Project Report

Project Name: Movie Ticketing Bot Powered by Watson Assistant

Table of Contents

1. Introduction:

A chat bot is a computer program that uses artificial intelligence (AI) and natural language processing (NLP) to understand customer questions and automate responses to them, simulating human conversation.

1.1 Overview

In this project, I've created a Movie Ticketing Bot Powered by Watson Assistant. The bot should have the following features:

- It should greet the user
- It should give the list of available movies.
- It should be able to show different timings of the show and the hall arrangement.
- It should be able to book tickets.

1.2 Purpose

- Allows companies to manage a massive amountof customer queries in relatively short period.
- An operator can concentrate on one customer at a time and can answer one only one question. However, a chatbot can answer thousands of questions at the same time.
- Chatbots offer an interactive one-on-one experience to the customers.
- With chatbots, we can save money and time.

2. Literature survey:

2.1 Existing Problems

- **Limitations of NLP:** NLP helps chatbots understand, analyze and prioritize the questions according to the complexity & this enables bots to respond to customer queries and analyze the given text faster than a human being.

- **Limited attention spam:** One simple solution to stop such spam messages is to identify and block them. So, this may be a solution to spam detection.

- **User's way of texting:** Keep Feeding Chatbots With New Information. Use Them to Collect Information in the Initial Part of Conversations.

- **Data privacy:** It's crucial that you create chatbots that can assure data privacy for yourcustomers**.**

2.2 Proposed Solution

- **Limitations of NLP**: We must give more intents that are mostly asked by the user so that the bot can understand many things can be understood by bot.
- **Limited attention span**: We must use something like in-build spam detector to focus on spam messages and for security. This may be a solution to spam detection.
- **Users' way of texting**: Different people have their own way of typing a message. How to understand the user's intention? This can be solved by creating more entities.
- **Data privacy**: Data privacy is needed, we can acquire it by making regular backups of files, protecting yourself against viruses by running anti-virus software. Using a system of passwords so that access to data is restricted.

3. Theoretical Analysis:
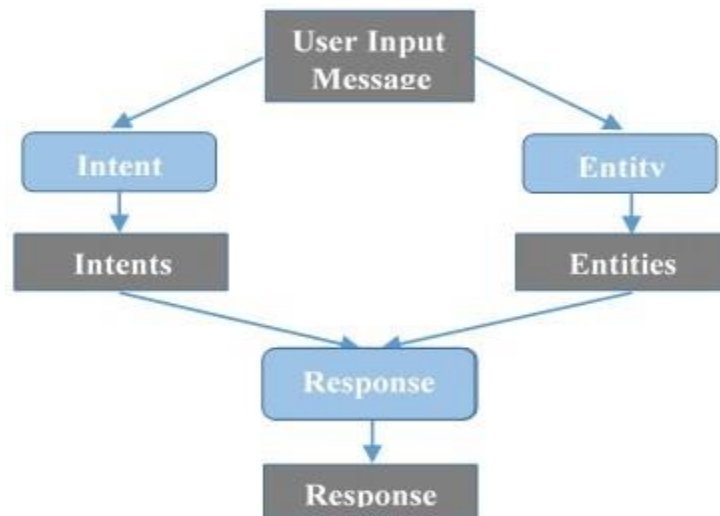
3.1 Block Diagram
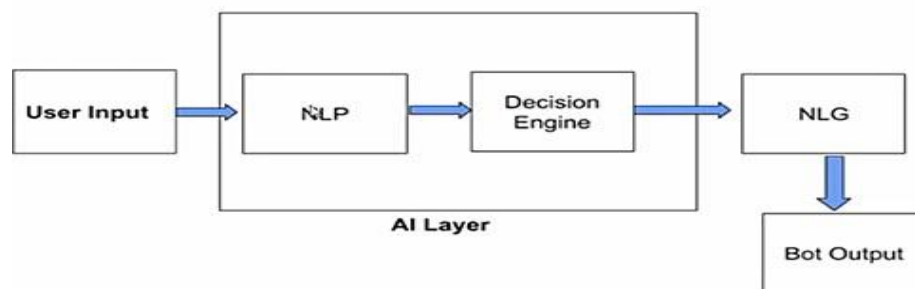
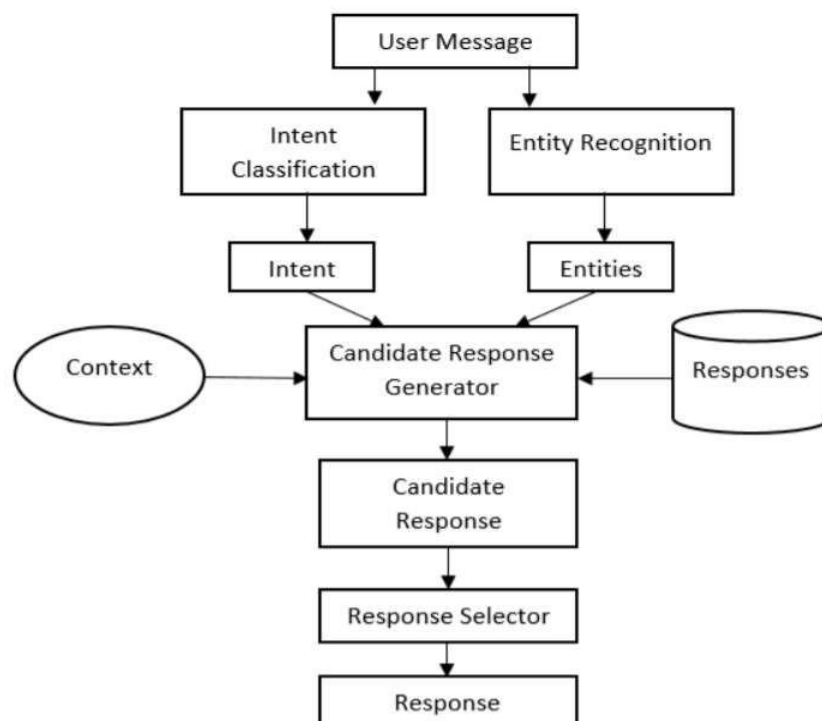This Ticketing Bot mainly Work on the following:
INTENT: Questions from the User.
ENTITY: Keywords in the questions asked by the user
DIALOG: Relevant Response from the Bot.

General approach towards Bot:

3.2 Hardware / Software Designing

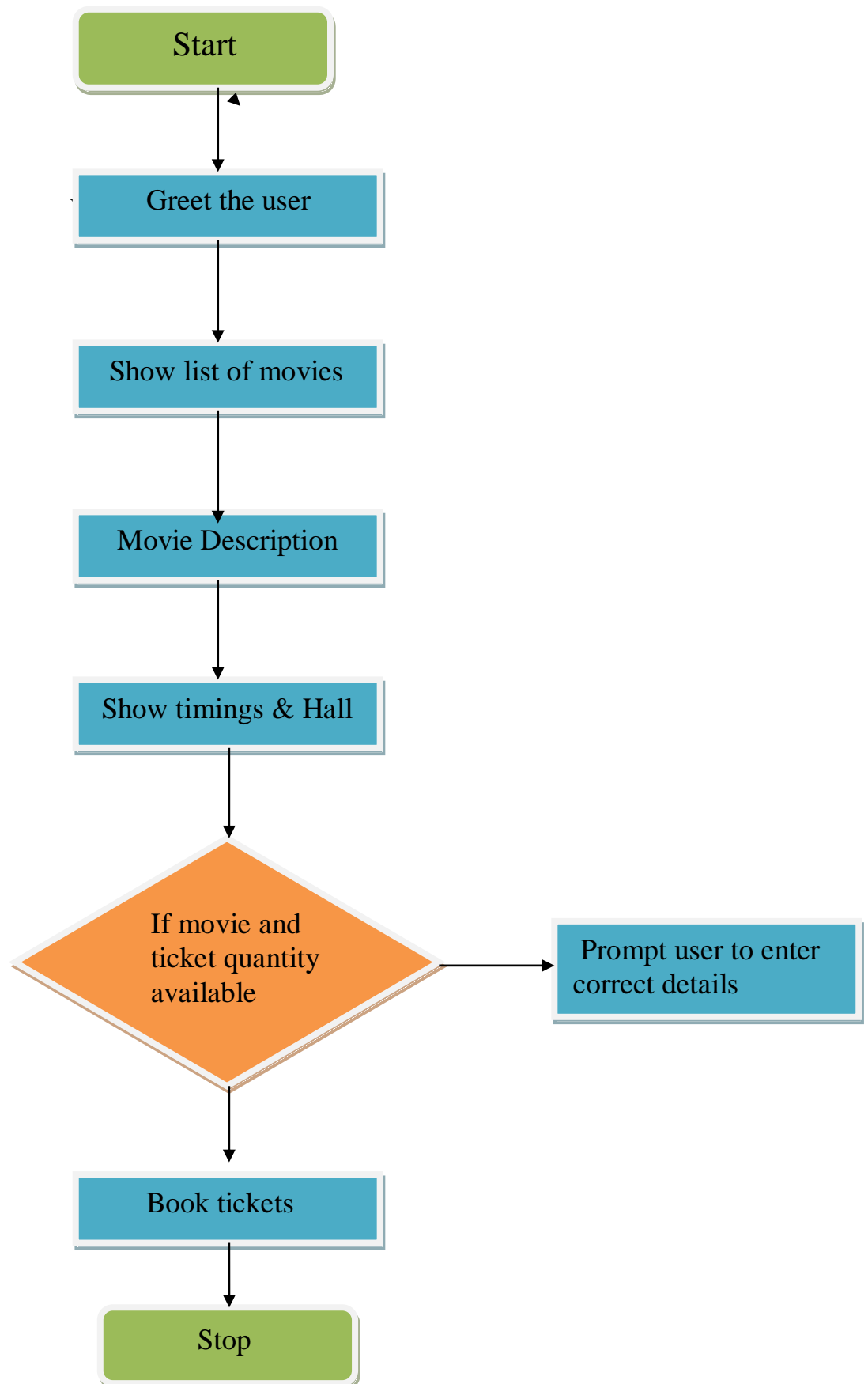- Chatbot can be designed using Watson assistant, Node Red.

4. Experimental Investigations:

- A Chatbot is an artificially created virtual entity that interacts with users usinginteractive textual or speech skills.
- Conversation is the run time architecture that showcases the components that are involved in using a trained and deployed AI conversation system.
- With IBM Watson Assistant Service you can create an application that understands natural language input and uses machine learning to respond in a way that simulates the conversation between the users.
- It IdentifysourcesofinformationfortrainingtheAI systems.
- Before launching the bot, think about the typical interests of the users, not only theconversions.
- Inventing new features to bot will give best output.

Steps involved:

I.	Create Assistant Service
II.	Create a work Space
III.	Create intents
IV.	Test the intents created
V.	Add Entities
VI.	Build dialogues
VII.	Complete advanced dialogue work
VIII.	Use the API

5. Flow Chart:

```
                    ┌─────────────┐
                    │    Start    │
                    └─────────────┘
                           │
                           ▼
                    ┌─────────────┐
                    │Greet the user│
                    └─────────────┘
                           │
                           ▼
                    ┌─────────────┐
                    │Show list of movies│
                    └─────────────┘
                           │
                           ▼
                    ┌─────────────┐
                    │Movie Description│
                    └─────────────┘
                           │
                           ▼
                    ┌─────────────┐
                    │Show timings & Hall│
                    └─────────────┘
                           │
                           ▼
                    ╱─────────────╲
                   ╱ If movie and   ╲      ┌─────────────────────┐
                  ╱  ticket quantity ╲────▶│ Prompt user to enter │
                  ╲    available      ╱     │  correct details     │
                   ╲─────────────────╱      └─────────────────────┘
                           │
                           ▼
                    ┌─────────────┐
                    │Book tickets │
                    └─────────────┘
                           │
                           ▼
                    ┌─────────────┐
                    │    Stop     │
                    └─────────────┘
```

6. Result:

A user friendly chatbot capable of booking movie tickets is built using IBM Watson assistant. This chatbot is capable of showing the list of movies available, different show timings, hall arrangement. When a movie is selected the bot is capable of booking tickets.

Snap Shots:

Assistant preview

List of movies

Select any movie to know more about it

Select an option ⌃
Bhairava
Gilli
Theri
Thuppakki
Nanban
Tamizhan

Type something... ➤

Assistant preview

List of movies

Select any movie to know more about it

Gilli ⌄

Gilli

Movie Name: Gilli
Hall : Hall 1 Screen 2
Morning Show: 10:45 AM
Matinee Show: 02:15 PM
Evening Show: 06:30 PM
Night Show: 10:05 PM
Ticket Cost : Rs.250

Type something... ➤

Assistant preview

Ticket Cost : Rs.250

Book my tickets

Enter the movie name to book tickets

Gilli

Enter the number of tickets you want to book

4

Select your show

Morning Show   Matinee Show

Evening Show   Night Show

Type something... ➤

Assistant preview

Select your show

Morning Show   **Matinee Show**

Evening Show   Night Show

Matinee Show

Your ticket for Gilli movie has been booked
booked successfully
Number of tickets : 4
Show : Matinee Show

Thankyou

You're Welcome

Type something... ➤

7. **Advantages & Disadvantages:**

Advantages:

- Increase Customer Engagement

- Improve Lead Generation

- Reduce Customer Service Costs

- Meet Customer Expectations

- Achieve Scalability of Support

- Connects with customer any time, any where

Disadvantages:

- They need maintenance

- Not Personalized or Emotive

- Chatbots sound too Mechanical

- Requires more time for implementation

8. **Applications:**

- Media Publishing Applications

- Food ordering

- Companionship Applications

- Market Research Applications

- Healthcare Applications

- Hospitality Sectors

- Legal Industry

9. Conclusion:

In the project AI based Movie Ticketing chatbot, capable of showing available movies, timings, hall arrangement and booking tickets is built using IBM Watson Assistant and Node red. The bot is fed with intents, entities and dialogues which are used for training the bot to give the appropriate response to the questions asked by the user. The bot is simple, faster and has intuitive user interface which results in an overall better user experience.

10. Future Scope:

- As per Global Market Insights, "The overall market size for chatbots worldwidewould be over $1.3 billion by 2024." Hence, it is inevitable that the chatbot industry will become the driving force of business communications

- Chatbots are becoming the primary channel for marketing conversations.

- Social Messenger Applications will aggressively drive Chatbot Marketing.

- Artificial intelligence (AI), augmented reality (AR), blockchain, drones, Internet ofThings (IoT), robotics, 3D printing and virtual reality (VR) will give more impact.

11. Bibliography

- **https://cloud.ibm.com/docs/assistant?topic=assistant-getting-started**

- **https://www.hubtype.com/blog/how-to-train-a-chatbot-2**

- Oisin Muldowney-A Book that consists of introduction & easy guide to makingour own chatbots.

- Chatbot Evaluation and Database Expansion via Crowdsourcing, Author: Zhou Yu, Ziyu Xu, Alan WBlack

Appendix

A. Source Code

```html
<script>

  window.watsonAssistantChatOptions = {

    integrationID: "82acddd8-8f5e-4eb5-b69c-c900b8bca40a", // The ID of
this integration.

    region: "eu-gb", // The region your integration is hosted in.

    serviceInstanceID: "cb33fa82-2bbd-4bc3-bbb2-2dc6e64ebb55", // The ID
of your service instance.

    onLoad: function(instance) { instance.render(); }

  };

  setTimeout(function(){

  const t=document.createElement('script');

  t.src="https://web-chat.global.assistant.watson.appdomain.cloud/versions/"
+ (window.watsonAssistantChatOptions.clientVersion || 'latest') +
"/WatsonAssistantChatEntry.js"

  document.head.appendChild(t);

  });

</script>
```