Movie Ticketing Bot Powered By IBM Watson Assistant

Smart Internz

July 2023

by

Surya G: 20BCE0079
Kushagra Agrawal: 20BCE0577
B Akash: 20BCE0606
Nimish Singh Chouhan: 20BCE10773

Vellore Institute of Technology

1. INTRODUCTION

1.1 Overview

Introducing MovieTicketBot: Your personal movie booking assistant. With AI-powered convenience, MovieTicketBot helps you discover movies, select showtimes, choose theaters, and effortlessly book tickets. Say goodbye to long queues and enjoy a seamless movie experience. Sit back, relax, and let MovieTicketBot handle your movie bookings.

1.2 Purpose

A movie ticketing bot simplifies and enhances the ticket booking process. It serves as a virtual assistant, providing a seamless way to discover movies, select showtimes, choose theaters, and book tickets. Using AI capabilities, the bot swiftly searches a comprehensive movie database, offering personalized suggestions based on user preferences like genre, language, or actors.

The bot streamlines showtime selection by displaying available screenings and suggesting alternatives if desired slots are unavailable. It assists in theater selection by providing information on nearby theaters, including location, seating capacity, amenities, and user ratings.

The primary purpose of a movie ticketing bot is to streamline ticket booking. It guides users through seat selection, real-time availability checks, pricing details, and secure payment handling. Once booked, the bot issues e-tickets or booking codes for easy entry.
By automating the process and eliminating manual searches across multiple platforms, the bot saves time and enhances convenience. It ensures a smooth and efficient movie booking experience, allowing users to focus on enjoying their cinematic experience.

2. LITERATURE SURVEY

2.1 Existing problem

Bottlenecks in Movie Ticketing: A Literature Survey

- Limited Ticket Availability: Highly anticipated movies or peak hours often result in limited ticket availability, causing frustrations for customers trying to secure tickets for popular shows.
- Long Queues: Physical ticket counters or websites experiencing high traffic can lead to long queues and delays during the ticket booking process, resulting in customer dissatisfaction and potential revenue loss for theaters.
- Complex Booking Processes: Multi-step booking processes, such as seat selection, showtime choices, and payment information entry, can be time-consuming and confusing

for customers. A convoluted user interface or excessive data entry requirements can deter users from completing the booking.

- Scalability Challenges: Online ticketing platforms need to handle a large number of concurrent users during peak periods. If the systems are not designed to scale effectively, performance issues, crashes, or slow response times may hinder the ticket booking process.
- Integration Issues: Integrating ticketing platforms with various theater systems, such as seating plans, payment gateways, and loyalty programs, can be complex.
- Mobile Experience: With the rise of mobile usage, having a responsive and user-friendly mobile ticketing experience is crucial. If ticketing platforms are not optimized for mobile devices or lack intuitive mobile interfaces, it can create a significant bottleneck for customers trying to book tickets on the go.
- Fraud and Scalping: Ticket scalping and fraudulent ticket sales pose challenges in the ticketing process. Issues like counterfeit tickets, inflated prices, and unauthorized reselling can create hurdles for customers and impact overall ticket availability.

2.2 Proposed solution

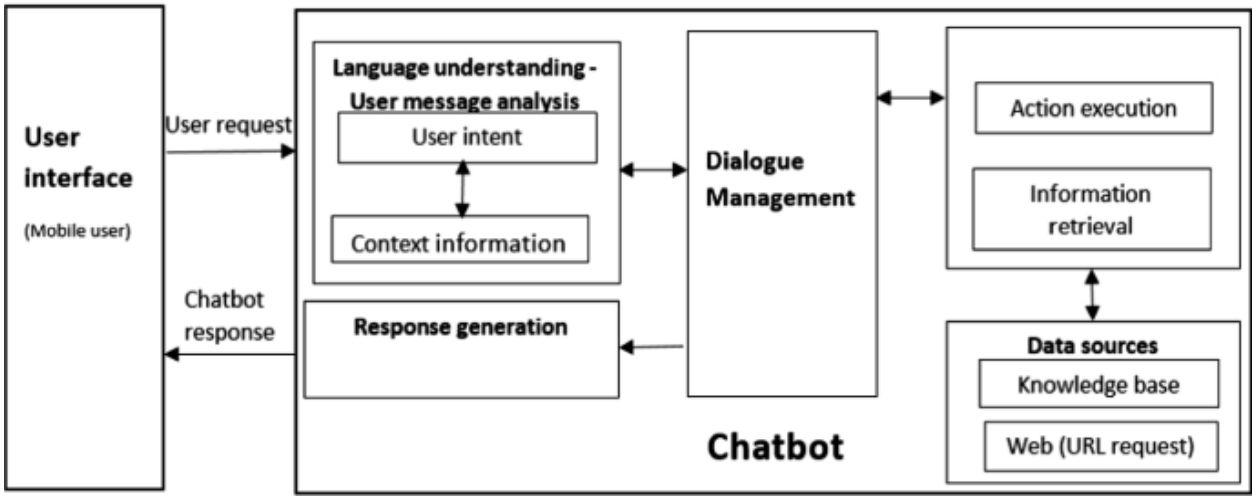
One effective solution to make movie ticketing easier is by leveraging chatbots to provide a seamless and user-friendly experience. Chatbots can serve as virtual assistants, interacting with customers through a conversational interface and guiding them through the ticket booking process. Here's how chatbots can simplify movie ticketing:

- Intuitive Movie Discovery: Chatbots can engage in natural language conversations with users to understand their preferences, such as genre, language, or actors. By analyzing this information, chatbots can provide personalized movie recommendations and help customers discover movies that align with their interests.
- Showtime Selection Assistance: Chatbots can display available showtimes for selected movies and provide real-time updates on seat availability. Users can specify their preferred date and time, and the chatbot can suggest alternative showtimes if the desired slot is unavailable. This eliminates the need for manual browsing across multiple platforms to find suitable showtimes.
- Theater and Seat Selection: Chatbots can present information about nearby theaters, including locations, seating capacity, amenities, and user ratings. Users can easily compare options and make informed decisions. Chatbots can also assist in selecting seats by displaying interactive seating plans and providing recommendations based on user preferences.
- Simplified Booking Process: Chatbots guide users through each step of the booking process, such as selecting seating categories, entering payment details, and confirming the booking. They provide real-time updates on ticket availability and pricing information, ensuring a smooth and efficient booking experience.

- Instant Confirmation and E-tickets: Once the booking is complete, chatbots can instantly generate e-tickets or unique booking codes, which can be conveniently delivered to customers via email or within the chat interface. This eliminates the need for physical tickets and allows for seamless entry to the theater.
- 24/7 Support and Assistance: Chatbots provide round-the-clock support, answering customer inquiries, addressing concerns, and assisting with ticket cancellations or rescheduling. This ensures that customers receive timely assistance at any stage of the ticketing process.

3. THEORETICAL ANALYSIS

3.1 Block diagram



3.2 Hardware / Software

Hardware Requirements:
A device with an active internet and browsing facility.

Software Requirements:
IBM Watson Assistant service, Online Payment Software, Browser.

3.2.1 IBM Watson Assistant

IBM Watson Assistant is built on deep learning, machine learning, and natural language processing (NLP) models to understand questions, find or search for the best answers, and complete the user's intended action through conversational AI. A key component is the large language model (LLM) that has been trained on an enormous dataset—including millions of business-related words and phrases—to increase understanding based on context, enable accurate

information extraction, deliver granular insights from business documents, and boost the accuracy of responses.

4. EXPERIMENTAL INVESTIGATIONS

An experimental investigation was conducted to evaluate the performance and user experience of a movie ticketing chatbot. The objective was to assess the effectiveness of the chatbot in providing seamless ticket booking and enhancing the overall movie-going experience. The experiment involved a sample group of participants who interacted with the movie ticketing chatbot. The participants were given specific tasks to perform, such as searching for movies, selecting showtimes, choosing seats, and making ticket bookings. Their interactions with the chatbot were monitored and recorded for analysis.

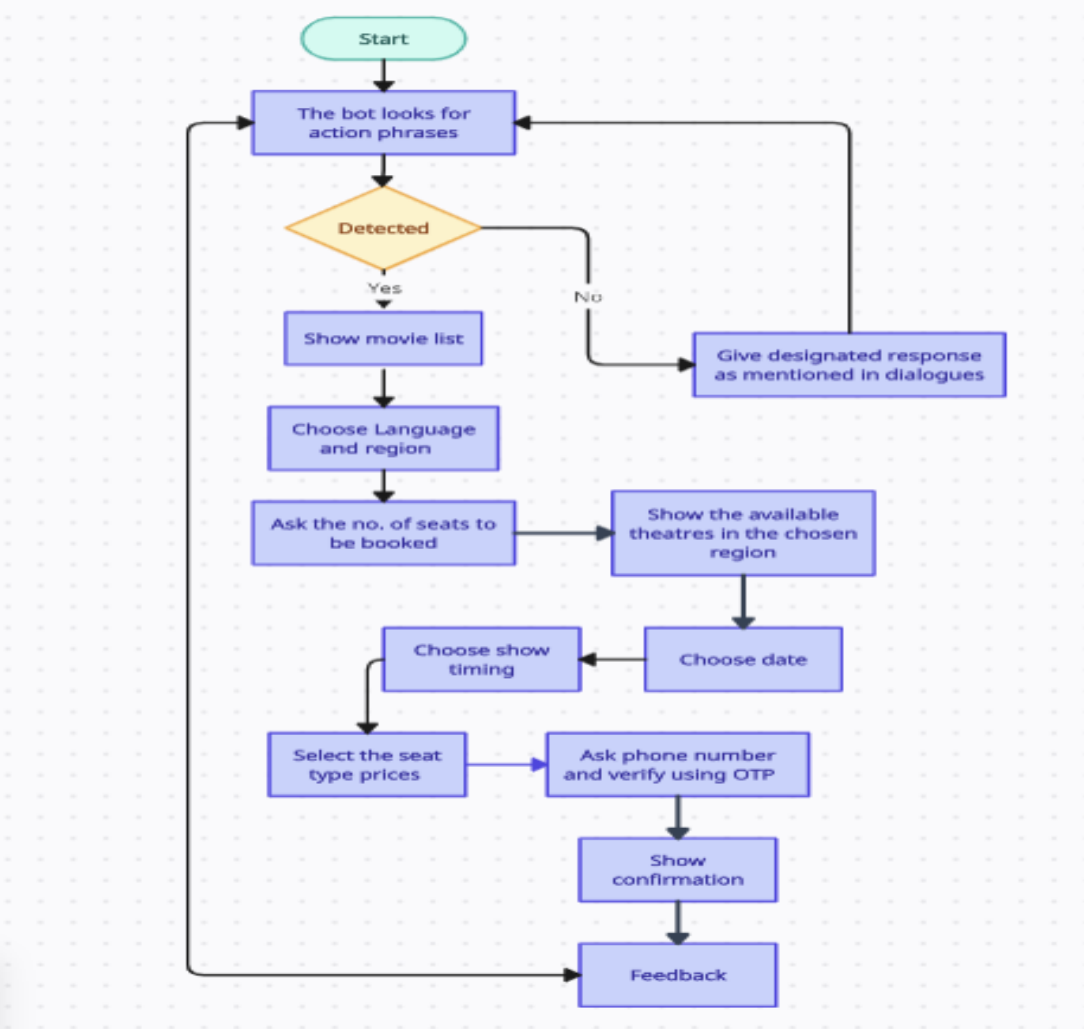
The investigation focused on several key aspects, including the accuracy of understanding user queries, the responsiveness of the chatbot in providing timely and relevant information, the ease of navigation and interaction within the chatbot interface, and the overall user satisfaction with the ticket booking process.

Data collected during the experiment was analyzed using qualitative and quantitative methods. Participants' feedback, including their opinions, suggestions, and frustrations, was also taken into account. The analysis aimed to identify strengths and weaknesses of the chatbot, areas for improvement, and user preferences.

The findings of the experimental investigation provided valuable insights into the performance of the movie ticketing chatbot. The results highlighted its effectiveness in simplifying the ticket booking process, offering personalized recommendations, and providing a convenient and user-friendly experience. However, certain limitations were also identified, such as occasional misunderstandings of user queries or technical glitches that affected the smoothness of the interaction.

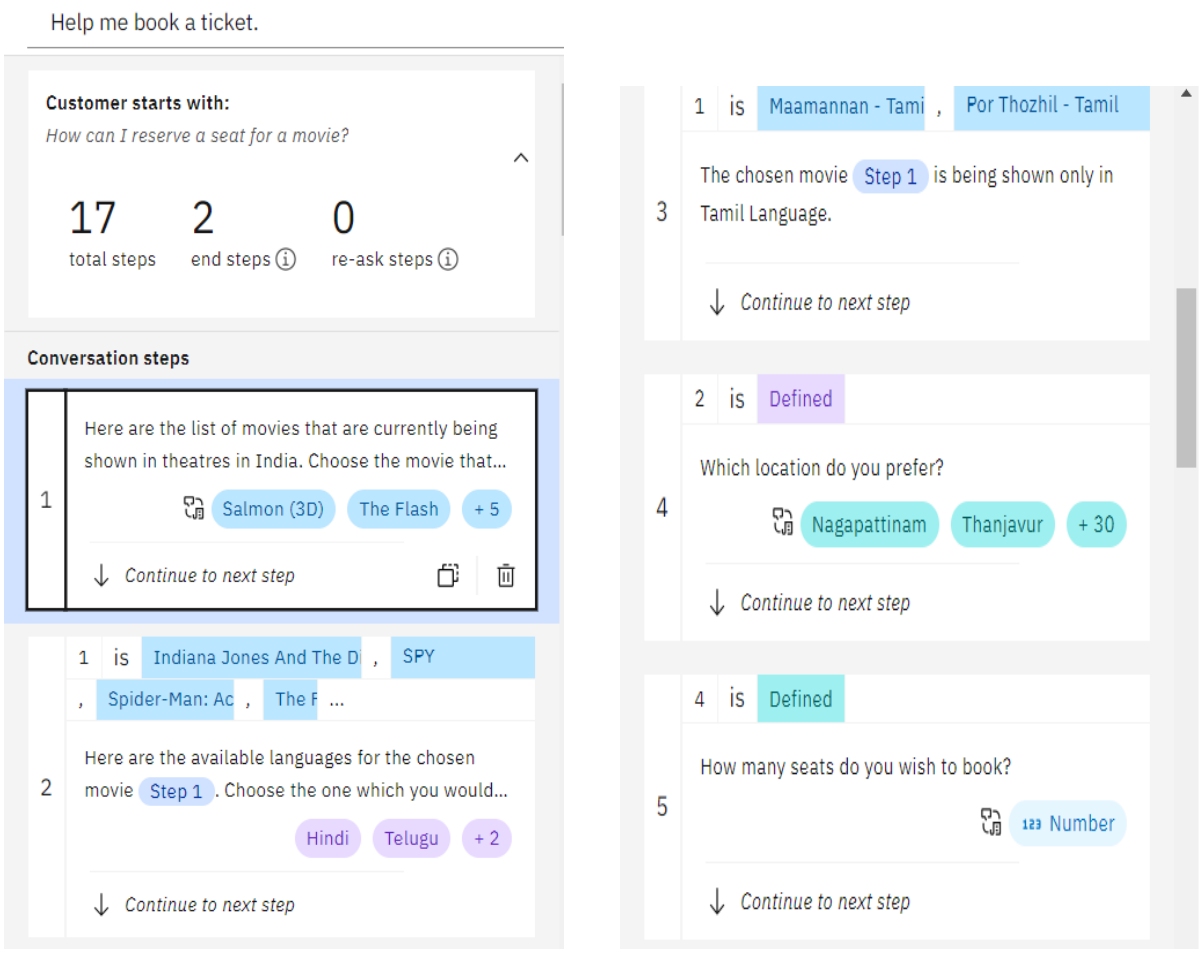
Based on the experimental investigation, recommendations for enhancements were proposed, including refining the chatbot's natural language understanding capabilities, improving response times, and addressing identified user frustrations. The insights gained from the investigation served as a valuable basis for further development and optimization of the movie ticketing chatbot to ensure an enhanced and seamless ticket booking experience for users.

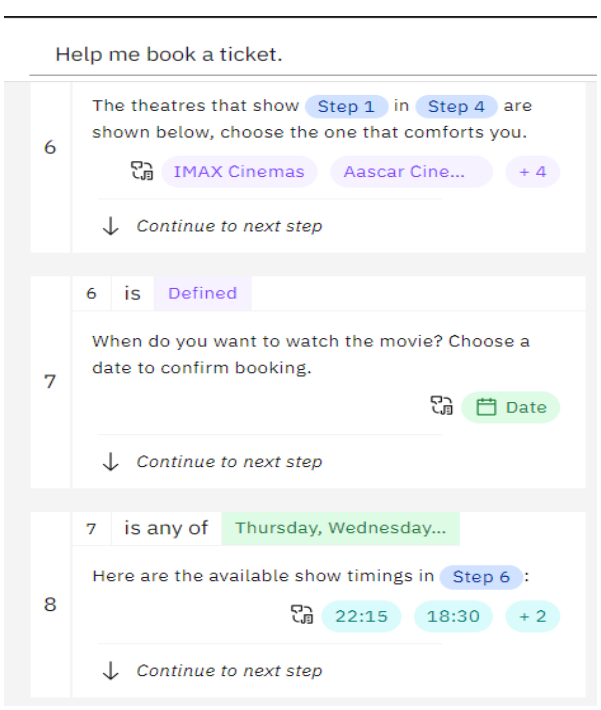
5 FLOWCHART

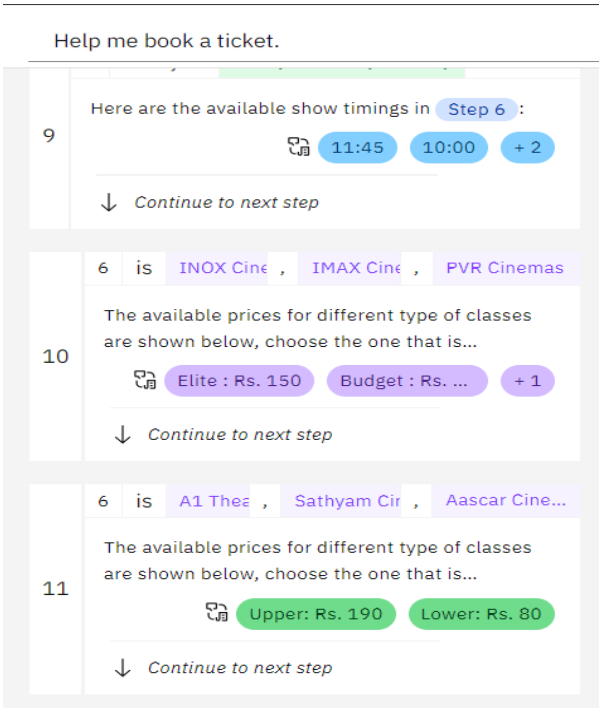

Start
The bot looks for action phrases
Detected
Yes
No
Show movie list
Give designated response as mentioned in dialogues
Choose Language and region
Ask the no. of seats to be booked
Show the available theatres in the chosen region
Choose date
Choose show timing
Select the seat type prices
Ask phone number and verify using OTP
Show confirmation
Feedback

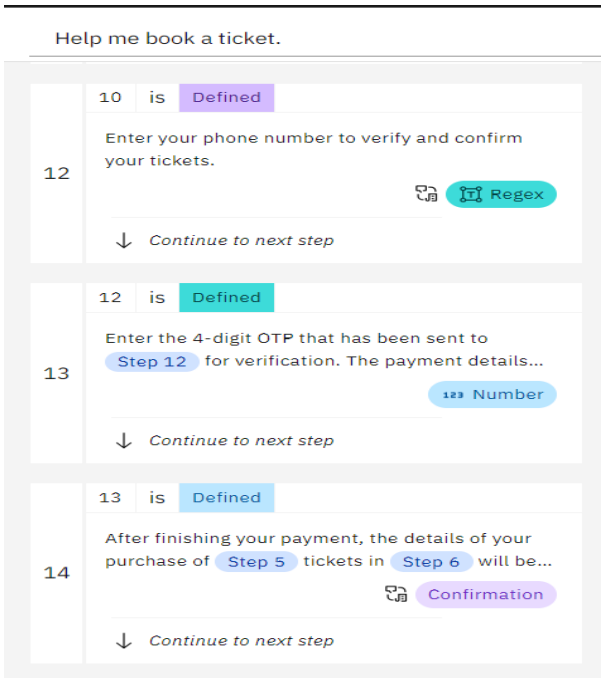
6 RESULT

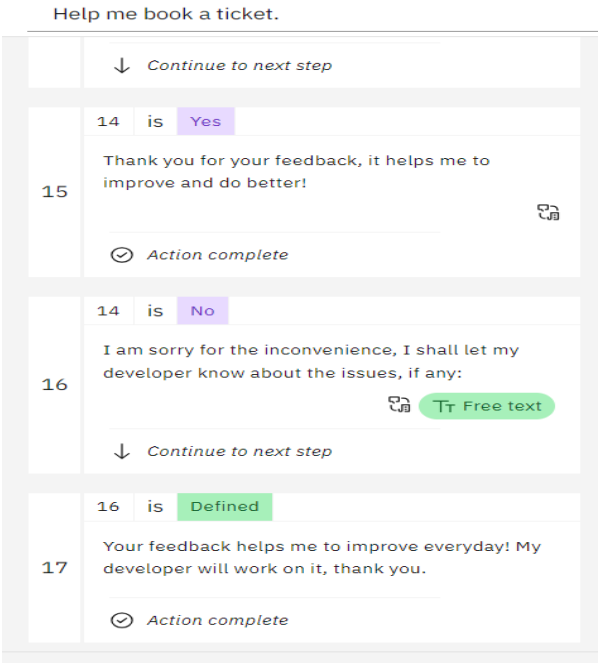
Actions



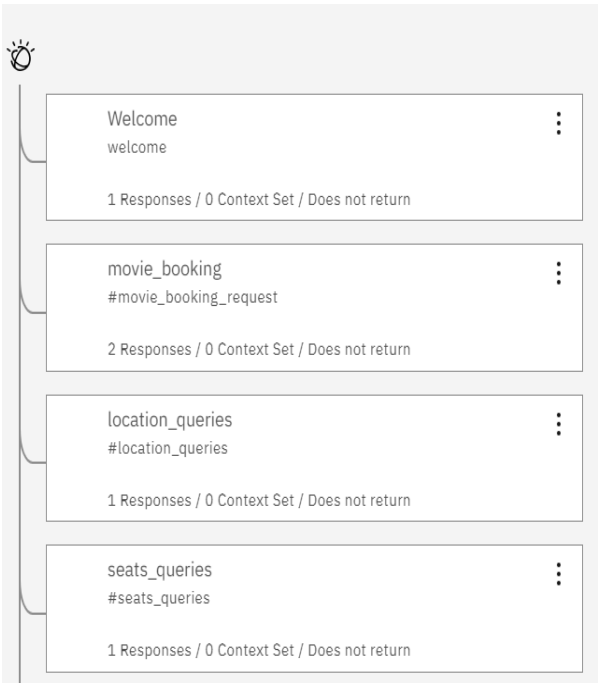

Help me book a ticket.
6
The theatres that show Step 1 in Step 4 are shown below, choose the one that comforts you.
IMAX Cinemas
Aascar Cine...
+ 4
Continue to next step
7
6 is Defined
When do you want to watch the movie? Choose a date to confirm booking.
Date
Continue to next step
8
7 is any of Thursday, Wednesday...
Here are the available show timings in Step 6 :
22:15
18:30
+ 2
Continue to next step

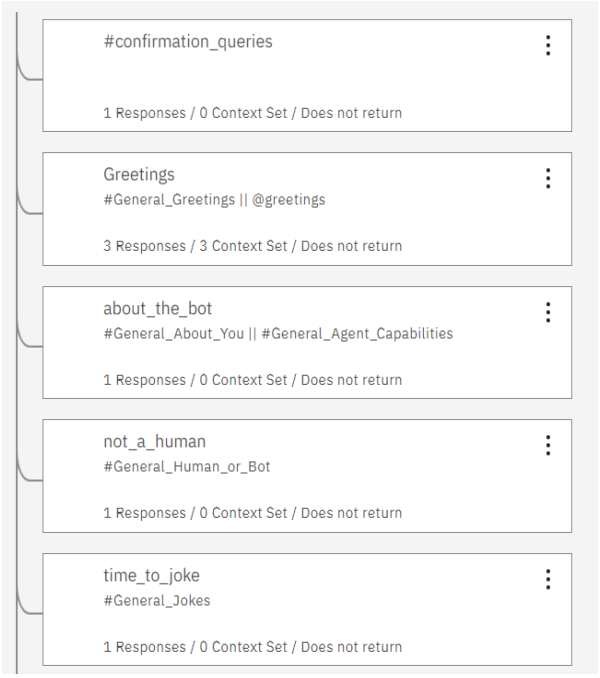

Help me book a ticket.
9
Here are the available show timings in Step 6 :
11:45
10:00
+ 2
Continue to next step
10
6 is INOX Cine , IMAX Cine , PVR Cinemas
The available prices for different type of classes are shown below, choose the one that is...
Elite : Rs. 150
Budget : Rs. ...
+ 1
Continue to next step
11
6 is A1 Thea , Sathyam Cir , Aascar Cine...
The available prices for different type of classes are shown below, choose the one that is...
Upper: Rs. 190
Lower: Rs. 80
Continue to next step

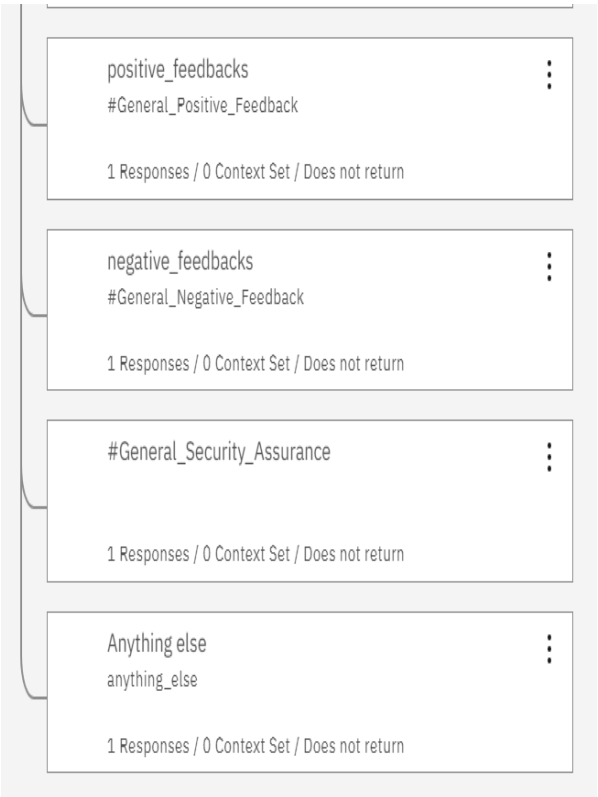

Help me book a ticket.
12
10 is Defined
Enter your phone number to verify and confirm your tickets.
Regex
Continue to next step
13
12 is Defined
Enter the 4-digit OTP that has been sent to Step 12 for verification. The payment details...
Number
Continue to next step
14
13 is Defined
After finishing your payment, the details of your purchase of Step 5 tickets in Step 6 will be...
Confirmation
Continue to next step


Help me book a ticket.
Continue to next step
15
14 is Yes
Thank you for your feedback, it helps me to improve and do better!
Action complete
16
14 is No
I am sorry for the inconvenience, I shall let my developer know about the issues, if any:
Free text
Continue to next step
17
16 is Defined
Your feedback helps me to improve everyday! My developer will work on it, thank you.
Action complete

Dialog


Welcome
welcome
1 Responses / 0 Context Set / Does not return
movie_booking
#movie_booking_request
2 Responses / 0 Context Set / Does not return
location_queries
#location_queries
1 Responses / 0 Context Set / Does not return
seats_queries
#seats_queries
1 Responses / 0 Context Set / Does not return


#confirmation_queries
1 Responses / 0 Context Set / Does not return
Greetings
#General_Greetings || @greetings
3 Responses / 3 Context Set / Does not return
about_the_bot
#General_About_You || #General_Agent_Capabilities
1 Responses / 0 Context Set / Does not return
not_a_human
#General_Human_or_Bot
1 Responses / 0 Context Set / Does not return
time_to_joke
#General_Jokes
1 Responses / 0 Context Set / Does not return


positive_feedbacks
#General_Positive_Feedback
1 Responses / 0 Context Set / Does not return
negative_feedbacks
#General_Negative_Feedback
1 Responses / 0 Context Set / Does not return
#General_Security_Assurance
1 Responses / 0 Context Set / Does not return
Anything else
anything_else
1 Responses / 0 Context Set / Does not return

Entities

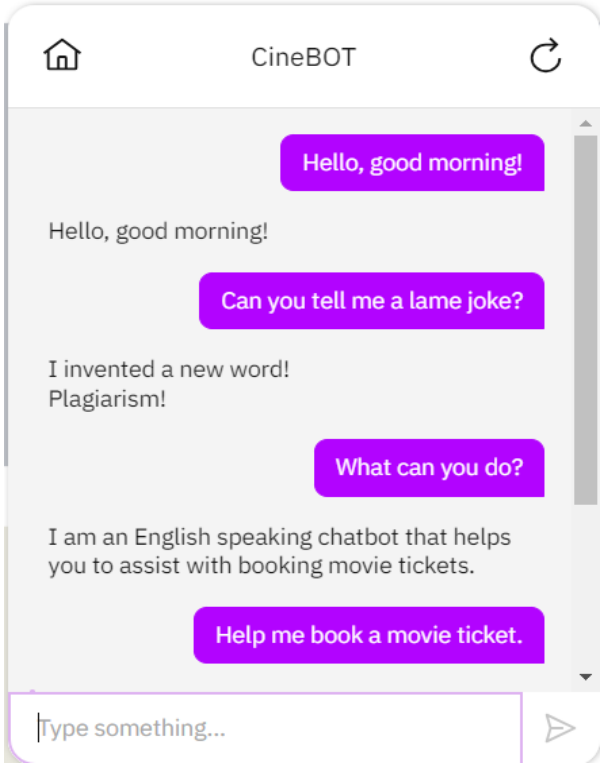
Entity (1) ↑	Values
@greetings	good morning, Hi, Good afternoon

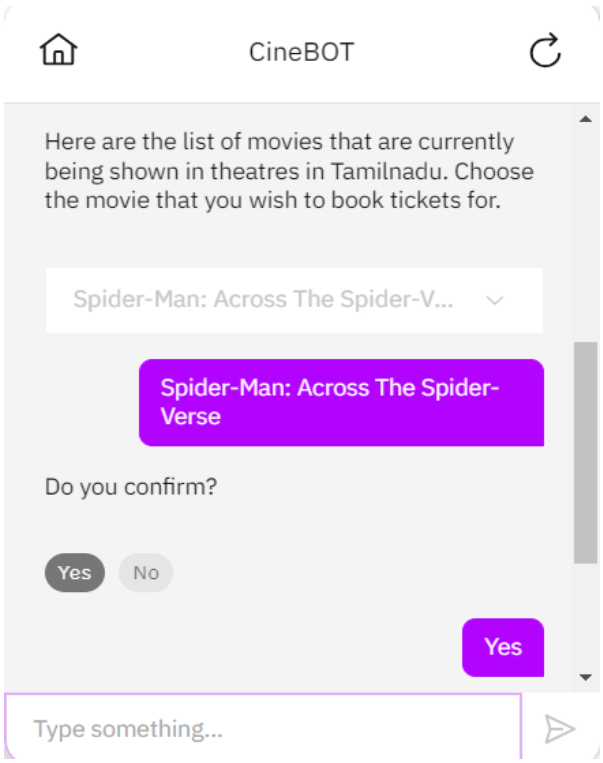
Intents

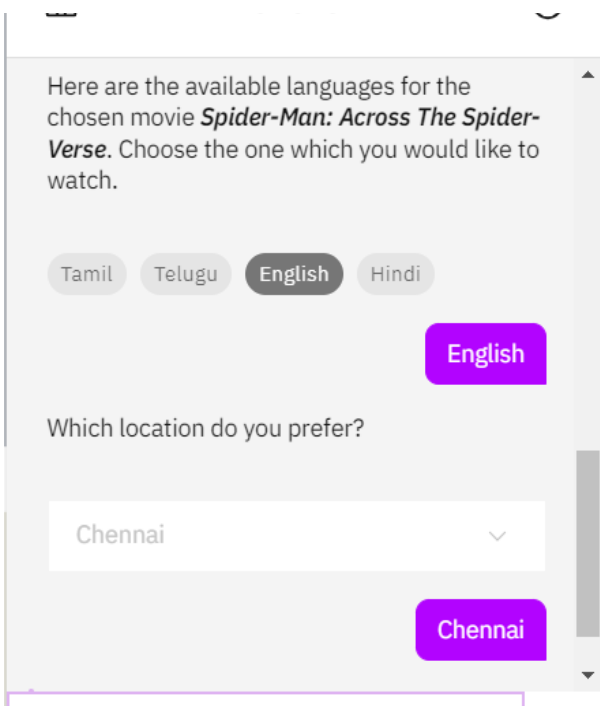
Intents (14) ↑	Description	Modified ↑↓	Examples ↑↓
#confirmation_queries	This covers all the general questions and doubt...	3 days ago	19
#General_About_You	Request generic personal attributes.	4 days ago	20
#General_Agent_Capabilities	Request capabilities of the bot.	4 days ago	30
#General_Ending	End the conversation.	4 days ago	37
#General_Greetings	Greet the bot.	4 days ago	27
#General_Human_or_Bot	Ask if speaking to a human or a bot.	4 days ago	12
#General_Jokes	Request a joke.	4 days ago	17
#General_Negative_Feedback	Express unfavorable feedback.	4 days ago	20
#General_Positive_Feedback	Express positive sentiment or gratitude.	4 days ago	19

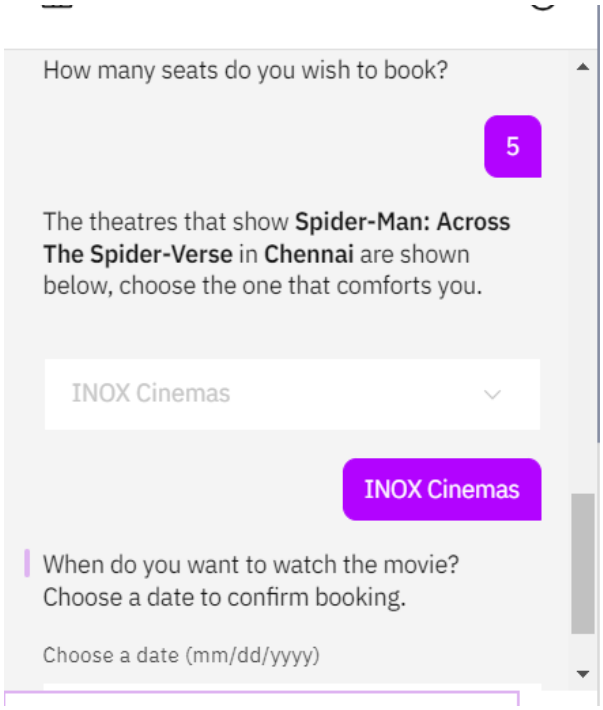
Intents (14) ↑	Description	Modified ↑↓	Examples ↑↓
#General_Human_or_Bot	Ask if speaking to a human or a bot.	4 days ago	12
#General_Jokes	Request a joke.	4 days ago	17
#General_Negative_Feedback	Express unfavorable feedback.	4 days ago	20
#General_Positive_Feedback	Express positive sentiment or gratitude.	4 days ago	19
#General_Security_Assurance	Express concerns about the security of the bot.	4 days ago	26
#greetings	This intent covers all the greetings and salutati...	5 days ago	7
#location_queries	This covers all the general questions and doubt...	3 days ago	11
#movie_booking_request	Common movie request examples by users.	4 days ago	19
#seats_queries	This covers all the general questions and doubt...	3 days ago	16

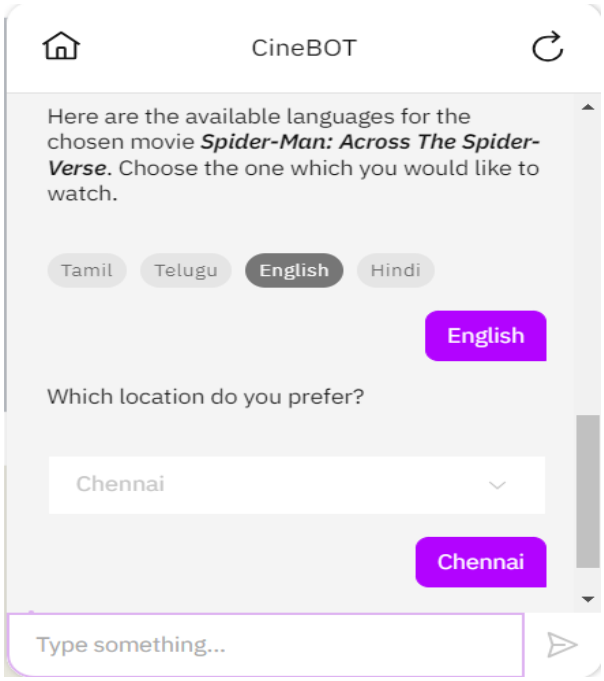
Output Preview

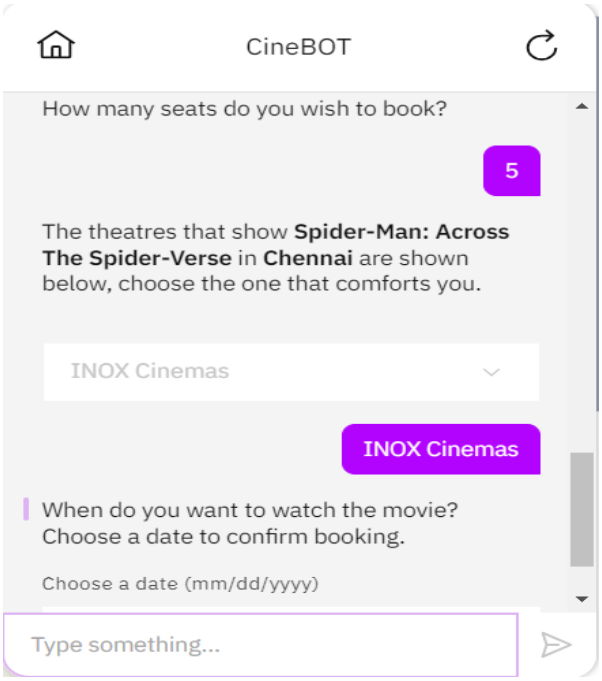


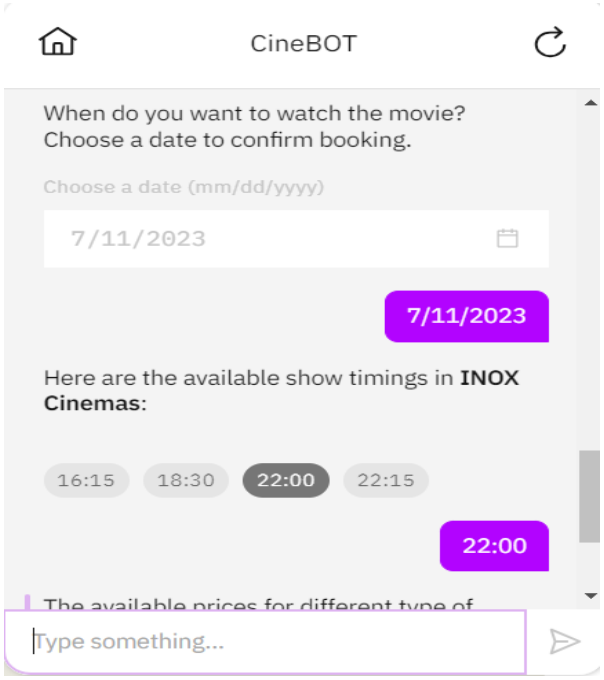


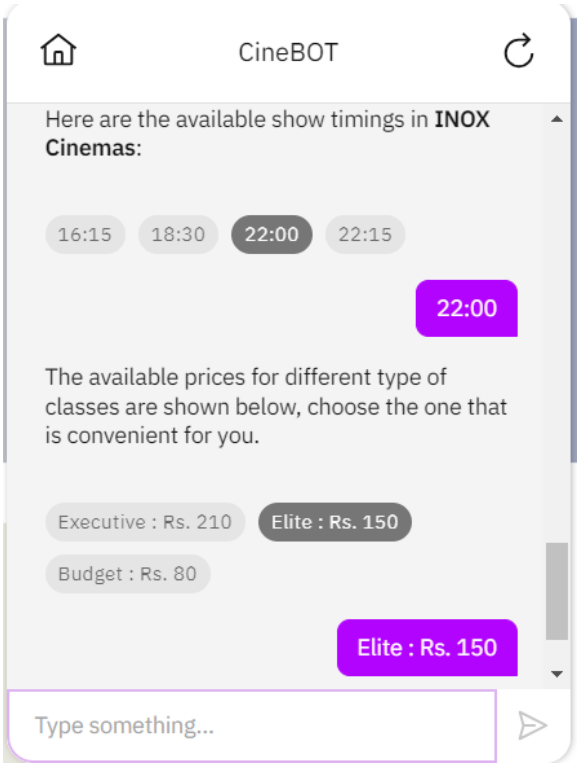


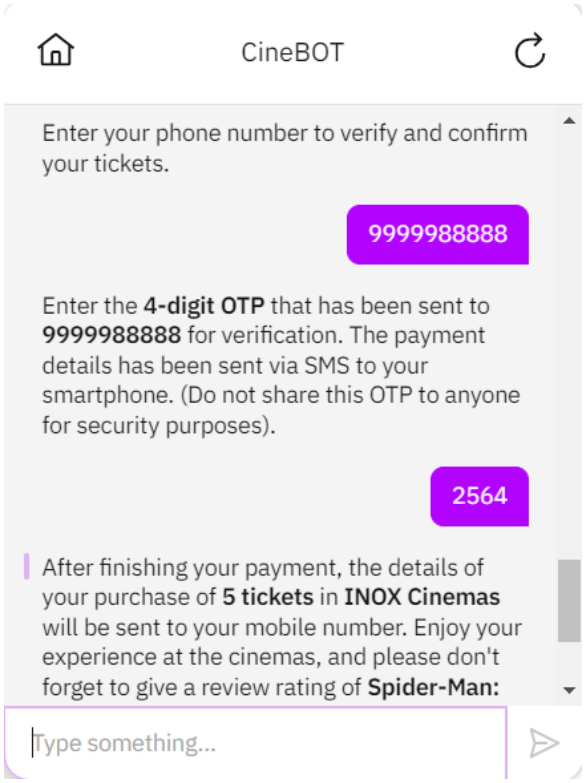


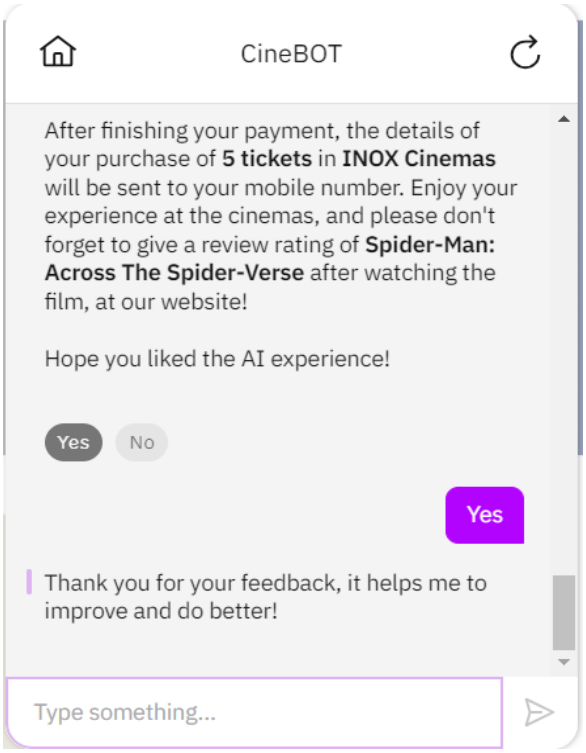

CineBOT
Here are the available languages for the chosen movie ***Spider-Man: Across The Spider-Verse***. Choose the one which you would like to watch.
Tamil
Telugu
English
Hindi
English
Which location do you prefer?
Chennai
Chennai
Type something...


CineBOT
How many seats do you wish to book?
5
The theatres that show **Spider-Man: Across The Spider-Verse** in **Chennai** are shown below, choose the one that comforts you.
INOX Cinemas
INOX Cinemas
When do you want to watch the movie? Choose a date to confirm booking.
Choose a date (mm/dd/yyyy)
Type something...


CineBOT
When do you want to watch the movie? Choose a date to confirm booking.
Choose a date (mm/dd/yyyy)
7/11/2023
7/11/2023
Here are the available show timings in **INOX Cinemas**:
16:15
18:30
22:00
22:15
22:00
Type something...


CineBOT
Here are the available show timings in **INOX Cinemas**:
16:15
18:30
22:00
22:15
22:00
The available prices for different type of classes are shown below, choose the one that is convenient for you.
Executive : Rs. 210
Elite : Rs. 150
Budget : Rs. 80
Elite : Rs. 150
Type something...





ChatBot Preview Link:
https://web-chat.global.assistant.watson.appdomain.cloud/preview.html?backgroundImageURL=https%3A%2F%2Fau-syd.assistant.watson.cloud.ibm.com%2Fpublic%2Fimages%2Fupx-568c6482-b569-4a1b-9d66-973a5ae1b60a%3A%3Aa6d1a397-1c79-42ba-acdb-a5b360660685&integrationID=51f21703-cb6e-400c-9c42-d30e653737a4&region=au-syd&serviceInstanceID=568c6482-b569-4a1b-9d66-973a5ae1b60a

7 ADVANTAGES & DISADVANTAGES

Advantages of a Movie Ticketing Bot:

- Convenience: A movie ticketing bot provides the convenience of booking tickets anytime and anywhere through a chat interface, eliminating the need to visit a physical location or wait in long queues.
- Personalized Recommendations: Using AI algorithms, a movie ticketing bot can offer personalized movie recommendations based on user preferences, enhancing the movie discovery process and helping users find movies tailored to their interests.

- Seamless Booking Experience: The bot simplifies the ticket booking process by guiding users through each step, including selecting showtimes, theaters, and seating categories. It provides real-time updates on ticket availability and pricing information, ensuring a smooth and hassle-free booking experience.
- Faster Response Time: Compared to traditional methods, a movie ticketing bot provides instant responses to user inquiries, delivering information on movie timings, theater locations, or ticket availability quickly and efficiently.
- 24/7 Availability: A movie ticketing bot is available round-the-clock, allowing users to book tickets at their convenience, even outside of regular business hours. This flexibility caters to users in different time zones or those with busy schedules.

Disadvantages of a Movie Ticketing Bot:

- Limited Human Interaction: The absence of human interaction in a movie ticketing bot may be a drawback for users who prefer personalized assistance or have complex inquiries that cannot be addressed by the bot's capabilities.
- Technical Limitations: The effectiveness of a movie ticketing bot relies on its AI capabilities and underlying technology. Technical issues, such as system failures or connectivity problems, can disrupt the booking process and impact the user experience.
- Privacy and Security Concerns: When using a movie ticketing bot, users often need to provide personal information and payment details. Privacy and security concerns arise if the bot does not have robust security measures in place to protect user data. Users may hesitate to share sensitive information, impacting their trust and willingness to use the bot for ticket bookings.
- Language and Understanding Limitations: Chatbots rely on Natural Language Processing (NLP) to understand and respond to user queries. However, they may encounter difficulties in accurately interpreting and comprehending certain phrases, accents, or variations in language. This can lead to miscommunication and incorrect responses, potentially impacting the accuracy of ticket bookings.

8 APPLICATIONS

A movie ticketing bot can have various applications that enhance the movie ticketing experience for users. Here are some key applications of a movie ticketing bot:

- Ticket Booking: The primary application of a movie ticketing bot is to facilitate the booking of movie tickets. Users can interact with the bot to search for movies, select showtimes, choose theaters, and complete the ticket booking process seamlessly through a chat interface. The bot provides real-time updates on ticket availability, assists in seat selection, and securely handles payment information.
- Movie Recommendations: A movie ticketing bot can serve as a virtual movie recommender system. By analyzing user preferences, viewing history, and ratings, the bot

can suggest personalized movie recommendations tailored to the user's taste. This application helps users discover new movies and make informed decisions when booking tickets.

- Showtime Reminders: The bot can send showtime reminders to users, keeping them informed about upcoming movies and showtimes. By sending notifications via email or chat, users can stay updated on their selected movies, ensuring they don't miss their preferred screenings.
- Theater Information: The movie ticketing bot can provide comprehensive information about theaters, including their locations, amenities, seating arrangements, and user reviews. Users can gather relevant details to choose the most suitable theater based on their preferences.
- Customer Support: The bot can offer customer support throughout the ticketing process. Users can seek assistance for queries, ticket cancellations, refunds, or rescheduling. The bot can provide prompt responses, addressing customer concerns and ensuring a satisfactory user experience.
- Loyalty Programs and Discounts: A movie ticketing bot can integrate loyalty programs and discounts, offering users exclusive deals, promotional offers, or rewards. This encourages customer loyalty and enhances the overall ticketing experience.
- Feedback and Reviews: The bot can collect feedback and reviews from users after their movie-going experience. This information helps theaters and movie distributors gather valuable insights and improve their services based on customer feedback.

9 CONCLUSION

In conclusion, a movie ticketing bot powered by IBM Watson offers numerous advantages and opportunities for streamlining the ticket booking process. With its AI capabilities, the bot provides convenience, personalized recommendations, and a seamless booking experience for users. It allows users to book movie tickets anytime and anywhere through a chat interface, eliminating the need for physical visits or waiting in long queues. The personalized recommendations based on user preferences enhance the movie discovery process and make it easier for users to find movies aligned with their interests.

- The bot's ability to guide users through each step of the booking process, including selecting showtimes, theaters, and seating categories, ensures a smooth and hassle-free experience. Real-time updates on ticket availability and pricing information help users make informed decisions promptly. The 24/7 availability of the bot caters to users in different time zones and those with busy schedules, offering flexibility and convenience.
- Despite the advantages, it is important to acknowledge the limitations of a movie ticketing bot, such as the absence of human interaction and potential technical challenges. Users who prefer personalized assistance or have complex inquiries may find the lack of

human touch unsatisfactory. Additionally, technical issues like system failures or connectivity problems can disrupt the booking process and impact the user experience.

- To address these limitations, ongoing advancements in AI technology and continuous improvements in chatbot capabilities are necessary. The development of better natural language understanding and emotional intelligence, as well as robust technical infrastructure, will enhance the bot's effectiveness and provide a more seamless and satisfactory user experience.
- Overall, a movie ticketing bot powered by IBM Watson has the potential to revolutionize the ticket booking process, offering convenience, personalization, and efficiency. It is an innovative solution that simplifies the movie ticketing experience and brings added value to users, paving the way for a more accessible and enjoyable movie-going experience.

10 FUTURE SCOPE

- The future scope of a movie ticketing bot holds tremendous potential for further advancements and enhancements in the movie ticketing industry. Here are some key areas where the movie ticketing bot can evolve:
- Voice-Enabled Interactions: As voice assistants become more prevalent, integrating voice-enabled interactions with the movie ticketing bot can offer a hands-free and intuitive experience. Users can simply speak their preferences, and the bot will understand and respond accordingly, making ticket booking even more convenient.
- Integration with Social Platforms: Integrating the movie ticketing bot with popular social platforms can enable users to discover movies and book tickets directly within their social media feeds. This integration can leverage social recommendations, user reviews, and social sharing features to enhance the movie discovery process.
- Personalized Movie Experiences: The movie ticketing bot can offer personalized movie experiences by leveraging user data and preferences. It can provide tailored recommendations not only for movies but also for related content such as trailers, behind-the-scenes footage, or merchandise, creating a more immersive and engaging movie ecosystem.
- Augmented Reality (AR) Integration: AR technology can enhance the movie ticketing experience by allowing users to visualize seating arrangements in theaters or even preview scenes from movies using their smartphones. AR integration with the bot can provide users with a more interactive and immersive ticket booking experience.
- Integration with Smart Home Devices: As smart home devices become increasingly popular, integrating the movie ticketing bot with devices like smart speakers or smart TVs can enable users to book tickets or access movie-related information using voice commands or through their connected devices.
- Enhanced Chatbot Capabilities: Advancements in Natural Language Processing (NLP) and machine learning can enable movie ticketing bots to understand and respond to user

queries and requests more accurately. The bots can continuously learn from user interactions to provide more personalized recommendations and improve the overall user experience.

- Blockchain-based Ticketing: Leveraging blockchain technology can offer secure and transparent ticketing solutions. Blockchain-based ticketing systems can prevent fraud, ensure authentic ticket issuance, and enable secure peer-to-peer ticket transfers, enhancing trust and security in the ticketing process.

11 BIBILOGRAPHY

- IBM Watson Assistant. (n.d.). Retrieved from https://www.ibm.com/cloud/watson-assistant/
- Watson Assistant Overview. (n.d.). Retrieved from https://www.ibm.com/cloud/watson-assistant/
- Manning, C. D., Raghavan, P., & Schütze, H. (2008). Introduction to Information Retrieval. Cambridge University Press.
- Jurafsky, D., & Martin, J. H. (2019). Speech and Language Processing: An Introduction to Natural Language Processing, Computational Linguistics, and Speech Recognition. Pearson.
- Rausch, P., Stein, B., Puschmann, T., & Schmitt, M. (2018). Chatbots in the movie industry: User expectations and experiences. International Journal of Human-Computer Studies, 115, 11-24.