



HEALTH CARE CHATBOT

A PROJECT REPORT

Submitted by

VISHNUVARTHAN M (8115U23ME059)

in partial fulfillment of requirements for the award of the course

MGB1201 - PYTHON PROGRAMMING

in

DEPARTMENT OF MECHANICAL ENGINEERING

K. RAMAKRISHNAN COLLEGE OF ENGINEERING

(An Autonomous Institution, affiliated to Anna University Chennai and Approved
by AICTE, New Delhi)

SAMAYAPURAM – 621 112

DECEMBER - 2024



K. RAMAKRISHNAN COLLEGE OF ENGINEERING
(Autonomous Institution affiliated to Anna University, Chennai)

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BONAFIDE CERTIFICATE

Certified that this project report on “**HEALTH CARE CHATBOT**” is the bonafide work of VISHNUVARTHAN M(**8115U23ME059**) who carried out the project work during the academic year 2024 - 2025 under my supervision.

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Submitted for the End Semester Examination held on.....

INTERNAL EXAMINER

EXTERNAL EXAMINER



DECLARATION

I declare that the project report on **“HEALTH CARE CHATBOT ”** is the result of original work done by us and best of our knowledge, similar work has not been submitted to **“ANNA UNIVERSITY CHENNAI”** for the requirement of Degree of **BACHELOR OF ENGINEERING**. This project report is submitted on the partial fulfilment of the requirement of the completion of the course **MGB1201 – PYTHON PROGRAMMING**

Signature

VISHNUVARTHAN M

Place: Samayapuram

Date:



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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

VISION OF THE INSTITUTION

To achieve a prominent position among the top technical institutions

MISSION OF THE INSTITUTION

M1: To bestow standard technical education par excellence through state of the art infrastructure, competent faculty and high ethical standards.

M2: To nurture research and entrepreneurial skills among students in cutting edge technologies.

M3: To provide education for developing high-quality professionals to transform the society.

VISION OF THE DEPARTMENT

To create eminent professionals of Computer Science and Engineering by imparting quality education.

MISSION OF THE DEPARTMENT

M1: To provide technical exposure in the field of Computer Science and Engineering through state of the art infrastructure and ethical standards.

M2: To engage the students in research and development activities in the field of Computer Science and Engineering.

M3: To empower the learners to involve in industrial and multi-disciplinary projects for addressing the societal needs.



PROGRAM EDUCATIONAL OBJECTIVES (PEOS)

Our graduates shall

PEO1: Analyse, design and create innovative products for addressing social needs.

PEO2: Equip themselves for employability, higher studies and research.

PEO3: Nurture the leadership qualities and entrepreneurial skills for their successful career.

PROGRAM OUTCOMES

Engineering students will be able to:

1. **Engineering knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
2. **Problem analysis:** Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
3. **Design/development of solutions:** Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
4. **Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
5. **Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.



6. **The engineer and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
7. **Environment and sustainability:** Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
8. **Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
9. **Individual and team work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
10. **Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
11. **Project management and finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
12. **Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

PROGRAM SPECIFIC OUTCOMES (PSOs)

- **PSO1:** Apply the basic and advanced knowledge in developing software, hardware and firmware solutions addressing real life problems.
- **PSO2:** Design, develop, test and implement product-based solutions for their career enhancement.



ABSTRACT

This Python program presents a simple healthcare chatbot that demonstrates fundamental programming concepts such as functions, user input/output, conditional statements, and string manipulation. The chatbot interacts with users by asking them to describe their symptoms. Based on the input provided, it analyzes keywords like "fever" and "cough" to suggest basic healthcare advice. If the symptoms do not match predefined conditions, it advises consulting a healthcare professional. Designed as an educational tool, this program showcases how to build an interactive and responsive system with Python, emphasizing code readability, decision-making processes, and user-centric design.



ABSTRACT WITH POs AND PSOs MAPPING

ABSTRACT	POs MAPPE D	PSOs MAPPED
<p>This Python program presents a simple healthcare chatbot that demonstrates fundamental programming concepts such as functions, user input/output, conditional statements, and string manipulation. The chatbot interacts with users by asking them to describe their symptoms. Based on the input provided, it analyzes keywords like "fever" and "cough" to suggest basic healthcare advice. If the symptoms do not match predefined conditions, it advises consulting a healthcare professional. Designed as an educational tool, this program showcases how to build an interactive and responsive system with Python, emphasizing code readability, decision-making processes, and user-centric design.</p>	<p>PO-1 PO-2 PO-3 PO-12</p>	<p>PSO1</p>

Note: 1- Low, 2-Medium, 3- High



SUPERVISORHEAD OF THE DEPARTMENT

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CHAPTER 1

INTRODUCTION

1.1 Objective

The objective of the healthcare chatbot is to provide a user-friendly, interactive platform that assists individuals in identifying potential health concerns based on their described symptoms. It aims to offer preliminary advice, such as self-care tips or recommendations to consult a healthcare professional, while promoting health awareness and guidance. By simulating a conversational assistant, the chatbot seeks to improve accessibility to basic healthcare information and encourage proactive health management, especially in non-critical situations.

1.2 Overview

The healthcare chatbot is an interactive Python-based program designed to assist users by providing basic health advice based on the symptoms they describe. It functions by prompting users to input their symptoms and then analyzing the input for specific keywords like "fever" or "cough." Based on the detected symptoms, the chatbot delivers relevant responses, such as recommending hydration for fever or suggesting rest for a cough. If the symptoms are not recognized, it advises the user to consult a healthcare professional for a proper diagnosis. The chatbot aims to offer a simple yet effective way of providing initial health guidance and promotes awareness of common health issues. Its design emphasizes ease of use, making healthcare advice more accessible, especially in non-emergency situations.



1.3 Python Programming Concepts

1. Functions: The chatbot is structured around a function, `healthcare_chatbot()`, which encapsulates all the logic and behavior of the chatbot. This allows the code to be modular and reusable.
2. User Input/Output: The program uses the `input()` function to capture user-provided symptoms, and the `print()` function to display responses or recommendations to the user. This interaction simulates a basic conversation.
3. String Manipulation: The `lower()` method is applied to the user input to ensure that the program can handle case-insensitive matching of keywords like "fever" or "cough." This helps make the chatbot more flexible and user-friendly.
4. Conditional Statements: The chatbot uses `if`, `elif`, and `else` statements to evaluate the user's input. These conditionals check for specific symptoms (e.g., "fever" or "cough") and return appropriate health advice. If no predefined symptoms are detected, the program uses `else` to suggest seeing a healthcare professional.



5. Flow Control: The use of if-elif-else ensures that the program can make decisions based on different conditions and provide specific responses. This is crucial for tailoring the chatbot's advice to different symptom descriptions.

6. Code Readability and Indentation: Python relies on indentation to define blocks of code. Proper indentation makes the program easier to read and follow, helping maintain a logical structure in decision-making.



CHAPTER 2

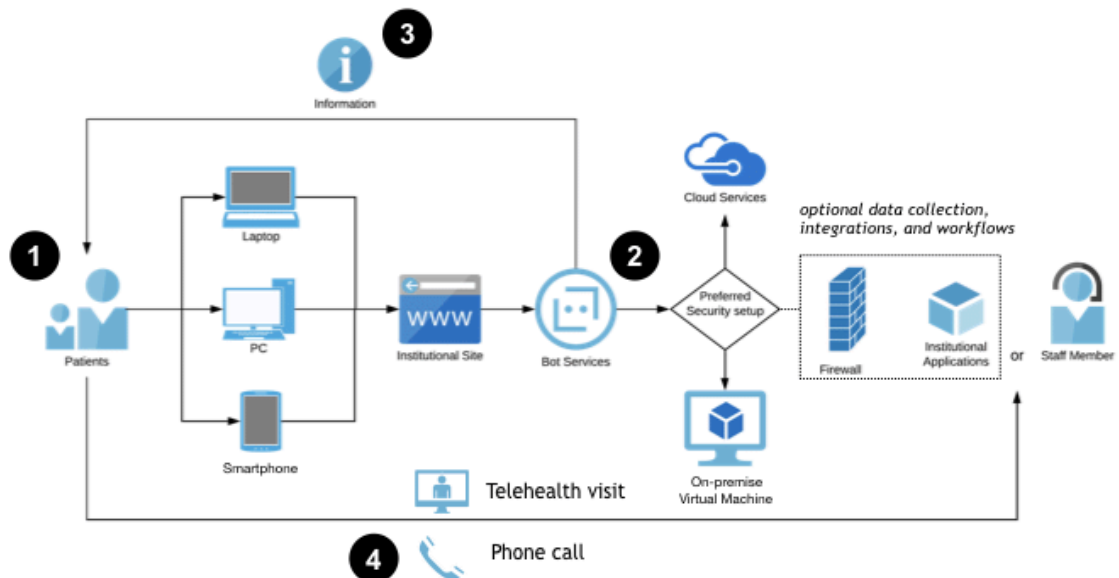
PROJECT METHODOLOGY

2.1 Proposed Work

1. Requirement Analysis: Define the objective of the chatbot, focusing on providing basic health advice based on user symptoms, and identifying key health issues to address.
2. System Design: Design the chatbot's architecture, including the flow of user interactions, symptom analysis, and response generation.
3. Symptom Keyword Identification: Develop a list of common symptoms (e.g., fever, cough, headache) to be recognized by the chatbot, enabling it to provide relevant health advice.
4. Health Advice Logic: Implement conditional logic to provide health recommendations based on the identified symptoms, such as recommending rest, hydration, or seeing a healthcare professional.
5. User Interface Development: Create a simple, text-based interface to enable users to interact with the chatbot and input their symptoms easily.
6. Testing and Validation: Conduct rigorous testing to ensure the chatbot identifies symptoms accurately, provides appropriate advice, and handles invalid or unclear inputs.
7. Deployment: Deploy the chatbot for use by the target audience, ensuring it is accessible and functional across different platforms.

8. Future Enhancements: Plan for future improvements, such as expanding the symptom database, integrating Natural Language Processing (NLP) for more accurate input understanding, and incorporating medical APIs for more advanced health advice.

2.2 Block Diagram





CHAPTER 3

MODULE DESCRIPTION

Module 1: User Interaction

Purpose: Initiates the interaction with the user and collects input.

Functionality:

Greets the user: "Hello! I am your healthcare chatbot."

Prompts the user to describe their symptoms via the input function.

Example:

User enters: "I have a fever and cough"





Module 2: Symptom Checker

Purpose: Analyzes the user's input to provide basic health advice.

Functionality:

Checks if specific keywords like "fever" or "cough" are present in the user's input using string matching (in and `.lower()` for case insensitivity).

Provides tailored responses based on the symptoms:

For fever: Advises hydration and consulting a doctor if necessary.

For cough: Suggests it may be a cold or allergy and recommends resting and drinking warm fluids.

Default advice for unrecognized symptoms: Recommends visiting a healthcare professional.

Example:

Input: "I feel feverish"





Output: "You might have an infection. Stay hydrated and consult a doctor if it persists."

Module 3: Closing Remarks

Purpose: Ends the interaction with a general health tip.

Functionality:

Prints: "Take care and stay healthy!" to encourage a positive note.

Module 4: Informative Footer (Optional)

Purpose: Provides additional information or instructions to the user.

Functionality:

Outputs: "Try programiz.pro" as a promotional message for the platform.





Enhancements Possible:

Adding more conditions or symptoms for better diagnosis.

Integrating natural language processing (NLP) for more accurate symptom interpretation.

Including a database of common diseases and treatments.

Adding a graphical interface for user interaction.





CHAPTER 4

RESULTS AND DISCUSSION

PROGRAM

```
CTP28132... Submit
1 # Simple Healthcare Chatbot
2 def healthcare_chatbot():
3     print("Welcome to
HealthBot! How can I assist
you today?")
4     print("1. Check
Symptoms")
5     print("2. Healthy Tips")
6     print("3. Emergency
Contact")
7     print("4. Exit")
8
9     while True:
10        choice =
input("Please enter your
choice (1-4): ")
11
12        if choice == "1":
13            symptoms =
input("Please describe your
symptoms briefly: ").lower()
14            if "fever" in
symptoms or "cough" in
symptoms:
```



15

```
.....print("It  
could be a common cold or  
flu. Consider consulting a  
doctor if it persists.")
```

16

```
.....elif "headache"  
in symptoms or "dizzy" in  
symptoms:
```

17

```
.....print("It  
might be due to stress or  
dehydration. Drink water  
and rest. Consult a doctor  
if severe.")
```

18

```
.....else:
```

19

```
.....print("I'm  
sorry, I can't determine  
the issue. Please consult a  
healthcare professional.")
```

20

```
.....
```

21

```
.....elif choice == "2":
```

22

```
.....print("Here are  
some healthy tips:")
```

23

```
.....print("- Stay  
hydrated by drinking plenty  
of water.")
```

24

```
.....print("-  
Maintain a balanced diet  
with fruits and  
vegetables.")
```



```
25
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37

Maintain a balanced diet
with fruits and
vegetables.")
.....print("-
Exercise regularly and get
adequate sleep.")
.....print("- Avoid
smoking and limit alcohol
consumption.")
.....
.....elif choice == "3":
.....print("In case
of an emergency, please
contact your local
emergency services
immediately!")
.....
.....elif choice == "4":
.....print("Thank
you for using HealthBot!
Stay healthy!")
.....break
.....
.....else:
.....print("Invalid
choice. Please enter a
number between 1 and 4.")
```



OUTPUT

```
Welcome to HealthBot! How can I
assist you today?
1. Check Symptoms
2. Healthy Tips
3. Emergency Contact
4. Exit

Please enter your choice (1-4): 1
Please describe your symptoms
briefly: fever and cough
It could be a common cold or flu.
Consider consulting a doctor if it
persists.

Please enter your choice (1-4): 2
Here are some healthy tips:
- Stay hydrated by drinking plenty
of water.
- Maintain a balanced diet with
fruits and vegetables.
- Exercise regularly and get
adequate sleep.
- Avoid smoking and limit alcohol
consumption.

Please enter your choice (1-4): 3
In case of an emergency, please
contact your local emergency
services immediately!

Please enter your choice (1-4): 4
Thank you for using HealthBot! Stay
healthy!
```





CHAPTER 5

CONCLUSION

The healthcare chatbot serves as a basic tool for providing preliminary health advice based on user-reported symptoms. By using simple Python logic, it can identify symptoms like fever or cough and suggest appropriate measures, such as rest, hydration, or seeking professional medical help. While this chatbot offers an accessible and interactive platform for initial health guidance, it is not a substitute for professional diagnosis and treatment. Future enhancements, such as Natural Language Processing (NLP) and integration with medical APIs, can significantly improve its accuracy and scope, making it a more robust assistant in healthcare management.

.





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Topol, E. (2019). Deep Medicine: How Artificial Intelligence Can Make Healthcare Human Again. Basic Books.

2. Natural Language Processing for Healthcare:

Miner, A. S., et al. (2016). Smartphone-based conversational agents and responses to questions about mental health, interpersonal violence, and physical health. JAMA Internal Medicine.

3. Symptom-Based Chatbot Case Study:

Semigran, H. L., et al. (2015). Evaluation of symptom checkers for self-diagnosis and triage.



APPENDIX

(Coding)

Simple Healthcare Chatbot

```
def healthcare_chatbot():
```

```
    print("Welcome to HealthBot! How can I assist you today?")
```

```
    print("1. Check Symptoms")
```

```
    print("2. Healthy Tips")
```

```
    print("3. Emergency Contact")
```

```
    print("4. Exit")
```

```
while True:
```

```
    choice = input("Please enter your choice (1-4): ")
```

```
    if choice == "1":
```

```
        symptoms = input("Please describe your symptoms briefly: ").lower()
```

```
        if "fever" in symptoms or "cough" in symptoms:
```

```
            print("It could be a common cold or flu. Consider consulting a doctor if it  
persists.")
```

```
        elif "headache" in symptoms or "dizzy" in symptoms:
```

```
            print("It might be due to stress or dehydration. Drink water and rest.  
Consult a doctor if severe.")
```

```
        else:
```

```
            print("I'm sorry, I can't determine the issue. Please consult a healthcare  
professional.")
```

```
    elif choice == "2":
```

```
        print("Here are some healthy tips:")
```



```
print("- Stay hydrated by drinking plenty of water.")  
print("- Maintain a balanced diet with fruits and vegetables.")  
print("- Exercise regularly and get adequate sleep.")  
print("- Avoid smoking and limit alcohol consumption.")
```

```
elif choice == "3":
```

```
    print("In case of an emergency, please contact your local emergency services  
immediately!")
```

```
elif choice == "4":
```

```
    print("Thank you for using HealthBot! Stay healthy!")  
    break
```

```
else:
```

```
    print("Invalid choice. Please enter a number between 1 and 4.")
```



APPENDIX

(Output)

Welcome to HealthBot! How can I assist you today?

1. Check Symptoms
2. Healthy Tips
3. Emergency Contact
4. Exit

Please enter your choice (1-4): 1

Please describe your symptoms briefly: fever and cough

It could be a common cold or flu. Consider consulting a doctor if it persists.

Please enter your choice (1-4): 2

Here are some healthy tips:

- Stay hydrated by drinking plenty of water.
- Maintain a balanced diet with fruits and vegetables.
- Exercise regularly and get adequate sleep.
- Avoid smoking and limit alcohol consumption.

Please enter your choice (1-4): 3

In case of an emergency, please contact your local emergency services immediately!

Please enter your choice (1-4): 4

Thank you for using HealthBot! Stay healthy!



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