# KAKATIYA GOVERNMENT COLLEGE HANAMKONDA

## STUDENTS' STUDY PROJECT
# On

## "Web Portal for Health Care"

Under the Supervision of
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## DEPARTMENT OF COMPUTER SCIENCE AND APPLICATIONS
## 2022-23

# CERTIFICATE

This is to certify that the project report entitled **"Web Portal for Health Care"** submitted to the Department of Computer Science and Applications, Kakatiya Government College, Hanamkonda and it was carried out by the following students under my guidance.

| | |
|---|---|
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# 1. INTRODUCTION

To make the essentials of good health practices accessible to everyone, individually **E- Health Advisor** is provided to you.

Functions as a mediator in bringing various health services to your door step. Whether you are based locally or anywhere make Health Care of the best standards completely accessible to you. Health advisor for you will help you in early diagnosis of illnesses in time so that you are saved from the distress in the very first place. We follow the dictum that at any given time in life 'Prevention is better than cure'. Our core strength and expertise is in providing efficient health care services.

## 1.1 Methodology

The Rational process is structured along two dimensions:

·Time division of the lifecycle into phases and iterations.

·Process components--production of a specific set of artifacts with well-defined activities.

Both dimensions must be taken into account for a project to succeed.
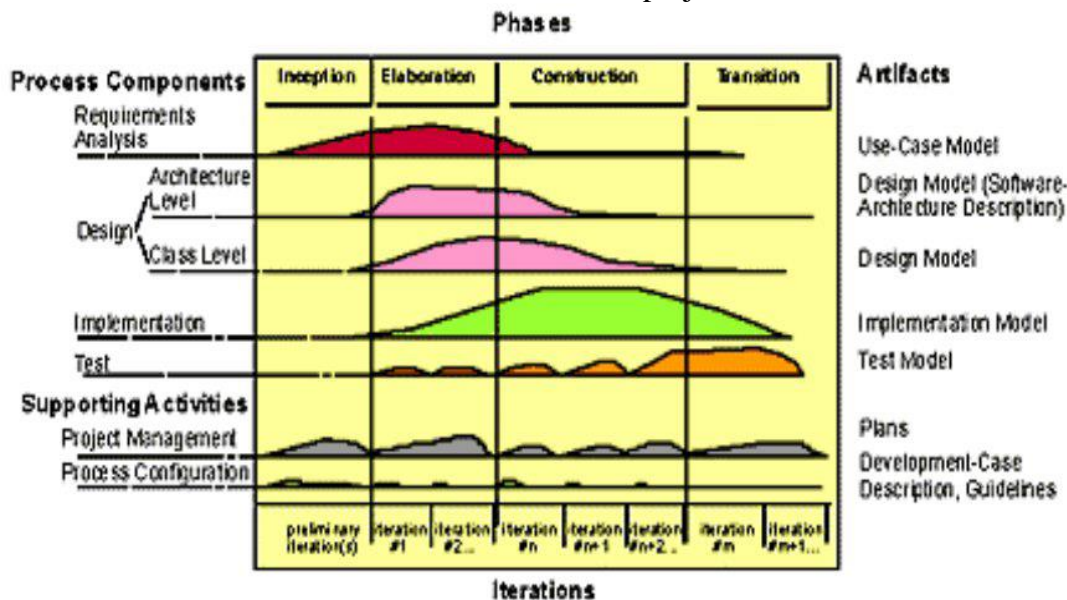


The different phases in RUP are

**Inception**

The goal of the inception phase is to establish a business case for the system. Identifying all external entities that will interact with the system and defining these interaction. This information is used to assess the contribution of system to business.

**Elaboration**

The goals of the elaboration phase are to develop an understanding of the problem domain, establish an architectural framework, and develop project plan and identify key project risks.

**Construction**

This phase is concerned with system design, programming and testing. Parts of the system are developed in parallel and integrated during this phase.

**Transition**

This is the final phase of RUP and is concerned with moving the system from the development community to the user community work in real environment.

Software architecture is not a one-dimensional thing - it is made up of concurrent multiple views. Figure shows the "4+1" views of architecture.

The *use case view* describes the system as sets of transactions from the point of view of external actors. This view is initially created in the inception phase of the lifecycle and drives the rest of the process.

The *logical view* contains the collection of packages, classes, and relationships. This view is initially created and matured in the construction phase.

The *process view* contains processes, threads, inter-process communication and synchronization mechanisms. This view is initially created in the elaboration phase and matured in the construction phase.

The *implementation view* contains modules and subsystems. This view is initially created in the elaboration phase and matured in the construction phase.

The *deployment view* contains the physical nodes in the system and the connections between the nodes. This view is created in the elaboration phase of the process.

### *The "4+1" View of Architecture*
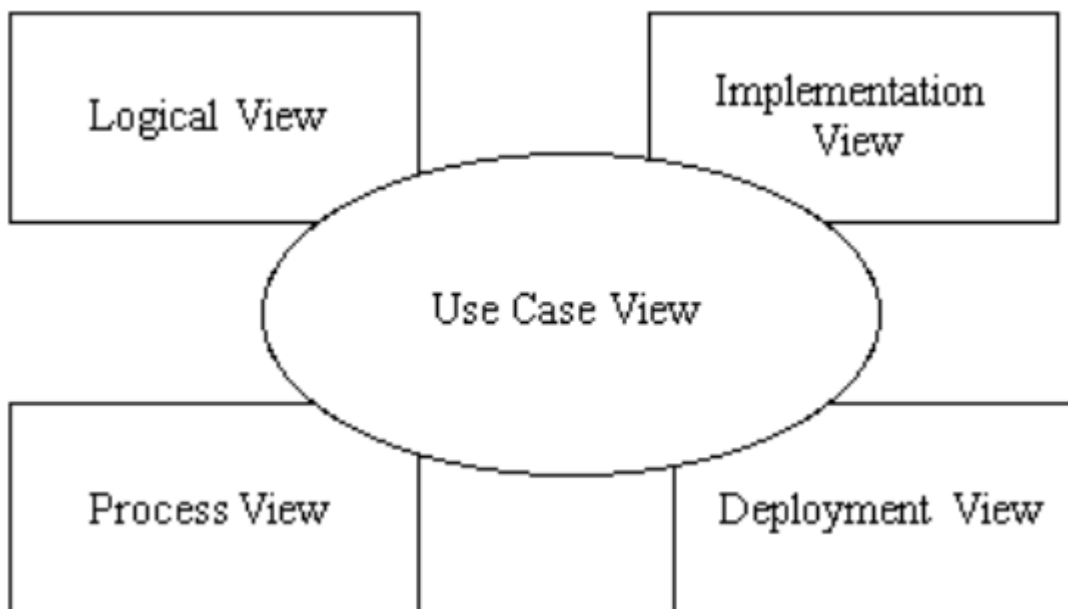


## 1.2 Purpose

The main purpose of this project is to implement a computer based Healthcare Information System. This system will help the users to identify certain diseases by answering certain questions asked by the system. Based on the diagnose received the user will be getting medicines that are available at the local chemist without prescription with an advice to visit the doctor.

## 1.3 Scope

There are three basic users - Patient, Admin, nonmembers

- All patients have their own profiles and also can view their health record, reports, and prescription. Patient answering queries and can get the details of the local doctor, hospital, medicines as a report
- Admin has the authority to add/delete users, to generate and view reports. Admin updates health record.
- Nonmembers can view only required information.

## 1.4 Definitions, Acronyms and Abbreviations

**EHA:**
**E Health Advisor:** It's a web application that provides online medical services for people.

**Admin:**
**Administrator**: He has the authority to add/delete users, to generate and view reports. Admin updates health record.

**WASCE**
**Web Sphere Application Server Community Edition:** It is an application server that runs and supports J2EE and web service applications.

**DB2:**
**Database_2**: A database management system that provides a flexible and efficient database platform to maintain records of patients, admin.

**JSP:**
**Java Server Pages:** It is used to create dynamic web content.

**J2EE:**
**Java 2 Enterprise Edition:** A programming platform which is a part of java platform for developing and running

**UML:**
**Unified Modeling Language:** It is a standard language for writing software blueprints. The UML may be used to visualize, specify, construct and document.

**XML:**
**Extensible Markup Language:** It is a text based format that let developers describe, deliver and exchange structured data between a range of applications to client for display and manipulation.

**HTTP:**
**Hypertext Transfer Protocol:** It's a service protocol.

**RAD:**
**Rational Application Developer:** It is a development tool that helps to design web pages and also helps to design the diagrams like ER, Database schema diagrams and to generate DDL.

**1.5 TOOLS USED**

**Application architecture – JAVA, J2EE**

**JAVA**
Java is an object-oriented programming language developed by Sun Microsystems a company best known for its high end UNIX workstations.
Java language was designed to be small, simple, and portable across platforms, operating systems, both at the source and at the binary level, which means that Java programs (applet and application) can run on any machine that has the Java virtual machine (JVM) installed.
**J2EE**

**Java Platform, Enterprise Edition or Java EE** is a widely used platform for server programming in the Java programming language. The Java platform (Enterprise Edition) differs from the Java Standard Edition Platform (Java SE) in that it adds libraries which provide functionality to deploy fault-tolerant, distributed, multi software, based largely on modular components running on an application server.

### Web server – WASCE

**WebSphere Application Server Community Edition** (from now on WASCE) is a free, certified Java EE 5 server for building and managing Java applications. It is IBM's supported distribution of Apache Geronimo that uses Tomcat for server container and Axis 2 for web services. Over 15 WASCE developers are committers in the Apache Geronimo project.

### Development tool –RAD

IBM Rational Application Developer for WebSphere Software (RAD) is an integrated development environment (IDE), made by IBM's Rational Software division, for visually designing, constructing, testing, and deploying Web services, portals, and Java (J2EE) applications.

### Database platform – DB2

DB2 Database is the database management system that delivers a flexible and cost effective database platform to build robust on demand business applications and supports the J2EE and web services standards.

### Design tool – Rational Software Modeler

**IBM Rational Software Modeler**, (RSM) made by IBM's Rational Software division, is a Unified Modeling Language UML 2.0 and design tool. Rational Software Modeler is built on the Eclipse open-source software framework and includes capabilities focused on visual modeling and model (MDD) with the UML for creating resilient, thought-out applications and web services.

### 1.6 References

www.zturk.com/edu/readings/RATIONAL-APPROACH.PDF

### 1.7 Technologies to be used

**DB2:** Relational Database Management System.
**RAD:** Rational Application Developer.
**WASCE:** Websphere Application Server Community Edition.
**Rational Rose 2000**
**J2EE:** (Servlet, JSP, JAXP, Java Beans) Application architecture.
**JAVA:** Application architecture.
**AJAX:** Asynchronous Java Script and XML.
**XML:** Extension Markup Language.
**Web 2.0:** RSS Feed 2.0.

### 1.8 Overview:

The SRS will include two sections, namely:
**Overall Description:**
Registration for non members, patient. Online maintenance of health record. Online generation and updating of reports.

**Specific Requirements:**

I. It focuses on the acquisition and management of disease database
II. It mainly emphasized creation and implementation of patient and disease management information system.
III. It will ease and speed up the planning decision making process secure confidential and reliable reports
IV. It helps for addressing problems of security secrecy and confidentially of patients.
V. Used to check the delays, errors, inconsistencies in medical records and access to historical records
VI. To maintain patient profile

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## 2. OVERALL DESCRIPTION

### 2.1 Product Perspective
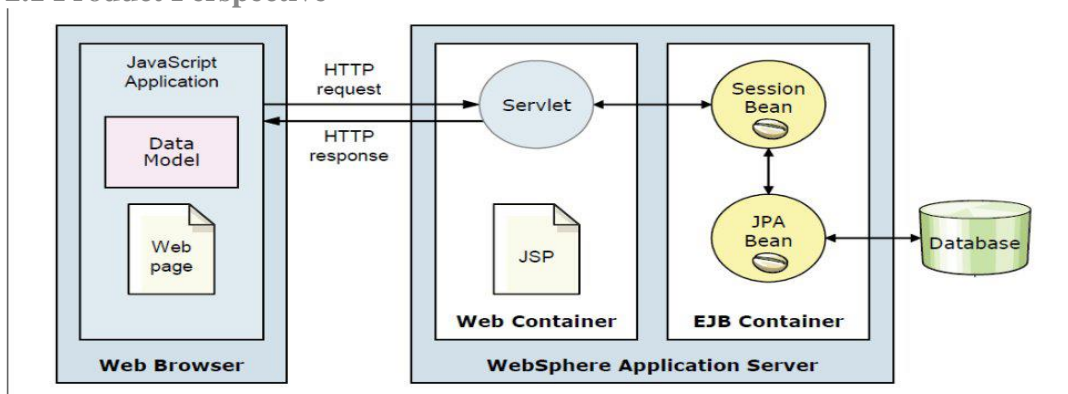


### 2.2 Software Interface

**Front End Client:** web browser, operating system (any)

**Web Server:** WASCE, Operating System (any)

**Data Base Server:** DB2, Operating System (any)

**Back End:** RAD (J2EE, Java, Java Bean, Servlets, HTML, XML, AJAX), DB2, OS (Windows),WebSphere(Web Server)
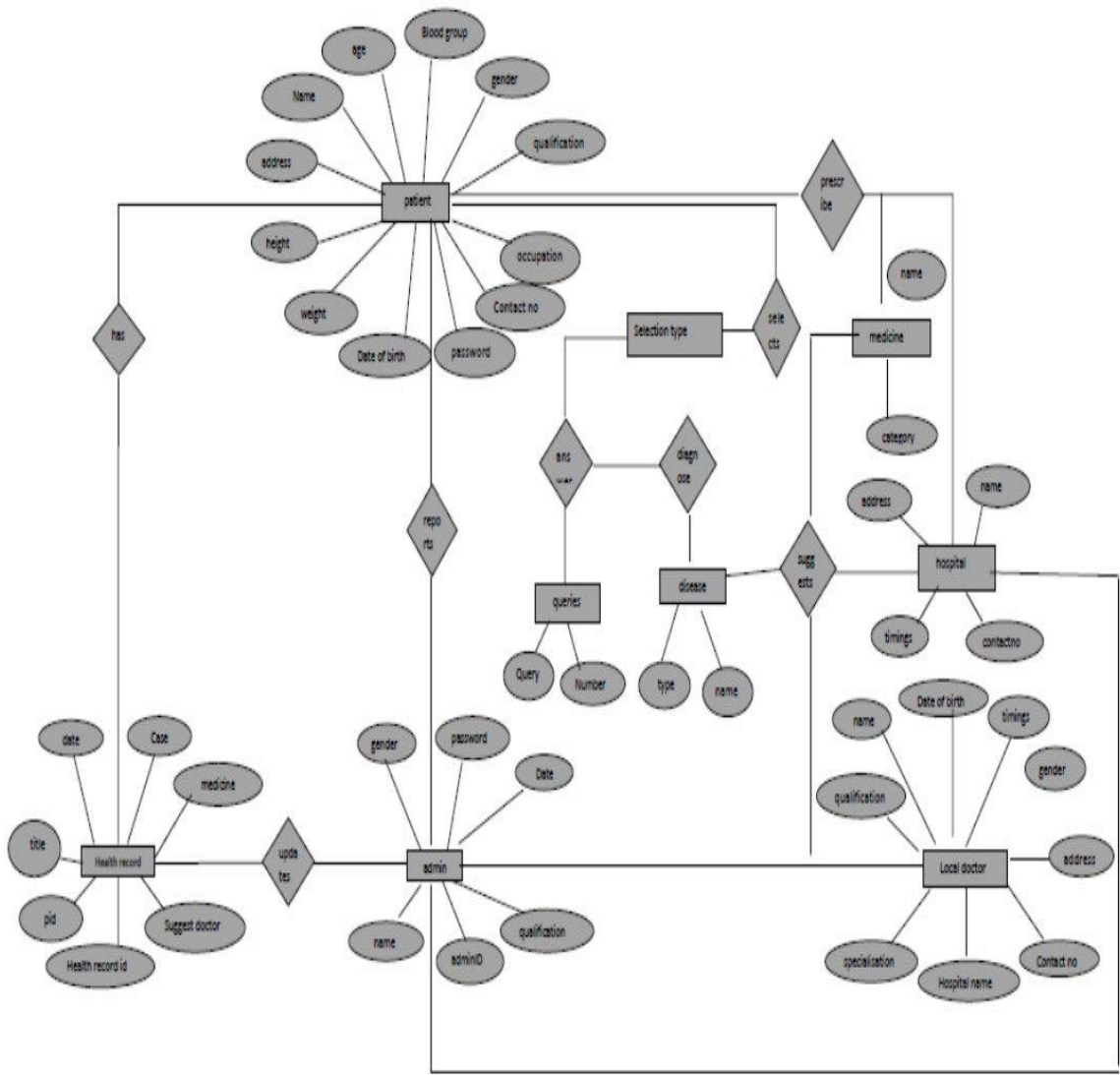
### 2.3 Hardware Interface
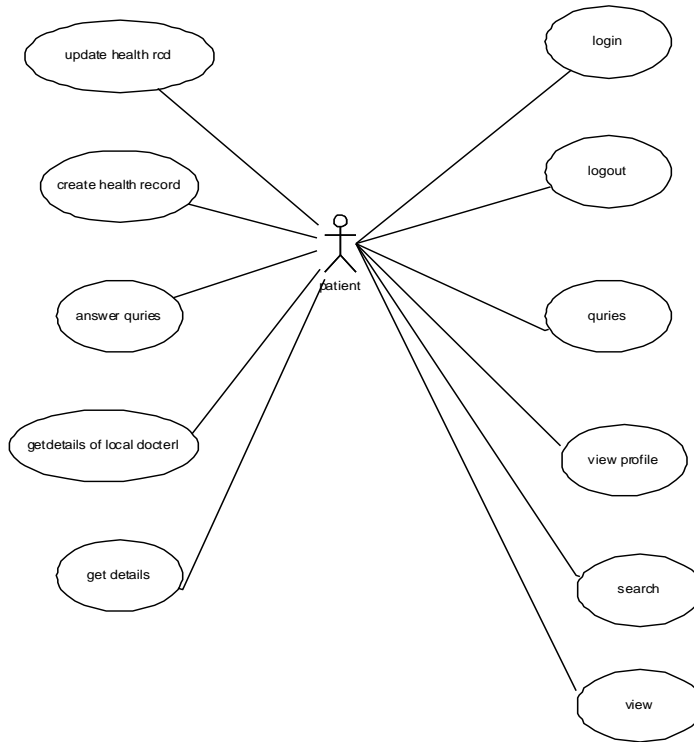Tables

### 2.4 Communication Interface
- Client (patient) on Internet will be using HTTP/HTTPS protocol.
- Client (non member) on Internet will be using HTTP/HTTPS protocol.
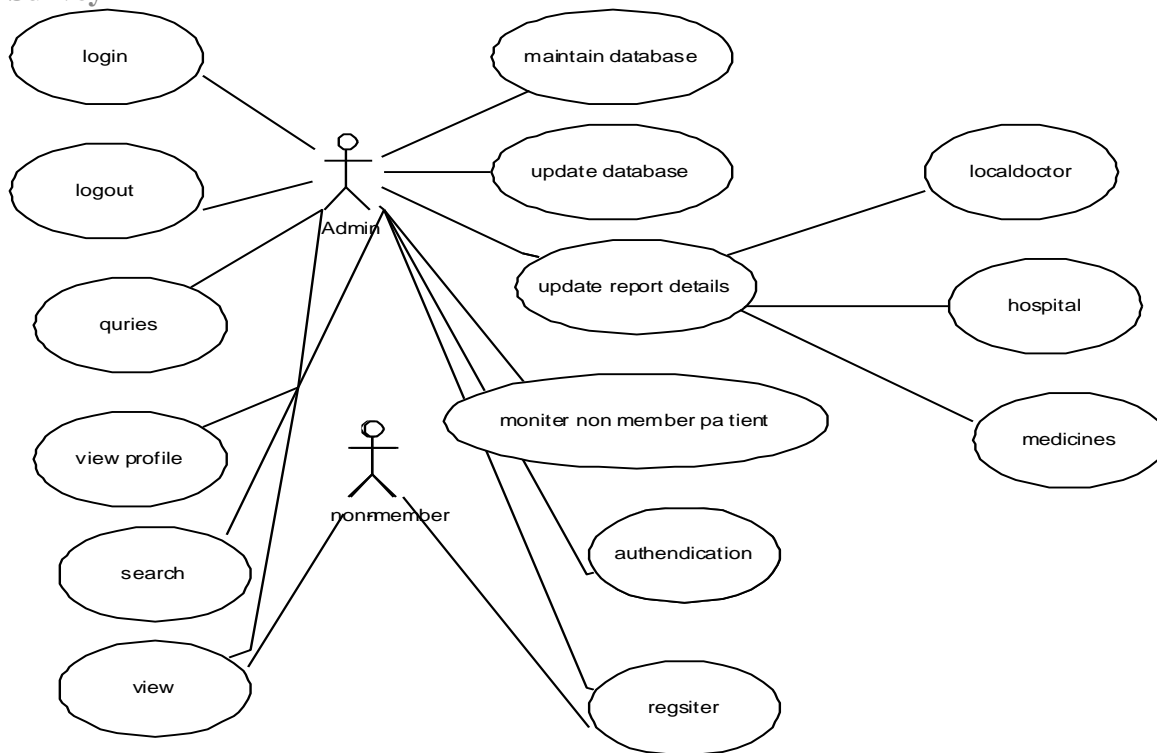
### 2.5 Constraints

- GUI is only in English.
- Login and password is used for the identification of patient.
- Only registered patients are authorized to use the services.
- Limited to HTTP/HTTPS.
- This system is working for single server.
- Nonmembers can only view the contents

## 2.6 ER Diagram

update health rcd

login

create health record

logout

answer quries

patient

quries

getdetails of local docterl

view profile

get details

search

view

**Survey**

login

maintain database

update database

localdoctor

logout

Admin

update report details

hospital

quries

moniter non member pa tient

medicines

view profile

nonmember

authendication

search

view

regsiter

**Patient:**
Patients can view their profile, health record, reports which contain doctor's prescription and medicines, hospital details,

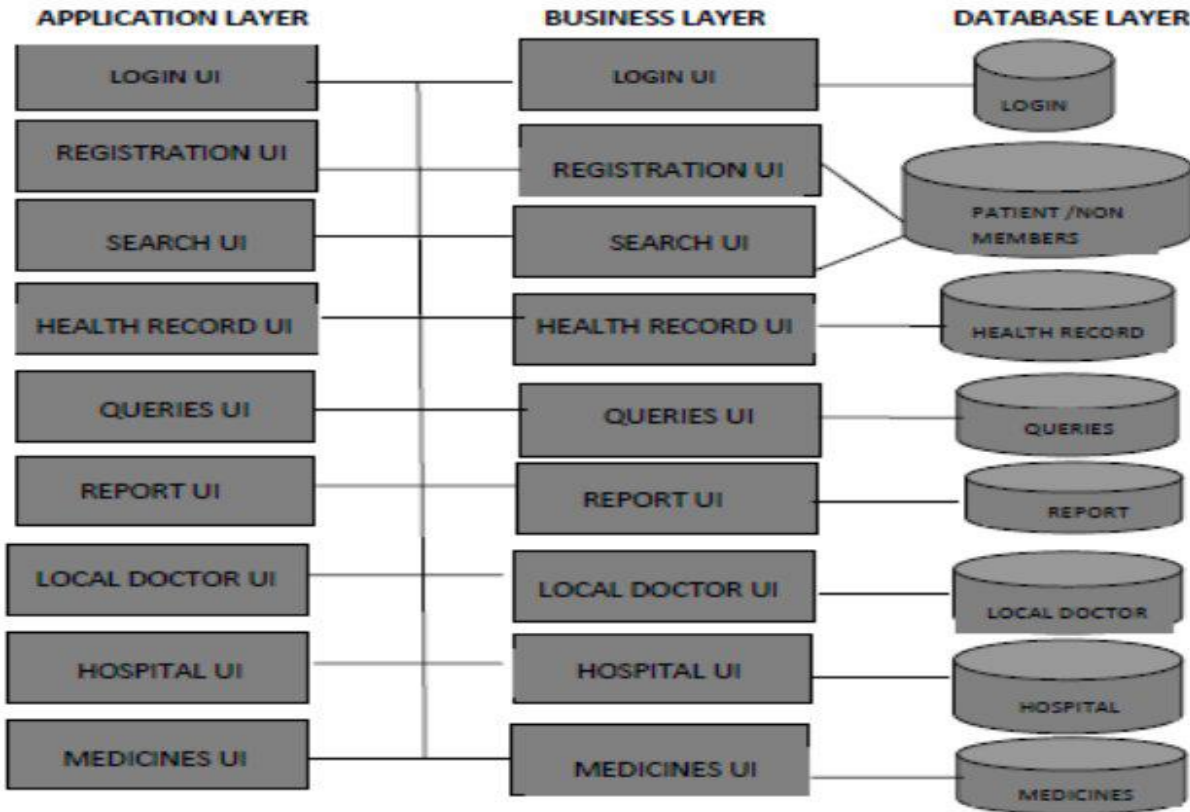Patients can answer queries to diagonise their disease.

**Admin:**
Admin has the authority to add/delete users, to generate and view reports. Admin updates health record. Admin controls the activity of non
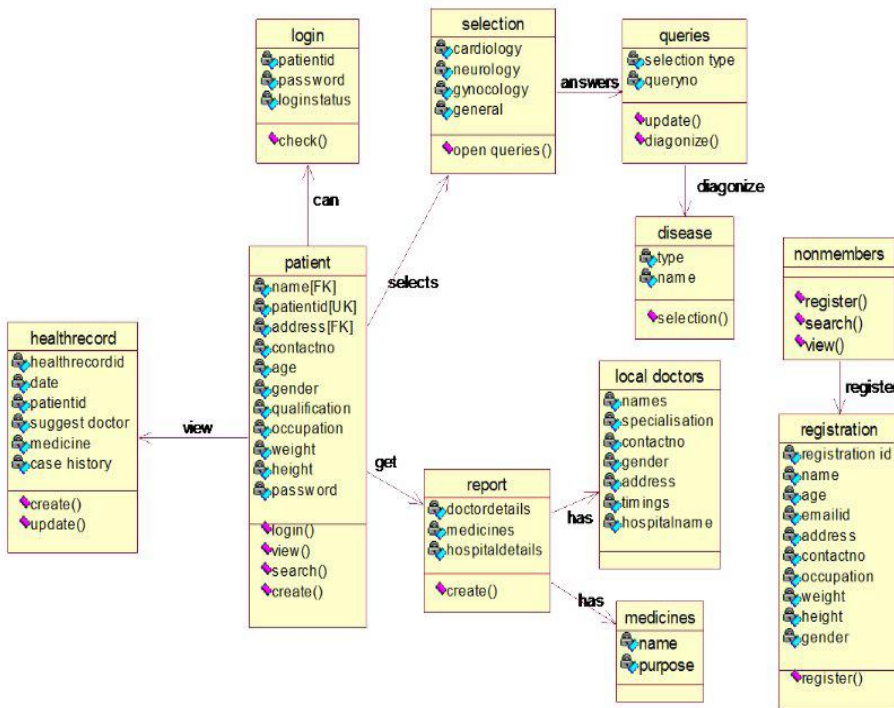members.
**Non-members:**
Non-members can view the content and can also register.
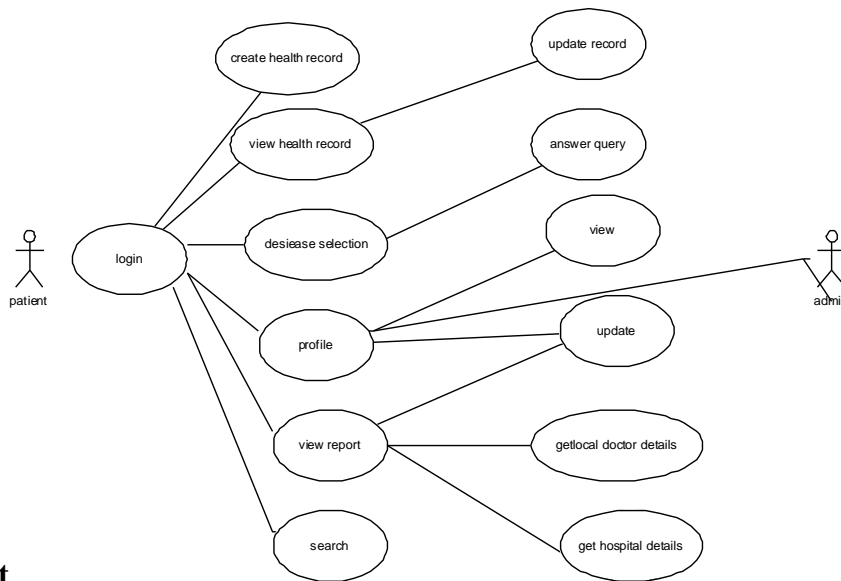
## 2.8 Architecture Diagram



## 2.9 Database Design

# 3. SPECIFIC REQUIREMENTS
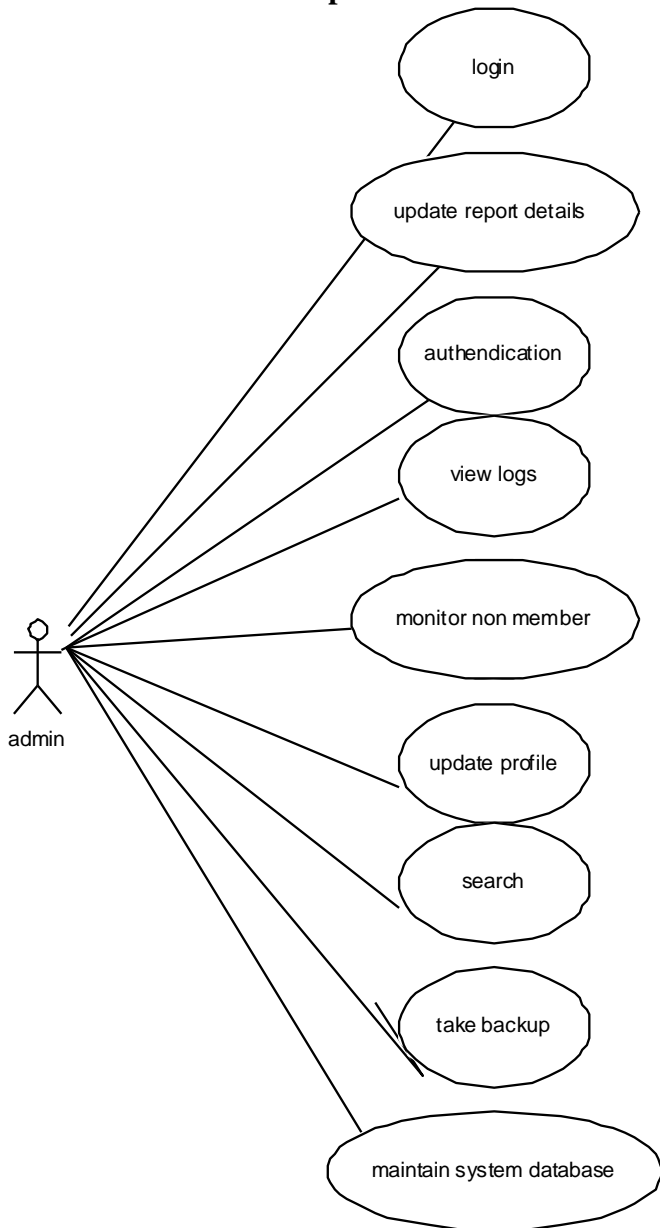
## 3.1 Use case reports



### 3.1.1 Patient use-case report

| USE CASE | DESCRIPTION |
|---|---|
| Login | Patient can sign in to view his/her profile, health record |
| Create Health Record | Patient can create his own health record |

| View profile | Registered patient can view his personal details |
|---|---|
| Update profile | Registered patient can update his personal details |
| Search | Patient can search for a particular item he requires |
| Get Report | Patient can receive the report |
| Get medicines | Patient can get the details of the medicines he needs |
| Get local doctor details | Patient can get the details of the local doctor with whom they can consult |
| Get hospital details | Patient can get the details of the hospital as per the report |
| Disease selection | Patient can select particular disease to answer the queries |
| Answer queries | Patient answers the queries according to his disease selection |
| Update health record | Patient can update his health record |
| View health record | Patient can view health record |

## 3.1.2 Admin use-case report

| USECASE | DESCRIPTION |
|---|---|
| Login | Admin logs in to monitor |
| Generate report | Admin generates report for patients |
| Authenticate users | Verifies whether the users are authenticated patients or not |
| View logs | Admin can view log details of patient |
| Monitors non-members | Admin provides restricted access to non-members |
| Update profiles | Admin updates patients profile |
| Search | Admin can monitor the search made by non-members |
| Take backup | Admin can take the backup of data base |
| Maintain system database | Updates and maintains system data base |

### 3.1.3 Non-member use-case report
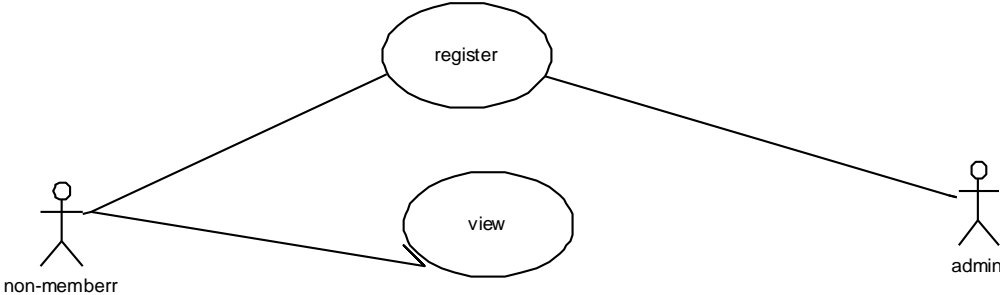


| USE CASE | DESCRPTION |
|---|---|
| Register | Non-members can register |
| View | Non-members can view the content without registering |

**3.2 Activity diagrams:**
**3.2.1 Activity diagram for login**

enter usernsame and password

valid

login successfully

display user homepage
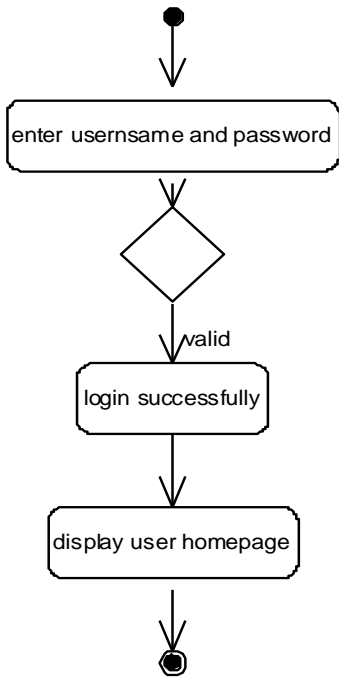
User is made to enter the username and password, they are verified and if the username and password are valid then the user's

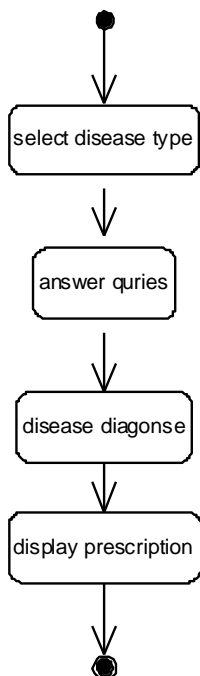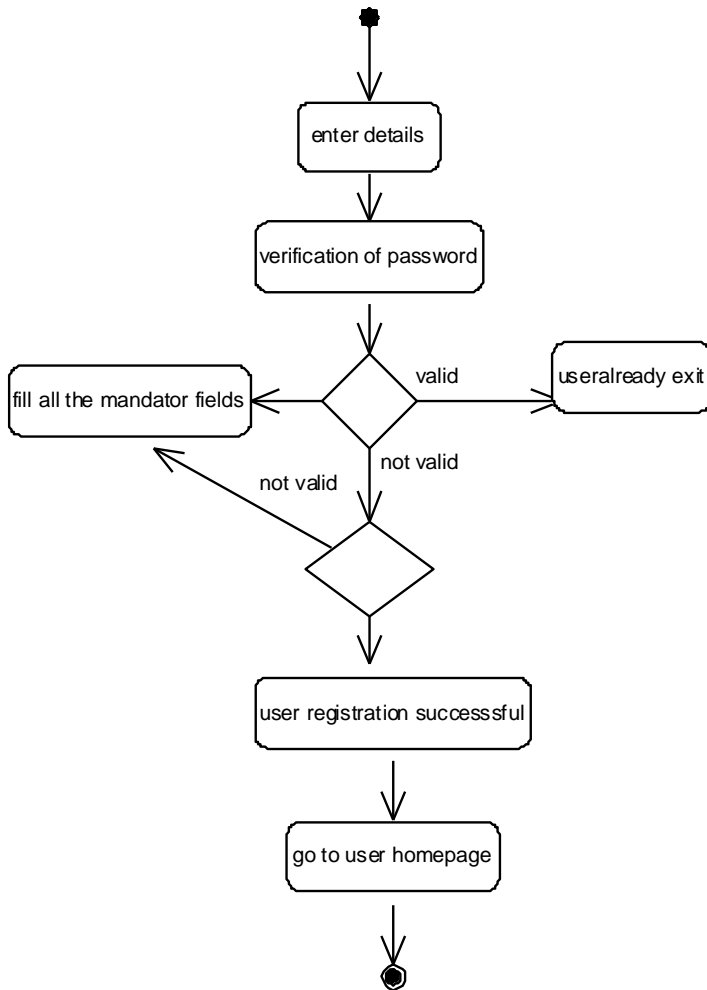**selec**                        displayed indicating he is logged in or else they are asked to re enter the correct values

**3.2.2 Activity Diagram For Disease Selection**

Initially the patient selects a disease type under given category and answers to the queries then the disease is diagnosed an on the screen

**3.2.3 Activitiy Diagram For Non-Members**



select disease type

answer quries

disease diagonse

display prescription

```
                          ■

                          ↓

                    ┌──────────────┐
                    │ enter details│
                    └──────────────┘

                          ↓

                  ┌────────────────────┐
                  │verification of password│
                  └────────────────────┘

                          ↓

┌──────────────────────┐        valid      ┌──────────────────┐
│fill all the mandator fields│◄────  ◇  ────►│useralready exit  │
└──────────────────────┘        ╱   ╲        └──────────────────┘
              ▲                      not valid
        not valid              ↓

                          ◇

                          ↓

              ┌──────────────────────────┐
              │user registration successsful│
              └──────────────────────────┘

                          ↓

                  ┌──────────────────┐
                  │go to user homepage│
                  └──────────────────┘

                          ↓

                          ◉
```

Initially non member is made to fill all fields filled in registration form. Once the user clicks submit, the username is verified. If the username is already present, then the user is again taken back, so that he can change the username. If the username is not present then is no password and remaining mandatory fields. If any of the mandatory field is left empty or filled incorrect, then the user is in correct values.
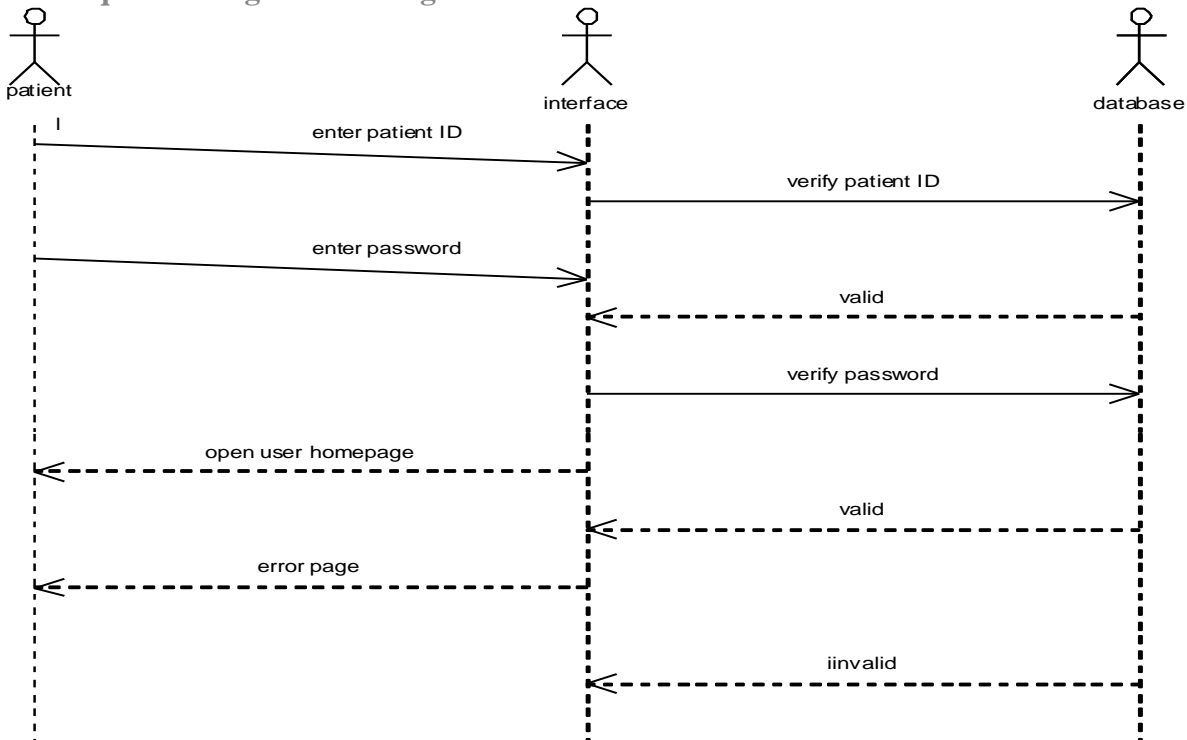 Once all these verifications are succeeded, then the registration is done.

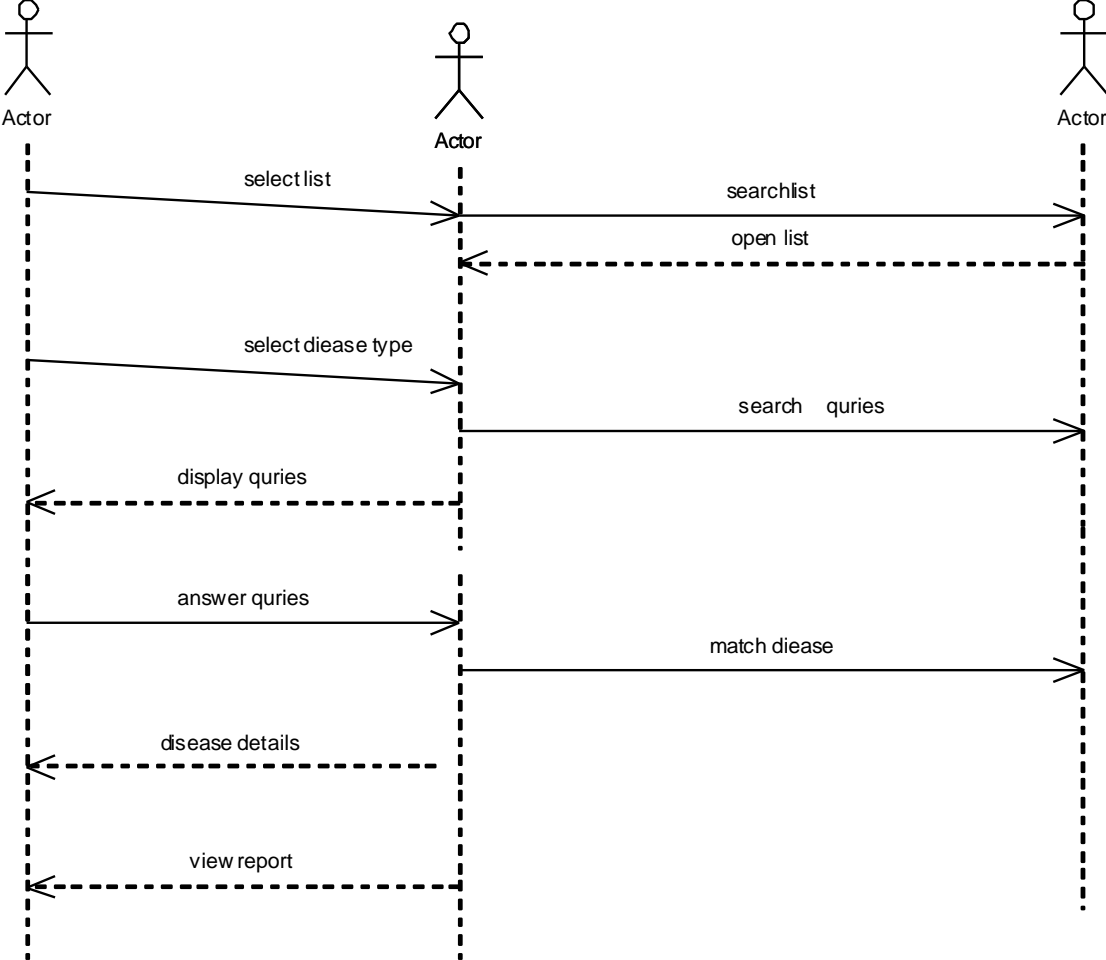### 3.2.4 Activity Diagram For Getreport
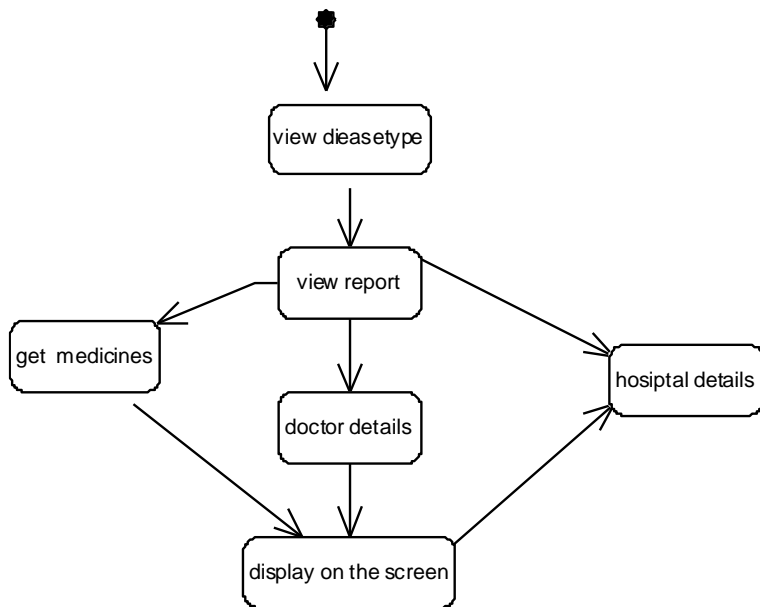


According to the disease details a report is generated which consists of medicines details, local doctor details are displayed on the screen
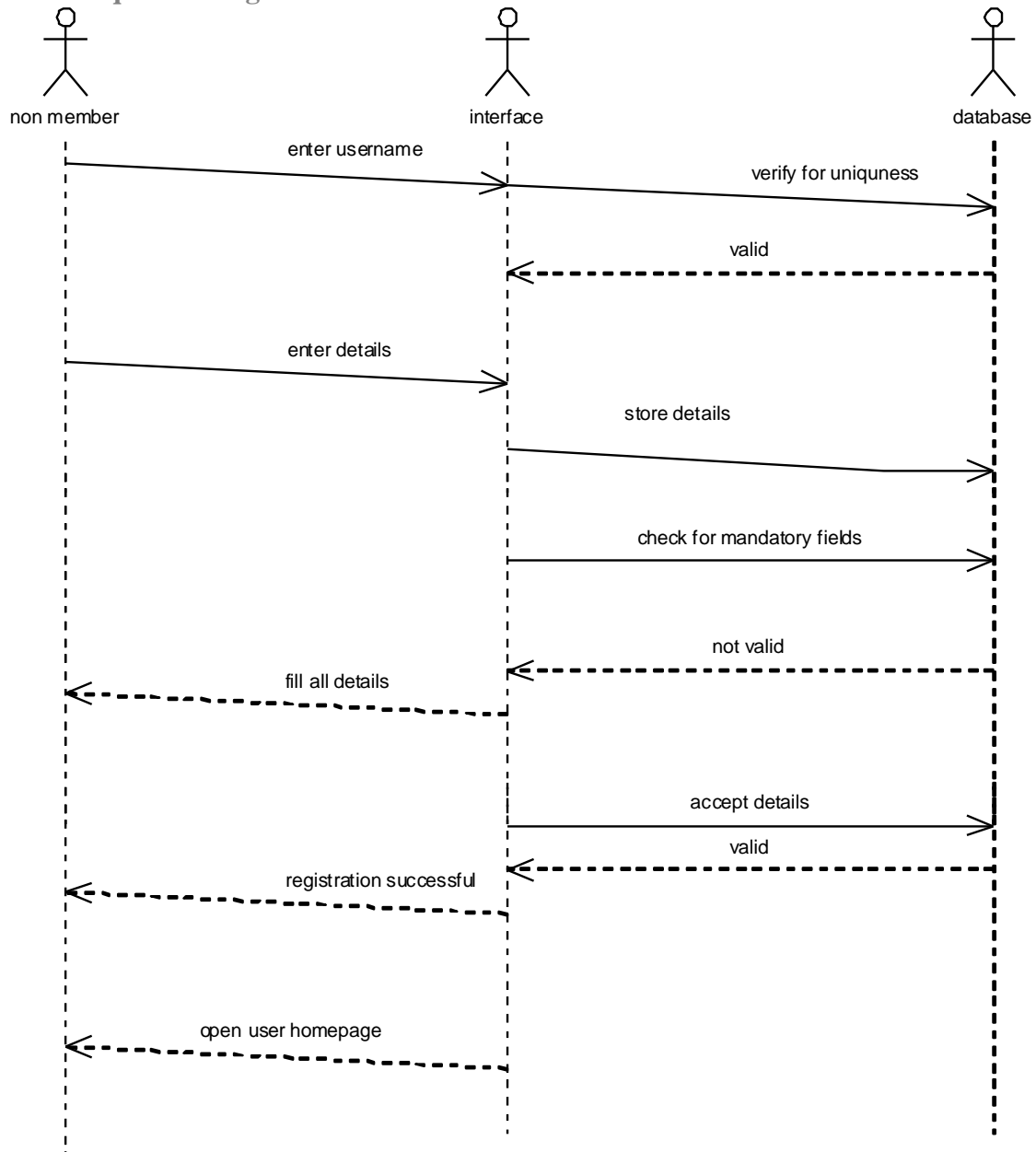
### 3.3 Sequence Diagrams

### 3.3.1 Sequence Diagram For Login

### 3.3.2 Sequence Diagram For Disease Diagnosis

### 3.3.3 Sequence Diagram For Non-Member



non member          interface          database

enter username

verify for uniquness

valid

enter details

store details

check for mandatory fields

not valid

fill all details

accept details

valid

registration successful

open user homepage

### 3.3.4 Sequence Diagram For Get Report