BUS ASSISTANCE CHATBOT SYSTEM USING ARTIFICIAL INTELLIGENCE

Dr.D.Hari[1], Gokulkanna G S[2], Shanmugappriya M[3], AshwinRathish M[4]

[1] Assistant Professor, Dept. of Computer Science and Engineering, Dr. Mahalingam College of Engineering and Technology, Pollachi, TN, India.

[2, 3, 4] Dept. of Computer Science and Engineering, Dr. Mahalingam College of Engineering and Technology, Pollachi, TN, India.

Abstract—Chatbots as a replacement for information, communication and transaction channel enable businesses to succeed in their audience through messenger apps like Facebook, WhatsApp or WeChat. Compared to traditional chats, Chabot's are not handled by human persons, but software is leading through conversations. Latest Chabot developments in customer services and sales are remarkable. However, within the field of transportation, very little analysis has been done on chatbots up to date. This chatbot system has been built using artificial intelligence. Natural Language Processing (NLP) algorithm has been implemented to process the query of the user and display the output in the form of chat replies to the user.

Keywords: Natural Language Processing (NLP) algorithm, chatbot.

I.INTRODUCTION

The ticket reservation system is presently maintaining Transport Company's method manually which may be a terribly long method. It deals with the transport industry's price ticket booking and transport maintenance, thus it becomes a really tedious job for the price ticket booking transporter to seem once these particulars to finish the task at right time. The ticket booking system not solely deals with transporters -owned vehicles however additionally takes into thought the opposite sorts Like clarifying the doubts on the spot by AI Chatbot. With the increase of Chabot's the quantity and style of chatbots powerfully enlarged within the last few years. In Gregorian calendar month 2017, over 100'000 chatbots are out there in Facebook traveler solely and also the potential world annual revenue generated by chatbot transactions is calculable up to thirty-two billion U.S. bucks but, chatbots as a private, interactive, and troubled info, communication, and dealing channel not solely generate high revenues, they additionally cut back costs: The potential annual wage savings created by chatbots is calculable to twelve billion U.S. bucks in insurance sale, fifteen billion for monetary services and sales representatives and twenty-three billion for common client service personnel within the U.S. Originally, the term chatbot was used for a malicious program, that simulates human language with the help of a text-based dialogue system. Chatbots contain a text input andoutput mask that permits mobile users to speak with the software system behind them giving them the sensation of chatting with a true Person.

II. SOFTWARE DESCRIPTION

A. Anaconda

Anaconda is that the open-source tool designed for Python for scientific computing that aims to change the task of install, upgrade, or uninstall packages and environments to use sometimes with Python. It comes with the Python interpreter and varied packages associated with knowledge science and machine learning. The Terminal application is additionally a straightforward bash shell terminal that runs in your browser. Open multiple shells at intervals one instance of Terminal.

B. SQLite

SQLite is a common selection as embedded information code for local/client storage in application code like net browsers. It's arguably the foremost wide deployed information engine, because it is employed by many widespread browsers, operational systems, and embedded systems. SQLite has bindings to several programming languages

III. LITERATURE SURVEY

[1]Chatbot which supplies responses supported the context of oral communication tends to be a lot of user friendly. The chatbot we tend to square measure proposing demonstrates a way of developing chatbot which might follow the context of the oral communication. [2] there's smart potential accuracy in preciseness interferometry. So as to get its total realization there's necessity to get a decent accuracy for mirror curvature radius from one half in one0/sup 6/ to 1 half in 10/sup 7/. So as to attain this aim we've developed associate degree interferometry technique of mensuration of mirror radius of curvature. In accordance with this technique of checking; an intrus mirror and reference plate mirror square measure combined with a Fabry-Perot measuring device whose length is a smaller amount than the mirror curvature radius. [3]

The CSDA document is meant for graduating software system engineers and entry-level software system professionals and serves to bridge the gap between your academic expertise and real-world work needs. The mathematical fundamentals of software system engineering give the mathematical underpinnings for the development of software system product with desired attributes. They supply the mathematical foundations to model and facilitate reasoning regarding these product and their interrelations, moreover as kind the premise for a predictable style method. [4] Video traffic constitutes the bulk of traffic in bytes that mobile and stuck line operators deliver to their client. This sort of traffic is each resource intense and QoE sensitive. Either attributable to content quality or QoE, an outsized fraction of users typically abandon viewing untimely. [5] This paper presents a very-low-drift zero.18μ m CMOS time-based resistive-bridge detector interface. It exhibits solely three.8 ppm/° C gain drift and zero.3 ppm/°C offset drift for the complete -40°C to 175°C temperature vary employing a single-temperature standardization theme and no external correct references nor elements. The interface provides a fifteen ENOB for a 100ms conversion time, intense three.41mW of power and zero.26mm two of active space. [6] The aim of this tutorial is to alter you to model complicated inexperienced engineering systems, method inputs, outputs, resources and controls. You'll see crucial compliance aspects of product, processes and repair systems by victimization customizable templates. The customizable templates give you a group of design, format, syntax, some linguistics, and a decent vantage once modeling. It provides steerage, some structure, moreover as time saving since you're given templates and ought not to begin from scratch. [7] Passage retrieval of Question responsive (QA) systems aims to search out the text segments or sentences which will contain the precise answers for the given question. Some analysis has proven that the relations between passages are often used to boost the accuracy of relevancy analysis. Hence, a passage retrieval technique supported passage-passage graph model is projected. A KNN-based question enlargement technique is projected and so the candidate answer passages square measure retrieved supported the expanded question model. [8] A key part differentiating ancient systems from systems of systems is governance. Whereas systems square measure characterized by happiness to one governing authority, systems inside a system of systems square measure typically severally ruled or ruled by totally sceptred entities. [9] The move to Cloud services introduces several new and sophisticated problems associated with knowledge security. This video course addresses the threats to knowledge security as they relate to the Cloud, and offers a review of the technologies that job along to make a sturdy knowledge Loss hindrance (DLP) design. [10] Experiments show the projected framework is each effective and economical for many OSNs. Contributions of this study square measure two-fold: (i) model posting activity in numerous styles of OSNs; (ii) propose novel classification framework to spot UGC quality. [11] The popular interface embody graphical and web-based application, the requirement arise for another interface. Whether or not thanks to multi-threaded complexness, or close execution of the service, a chatbot is that would like. Chatbot give a text-based interface, so permitting the user to sort command and receive text moreover as text to speech response. [12] Within the 3 layer design, we've given insights of however the information science, linguistic communication Understanding (NLU) and call engine work along with knowledge domain to attain AI victimization continual Neural Network (RNN) and Long Short Term Memory (LSTM). Additionally, we tend to additionally discuss totally different chatbot platforms and development frameworks of recent times. [13] The aim is to extend the speed of the ordering method through the system. Prospective guests ought not to fill within the kind, they solely ought to have an oral communication with the system whereas coming into the order knowledge. The analysis results victimization the keystroke-level model show that the chatbot interface will increase the speed of the method by shortening steps. [14] We tend to propose associate degree interactive product instruction system employing a chatbot. A chatbot could be a framework that performs interactive talks with the users through electronic messaging applications, e.g., Slack, Facebook traveler, LINE, and others. [15] Within the projected work, the chatbot is constructed victimization Gupshup larva Builder API that deploys it on to Amazon internet Services (AWS) Cloud, and then, it's integrated with Rally. Linguistic communication process (NLP) is employed by the chatbot normally command interactions with the user, thereby eliminating the requirement for a set information of interaction commands.

IV. SYSTEM ANALYSIS

A. Existing system
The existing system is completely on books and so a good quantity of manual work must be done. The number of manual work will increase exponentially with a rise in services. Desires a lot of operating employees and further attention on all the records. within the existing system, there are unit varied issues like keeping records of things, seats on the market, costs of per/seat, and fixing bill generation on every bill. Searching for details concerning any info is extremely tough because the user must bear all the books manually. The most important drawback was the dearth of security.

B.Proposed system
The process starts with a user's request using a Chatbot app or an app using text input. The user request is recorded by a so-called Natural Language Parser and is translated into the programming language of the conversation engine. the conservation engine analyses the question and redirects it to the back-end The back-end is connected to one or several databases

(DB) or information systems (IS), which give the request to the corresponding query.
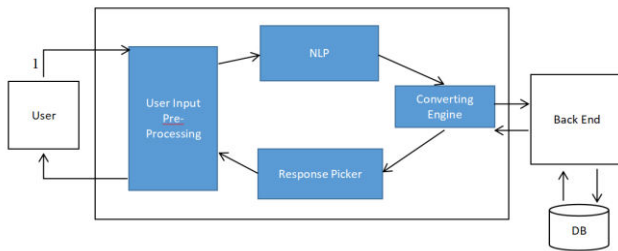
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V. SYSTEM DESIGN

Fig 1. Activity Diagram

In the above fig 1. Flow of activities that happens within the bus reservation using chatbot is portrayed which explains about the working scenarios of the system.

VI. METHODOLOGY

This paper presents a bus reservation system using chatbot. Where our aim is to solve the problem mentioned in problem description area and solve the problem of bus reservation with minimal interface and satisfy user choice.

A. Pre-Processing

Each sentence extracted from a given user query. Specifically, in this step, our system performs word segmentation, part of speech tagging, named entity recognition and dependency parsing, and semantic role label parsing which is entirely done using NLP. This information is essential for sentence simplification and question generation, described next.

B. Sentence Simplification

In our approach, a collection of transformation operations derive an easier type of the supply sentence by removing parentheses (The parts in an exceedingly sentence that operate because the instructive or qualifying remarks and haven't any clear dependent relations with the opposite constituents of a sentence.), adverbial modifiers between commas and phrase varieties like sentence-level modifying phrases (e.g. manner adverb). But, in some cases, we have a tendency to keep some adverbial modifiers if they contain info a few person's name, place, number, and time as a result of this info will generate potential queries.

C. Question Transformation

In this stage, the simplified declarative sentences derived in stage one area unit reworked into a group of queries supported predefined question generation rules showed in Table two. A

key subtask of question generation is target content choice, i.e. what's the target content the question is asking concerning. In our case, we tend to determine answer phrases within the input sentence as potential targets for generating queries. In English, a matter is generated by victimization associate interrogative closed-class word to switch the target answer phrase within the sentence. In contrast to question generation in English, it doesn't need subject-auxiliary inversion and verb decomposition. During this respect, the question generation method in English is easier.

D. Question Ranking

The previous stages generate queries that change in their quality with relation to syntax, semantics, or importance. This can be inevitable and happens for various reasons, like errors in sentence parsing, named entity recognition, and sentence simplification. To handle this drawback, ranking the massive pool of queries consistent with their quality is required. Stage three in our methodology implements learning to a rank algorithmic program to satisfy this challenge.

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VII. IMPLEMENTATION

A. Implementation of HTML, CSS

HTML and CSS are the languages that have been used to develop the front-end of the booking pages. These pages have been used to develop the booking page. In order to make the booking easier, it has been developed with a simple UI. The user or the passenger, who would like to make the reservation has to fill in the page with the necessary details for the booking. Once, the booking has been confirmed they can track the details of their booking on the site.

B. Implementation of SQLite

SQLite is the back-end server used for this booking portal. When the user logs in to the reservation page, an account would be given to the user by creating an account for them. Each entries in the booking and cancellation are saved in the server, which would be useful to keep track of all the records in the server.

VIII. EXPERIMENTS

Different analysis has been known and experimented so as to realize economical outcomes and results. The code prints out the number of false positives it detected and compares it with the particular values. This can be accustomed calculate the accuracy score and preciseness of the algorithms. The fraction of information we have a tendency to use for quicker testing is 100% of the complete dataset. The entire dataset is additionally used at the top and each of the results are wrote. This result

matched against the valid case UN agency not be thought-about as a missive of invitation.

Evaluation metrics and comparison

Various measures such as sensitivity, specificity, accuracy and error rate are derived from the confusion matrix.

- *Accuracy: Accuracy is calculated as the total number of two correct predictions (A+B) divided by the total number of the dataset(C+D).It is calculated as (1-error rate). Accuracy=A+B/C+D Whereas, A=True Positive B=True Negative C=Positive D=Negative*

- *Precision: Precision also known as detection rate is the number of transactions either genuine or fraudulent that were correctly classified. Precision/Detection rate/Hit rate = TP / TP + FP*

- *F1 Score: The F1 score (also F-score or F-measure) is a measure of a test's accuracy. It considers both the precision p and the recall r of the test to compute the score.*

- *Sensitivity: Sensitivity is calculated as the number of correct positive predictions (A) divided by the total number of positives(C). Sensitivity=A/C*

- *Specificity: Specificity is calculated as the number of correct negative predictions (B) divided by the total number of negatives (D). Specificity=B/D.*

$$Accuracy = \frac{TP + TN}{TP + FP + TN + FN}$$

$$Sensitivity = \frac{TP}{TP + FN}$$

$$Specificity = \frac{TN}{FP + TN}$$

$$Precision = \frac{TP}{TP + FP}$$

IX. Conclusion

Reservation of bus ticket through online incurs a lot of user or passenger data which might risk the case of data security. Also, It needs certain knowledge about where to access the correct portal. As a solution to all these problems, This system has been developed.

It also ensures the security of the user data by not incurring the unnecessary data from the user such as essential bank information, registration through phone number. Anonymous entries will also be abducted.

By providing a simple and easy readable UI makes it easier for the user to interact with the system. Based on the user interest to book tickets, the user information are captured. When the user tries to book tickets frequently to the same destination, this information would be captured which can used to suggest the user during their next booking.

Thus, this system ensures the user with easy interaction with user and easy booking facility.

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15 Scientific and Practical Cyber Security Journal (SPCSJ) 4(2): 15-27 ISSN 2587-4667 Scientific Cyber Security Association (SCSA) 15 IMPLEMENTATION OF CHATBOT USING AWS AND GUPSHUP API Pramod K.1 , Akash Hegde2 , Sandhya S.3 , Dr. Shobha G.4 1-4Department of Computer Science and Engineering, R. V. College of Engineering, Bengaluru, India