Enquiry Chatbot at District Court using NLP

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Abstract: **Nowadays the concept Deep learning and artificial intelligence has been emerging in world. Our projects are based on Deep learning and artificial intelligence as we all know that while visiting to district office for any documents purpose, we have to face many issues due to huge crowd and insufficient information about those process that to make this document. At such situation the corruption comes to picture as due to this issue people use to approach brokers to get their work completed easily. But this situation needed to be overcome in order to solve this issue to prevent corruption till some extent. So, to solve this issue we will implement a Chatbot (Chat bots typically provide a text-based user interface, allowing the user to type commands and receive text as well as text to speech response. Chat bots are usually a stateful services, remembering previous commands and perhaps even conversation in order to provide functionality. When chat bot technology is integrated with popular web services it can be utilized securely by an even larger audience) which can be used as an enquiry section for the peoples as they can get the complete information about the process of any documents with whole correct information including stepwise procedure. So, due to this user can be assured that how to get their work done easily without any difficulties also it will save human resources of any enquiry executive.**

Keywords: **chatbot, district court, public sector, AIML, information repository.**

1. Introduction

Nowadays, having chatbot as a conversational agent has become important for the organization as well as it is ease for the users to have a chatbot. We can implement chatbot as an enquiry agent or also as a customer care agent to solve primary issues. Chatbot system is a software program that interacts with users using natural language. Different terms have been used for a chatbot such as: machine conversation system, virtual agent, dialogue system, and chatterbot. The purpose of a chatbot system is to simulate a human conversation; the chatbot architecture integrates a language model and computational algorithms to emulate informal chat communication between a human user and a computer using natural language. The main purpose and idea of the so-called chat-bots is that the computer is performing a natural language conversation with human clients which should be as human-like as possible. Based on the task bot was made for, the conversations then usually serve some specific purpose such as searching the web, organizing files on the computer, setting up appointments, etc. Currently the biggest challenge that existing chat-bots have is maintaining of the context and understanding the human inputs and its responses.

A. Natural language toolkit (NLTK)

The Natural Language Toolkit (NLTK) is a set of modules, tutorials and exercises which are open source and cover Natural Language Processing symbolically and statistically. NLTK was developed at the University of Pennsylvania in 2001allowing computational linguistics with three educational applications in mind: projects, assignments and demonstrations. It can be found within the Python Libraries for Graph manipulation GPL open license. NLTK is used to split words in a string of text and separate the text into parts of speech by tagging word labels according to their positions and functions in the sentence. Different grammar rules are used to categories the tagged words in the text into groups or phrases relating to their neighbors and positions.

B. Related work

There has been a recent upsurge in speech-based search engines and assistants such as Siri, Google Chrome and Cortana. Natural Language Processing techniques such as NLTK for Python can be applied to analyses speech, and intelligent responses can be found by designing an engine to provide appropriate human like responses. 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. Chatbots need improvements by designing more comprehensive knowledge bases.

2. Chatbot strategies

The Chatbot is a computer programmer that mimics intelligent conversation. The input to this programmed is natural language text, and the application should give an answer that is the best intelligent response to the input sentence. This process is repeated as the conversation continues and the response is either text or speech. he bot developer usually builds the knowledge base as well. However, there are some platforms which provide a learning environment. Writing a perfect Chatbot is very difficult because it needs a very large database and must give reasonable answers to all interactions. There are a number of approaches to create a knowledge base for a Chatbot and include writing by hand and learning from a

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corpus. Learning here means saving new phrases and then using them later to give appropriate answers for similar phrases. To give suitable answers to keywords or phrases extracted from speech and to keep conversation continuous, there is a need to build a dialogue system (programmed) called a Chatbot (Chatter-Bot). Chatbots can assist in human computer interaction and they have the ability to examine and influence the behavior of the user.
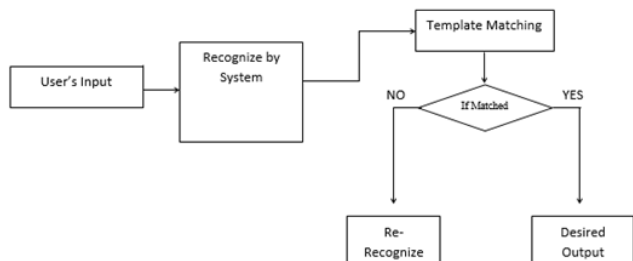

Fig. 1. Components of Chatbot

A. Components

User's Input: The user's input section will take the input from the users using the interface that is available as a frontend for the users.

Recognizing System: This section recognizes the data keywords/phrases in the users question and proceed it to template matching section.

Template Matching: This section consists of the dataset of templates which matches the phrases from the user's input data if the phases matches it gives the desired output to the users i.e. resolution to their question.

3. Conclusion

It is obvious that there is a trend towards semantics, which can lead to a conclusion that future chat bots will evolve from the pattern matching, towards more semantic approaches and will probably start to incorporate more and more computer reasoning systems. As we are implementing Chatbot in the district court it will be very helpful for the users to find out the steps for how to make any kind of documents exact detailed steps to acquire any documents easily as well as any kind of information regarding any procedure will be made available. Due to which the corruption chances will be drastically reduced as if the user's work is getting done with in certain period of time, they will not need to approach any Brokers to get their work done as due to sufficient required information is provided by our chatbot. Thus, the issue of getting rid of waiting in rows and confused about how and where to get the required any documents by any common man can be resolved and corruption is most important issue in this field will reduced to some extent.

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