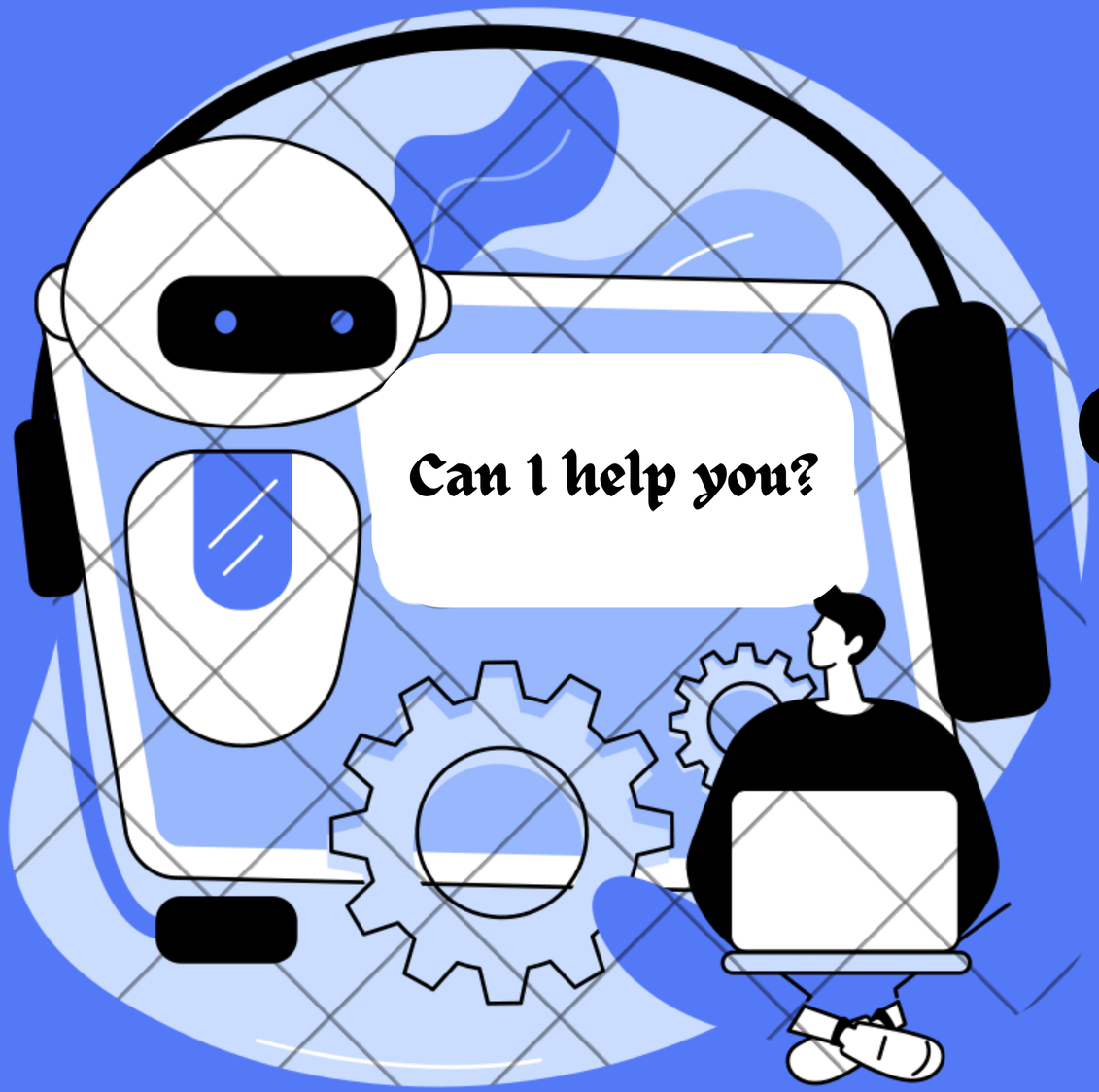
IBM- Naan Mudhalvan



CREATE A CHATBOT IN PYTHON

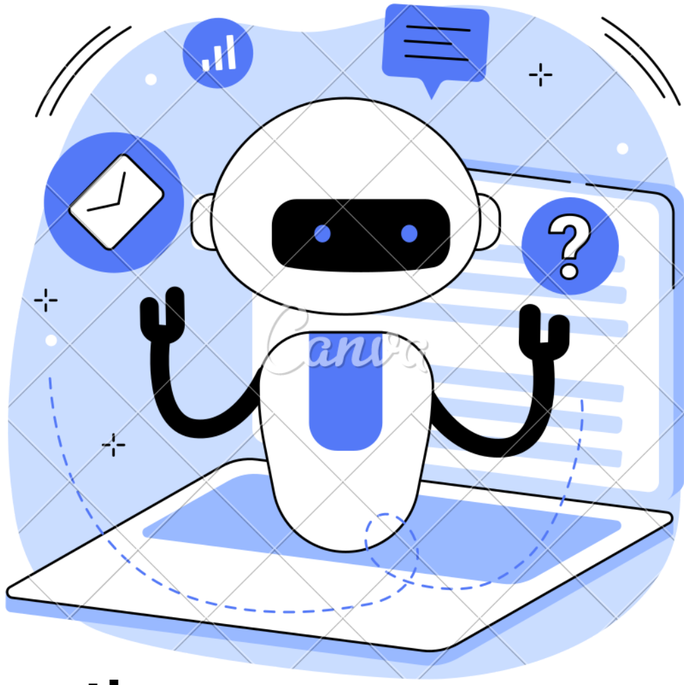
AGENDA

1. Abstract
2. Problem Definition
3. Design Thinking Approach
4. Conclusion

ABSTRACT

- This project aims to develop a chatbot using Python that can effectively engage with users, understand natural language input, and provide relevant responses.

- The chatbot will be designed to enhance user interactions by integrating various functionalities and ensuring a user-friendly interface.



This document outlines the

- problem statement,
- design thinking approach
- the key components of development

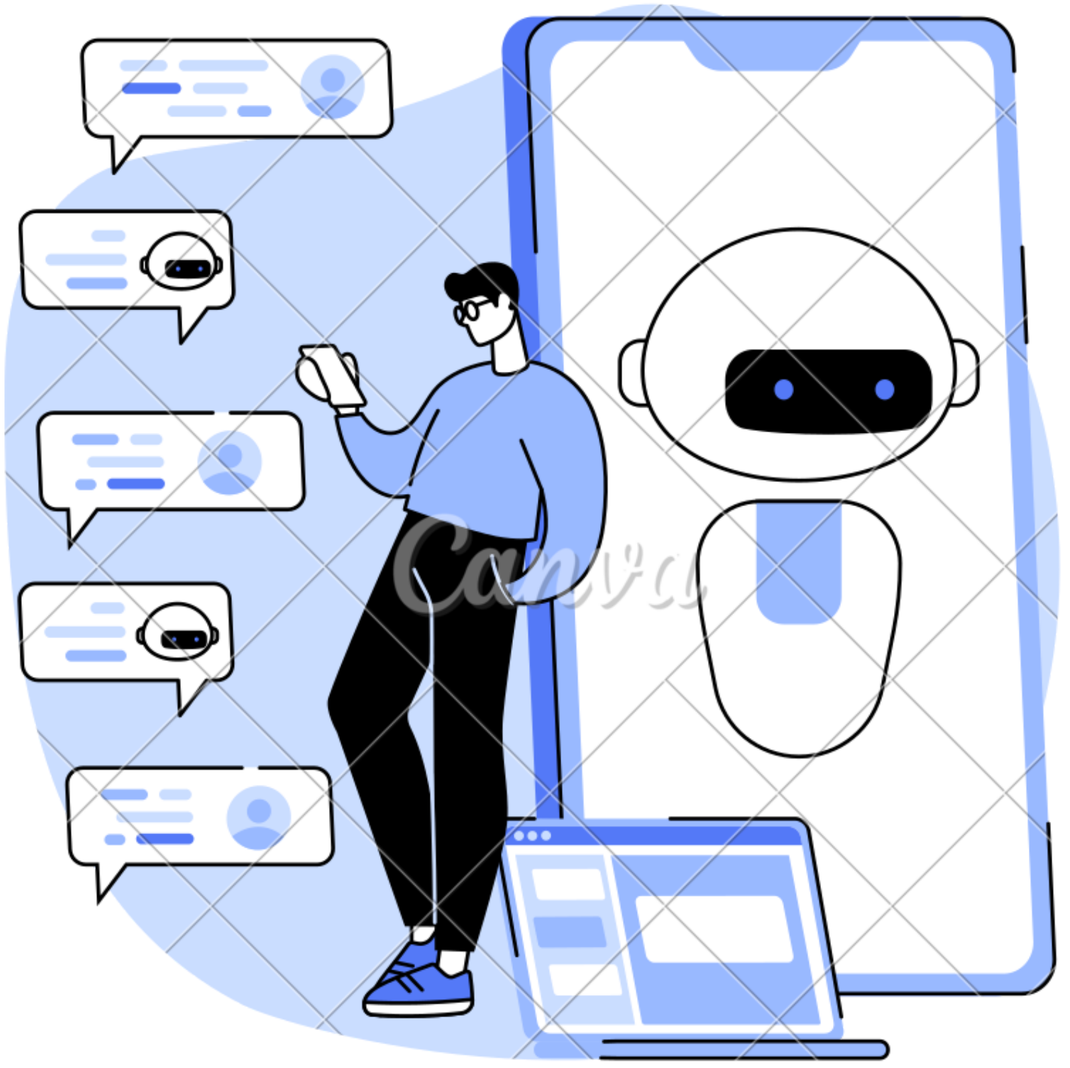
like,

1. functionality,
2. user interface,
3. natural language processing

PROBLEM DEFINITION

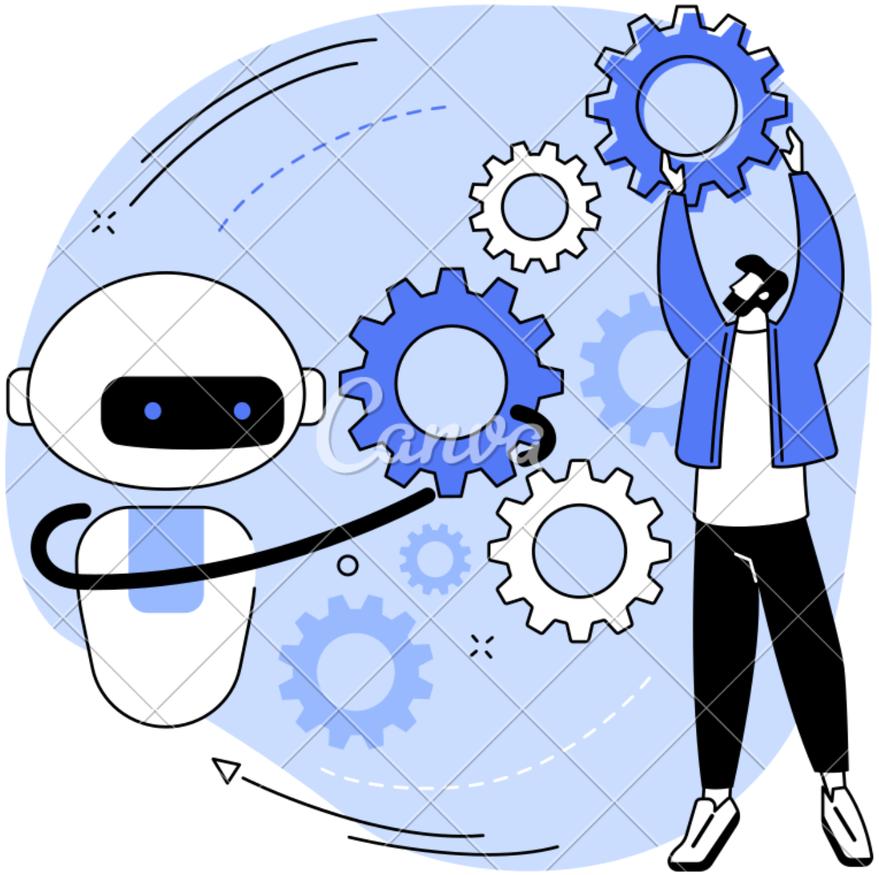
- The problem addressed in this project is the need for a chatbot that can assist users in various domains by understanding their natural language queries and responding intelligently.

- Current systems often struggle to provide meaningful responses, leading to user frustration. Therefore, the objective is to create a chatbot that can deliver accurate and helpful information or services while maintaining a user-friendly interface.



DESIGN THINKING APPROACH

- Empathize
- Define
- Ideate
- .Prototype



- Test
- Develop
- Test and Iterate
- Deploy

The Design Thinking Approaches

Empathize

Understand user needs and pain points by conducting user research, surveys, and interviews.

Ideate

Clearly define the problem, objectives, and success criteria for the chatbot.

Test

Gather feedback from potential users and refine the prototype

Test &Iterate

Continuously test and improve the chatbot's performance based on user feedback

Define

Clearly define the problem, objectives, and success criteria for the chatbot.

Prototype

Create a low-fidelity prototype to visualize the chatbot's interface and functionality.

Develop

Build the chatbot using Python, incorporating natural language processing (NLP) techniques.

Deploy

Deploy the chatbot on a suitable platform for user access.

FUNCTIONALITY

- Natural language understanding to interpret user queries.

- Integration with external APIs and databases for retrieving information.

- Multi-domain support for addressing a wide range of user needs.

- Context management to maintain the conversation flow.

- Error handling and user assistance for handling misunderstandings.

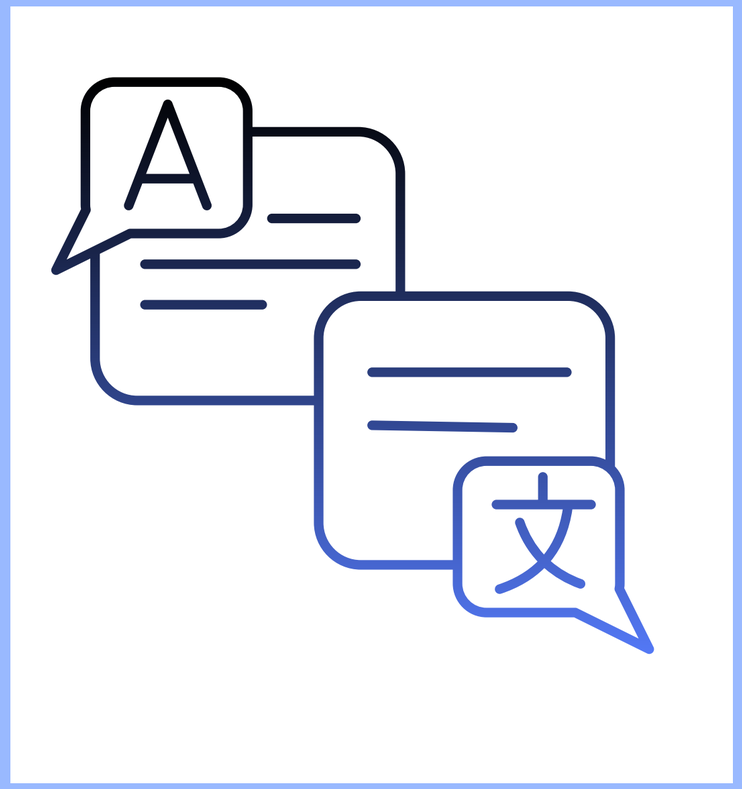
USER INTERFACE

- A user-friendly and responsive web-based interface.

- A clean and intuitive design with clear instructions.

- Options for user customization, such as themes and preferences.

- Support for multimedia, including images and links.



Natural Language Processing (NLP)

- **Tokenization, part-of-speech tagging, and named entity recognition for text analysis.**

- **Sentiment analysis to gauge user emotions.**
- **Intent recognition to understand the purpose of user queries.**

- **Machine learning models for improving language understanding over time.**

RESPONSES

- **Contextually relevant responses that address user queries.**
- **Personalization based on user history and preferences.**
- **Support for structured and unstructured responses.**
- **Generation of informative suggestions and recommendations.**

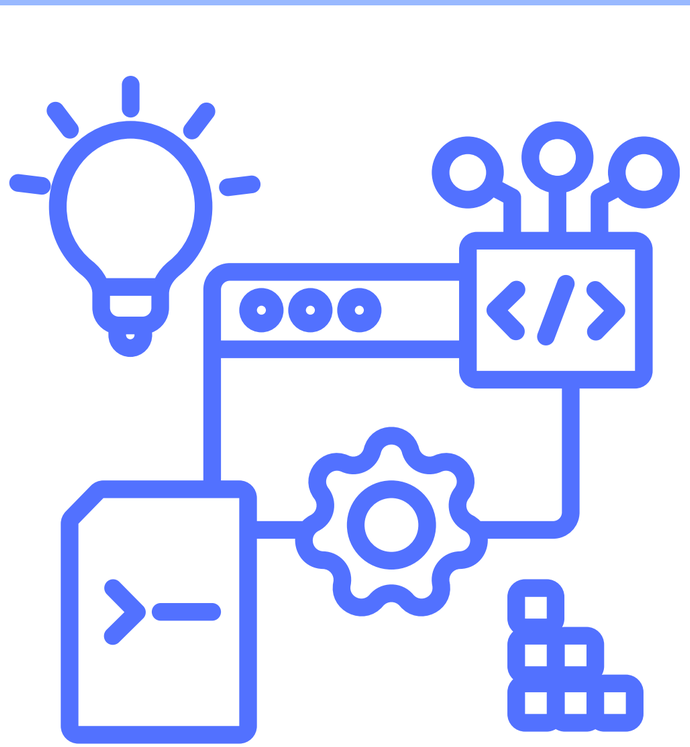
INTEGRATION

- **Integration with external services, APIs, and databases for data retrieval.**

- **Compatibility with popular messaging platforms like Facebook Messenger etc.**

- **Support for chatbot-to-human handoff when complex issues arise.**

- **Security measures to protect user data and maintain privacy.**



TESTING AND IMPROVEMENT

- **Automated testing for robustness and error detection.**

- **Continuous monitoring of user interactions for improvement insights.**

- **Regular updates to the chatbot's knowledge base and NLP models.**

- **Soliciting user feedback and implementing improvements based on user suggestions.**

IMPROVEMENT OF CHATBOT

Monitor Success Metrics

Collect Chat Transcripts

Post-Chat Surveys

Make the Bot More Human

CONCLUSION

- This project aims to create a versatile and user-centric chatbot using Python, with a focus on natural language understanding, thoughtful responses, seamless integration, and continuous improvement.

- The design thinking approach ensures that the chatbot remains aligned with user needs and evolves over time to provide an enhanced conversational experience

THANK YOU