

SRS Document for Health Care System

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1. Project Title:

Health care system

2. Introduction:

a. Purpose

The purpose of the software is to examine the public health issues, aware the public about those issues, and provide a solution to overcome such issues. The software does not only focus on human life, but it also plays a crucial role on the health of animals. This purpose will lead to the better economic condition of the country by improving the public health.

b. Scope

This assignment applies to Health Care System, which will be developed by EZ developers. The system will be based on the client server system and this idea will be the fresh new idea by EZ developers. The HCS will monitor the ratio of diseases including epidemics and pandemics (e.g., Polio, Dengue, HIV, COVID-19 etc.), the environmental condition of an area (e.g., oxygen ratio, water level etc.) and provide a way to deal such situations. The system will support web, android, and iOS application.

3. Project Overview Statement:

The document contains all the functional and non-functional requirements, the product perspective is also given to learn dependencies of the system, both user and non-user stakeholders with their interests and constraints are given.

4. Project Goals and Objectives:

The goal is to develop this project is to make better economic condition of the country, by serving public health. The countries having less morbidity ratio attracts more tourists, and all the morbidity ratio of different cities of Pakistan will be provided, tourists would be able to decide where to visit. Moreover, it will provide awareness and precautions to make better morbidity ratio.

5. Functional Requirements and Non-Functional Requirements:

a. Body Survey:

Functional Requirement: This system will take the medical data of the user and save it.

b. Health Companion

Functional Requirement: This system will allow to see different precautions about respective diseases.

c. Alert and Alarm

Functional Requirement: The system will alert whenever user enters in any dangerous city-peak on any particular disease.

Non-Functional Requirement: Alert will be in the form of alarm ring and pop up message.

Non-Functional Requirement: Pop-up message will be shown in red color.

Non-Functional Requirement: System will must ring minimum 10 seconds and maximum 60 seconds.

d. Regional Survey

Functional Requirement: The system shall provide the data about the environmental condition and morbidity survey of different cities.

Non-Functional Requirement: Diseases like Polio, Dengue, Cancer, HIV must include in the morbidity survey.

Non-Functional Requirement: Oxygen level, water ratio, weather report, and forest ratio must include in environmental survey.

e. News

Functional Requirement: The system shall provide all the news regarding pandemics, epidemics, death rate etc.

Non-Functional Requirement: News feed must be updated in every 5 minutes.

Non-Functional Requirement: It will cover both global and local news.

f. Research

Functional Requirement: The system shall provide the data detailed researched data about different diseases.

g. Awareness

Functional Requirement: The system shall spread awareness to the people who feel uncomfortable or frighten while giving their health-related information.

Non-Functional Requirement: Awareness will also be spread through online adds.

h. Veterinary services

Functional Requirement: The system must facilitate the pets/ animal's health care.

i. Personal trainer

Functional Requirement: The system will allow user to maintain his/her health with the help of personal trainer.

5.10 Appointment

Functional Requirement: The system will facilitate online appointment associated with different hospitals.

Non-Functional Requirement: 50% payment will be returned on the cancelation of the appointment.

Non-Functional Requirement: Appointment date can be extended prior to 2 days of the previous date.

5.11 Medicine reminder

Functional Requirement: The system shall provide a feature that reminds patient of its medicine.

Non-Functional Requirement: Reminder can be set through phone's personal reminders or ringtone.

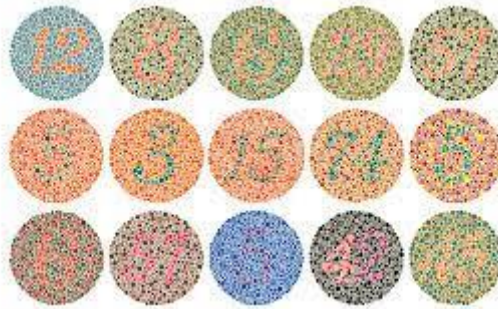
5.12 Color blindness

Functional Requirement: The system shall also provide a color blindness test facility.

Non-Functional Requirement: There will be minimum 10 questions.

Non-Functional Requirement: Questions must be in the form of mcqs.

Non-Functional Requirement: If user fails in anyone option, color blindness will be set to positive.



5.13 Medicine scanner

Functional Requirement: The system will scan the medicine and give relevant details to the user.

Non-Functional Requirement: Scanning can be done through camera or entering the name of the medicine manually.

5.14 EZ Pharmacy

Functional Requirement: The system will allow patients to order online medicine through different pharmacies.

5.15 EZ Assistant

Functional Requirement: The system will provide a virtual assistant for the blind people.

Non-Functional Requirement: Voices of both Male and Female must be available.

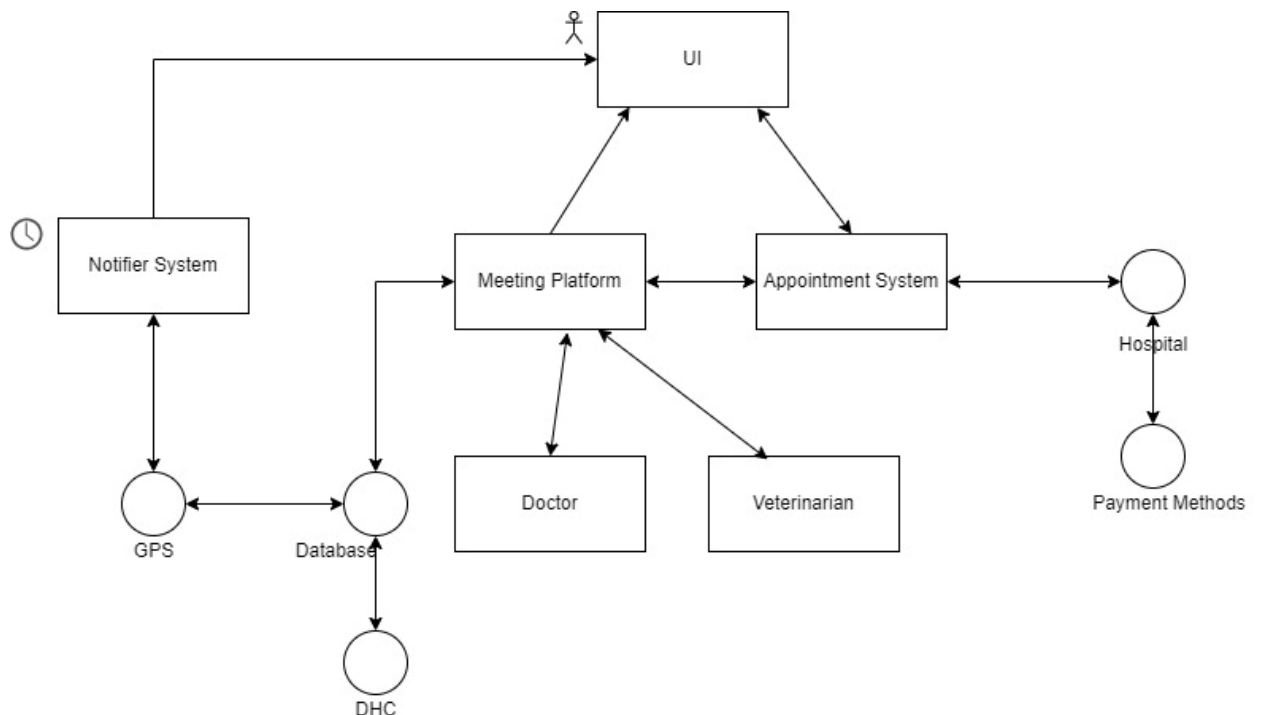
5.16 Data Privacy

Non-Functional Requirement: Data must be kept secured and it must not be mislead in any case.

6. Tools and Techniques

For architecture process, we will use UML Modeling for different types of diagrams, and for user interface we will use Windows form console coded in C#, at backend we'll use MYSQL database. Moreover, we may change or add tools or techniques future on the basis of market environment and stakeholder needs.

7. Conceptual Architecture:



8. Components with Responsibilities

UI: User interface is the most important component that is responsible for to use every functionality.

Appointment System: It is a subsystem that schedules appointments with veterinarian or a doctor.

Hospital: An external component that is connected to appointments-it is where patient wants to make an appointment.

Payment Methods: Another external component, used to get payment from patient for booking an appointment.

Meeting Platform: Platform where user can meet with the doctor or veterinarian.

Doctor: The doctor will check up the user's health.

Veterinarian: The doctor that will look up to the pets/animals.

Notifier System: It is another subsystem, that will notify and alert if user enters in a city, where any disease is on its peak.

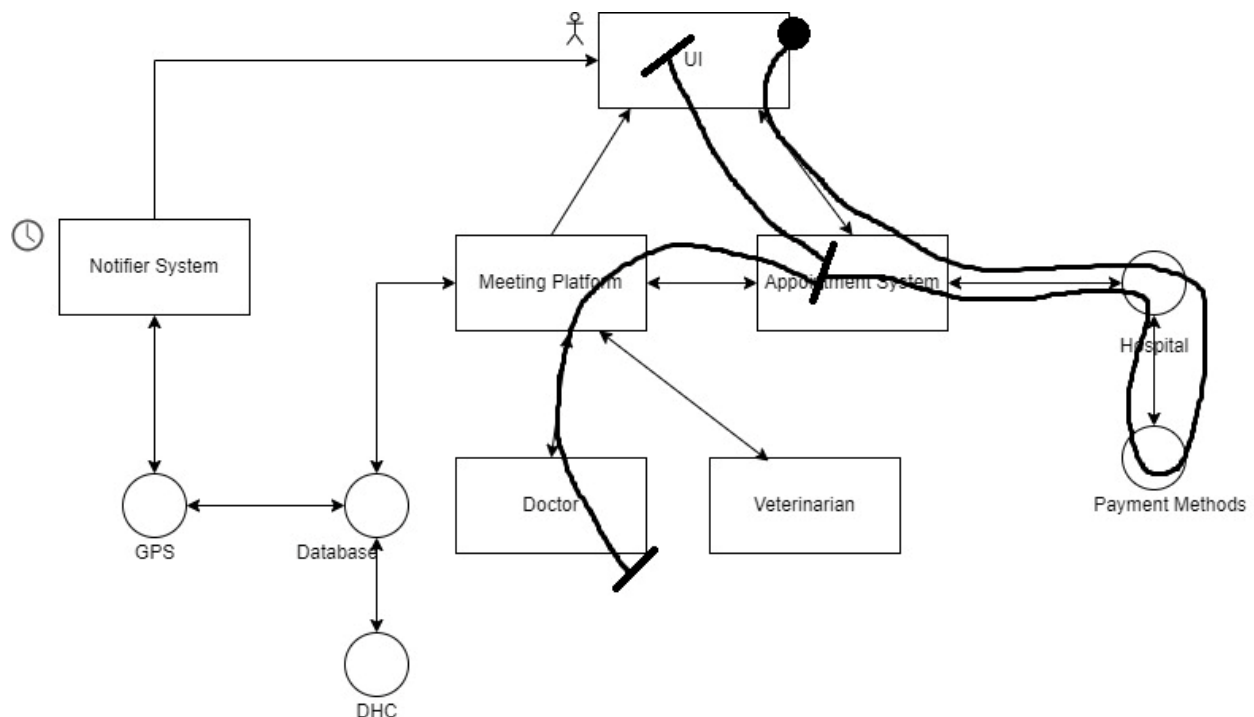
GPS: An external component that will give the current location of the user to the database.

Database: An external component that has all the health-related data.

DHC: District Health Centers are also an external component, that will provide data to the database.

9. Use-Case Maps.

a. Appointment System Map:



b. Notifier System Map:

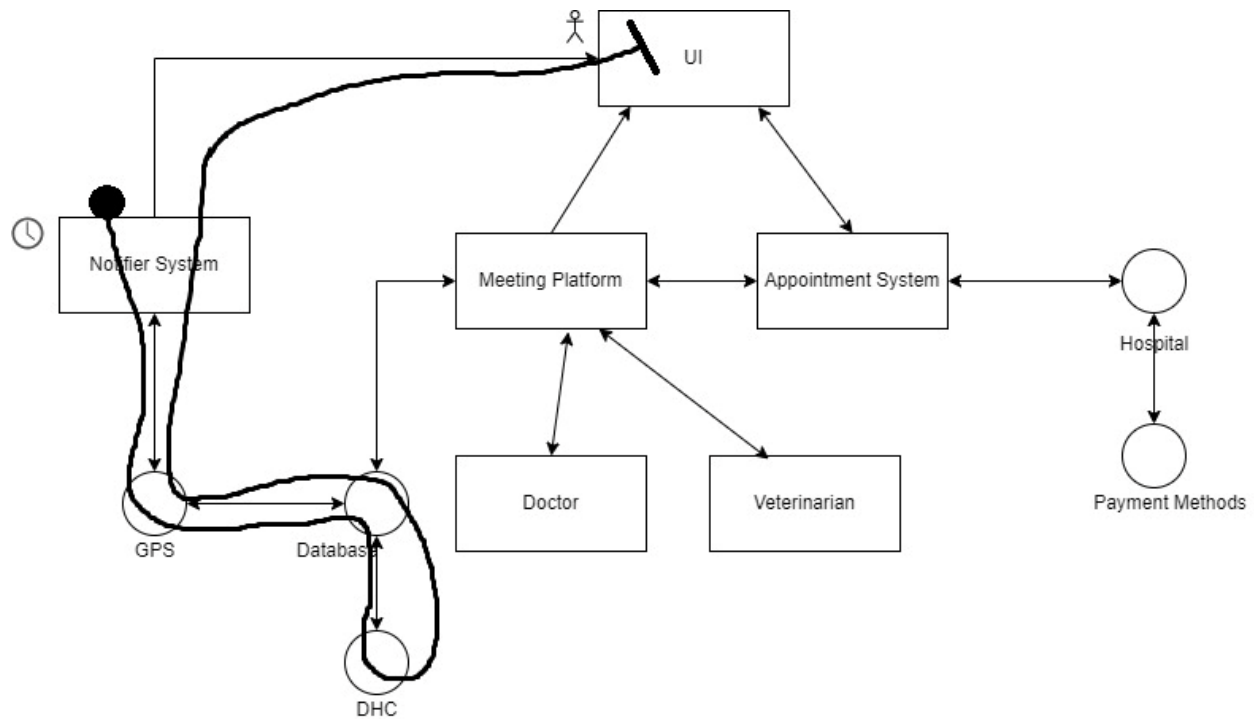


Table of Details:

Functional Requirements	Use Case Name	Actors
This system will take the medical data of the user and save it.	Input Medical Data	Patient
This system will allow to see different precautions about respective diseases.	Check Disease Precautions	Patient, Doctor
The system will alert whenever user enters in any dangerous city-peak on any particular disease.	Alert Dangerous City	Patient, Surveillance Center
The system shall provide the data about the environmental condition and	Check Environmental data	Patient, Surveillance Center

morbidity survey of different cities.		
The system shall provide all the news regarding pandemics, epidemics, death rate etc.	Check Disease News	Patient
The system shall provide the detailed researched data about different diseases.	Provide Detailed Research	Patient, Research Center
The system shall spread awareness to the people who feel uncomfortable or frighten while giving their health-related information.	Aware Uncomfortable People	Patient
The system must facilitate the pets/ animal's health care.	Checkup Pet	Veterinarian
The system will allow user to maintain his/her health with the help of personal trainer.	Use Personal Trainer	Patient
The system will facilitate online appointment associated with different hospitals.	Make Appointment	Patient, Hospital
The system shall provide a feature that reminds patient of its medicine.	Remind Medicine	Patient
The system shall also provide a color blindness test facility.	Check Color Blindness	Patient

The system will scan the medicine and give relevant details to the user.	Scan Medicine Detail	Patient
The system will allow patients to order online medicine through different pharmacies.	Order Medicine	Patient, Pharmacy
The system will provide a virtual assistant for the blind people.	Provide Virtual Assistant	Patient

Use cases:

1.

Use case Name	Aware Uncomfortable People	
Primary Actors	Patient	
Stakeholders and interests	Patient	Patient will input his health information.
Precondition	Patient does not enter his/her health related information, due to unawareness of how necessary it is.	
Post condition	Users/ patients agree and input all the details regarding their health.	
	Step No.	Action
	1.	Patient agrees to input his health information.

Main Success Scenario	2.	Patient is asked a few questions regarding his health.
	3.	The survey is being done in questionnaire type.
	4.	Patient successfully enter the details.
Extensions	1.	If patient does not fulfil the health survey, an aware message will be shown.
	2.	Awareness message will give the importance of the survey.

2.

Use case Name	Checkup Pet	
Primary Actors	Pet Owner, Veterinarian	
Stakeholders and interests	Pet Owner	Pet owner is the stakeholder who's pet is not well, and need a proper checkup.
	Veterinarian	Veterinarians estimate about pet's diseases as owner tell him about symptoms and suggest him medicines and cautions.
Precondition	Someone's pet gets ill.	
Post condition	Owner gets a proper checkup and medicines for his/her pet by a veterinarian with minimal expense.	
Main Success Scenario	Step No.	Action
	1.	Pet Owner makes an appointment veterinarian.
	2.	Veterinarian examines the pet.
	3.	Veterinarian suggests guidelines and medicines to take care of the pet.

Extensions	1.	The veterinarian could no be found or not available for that time period.
	2.	All the appointments of the veterinarian are booked.

3.

Use case Name	Make appointment.	
Primary Actors	Patient, Doctor	
Stakeholders and interests	Patient	The patient interacts with doctor and seek knowledge about his/her diseases.
	Doctor	Doctor will checkup the patient; he will suggest some guidelines and medicine to the patient.
Precondition	The user gets ill, or observe some symptoms that are needed to be examined by a doctor.	
Post condition	The doctor is found and an appointment is fixed.	
Main Success Scenario	Step No.	Action
	1.	Patient search for a hospital.
	2.	Patient successfully make an appointment at the hospital.
	3.	Patient pays for the appointment.
	4.	Finally, patient meets doctor and doctor examines him.
Extensions	1.	Doctors can be un available at some moments.
	2.	System will provide proper availability of doctor at specific time means at specific hours all the doctors

		are available at this time there will be maximum probability of making appointment.
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4.

Use case Name	Input medical data	
Primary Actors	Patient,	
Stakeholders and interests	Patient	The patient will give its medical records to the system according to the specific disease
Precondition	When user sign up for the first time, system will ask to input medical record.	
Post condition	The system checks and saves the patient data and proceed it for further use.	
Main Success Scenario	Step No.	Action
	1	Patient will Sign up for the first time to the system.
	2	Patient will input data about him.
	3	Patient will input data about the disease
	4	System checks the correct availability of patient
	5	System checks the data and proceed the details if correct
	6	System saves the patients information.

Extensions	1	If the login or data of the patient is irrelevant the system will show an error message
	2	If the system unable to save the information due to any inconvenience the patients data will trash.

5.

Use case Name	Alert dangerous city	
Primary Actors	Patient, surveillance center	
Stakeholders and interests	patient	the patient will ask the system to check the environmental condition before and during visit
		The patient will follow the instructions given by the system if the system shows the beep message or alert.
Precondition	Patient wants to visit any area or a city.	
Post condition	The system will give a message if the user enters in any wrong or disease effected area.	
Main Success Scenario	Step No.	Action
	2	Patient will follow the instructions.
	3	Patient will delay its tour in case of high alert beep.

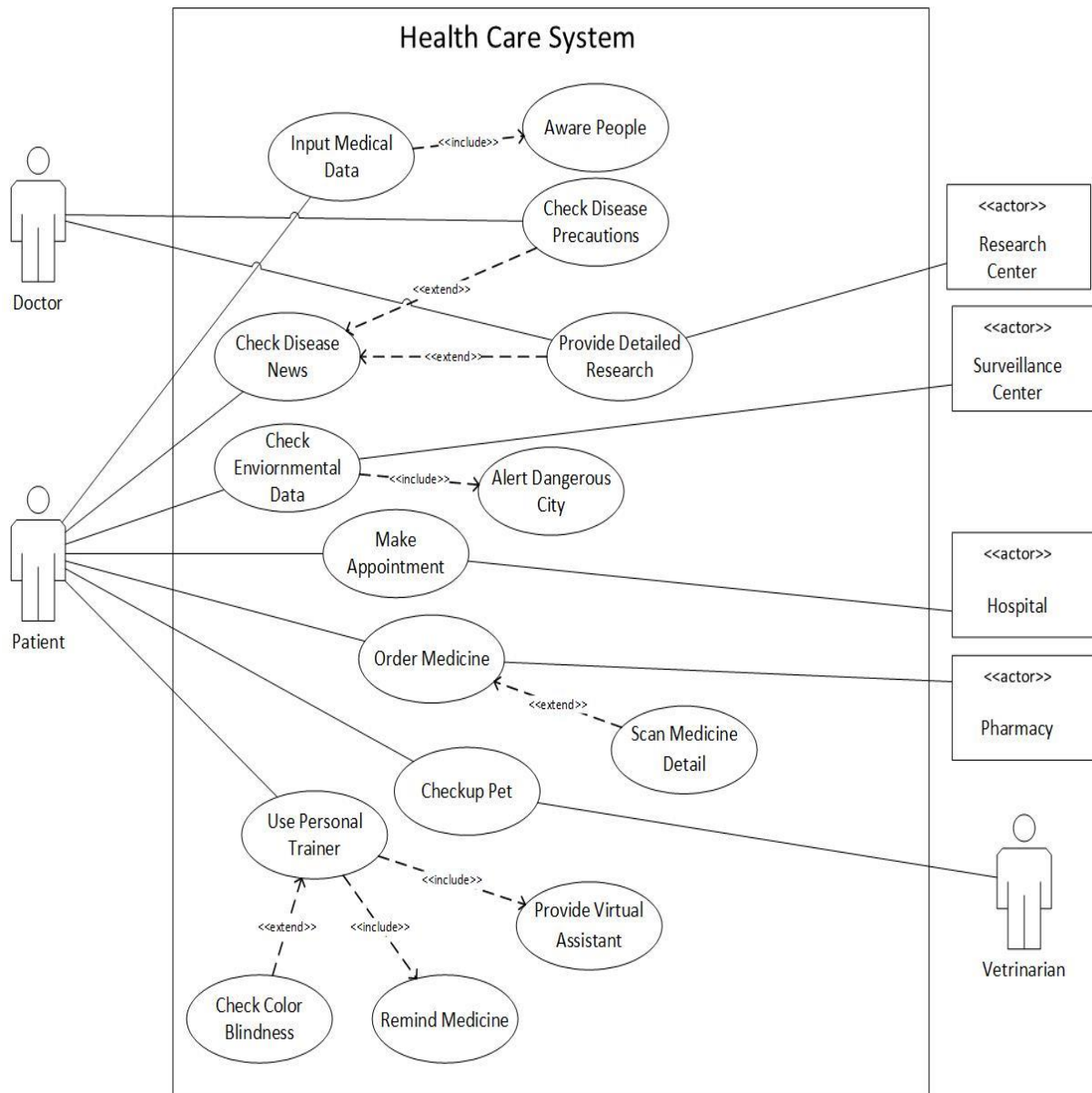
	4	System checks the areas disease rate.
	5	System shall keep on informing the patient about disease through beep.
	6	System shows a red light if area is not suitable to visit
Extensions	1	If the patient declines to follow the system's instruction it will beep for 20 seconds.
	2	The system will stop alarming if the user is stubborn.

6.

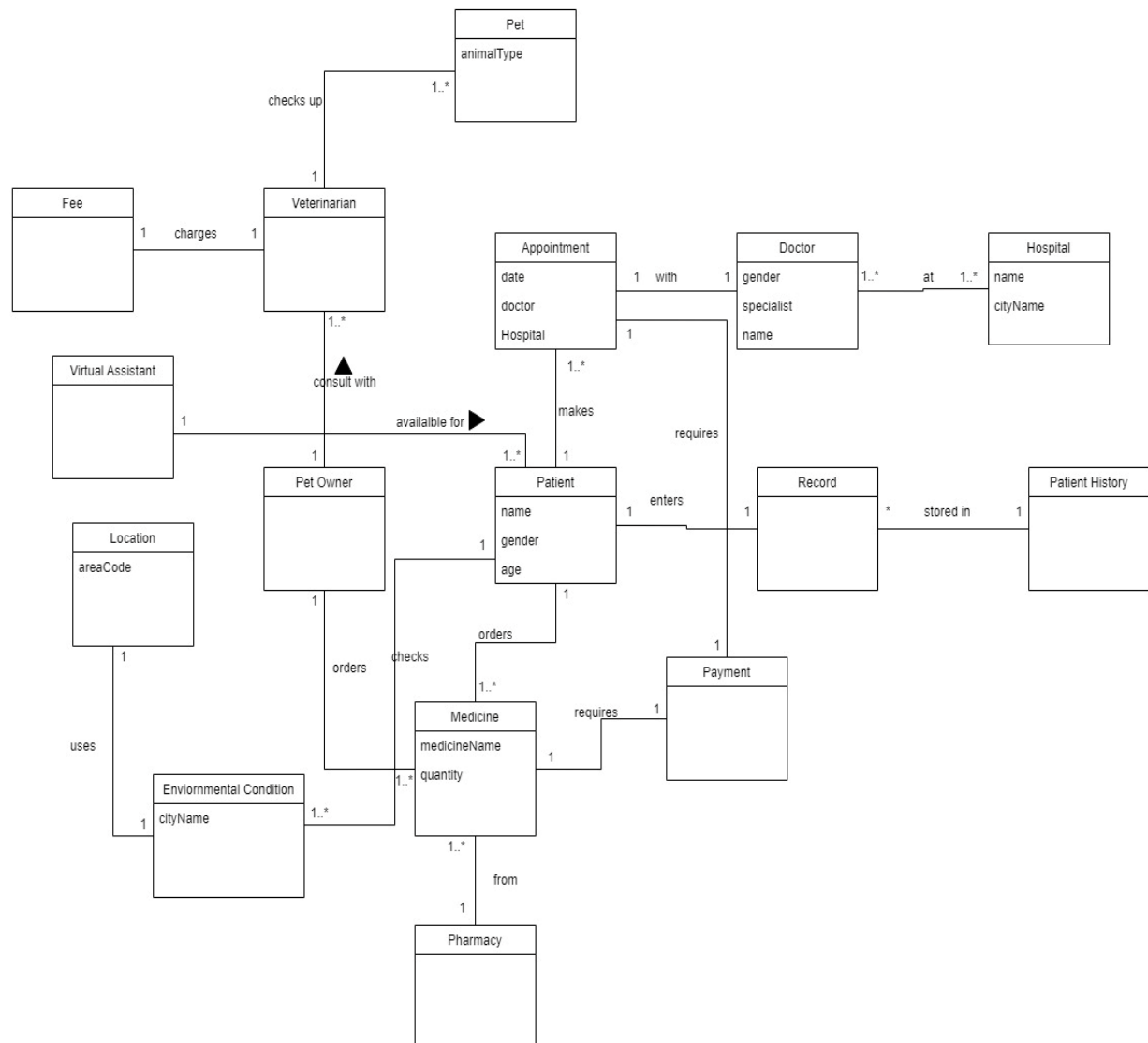
Use case Name	Order medicine	
Primary Actors	Patient	
Secondary Actors	Pharmacy, pharmacist	
Stakeholders and interests	patient	the patient will order the desired medicine for its disease.
	pharmacist	The patient shall give its medical transcript to pharmacist to get the best conveniency by experts.
Precondition	The patient shall need medicine advised by expert.	
Post condition	The system will give the medicine to the patient for its specific disease.	

Main Success Scenario	Step No.	Action
	1	Patient will provide details of disease.
	2	Patient will select the medicine required.
	3	Patient will pay online to pharmacy.
	4	System checks the availability of medicine.
	5	System will give the delivery options.
	6	System will provide the consultancy to the patient if required.
Extensions	1	If the system is unable to deliver the medicine due to high-distance of location it gives a message.
	2	If the patient enters the wrong address the system shows a message no address found.

Use-case Diagram:

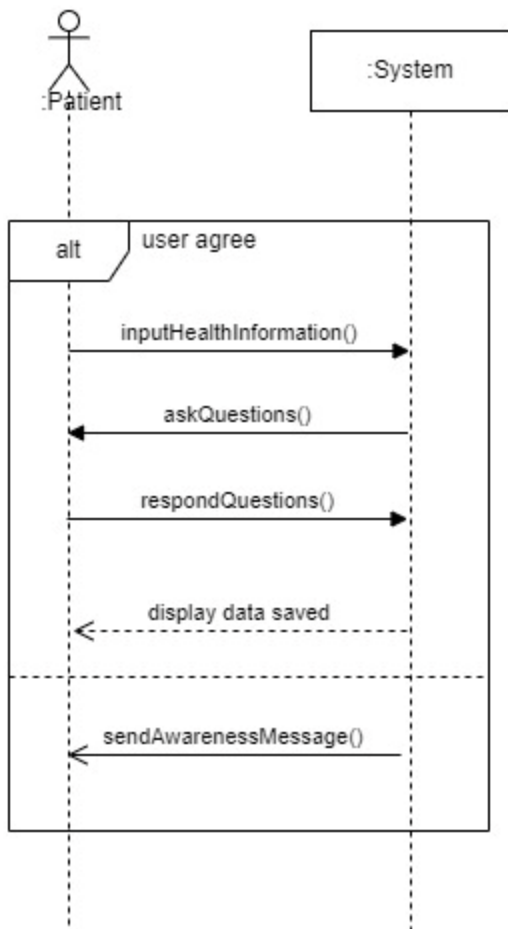


Domain Model

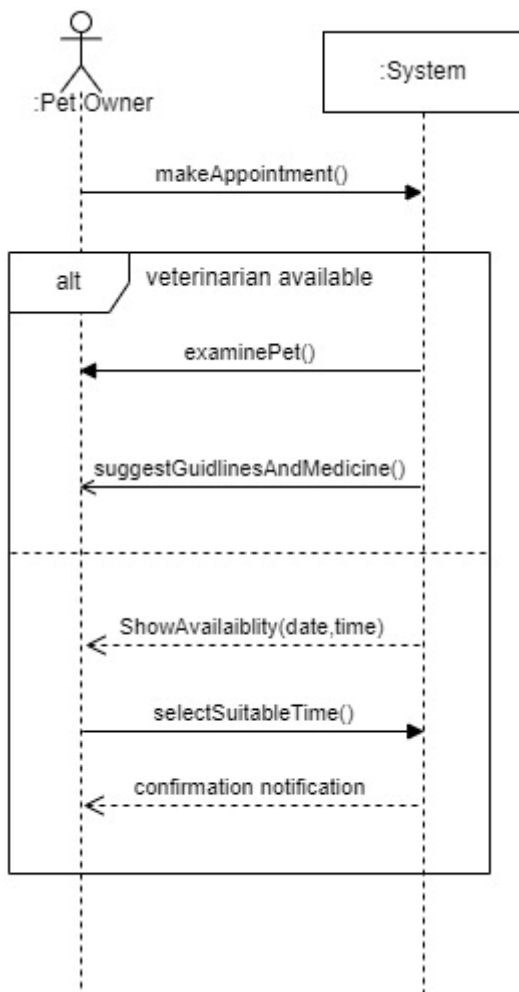


System Sequence Diagrams

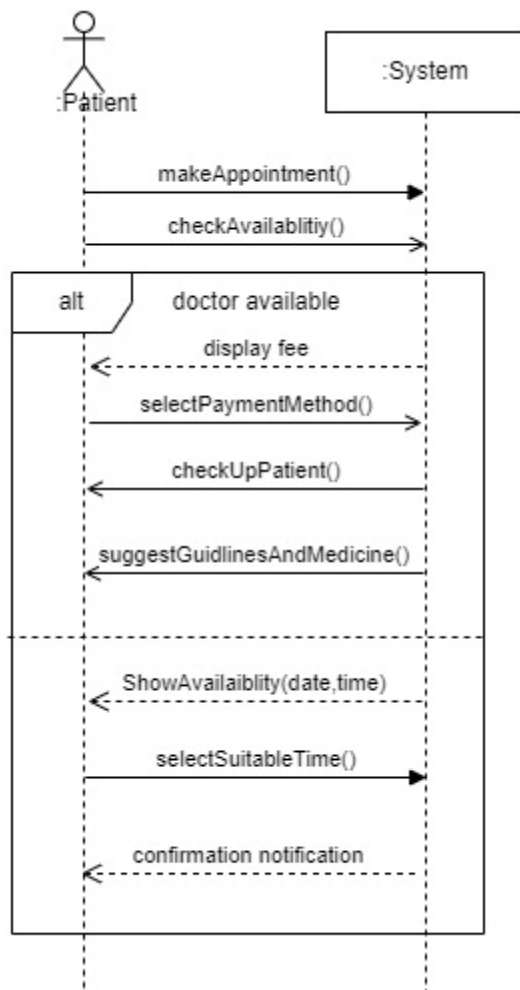
SSD 1 – Use Case: Aware Uncomfortable People



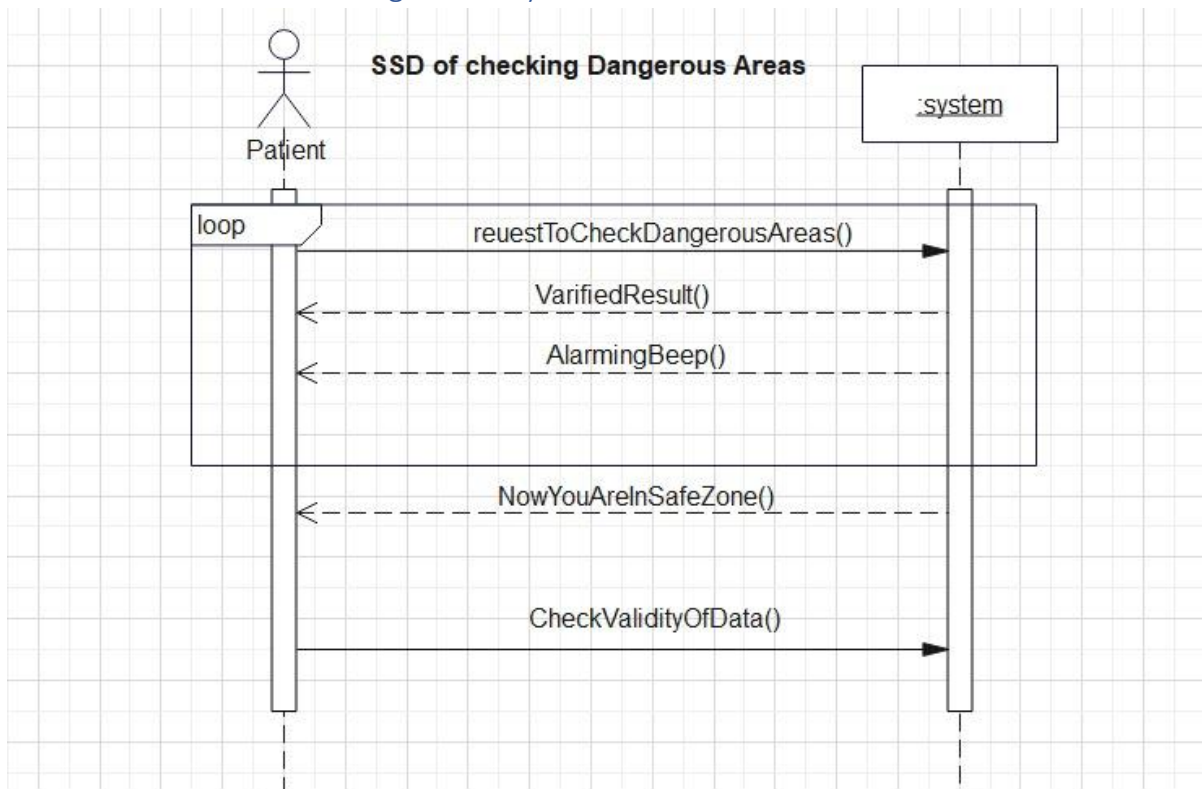
SSD 2 – Use Case: Checkup Pet



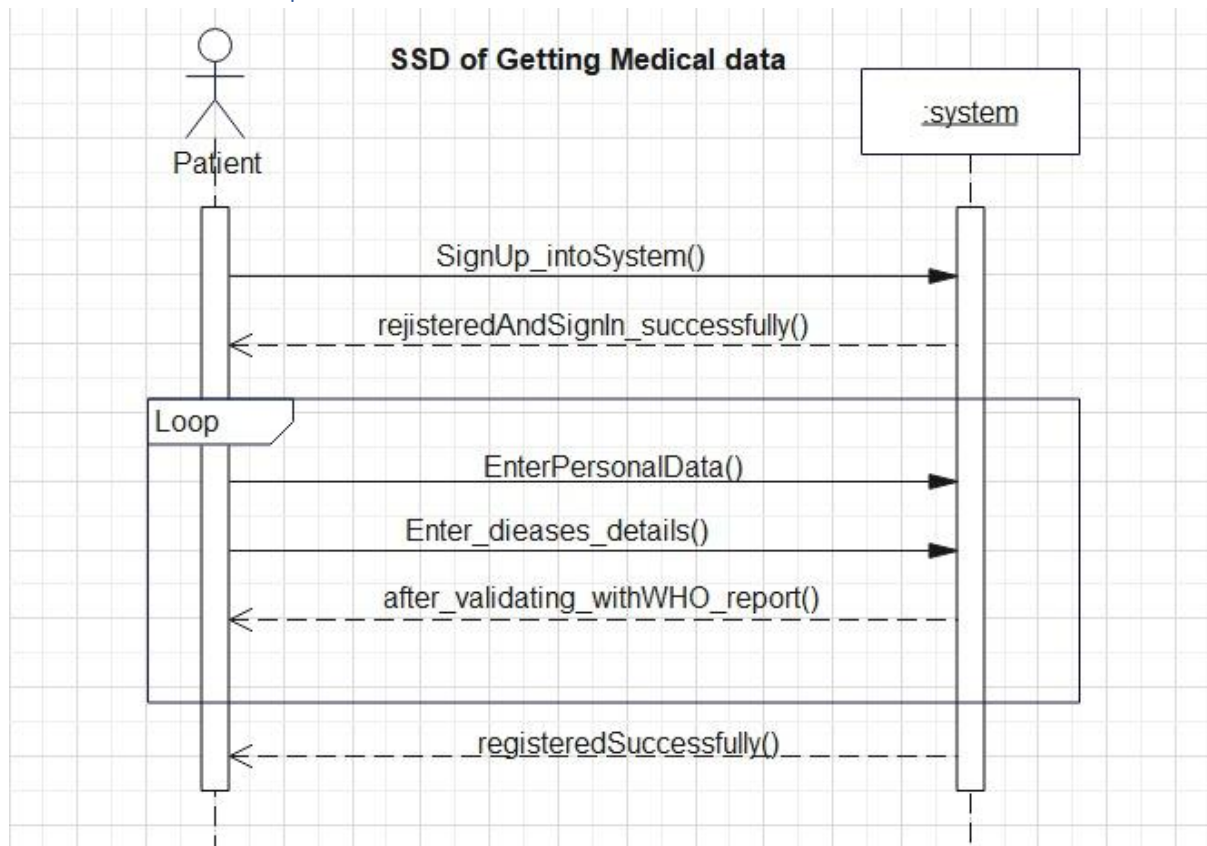
SSD 3 – Use Case: Make appointment



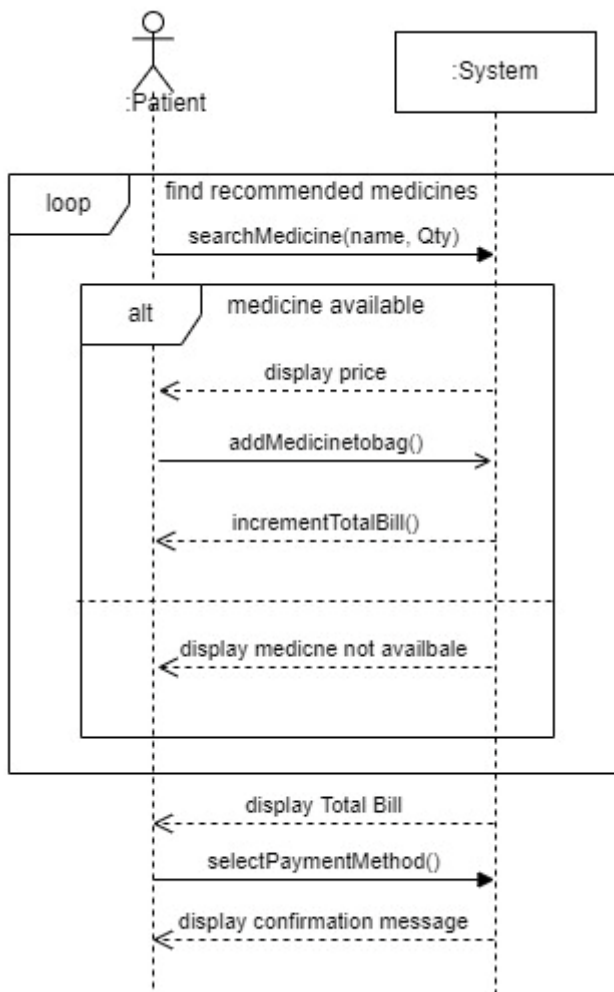
SSD 4 – Use Case: Alert dangerous city



SSD 5 – Use Case: Input medical data



SSD 6 – Use Case: Order medicine



Operational Contracts

OC 1

Contract

Input health information

Operation inputhealthinformation(ID,Reports:string)

Cross references Use Cases: aware uncomfortable people

Pre conditions user agrees to add health information

Post conditions

- A portal was created for user (instance creation)
- information was associated with the medical sector (association formed)
- Information was set to the system (attribute modification)

OC 2

Contract

Send awareness message

Operation SendAwarenessMessage(ID,Email:string,phone_no:long integer)

Cross references Use Cases: aware uncomfortable people

Pre conditions user declines to add information and facilitation

Post conditions

- A message was created based on the report (instance creation)
- Awareness message was associated with the medical sector (association formed)
- Message was set in form of ads and email (attribute modification)

OC 3

Contract

examine pet

Operation examine pet ()

Cross references Use Cases: Checkup Pet

Pre conditions availability of veterinarian and pet is necessary

Post conditions

- Examination became successful (attribute modification)
- medicines were associated with the veterinarian's guidelines (association formed)

OC 4

Contract

Select payment method

Operation SelectPaymentMethod(ID,pin:integer)

Cross references Use Cases: Make Appointment

Pre conditions user must takes the appointment first

Post conditions

- A payment instance p was created (instance creation)
- Multiple methods were set for the user (attribute modification)
- transaction was associated with the banking sector (association formed)

OC 5

Contract

Show availability

Operation ShowAvailability(date:integer,time:integer)

Cross references Use Cases: make appointment

Pre conditions system must provide the accurate date and timing without collapsation

Post conditions

- availaility became successful (attribute modification)
- Patient was associated with the doctor's preception (association formed)
- Examination became successful (attribute modification)

OC 6

Contract

Search medicine

Operation SearchMedicine(Name:string,qty:integer)

Cross references Use Cases: order medicine

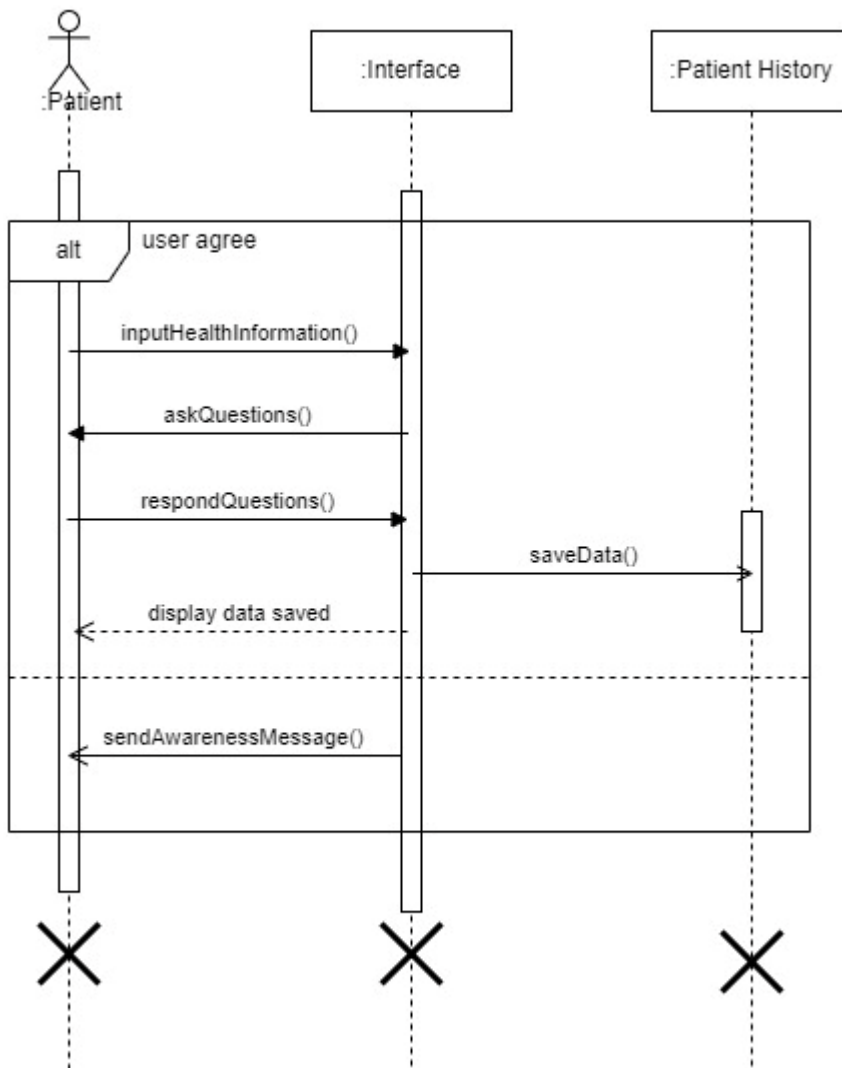
Pre conditions patient must search for medicine advised by expert

Post conditions

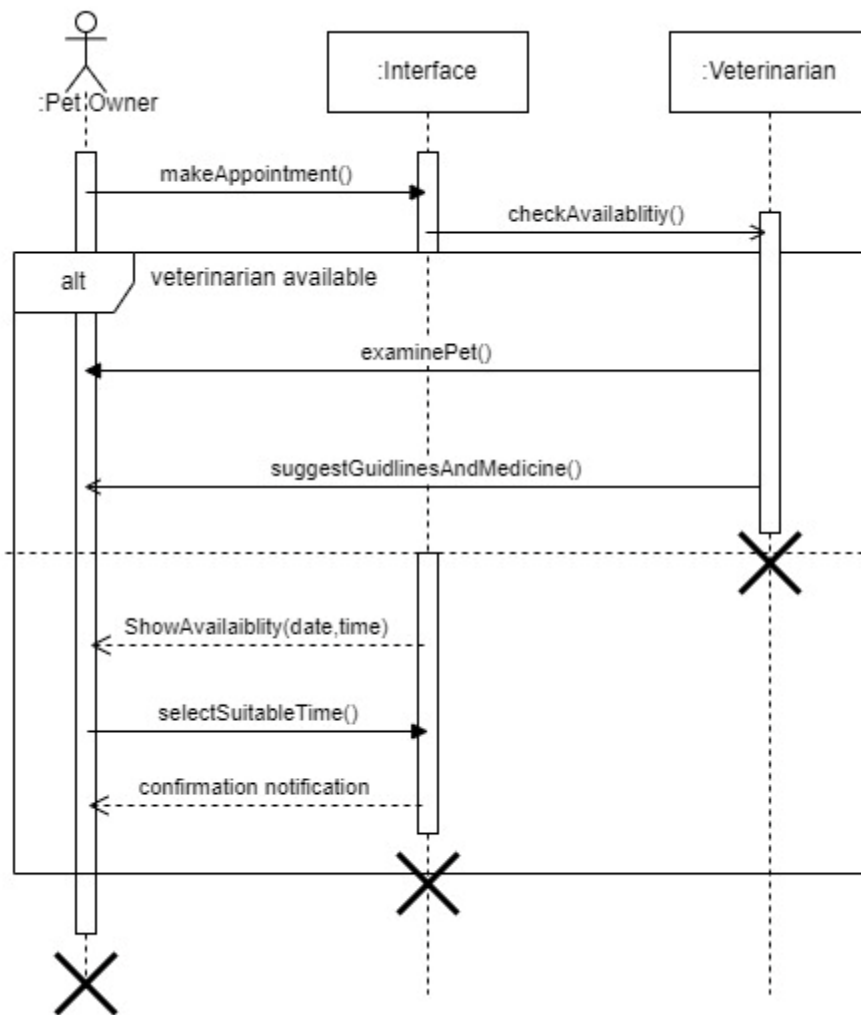
- Search medicine was associated with med report (association formed)
- availaility became successful (attribute modification)
- Medicine was associated with medicine Specification (association formed)

Sequence Diagrams

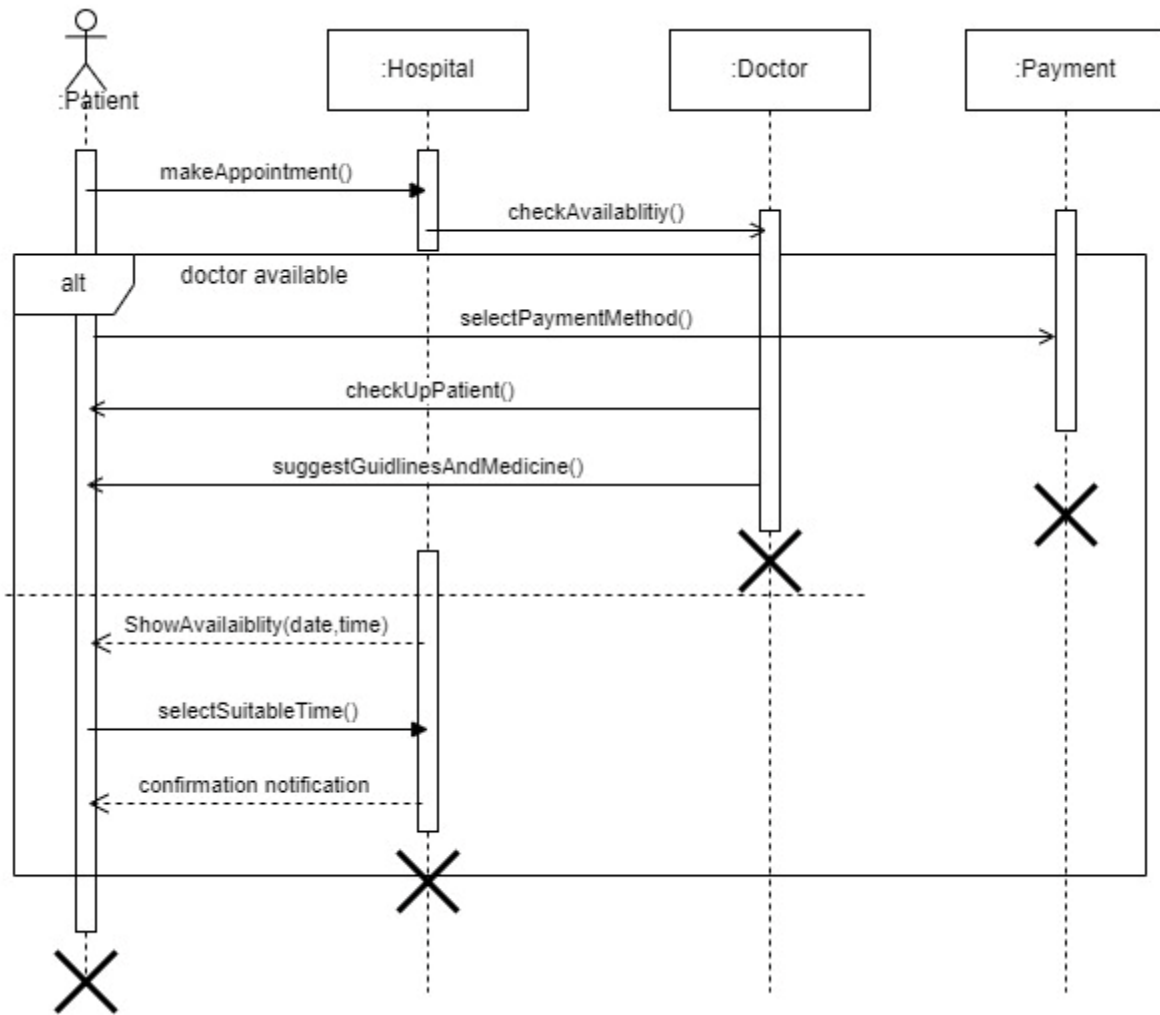
SD 1 – Use Case: Aware Uncomfortable People



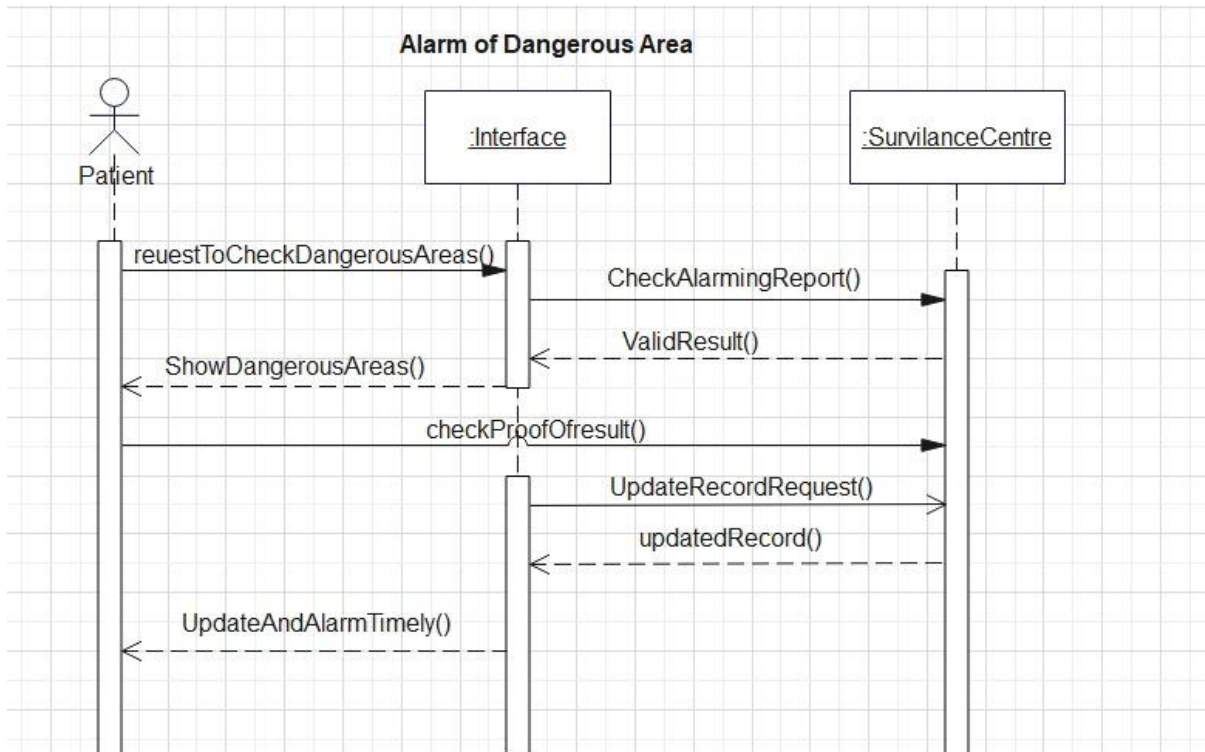
SD 2 – Use Case: Checkup Pet



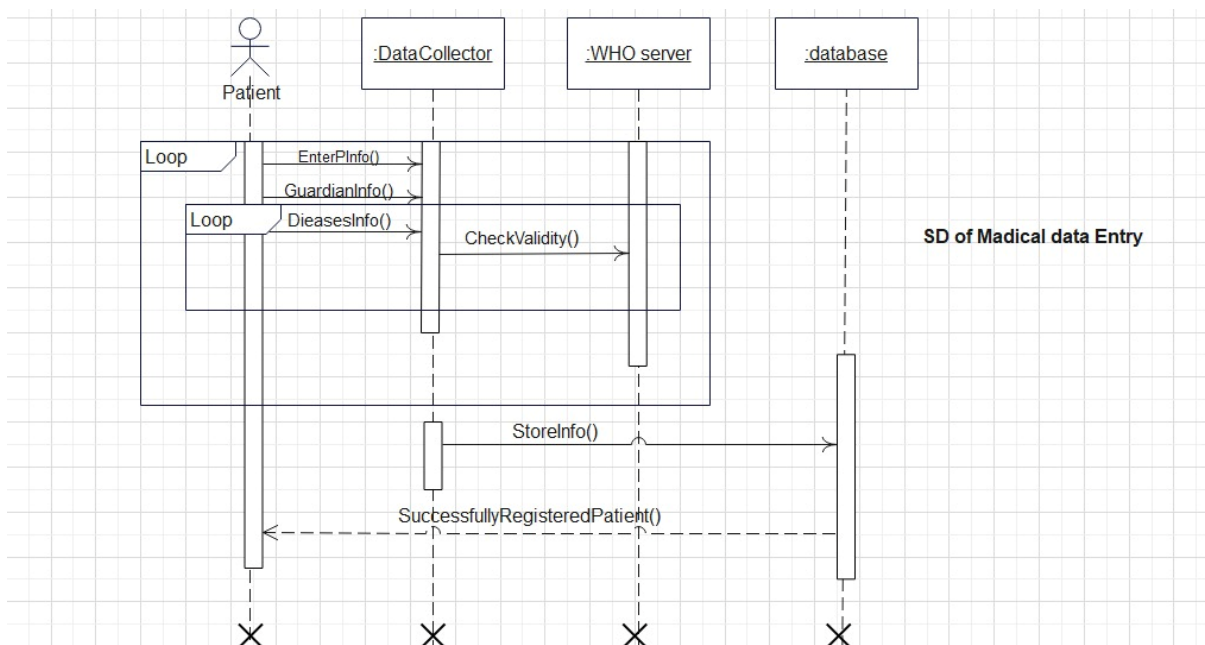
SD 3 – Use Case: Make appointment



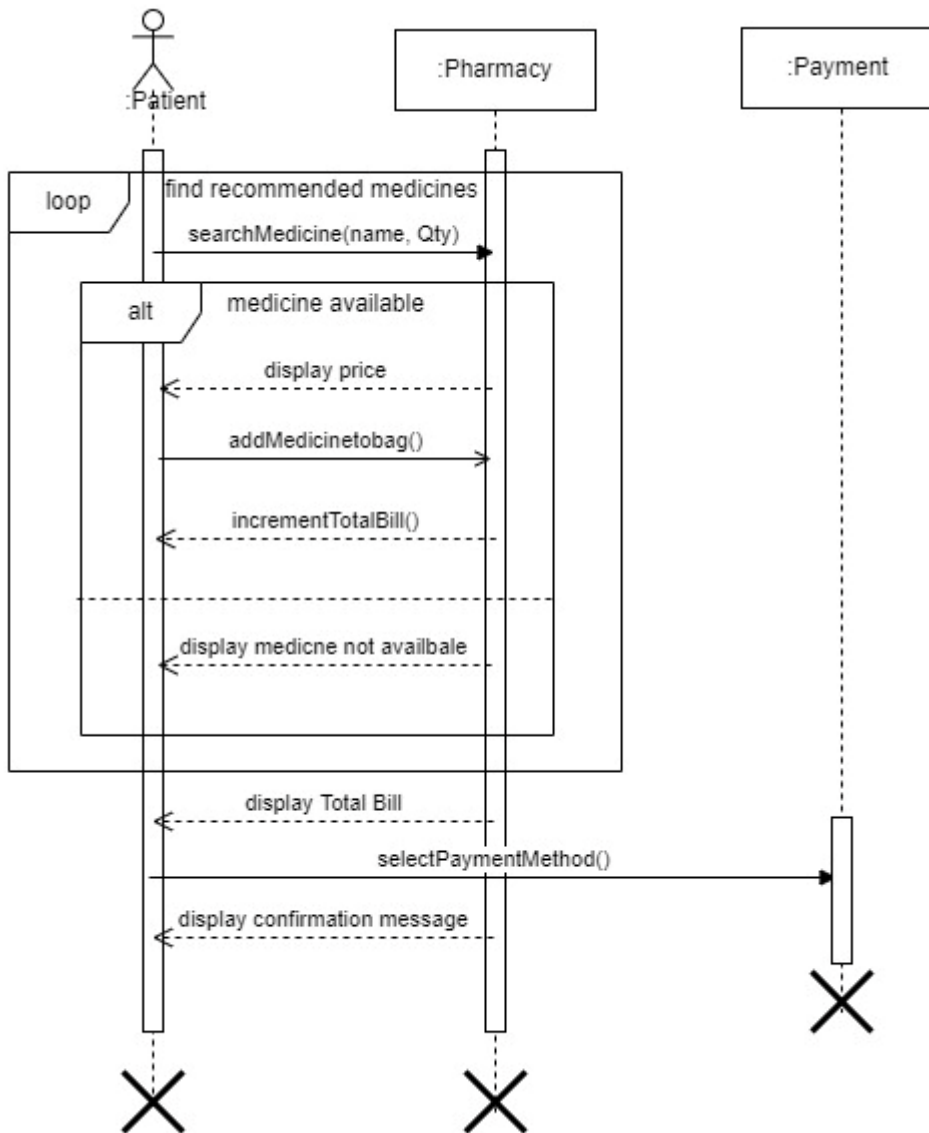
SD 4 – Use Case: Alert dangerous city



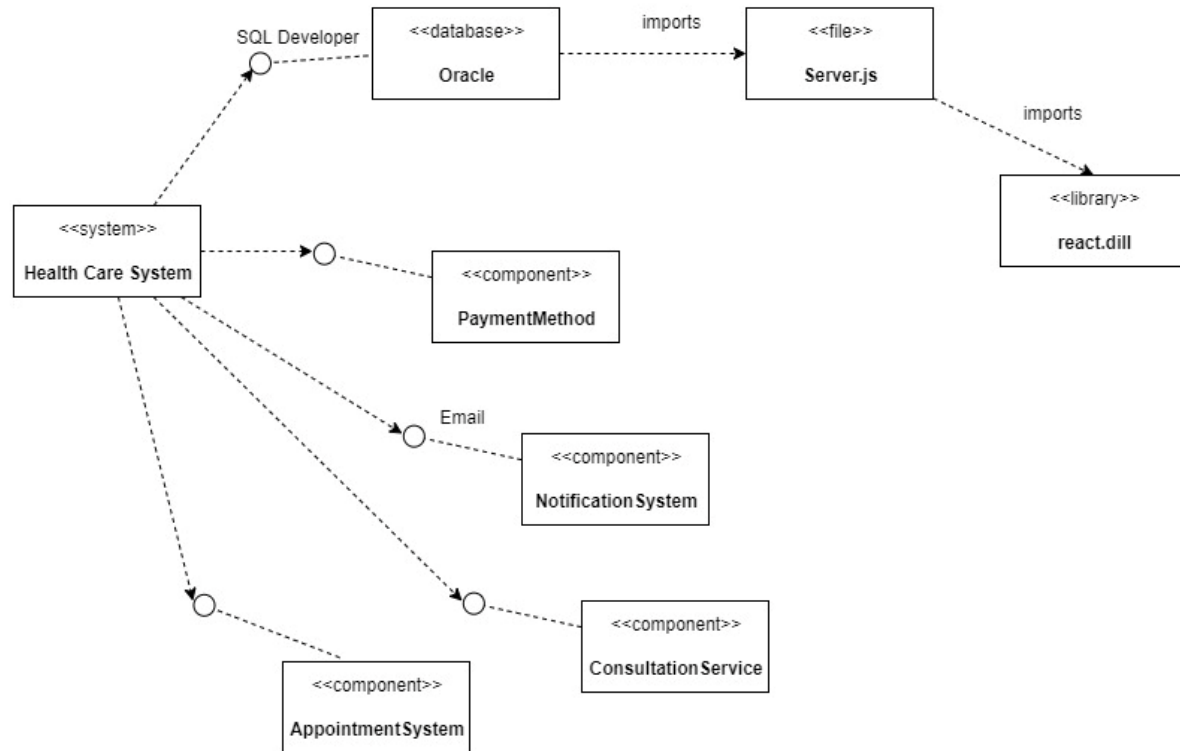
SD 5 – Use Case: Input medical data



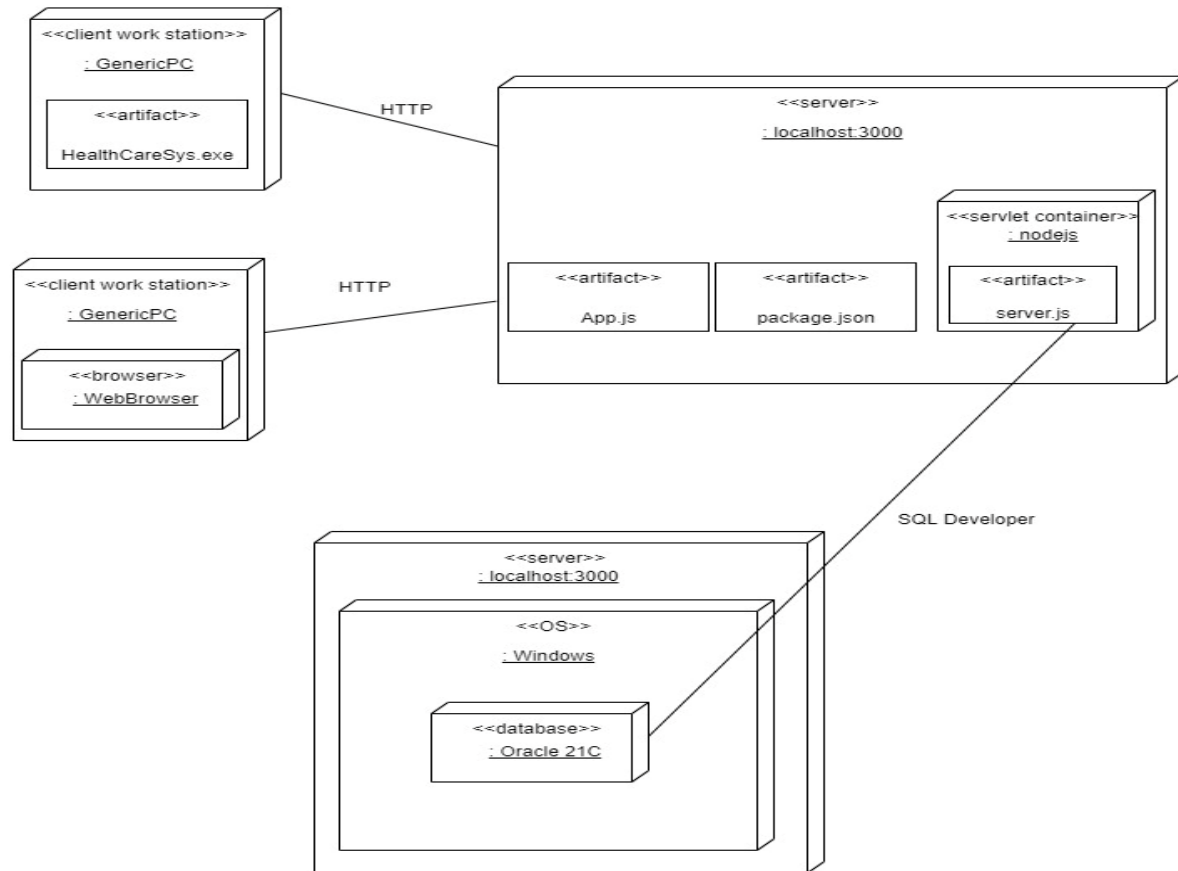
SD 6 – Use Case: Order medicine



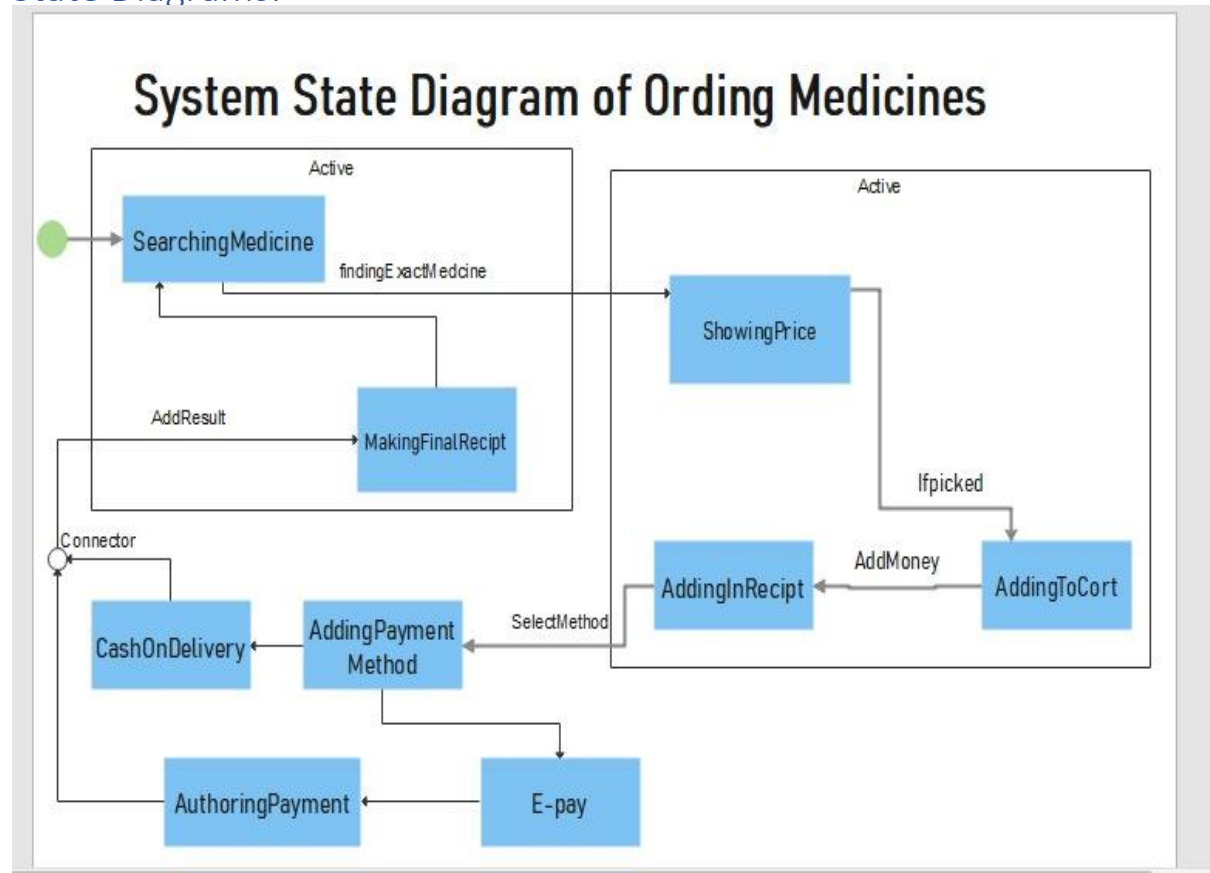
Component Diagram of HCS:



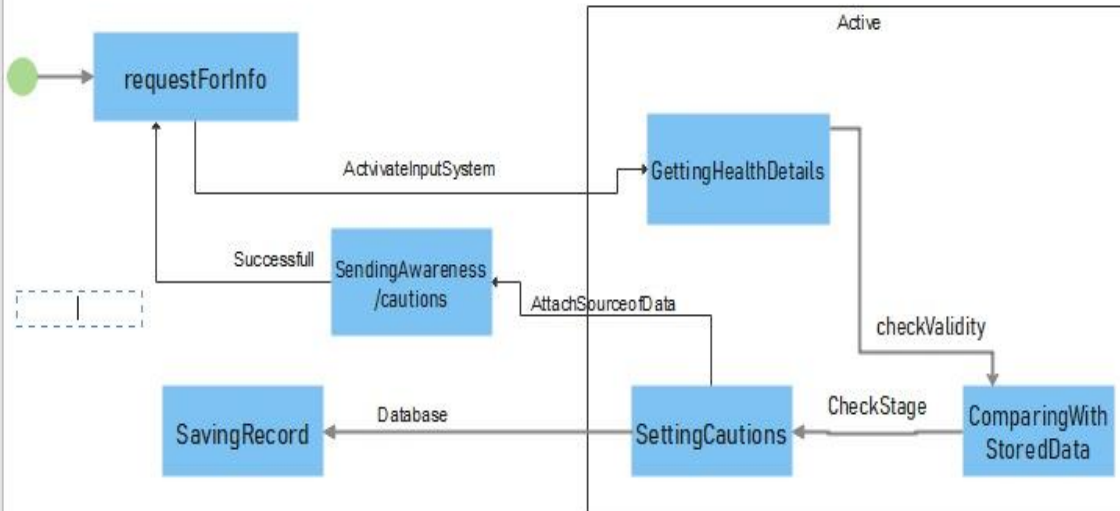
Deployment Diagram of HCS:



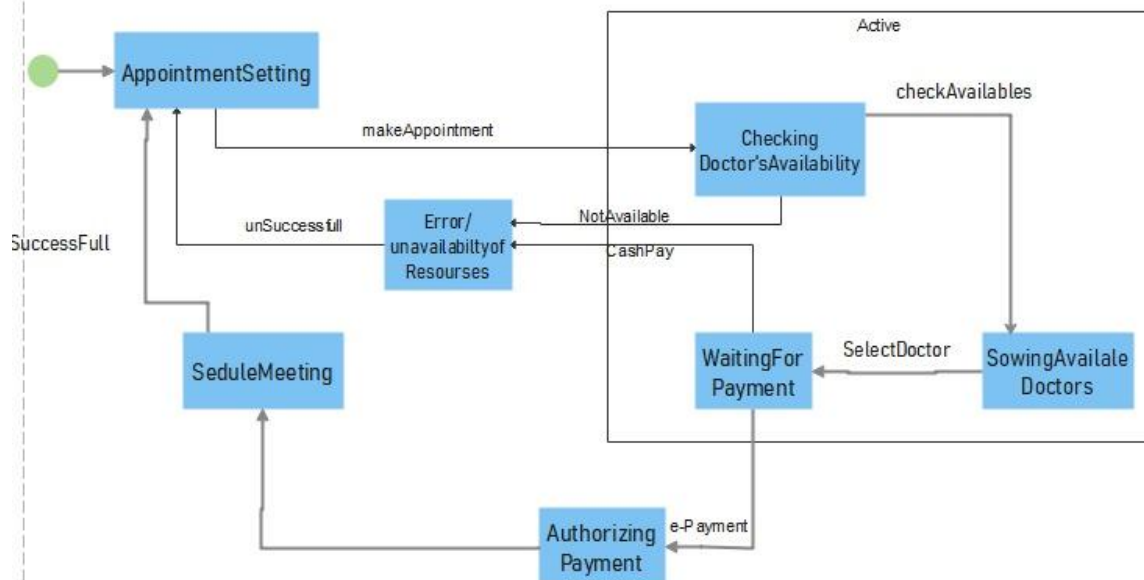
State Diagrams:



System State Diagram of Awareness of People



System State of Making Appointment



Activity Diagrams:

