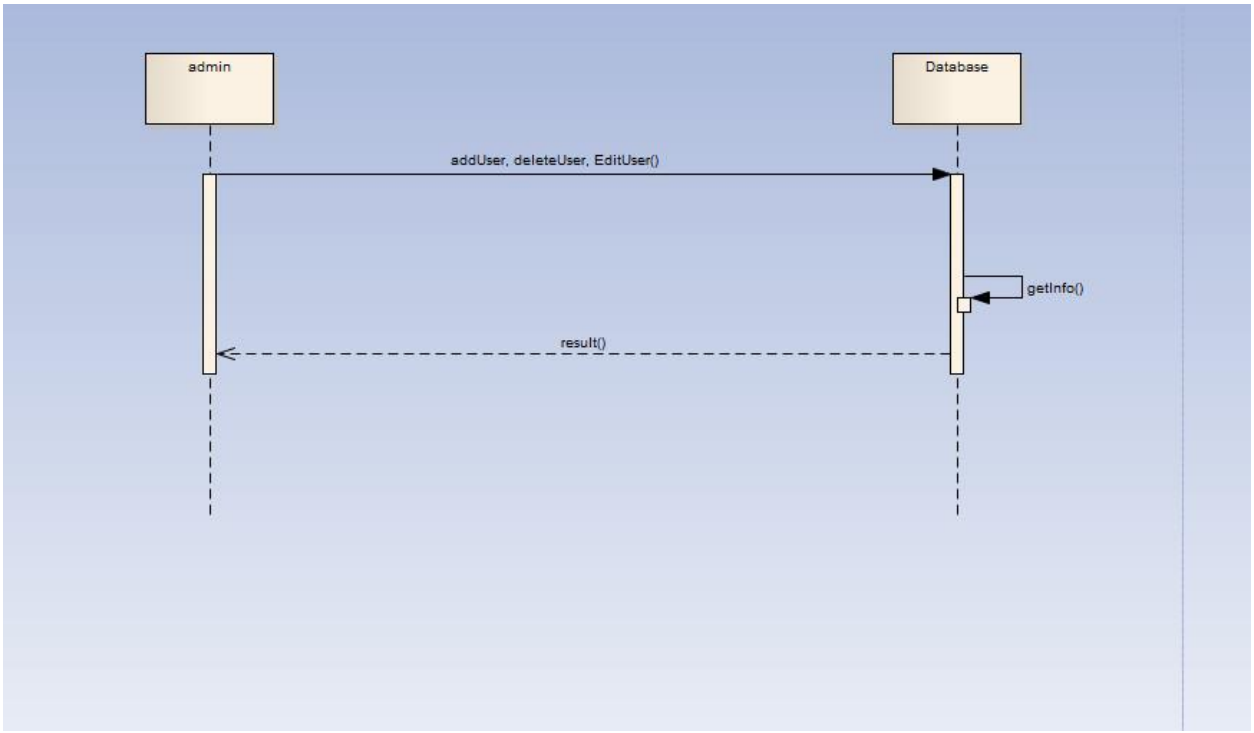
1.3 Manage account



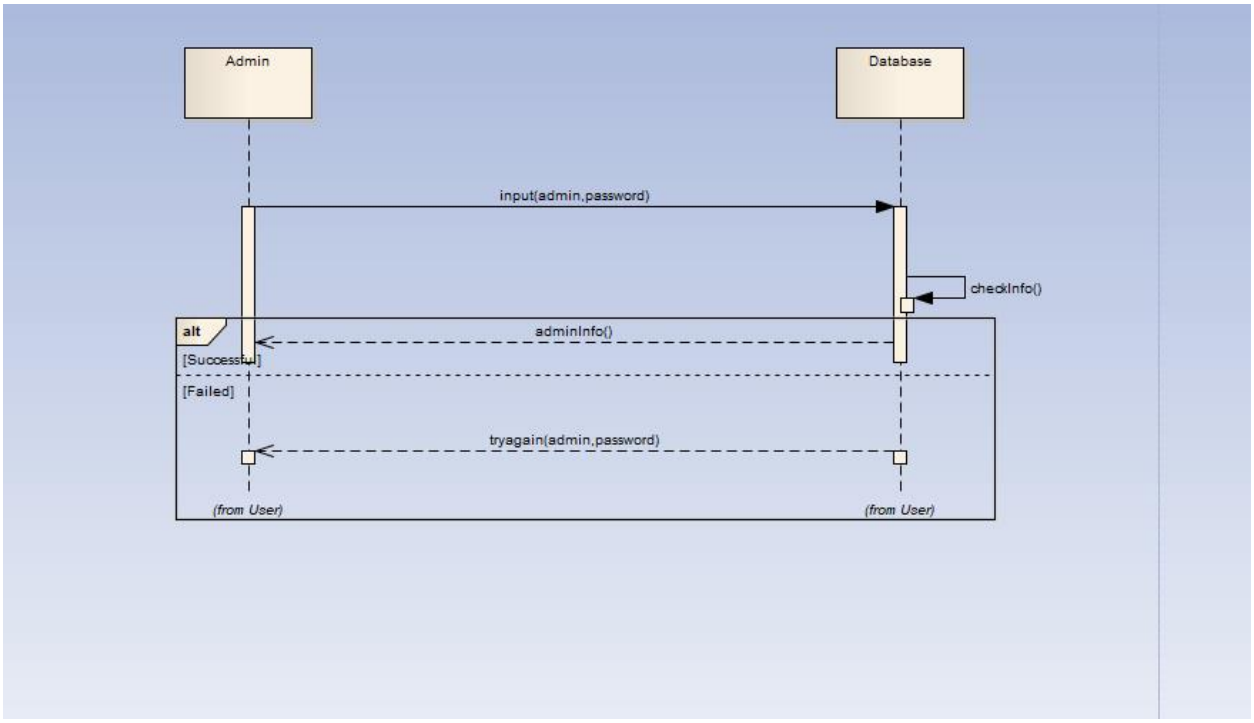
1.4 Manage comment



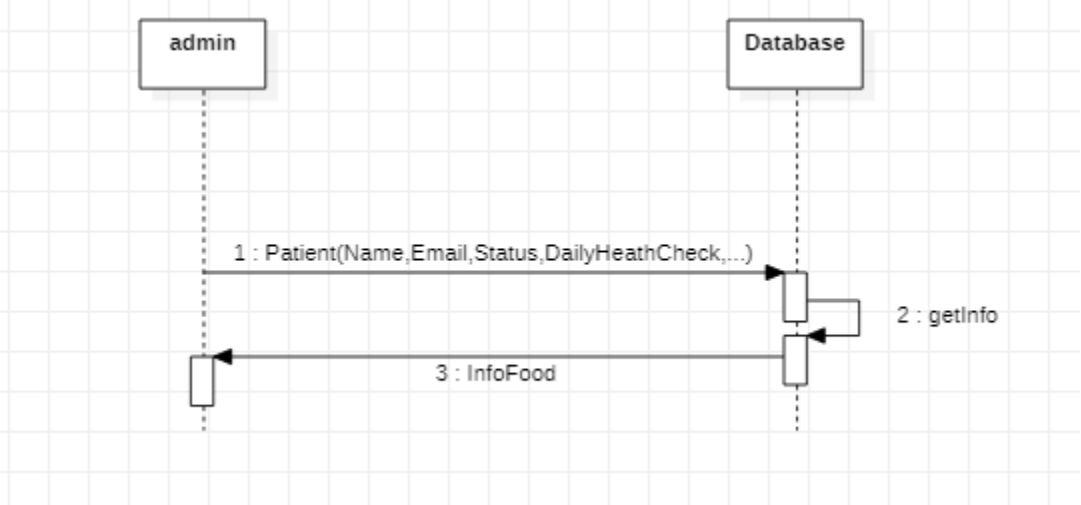
1.5 Manage patient



1.6 Register

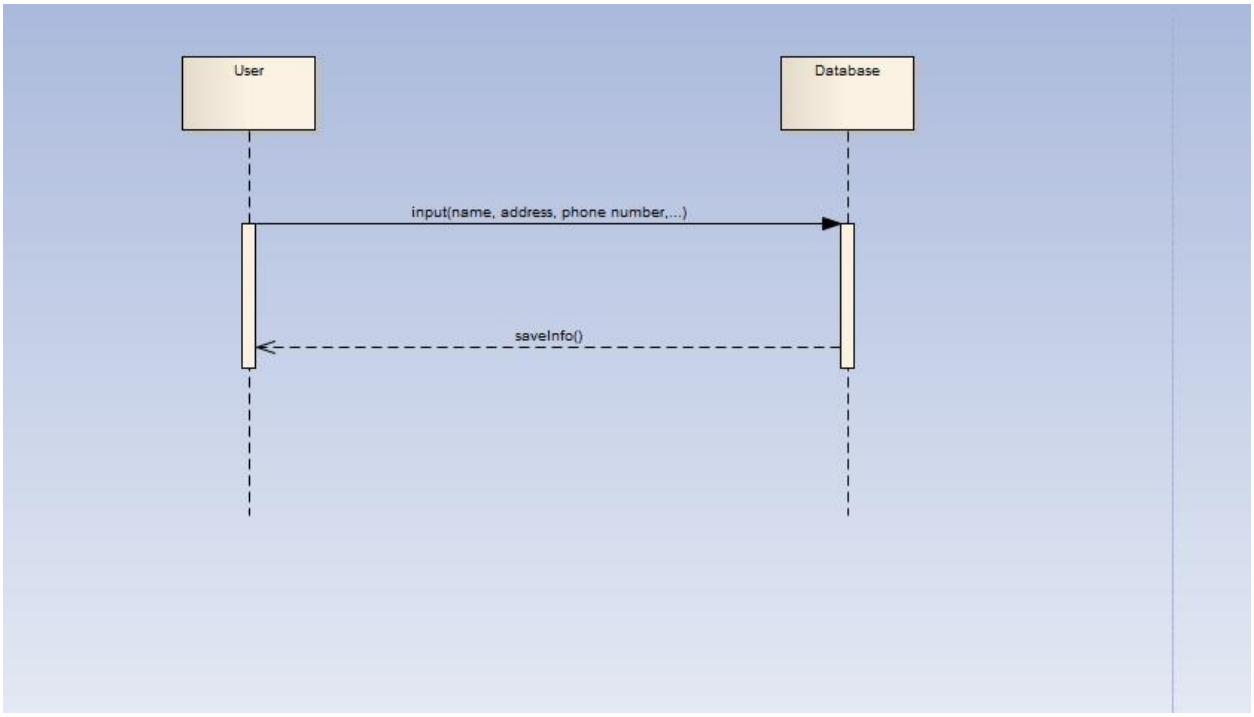


1.7Patient management

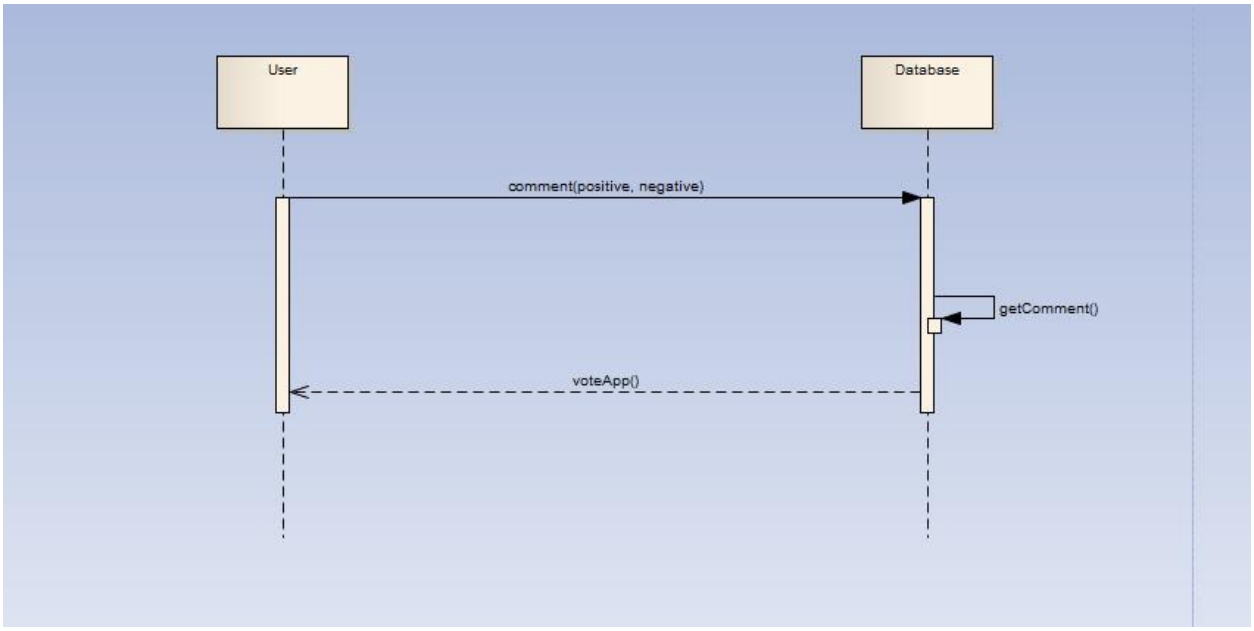


2. User

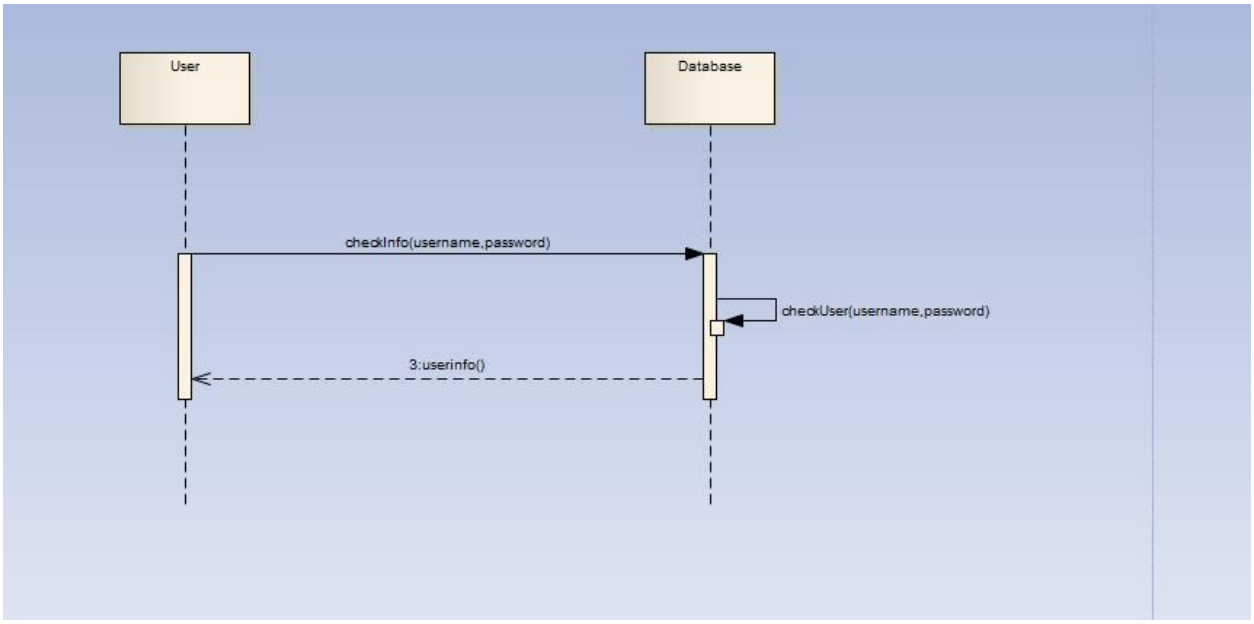
2.1 Contact



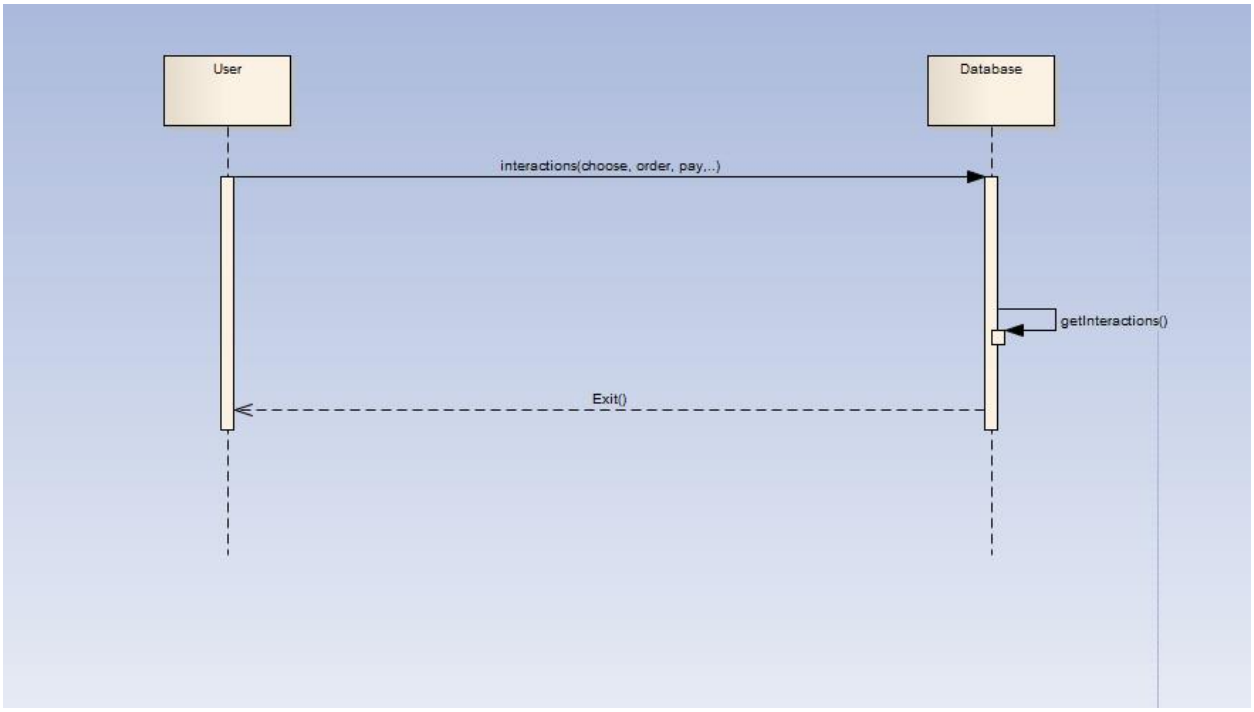
2.2 Evaluate


User
Database
comment(positive, negative)
getComment()
voteApp()

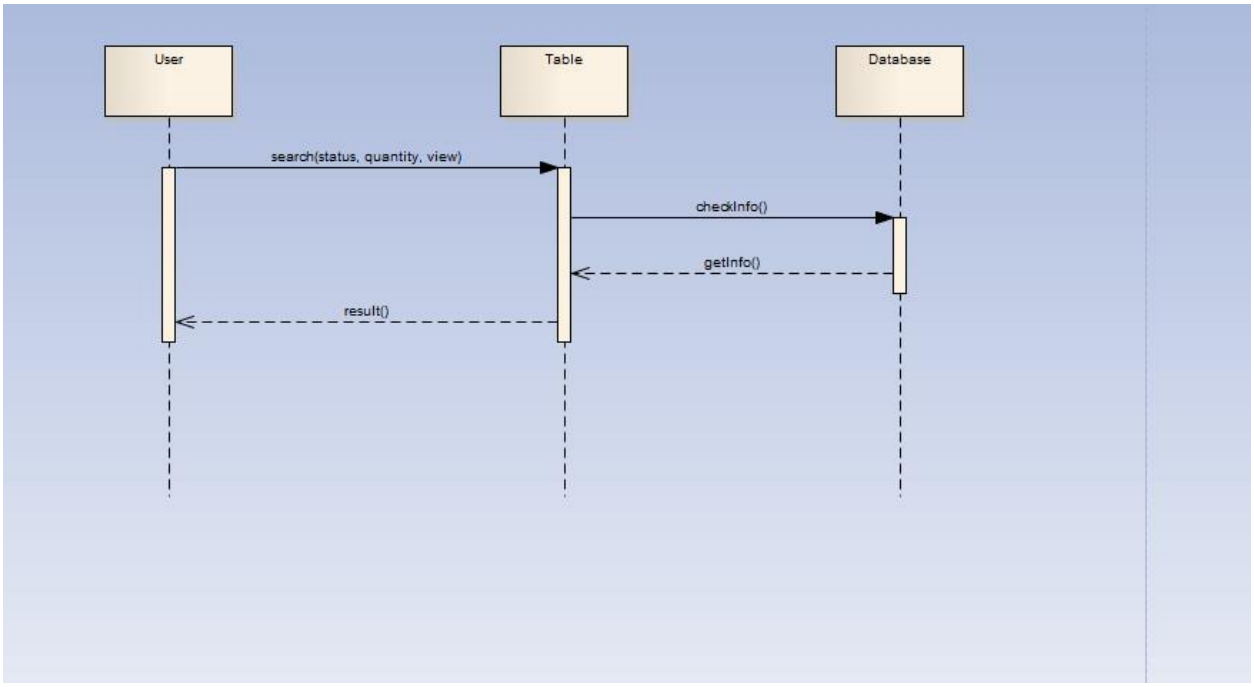
2.3 Login


User
Database
checkInfo(username,password)
checkUser(username,password)
3:userinfo()

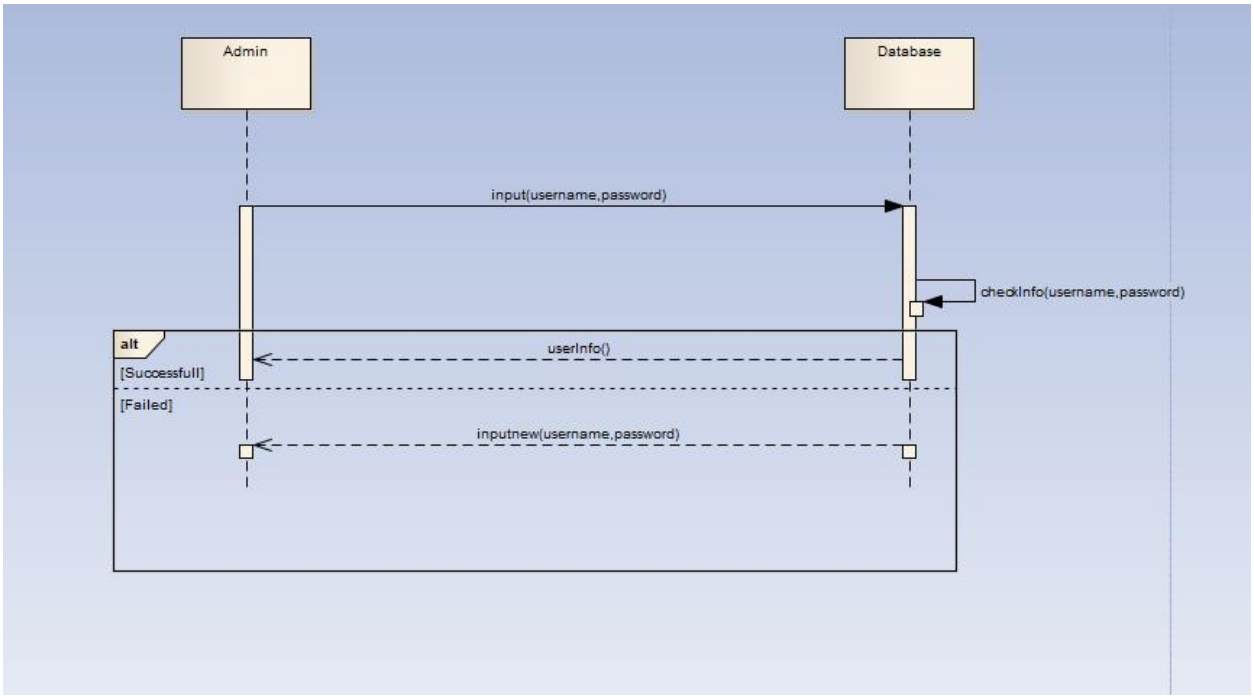
2.4 Logout



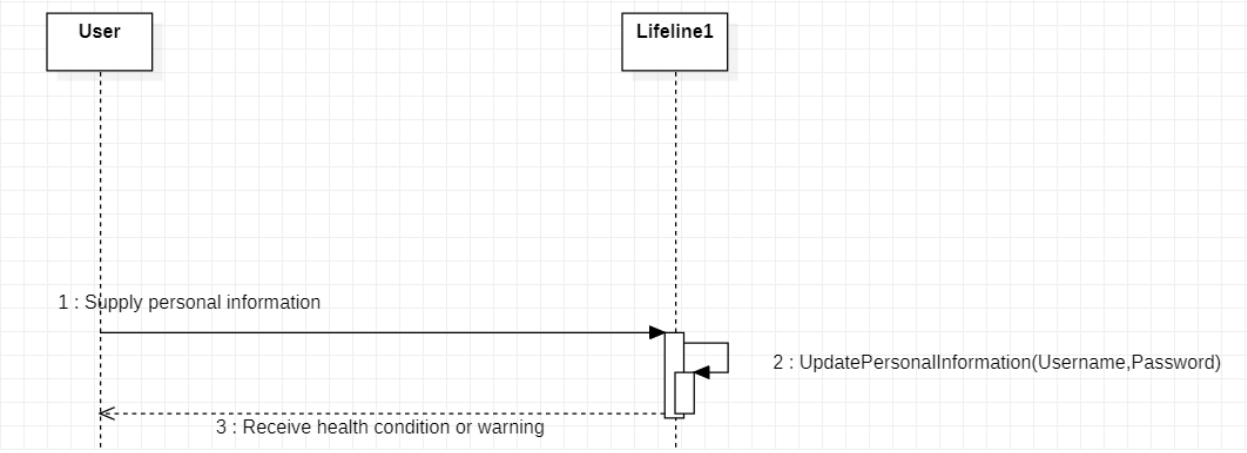
2.5 Look table



2.6 Register



2.7 Supply Patient Health



Chapter 8: System evolution

In the upcoming versions, to be able to improve the application further, we will invite health experts to get the most accurate reviews for users. At the same time, we will update the data system to meet the needs of many users

Accompanied by new functions such as: diet and exercise curriculum for each different type of patient or even healthy people to get the best health, and there is a social network between those using the app who can communicate with each other.

Chapter 9: Appendices

The database of our application:

1. User

Name of the table	User
Table description	This table handle the information for the User
Attribute	Type
User_id	Int
First_name	Varchar (50)
Last_name	Varchar (50)
User_name	Varchar (50)
Password	Varchar (50)
Email	Varchar (225)
Gender	TINYINT
Height	Float
Weight	Float
Address	Varchar (100)
Primary Key	User_

2. Meal recipe

Name of the table	Meal recipe
Table description	This table handle the information for the

	meal recipe suggested for user
Attribute	Type
Meal_id	Int
Name	Varchar (50)
Meal recipe video	Varchar (50)
Price	Float
Calories	Float
Meal_type	Varchar (50)
Components	Varchar (50)
Primary Key	Meal_

3. Suggested therapy

Name of the table	Suggested theraphy
Table description	This table suggested nutritional theraphy for user base on their stats
Attribute	Type
Theraphy id	Int
Food name	Varchar (50)
Daily menu description	Varchar (200)
Price	Float
Calories stat	Float
Suggested Meal_type	Varchar (50)
Primary Key	Theraphy id

Chapter 10: Index of function

Log in

Log out

Register

View Profile

Warning

View health status

Input health index

View health advice

Connect health device

Contact