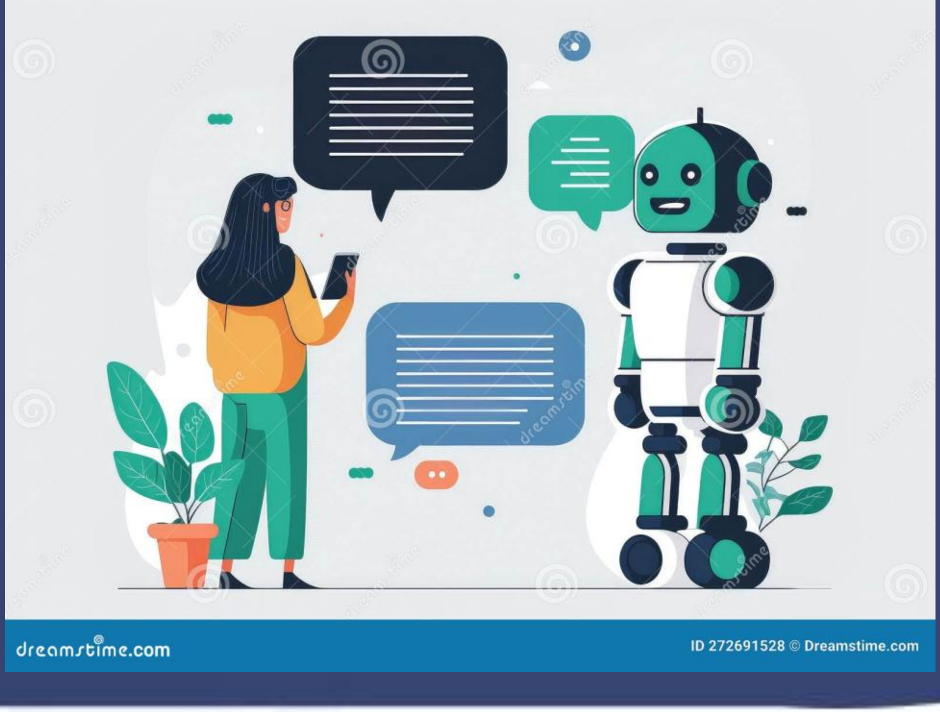
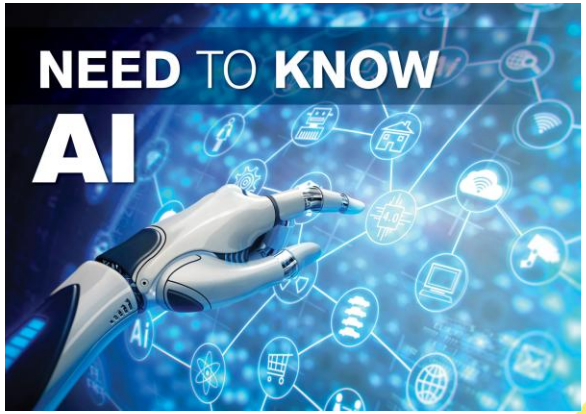
Chatbot Using NLP



Learning Objectives



This presentation provides an overview of our chatbot project. We will explore the use of Natural Language Processing (NLP) in developing an intelligent chatbot. To understand its architecture and future enhancements.

1. **NLP Fundamentals**
   Understand the role of NLP in modern chatbot technology.

2. **Intent-Based Training**
   Learn to train chatbots using intent-based classification techniques.

3. **Python Implementation**
   Master the implementation of a chatbot using Python programming.

Source : www.freepik.com/

Project Goal

Understanding Queries

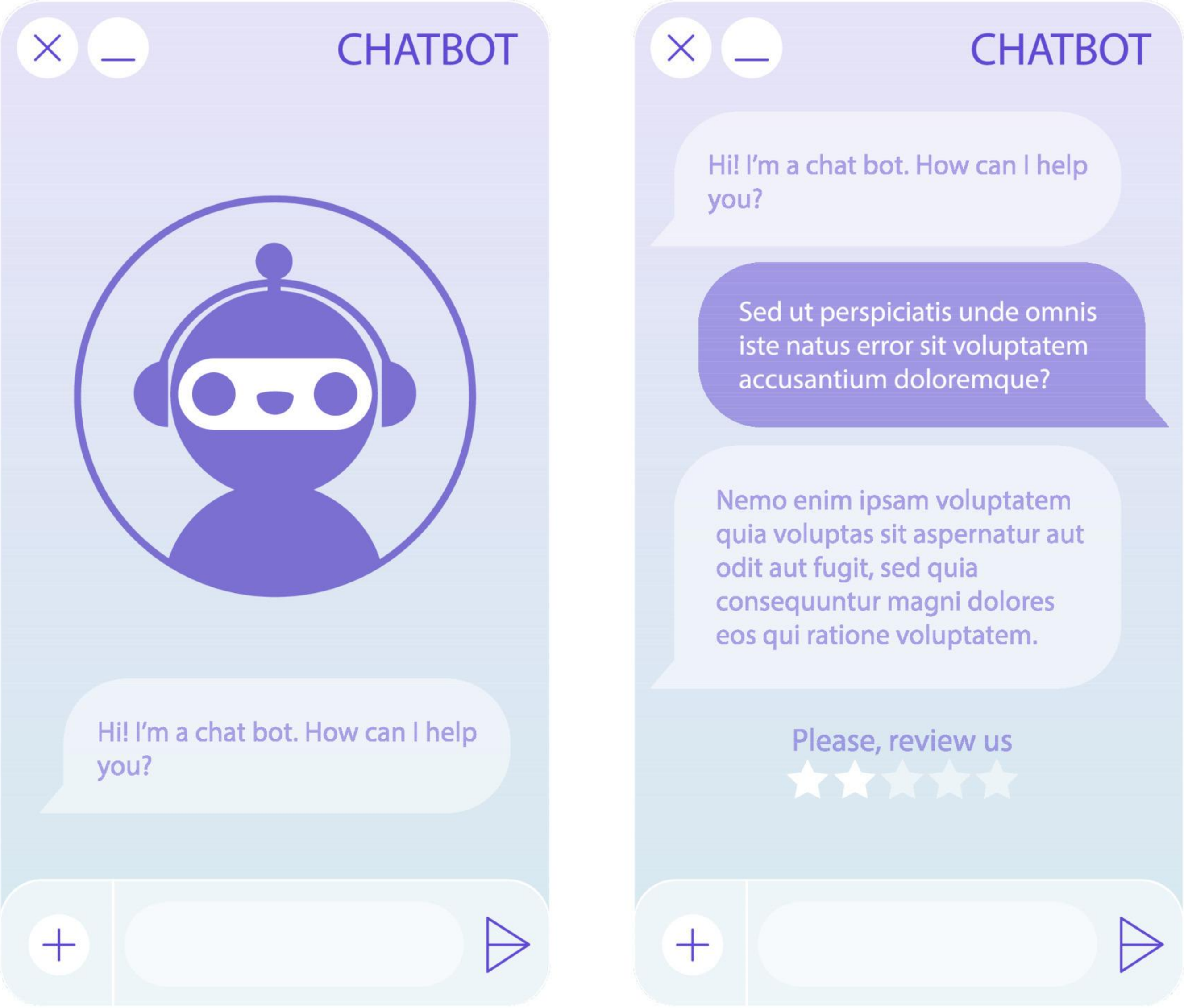
Develop a chatbot that understands a wide array of user questions.

Responding Intelligently

Craft suitable, relevant responses to these user queries.

Enhancing User Experience

Provide interactions that are both effective and enjoyable.

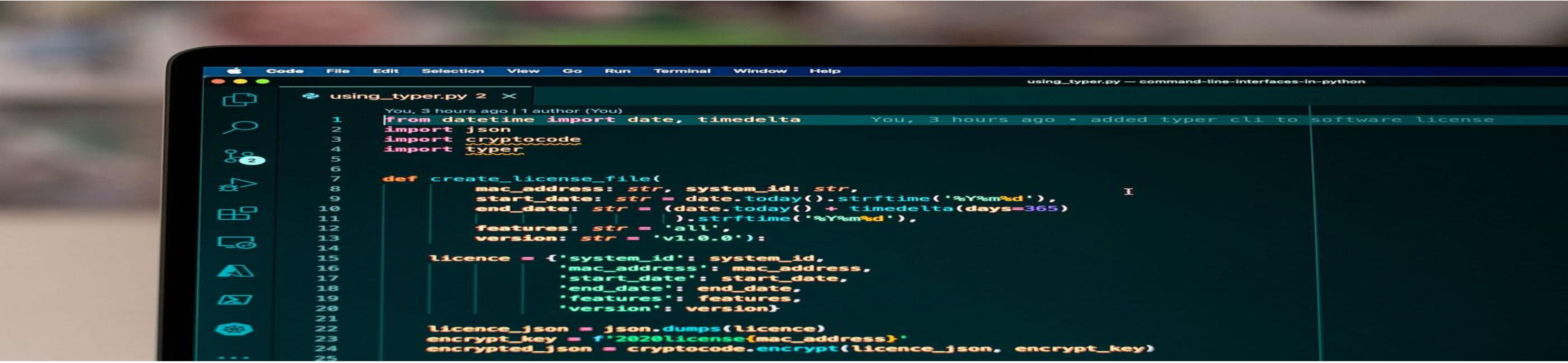


Hi! I'm a chat bot. How can I help you?

Hi! I'm a chat bot. How can I help you?

Sed ut perspiciatis unde omnis iste natus error sit voluptatem accusantium doloremque?

Nemo enim ipsam voluptatem quia voluptas sit aspernatur aut odit aut fugit, sed quia consequuntur magni dolores eos qui ratione voluptatem.



Code
File
Edit
Selection
View
Go
Run
Terminal
Window
Help
using_typer.py — command-line-interfaces-in-python
using_typer.py 2
You, 3 hours ago | 1 author (You)
You, 3 hours ago • added typer cli to software license

```
from datetime import date, timedelta
import json
import cryptocode
import typer


def create_license_file(
        mac_address: str, system_id: str,
        start_date: str = date.today().strftime('%Y%m%d'),
        end_date: str = (date.today() + timedelta(days=365)
                         ).strftime('%Y%m%d'),
        features: str = 'all',
        version: str = 'v1.0.0'):

    licence = {'system_id': system_id,
               'mac_address': mac_address,
               'start_date': start_date,
               'end_date': end_date,
               'features': features,
               'version': version}

    licence_json = json.dumps(licence)
    encrypt_key = f'2020license{mac_address}'
    encrypted_json = cryptocode.encrypt(licence_json, encrypt_key)
```

Tools and Technology used

Python

Primary programming language for chatbot development.

NLTK

Essential library for natural language processing tasks.

TensorFlow/Keras

Deep learning frameworks for neural network training.

Intents JSON

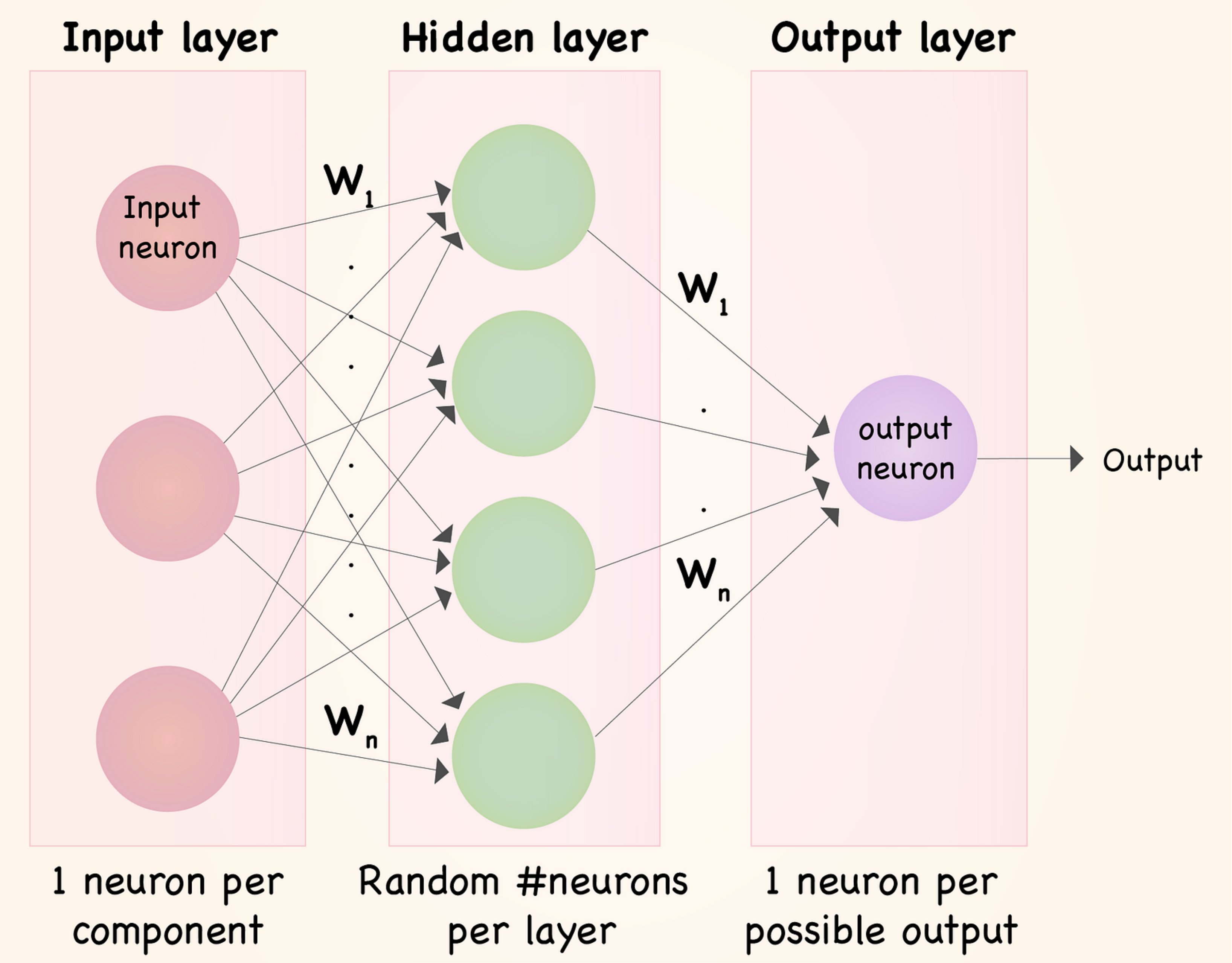
Structured data format for training chatbot responses.

Methodology

Data Preprocessing
Tokenization and stemming techniques.

Neural Network Training
Training with TensorFlow/Keras.

Response Generation
NLP models for intelligent responses.



Problem Statement:

Limited Flexibility

Rule-based chatbots often struggle with diverse user inputs.

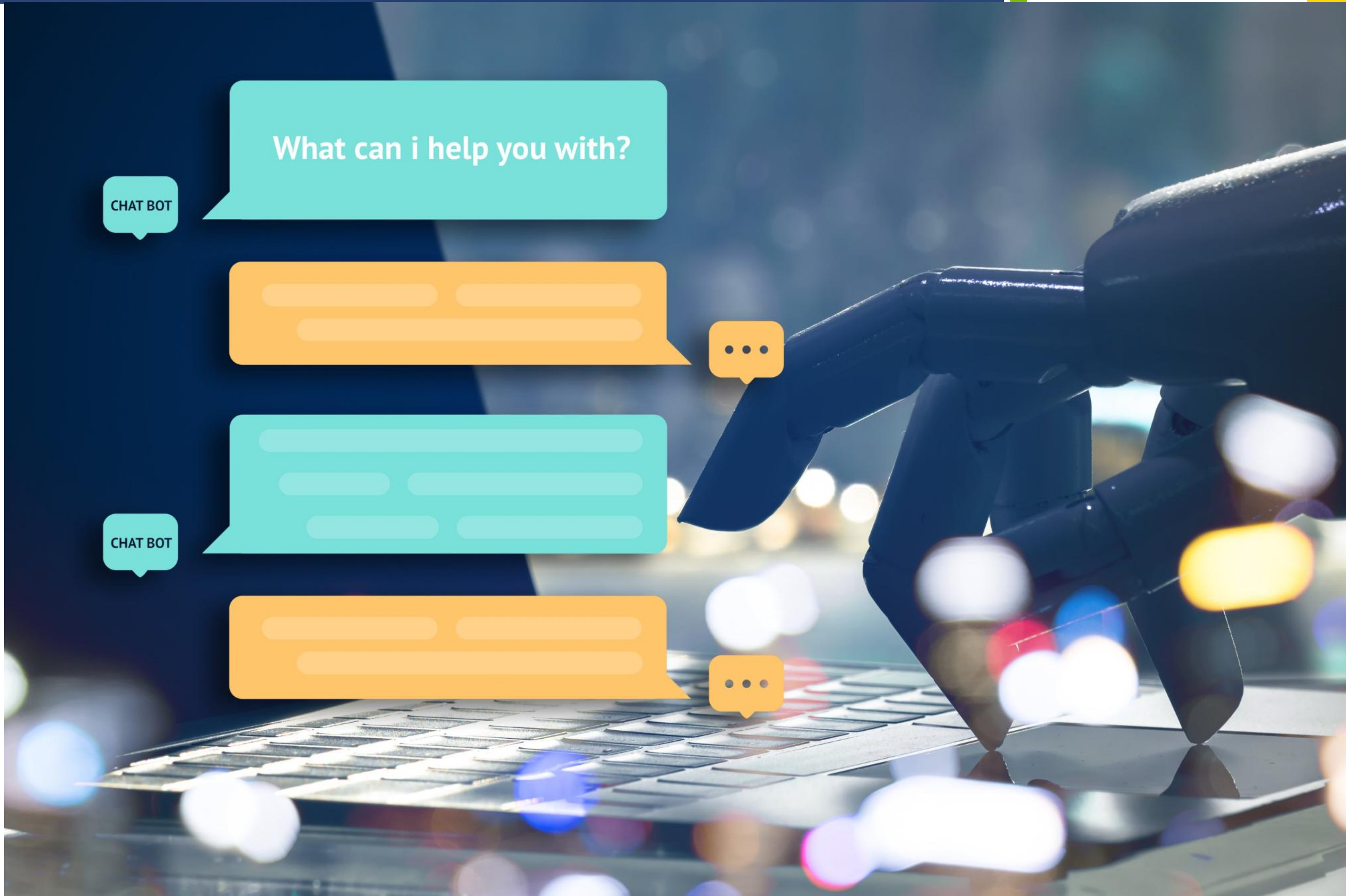
Lack of Adaptability

Traditional chatbots can't dynamically adapt to varying user needs.

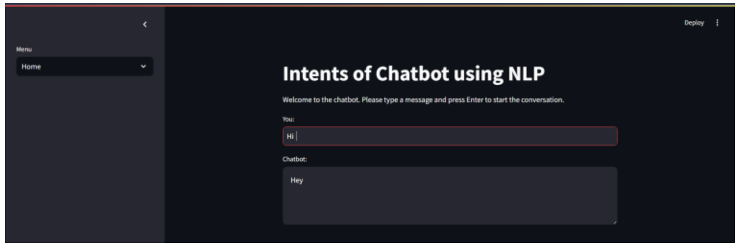
Solution:

NLP-Based Chatbot
Leverage NLP for understanding predefined intents.

Machine Learning
Enhance accuracy with machine learning algorithms.



Screenshot of Output:

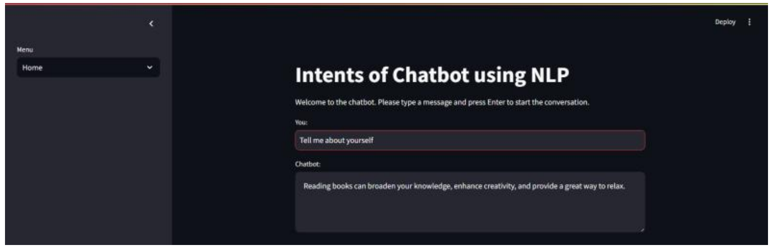


Intents of Chatbot using NLP

Welcome to the chatbot. Please type a message and press Enter to start the conversation.

You:
Hi

Chatbot:
Hey

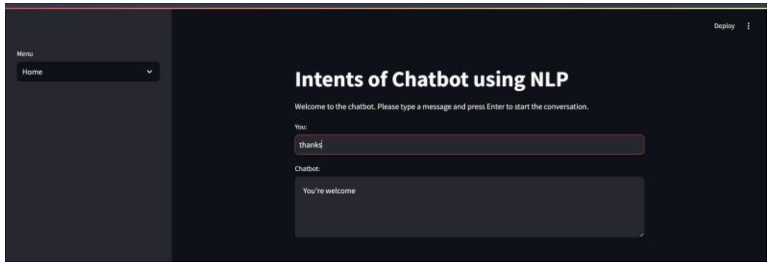


Intents of Chatbot using NLP

Welcome to the chatbot. Please type a message and press Enter to start the conversation.

You:
Tell me about yourself

Chatbot:
Reading books can broaden your knowledge, enhance creativity, and provide a great way to relax.

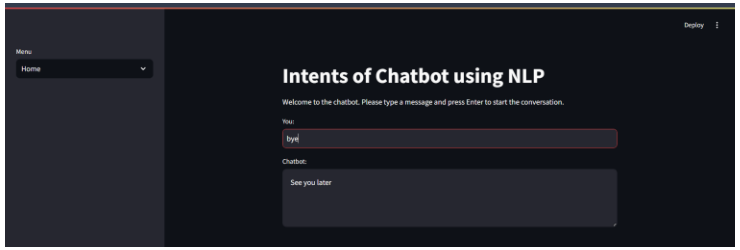


Intents of Chatbot using NLP

Welcome to the chatbot. Please type a message and press Enter to start the conversation.

You:
thanks

Chatbot:
You're welcome

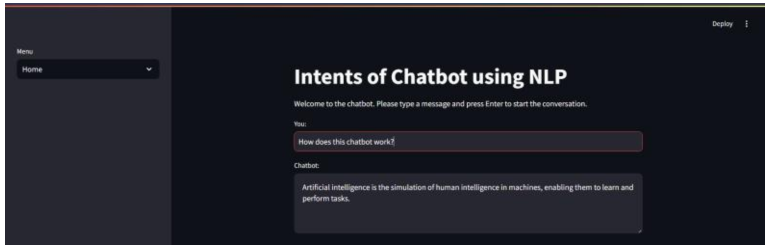


Intents of Chatbot using NLP

Welcome to the chatbot. Please type a message and press Enter to start the conversation.

You:
bye

Chatbot:
See you later

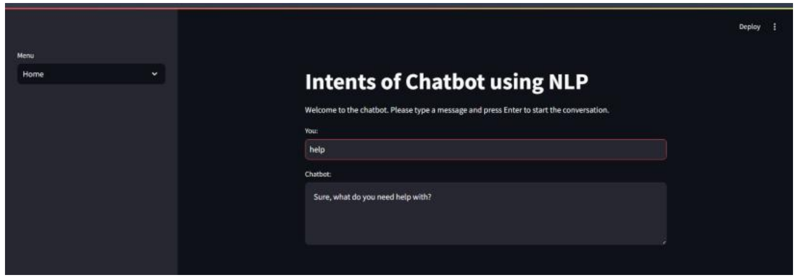


Intents of Chatbot using NLP

Welcome to the chatbot. Please type a message and press Enter to start the conversation.

You:
How does this chatbot work?

Chatbot:
Artificial intelligence is the simulation of human intelligence in machines, enabling them to learn and perform tasks.

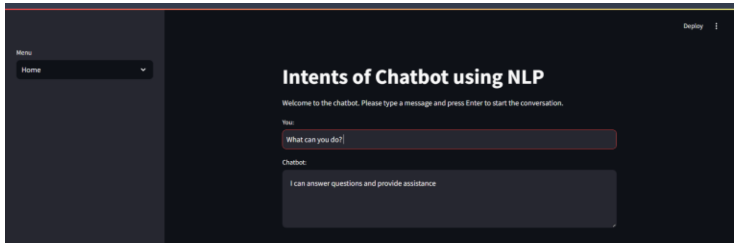


Intents of Chatbot using NLP

Welcome to the chatbot. Please type a message and press Enter to start the conversation.

You:
help

Chatbot:
Sure, what do you need help with?

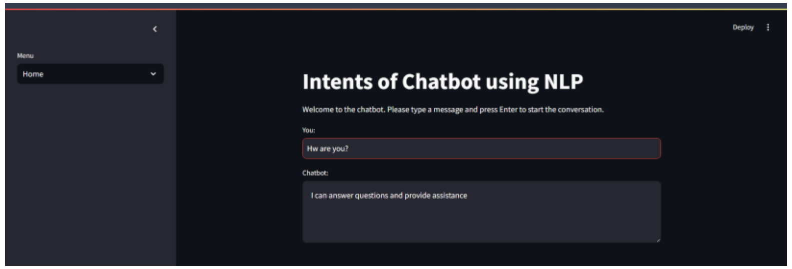


Intents of Chatbot using NLP

Welcome to the chatbot. Please type a message and press Enter to start the conversation.

You:
What can you do?

Chatbot:
I can answer questions and provide assistance

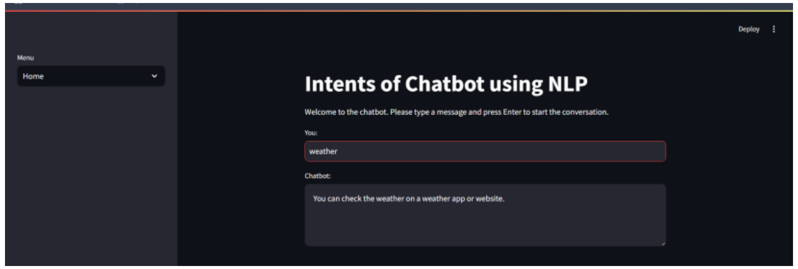


Intents of Chatbot using NLP

Welcome to the chatbot. Please type a message and press Enter to start the conversation.

You:
Hw are you?

Chatbot:
I can answer questions and provide assistance



Intents of Chatbot using NLP

Welcome to the chatbot. Please type a message and press Enter to start the conversation.

You:
weather

Chatbot:
You can check the weather on a weather app or website.

Conclusion:

Conclusion & Future Work

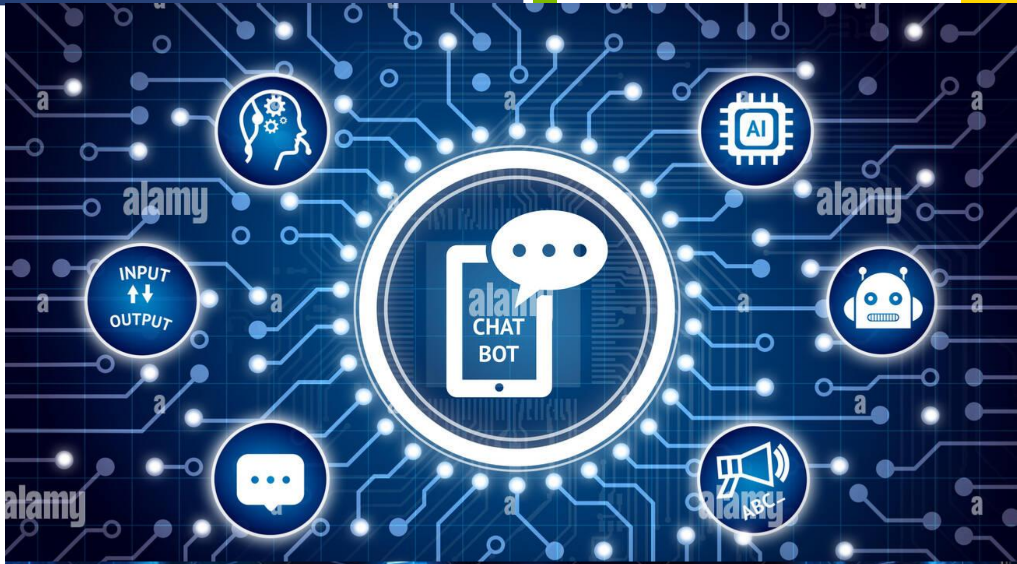
AI Chatbot Implemented

Database Integration

Voice Recognition

Multilingual Support

We've successfully created an AI chatbot using NLP. Future improvements include database integration, voice recognition, and multilingual support.



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