

**HEALTH CONSULTANT USING DATA MINING**

**BY**

**Md. Abed Ali**

**ID: 151-15-5324**

This Report Presented in Partial Fulfillment of the Requirements for the  
Degree of Bachelor of Science in Computer Science and Engineering.

Supervised By

**Mr. Md. Sazzadur Ahamed**

Lecturer

Department of Computer Science and Engineering  
Daffodil International University

Co-Supervised By

**Mr. Mohshi Masnad**

Lecturer

Department of Computer Science and Engineering  
Daffodil International University



**DAFFODIL INTERNATIONAL UNIVERSITY**

**DHAKA, BANGLADESH**

**May 2018**

## **APPROVAL**

This Project/internship titled “**HEALTH CONSULTANT USING DATA MINING**”, submitted by Md. Abed Ali, ID No: 151-15-5324 to the Department of Computer Science and Engineering, Daffodil International University has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of B.Sc. in Computer Science and Engineering and approved as to its style and contents. The presentation has been held on 07-05-2018.

### **BOARD OF EXAMINERS**

---

**Dr. Syed Akhter Hossain**  
**Professor and Head**

Department of Computer Science and Engineering  
Faculty of Science & Information Technology  
Daffodil International University

**Chairman**

---

**Dr. Sheak Rashed Haider Noori**

**Associate Professor and Associate Head**  
Department of Computer Science and Engineering  
Faculty of Science & Information Technology  
Daffodil International University

**Internal Examiner**

---

**Md. Zahid Hasan**

**Assistant Professor**  
Department of Computer Science and Engineering  
Faculty of Science & Information Technology  
Daffodil International University

**Internal Examiner**

---

**Dr. Mohammad Shorif Uddin**

**Professor**  
Department of Computer Science and Engineering  
Jahangirnagar University

**External Examiner**

## DECLARATION

We hereby declare that, this project has been done by us under the supervision of **Mr. Md. Sazzadur Ahamed, Lecturer**, Department of Computer Science and Engineering, Daffodil International University. We also declare that neither this project nor any part of this project has been submitted elsewhere for award of any degree.

### Supervised by:

---

**Mr. Md. Sazzadur Ahamed**  
Lecturer  
Department of Computer Science and Engineering  
Daffodil International University

### Co-Supervised by:

---

**Mr. Mohshi Masnad**  
Lecturer  
Department of Computer Science and Engineering  
Daffodil International University

### Submitted by:

---

**Md. Abed Ali**  
ID: 151-15-5324  
Department of Computer Science and Engineering  
Daffodil International University

## ACKNOWLEDGEMENT

First we express our heartiest thanks and gratefulness to “**Almighty God**” for his divine blessing makes us possible to complete the final year project successfully.

To create a project report & fit up with a technological world is not so easy work if not get support by others. We fell really grateful and show our gratitude to **Mr. Md. Sazzadur Ahamed, Lecturer**, Department of CSE Daffodil International University, Dhaka who guided us with his deep Knowledge & keen interest in the field of “*Web Design & Development*” to carry out this project. His endless patience, scholastic guidance, continual encouragement, constant and energetic supervision, constructive criticism, valuable advice ,reading many inferior draft and correcting them at all stage have made it possible to complete this project.

We would like to express our heartiest gratitude to **Dr. Syed Akhter Hossain, Professor and Head**, Department of CSE, for his kind help to finish our project and also to other faculty member and the staff of CSE department of Daffodil International University.

We would like to thank our entire class mate in Daffodil International University, who took part in this discuss while completing the course work.

And finally but immensely express our utmost gratitude to our parents for their love and support, affection and inspiration.

## **ABSTRACT**

It might have happened so many times that you or someone yours need doctors help immediately, but they are not available due to some reason. The Health Consultant system is an end user support and online consultation project. Here we propose a system that allows users to get instant guidance on their health issues through an intelligent health care system online. The system is fed with various symptoms and the disease/illness associated with those systems. The system allows user to share their symptoms and issues. It then processes user's symptoms to check for various illnesses that could be associated with it. Here we use some intelligent data mining techniques to guess the most accurate illness that could be associated with patient's symptoms.

## TABLE OF CONTENTS

<b>CONTENTS</b>	<b>PAGE NO</b>
Board of examiners.....	ii
Declaration.....	iii
Acknowledgements.....	iv
Abstract.....	v

### CHAPTER

<b>CHAPTER 1: INTRODUCTION</b>	<b>1-3</b>
1.1 Introduction.....	1
1.2 Motivation.....	1
1.3 Objective.....	2
1.4 Expected Outcome.....	2
1.5 Report Layout.....	2-3
<b>CHAPTER 2: BACKGROUND</b>	<b>4-7</b>
2.1 Background studies for health consultant system.....	4
2.2 Related Work.....	5
2.3 Comparative Studies.....	6
2.4 Scope of the problem.....	7
2.5 Challenge.....	7
<b>CHAPTER 3: REQUIREMENT SPECIFICATION</b>	<b>8-12</b>
3.1 Business Process Modeling.....	8
3.2 Requirement Collection and Analysis.....	8-9

3.3 Use Case Modeling and Description.....	9-10
3.4 Logical Data Model.....	10-11
3.5 Design Requirement.....	11-12
<b>CHAPTER 4: DESIGN SPECIFICATION</b>	<b>13-27</b>
4.1 Front-end Design.....	13-18
4.2 Back-end Design.....	18-26
4.3 Interaction Design and UX.....	26
4.4 Implementation Requirement.....	27
<b>CHAPTER 5: IMPLEMENTATION AND TESTING</b>	<b>28-34</b>
5.1 Implementation of Database.....	28-30
5.2 Implementation of Front-end Design.....	31
5.3 Testing Implementation.....	31- 32
5.4 Test Results and Reports.....	33-34
<b>CHAPTER 6: CONCLUSION AND FUTURE SCOPE</b>	<b>35-36</b>
6.1 Discussion and Conclusion.....	35
6.2 Scope for Further Developments.....	36
<b>REFERENCES</b>	
References.....	37

## **APPENDIX**

Figure: E-R Diagram.....	38-39
Figure: 0 Levels DFD.....	40
Figure: 1 Level DFD Diagram.....	40
Figure: 2 Levels DFD.....	41

## LIST OF FIGURES

<b>FIGURES</b>	<b>PAGE NO</b>
Figure 2.1: Background studies for health consultant system .....	4
Figure 3.1: Business Process Modeling.....	8
Figure 3.3: Use Case Diagram.....	10
Figure 3.3: Logical Data Model.....	11
Figure 3.4: Basic structure of Designed system.....	12
Figure 4.1: Basic structure of Home Page.....	13
Figure 4.2: Patient Login.....	14
Figure 4.3: User Create Account.....	15
Figure 4.4: User Home Page.....	16
Figure 4.5: Doctor Login.....	16
Figure 4.6: Doctor Home Page.....	17
Figure 4.8: Admin Page.....	18
Figure 4.8: patient account.....	20
Figure 4.9: Give Disease.....	21
Figure 4.10: Disease select.....	22
Figure 4.11: Select Next Step.....	22
Figure 4.12: Select another Step.....	23
Figure 4.13: Final Result.....	23
Figure 4.14: Search Doctor.....	24
Figure 4.15: Feedback.....	25
Figure 4.16: Login Patient Information.....	25
Figure 4.17: Login Patient Feedback.....	25
Figure 4.18: Interaction Design.....	26
Figure 5.1: All data base table.....	28

Figure 5.2: User database table.....	29
Figure 5.3: Roles.....	29
Figure 5.4: Patient.....	30
Figure 5.5: Feedback.....	30
Figure 5.5: Doctor Category.....	30
Figure 5.6: Implementation of Front-end Design.....	31
Figure 5.7: Testing Process.....	32
Figure 5.8: Testing Implementation.....	32

## LIST OF TABLE

<b>TABLES</b>	<b>PAGE NO</b>
Table 5.9: Integration testing .....	33
Table 5.10: System testing .....	34
Table 5.11: Installation testing .....	34

# CHAPTER 1

## Introduction

### 1.1 Introduction

It might have happened such a big amount of times that you simply or somebody yours want doctors facilitate instantly, however they're not out there thanks to some reason. The Health Consultant system is a user support and on-line consultation project. Here we have a tendency to propose a system that enables users to induce instant steering on their health problems through an intelligent health care system online. The system is fed with numerous symptoms and therefore the disease/illness related to those systems. The system permits user to share their symptoms and problems. It then processes user's symptoms to ascertain for numerous maladies that might be related to it. Here we have a tendency to use some intelligent data processing techniques to guess the foremost correct malady that might be related to patient's symptoms. If the system isn't ready to give appropriate results, it informs the user regarding the kind of sickness or disorder it feels user's symptoms square measure related to. If users symptoms don't specifically match any sickness in our information, it shows the diseases user might most likely have judgment by his/her symptoms. It conjointly consists of doctor address, contacts in conjunction with Feedback and administrator dashboard for system operations [1].

### 1.2 Motivation

It's help people to identify their disease so that they can be sure what kind of disease they are suffering. People can find a doctor easily by searching and contact them. The system will show how much probability he/she affect the diseases. And system will show a specialist who have a contact number if patient want contact the doctor patient can easily contact with them. And in future try to add some medicine which is related of the disease. And try to create a online chat system between patient and doctor.

**Conclusion:** Introduction about the project and why Choose our project? .

### **1.3 Objective**

- ⇒ The system gives the diseases probability by using data mining technique.
- ⇒ It is very user friendly.
- ⇒ User keeps their information.
- ⇒ Easily find doctor and contact with them.
- ⇒ It is secure about user personal Information.
- ⇒ This system is dynamic, simple, easy and user friendly for the user where user can interactive efficiently with the system [1].

### **1.4 Expected Outcome**

We think everyone like that and we also get feedback from People. So that we judge their opine actually this application is helpful or not. We think we also get many viewers who are very eager to use our application. If we add more future scope in this site like online conversion add diseases related medicine and also add more symptoms we think we get more feedback from user. All in all we try to how to assistance people how the ensure what kind of diseases they probability attack. And also try to online negotiation with a specialist.

### **1.5 Report Layout**

The following description is provided to understand which chapter covers which topics and their relevant discussions.

- ⇒ In the chapter “Introduction”, the basic principle and purpose of this Project is already described.
- ⇒ In the chapter “Background”, related works and Comparative studies which have been studied will be briefly described.
- ⇒ In the chapter “Requirement Specification”, analysis the business requirements, functionality and use cases.
- ⇒ In the chapter “Requirement Specification”, a detail description of system design.

- ⇒ In the chapter “Implementation and Testing”, a detail description of implementation and its testing.
- ⇒ In the chapter “Conclusion and Future Works”, shows the future plans and goals of this project.

**Conclusion:** We also discuss about the project objective and what are the expected outcome and the layout of the project.

# CHAPTER 2

## Background

### 2.1 Background studies for health consultant system

Goals, objectives and background studies guide our system strategy to help us successfully connect with our user.

In this article we are share what we need in background studies to create this website, so it works from day one.

At The website Solutions we follows this critical phases in creating successfully health consultant system [2]:

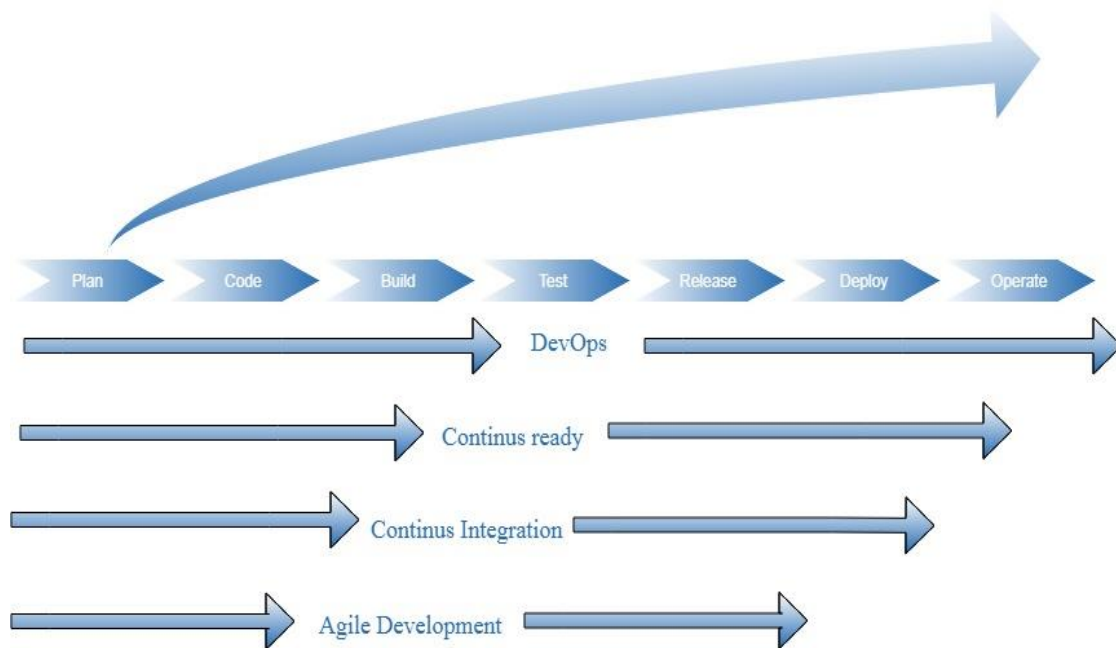


Figure 2.1: Background studies for health consultant system.

We are done seven steps for health consultant system:

**Conclusion:** We follow the background studies to develop the apps.

## **2.2 Related Work**

### **Plan**

The planning process is most important to create an application. It maintains the whole system activity. At first we plan how to design the application. When our design part is complete then we try to develop the application. It helps us to easily maintain the software and also helps in thinking logically when it builds user-friendly [3].

### **Code**

When our planning part is complete then we do write code for building the site. The code helps us to build frontend and backend design. There are separate codes for frontend and backend. A site can't run without code so it's most important to build a site [3].

### **Build**

When all code is done it's more important to build a site. The building process is done step by step. When the site is completely built then we can run it very easily [3].

### **Test**

All the units developed within the implementation section are integrated into a system once testing of every unit is complete. Post integration the complete system is tested for any faults and failures [3].

### **Deploy**

Once the useful and non-functional testing is done; the merchandise is deployed within the client surroundings or discharged into the market [3].

### **Operate**

There are some problems that return up within the consumer surroundings. To repair those problems, patches are made free. Additionally to boost the merchandise some higher versions are made free. Maintenance is finished to deliver these changes within the client surroundings [3].

**Conclusion:** Related work the working process of the software.

## 2.3 Comparative Studies

### Strategy

At this stage, we thoroughly study the idea and the competitive field, analyze the requirements, draw up a portrait of the target audience and establish the key performance indicators that are to be achieved. All this helps to find a unique niche while developing a website.

### Design

The design itself consists of several steps:

#### ⇒ Sketching

Very quick basic outlines of future website. They help assess the future logic of the project, the number of screens and the interaction between them.

#### ⇒ Wire framing

It is one of the most important steps of a design process as it helps development team to visualize the skeletal structure of the website. It gives a structure view at the app and the experience that will get end user.

### Prototyping

Created prototype is a working model of the future website. It provides both for the customer and for developers the better understanding of the product. It is much easier to edit idea and bring changes into it before the coding process is started.

### Design App Skins

At this stage, we convert wireframes in the health consultant design. We are carefully studying existing solutions, watching latest trends and elaborating UI/UX to provide the best of possible solutions.

**Conclusion:** It helps us easy to understand about the system

## 2.4 Scope of the problem

- ⇒ At first we face design problem basically we have no idea how the frontend look like than we search it and get idea from it in different site.
- ⇒ We also face coding problem and face a lot of crux but we get idea about it from internet.
- ⇒ We also face database problem at first we can't matching the database so that we can't find the actual result.
- ⇒ After run we also find some coding error and design problem.

## 2.5 Challenge

Life is not judged just by the heart beats, but by the way you accept and overcome the challenges of life. All great men face challenges in the pursuit of their goals. However, the challenges did not deter them for pushing forward and realizing their goals. I work hard and take a risk at any cost I do it. And share my friends the project topic hearing about the happy hour, I've found that there is some common challenges to build it. I work hard day and night. At first I think it's very difficult for me but I never give up every step I take a challenge and thought that it's not only a project it's also my dream. So I fail many time but never feel hopeless try again and again and turn back to complete my project. At time it really a big challenge for me to build it but self-confidence and pluck recover me and my mind encourage me so that I entire complete it full-fill. There comes a time for us not to just be survivors, but to be warriors. You have your life, and the chance to make the most of it. Don't run or hide from that challenge or let your guilt keep you from living your life. This gift is such a beautiful opportunity. Embrace it. Seize every opportunity from here on out. Live.

**Conclusion:** Challenge comes from problem so we should have take challenge solving the problem.

# CHAPTER 3

## Requirement Specification

### 3.1 Business Process Modeling

Business method modeling (BPM) in business method management and systems engineering is that the activity of representing processes of an enterprise, so the present method is also analyzed, improved, and automatic. Metronome marking is usually performed by business analysts, World Health Organization give experience within the modeling discipline; by material consultants, World Health Organization have specialized information of the processes being modeled or additional unremarkably by a team comprising each. Or else, (the method the method) model may be derived directly from events' logs victimization process mining tools [4].

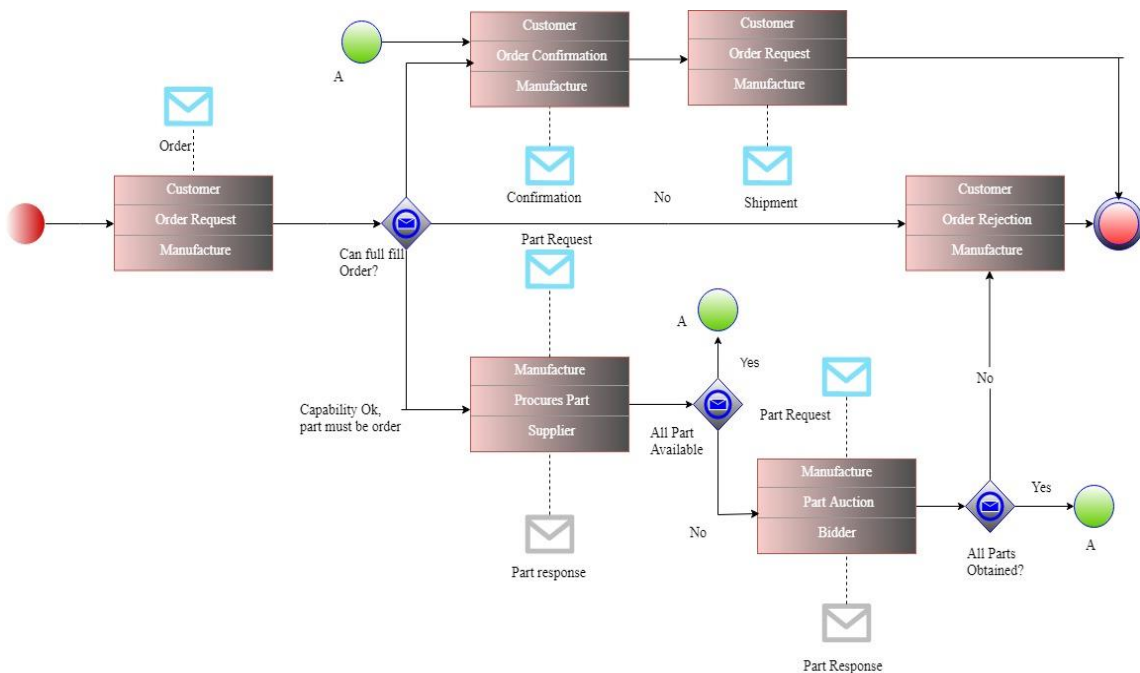


Figure 3.1: Business Process Modeling.

### 3.2 Requirement Collection and Analysis

A software requirements specification (SRS) is a description of a “software system” to be developed. It lays out “functional” and “non-functional” requirements, and may

**Conclusion:** BPM representing process of an enterprise.

include a set of “use cases” that describe user interactions that the software must provide [5].

Following is the detail of the software requirements specification (SRS) of our project.

A software system is a system of intercommunicating components based on software forming part of a computer system (a combination of hardware and software) [5].

### **3.2.1 Hardware Requirement**

- ⇒ RAM: Minimum 256 MB
- ⇒ Minimum Space to Execute: 150 MB
- ⇒ Internet Connection

### **3.2.2 Software Requirement**

- ⇒ Operating System: All operating system compatible.

### **3.2.3 Functional Requirement**

- ⇒ Login, Create account
- ⇒ Search disease
- ⇒ Keeping detail information of user's
- ⇒ Enter the symptom
- ⇒ Feedback
- ⇒ Search doctor
- ⇒ Add doctor and diseases

### **3.2.4 Non Functional Requirement**

- ⇒ Better design and less complexity
- ⇒ Availability of its every feature.
- ⇒ Secured system

**Conclusion:** This requirement needs to build a system.

### 3.3 Use Case Modeling and Description

Use case analysis is a widely used technique used to identify the business goals to be accomplished by a software system. Use case, an important concept in use case analysis, represents a unique objective that the business stakeholders want to achieve. Use case diagram provides a graphical overview of goals (represented by use cases) users (represented by actors) want to achieve by using the system (represented by system boundary but is often opt out in diagram). Use cases in a use case diagram can be organized and arranged according to their relevance, level of abstraction and impacts to users. Use case analysis is intended to provide an overview of business goals without knowing the system requirements in detail. A use case is typically a without knowing the system requirements in detail. A use case is typically a simple title that describes a user goal [6].

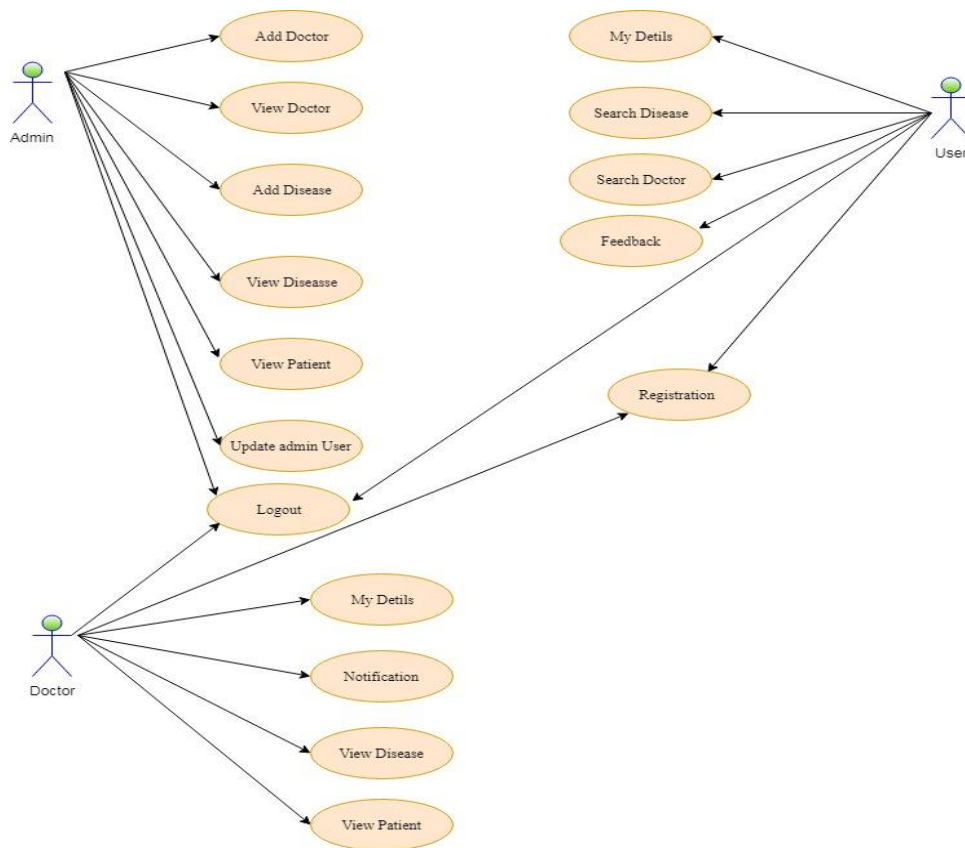


Figure 3.3: Use Case Diagram

**Conclusion:** Use Case describes what user need or goal.

### 3.4 Logical Data Model

A logical information model or logical schema could be an information model of a selected downside domain expressed severally of a specific direction product or storage technology (physical information model) however in terms of information structures like relative tables and columns, object-oriented categories, or XML tags. This is often as critical an abstract information model that describes the linguistics of a company while not relevance technology. Logical information models represent the abstract structure of a site of data. Square measure they're usually delineated in nature and are most usually utilized in business processes that get to capture things of importance to a company and the way they relate to at least one another. Once valid and approved, the logical information model will become the premise of a physical information model and kind the look of a information. Logical information models ought to be supported the structures known during a preceding abstract information model, since this describes the linguistics of the data context that the logical model ought to additionally replicate. Even so, since the logical information model anticipates implementation on a selected ADPS, the content of the logical information model is adjusted to realize sure efficiencies [7].

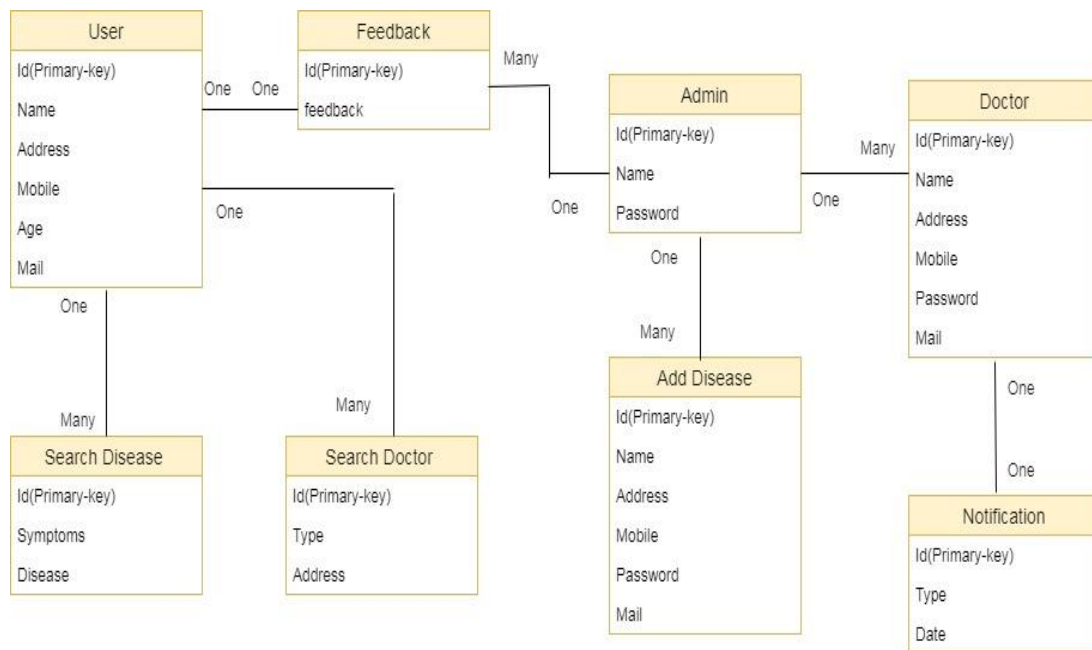


Figure 3.3: Logical Data Model

**Conclusion:** It describes the linguistics of a company while not relevance technology

### 3.5 Design Requirement

For design & developing the website we prepared the list of users specific features. We are follow the several step to design & develop the basic structure of health consultant website [8].

They are shown in below:

- ⇒ Strategy
- ⇒ Design Activities
- ⇒ List the features & functions for users
- ⇒ Quality viewing data options
- ⇒ Choose the right technology for develop

Try to develop all the features we listed & in future we want to add more features in the website to attract the right users.

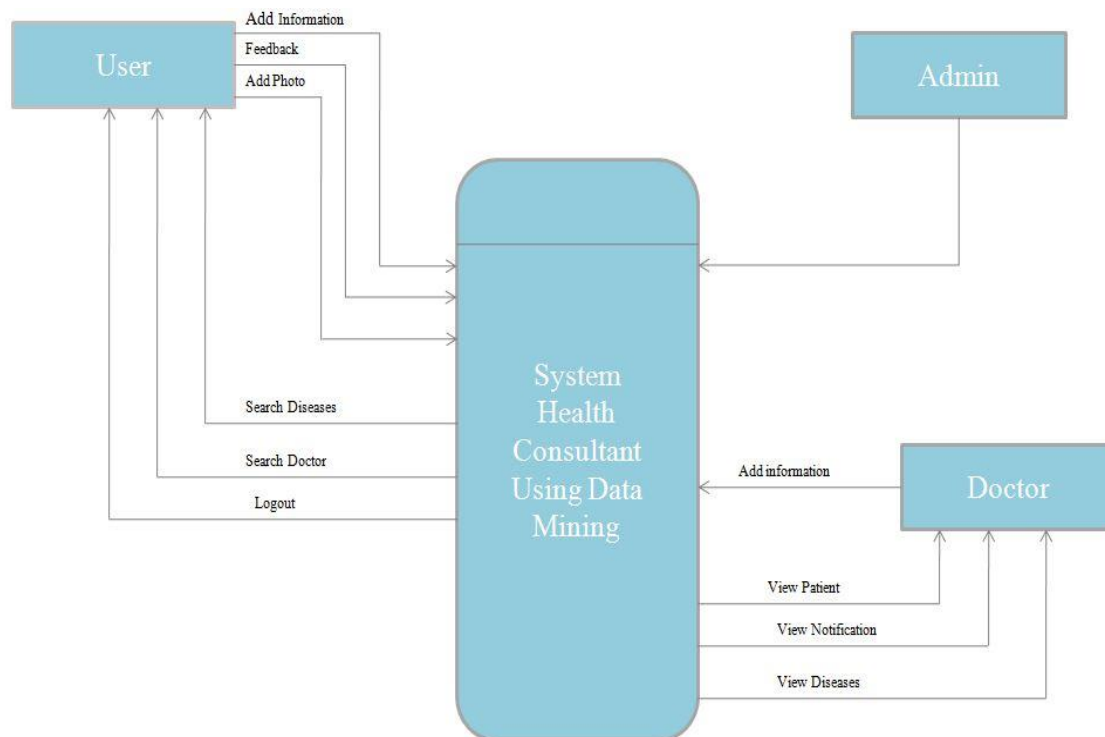


Figure 3.4: Basic structure of Designed system

**Conclusion:** It is basic structure of the system.

## CHAPTER 4

### Design Specification

#### 4.1 Front-end Design

##### 4.1.1 Proposed GUI of the Application

Graphical User Interface (GUI) is a very important part of a website. Basically main visual part is presented by GUI. Moreover, the popularity of a website is much depended on its interface. If its interface is user friendly, simple and easy then user gets more attraction to use the websites. So, to draw attention of users the importance of GUI knows no bound [9].

##### 4.1.2 Home

This is our home page of the system. There is three login category of the system. If an admin wants to log in the system then he easily logs in the system. Patient and Doctor have also a login system. Patient login the system by uses their username and password and view the system. The doctor also can easily log into the system and view the system process. We use a background image in the header and the pain process is in the main content and the publish date is in the footer [10].

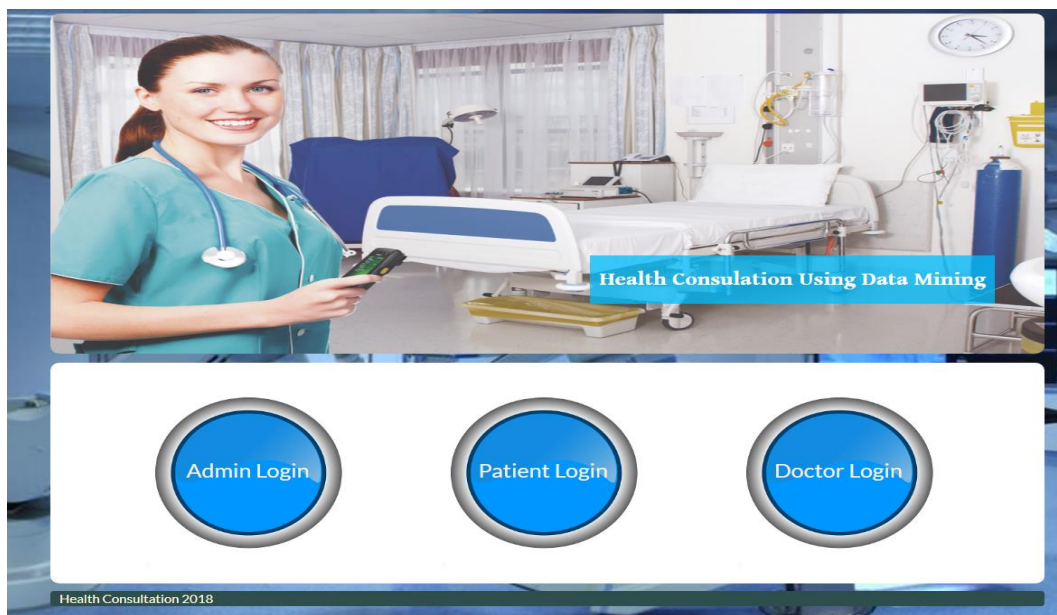
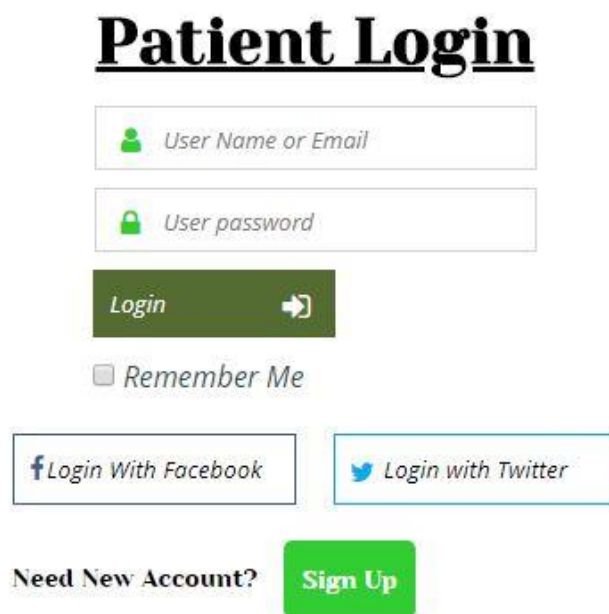


Figure 4.1: Basic structure of Home Page

### 4.1.3 User Login

This is the User login form. When a user want to visit the site he or she might be at first create an account. So at first click the sign up button and then the button show a patient account form. The patient login form has included some category the category is.

- ⇒ Login
- ⇒ Remember me
- ⇒ Forget Password
- ⇒ Social icon
- ⇒ Sign Up



The image shows a 'Patient Login' form. At the top, the title 'Patient Login' is underlined in a large, bold, black serif font. Below the title are two input fields: the first is labeled 'User Name or Email' with a green person icon, and the second is labeled 'User password' with a green padlock icon. Below these fields is a dark green 'Login' button with a white right-pointing arrow. Underneath the button is a checkbox labeled 'Remember Me'. At the bottom, there are two social login buttons: 'Login With Facebook' (with a blue Facebook icon) and 'Login with Twitter' (with a blue Twitter icon). Below these is the text 'Need New Account?' followed by a bright green 'Sign Up' button.

Figure 4.2: Patient Login

### 4.1.4 User Create Account

This is very easy at first complete the all requirement here you see the form. It's obligatory because if you have wanted to visit the site you must be complete the form very carefully.

- ⇒ Type your full name.
- ⇒ Type your phone number.
- ⇒ Type your email address.
- ⇒ Type your age
- ⇒ Select your gander.
- ⇒ Type your address
- ⇒ Type your password.
- ⇒ Type password again.

When the entire requirement complete perfectly then the page show you have successfully complete now you can log into the system.

Then give the username or email address and the password and click the login button. If you want to don't write the usernames again then click the Remember button. If you forget your password then click the forget button. You also log into the system with your facebook account or your twitter account. When you successfully login the system then the system will allow visiting the site.

The image shows a 'Create An Account' form with the following fields and elements:

- Title:** Create An Account
- Full Name:** Text input field with a person icon.
- Phone Number:** Text input field with a phone icon.
- Email:** Text input field with an envelope icon.
- Age:** Text input field with an envelope icon.
- Gender:** Dropdown menu with 'Male' selected and a person icon.
- Blank Field:** An empty text input field.
- Password:** Text input field with a lock icon.
- Retype Password:** Text input field with a lock icon.
- Terms:** A checkbox labeled 'I Agree To The [Term And Condition](#) and [The Policy](#)'.
- Button:** A green 'Create Account' button.

Figure 4.3: User Create Account

#### 4.1.5 User Home Page

This is the user home page. Here user get all facility from the site provide. User can check his profile. And find disease by searching the symptoms. And also search a doctor easily and can contact with doctor by giving the doctor contact information. And also give their own feedback about the site.

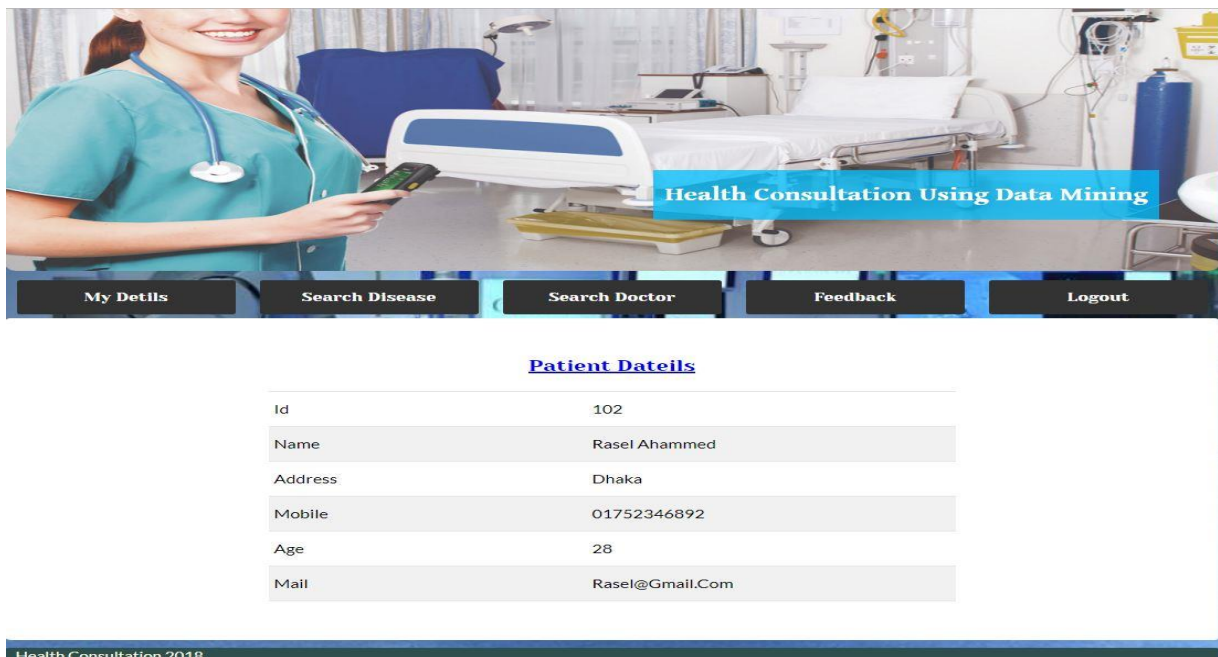


Figure 4.4: User Home Page

#### 4.1.6 Doctor Login

This is the Doctor Login form. The Doctor n Login form has included some category the category is.

- ⇒ Login
- ⇒ Remember me
- ⇒ Forget Password
- ⇒ Social icon

### Doctor Login

Remember Me      [Forget Password?](#)

Figure 4.5: Doctor Login

### 4.1.7 Doctor Home Page

The Doctor home page the doctor just shows all the facility which provides the site. Doctor also sees his profile and also sees the notification.

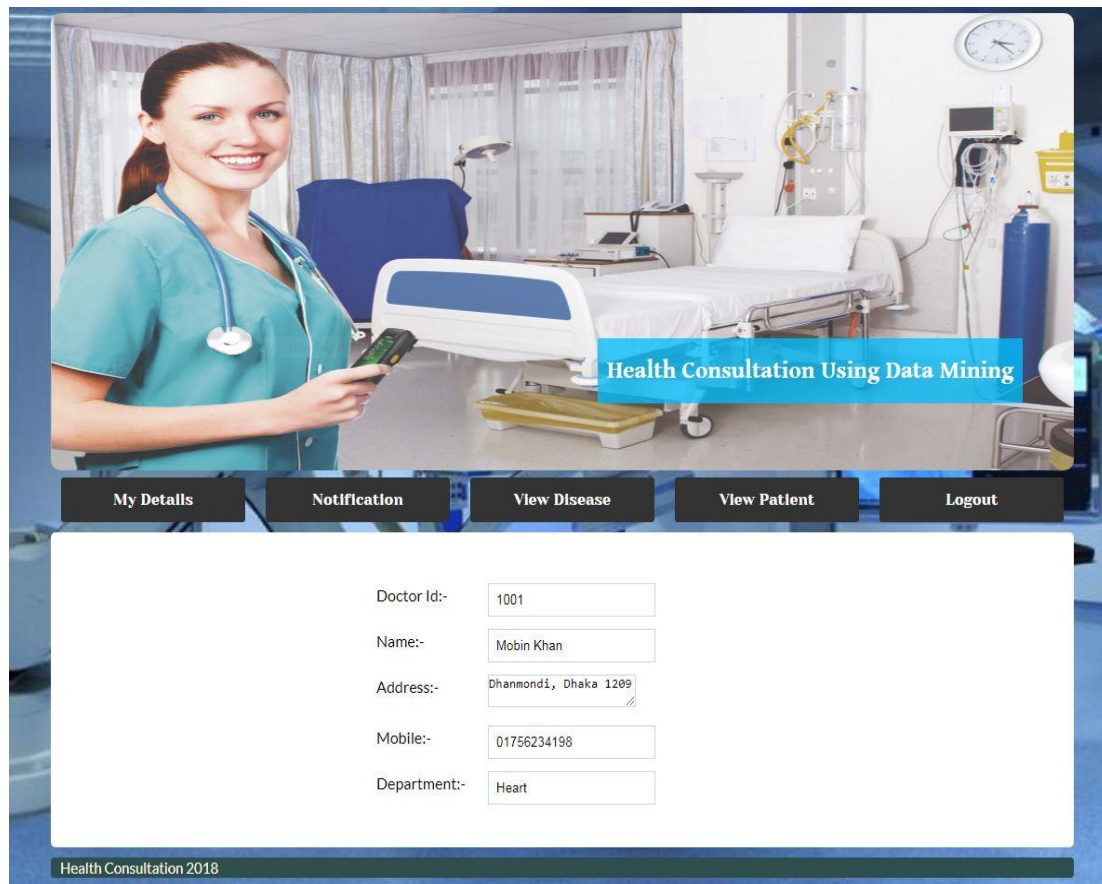


Figure 4.6: Doctor Home Page

### 4.1.8 Admin Login

In admin Login page admin can easily login and manage the full system.

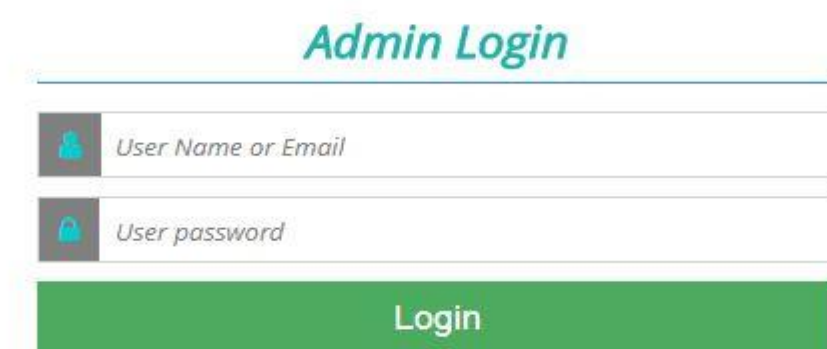


Figure 4.7: Admin Login

### 4.1.9 Admin Page

In admin dashboard admin can update delete or modify any data. Here admin control all the system and security of the site.



Figure 4.8: Admin Page

**Conclusion:** The fronted design of the system.

### 4.2 Back-end Design

The back-end, or the "server-side", is basically how the site works, updates and changes. This refers to everything the user can't see in the browser, like databases and servers. Usually people who work on the back-end are called programmers or developers. Back-end developers are mostly worried about things like security, structure and content management. They usually know and can use languages like HTML and CSS, but that's definitely not their focus. Back-end developers, or at least back-end development, are required to create a dynamic site. A dynamic site is a site that's constantly changing and updated in real-time. Most sites are dynamic sites, as opposed to static sites. Facebook, Google Maps and this blog are all considered dynamic sites. Blogs are dynamic sites, since their content is constantly changing and updating. A dynamic site requires a database to work properly. All information, like user profiles or images they've uploaded, or blog

posts, are stored in the database. Web developer's work with programming languages like PHP or .Net, since they need to work with something the database understands. The code they write communicates with the server and then tells the browser what to use from the database.

#### **4.2.1 Create patient account**

This is very easy at first complete the all requirement here you see the form. It's obligatory because if you have wanted to visit the site you must be complete the form very carefully.

- ⇒ Type your full name.
- ⇒ Type your phone number.
- ⇒ Type your email address.
- ⇒ Type your age
- ⇒ Select your gander.
- ⇒ Type your address
- ⇒ Type your password.
- ⇒ Type password again.
- ⇒ Click I agree to the term and condition.
- ⇒ Finally click the create account.

When the entire requirement complete perfectly then the page show you have successfully complete now you can log into the system.

Then give the username or email address and the password and click the login button. If you want to don't write the usernames again then click the Remember button. If you forget your password then click the forget button. You also log into the system with your facebook account or your twitter account. When you successfully login the system then the system will allow visiting the site.

## Create An Account

---

I Agree To The [Term And Condition](#) and [The Policy](#)

[Create Account](#)

Figure 4.8: patient account

### 4.2.2 User Login

When user successfully create their account than they can easily log into the system and continue their activity.

## Patient Login

[Login](#)

Remember Me

[Login With Facebook](#)

[Login with Twitter](#)

Need New Account?
[Sign Up](#)

Figure 4.8: patient Login

### 4.2.3 Search Disease

Here the user can easily find their disease by search the disease symptoms. At first user input symptoms what kind of problems he or she faces. When he input the symptoms by following the system rules and click the next button then the system tries to find out other related symptoms user face or not. After the system asks the user are you experiencing any of these symptoms too? If he fell any kind of symptoms then user select the system and press the next button if he has none any kind of symptoms from this then press the other button. If he has a symptoms here and select the symptoms and click the next button then it work just a loop and shows a section. Here every symptom has sub category symptoms. When all the symptoms which user has done completely then the system predict the percentage of the disease which is related to symptom and show it the user. And also suggest a doctor who is specialist about the disease. Here the system suggests a doctor if user wants to contact the doctor then he can easily contact the doctor by taking the doctor mobile number. If he want to ask for an appointment than send an appointment message for a appointment date. This notification will show doctor home page.

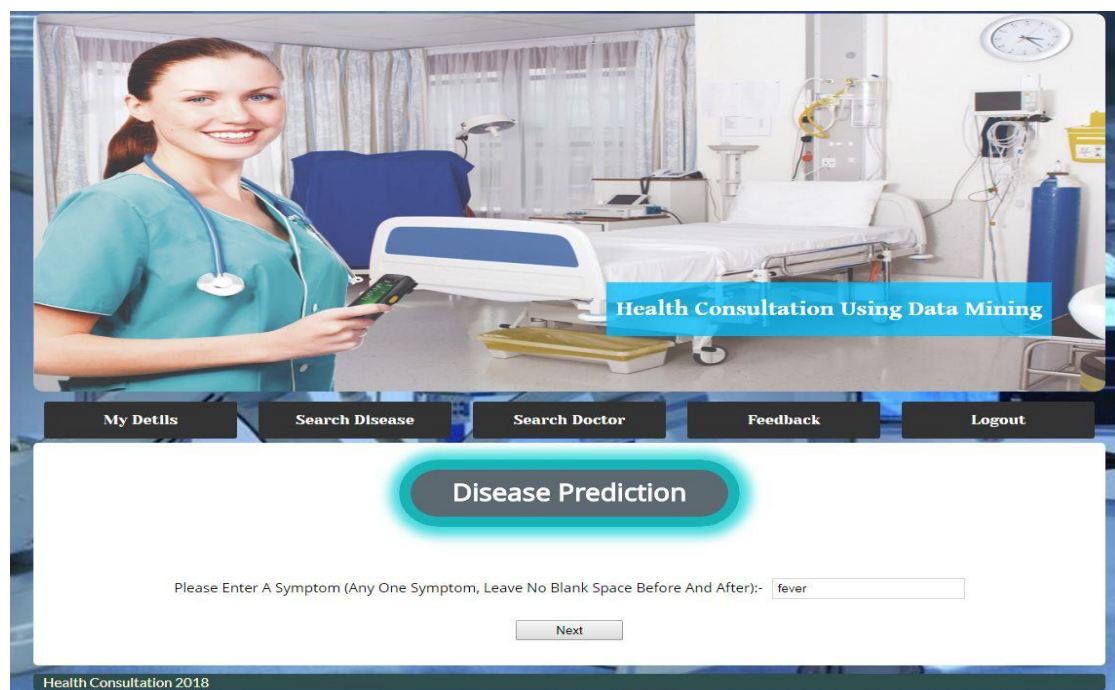


Figure 4.9: Give Disease

A screenshot of a user interface for selecting a disease. The interface has a light blue background. A white rounded rectangle contains a list of symptoms, each preceded by a radio button. The symptoms are: Rednedd Over Infected Area, Swelling, Stiffness, Larger Tender Lymph Nodes, Throat Inflammation, Headache, Rashes, Headache, Joint Pain, and Measles Like Rashes. The second 'Headache' option is selected, indicated by a dark blue dot in the center of its radio button. Below the list is a green button with the text 'Next'.

- Rednedd Over Infected Area
- Swelling
- Stiffness
- Larger Tender Lymph Nodes
- Throat Inflammation
- Headache
- Rashes
- Headache
- Joint Pain
- Measles Like Rashes

Next

Figure 4.10: Disease select

A screenshot of a user interface for selecting the next step. The interface has a light blue background. A white rounded rectangle contains two options, each preceded by a radio button. The options are: Rednedd Over Infected Area and Stiffness. The 'Stiffness' option is selected, indicated by a dark blue dot in the center of its radio button. Below the list is a green button with the text 'Next'.

- Rednedd Over Infected Area
- Stiffness

Next

Figure 4.11: Select Next Step

Fever  
 Larger Tender Lymph Nodes  
 Throat Inflammation  
 Rashes  
 Fever  
 Joint Pain  
 Measles Like Rashes

Figure 4.12: Select another Step

**Disease Prediction**

Please Enter A Symptom (Any One Symptom, Leave No Blank Space Before And After):-

Analysis Complete:-  
Suspected Disease:-

---

System Prediction( You Have Disease/Disorders Related To One Or More Of The Following ).

»The Probability Is Normal Fever

**Suggested Doctor For You**

Name	Address	Mobile
Jamil Horshed Alam	Dinajpur	01752346895

Figure 4.13: Final Result

#### 4.2.4 Search Doctor

If anyone wants to search a doctor the system will help him or her for searching a doctor. There are three type of category for searching a doctor.

- ⇒ Doctor name.
- ⇒ Doctor type
- ⇒ Doctor address

When the search complete then the doctor information appear in front the user. Here the user can easily choose the doctor and find the doctor contact number, address, other information about the doctor. And it's very helpful to the user to find out any doctor.

[Search Doctor](#)

Search By:-

Text:-

---

**Doctor**

SL	Doctor_id	Name	Mobile	Email	Address	Category
0	1000	Abed Ali	01758642319	Abed@Gmail.Com	Dhaka	Skin

Figure 4.14: Search Doctor

#### 4.2.5 Give Feedback

Here user can send their feedback which is very helpful for the system. User disclose their opines how much the like the system. Are the system is very helpful for them. The feedback is need for update the system its help the system to know which kind of chance the user need. The system rating and viewer also depend on the feedback

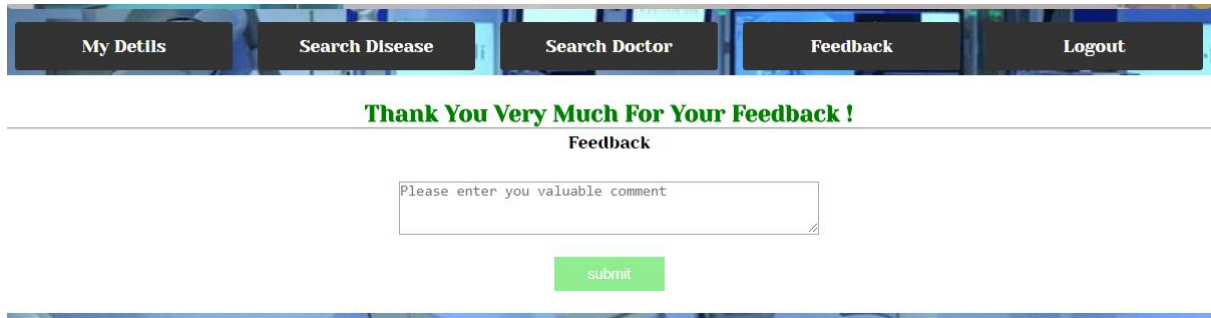


Figure 4.15: Feedback

#### 4.2.6 Admin

Admin can check all the system the system work properly or not.

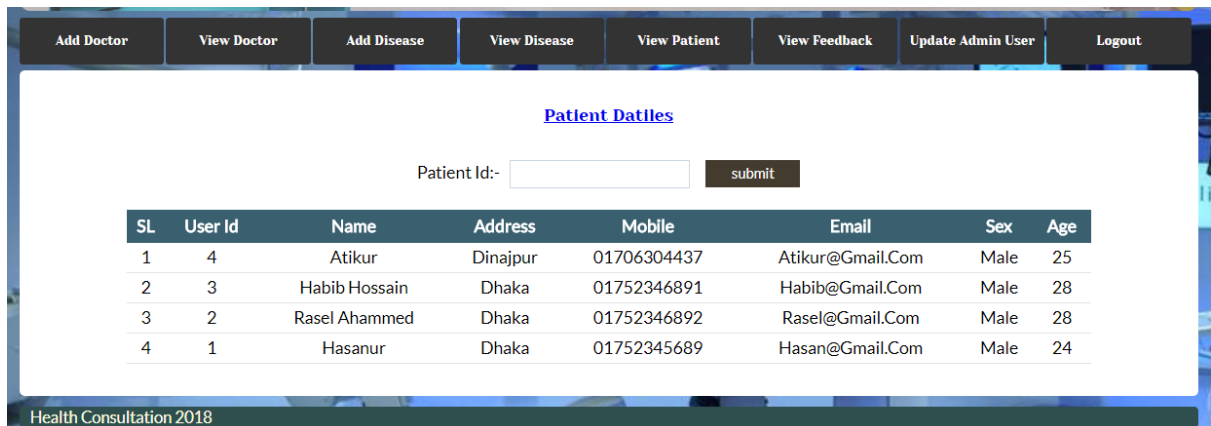


Figure 4.16: Login Patient Information

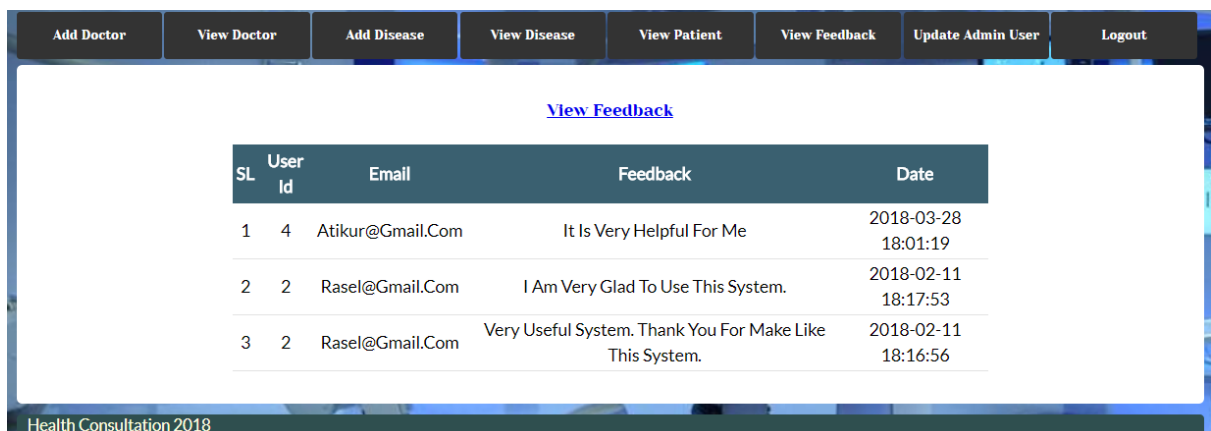


Figure 4.17: Login Patient Feedback

### 4.2.7 Logout

When user can't stand anymore in the system than just logout the system and forsake the system and get back the patient home page. This all process describes just patient system. How patient view the system.

### 4.3 Interaction Design and UX

With so many emerging innovations such as mobile apps, Smartphone's, medical devices, wearable technology, connected appliances, and self-driving cars, technology and design are converging like never before.

A new breed of designer who understands the user and a user-centered approach is required.

This is what Interaction Design is — Designing the future [11].

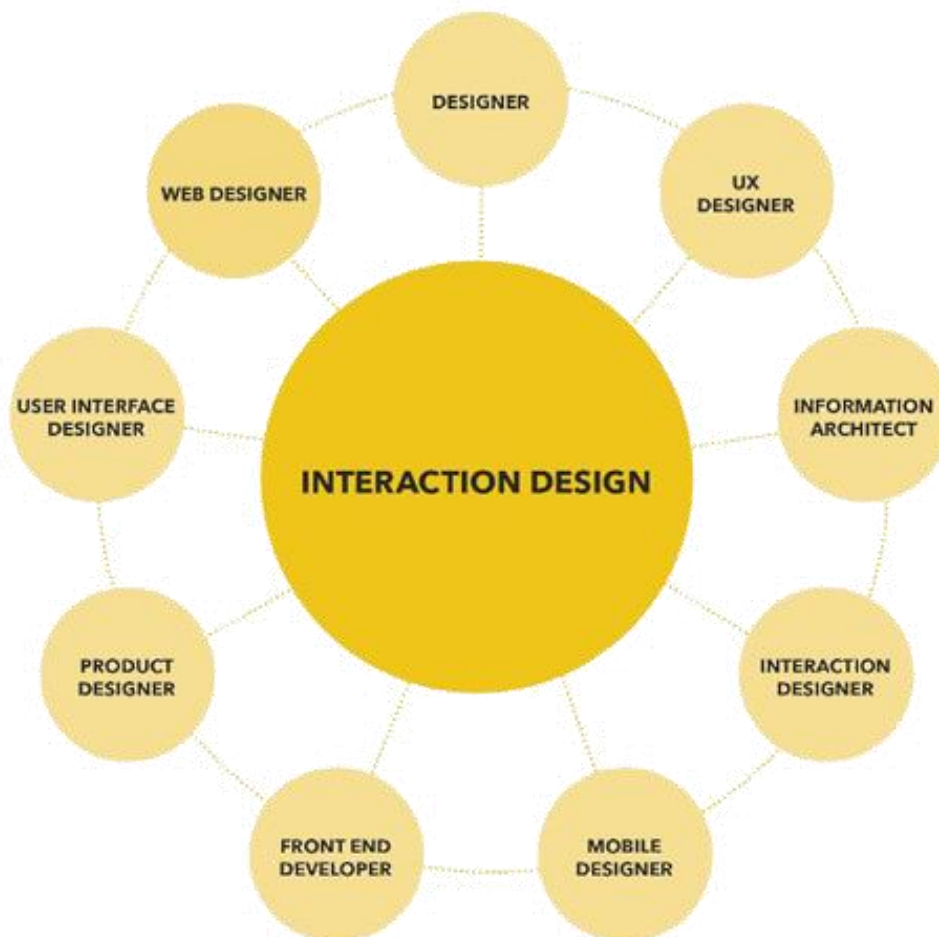


Figure 4.18: Interaction Design

**Conclusion:** The process backhand design and the interaction design.

#### **4.4 Implementation Requirement**

**Design and Development Tools:** HTML5, CSS3, JavaScript, JQuery, Ajax, PHP laravel, XAMPP Server.

**Conclusion:** Basically if we design and develop a system we must need this requirement.

# CHAPTER 5


## Implementation and Testing

### 5.1 Implementation of Database

Primarily we used localhost server but near future we integrate our software to global server.

#### 5.1.1 All data base table

This is all data base table. The table is containing the other entire database table.



The screenshot shows a database management interface with a search filter at the top. Below the filter is a table listing 14 database tables. Each table row includes a checkbox, a star icon, a 'Browse' button, and a set of icons for 'Structure', 'Search', 'Insert', 'Empty', and 'Drop'. The table columns are: Table, Action, Rows, Type, Collation, Size, and Overhead. At the bottom, there is a 'Sum' row and a 'Check all' checkbox.

Table	Action	Rows	Type	Collation	Size	Overhead
activations	6	InnoDB	utf8mb4_unicode_ci	16 KiB	-	
diseases	9	InnoDB	utf8mb4_unicode_ci	32 KiB	-	
disease_categories	4	InnoDB	utf8mb4_unicode_ci	16 KiB	-	
doctors	2	InnoDB	utf8mb4_unicode_ci	64 KiB	-	
doctory_categories	4	InnoDB	utf8mb4_unicode_ci	16 KiB	-	
feedback	3	InnoDB	utf8mb4_unicode_ci	16 KiB	-	
migrations	9	InnoDB	utf8mb4_unicode_ci	16 KiB	-	
patients	2	InnoDB	utf8mb4_unicode_ci	48 KiB	-	
persistences	4	InnoDB	utf8mb4_unicode_ci	32 KiB	-	
reminders	0	InnoDB	utf8mb4_unicode_ci	16 KiB	-	
roles	5	InnoDB	utf8mb4_unicode_ci	16 KiB	-	
role_users	5	InnoDB	utf8mb4_unicode_ci	16 KiB	-	
throttle	59	InnoDB	utf8mb4_unicode_ci	32 KiB	-	
users	5	InnoDB	utf8mb4_unicode_ci	32 KiB	-	
14 tables	Sum	117	InnoDB	latin1_swedish_ci	368 KiB	0 B

Figure 5.1: All data base table

#### 5.1.2 User database table

This is all user database tables. The tables contain three type of user.

- ⇒ Admin.
- ⇒ Patient.
- ⇒ Doctor.

Showing rows 0 - 4 (5 total, Query took 0.0130 seconds.)

SELECT \* FROM `users`

Profiling [ Edit inline ] [ Edit ] [ Explain SQL ] [ Create PHP code ] [ Refresh ]

Show all | Number of rows: 25 | Filter rows: Search this table | Sort by key: None

Options

	id	email	password	permissions	last_login	first_
<input type="checkbox"/>	1	abedmax9@gmail.com	\$2y\$10\$yJenSrSsLcXbG4rlp1VvEO7UeVGvBQlrdBWFuVF/App...	NULL	2018-02-18 18:16:30	abed
<input type="checkbox"/>	2	abed@gmail.com	\$2y\$10\$Or22ehQzZp5s6ts5VNSgQOL5jYAsOJEhwL74S4XLYmw...	NULL	2018-02-17 02:22:58	abed
<input type="checkbox"/>	3	hasan@gmail.com	\$2y\$10\$jn.dBsG61HG4BRQmz//cdurYGx1iGIGmkCczypt2Bfp...	NULL	2018-02-19 01:56:51	Hasan
<input type="checkbox"/>	5	mobin@gmail.com	\$2y\$10\$5ho9lva38lLeke9cMb1YsuQsySaH27qw8eccXJvfzGH...	NULL	2018-02-13 21:11:24	Mobin
<input type="checkbox"/>	6	rasel@gmail.com	\$2y\$10\$1tqzHLsOq7jsNY2XaaSDm.QLUqoN5IXlgud2z5iCswA...	NULL	2018-02-12 19:01:08	Rasel Ahamr

Check all | With selected: Edit Copy Delete Export

Show all | Number of rows: 25 | Filter rows: Search this table | Sort by key: None

Query results operations

Print Copy to clipboard Export Display chart Create view

Figure 5.2: User database table

### 5.1.3 Roles

Showing rows 0 - 4 (5 total, Query took 0.0000 seconds.)

SELECT \* FROM `roles`

Profiling [ Edit inline ] [ Edit ] [ Explain SQL ] [ Create PHP code ] [ Refresh ]

Show all | Number of rows: 25 | Filter rows: Search this table | Sort by key: None

Options

	id	slug	name	permissions	created_at	updated_at
<input type="checkbox"/>	1	admin	Admin Access Admin Panel	NULL	2018-02-07 00:00:00	2018-02-07 00:00:00
<input type="checkbox"/>	4	doctor	Doctor	NULL	NULL	NULL
<input type="checkbox"/>	5	patient	Patient	NULL	NULL	NULL
<input type="checkbox"/>	7	doctor	Doctor	NULL	NULL	NULL
<input type="checkbox"/>	8	patient	Patient	NULL	NULL	NULL

Check all | With selected: Edit Copy Delete Export

Show all | Number of rows: 25 | Filter rows: Search this table | Sort by key: None

Query results operations

Print Copy to clipboard Export Display chart Create view

Figure 5.3: Roles

## 5.1.4 Patient

Showing rows 0 - 1 (2 total, Query took 0.0010 seconds.)

```
SELECT * FROM `patients`
```

Number of rows: 25 | Filter rows: Search this table | Sort by key: None

+ Options

	id	full_name	mobile	email	age	sex	address	condition	created_at	updated_at
<input type="checkbox"/>	1	Hasanur	01752345689	hasan@gmail.com	24	Male	Dhaka	1	NULL	NULL
<input type="checkbox"/>	2	Rasel Ahammed	01752346892	rasel@gmail.com	28	Male	Dhaka	1	NULL	NULL

Query results operations: Print, Copy to clipboard, Export, Display chart, Create view

Figure 5.4: Patient

## 5.1.5 Feedback

Showing rows 0 - 2 (3 total, Query took 0.0010 seconds.)

```
SELECT * FROM `feedback`
```

Number of rows: 25 | Filter rows: Search this table | Sort by key: None

+ Options

	id	patient_email	feedback_text	created_at	updated_at
<input type="checkbox"/>	1	rasel@gmail.com	Very useful system. Thank you for make like this ...	2018-02-11 18:16:56	2018-02-11 18:16:56
<input type="checkbox"/>	2	rasel@gmail.com	I am very Glad to use this system.	2018-02-11 18:17:53	2018-02-11 18:17:53
<input type="checkbox"/>	3	hasan@gmail.com	good system	2018-02-13 20:57:57	2018-02-13 20:57:57

Figure 5.5: Feedback

## 5.1.5 Doctor Category

Showing rows 0 - 3 (4 total, Query took 0.0050 seconds.)

```
SELECT * FROM `doctory_categories`
```

Number of rows: 25 | Filter rows: Search this table | Sort by key: None

+ Options

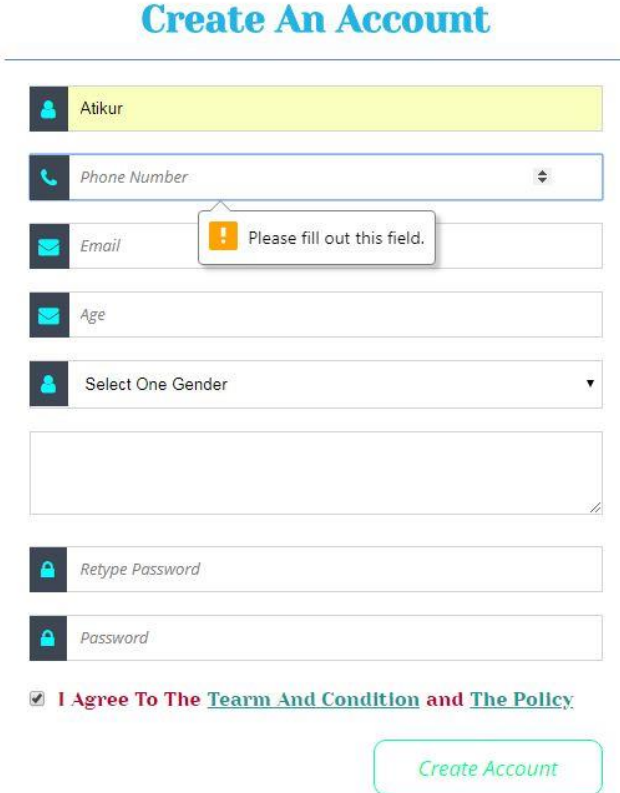
	id	category_name	status	created_at	updated_at
<input type="checkbox"/>	1	Born	1	2018-02-07 00:00:00	2018-02-07 00:00:00
<input type="checkbox"/>	2	Heart	1	2018-02-07 00:00:00	2018-02-07 00:00:00
<input type="checkbox"/>	3	Skin	1	2018-02-07 00:00:00	2018-02-07 00:00:00
<input type="checkbox"/>	4	Orthopedic	1	2018-02-07 00:00:00	2018-02-07 00:00:00

Figure 5.5: Doctor Category

**Conclusion:** Database is mandatory to run a system dynamically.

## 5.2 Implementation of Front-end Design

This most Important to implementation a front-end design here we basically use HTML5, CSS3, JQuery, Javascript for implementation the front-end design. And check the validity of the front-end design.



The image shows a web form titled "Create An Account". The form contains several input fields: a name field with the value "Atikur", a phone number field, an email field, an age field, a gender dropdown menu, a password field, and a retype password field. A validation error message "Please fill out this field." is displayed over the email field. At the bottom of the form, there is a checkbox labeled "I Agree To The [Term And Condition](#) and [The Policy](#)" and a "Create Account" button.

Figure 5.6: Implementation of Front-end Design

This is popper valid if anyone wants to create a account he or she must be fill up all the requirement. Without they can't create the account.

## 5.3 Testing Implementation

In test implementation phase test manager ensures that all the pre-requisites are handled to start the test execution [12].

**Conclusion:** Implementation a front-end dsgin is most important to view a system.

### 5.3.1 Testing Process

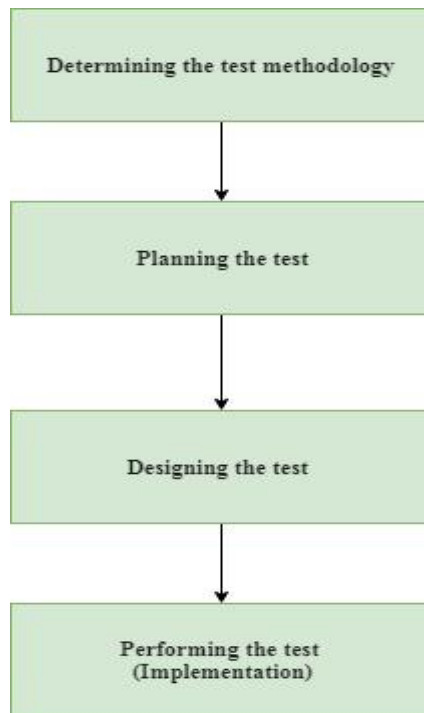


Figure 5.7: Testing Process

### 5.3.2 Test Implementation

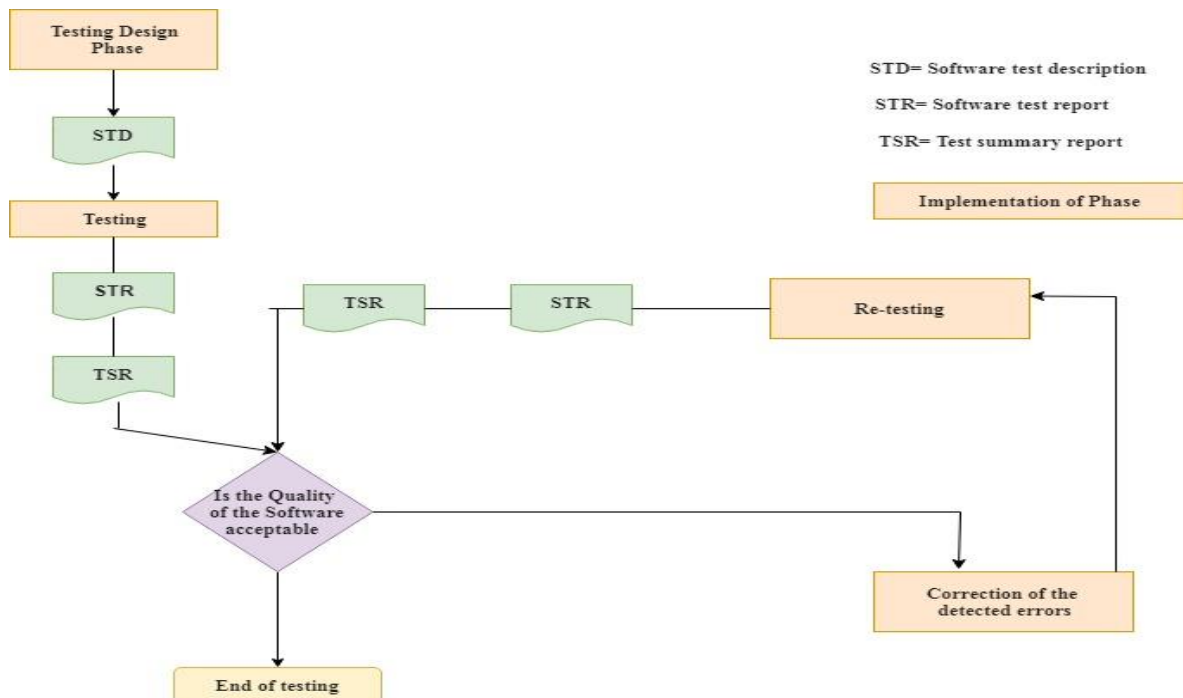


Figure 5.8: Testing Implementation

## 5.4 Test Results and Reports

### 5.4.1 Unit Testing

Unit testing is a testing method by which individual units can be tested. So, this testing method is useful to check individual parts of the websites. We have tried this testing method and got positive result [13].

### 5.4.2 Integration testing

Integration testing is any type of software testing that seeks to verify the interface between components against a software design. Normally the former is considered a better practice since it allow interface issues to be located more quickly and fixed.

We had a good integration testing for the interface web service.

Test Case	Expected Result	Observed Result	Test Result
Website testing, including functional, compatibility.	Can Do	Can Do	Pass
Database updated working properly for all function	Working properly	Working properly	Pass

Figure 5.9: Integration testing

### 5.4.3 System testing

System testing or end-to-end testing a completely integrated system to verify that it meets its requirements. For example, a system test might involve testing a logon interface, then creating and editing an entry, plus sending or printing results, followed by summary processing or deleting (or archiving) of entries, then logoff.

Test Case	Expected Result	Observed Result	Test Result
User should have a successful login in the system	Successful login	Login Successfully	Pass
User can access every menu without any difficulties	Accessible every Menu	Accessible every menu	Pass
User can do any operation like post, chatting, friend request send, accept etc	Successful operation without interruption	Successful operation without interruption	Pass

Figure 5.10: System testing

#### 5.4.4 Installation testing

After building the social media website, an installation by domain hosting assures that the system is installed correctly and working for user communication properly.

Test Case	Expected Result	Observed Result	Test Result
System is installed and working at web browser	A successful Run	Run successfully done	Pass

Figure 5.11: Installation testing

**Conclusion:** A test case is a set of conditions or variables under which a tester will determine whether a system under test satisfies requirements or works correctly. Seems reasonable to me. You have a system and a tester

## CHAPTER 6

### Conclusion and Future Scope

#### 6.1.1 Discussion

Health consolation system is a web application system. In this system, a user at first creates an account and log in the system. Then he or she put the symptoms in the search box and try to find their probability diseases. If the symptoms are the match of this diseases then the system will show a probably diseases. And visualize the user you are probably invaded by the diseases. And show the percentage how much probably of the diseases. The system main goal is to find probability diseases by giving the user input symptoms. If the symptoms do not properly match of the diseases then the system will show you are completely fine you have seen some problem. The problem is the match of the diseases so consult a specialist. The system will also suggest a doctor after completely find the diseases by searching the symptom. The doctor is specialist in the diseases. And if the user wants to set an appointment with the doctor then the user can send a message to ask an appointment date from the doctor that will show a notification in the doctor account.

The user can easily search a specialist doctor in the system by doctor name, type, address. user also send a feedback about the system which helps the system how much people like it and what people want and what will need to update the system. The doctor has a login system. Doctor easily checks out what diseases needed to include the system. And show the notification any patient has an appointment or not.

#### 6.1.2 Conclusion

We have shown how to build a system with a database system as the back-end and a front-end in HTML embedded with PHP it is easy to make application user interface and the week schema gives a good overview of the application. The combinations of the search functions, the ability to reserve for any user and the ability to manage the whole database from the web-site made the system a very powerful administrative health consulting system the security model used based on different privilege for different user also made the system a real life application. This Program will help to

people to show their symptoms and diseases. So I think basically it is very helpful for the people. So I think it is a better idea to help the people basically old people.

## **6.2 Scope for Further Developments**

- ⇒ Create an online chatting with doctor and patient
- ⇒ Sent a schedule notification to the doctor
- ⇒ And give a schedule from doctor to patient
- ⇒ Create mobile apps
- ⇒ Suggest medicine for patient
- ⇒ Also create a medicine chart which are related with disease

## REFERENCES

- [1] A brief introduction of health consultation, available at < <http://nevonprojects.com/smart-health-prediction-using-data-mining/>>>, last accessed on 11 Jan 2017 10:00pm.
- [2] Background studies for health consultant system, available at < <https://www.semiwiki.com/> >>, last accessed on 12 July 2017 8:41pm.
- [3] Software design plan, available at < <http://www.taasi.org/software-design-models/software-development-pricing-models-time-and-materials-vs.html>>>, last accessed on 20 July 2017 9:22pm.
- [4] Business processing model, available at < <http://www.conceptdraw.com/> >>, last accessed on 8 August 2017 11:12pm.
- [5] Requirement Collection and Analysis, available at < <https://usabilitygeek.com/> >>, last accessed on 10 August 2017 10:22pm.
- [6] Use Case Modeling and Description, available at < <http://epf.eclipse.org/wikis/openup/> >>, last accessed on 15 August 2017 11:44pm.
- [7] Logical Data Model, available at < <https://www.visual-paradigm.com/> >>, last accessed on 2 September 2017 8:11pm.
- [8] Basic structure of Designed system, available at < <https://it.toolbox.com/> >>, last accessed on 4 September 2017 8:22pm.
- [9] Proposed GUI of the Application, available at < <https://wiki.onap.org/> >>, last accessed on 7 September 2017 7:30pm.
- [10] Front-end design concept, available at < <https://www.youtube.com/watch?v=6pezdf4cbY8>>>, last accessed on 8 September 2017 9:36pm.
- [11] Interaction Design and UX, available at < <http://www.smcixd.org/> >>, last accessed on 15 September 2017 10:12pm.
- [12] Test Implementation, available at < <http://slideshare.com/> >>, last accessed on 2 Oct 2017 11:10pm.
- [13] About test case, available at < <https://huddle.eurostarsoftwaretesting.com>>>, last accessed on 5 Oct 2017 10:12pm.
- [14] E-R Diagram, available at < <https://www.smartdraw.com/>>>, last accessed on 9 Oct 2017 8:10pm.

## **Appendices**

### **Appendix A: Project Reflection**

At first I thank my supervisor Mr. Md. Sazzadur Ahamed for his help and great idea. I make this project basically thought those people who are old and who live in ruler area they can easily find there probability disease. They can also contact the doctor and in future if I include more future in this project it is more helpful for user. User can chat with doctor in online and discuses with them. We create a section where users find some medicine which is related the disease. User can send the notification and doctor also sent his feedback to the user. I also thank my supervisor he also help me lot to build this project. Without his idea this project is more difficult for me. I learn one thing from this project anything can possible if we believe our self and work hard for our dream the success will be come to us.

### **Appendix B: Related Diagrams**

#### **E-R Diagram**

An entity relationship diagram (ERD), also known as an entity relationship model, is a graphical representation of an information system that depicts the relationships among people, objects, places, concepts or events within that system. An ERD is a data modeling technique that can help define business processes and be used as the foundation for a relational database [14].

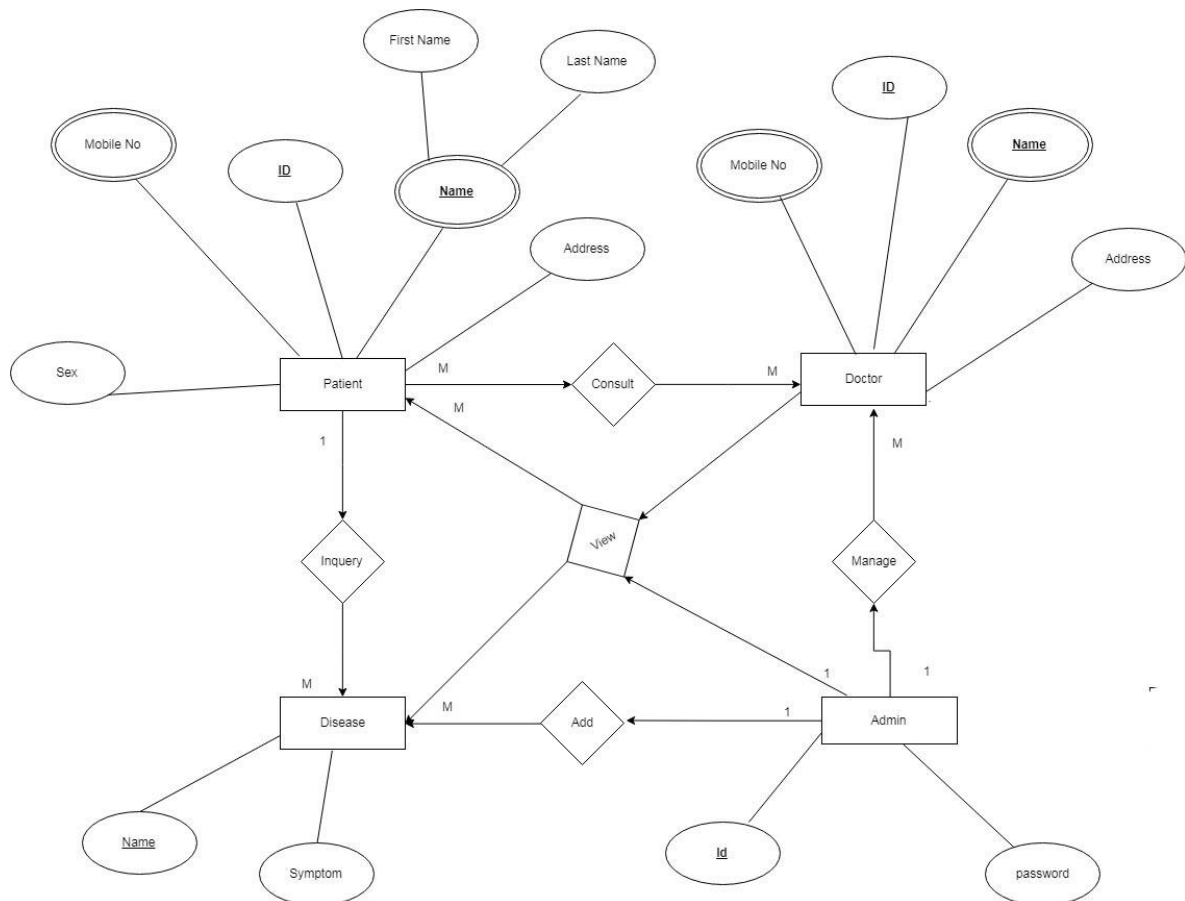


Figure: E-R Diagram

### DFD (Data Flow Diagram)

A data flow diagram (or DFD) is a graphical representation of the flow of data through an information system. It shows how information is input to and output from the system, the sources and destinations of that information, and where that information is stored.

Information not shown in a DFD includes how long processes take, and whether those processes operate in series or parallel. Such information is typically shown in a flowchart instead.

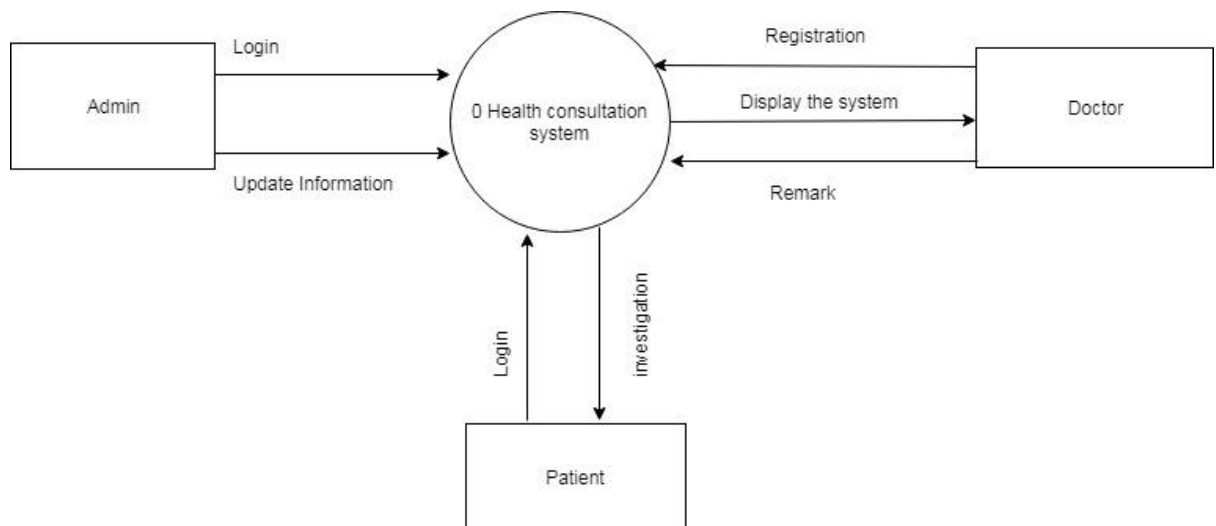


Figure: 0 Level DFD

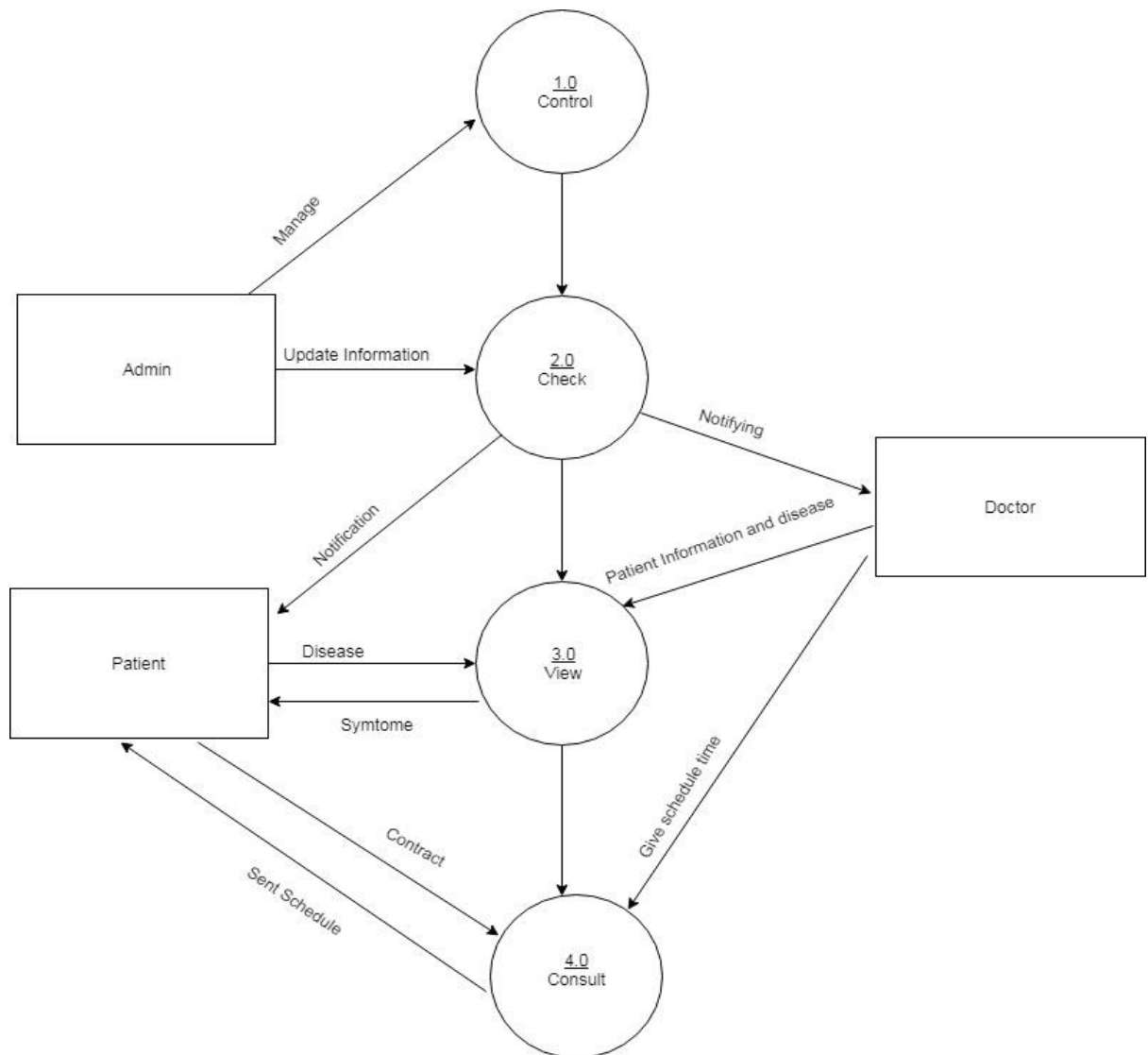


Figure: 1 Level DFD Diagram

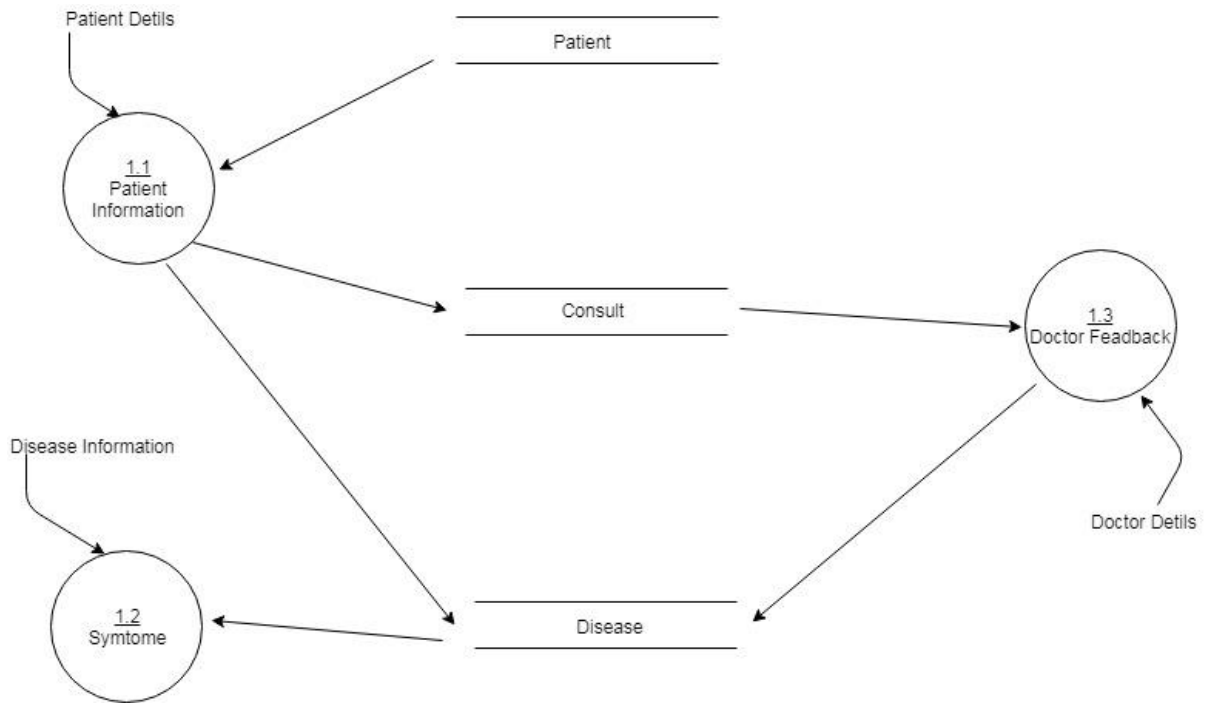


Figure: 2 Level DFD

