A Project Report on

Chatbot-Pizza Ordering

Submitted in partial fulfillment of the requirements for the award of the degree of

Bachelor of Engineering

in

Computer Engineering

by

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Approval Sheet

This Project Report entitled ***"Chatbot-Pizza Ordering"*** Submitted by ***"Sayali Kamble"(16102039),"Zahid Khan"(16102051),"Vishal Jain"(16102044)***is approved for the partial fulfillment of the requirement for the award of the degree of ***Bachelor of Engineering*** in ***Computer Engineering*** from ***University of Mumbai***.

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CERTIFICATE

This is to certify that the project entitled ***"Chatbot-Pizza Ordering"*** submitted by ***"Sayali Kamble" (16102039), "Zahid Khan" (16102051), "Vishal Jain" (16102044)*** for the partial fulfillment of the requirement for award of a degree ***Bachelor of Engineering*** in ***Computer Engineering***,to the University of Mumbai,is a bonafide work carried out during academic year 2019-2020.

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Declaration

We declare that this written submission represents our ideas in our own words and where others' ideas or words have been included, We have adequately cited and referenced the original sources. We also declare that We have adhered to all principles of academic honesty and integrity and have not misrepresented or fabricated or falsified any idea/data/fact/source in our submission. We understand that any violation of the above will be cause for disciplinary action by the Institute and can also evoke penal action from the sources which have thus not been properly cited or from whom proper permission has not been taken when needed.

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Abstract

Chatbots are computer programs that are developed using Artificial Intelligence for providing an easy interference between the computer and humans . The interaction can be textual or auditory depending upon the need. The technology at the core of the rise of the chatbot is Natural Language Processing(NLP). The project aims to develop a 'Pizza Ordering Chatbot' for which We are going to develop a chatbot using dialogflow that incorporates machine learning expertise and products such as google cloud speech to text conversation . Chatbots can be used in Customer service , sales/marketing and also as a human resource .This pizza ordering Chatbot is beneficial in many ways as it offer mass communication service , improves customer satisfaction and reduces cost .

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Chapter 1

Project Conpetion and Initiation

1.1 Introduction

One of the most emerging trend in the development of robotics is Chatting robot.
Chat bot is a computer program which conducts a conversation via textual or auditory method.
This chatbot project is a android application chatting interface for ordering pizza that will be developed using Artificial Intelligence algorithms.

1.2 Objective

1.Quick and easy to use interface for customers.

2.To support and scale up the business of a Pizza Restaurant .

3.Knowing the order patterns for frequent customers.

1.3 Problem Definition

To Design and Develop a Chatbot for a pizza restaurant that would overcome the problems like unable to keep track of ordering patterns for frequent customers and customer feedback .

1.4 Scope

The Proposed chatbot will be useful in easy handling a pizza restaurant app . This chatbot will help a customer to order a pizza using a text or voice based chat .
The customer will also be able to search for different variety of pizza options available using the chat console . The customer can also apply the coupons and then calculate the total payable amount for the pizza .

1.5 Technology Stack

1.Dialogflow
Dialogflow is an end-to-end , build-once deploy-everywhere development suite for creating conversational interfaces for websites , mobile applications ,messaging platforms and IoT devices .

2.Android Studio
Development of an android application .

1.6 Benefits for Society

1.Accessible anytime
More time is been wasted till operators connect customers to a customer care executive. They are replacing live chat and other forms of slower contact methods such as emails and phone calls.

2.Handling Capacity
Unlike humans who can only communicate with one human at a time, chat bots can simultaneously have conversations with thousands of people. No matter what time of the day it is or how many people are contacting you, every single one of them will be answered immediately.

1.7 Application

1. Content delivery:
A lot of publishers are also harnessing AI and machine learning technology within their chatbots to anticipate what content their consumers may be interested in.

2. Book Flights:
Chatbot gives their customers the ability to search for and book flights in a text-based conversational manner. Instead of drop-down menus, customers enter the information themselves.

3. Companionship:
A Russian company has developed its companion chatbot for Senior People and Patients with Alzheimer's Disease.
The primary function of the chatbot is to be a virtual companion – To speak with senior people on general topics like the weather, nature, hobbies, movies, music, news, etc.

Chapter 2

Literature Review

A. Nsmav-Bot: Intelligent Dual Language Tutor System
Sambit Mohapatra ; Neeraj Shukla ; Simoni Jain ; Shweta Chachra 2018 Fourth International Conference on Computing Communication Control and Automation (ICCUBEA)
To deal with low literacy rate of developing countries the paper aims to develop a bot that's going to act as a tutor of standard education for age groups.
The bot will be built with the Microsoft Bot Framework using Node.js and will be integrated with the Facebook Messenger. It will be designed to communicate intelligently in English as well as Hindi languages trained using Recast.ai and Dialogflow so as to target the rural along with the urban population.

B. Design of information system architecture for the recommendation of tourist sites in the city of Manta, Ecuador through a Chatbot
David Arteaga ; Juan Arenas ; Freddy Paz ; Manuel Tupia ; Mariuxi Bruzza 2019 14th Iberian Conference on Information Systems and Technologies (CISTI)
The current paper will present a solution for the recommendation of tourist places of the city of Manta, Ecuador.
These recommendations will be performed through the decision trees algorithm and will have a chatbot as user interface in Facebook Messenger. The presented solution integrates different components, and this paper will describe the proposal by means of diagrams of software architecture. Within these components, the integration of Web services such as IBM Watson Assistant and Google Dialogflow will be presented.

C. An Intelligent web-based voice chat bot
Salomon Jakob's du Preez , Manoj Lall and Saurabh Sinha, An Intelligent Web-Based Voice Chat Bot, in EUROCON 2009, EUROCON '09. IEEE, 2009, p. 386
This paper deals with the working of AIML based chat robot. A Java Program is developed which convert AIML files into database. This program is embedded into website which can

in turns help its customers to develop bots. The major technological enhancement in this research is integrating speech recognition and text to speech converter. This empowers the bots to respond to user queries using voice instead of text and humans to chat with bots using voice instead of text messages.

D. Chinese Intelligent Chat Robot Based on the AIML

Wei Yun-Gang, Sun Bo, Sun Ming-Chen, Zhao Cui-Yi, and Ma PeiZi, "Chinese Intelligent Chat Robot Based on the AIML language", in Sixth International Conference on Intelligent Human-Machine Systems and Cybernetics, 2014, p. 368.

This paper explains the language enhancements in the field of Chatting Bot Development system. Here, the bot developed is in Chinese Language known as Chinese Intelligent Chat Robot Xiao Hui-hui. This major technological enhancement in this research paper is language enhancement that AIML can be used not only to develop bots in English Language but also in many other foreign languages such as Chinese, Japanese, Indonesian, Hindi, Marathi etc.

E. Development and Implementation of a chat bot in a Social Network

Salto Martínez Rodrigo, Jacques García Fausto Abraham, Development and Implementation of a Chat Bot in a Social Network, in Ninth International Conference on Information Technology - New Generations, 2012, p. 751

This paper describes the linking of chat bot with social network. It describes that how a chat bot can be linked with Twitter to entertain the users. It can also be used for advertisements. The bot is linked with Twitter since it parts from a simple concept, the exchange of short messages no longer than 140 characters which drastically reduces the amount of information and the way it is published. The algorithm process in this bot is divided into three different parts:
1 Message reception.
2 Message processing.
3 Generation of a suitable reply.

Chapter 3

Project Design

3.1 Proposed System

The given system will be a chatbot that will be simply intergrated with a pizza ordering existing system .
The process of ordering a pizza becomes much more simpler with the help of a bot .
A customer can search for variety of pizzas , choose, customize and check for prices of the pizza using the chatting interface .

3.3.1 Description of Use Case Diagram

1.Customers can search for different type of pizzas , if they wants to order a pizza then they need to provide login id and password details and then the order gets placed . Customers can also check prices of the pizza , apply suitable coupons and update their profiles .

2.A pizza delivery outlet can see the placed orders , prepare for them and subsequently assign a delivery boy to drop the order .

3.A super admin can will have full control over the application .

3.2 Activity Diagram

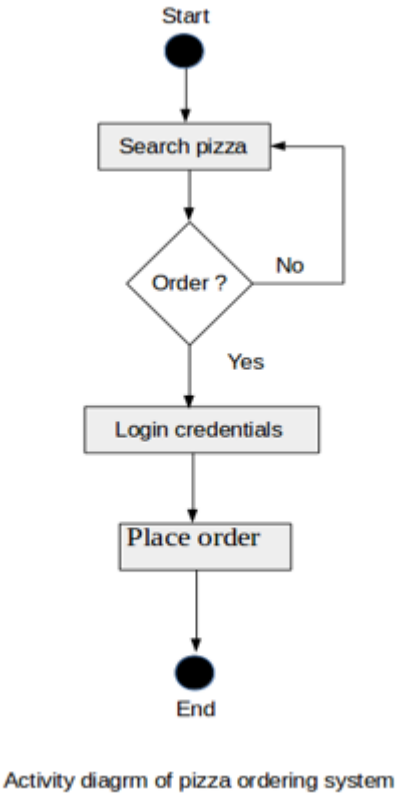

Figure 3.1: Activity Diagram

3.3 Use Case Diagram

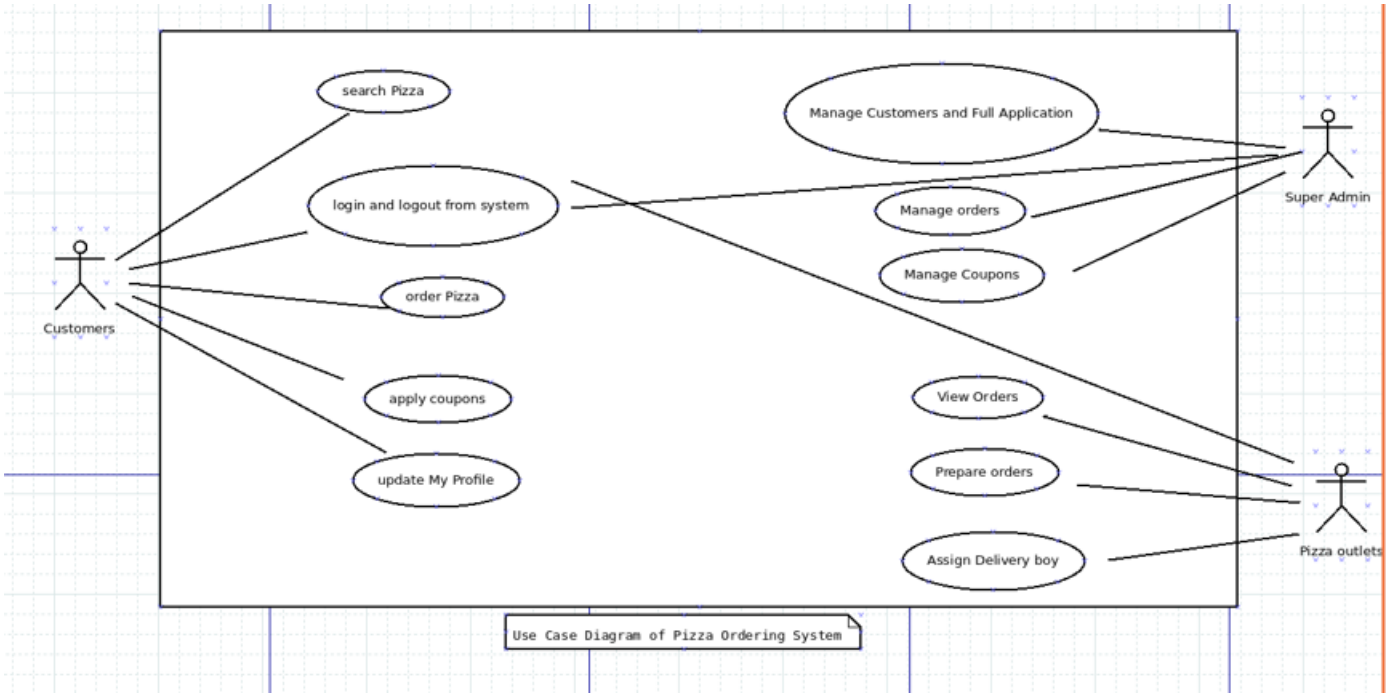

Figure 3.2: Use Case Diagram

Chapter 4

Modules

4.1 Module-1

Intents :
Intents are the words that replace the entire sentence written by a end-user . Intents basically categories the users intentions behind a conversation .
Dialogflow matches the end-user expression to the best intent in the given agent . This is also called as intent classification . Intents are defined are with a prefix '#'.
A basic intent contains the following :
1.Training Phrases : These are the sentences provides by the developer as a form of examples.
2.Actions : When an intent is match dialogflow performs the given action for that intent.
3.Parameters : When an intent is match dialogflow gives the values of the expression of the end-user as the parameter .
4.Responses : The defined text/speech form the response for the end-user's queries .

4.2 Module-2

Entities :
Each intent parameter has a type called the entity type , which dictates exactly how data from and end-user sentence is extracted .Entities are nouns that we use in normal world .Entities are defined by the prefix '@'.
The further classification of entities can be :
1. Entity Type :Entity type defines the information that the system wants to extract from user input .
2. Entity Entry : Entity entry provides a set of words or phrases that are considered equivalent . Each entity type there are many entity entries.
3.Entity Reference Values and Synonyms : For each entity entries the system defines a reference value and one or more synonyms .

Dialogflow provides some system entities . System entities are pre-build entities that facilitates handling popular common concepts .
Some of the system entities are :

@sys.date-time
@sys.date
@sys.time
@sys.number

4.3 Module-3

Contexts :
Dialogflow contexts are similar to natural language context . Using contexts , one can control the flow of a conversation .
Configuration of context for an intent is done by setting input and ouput contexts. whenever an intent is matched , any configured output contexts for that intent become active .
Dialogflow will only match intents that are configured with input contexts that match the currently active contexts .

Chapter 5

Conclusion and Future Scope

A usable system will be designed , developed and deployed to a application .
The customer can search , chose , apply coupons on a particular pizza ordering .
Thus this system will be helpful an quick access chat section for pizza ordering from a given app.
Big data Analytics can be carried out with the help of customers feedback provided .

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Appendices

Appendix-A: Registration on dialogflow console

1. Go to the site ' https://console.dialogflow.com '

2. Register with google account to make use of free services.

3. Logout from the account .

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Publication

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