Phase 2: CREATE A CHATBOT IN PYTHON

INTRODUCTION:

Creating a chatbot project in Python involves more than just the code for the chatbot itself. It typically includes setting up a development environment, handling user input/output, and integrating the chatbot into a user-friendly interface. Here's a step-by-step guide to creating a Python chatbot project

TYPES OF CHATBOTS :

Chatbots deliver instantly by understanding the user requests with pre-defined rules and AI based chatbots. There are two types of chatbots.

- **Rule Based Chatbots:** This type of chatbots answer the customer queries using the pre-defined rules. These bots answer common queries such as hours of operation of business, addresses, phone numbers and tracking status.
- **Conversational AI Chatbots:** This type of chatbots using Natural language Processing(NLP) to understand the context and intent of a user input before providing the response. These Bots train themselves as per the user inputs and more they learn, more they become user interaction.

NLP

NLP stands for Natural Language Processing, which is a subfield of artificial intelligence (AI) that focuses on the interaction between computers and human language. The primary goal of NLP is to enable computers to understand, interpret, and generate human language in a way that is both meaningful and useful.

Language Understanding: NLP algorithms are designed to process and understand human language. This involves various tasks such as tokenization (breaking text into words or phrases), part-of-speech tagging (identifying the grammatical role of each word), and parsing (analyzing sentence structure).

Language Generation: NLP systems can also generate human-like text. This can include tasks like text generation, machine translation, and automatic summarization. For instance, chatbots and virtual assistants use NLP to generate responses to user queries.

Information Extraction: NLP can be used to extract structured information from unstructured text. Named Entity Recognition (NER) is one example, where entities like names of people, places, and organizations are identified in a text.

Sentiment Analysis: NLP techniques are employed to determine the sentiment or emotional tone expressed in a piece of text. This is often used in social media monitoring, customer feedback analysis, and market research.

Speech Recognition and Synthesis: NLP is not limited to written text; it also encompasses the processing of spoken language. Speech recognition converts spoken words into text, while speech synthesis generates human-like speech from text.

SAMPLE PROGRAM

```
from chatterbot import ChatBot

from chatterbot.trainers import ListTrainer

# Create a ChatBot instance

bot = ChatBot('MyBot')

# Define the list of questions and answers

conversations = [

    "hi, how are you doing?", "I'm fine. How about yourself?",

    "I'm fine. How about yourself?", "I'm pretty good. Thanks for asking.",

    "I'm pretty good. Thanks for asking.", "No problem. So how have you been?",

    "No problem. So how have you been?", "I've been great. What about you?",

    "I've been great. What about you?", "I've been good. I'm in school right now.",

    "I've been good. I'm in school right now.", "What school do you go to?"

]

# Set the trainer to train the chatbot

trainer = ListTrainer(bot)

trainer.train(conversations)

# Chat with the bot

while True:

    user_input = input("You: ")

    response = bot.get_response(user_input)

    print("Bot:", response)
```

SAMPLE OUTPUT

```
You: hi, how are you doing?

Bot: I'm fine. How about yourself?


You: I'm pretty good. Thanks for asking.

Bot: No problem. So how have you been?
```

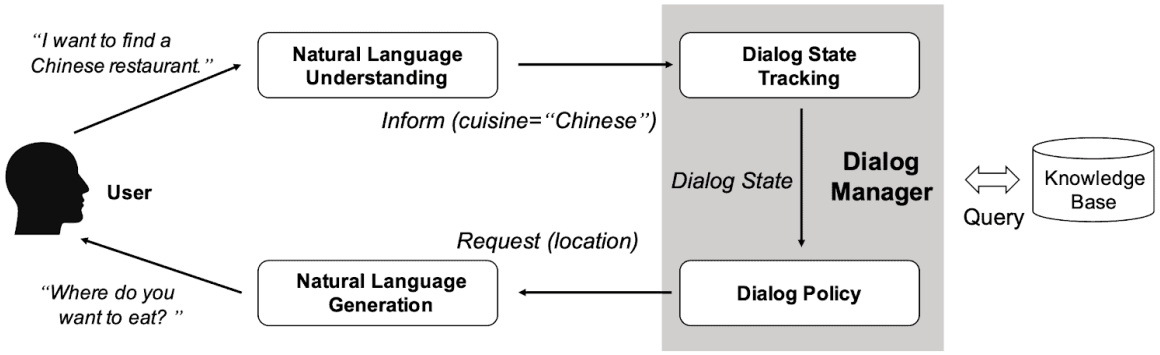
You: I've been great. What about you?

Bot: I've been good. I'm in school right now.

You: What school do you go to?

Bot: [Bot's response to the last question]

ARCHITECTURE FOR CHATBOT



BENEFITS OF USING CHATBOT:

1.24×7 availability.

2.Instant answers to queries.

3.Support multi-language to enhance businesses.

4.Simple and Easy to Use UI to engage more customers.

5.Cost effective and user interactive.

6.Avoid communication with call agents thereby reducing the time consuming tasks.

7.Understand the Customer behavior

8.Increase sales of business by offering promo codes or gifts.

CONCLUSION:

In this project, we have introduced a chatbot that is able to interact with users. This chatbot can answer queries in the textual user input. For this purpose, AIML with program-o has been used. The chatbot can answer only those questions which he has the answer in its AIML dataset.