

Department of Technical Education
Capstone project
Format-5
Capstone Project Execution Document

**Capstone project Name: Disease Prediction & Online
Recommendation**

Capstone project Members:

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Main Deliverables -

1) Design:

➤ **Description of Components in the system**

- **Admin login**

Admin will enter his or her username and password to access the form. Once logged in, the user may add or browse organs, symptoms, and diseases as well as check the registrations of physicians with reputable hospitals. He is capable of overseeing the medical professionals based on their training and experience.

- **Manage Symptoms & Disease**

Administrators can control symptoms and diseases after they log in. He or she may see or add the illness' signs and symptoms.

- **Check Symptoms & Disease**

The user must first select organs, and then select the symptoms that they are experiencing.

- **Predict Disease**

The technology will automatically identify the ailment based on the symptoms that the users select.

- **Manage Doctor**

Here the doctors are Managed by admin & admin accepts the login of doctor/hospitals.

- **Doctor Login**

Here, the doctor must sign in with his information and submit his or her credentials and work history so that admin can authorize him.

- **View Doctor**

Following the doctor's login, the admin will review the physicians on his form and give them the go-ahead to assist users.

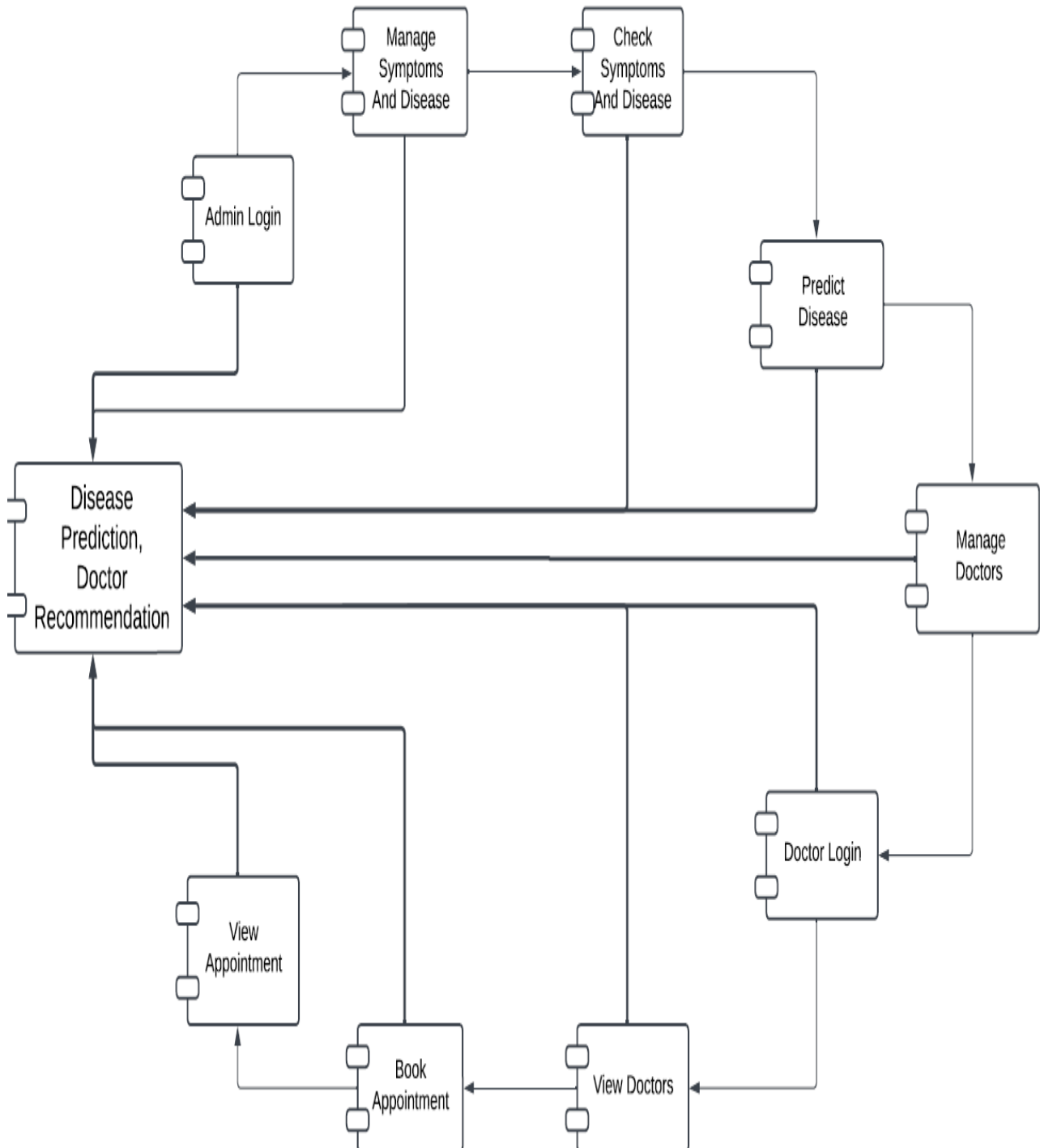
- **Book Appointment**

Users should select a doctor and schedule an appointment after confirming their illness by entering the appointment date and their personal information.

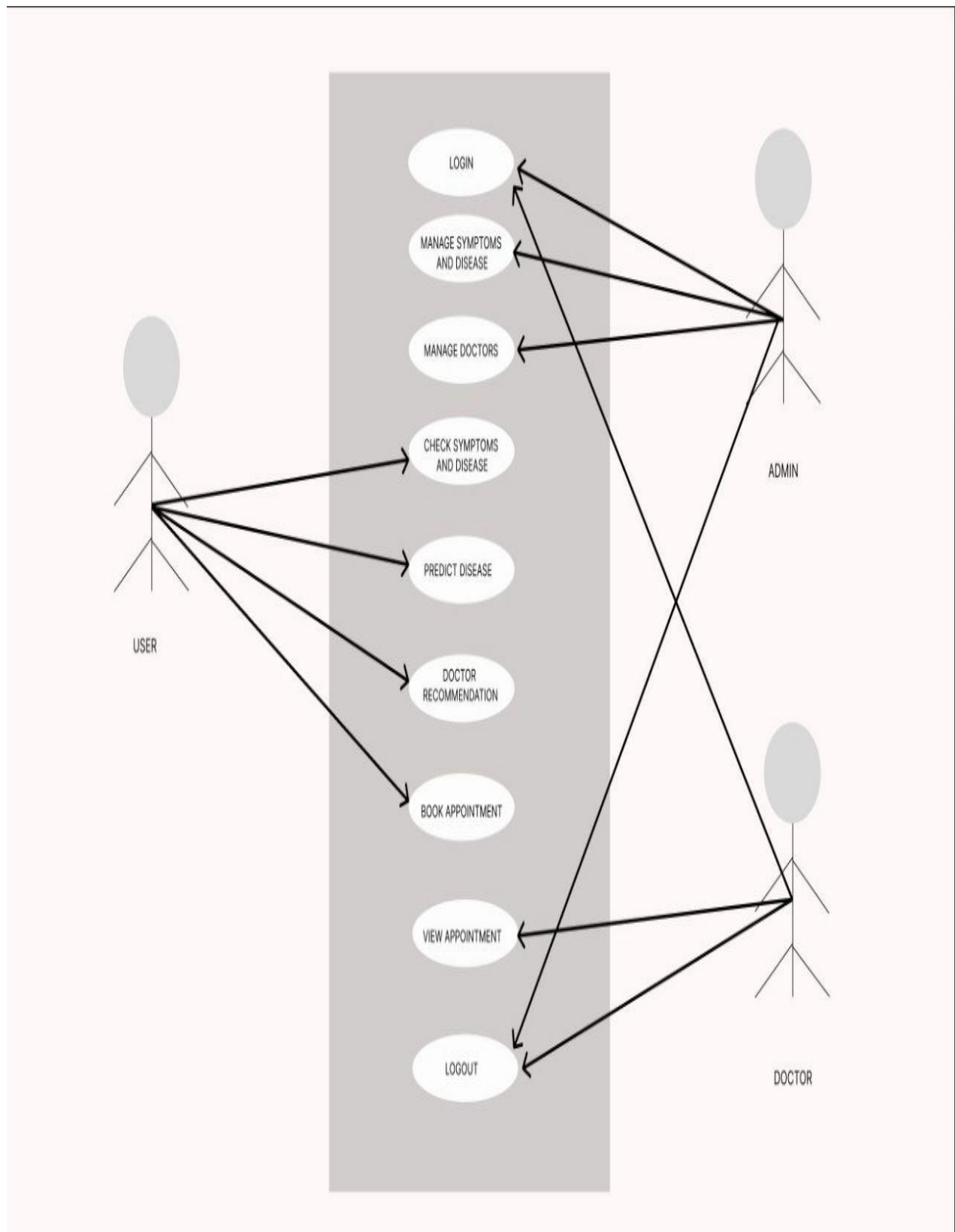
- **View Appointment**

After users make an appointment, the doctor should log in to his or her form to view the appointments and calendar so that he or she may speak with the users who made the appointment.

➤ **Components Diagram:**



➤ **Use Case Diagram:**



2) Description of Technology Used:

➤ Details of Hardware devices

- **What is a Processor**

The processor is a chip or a logical circuit that responds and processes the basic instructions to drive a particular computer. The main functions of the processor are fetching, decoding, executing, and write back the operations of an instruction. The Core i3 processor is available in multiple speeds, ranging from 1.30 GHz up to 3.50 GHz, and features either 3 MB or 4 MB of cache. Core i3 processors are found as dual-core, having two cores.

- **Types of processors: -**

- ❖ **Microprocessor: -**

- The general-purpose processors are represented by the microprocessor in embedded systems. There are different varieties of microprocessors available in the market from different companies.

- ❖ **Microcontroller**

- The microcontroller is basically a computer that comes in various packages and sizes. The reading input and responding to output is the basic function of the microcontroller.

- **RAM**

RAM (Random Access Memory) is the hardware in a computing device where the operating system (OS), application programs and data in current use are kept so they can be quickly reached by the device's processor. RAM is the main memory in a computer.

- **Types of RAMS**

1. **SRAM** (Static Random Access Memory)

SRAM is used for cache memory. It can hold the data as long as the power availability is there.

2. **DRAM** (Dynamic Random Access Memory)

DRAM is used for the main memory, it has a different construction than SRAM, and it used one transistor and one capacitor which is needed to get recharged in milliseconds due to the presence of the capacitor.

- **Advantages: -**

1. RAM Faster than secondary storage.
2. RAM can capably read and write any type of data.
3. RAM consumes less power compared to hard disk, CD, DVD, FLOPPY disk.
4. No part of RAM moves when RAM executes an instruction.
5. RAM memory increases your computer speed.
6. Central Processing Unit (CPU) reads any data faster because of RAM.

➤ Details of software products

XAMPP: -

XAMPP is a free and open-source cross-platform web server solution stack package developed by Apache Friends, consisting mainly of the Apache HTTP Server, MariaDB database, and interpreters for scripts written in the PHP and Perl programming languages.

PHP Designer: -

PHP is a general-purpose scripting language geared toward web development. It was originally created by Danish-Canadian programmer Rasmus Lerdorf in 1993 and released in 1995. The PHP reference implementation is now produced by The PHP Group. PHP was originally an abbreviation of Personal Home Page, but it now stands for the recursive initialism PHP: Hypertext Pre-processor.

Operating system (OS): -

The program that, after being initially loaded into the computer by a boot program, manages all of the other application programs in a computer. The application programs make use of the operating system by making requests for services through a defined application program interface (API).

VS Code: -

Visual Studio Code is a source-code editor that can be used with a variety of programming languages, including C, C#, C++, Fortran, Go, Java, JavaScript, Node.js, Python, Rust. It is based on the Electron framework, which is used to develop Node.

Browser: -

A browser is an application program that provides a way to look at and interact with all the information on the World Wide Web. This includes Web pages, videos and images. Common web browsers include Microsoft Edge, Internet Explorer, Google Chrome, Mozilla Firefox, and Apple Safari.

Web Apache Server: -

An Apache Server is a web server application that delivers content such as HTML pages, multimedia and CSS Style sheets over the internet. Apache is a community-developed web application published by the Apache Software Foundation.

MySQL: -

MySQL is a relational database management system based on the Structured Query Language, which is the popular language for accessing and managing the records in the database. MySQL is open-source and free software under the GNU license. It is supported by Oracle Company.

➤ Programming language

HTML: -HTML stands for Hyper-Text Markup Language. It is used to design web pages using a markup language. HTML is a combination of Hypertext and Markup language. Hypertext defines the link between web pages. A markup language is used to define the text document within the tag which defines the structure of web pages.

CSS: -

- CSS stands for Cascading Style Sheet.
- CSS is used to design HTML tags.
- CSS is a widely used language on the web.
- HTML, CSS and JavaScript are used for web designing. It helps the web designers to apply style on HTML tags.

JAVASCRIPT: -JavaScript (JS) is a light-weight object-oriented programming language which is used by several websites for scripting the webpages. It is an interpreted, full-fledged programming language that enables dynamic interactivity on websites when applied to an HTML document.

BOOTSTRAP: - Bootstrap is a free and open-source tool collection for creating responsive websites and web applications. It is the most popular HTML, CSS, and JavaScript framework for developing responsive, mobile-first websites. Designed to enable responsive development of mobile-first websites, Bootstrap provides a collection of syntax for template designs.

PHP: -

- PHP stands for Hypertext Pre-processor.
- PHP is an interpreted language, i.e., there is no need for compilation.
- PHP is faster than other scripting languages, for example, ASP and JSP.
- PHP is a server-side scripting language, which is used to manage the dynamic content of the website.
- PHP can be embedded into HTML.
- PHP is an object-oriented language

3) Fabrication:

➤ Construction or Fabrication details

• Admin Login

We first gathered the prerequisites for admin login, then we analyzed the information we had. The admin login form is then created. The page is validated after it has been designed, and each field of the form needs to be filled out correctly. After that, we connected the database. After finishing all the processes, the testing is finished.

• Manage Symptoms & Disease

For symptom and illness management We initially gathered requirements, then analyzed those requirements. Then we built the add symptoms and add disease

pages. After constructing both pages, it is validated where the symptoms are defined to fit the disease. Then we connect to a database. Finally, after completing all of the stages, testing is completed.

- **Check Symptoms & Disease**

We first gathered the criteria for the do Check Symptoms & disease, analyzed those needs, and then designed the form. Following the evaluation of the designed page, we link to the database, and finally all the steps are finished. The testing is over.

- **Predict Disease**

In order to predict disease, we first collected the necessary information, which we then analyzed. then the form was created. The website is validated when the disease is predicted once it has been designed. then we connect to the database. and lastly, once all the stages have been completed, testing is finished.

- **Manage Doctor**

For Managing Physician, we initially gathered the requirements, then we analyzed them. then the form for managing the doctors was created. The page is evaluated after it has been designed. then we connect to the database. and lastly, once all the stages have been completed, testing is finished.

- **Doctor Login**

We first gathered the criteria for the doctor login, analyzed those needs, and then designed the form for the doctor login. Following the evaluation of the designed page, we link to the database, and finally all the steps are finished. The testing is over.

- **View Doctor**

For view doctor, we first gathered the requirements, then analyzed them, and finally designed the form. Following the evaluation of the designed page, we link to the database, and finally all the steps are finished. The testing is over.

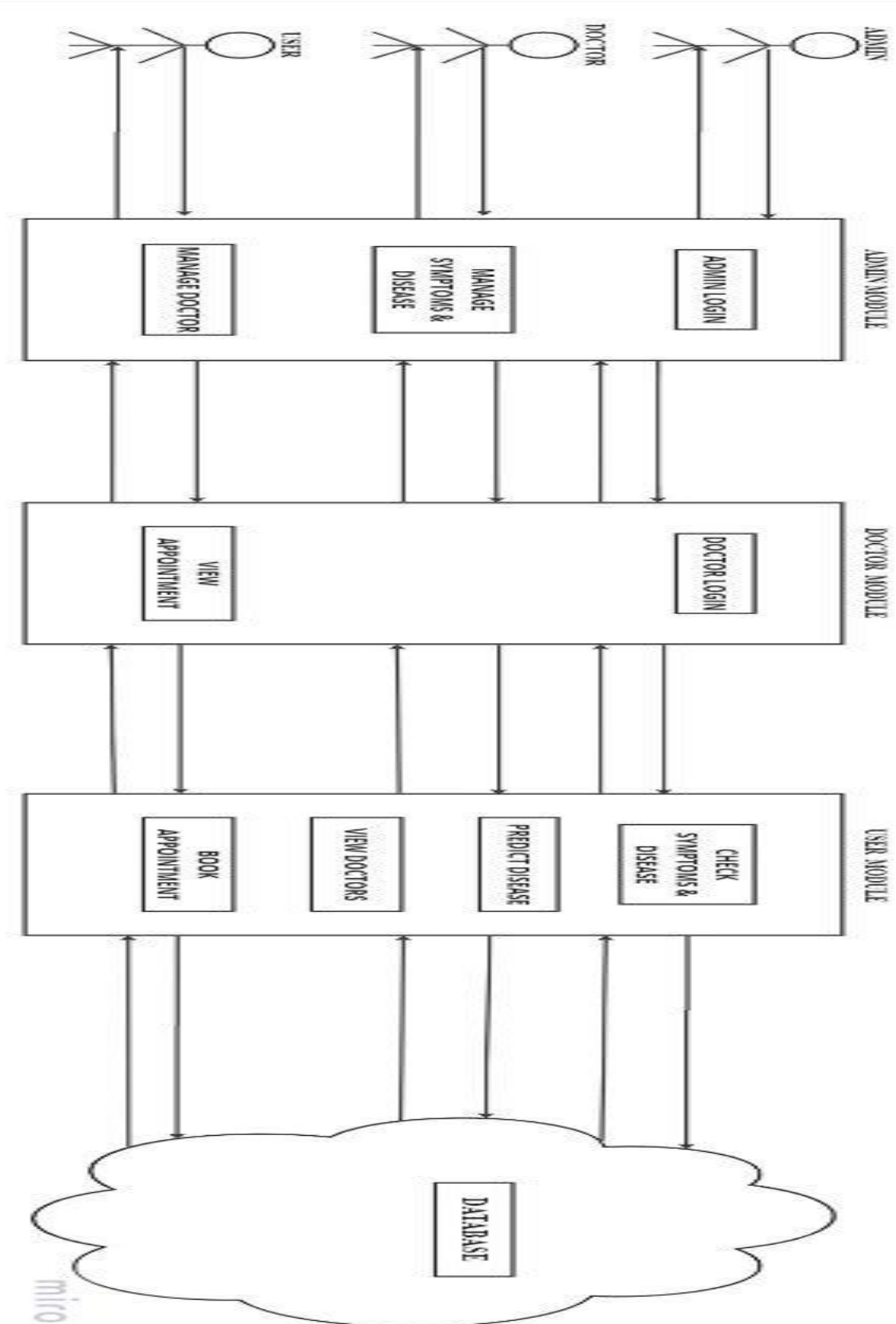
- **Book Appointment**

For making an appointment book. collected the needs, examined them, and then created the form that has been. users have scheduled appointments with doctors. Following When all of the stages are complete and the testing is complete, the evaluation of the design page will link to the database.

- **View Appointment**

Gather the requirements for seeing an appointment first, analyze them, and then create the form that users will use to view the appointment. Next, doctors Check the appointment on his form by going there. Set the time as he chooses. When all testing stages are complete, the evaluation of the design page will link to the database.

➤ System Architectural Dig.



4) Testing

Testing Types: -

Manual Testing: - Manual Testing is a kind of software testing in which a software tester develops and executes the test cases without using any automated testing tools. The main objective of manual testing is to detect the issues, bugs, and defects of a software application. Any new software application should be manually tested before performing the automation testing. The software testing fundamental “100% Automation is not possible” makes Manual Testing essential.

Unit Testing: - Unit testing is a software development process in which the smallest testable parts of an application, called units, are individually scrutinized for proper operation. Software developers and sometimes QA staff complete unit tests during the development process. The main objective of unit testing is to isolate written code to test and determine if it works as intended. Unit testing is an important step in the development process. If done correctly, unit tests can detect early flaws in code which may be more difficult to find in later testing stages.

Integration Testing: - Integration testing (sometimes called integration and testing, abbreviated I&T) is the phase in software testing in which individual software modules are combined and tested as a group. Integration testing is conducted to evaluate the compliance of a system or component with specified functional requirements. It occurs after unit testing and before system testing. Integration testing takes as its input modules that have been unit tested, groups them in larger aggregates, applies tests defined in an integration test plan to those aggregates, and delivers as its output the integrated system ready for system testing.

White Box Testing: - White box testing is a form of application testing that provides the tester with complete knowledge of the application being tested, including access to source code and design documents. This in-depth visibility makes it possible for white box testing to identify issues that are invisible to grey and black box testing.

Black Box Testing: - Black box testing involves testing a system with no prior knowledge of its internal workings. A tester provides an input, and observes the output generated by the system under test. This makes it possible to identify how the system responds to expected and unexpected user actions, its response time, usability issues and reliability issues.

Validation: -

1. Admin Login: -

Test Case Id	Test Case Description	Test Steps	Test Data	Expected Result	Actual Result	Status
TC01	Check Admin Login with valid data	Enter username Enter password	Username: admin Password: admin	User should login into an application	As Excepted	Pass

2. Manage Symptoms and Disease: -

Test Case Id	Test Case Description	Test Steps	Test Data	Expected Result	Actual Result	Status
TC02	While Adding the Organs, Symptoms& Disease there should not be any Numeric Values	Enter Organs Enter Symptoms Enter Disease	Organ: Kidney Symptoms: swelling in the area of your kidneys Disease: Kidney Cancer	User should enter the correct details for organs, symptoms & Diseases.	As Excepted	Pass

3. Check Symptoms and Disease: -

Test Case Id	Test Case Description	Test Steps	Test Data	Expected Result	Actual Result	Status
TC03	Selection of the organs & symptoms must be correctly done.	Selecting the organ. Selecting the Symptoms.	Organ: Kidney Symptoms: swelling in the area of your kidneys	User should correctly select the organs & Symptoms.	As Excepted	Pass

4. Predict Disease: -

Test Case Id	Test Case Description	Test Steps	Test Data	Expected Result	Actual Result	Status
TC04	While Predicting Disease the symptoms must be correctly listed out to properly Predict the disease	Selecting the Symptoms.	Symptoms: swelling in the area of your kidneys	User should correctly select the Symptoms.	As Excepted	Pass

5. Manage Doctor: -

Test Case Id	Test Case Description	Test Steps	Test Data	Expected Result	Actual Result	Status
TC05	This module is managed by the admin it will give the approval to Hospitals when they register themselves.	Username Password:	Username: Shridhar Kulkarni Password: Shridhar@1234	User should correctly Register & Login themselves	As Excepted	Pass

6. Doctor Login: -

Test Case Id	Test Case Description	Test Steps	Test Data	Expected Result	Actual Result	Status
TC06	Here the doctor will login using username & password.	Username Password	Username: Shridhar Kulkarni Password: Shridhar@1234	User should correctly Register & Login themselves	As Excepted	Pass

7. View Doctor: -

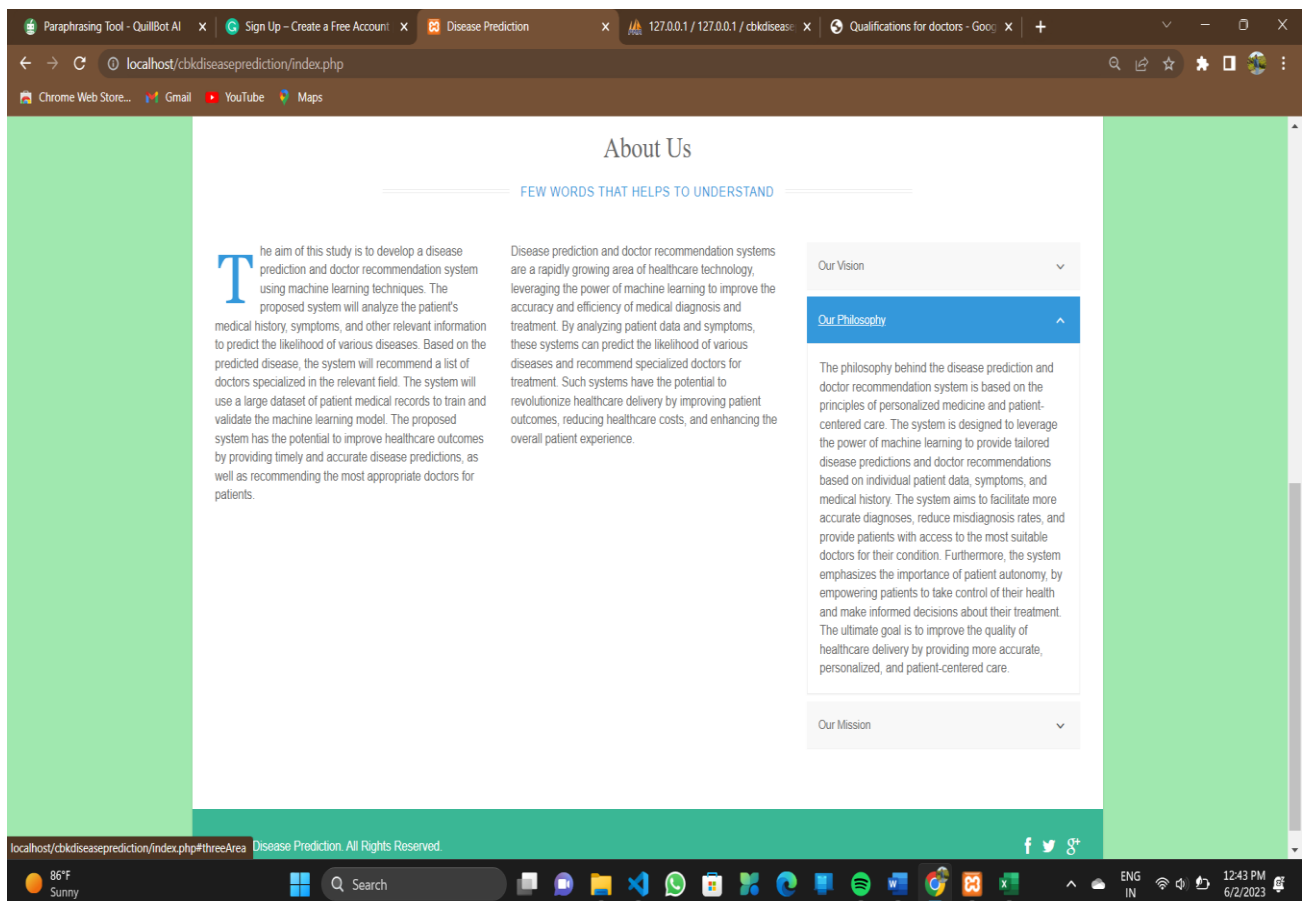
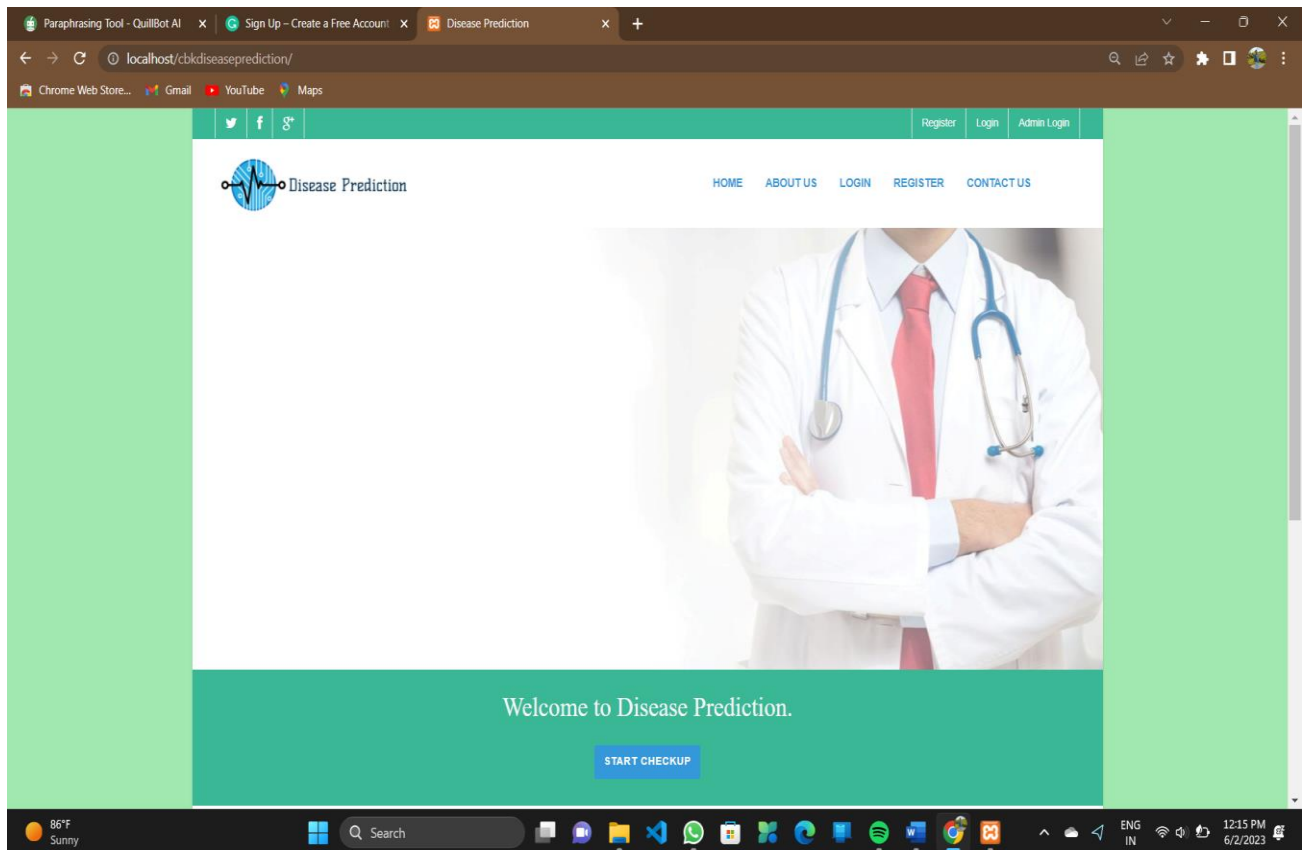
Test Case Id	Test Case Description	Test Steps	Test Data	Expected Result	Actual Result	Status
TC07	In this module the doctors will be recommended based on their symptoms Organs & Diseases.	Select Organs & Symptoms	Organ: Kidney Symptoms: swelling in the area of your kidneys	User should correctly select the organs & Symptoms	As Excepted	Pass

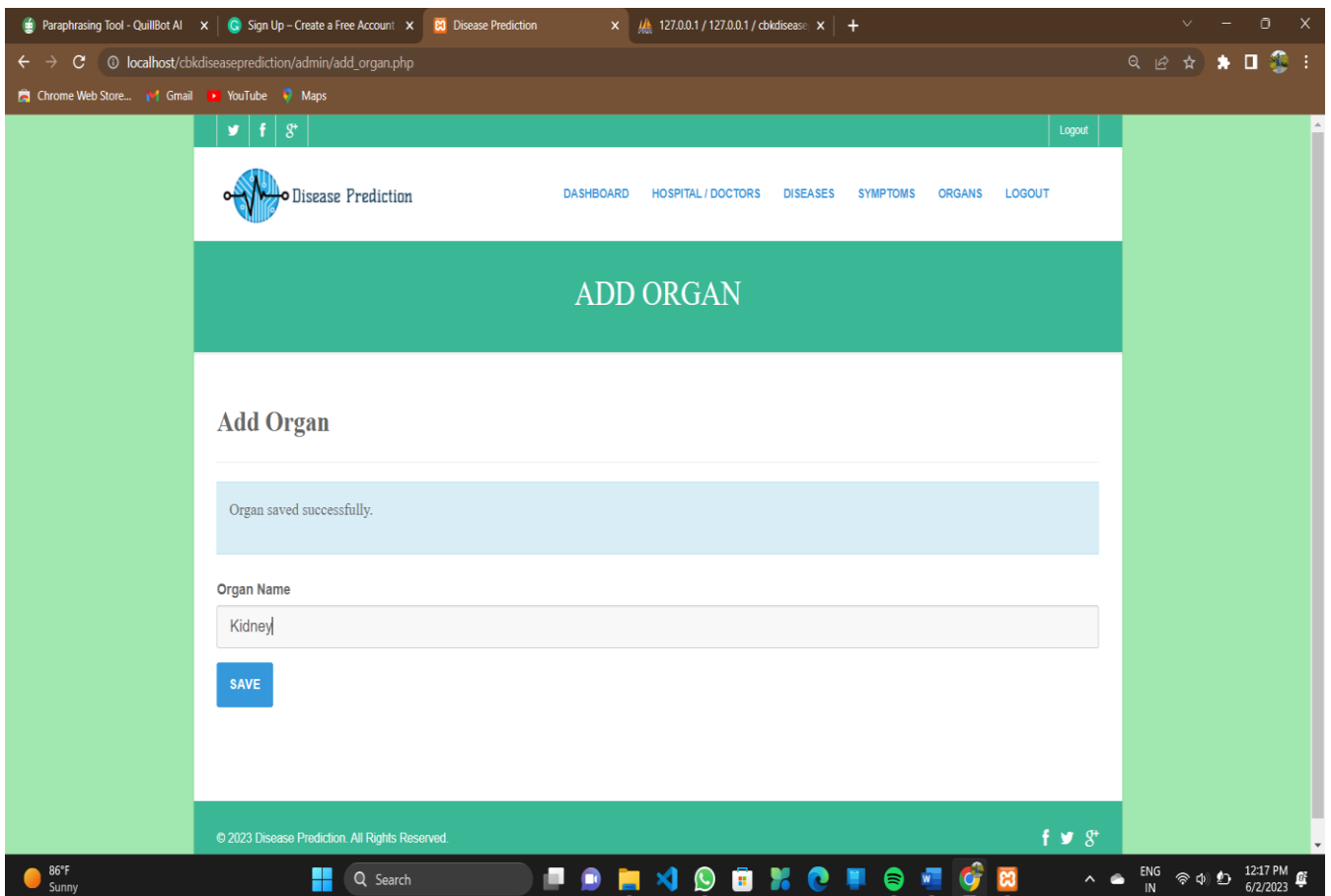
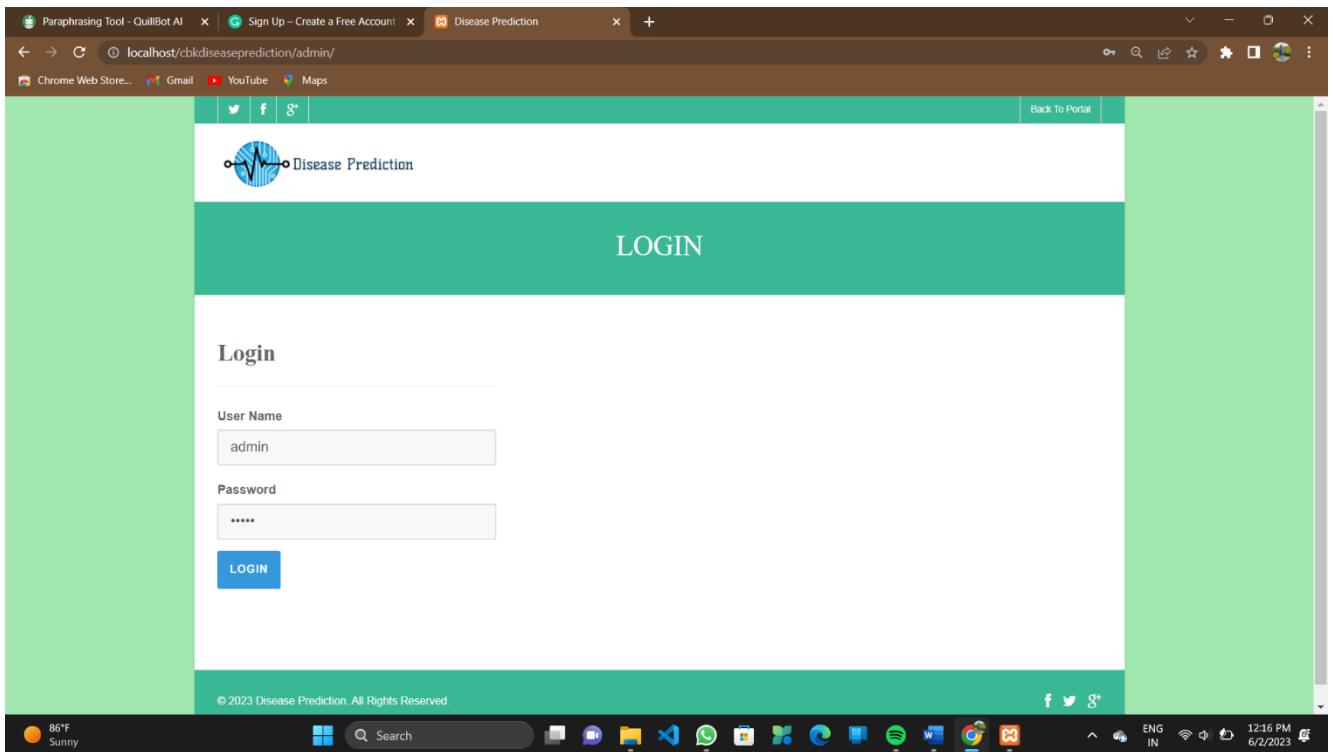
8. Book Appointment: -

Test Case Id	Test Case Description	Test Steps	Test Data	Expected Result	Actual Result	Status
TC08	In this module the users will be able to book the appointment based on their Diseases.	Enter appointment date & personal details like name, email & phone no.	Appointment Date: 8/05/2023 Name: Rohan. K Email-id: rohank@gmail.com Phone no. 9986472556	User should correctly fill their details	As Excepted	Pass

9. View Appointment: -

Test Case Id	Test Case Description	Test Steps	Test Data	Expected Result	Actual Result	Status
TC09	In this module the users will be able to view the appointment based on their Diseases.	Enter username Enter password	Username: Shridhar Kulkarni Password: Shridhar@1234	User should correctly put their username & password to login & view details	As Excepted	Pass






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Twitter Facebook Google+ Logout

 Disease Prediction

DASHBOARD HOSPITAL / DOCTORS DISEASES SYMPTOMS ORGANS LOGOUT

ADD SYMPTOM

Add Symptom

Symptom saved successfully.

Symptom Name

a lump or swelling in the area of your kidneys

SAVE

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 Disease Prediction

DASHBOARD HOSPITAL / DOCTORS DISEASES SYMPTOMS ORGANS LOGOUT

ADD DISEASE

Add Disease

Disease saved successfully.

Disease Name

Kidney Cancer

Cause

smoking, obesity, high blood pressure, long-term dialysis, and a family history of kidney cancer can all increase your risk.

SAVE

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YouTube
Maps

Diseases

ID	Disease Name	Cause	Actions
16	Kidney Cancer	smoking obesity high blood pressure long term dialysis a family history of kidney cancer can all increase your risk	Edit + Link Symptoms Remove
15	SIBO	SIBO occurs when bacteria from the large intestine migrate to the small intestine	Edit + Link Symptoms Remove
14	Appendicitis	Appendicitis may be caused by various infections such as virus, bacteria or parasites, in your digestive tract	Edit + Link Symptoms Remove
13	Bells Palsy	This condition causes temporary paralysis or weakness of one side of the face. "It's a loss of function of the seventh cranial nerve," Lawton explains.	Edit + Link Symptoms Remove
12	Spina Bifida	This birth defect -- specifically what's called a neural tube defect -- occurs on a continuum. It can be more or less severe. The most severe form is known as myelomeningocele. Depending upon severity, spina bifida can lead to a range of complications.	Edit + Link Symptoms Remove
11	Scoliosis	Most often, the cause of scoliosis, or abnormal curvature of the spine, is unknown -- called idiopathic scoliosis. In other cases, it may be degenerative and occur as a person ages.	Edit + Link Symptoms Remove
10	Tumors	Both benign and malignant tumors can put pressure on brain tissue or destroy tissue, causing problems in the body associated with the area of the brain affected. Tumors can start within the brain or metastasize there from other organs.	Edit + Link Symptoms Remove
9	Trauma	Trauma, including concussion, can be mild or severe, and can cause anything from a mild headache to confusion, loss of consciousness, convulsions and even death. Benish stresses the importance of head protection for everyone.	Edit + Link Symptoms Remove

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Disease Prediction

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DISEASES
SYMPTOMS
ORGANS
LOGOUT

LINK SYMPTOMS OF KIDNEY CANCER

Link Symptoms

Symptom linked successfully.

Organ Name
Select

Symptom Name
Select

SAVE

Kidney Cancer Symptoms

#	Organ Name	Symptom Name	Actions
66	Kidney	a lump or swelling in the area of your kidneys	Remove
67	Kidney	blood in your urine the amount of blood is usually high enough to change the colour of your urine to a reddish or dark brown colour	Remove

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localhost/cbkdiseaseprediction/register.php

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DOCTOR REGISTER

Register

Hospital Name <input type="text" value="Shiv Krupa"/>	Hospital Phone <input type="text" value="8972556716"/>	Hospital Email <input type="text" value="shivkrupa24@gmail.com"/>
Hospital City <input type="text" value="Chikodi"/>	Hospital Address <input type="text" value="K.C road"/>	Doctor Name <input type="text" value="Shridhar Kulkarni"/>
Doctor Phone <input type="text" value="6352418790"/>	Doctor Qualification <input type="text" value="MBBS"/>	Doctor Speciality <input type="text" value="Kidney"/>
Photo <input type="button" value="Choose File"/> No file chosen	User Name <input type="text" value="shridhar"/>	Password <input type="password" value="*****"/>

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Logout

Disease Prediction

DASHBOARD HOSPITAL / DOCTORS DISEASES SYMPTOMS ORGANS LOGOUT

HOSPITAL / DOCTORS

Hospital / Doctors

ID	Hospital Name	Hospital Phone	Hospital Address	Doctor Name	Doctor Phone	Doctor Qualification	Doctor Speciality	Status	Actions
2	Shiv Krupa	8972556716	K.C road	Shridhar Kulkarni	6352418790	MBBS	Kidney	<input checked="" type="checkbox"/>	<input type="button" value="o"/>
1	Diya	6363703025	K.C road	palak	8050413712	MBBS	Head	<input checked="" type="checkbox"/>	<input type="button" value="o"/>

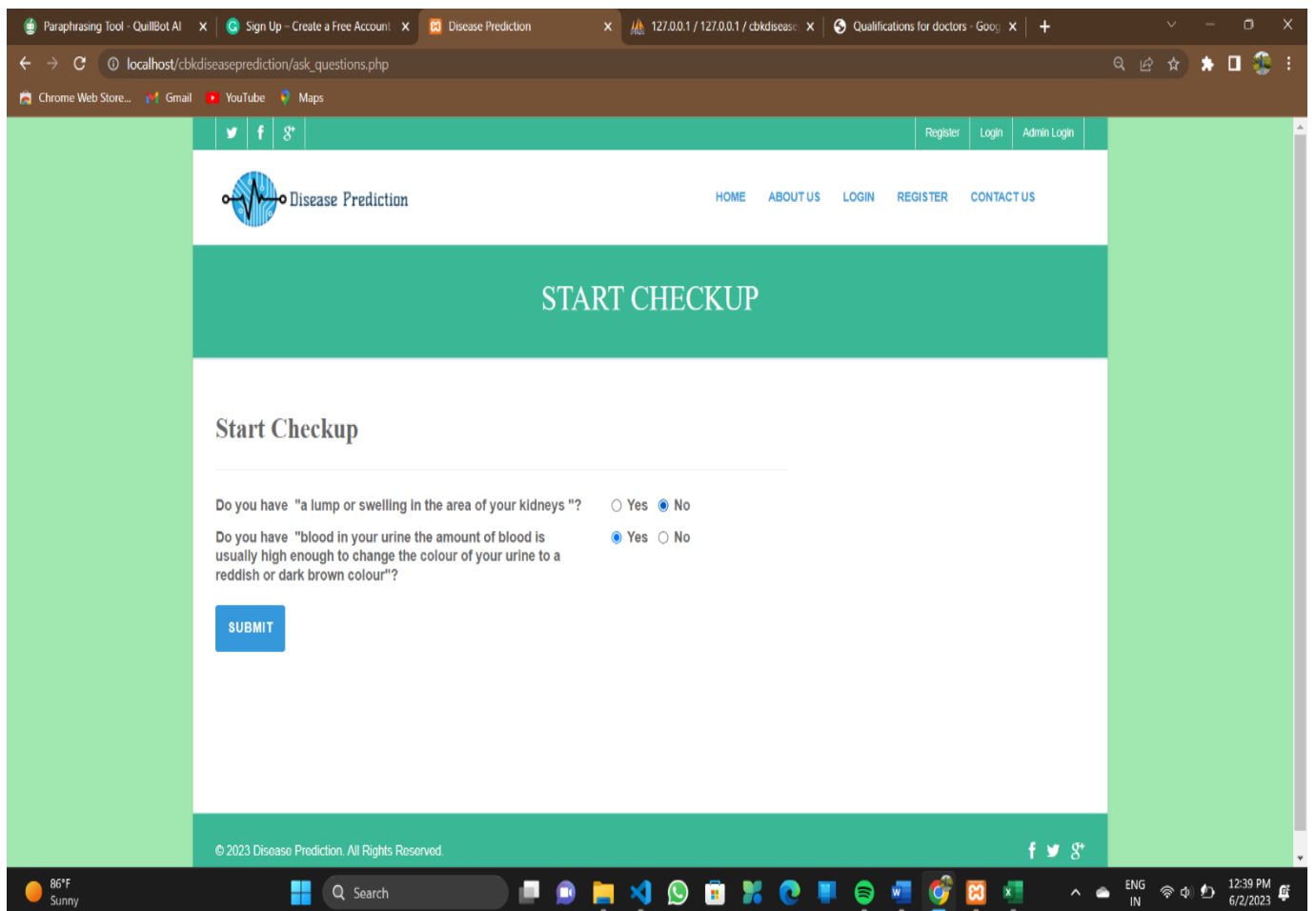
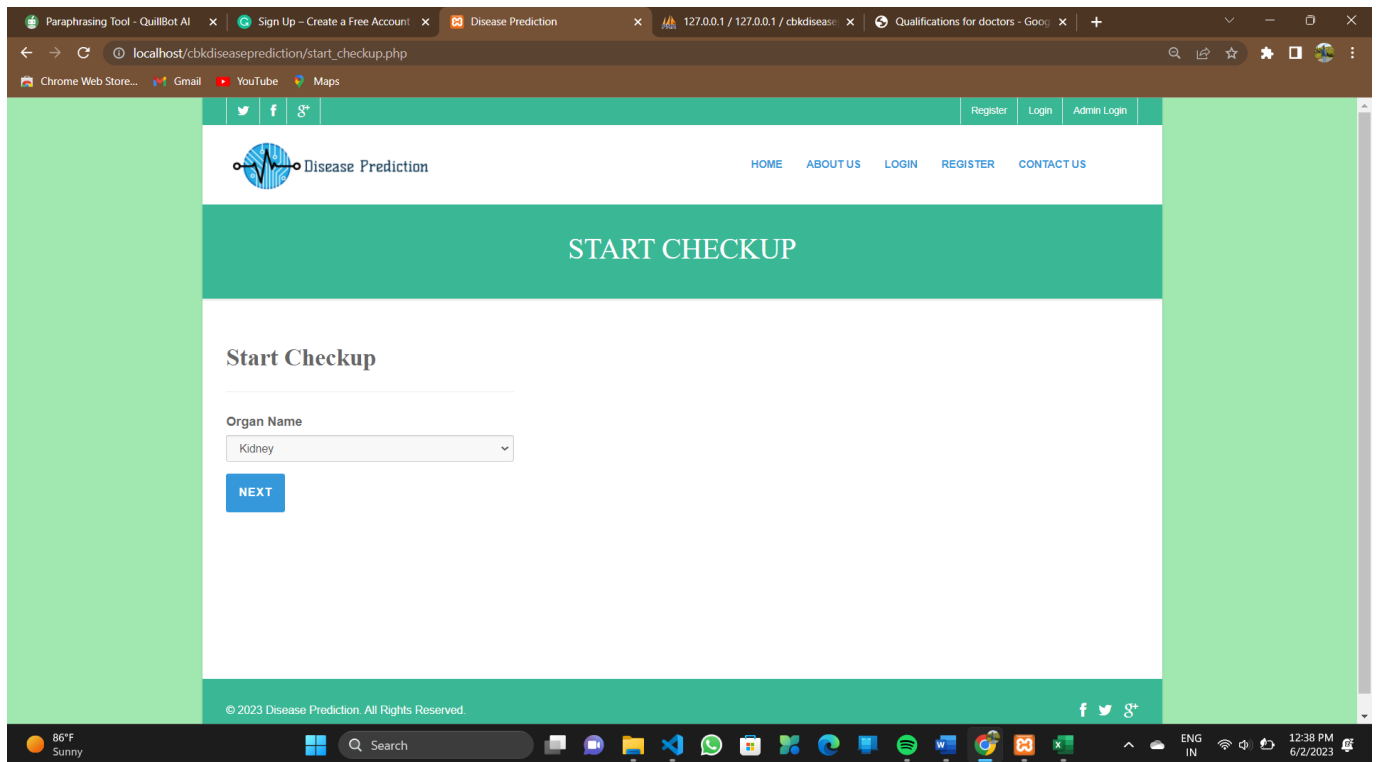
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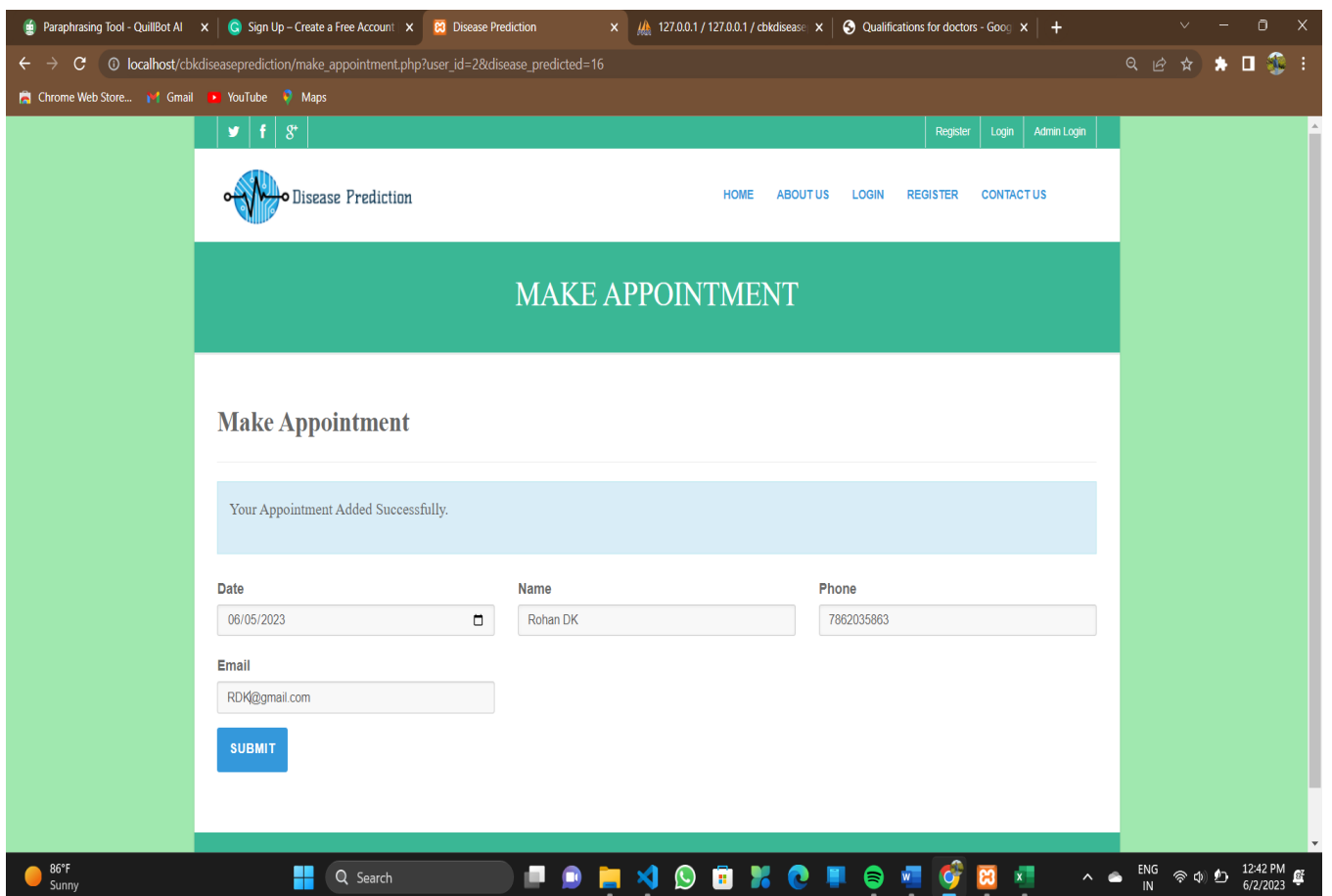
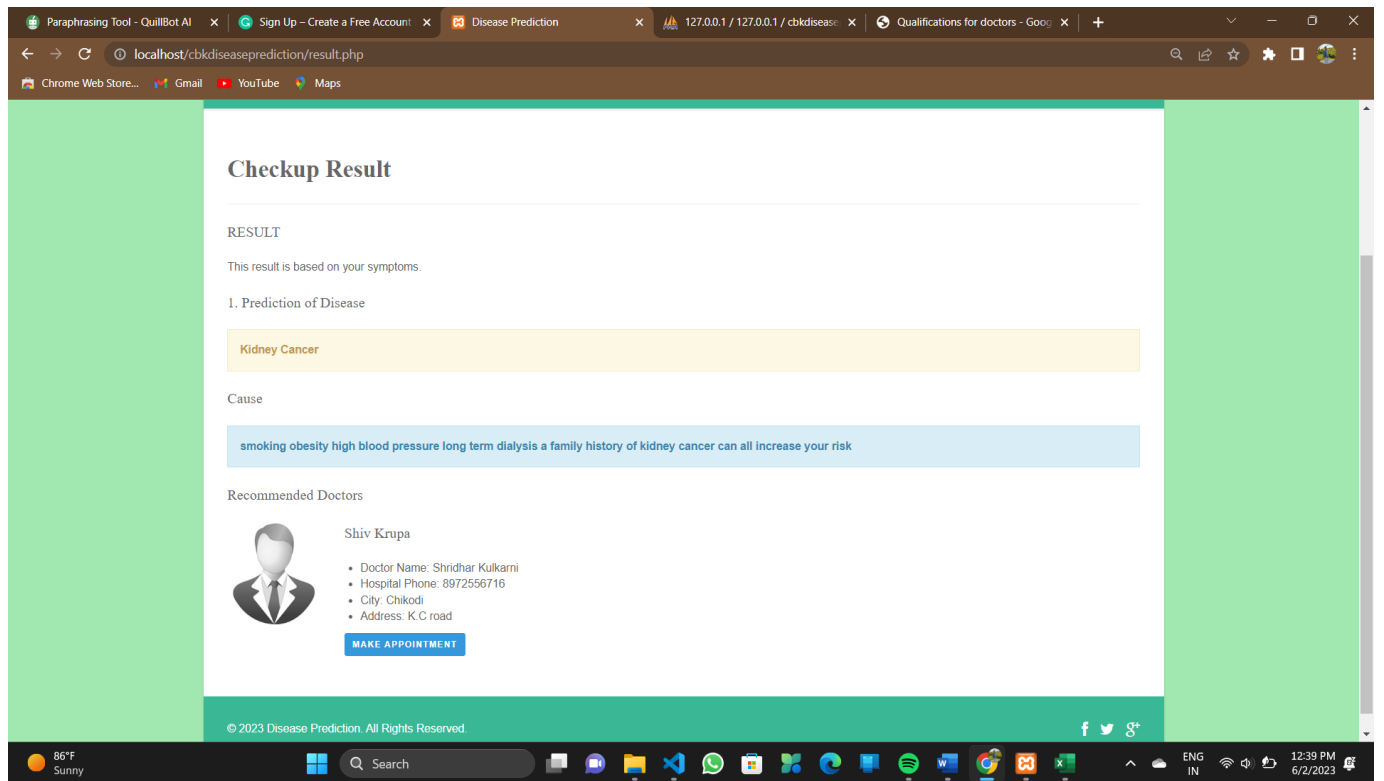
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localhost/cbkdiseaseprediction/login.php

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Register Login Admin Login

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HOME ABOUT US LOGIN REGISTER CONTACT US

LOGIN

Login

User Name

shridhar

Password

LOGIN

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localhost/cbkdiseaseprediction/appointments.php

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HOME ABOUT US DASHBOARD APPOINTMENTS CONTACT US

APPOINTMENTS

Appointments

Date	Name	Phone	Email	Actions
05/06/2023	Rohan DK	7862035863	RDK@gmail.com	

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Inference: -

- **Admin Login:** The admin module is the most crucial one in this case because it controls all dependent modules. The other two main modules, the Doctor module and the User module, are all handled by this module.
- **Manage Symptoms & Disease:** The Manage Symptoms & Disease module depends on the admin logging in because doing so adds organs, symptoms, and diseases as well as links all of them to their respective diseases.
- **Check Symptoms & Diseases:** Checking symptoms and diseases is dependent on managing symptoms and diseases since users can only check diseases when symptoms and diseases are handled by the admin.
- **Predict Disease:** Predicting disease is dependent on checking symptoms and diseases because when symptoms and organs are recorded, doctors are recommended.
- **Manage Doctor:** This module is managed by admin and is depending on disease prediction. When an illness is predicted, the administrator oversees the doctors, and the system recommends doctors depending on disease.
- **Doctor Login:** Doctor login is handled by admin login, and this module is dependent on manage doctors; when physicians register themselves, the admin accepts hospital/doctor registration.
- **View Doctor:** View Doctor is entirely dependent on the doctor login because only the doctors/hospitals who login and specify their details will be recommended based on that disease.
- **Book Appointment:** Booking an appointment is based on doctor recommendations because when doctors are suggested, the patient or user can book an appointment.
- **View Appointment:** To view the appointments, people must first book them, and then doctors must login to their portal to view them.

Date

Signature of the student

Signature of the cohort owner