Modular Conversational Bot
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Abstract:
Human-Computer Speech is picking up energy as a strategy of computer interaction. There has been a late upsurge in discourse based web crawlers and assistants, for example, Siri, Google Chrome and Cortana. Natural Language Processing (NLP) methods, for example, NLTK for Python can be connected to break down discourse, and smart reactions can be found by outlining an engine to give suitable human like reactions. This sort of project is known as a Chatbot, which is the center of this project. Main Objective of this project is to create a Conversational interface to common services like weather, location, government services. User can interact either by text or by speech with the bot. The user can also interact with the bot in their own regional language

Keywords: chatbot; computer interaction; NLP;

I. INTRODUCTION
We know that we are living in an era where everything we want is now available online. A mount of information and services provided by the internet is increasing day by day. One can now get a range of online data such as news stories from any corner of the world and services like purchasing airline tickets etc. Even though the content of information that is available on web is increasing rapidly the mechanism for accessing it has not changed much. At present only way we can get access to information is by typing. Even if we access by voice the search engine is only capable of showing the information as is. It is also very time-consuming. Speech interface for a browser is more helpful and useful as it is the most efficient way of communication. User can choose from multiple modalities to get access to information. Search by regional language will make reach this to a larger audience. At present current interfaces will offer multiple choices to the user to select from to the users. Step by step selecting the choices only user is able to reach the desired document. Multitude of indexes and Meta indexes makes the process more complex and time-consuming. Through a conversational interface we can ask for information that we want without knowing the real location of the information. (e.g., “will it rain tomorrow in Kerala?”). Several language based technologies are needed to integrate to reach this goal. Speech is a standout amongst the most effective types of communication between people; henceforth, it is the researchers’ aspiration in the human computer interaction research field to enhance speech communication between the human and the computer with a specific end goal to reproduce human-human speech cooperation. Speech collaboration with cutting edge networked computing has gotten expanding enthusiasm for as far back as couple of years with commitments from Google, Android and IOS. Since they are more regular than realistic based interfaces, talked speech frameworks are starting to shape the essential communication strategy with a machine [1]. Hence, speech cooperation will assume a critical part in humanizing machines sooner rather than later [2]. Much research work has focused on enhancing acknowledgment rates of the human voice and the innovation is currently drawing nearer reasonability for speech based human computer cooperation. Speech Interaction parts into more than one zone including: speech acknowledgment, speech parsing, NLP (Natural Language Processing), catchphrase distinguishing proof, Chatbot plan/identity, manmade brainpower and so on. Chatbot is a computer program that can hold a discussion with human utilizing Natural Language Speech. Main Objective of this project is to create a Conversational interface to common services like weather, location, government services. User can interact either by text or by speech with the bot. The user can also interact with the bot in their own regional language. In this paper, a study of Chatbot configuration strategies in speech discussion between the human and the computer is introduced. Nine studies that made identifiable commitments in Chatbot outline in the most recent ten years are chosen and after that, checked on. The diverse methods utilized for Chatbots as a part of the chose works are contrasted and those utilized as a part of a Loebner-Prize Chatbots[10]. The discoveries are examined and conclusions are drawn toward the end.

II. RELATED WORKS
Chatbots (additionally called chatbots) are a generally new innovation and their utilization in instructive settings has not been completely investigated and positively not broadly executed. A chatterbot is a PC program which leads a discussion by means of sound-related or printed strategies. Such projects are regularly intended to convincingly reenact how a human would act as a conversational accomplice, along these lines finishing the Turing test. Chatterbots are commonly utilized as a part of exchange frameworks for different reasonable purposes including client administration or data obtaining. Some chatterbots utilize advanced characteristic dialect handling frameworks, yet numerous more straightforward frameworks examine for catchphrases inside the information, then force an answer with the most coordinating watchwords, or the most comparative wording design, from a database[13]. There are applications like us, Amazon Echo, Google Assistant, Apple Siri and Microsoft Cortana. But the confines of these frameworks are they have just restricted usefulness. They don’t bolster territorial dialect input.

a. The teardown Amazon echo digital personal assistant
Web based business GIANT Amazon is adopting a more mindful strategy to its most recent purchaser hardware dispatch after a year ago’s failure to fire with the Fire Phone. That has
effectively constrained the organization to bring a $170m record in its records [8]. The Amazon Echo is the organization's new voice acknowledgment based individual right hand and remote music player. Until further notice, the smooth dark chamber is just accessible in the US and by welcome - the solicitations themselves for the most part going out to individuals from Amazon's Prime administration which offers expedited service and whatever you-can-eat gushing media. Phrases. [3]

b. Digital Forensic Artifacts of the Cortana Device Search Cache on Windows 10 Desktop

Microsoft Windows 10 Desktop version has brought some new elements and refreshed different ones that are of uncommon enthusiasm to advanced legal sciences investigation. The hunt box accessible on the taskbar, alongside the Windows begin catch is one of these curiosities. In spite of the fact that the essential utilization of this inquiry box is to go about as an interface to the smart individual computerized collaborator Cortana, in this paper, we concentrate the advanced measurable antiquities of the hunt box on machines when Cortana is unequivocally impaired[6]. In particular, we find, portray and examine the substance and progression of the JSON-based records that are intermittently produced by the Cortana gadget seek reserve framework. Forensically critical information from these JSON records incorporate the quantity of times each introduced application has been run, the date of the last execution and the substance of the custom hop rundown of the applications. Since these information are gathered per client and spared in a flexible content organization, they can help in computerized crime scene investigation, for the most part in helping the approval of different wellsprings of information.[2]

FEATURES OF MODULAR CONVERSATIONAL BOT SYSTEM

- Create a Conversational interface to common services
- Like weather, location, government services.
- User can interact either by text or by speech with the bot.
- The user can also interact with the bot in their own regional language

III. IMPLEMENTATION

Proposed System consists of mainly three modules.

1. WebApp – The user facing application will be used to get the input. The input will be in the form of text or speech.

2. Natural Language Processor Module – This module will take the input and find key information such as objects, subjects, intents and a corresponding query will be make in form of a JSON request and sent to the final module.

3. Machine Learning module – This will get the JSON request and fetch the appropriate data from modules attached to this module. The data will be encapsulated around a user readable text which will be sent back to user through the Backend Translator

Figure 1. the block diagram

IV. Node.js

Node.js is an open-source, cross-stage JavaScript runtime condition for building up an assorted assortment of server devices and applications. Despite the fact that Node.js is not a JavaScript framework,[4] a considerable lot of its essential modules are composed in JavaScript, and designers can compose new modules in JavaScript. The runtime condition translates JavaScript utilizing Google's V8 JavaScript motor. It is used to make user interface in the proposed system

V. Web Speech API

The Speech Application Programming Interface or SAPI is an API created by Microsoft to permit the utilization of discourse acknowledgment and discourse combination inside Windows applications. To date, various renditions of the API have been discharged, which have sent either as a component of a Speech SDK, or as a feature of the Windows OS itself. Applications that utilization SAPI incorporates Microsoft Office, Microsoft Agent and Microsoft Speech Server. This technique provides the speech interface for the user. Since this system also focus on blind people[5].

VI. Microsoft Bot Framework

After the rush of PDA applications current pattern is conversational AI bots. As of late informing stages like Slack, Telegram, Skype have acquainted their dev. units with make talk bots, where a client can visit with robotized bots to know something/finish some undertaking. Microsoft bot system tries to make a wrapper on top these structures so engineers can construct once and distribute crosswise over different stages. This is like what PhoneGap/Appcelerator accomplished for versatile application advancement, where a designer can compose an application once and distribute it over different portable stages. Bots likewise aren't really quite recently normal dialect handling [2]. Be that as it may, in the event that you will utilize content you don't really need to do some parsing where you are discovering elements and plans. What's more, you can manufacture some capable bots around common dialect handling. However, bots can likewise simply utilize things like general expressions. So here I have a case[7]. Utilizing "Climate Bot" Jump you can get most recent climate reports and conjectures. What you need to do is simply entering your closest city or postal district. I am simply speaking with this bot with consistent expressions. So it's truly all the more a charge line application, there's no fundamental characteristic dialect handling here. There are a lot of utilisations where you would not require Language preparing. The above mentioned technologies are combined together to get the specified result. Here the flow of information is as follows. Since the proposed system offer platform dependency we prefer the technology of website to fruitful it. Then the user needed to ask the query in the form of text or speech
To handle the functionality of speech we are using web speech api tool for converting the text to speech and also for text to speech. The text keeps as it then this input is passed to our bot which is built with the help of Microsoft bot framework. One of the key issues in human-PC cooperation’s is the capacity of the PC to comprehend what a man needs [1]. LUIS is intended to empower engineers to manufacture brilliant applications that can comprehend human dialect and appropriately respond to client demands. With LUIS, a designer can rapidly send a HTTP endpoint that will take the sentences sent to it and translate them according to their aims (the expectations they pass on) and substances (key data applicable to the plan). By utilizing LUIS web interface, you can make an application, with an arrangement of expectations and elements that are pertinent to your application's area. For instance, in a travel operator application, a client may state an expression like "Book me a ticket to Paris". In this expression, there is the expectation to "Book Flight" and "Paris" is the area substance. Goal or the purpose can be characterized as the coveted activity and more often than not contains a verb, for this situation "book". The element is an important data of a particular information sort, for this situation "Paris" is the area substance. By recognizing the intent using the ML/NLP tool we get the appropriate result and give back to the user by doing the reverse procedure.

![Image](image.png)

**Figure 2. The screen shot of the system**

**VII. CONCLUSION**

The Modular conversational bot system makes use of the voice recognition, natural language processing and other technologies to make a simpler interface to common web services and information on the World Wide Web and other online sources. We are seeing that types of interfaces to the web are changing now a day. Characteristics of browsers in different devices are different. There are different types of devices such as hand-held personal digital assistants, smart digital telephones, and television set up boxes. Input output format of each of these devices are different. The Modular conversational system provides multiple ways to access the web makes it flexible and universal over different devices and different languages. Because of these reasons and user friendliness this will reach up to a much larger audience. In this paper, the literature review has covered a number of selected papers that have focused specifically on Chatbot design techniques in the last decade. A survey of nine selected studies that affect Chatbot design has been presented, and the contribution of each study has been identified. In addition, a comparison has been made between Chatbot design techniques in the selected studies and then with the Loebner Prize winning Chatbot techniques. From the survey above, it can be said that the development and improvement of Chatbot design is not grow at a predictable rate due to the variety of methods and approaches used to design a Chatbot. The techniques of Chatbot design are still a matter for debate and no common approach has yet been identified. Researchers have so far worked in isolated environments with reluctance to divulge any improved techniques they have found, consequently, slowing down the improvements to Chatbots. Moreover, the Chatbots designed for dialogue systems in the selected studies are, in general, limited to particular applications. General-purpose Chatbots need improvements by designing more comprehensive knowledge bases. Although some commercial products have emerged recently in the market (e.g. Microsoft Cortana) as dialogue Chatbots, improvements need continuous research and lack a common solution. Each researcher needs to robustly document any successful improvements to allow the human computer speech interaction to agree a common approach. This will always be at odds with commercial considerations.

**VIII. ACKNOWLEDGMENTS**

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**IX. REFERENCES**


