Department of Technical Education
Capstone project
Document CIE-2

Capstone project Name: Disease Prediction & Online Recommendation

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Description of technology used

- **Web technology**

  Web technology refers to the means by which computer communicate with each other using markup languages & multimedia package.
  - Browsers
  - HTML and CSS
  - Programming Languages
  - Frameworks
  - Web Servers
  - Databases
  - Protocols
  - Data Formats

- **Advantages:**

1. Lower Development Cost.
2. Easy installation & Maintenance.
3. Adaptable to changing Workloads.
4. Centralized Security.
5. Increased Efficiency.
6. Reduced Hardware Costs.

- **Cloud based technology**

  Cloud computing is a range of services delivered over the internet, or "the cloud." It means using remote servers to store and access data instead of relying on local hard drives and private datacenters.

- **Types of Cloud Computing:**

  SAAS: - Software as a Service.
  PAAS: - Platform as a Service.
  IAAS: - Infrastructure as a Service.

- **Advantages:**

1. Faster time to market.
2. Scalability and flexibility.
3. Cost savings.
4. Better collaboration.
5. Data loss prevention.
6. Advanced security.

- ## Open-Source web technology

Open-source software (OSS) is software that is distributed with its source code, making it available for use, modification, and distribution with its original rights. Source code is the part of software that most computer users don't ever see; it's the code computer programmers manipulate to control how a program or application behaves.

We do not need to buy any software or libraries for our project.

1. **Web server, Apache**

   Web server, Apache is an open-source platform & responsible for accepting directory (HTTP) requests from Internet users and sending them their desired information in the form of files and Web pages.

2. **XAMPP**

XAMPP is a cross-platform and open-source tool, which makes it an ideal choice of web developers. It is the acronym of X-cross platform, Apache, MySQL, PHP, and Perl.

3. **PHP**

   PHP is an open-source scripting language used for creating dynamic and interactive web pages and various digital platforms

4. **PhpMyAdmin**

   PhpMyAdmin is an open source and free administration tool for MySQL

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.

O**perating 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

Description of the 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**

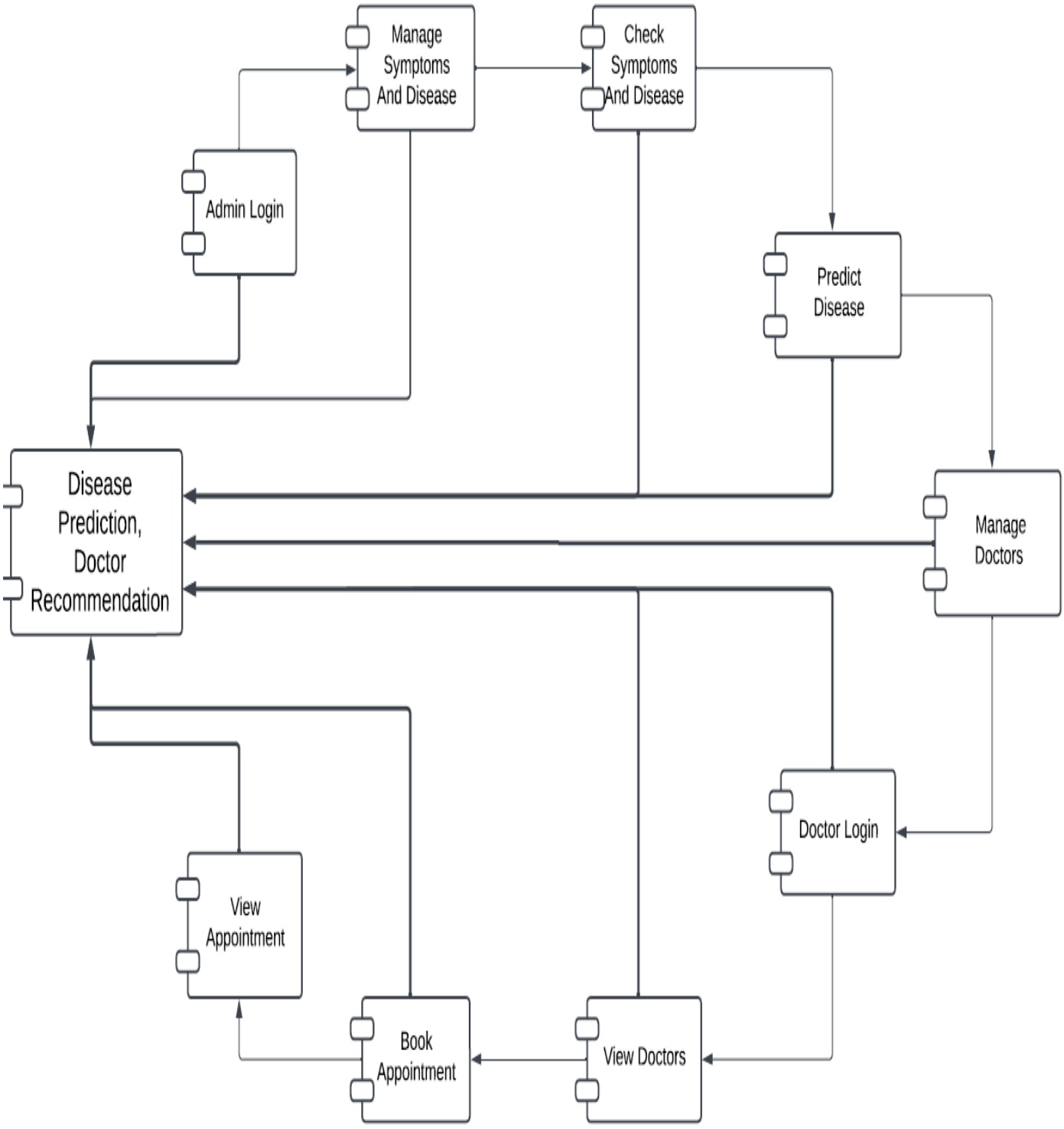
  Users should select a doctor and schedule an appointment after confirming their illness by entering the appointment date and their personal information.

- **View Appointment**

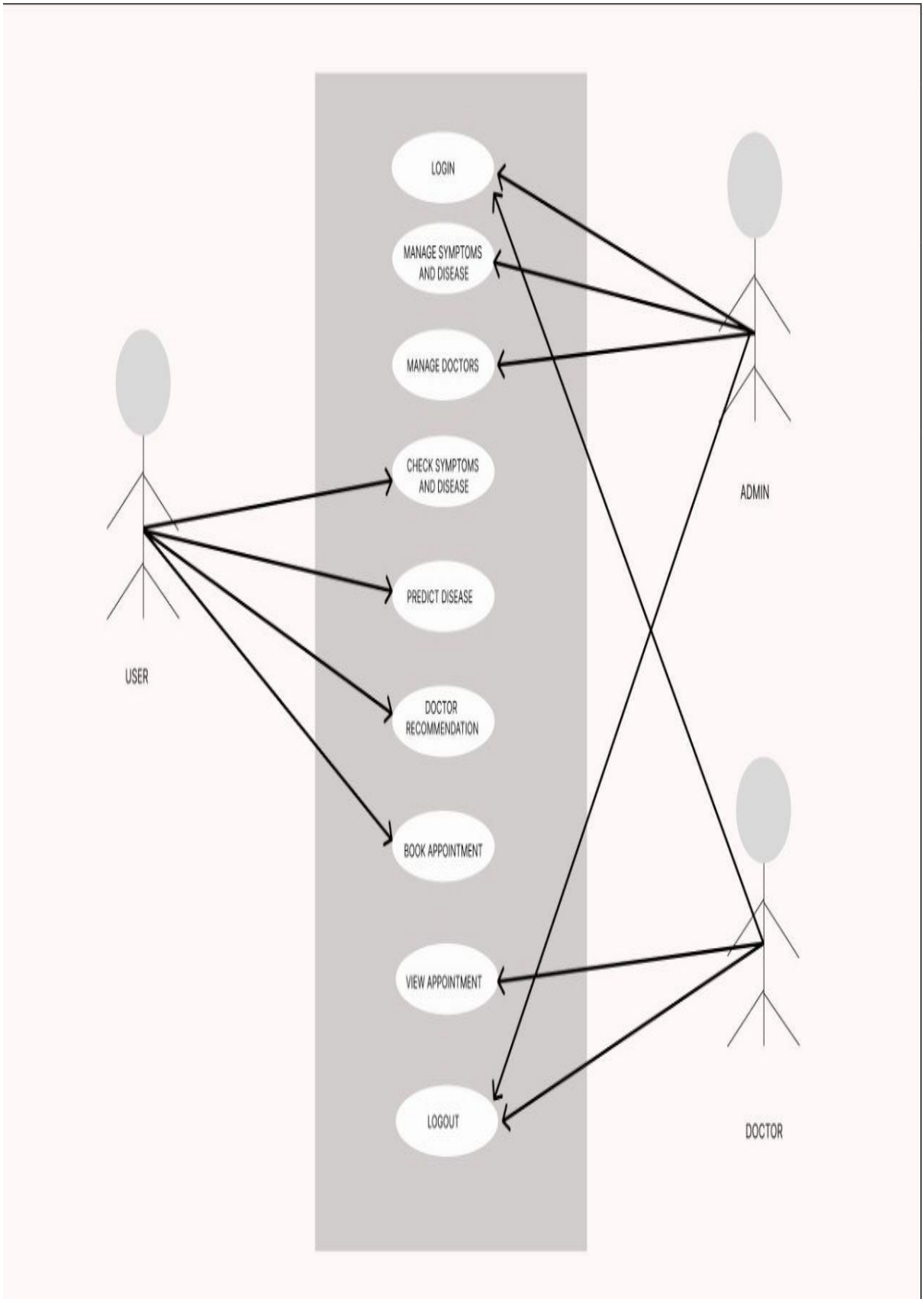
  After users make an appointment, the doctor should log in to his or her form to view the appointments and calendar so that he or she may speak with the users who made the appointment.

Component diagrams and required design

Component diagram: -



Use Case Diagram: -



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.

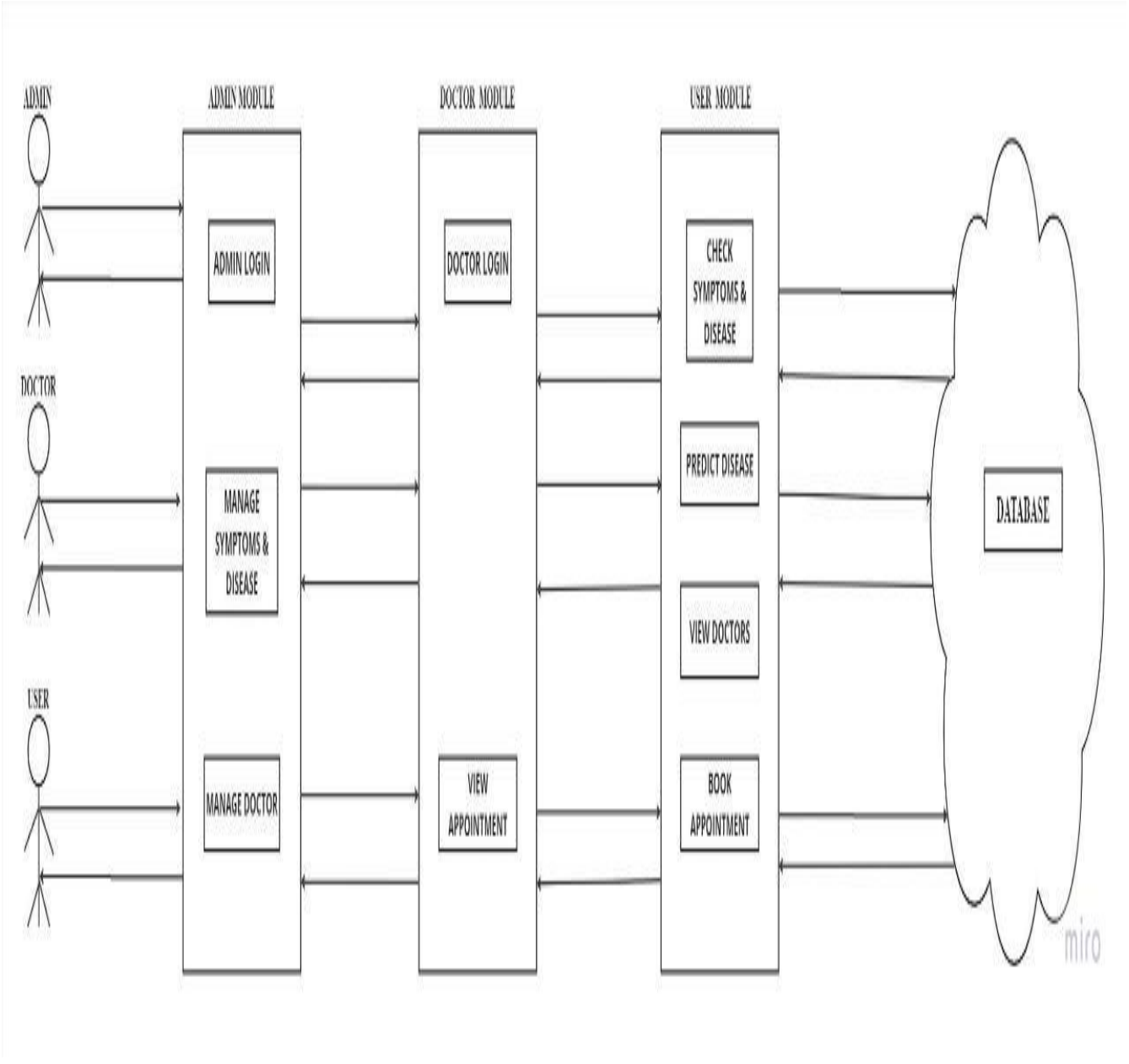
- **Book Appointment**

  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.



Any other information needed to execute the Capstone project

- **XAMPP Server**

  XAMPP is a cross-platform and open-source tool, which makes it an ideal choice of web developers. It is the acronym of X-cross platform, Apache, MySQL, PHP, and Perl.

  Steps to run program using XAMPP Server

  1. Open XAMPP Server control panel.
  2. Start Apache and MySQL service.
  3. Minimize the windows.
  4. Open browser.
  5. In URL address bar type root folder name with local host (local host/cbktest).

  To live the program on cloud server

  1. Purchase web domain name and cloud hosting server from any software company.

After purchase using username and password login to the cloud server and configure the project

Signature of the Cohort owner