Project Weekly Progress Report  
Agile – Scrum

|  |  |
| --- | --- |
| Semester | Fall-2024 |
| Course Code | AML2404 |
| Section | Section 2 |
| Group Name | Group 4 |
| Student names/Student IDs | Meher Vamsi Dontoju - C0893004​  Rudraksh Bahri - C0891302​  Sarveswararao Patchipulusu - C0892924​  Tazeen Singh Sudan - C0891287 |
| Reporting Week | Week - 4 |
| Team Lead for the reporting week | Sarveswararao Patchipulusu |

# **Progress Made in Reporting** **Week**

Introduction:

This report outlines the implementation of a restaurant chatbot using Dialogflow, a versatile conversational AI platform, emphasizing its significance in enhancing customer engagement and streamlining ordering processes. The report comprehensively covers the development of 14 key intents, including training phrases and responses, catering to diverse user inquiries. The application of Dialogflow in the context of a restaurant chatbot is discussed in detail, highlighting its potential benefits.

Why Dialogflow:

Dialogflow was chosen for this project due to its remarkable features:

1. Natural Language Processing: Dialogflow's advanced NLP capabilities enable it to understand and process user queries in a human-like manner.
2. Multi-Platform Compatibility: It can seamlessly integrate with websites, mobile apps, and messaging platforms, providing customers with various channels to interact with the restaurant.
3. Scalability: Dialogflow's scalability ensures that it can adapt to the growing needs of the restaurant as its customer base expands.
4. Rich Responses: The platform allows the creation of rich and context-aware responses, enhancing user engagement.

Implemented Intents:

A screenshot of a computer

Description automatically generated

Figure : Implemented Intents

The chatbot implementation involves the creation of 14 key intents, including:

1. Default Welcome Intent:

Training Phrases: "Hello," "Hi there," "Greetings"

Responses: "Hello, How can I help you today? You can say New Order or Track Order."

A screenshot of a computer

Description automatically generated

Figure a: Welcome Intent

A screenshot of a chat

Description automatically generated

Figure 2b: Welcome Response

1. New Orders:

Training Phrases: "I'd like to order," "Can I order food," "Let's order"

Responses: "Sure, I can help you with that. What type of food would you like to order?"

1. Track Orders:

Training Phrases: "Where's my food," "Track my order," "Check the order status."

Responses: "Of course! To track your order, please provide your order ID."

1. Non-Veg Biryani:

Training Phrases: "Tell me about non-veg biryani," "What non-veg biryani do you have," "I'd like non-veg biryani."

Responses: "Certainly! We offer a variety of non-veg biryani options. Which one would you like to order?"

1. Veg Biryani:

Training Phrases: "Show me your vegetarian biryani," "I want veg biryani," "Tell me about veg biryani."

Responses: "Great choice! We have delicious vegetarian biryani. What kind would you like to order?"

1. Spicy Biryani:

Training Phrases: "I'm in the mood for something spicy," "Tell me about your spicy biryani," "Spicy biryani, please."

Responses: "Certainly! We have some spicy biryani options available. Which one do you prefer?"

1. Veg and Non-Veg Starters:

Training Phrases: "Show me your starters," "Tell me about your starter dishes," "I'd like to order some starters."

Responses: "Certainly! We have a variety of starters, both vegetarian and non-vegetarian. What kind are you interested in?"

1. Spicy Starters:

Training Phrases: "I'm in the mood for something spicy," "Show me spicy starters," "Spicy starters, please."

Responses: "Certainly! We have some delicious spicy starters available. What would you like to order?"

A screenshot of a computer

Description automatically generated

Figure a: Spicy Starters

A screenshot of a computer

Description automatically generated

Figure 3b: Response

1. Drinks:

Training Phrases: "I'd like to order a drink," "What drinks do you have on the menu," "Give me some options for drinks."

Responses: "Certainly! We have a variety of drinks available, including popular choices like Coke, Thumsup, Sprite, and Canada Dry. Please let me know which one you'd like to order."

1. Veg and Non-Veg Soups:

Training Phrases: "Tell me about your soups," "What soup options do you have," "I'd like some soup, please."

Responses: "Of course! We have both vegetarian and non-vegetarian soups. What type of soup would you like?"

Results and Discussion:

The implementation of Dialogflow has improved customer interactions, reduced order processing time, and enhanced overall user experience. However, challenges such as fine-tuning training phrases and handling complex user queries have been encountered and are discussed.

Agent action:

A screenshot of a computer

Description automatically generated

Figure a: Agent action1

Response:

A screenshot of a phone

Description automatically generated

Figure 4b: Agent response1

Agent action:

A screenshot of a computer

Description automatically generated

Figure 5a: Agent action2

Response:

A screenshot of a phone

Description automatically generated

Figure 5b: Agent action2

Conclusion:

Implementing a restaurant chatbot using Dialog flow is a forward-looking endeavor to improve customer interactions, streamline ordering processes, and reduce operational workload. The chatbot's responsibility, emphasizing boosting customer engagement and happiness, is to provide a more dynamic and efficient method for consumers to connect with the restaurant.

Improvements and adjustments will be required as the project develops to fine-tune the chatbot's performance and enhance its capabilities. The road towards offering the best possible customer experience is continuing, and this action provides an enormous leap forward.

# **Difficulties encountered in Reporting** **Week**

1. Complex Menu Management: As part of our project, we were tasked with managing the chatbot's interaction with a dynamic and extensive menu. The menu encompassed a broad array of items, seasonal variations. Keeping training phrases and responses up to date to reflect these menu changes was a complex and time-consuming aspect of our project.

2. User Input Variability: A significant challenge was accommodating the diverse ways users express their food preferences and orders. Users presented an array of phrasings, and it was crucial to capture this variability effectively within our training phrases while ensuring that the chatbot accurately recognized their intentions.

3. Dynamic Dialogues: Our project involved creating intents that could handle complex user interactions. Users often engaged in intricate dialogues, adjusting their orders, or making specific requests. Ensuring that the chatbot could manage these dynamic conversations while maintaining context was a complex endeavor in the intent design phase.

4. Localization and Cultural Adaptation: Our project aimed at creating a chatbot that could cater to a wide range of users with diverse regional and cultural backgrounds. This necessitated considering regional food terminology, dialects, and cultural nuances in our training phrases. Adapting the chatbot to these cultural variations posed a unique set of challenges.

References:

[1] Stephanie (2020, July 30). Top 7 requirements for chatbot software. *ONLIM.* <https://onlim.com/en/top-requirements-for-chatbot-software/>

[2] Daryna L. (2022, December 1). Chatbot requirements Technical & Non-Technical to consider. *BotsCrew.* <https://botscrew.com/blog/essential-chatbot-requirements/>

[3] Ivy.ai. A Guide for developing AI Chatbots for Higher Education. *Ivy* <https://go.ivy.ai/hubfs/Marketing/Handouts%20and%201%20Pagers/Example%20AI%20%20Chatbot%20Requirements.pdf>

[4] Steven B., Ewan K., and Edward L. (2009). Natural Language Processing with Python. *O’Reilly Media Inc.* <https://www.nltk.org/book/>

[5] Python/C API Reference Manual. Python Software Foundation. <https://docs.python.org/3/c-api/index.html>

[6] Google Cloud. Dialogflow Documentation. *Google.* <https://cloud.google.com/dialogflow/docs>

[7] Rosa. Rosa Documentation. *Red Hat.* <https://docs.openshift.com/rosa/welcome/index.html>

[8] Karnal R. Create your own Intents and Entities in Dialogflow chatbot. *Geeks for Geeks* <https://www.geeksforgeeks.org/create-your-own-intents-and-entities-in-dialogflow-chatbot/>

[9] Kelly B. (2019, August 5.) Decoding Dialogflow: Creating Virtual Agent "Intents." *No Jitter.*<https://www.nojitter.com/contact-center-customer-experience/decoding-dialogflow-creating-virtual-agent-%E2%80%9Cintents%E2%80%9D>