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# AIES ASSIGNMENT 6

## Chatbot

### Code

```
from random import choice

import nltk
from nltk.chat.util import Chat, reflections

# Define your patterns and responses here
pairs = [
    [r"hello|hi|hey", ["Hello!", "Hey there!", "Hi!"]],
    [r"my name is (.*)", ["Hello %1, nice to meet you!"]],
    [
        r"(what is your name?|who are you?)",
        ["I am Mentos, your movie booking assistant!", "Call me Mentos."],
    ],
    [r"bye|goodbye|see you", ["Goodbye! Take care.", "See you soon!"]],
    [
        r".*\b(movie|movies|now playing|currently showing)\b.*",
        [
            "Here are the movies currently playing: Inception, Interstellar, Tenet, and The Dark Knight.",
            "We have Inception, Interstellar, and Tenet showing today.",
        ],
    ],
    [
        r".*\b(book|reserve|reservation|booking)\b.*",
        [
            "Sure, I can help with that. Let me know which movie, what time, and how many people.",
            "Great! I can help book your tickets. Just mention the movie, time, and number of people.",
        ],
    ],
    [
        r".*\b(what time|schedule|times|when)\b.*",
        [
            "You can find the movie schedules on our website.",
        ],
    ],
]
```

```

        "Movies are playing at various times today. Would you like to know
about a specific movie?",
    ],
    [
        r".*\b(price|cost|ticket cost)\b.*",
        [
            "The ticket price is $12 for standard and $18 for premium
seating.",
            "Tickets are priced at $12 for regular shows. For premium seats,
it's $18.",
        ],
    ],
    [
        r".*\b(seats|seat availability|available seats)\b.*",
        [
            "Seats are filling up quickly! Would you like to check
availability for a specific time?",
            "There are still some seats available. Let me know the movie and
showtime to proceed.",
        ],
    ],
    [
        r".*\b(genre|genres|type of movie)\b.*",
        [
            "We have action, drama, comedy, thriller, and sci-fi movies
available. Which genre would you prefer?",
            "What kind of movie are you looking for? We have action, comedy,
and sci-fi.",
        ],
    ],
    [
        r".*\b(confirm|confirmation)\b.*",
        [
            "Your booking has been confirmed! You will receive the details via
email shortly.",
            "Great! Your movie reservation is confirmed.",
        ],
    ],
    [
        r".*\b(theater|location|cinema)\b.*",
        [
            "Our theaters are located in the city center, next to the main
mall.",
            "You can find our theaters in multiple locations across the city.
Which one would you like to visit?",
        ],
    ],

```

```
[
    r".*\b(cancel|cancellation)\b.*",
    [
        "To cancel your booking, please provide your booking ID.",
        "Sure, I can help with the cancellation. Can you share your
booking ID, please?",
    ],
],
[
    r".*\b(payment|pay|payment options)\b.*",
    [
        "We accept credit cards, PayPal, and mobile payments. Which would
you like to use?",
        "You can pay with a credit card, PayPal, or Google Pay. Let me
know your preference.",
    ],
],
[
    r".*\b(recommend|suggest)\b.*(action|comedy|thriller|drama|sci-
fi)\b.*",
    [
        "For action lovers, I recommend Inception or Mad Max: Fury Road.",
        "If you're into sci-fi, check out Interstellar or The Matrix.",
    ],
],
[
    r".*\b(tickets for \d+ people|book for \d+)\b.*",
    [
        "Got it! I'll reserve seats for you. Just let me know the movie
and showtime.",
        "No problem! Tell me the movie and time, and I'll book your
tickets.",
    ],
],
[
    r".*\b(help|assist|support)\b.*",
    [
        "I'm here to help! Ask me about movie times, booking, or anything
else.",
        "How can I assist you today? Feel free to ask about booking,
movies, or schedules.",
    ],
],
[
    r".*\b(late|missed)\b.*",
    [
        "If you missed your show, don't worry! You can rebook for another
time.",
    ]
]
```

```

        "Running late? I can help you reschedule your tickets for the next
available show.",
    ],
],
[
    r".*\b(discount|offers|promo)\b.*",
    [
        "We have a 10% discount on all tickets if you book before noon!",
        "Currently, we have a buy 1 get 1 free offer on premium seats for
the weekend shows.",
    ],
],
]

# Create a chatbot instance with these pairs and reflections
chatbot = Chat(pairs, reflections)

# Main function to interact with the chatbot
def movie_chat():
    print(
        "Hi, I'm Mentos! How can I assist you with your movie booking today?
(type 'quit' to exit)"
    )
    while True:
        user_input = input("You: ").lower()
        if user_input == "quit":
            print("Mentos: Goodbye! Have a great day.")
            break
        response = chatbot.respond(user_input)
        if response:
            print("Mentos:", response)
        else:
            print("Mentos: I'm sorry, I didn't quite catch that. Could you
rephrase?")

# Start the chatbot
movie_chat()

```

## Output

```
AIES ➤ python .\chatbot.py
Hi, I'm Mentos! How can I assist you with your movie booking today? (type 'quit' to exit)
You: hello
Mentos: Hi!
You: what movies are showing?
Mentos: Here are the movies currently playing: Inception, Interstellar, Tenet, and The Dark Knight.
You: are there seats available?
Mentos: There are still some seats available. Let me know the movie and showtime to proceed.
You: I want to book
Mentos: Sure, I can help with that. Let me know which movie, what time, and how many people.
You: I want to cancel my booking
Mentos: Sure, I can help with that. Let me know which movie, what time, and how many people.
You: I might run late
Mentos: Running late? I can help you reschedule your tickets for the next available show.
You: Bye
Mentos: See you soon!
```

## TITLE

Implement a chatbot using techniques of Natural Language Processing.

## FAQs

1. Explain NLP in detail with example.

NLP is a branch of AI that focuses on the interaction between computers and humans through natural language. The goal is to enable computers to understand, interpret, and generate human languages in a valuable way.

## Key Components

- Tokenization - Breaking down text into smaller units such as words or phrases.
- POS Tagging - Identifying the part-of-speech in a sentence.
- Named Entity Recognition (NER) - Identifying and categorizing entities such as names, dates, or locations.
- Parsing - Analyzing the grammatical structure of a sentence.

E.g. "John works at Microsoft in Seattle."

### • Tokenization

✓ ["John", "works", "at", "Microsoft", "in", "Seattle", "."]

### • POS Tagging

John (noun), works (verb), at (preposition), Microsoft (proper noun), in (preposition), Seattle (proper noun)

### • NER

John (Person), Microsoft (Organization), Seattle (Location)

2. Explain limitations and challenges one faces while creating a chatbot.

- Context understanding of conversations.
- Handling inherent ambiguity of human language.
- Difficulty in engaging in smooth and natural conversations.
- Handling complex queries.
- Need of a vast amount of training data.
- ~~Diff~~ Handling language barriers.

3. Uses of chatbot in various domains.

i. Customer Support

Chatbots can handle frequent queries and provide 24/7 support, reducing wait times and improving user experience.

ii. Healthcare

Chatbots help with appointment scheduling, symptom checking, medication reminders, and patient follow-ups.

iii. E-Commerce

Chatbots assist users in product searches, order tracking, personalized recommendations, and handling customer inquiries regarding products or services.

iv. Education

Chatbots can be used for answering student queries, providing course recommendations, tutoring and helping students track their progress through automated systems.

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21/10/21