# MEDIBOT - HEALTH CARE CHATBOT

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## ABSTRACT

The new healthcare delivery system is complicated, unreliable, and unsustainable. Machine learning (ML), used to improve system performance, has completely changed how businesses and individuals collect and analyze data. Structured, unstructured, and semi-structured data can all be analyzed using machine learning techniques. A virtual assistant may converse with patients in their local language to understand their complaints, provide medical advice, and monitor health indicators.

**Keywords:** Analysis, Healthcare, research, chatbot, Machine Learning.

## I.     INTRODUCTION

The transition to modern medicine in healthcare has been sped using computer-generated analytics and electronic medical reporting to support clinical and administrative processes. The utilisation of specialised IT skills and resources is frequently required when attempting to get data from a big database. As a result, healthcare professionals frequently rely their decisions on their own perspectives or those of their colleagues. To identify linked patients, predict disease rates, and identify effective therapies, health practitioners may find it particularly helpful to employ an information retrieval system based on a QA model. Businesses, universities, and organisations can automate a variety of online and customer support tasks with chatbots. Quick responses are given to frequently requested questions by the client. A chatbot system that interacts with patients has been proposed. Patients are more likely to worry about their medications and other programmes they utilise because of their conditions. Instead of dialling an anonymous individual to receive a quick response, chatbots will be used. A chatbot is a piece of software that can communicate with and learn from people. For user input and output to and from chatbots, the great majority employ a graphical user interface (GUI) like that of a messenger. The chat bot comprehends and responds to user remarks.

## II.     PROBLEM STATEMENT

To develop a user-friendly and accessible conversational AI tool that can provide patients with easy and quick access to healthcare information and services. The chatbot should be able to use natural language processing and machine learning technologies to offer personalized recommendations based on patients' symptoms, medical history, and preferences. It should also integrate with existing healthcare systems such as electronic health records to provide seamless access to patient information. The aim is to create an efficient and convenient way for patients to manage their health, given the increasing demand for healthcare services and the shortage of healthcare professionals.

## III.     LITERATUE REVIEW

**[1]"Chatbots in healthcare: A systematic literature review" by Raza et al. (2021)**

This systematic literature review examined the use of chatbots in healthcare, with a particular focus on their potential benefits and limitations. The review found that chatbots can be effective in improving patient engagement, providing personalized support, and reducing healthcare costs. However, the authors also noted that there are several challenges associated with chatbot implementation, including privacy concerns, technical limitations, and ethical considerations.

**[2]"Design and Implementation of a Chatbot for Mental Health Screening" by Balci et al. (2021)**

This study focused on the design and implementation of a chatbot for mental health screening. The chatbot was designed to assess the mental health status of users and provide appropriate recommendations based on their responses. The study found that the chatbot was effective in identifying users who may be at risk of mental health issues and providing appropriate support and resources.

**[3]"Chatbots in mental health: A review of the literature" by Laranjo et al. (2018)**

This review explored the use of chatbots in mental health care, including their potential benefits and limitations. The authors found that chatbots can be effective in providing mental health support, particularly in areas such as cognitive-behavioural therapy and self-help interventions. However, the authors also noted that more research is needed to fully evaluate the effectiveness of chatbots in mental health care.

**[4]"Using Chatbots to Improve Mental Health in Low- and Middle-Income Countries: A Systematic Review" by Chua et al. (2021)**

This systematic review examined the use of chatbots in mental health care in low- and middle-income countries. The review found that chatbots can be an effective tool for providing mental health support in these settings, particularly in areas where there is a shortage of mental health professionals. However, the authors also noted that there are several challenges associated with chatbot implementation in these settings, including language and cultural barriers.

**[5]"Chatbots in Healthcare: State-of-the-Art and Future Directions" by Liao et al. (2021)**

This review examined the current state of chatbots in healthcare and discussed potential future directions for their development. The authors noted that chatbots have the potential to revolutionize healthcare by providing personalized, accessible support and information to patients. However, they also noted that there are several challenges associated with chatbot development, including technical limitations and ethical concerns.

## IV.     METHODOLOGY

A software development methodology in the context of software engineering is the division of software development work into discrete phases (or stages) containing tasks with the aim of improving planning and management. It is frequently regarded as a portion of the system development life cycle.

There are various approaches to software development.

We have decided to use agile development for this program. An iterative method of software development is known as an agile methodology. The agile software development method usually incorporates usable product feedback. It is a collection of approaches that exhibit a dedication to rapid feedback cycles and ongoing improvement. At every step of the project, agile teams within the company collaborate daily in person meetings. By working together and communicating, the process is maintained.
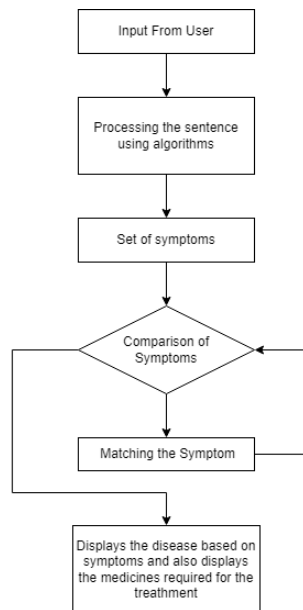
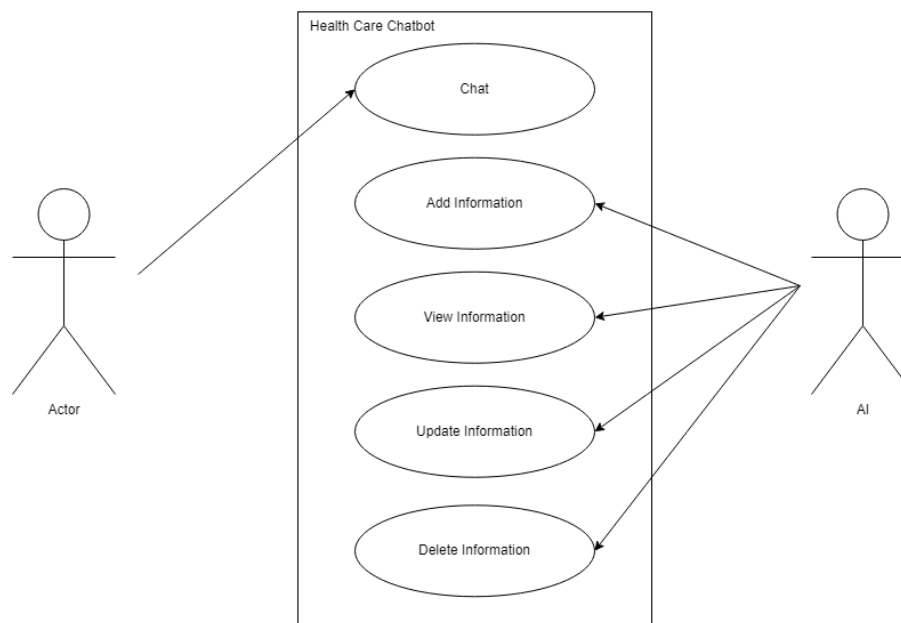**Figure 1:** Flow Chart of HealthCare Chatbot

## V.    UML DIAGRAMS



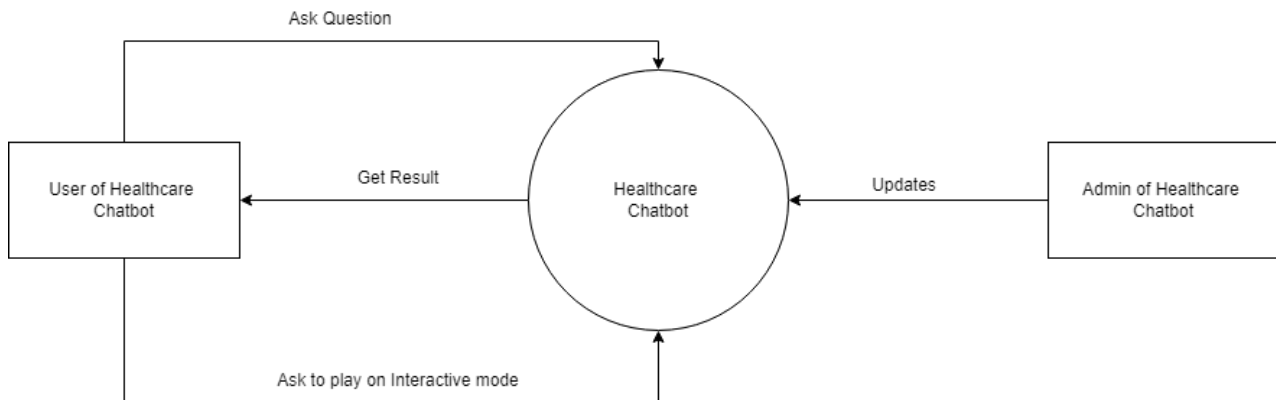**Figure 2:** Use Case diagram of HealthCare Chatbot

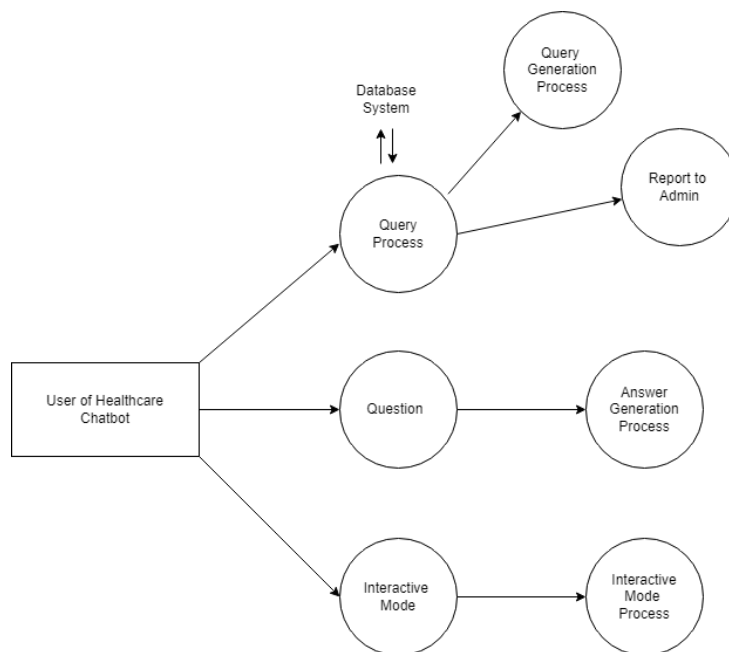**Figure 3:** Data Flow Diagram – Level 0 of HealthCare Chatbot



**Figure 4:** Data Flow Diagram – Level 1 of HealthCare Chatbot
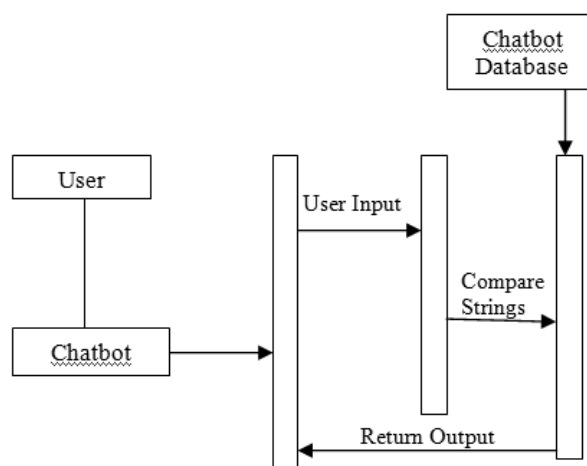


**Figure 5:** Sequence Diagram of HealthCare Chatbot

## VI.  CONCLUSION

Patients are never left unattended when using chatbots. They gain patients' trust by responding quickly and effectively. Undoubtedly, chatbots are beneficial. AI chatbots are particularly beneficial to the healthcare industry because they lighten workers' workloads. But setting expectations is a vital first step before implementing chatbots in the healthcare sector. Anyone who knows how to text in English language may utilize the Chatbot's mobile app or desktop version because it is so user-friendly. A medical chatbot offers individualized diagnosis in response to symptoms. For the medical chatbot to be able to manage all types of ailments, the efficiency of the chatbot can be increased by adding more word combinations and expanding the use of the database.

## ACKNOWLEDGEMENTS

## VII.  REFERENCES

[1] "Chatbots in healthcare: A systematic literature review" by Raza et al. (2021)

[2] "Design and Implementation of a Chatbot for Mental Health Screening" by Balci et al. (2021)

[3] "Chatbots in mental health: A review of the literature" by Laranjo et al. (2018)

[4] "Using Chatbots to Improve Mental Health in Low- and Middle-Income Countries: A Systematic Review" by Chua et al. (2021)

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