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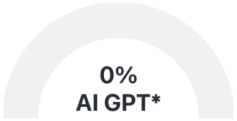

H ealthBot

A Gateway solution for better healthcare

Group 6

Srikar Sistla

Vineeth Petnakota

Kunal Rewade

Date of Submission : 11/22/2023

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Roles and r esponsibilities

Members Role (part 1) Role (part 2) Role (part 3) Responsibility

Kunal Developer Analyst Project Manager -Designing Logo

and UI Interface

for the

HealthBot

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Roles and responsibilities

Members	Role (part 1)	Role (part 2)	Role (part 3)	Responsibility
Kunal	Developer	Analyst	Project Manager	-Designing Logo and UI Interface for the application. -Management Issues -Gantt Chart and Flowchart -Project Scope -Requirement Elicitation Methods -System Design
Srikar	Project manager	Developer	Analyst	-Business Needs -Feasibility Analysis -System Request -Functional and Non-functional requirement - Alternative solutions - Communication plan - Milestones - Organizational Environment.
Vineeth	Analyst	Project Manager	Developer	-Business Requirement -Business Value -Technology scope -UML -ERD -DFD

Executive summary

Problem Statement

The US healthcare system is struggling to keep up with the rising demand, which has a negative impact on patient finances, access to physicians and quality. By reducing waiting times, maximizing doctor's time, and effectively matching patients with famous doctors, the healthbot initiative seeks to address these problems.

Proposed Solution

HealthBot acts as a server by helping patients in receiving best treatment by greeting patients upon login, matches them with doctors in the area based on search terms, and offers basic medical advice. This chatbot also helps patients and doctors communicate by enabling virtual consultations and, if necessary, the scheduling of in-person sessions. By increasing flexibility, this strategy helps physicians concentrate on urgent situations and raises the standard of care in general.

Project Scope

The technology makes patient profiles, matches symptoms with a keyword engine, offers quick remedies, connects patients and doctors, and arranges for in-person consultations. This project comprises development models, milestones, communication plans, role rotations, management and planning methodologies, and a thorough flowchart.

Business Value

HealthBot provides constant accessibility, cost-effectiveness, and convenience of use, as well as useful functions such as scheduling the appointment, prescription details and wellness tracking. By lowering the number of missed appointments, it enhances patients satisfaction, lowers human error and shields healthcare providers from financial loss.

Feasibility analysis

This project has Technical,economic and organizational feasibility analysis. Keyword-based systems, NLP integration and data pre-processing are examples of technical features. Financial concerns, labor cost containment and overall cost-effectiveness are considered under economic aspects. Organizational factors focus on promoting an innovative culture and adjusting the system to healthcare workflows.

Use Case Modeling

The five main use cases in the use case model are start chat, schedule appointment, conversation, diagnosis and follow-up. The relationships between actors and the system are described in this model.

DFD(Data flow diagram) and ERD(Entity-Relationship Diagram)

The ERD diagram describes entities such as patients,doctors and their relationships whereas the data flow diagram shows how data moves through the system. These schematics improve comprehension and make complex systems simpler.

System Design

With a front-end interface for intuitive user interaction and back-end development for database management, security and logical querying the system uses android studio to construct mobile applications. The system's acquisition approach places a strong emphasis on integration with the current healthcare ecosystem, agile approaches, custom development, and AI-driven functionality.

Limitations and Assumptions

Difficulties include reliance on technology, privacy issues with the data and restrictions on medical advice. Regarding NLP correctness, data quality, updates, maintenance, and user literacy, assumptions are made.

Alternative Solution

CRM systems are suggested as substitutes for traditional methods in order to improve community support and patient-doctor communication in healthcare and social initiatives.

Future Aspects

Upcoming improvements will prioritize data encryption for enhanced security, integrate numerous doctors and add additional services including medical service appointments.

Conclusion

An innovative project that combines technology and healthcare is called Healthbot. Even if it has the capacity to alter, health care systems must constantly evolve and adapt in order to overcome obstacles and advance.

Table of Content

1 Project Description

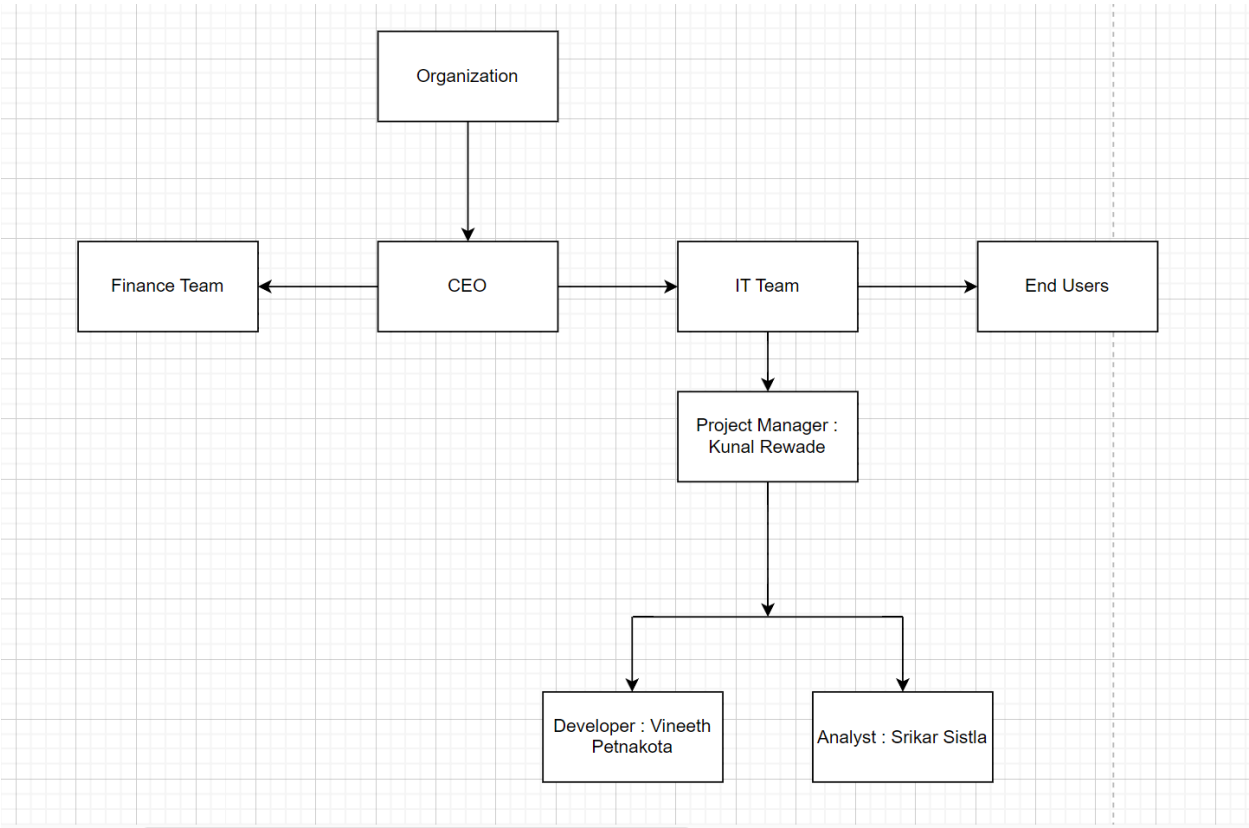
1.1 Problem Statement

Health Care in the United States have been demanding due to its quality, despite the rapid growth of the demand, the healthcare industry is struggling to put up the standards with the requirements of the public and with many aspects like limitations of the access of the doctors to the public, hefty budget plans from insurance companies are making it hard for the patients to get themselves checked up in routine. This in a bigger picture is affecting the quality of the healthcare quality in the United States. In order to overcome this disparity, many industries are working together to provide their solutions, and many projects are being initiated for the better cause.

1.2 Proposed Solution

HealthBot is one of those projects which is trying to bridge both patients and doctors who are well renowned thus minimizing unwanted waiting time and doctor's valuable time too. In another perspective, doctors can rapidly treat more patients who are suffering from common diseases and can focus on major treatments. HealthBot Acts as a "**SERVER**" which greets patients as soon as they are logged in. When the patients enter their problems, based on the simple Keyword engine the patients will be assigned to the nearest doctors available. **HealthBot** will be providing remedies/temporary medication based on the keyword matched. Then the chatbot connects the patient with the doctor so that both doctor and patient can chat. Post consultation, if the doctor feels that the patient requires to be met in person then the doctor can schedule the patient on the appointment list and can even prescribe medication. Adding to this if a doctor needs specific reports such as X-ray reports before meeting in person, he can directly forward to him a radiographer. This increases the flexibility of the system to assist the doctor to focus on patients who need prior supervision. This would be a robust system where the **server** with databases and the **keyword engine** works as a server connecting both patients and doctors which are considered as "**CLIENTS**".

1.3 Organization Environment



f.1 Organization Environment

- An organization will have a CEO who deals with both the IT team as well as the finance team, where the CEO is the primary stakeholder and manages most of organizational deeds in a flexible manner.
- The finance department for the organization deals with the financial analysis and decision making according to the proposed IT team functionality under the supervision of the CEO.
- The IT department deals with the development of the algorithm and the UI of the project which completes the whole project and provides it to the end users and make necessary changes according to the user requirements.

2 System Request

2.1 Project Sponsor
Srikar Sistla, Kunal Rewade and Vineeth Petnakota are potential project sponsors for this project.

2.2 Business Need
This is a robust system that has been initiated to bridge the gap between patients of all types who are struggling to get their medication within time due to the major wait times for getting appointments from hospitals and their personal doctors or clinics. It is personally believed that there would be a lot of revenue generated out of this project, which hopefully even creates some job opportunities that might require skilled professionals. On the other hand, this project will even reduce the unnecessary workload for all the desk people who might not be aware of the importance of the medical attention the patients require from the doctors and put them on the priority list. This will also help hospitals reduce their working staff, thereby helping hospitals save money.

It is even presumed that this project will reduce the disparity of people in healthcare in any system where healthcare is complicated and in any system where healthcare is more important.

2.3 Business Requirements
Business requirements are factors that are related to the goals and objectives of a health bot and include aspects such as target audience, data privacy and security, integration with already-existing systems, analytics and reporting, ethical considerations and legal considerations, testing and maintenance, quality assurance and testing, documentation and training reports.

The key to ensuring long-term sustainability is establishing a reasonable budget for development and maintenance. This entails calculating the expenses of software development, hosting and support as well as allocating funds for healthbot development. The business need should also outline the processes for gathering user feedback, managing escalations to real health care experts when appropriate and routinely updating the knowledge base conversational skills of the bot. A well-defined business need that takes into account these factors guarantees the effective installation and long-term value of a health bot in the healthcare ecosystem.

2.4 Business Value
Due to its connection with both technology and healthcare, healthbot can be valuable to businesses in numerous ways. The advantages healthbot provides to business include constant accessibility by increasing patient interactionproviding the ability to access healthcare information around-the clock.Health bot also offers tremendous commercial value to the healthcare industry. Activities like scheduling appointments, noting patient details results in freeing staff thereby which leads to cost effectiveness, ease of use, first-aid advice,alerts and notifications,wellness tracking, health data analysis

and making health data documentation that could enhance insightful information and improve healthcare service.

For future well being of patients healthbot provides individual health suggestions based on patients symptoms and medical history . Apart from the above mentioned benefits it can also reduce human errors like forgetting appointments, entering incorrect information etc. Healthbot also prevents loss for health care providers by reducing missed appointments.

3 Feasibility analysis

Considering the value it generates, it is indeed important to have proper user experience and the quality of the project do define the depth/impression it creates among the clients it attracts. Aspects like **Technical**, **Economic** and **Organizational** are mostly given priority and are deeply supervised throughout the project.

3.1 Technical Aspects

Considering the **technical aspects**; the availability of diverse technologies gives a major advantage to the project. Using the database server as a starting point a simple keyword engine can be deployed that can immediately match and search for the related terms.

Phases can be used to group technical aspects. We will first perform data pre-processing in preparation for constructing a chat bot, which will comprise operations like data cleaning,text normalization, tokenization, stop word removal and parts of speech tagging. In addition to technical compatibility, we would like to use NLP to make it simpler to integrate the system. Keyword based systems serve as an NLP technique that can be applied.

3.2 Economic aspects

On the final note of **Economic aspects,**The project has a limited budget, so we intend to construct a prototype by creating two clone databases, one of which would be acting as a client and the other as a server. Therefore we shall carry out the prototype as a short-term project. Healthcare firms can cut down the need of manual labor and administrative employees by automating common administrative processes like appointment scheduling, prescription details and patient concerns.

By reducing labor costs and allowing healthcare workers to concentrate more on patient care activities, this helps the healthcare system as a whole allocate resources more effectively. By providing individualized health advice based on medical history and symptoms, health chatbots improve compliance and empower patients, improving the patient experience.

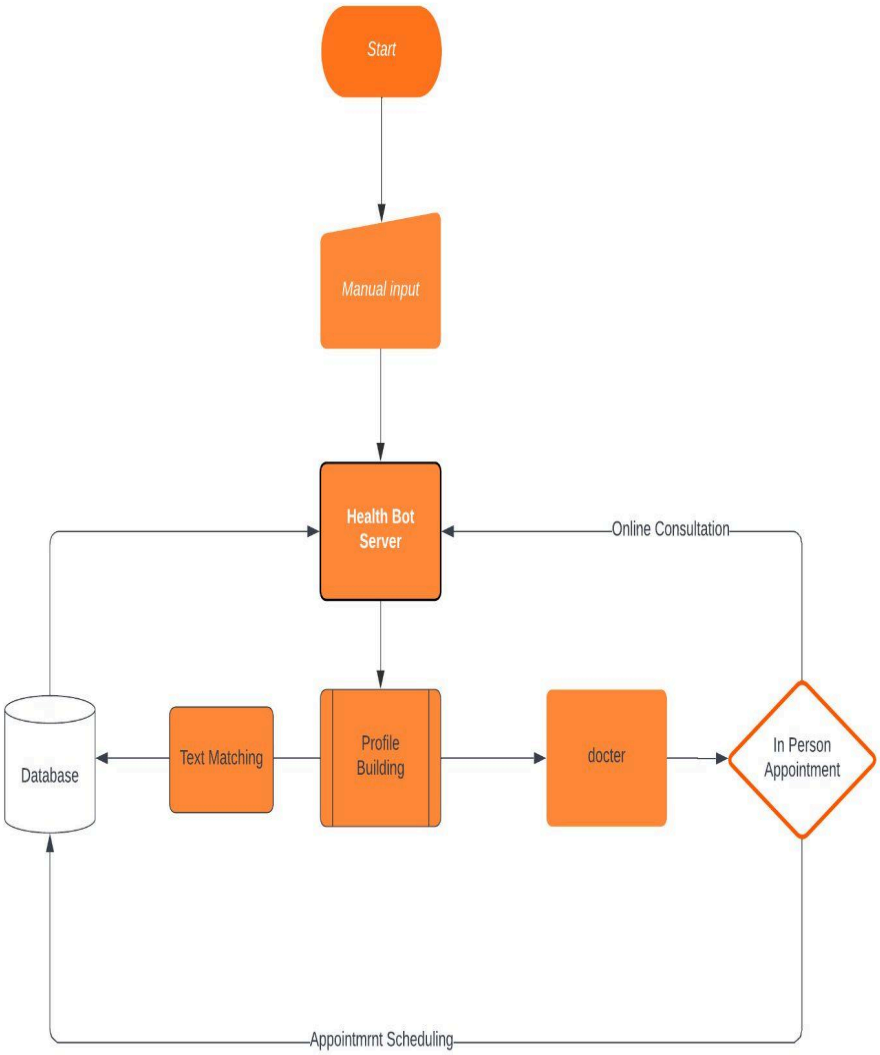
3.3 Organizational aspects

Considerations regarding a healthcare organization's structure,culture and workflow are included in the organizational aspects of adopting a health chatbot. As part of this, it is important to establish clear roles and duties for maintaining chatbot, ensure cooperation and buy-in among various departments and stakeholders and smoothly integrate the chatbot into current healthcare procedures. Organizational considerations also include educating medical staff on how to use the chatbot efficiently and improve patient care.

To fully embrace the technology and its potential benefits, as well as to address any potential resistance to change inside the business, it is also crucial to promote a culture of innovation and adaptation.

4 Project Scope

When the input is received from a user on the chatbot server, the system will start creating a profile with the help of these inputs. Profile is then sent for text matching as well as to the doctor. After text matching, quick health remedies would be displayed on the screen visible to the user. Simultaneously, the same profile would be examined by the doctor, who will decide whether to diagnose the patient virtually or personally via appointment scheduling. If a doctor wants to meet the patient, the system will schedule an appointment and display the details on the screen. But, if a doctor found the illness can be cured by virtual prescription, he can directly connect to the patient on ChatBot.

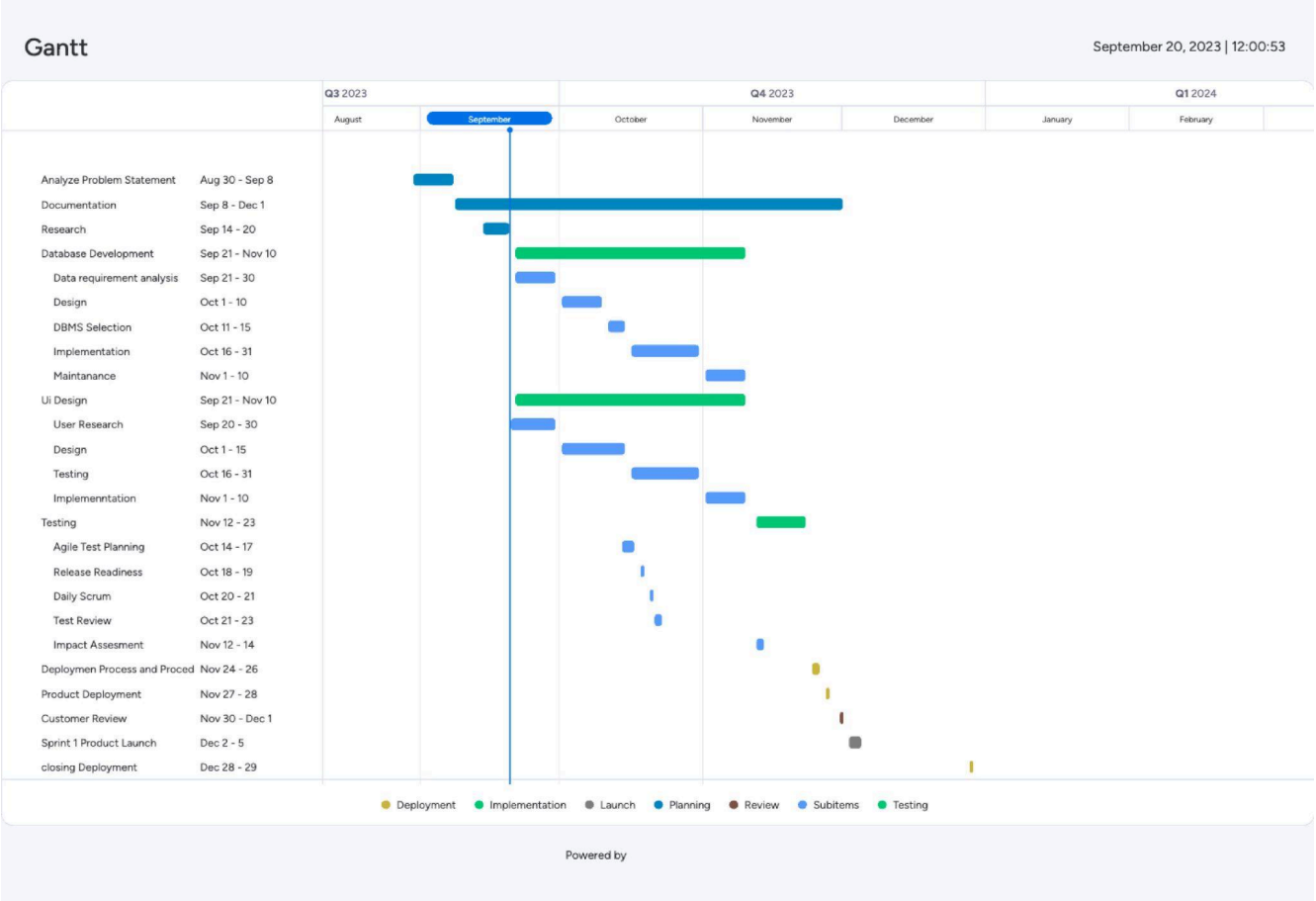


f.2 Flowchart

5 Management and Planning

Managing this project requires skilled professionals, or at least individuals who are willing to contribute the best of their abilities either by learning or progressing. However, there would definitely be miscommunication among the employees which depicts the key element of the management that is having "Having clear strategy and vision" of the respective goals. Having a collective vision across the organization will emphasize the overall performance of the product, challenges like developing a collective goal and vision among employees should be one of the managerial qualities. In Order to have better **Communication among the team members** it has been decided to implement **gantt charts** from **Monday.com** for instance.

5.1 Gantt Chart



f.3 Gantt Chart

5.2 Development Model

This project majorly runs on an **agile development** model which mainly focuses on the flexibility of the technical aspects throughout the phases. Considering the fact that the project is in the planning phase, most of the time will be dictated by the extreme programming and scrimmages of the project. This development even helps complete the project by ease due to its ability to make changes throughout the process of building the product.

Pros and cons of agile development model :

Flexibility to changes- Since Healthbot platform receives new requests from stakeholders everyday, developers can easily adapt to changes and develop accordingly.

Continuous updates- Since agile follows the iterative model, the features can be developed and updated in short cycles leading to better user interface.

Complexity with a large team - Healthbot systems will be a large scale project. Agile technology works well with small

Acquiring talent would be another issue due the requirements which are set by the organization against the available candidates. This would be challenging due to either overwhelming or underwhelming availability of the talent. In order to overcome this situation, proper and experienced professional human resources must be assigned and must be efficient to bring in the talent required for the organization.

Other Human Resources aspects like providing incentives to the available employees in light of appreciation which leads to their motivation and gaining their loyalty would indeed be challenging since in the case of limitations of budgets and financial constraints. Assigning suitable accountants and linking up with the Human Resources would assist the HR thus improving the efficiency.

Other miscellaneous challenges like **workplace comfort, workplace pressure, workplace environment, unfair treatment, Emptiness and not having a clear vision of the project** will be dealt with internally by internal affairs and provide a solution to the challenges available.

5.3 Role Rotation

We decided to rotate the roles in a way that every group member gets the chance to work as project manager , analyst, and developer. Initially, Srikar played the role of project manager. Simultaneously, Kunal concentrated on analysis and Vineeth did the development part of the project. After a month the roles were switched, which caused some difficulties to adjust and catch up to the expections.

5.4 **Team Members Roles**

Vineeth Petnakota :

- Working on the base algorithm.
- Define Project scope, business value, business requirements.
- Lead the project as third project manager.
- Analyze the business values and requirements in the timely accordance.
- Researched on the customer base and their requirements.

Kunal Rewade :

- Designing the Logo and the UI of the HealthBot.
- Design the workflow using gantt charts.
- Taking the project lead as the second project manager.
- Working on the functional requirements and non functional requirements.
- Design the UI according to the geographic requirements.

Srikar Sistla:

- Define Business needs
- Analyze the feasibility analysis
- Propose the System Request
- Lead the project as initial Project manager.
- Worked on the geographic algorithm for the project.

5.5 Milestones

- Initially, the team was working with only two group members where the first team manager defined the team project scope and defined the business needs.
- Designing of the logo and proposal of the project has been made.
- Designing of UI along with the workflow of the main algorithm was planned.
- Initial version of the project was demonstrated and further phases were planned.
- Designing of the project scope and proposal of system request was planned.
- Development model was finalized where the pros and cons of the project were decided and developed.
- Designing of DFDs and ERDs were finalized.
- Final version of the project was demonstrated post implementation of system modeling.

5.6 Communication plan

Monday.com was the main platform where the whole project has been monitored and the tasks have been split equally. Added to that social media platforms such as whatsapp and google meet where major parts of the project was being developed and this integration of platforms helped the project to make some crucial yet major changes which made some impactful implementations that has improved the customer quality in the project.

6 Requirement Elicitation Methods

6.1 Interviews :

Healthcare Professionals -
What are the most prevalent difficulties you encounter in your daily dealings with patients?
How do you now manage remote consultations or initial health exams for patients?
What features or functionalities in a HealthBot would you find most useful in assisting with patient interactions?
In what ways could a HealthBot system assist you in more successfully managing your patient load?

Potential users -
What do you expect when you seek medical advice or support online?
How comfortable are you with obtaining preliminary medical advice or treatment from a chatbot?
What characteristics do you believe are necessary in a HealthBot system to make it user-friendly and effective for your health-related queries?
How crucial is the ability to speak with a healthcare practitioner directly during your engagement with a HealthBot?

6.2 Observations

Observation is a significant elicitation strategy that involves monitoring users, healthcare professionals, and stakeholders in their natural setting in order to obtain insights into their behaviors, workflows, and difficulties. Conducting observational sessions in the context of the HealthBot system can provide significant information on how potential users and healthcare professionals presently interact with healthcare technology and how the HealthBot system can easily integrate into their workflows.

7 System Requirement

7.1 Functional Requirements

User Authentication and Authorization- The system must allow users (patients and doctors) to securely register, log in, and be authenticated. Different roles (patient, doctor) should have varying levels of authorization.
Problem Submission- Patients should be able to input their health problems through the chat interface, initiating contact with the HealthBot.
Keyword Research Tool- Implement a keyword engine to analyze patient problem inputs and link them with potential doctors based on expertise and location.
Remedies/Temporary Medication:
Functional Requirement- The HealthBot must deliver urgent cures or temporary pharmaceutical solutions based on keyword-matched concerns.
The Doctor-Patient Relationship- Facilitate direct communication between the patient and the designated doctor via a secure chat interface.
Prescription and consultation - Allow doctors to conduct remote consultations, check patient conditions, and electronically prescribe drugs.
Booking Appointments- Functional Requirement: Doctors should be able to use the system to book in-person appointments for patients.
Report Request and Distribution- Allow doctors to seek specific reports (e.g., X-rays) from patients and forward them to appropriate specialists.
Database Administration- Maintain a secure database for storing patient information, doctor details, chat logs, and other pertinent data.
System of Notification- Implement a notification system to notify users of appointments, messages, and other pertinent information.

7.2 Non - Functional Requirements

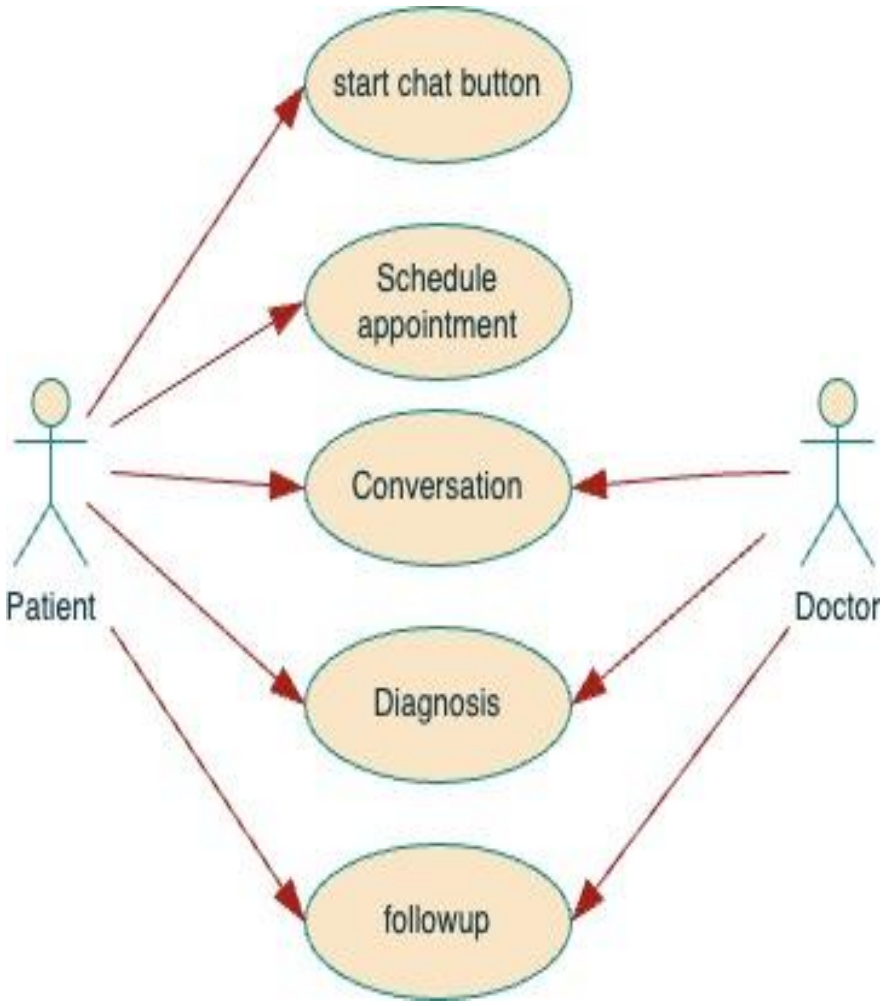
Security- To preserve the confidentiality and integrity of patient information, the system must comply with healthcare data security standards such as HIPAA.
Scalability- The system should be scalable so that it can handle an increasing number of users, doctors, and data without degrading performance significantly.
Usability- The user interface must be intuitive and user-friendly in order for both patients and doctors to find it easy to use.
Reliability- The HealthBot system must be available and dependable, with minimal downtime for planned maintenance.
Performance- To maintain a seamless user experience, the system must respond to user inputs and requests within an appropriate time range.
Compliance- To ensure legal compliance and ethical usage of patient data, the system must adhere to appropriate healthcare legislation and standards.

Interoperability- The HealthBot must be developed to connect easily with various healthcare systems and technology.
Backup and recovery of data- The database should be backed up on a regular basis, and there should be a solid data recovery plan in place in the event of a system failure.
Privacy: The system must prioritize user privacy, and procedures to control access to sensitive health information must be in place.

8 System Modeling

8.1 Use Case Modeling Diagram

We have two actors in the use case model: a patient and a doctor. Consequently, five use cases such as the start chat button,schedule appointment,conversation,diagnosis and followup are taken into consideration and represented in use case modeling. Thus as depicted in the picture, actor 1(patient) is related to each use case, whereas actor 2(doctor) has only three use cases.



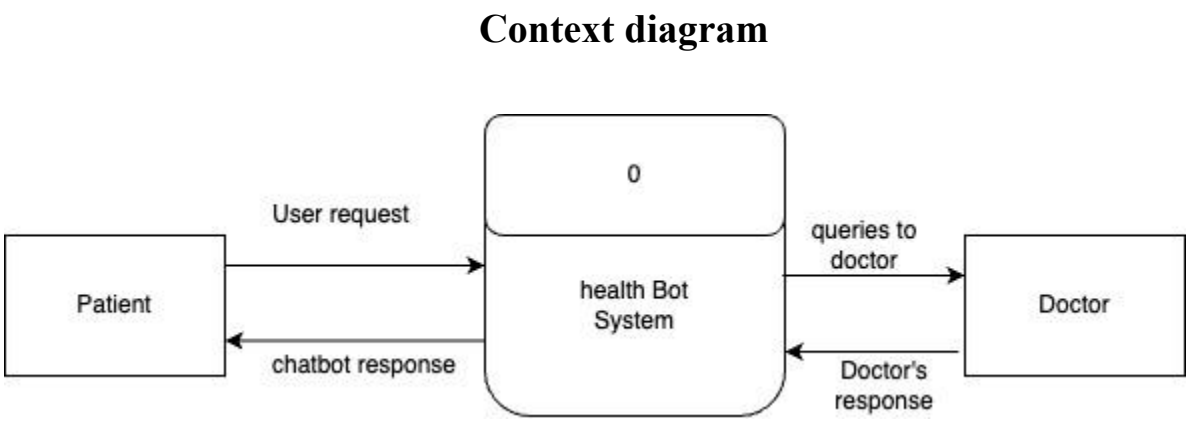
f.4 Use Case Diagram

8.2 Data Flow Diagram for healthbot:

Data flow diagram describes the flow of data through the databases and the available entities throughout the system. This eases the understanding of the system, and simplifies any sort of complexity. Below are the diagrams:

8.3 Context Diagram

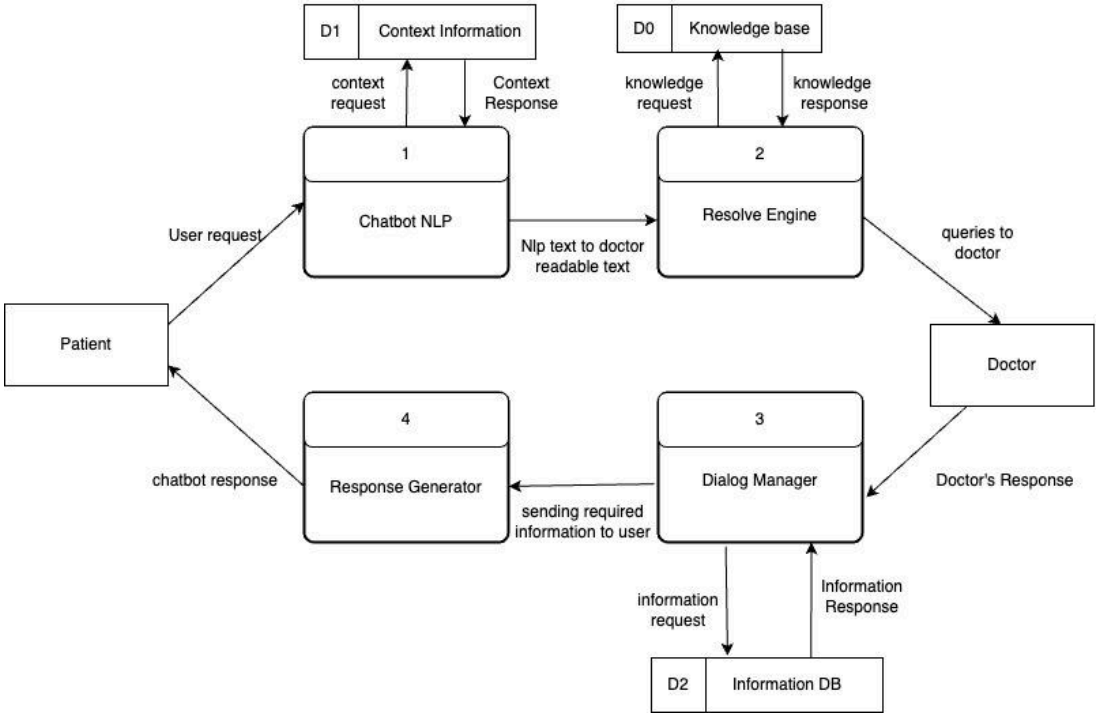
The Context diagram consists of entities such as patient and doctor and includes the top view of health bot system . This is a minimal representation of the main process and entities with minimal dataflows which gives users a brief overview of the dfd. The context diagram is mentioned in the figure below.



F.5 Context Diagram

Level 0

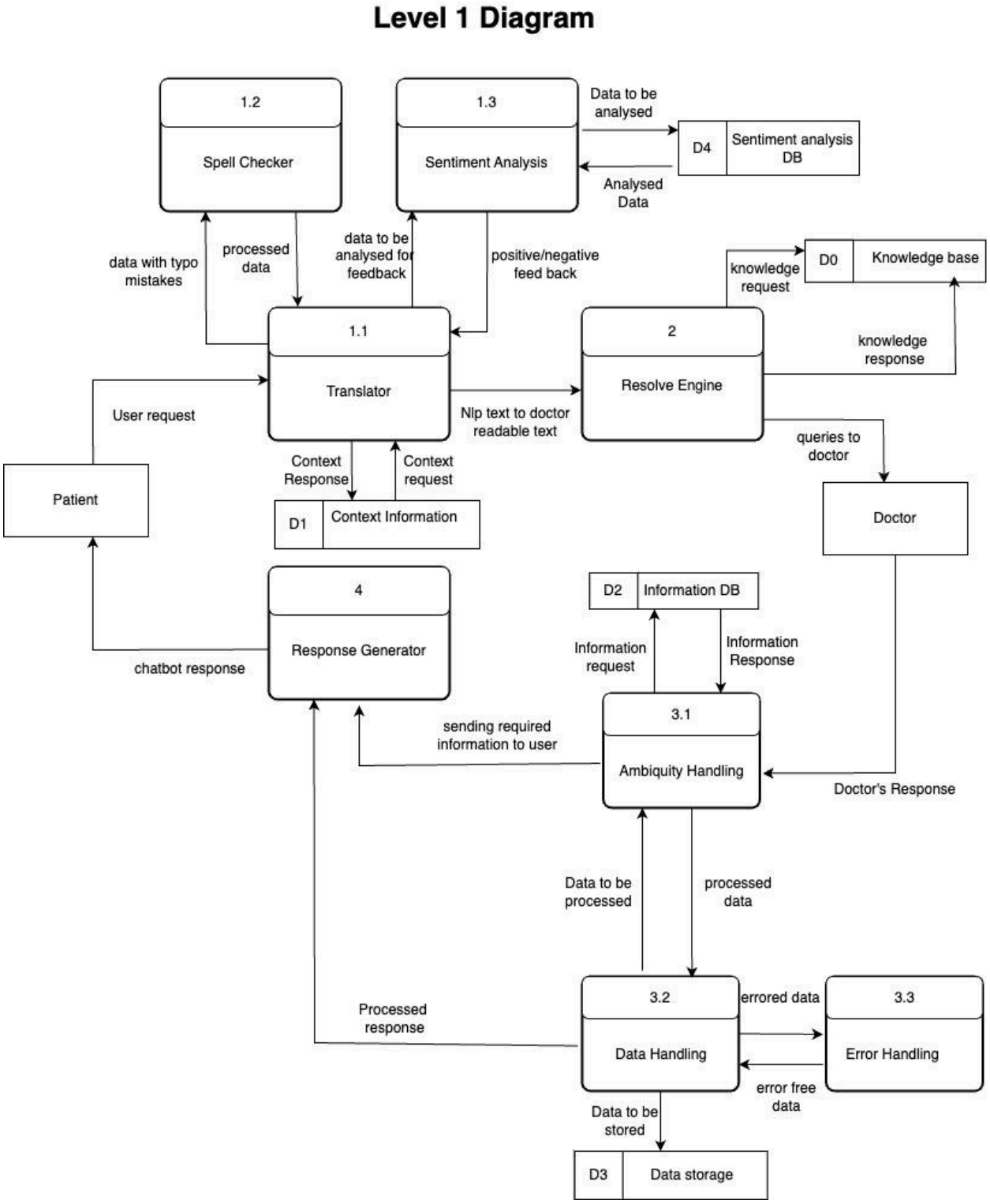
This diagram depicts some of the extensions for context diagrams and includes the sub-process like chatbotNLP, Resolve engine, Dialog Manager and response generator and all these are linked with databases linked to sub-process. The detailed flow diagram is shown in the figure below.



f.6 level zero

Level 1

The level 1 diagram consists of the overall sub process for level 0 diagram. The sub-process includes the extension of chatbotNL and Dialog Manager such as SpellChecker, Sentiment Analysis, Translator, Ambiguity handling, Data handling and Error handling with databases linked to them and respective dataflows. All the relationships are depicted in the figure below.



f.7 level 1 DFD

8.3 Entity Relationship Diagram for healthbot:

The Entity-Relationship diagram(ERD) provides a framework for creating a medical chatbot by outlining the basic entities,properties and relationships that are necessary for efficient data management. One of the main components is the patient entity, which includes vital information as follows:

1) Patient(Entity):

Attributes:

- Patient_ID(primary key)
- Patient_firstName
- Patient_lastname
- Patient_Age
- Patient_Contactnumber
- Patient_Insuranceinfo
- Patient_medicalhistory

There are in total seven entities including patient entity, the other entities are Doctor,Symptoms,Diagnosis,Appointment,Prescription and Followup respectively. Each of the entities have attributes as follows:

2) Doctor(Entity):

Attributes:

- Doctor_ID(primary key)
- Doc_Name
- Doc_Specilazation
- Doc_officehours
- Doc_Contactinfo
- Doc_hospitalaffliation

3) Appointment(Entity):

Attributes:

- Appointment_ID(primary key)
- Patient_ID(foreign key)
- Doctor_ID(foreign key)
- App_date
- App_time
- App_location
- App_status

4) Prescription(Entity):

Attributes:

- Prescription_ID(primary key)
- Patient_ID(foreign key)
- Doctor_ID(foreign key)
- pre_Medication
- pres_dosage
- pres_frequency

5) Symptoms(Entity):

Attributes:

- Symptom_ID(primary key)
- Patient_ID(foreign key)
- sym_description
- sym_duration
- sym_severity

6) Diagnosis(Entity):

Attributes:

- Diagnosis_ID(primary key)
- Symptom_ID(foreign key)
- Doctor_ID(foreign key)
- Diag_description
- Diag_medication

7) FollowUp(Entity):

Attributes:

- Followup_ID(primary key)
- Appointment_ID(foreign key)
- Followup_Notes
- Followup_appointmentdate

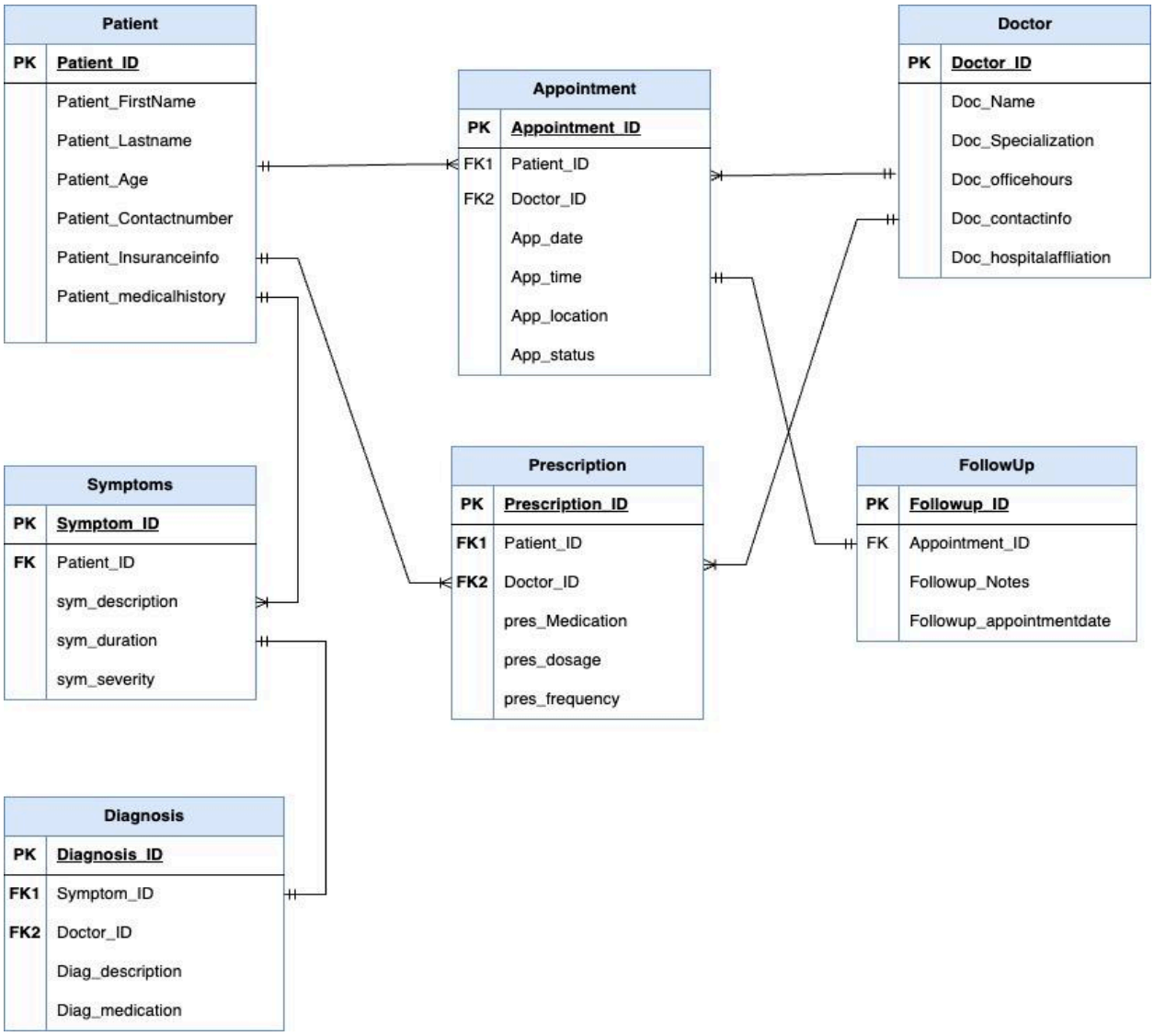
Relationships between the entities:

These relationships will illustrate the cardinality between the entities such as one-one,one-many,many-many.

1) Patient-Appointment: One-to-Many relationship(One patient can have multiple appointments).
2) Doctor-Appointment: One-to-Many relationship(one doctor can have multiple appointments).
3) Patient-Symptoms: One-to-Many relationship(One patient can have multiple symptoms).
4) Symptom-Diagnosis: One-to-One relationship(One symptom can have only one diagnosis).
5) Patient-Prescription: One-to-Many relationship(One patient can have multiple prescriptions).
6) Doctor-Prescription: One-to-Many relationship(One doctor can prescribe multiple medications).

7) Appointment-Follow Up: One-to-One relationship(One appointment can have one follow-up).

The foundation of an ERD for a medical chatbot is made up of these entities and relationships. It records data regarding symptoms,diagnoses,appointments,doctors,symptoms and follow-ups.Expanding or changing this framework can be necessary,depending on the particular needs of chat-bots.



f.8 Entity-Relationship(ER) Diagram for healthbot

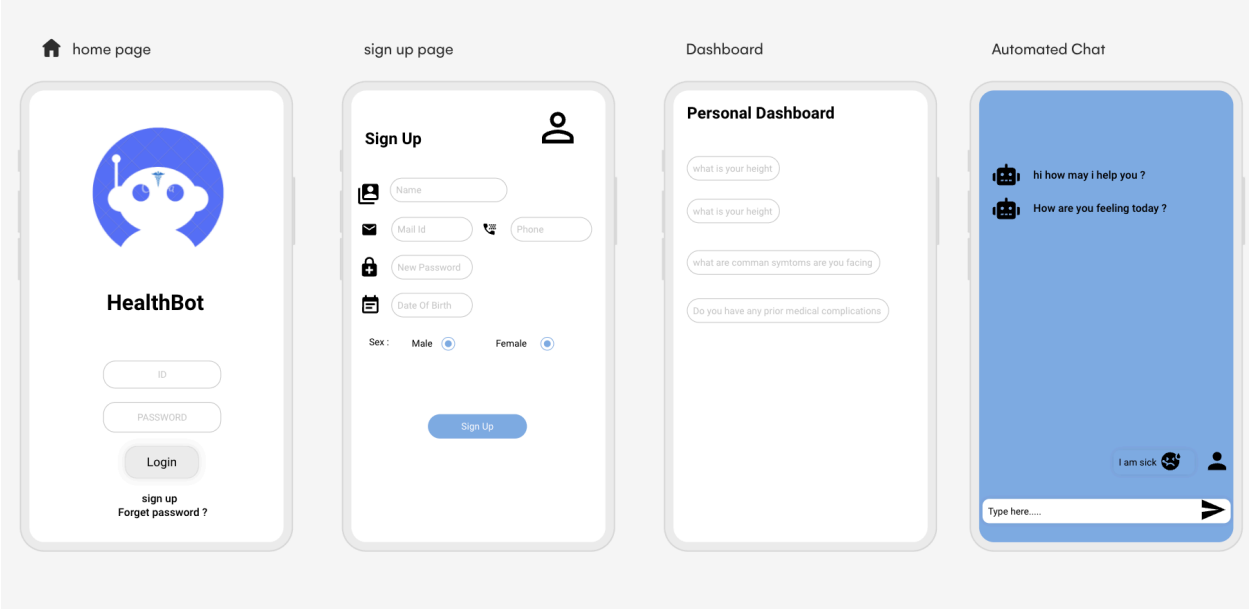
9 SYSTEM DESIGN

9.1 System Architecture

Front end Interface -
An user friendly interface environment which can be operated via web and mobile application . The automated response from the healthbot should be easily understandable with integration of chat modules for patient and doctor.

Back end development -
Database management and storing patient's data, ensuring security measures. Running logical query to extract data from the database , so that chat bot can provide automated replies. NLP to convert the user inputs to computer understandable language leading to automated replies from health bot according to the database.

9.2 UI Interface



f.9 User Interface

9.3 System Acquisition Strategy

The custom development with the integration strategy is an efficient approach to our Healthbot project. It satisfies the unique requirement of the system by emphasizing on user customization, security, adaptability, and customization to requirement. This strategy not only guarantees the flexible and adaptable solution to the problem statement but has a potential to lead to a successful development.
The project's success primarily depends on certain factors such as documentation, quality assurance and testing , agile methodology, and stakeholder collaboration.

Agile development approach :
As the healthcare industry continues to change frequently, agile methodology will provide a strong foundation to cope up with an ever changing environment. Custom development will support this approach and continue to update and get better with each iteration with respect to requirements.

Ai driven functionality :
Custom development works well with Artificial Intelligence driven projects, ensuring the continuous innovation and collaboration of emerging technologies to make the system more efficient and robust.

Existing Ecosystem :
Healthbot can integrate with the existing ecosystem (Electronic Health Records) and use the existing data to make better solutions and continue the workflow. Custom development ensures the integration of healthbot with existing systems leading to a broader health care ecosystem.

9.4 Limitations

Technological dependency -
Since healthbot relies on technology such as NLP, Text matching, and data processing capabilities, there are high changes of inaccuracies in solutions and can impact the efficiency of the system.

Data privacy and security-
Healthcare data consist of crucial information about the user's finances and insurance policies. The system faces restrictions in securing this data and is open to potential cyber attacks.

Healthcare limitations-
The healthbot is an automated feedback system and has limitations on medical suggestions and solutions. It lacks the diagnostic capabilities as compared to human expertise. Incorrect input from the user can lead to inaccurate response from the healthbot which may be dangerous in some situations.

9.5 Assumptions

NLP accuracy -
We assumed that NLP will process the inputs from users accurately and provide the relevant feedback according to the user's inputs.
Data Quality -
According to our assumption The input data from the user is accurate and consistent leading to better processing from the systems.
Updates and maintenance -
We assumed that we will update the new feature as and when required . This will ensure that the healthbot system is up to date and functions well with the latest technological advancement.
User literacy -
This application requires certain digital literacy and understanding of the technology to get better experience.

9.6 Alternative Solution

CRM system for healthcare-
Customer relationship management systems can be integrated with the healthcare sector leading to better management of patient- doctor interaction, health history, and improves the user experience by providing healthcare tools. Insights from the data analytics and reporting in CRM systems can be helpful for better decision making for healthcare professionals. The real time feedback from patients can be utilized by CRMs to identify areas of potential improvement in the system. CRMs provide a wide range of functionalities leading to healthcare system optimization and enhance the system.

Social Health Program-
Social media as a platform can be used to provide information and conduct regular health forums. This solution can provide patient to patient support under guidance of a healthcare professional. Pre- recorded videos can be used to spread knowledge leading to better understanding of the precautionary measures and cure to the diseases.

9.7 Future Work

Coordination of multiple doctors -
Certain Cases will require a coordination of doctors to provide healthcare solutions to the users. Our approach would be adding some functionality such as group chat, multiple appointments, and scheduling regular checkups in future models.

New features -
We will be Providing Medical service appointments such as pathology labs, medicine shops, and ambulance services in our coming model.

Encryption of data -
Healthcare data consist of important information of the users. Insurance policy, personal information, and financial information can be misused, we will be working on encrypting this information and making the platform more secure.

8 Conclusion

HealthBot is a significant step towards integrating technology with the healthcare industry. Though It has a potential to revolutionize the healthcare systems , it also has certain limitations such as data privacy, integration with existing systems, and technical limitations. The project focuses on User centric design with cutting edge technology. The project will continue to evolve according to challenges it faces in future.

9 References

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