

An Intelligent Behaviour Shown by Chatbot System for Banking in Vernacular Languages

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Abstract - A Chabot is a software that is used to interact between a computer and a human in natural language. Chabot are extended in real life, such as help desk tools, automatic telephone answering system, business, e-commerce, service provided companies Chabot is in essence, a piece of robotic software used to imitate human conversation through text chats. In this paper proposal is carried on to explain the design of a Chabot that specifically tailored as resolving the query about banking system in two languages. Chatbots are actually a stateful services, remembering commands in order to generate solution for it. When Chabot technology is integrated with popular web services it can be utilized securely by an even larger audience.

Key Words: Chatbot, FAQ, Chat, customer service, banking, helpdesk.

1. INTRODUCTION

Chabot are extremely valuable for businesses and this value will only increase as time goes by. On obvious area of Chabot implementation is customer service. Waiting on hold may soon be a thing of the past as they become advanced enough to deal with basic level customer services queries and this had made their technical support much more responsive and immediate. This has resulted in significant cost reduction.

The ability to identify the user's intent and extract the data and relevant entities contained in the user's request is the primary condition and the most relevant step at the core of a Chabot. If Chabot are not able to correctly understanding the user request, it won't be able to provide correct answers. The Chabot must identify the user context to manage the conversation state, flow and branching. The proposed Chabot identify the user context that helps to trigger the particular intent alone for generating response to the user.

When an intent is triggered, Chabot will make a HTTP POST request to webhook with a JSON object containing information about the matched intent. This Chatbot implemented in two languages English and Hindi. These multi-lingual languages can works by sending a query and receiving response. It is easy to use for people who suffered in English language and helps to resolve the banking queries without physically available to bank. Initially user have to register themselves to the system and access the chatbot using login portal. After login the session of particular user is generated and chat box is displayed where user can chat by asking queries (either in English or Hindi) related to banking activities. The system will reply to the user in two languages

(English and Hindi) with the help of effective graphical user Interface (GUI).The user can query about the banking related activities with the help of this web application. Banking related activities such as common FAQ's, Documents required, Queries about loans, Creating accounts, Current Interest rate. It will help the user to be updated about the banking activities.

2. EXISTING SYSTEM

[1]. The paper illustrates the implementation and semantic enhancement of a domain-oriented Question-Answering system based on a pattern-matching Chatbot technology. Question Answering (QA) systems can be done as retrieving information from the database which already loaded datasets by admin manually. The main difficulty in building a KB for a chatbot is to handwrite all possible question-answer pairs that constitute the KB. In semantic Web knowledge has been used in order to improve the capabilities of a language independent conversational agent oriented to solve question answering tasks. In authors introduced a chain of conversational agents and subdivide questions into domains: definition, measure, list, comparison, factual and reasoning questions. In particular, the first agent has the task of converting Semantic Web knowledge to AIML format, while a second agent deals with the task to detect. Natural Language Dialog Systems (NLDs) are an easiest way to access information about the datasets. Users can type natural language questions and expect to receive short answers in natural language. NLD cant identify the context hided in user queries. It fetch the desired answer from data set which may be incorrect sometimes.

[2]. E-commerce is one of the e-business artifacts which mostly do business using the internet. The drawback is providing quality of customer service and customers have to wait for a long time to get response from the customer service representative. To overcome, this chatbot automatically gives quick responses to the users in multiple languages based on the data set of Frequently Answered Questions (FAQs), using Artificial Intelligence Markup Language (AIML) and Latent Semantic Analysis (LSA). When coming for responses, greeting messages or built-in messages will be answered by AIML and others are driven through LSA. The main disadvantage of AIML is that the developer has to write patterns for all the questions customers could possibly ask. As a solution to this, we used the method called LSA which is used to find the semantic similarity between words in vector representation form. For example, vehicle and car has semantic similarity in structure according to LSA. So that,

the unanswered questions will be driven by the LSA part. This technique gives more intelligence to the chatbot. It's a difficult task for the developer to give all questions user could possibly ask to the chatbot. This is the major drawback of AIML. The unanswered questions from AIML will be automatically routed to the LSA block. It uses AIML files for interaction between the user and system, so the user need to specify the question in the pattern stored in AIML file. Since the knowledge base is in AIML format, the user need to specify the exact question in AIML file.

3. PROPOSED SYSTEM

In proposed system we presented a chatbot that generate dynamic response for banking system queries in two languages. This proposed chatbot identifies the user context which trigger the particular intent for response. Since it is responding dynamic response the desired answer will be generated for user. This proposed chatbot implemented a algorithm called Porter stemmer Algorithm which is used to removing suffixes from words in English. Removing suffixes automatically is an operation which is especially useful in the field of information retrieval. Since using the logon system, sessions are created for every user. If a particular question is not found in the database such questions are answered by the admin person. It enrich the high interactive graphical user interface there by it is ease of use by the user.

4. SYSTEM ARCHITECTURE

Initially, user have to authorize themselves by registering into the system then user have to login and session for the particular user will be created.

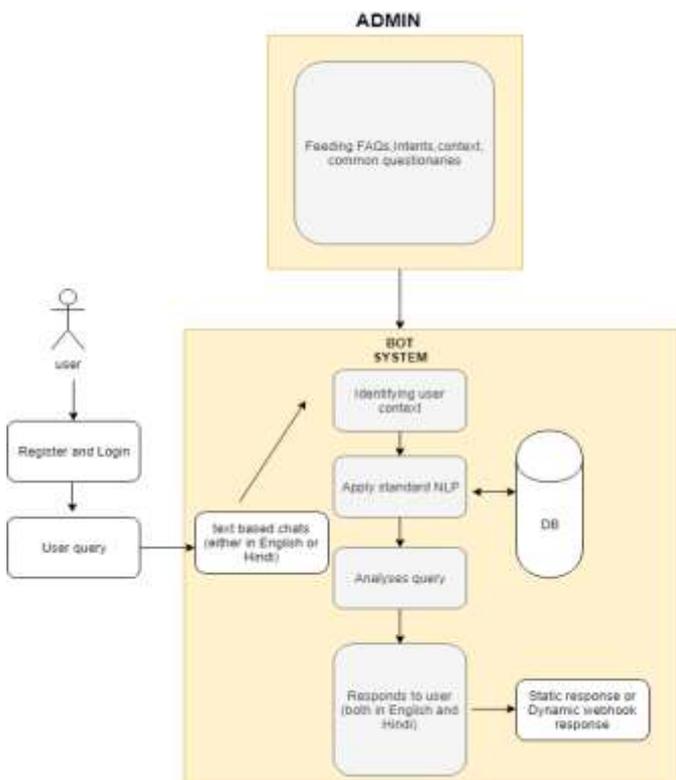


Fig 1: Architecture Diagram

4.1 ADMIN PHASE

Admin phases are the action that feed the FAQs, general questionnaires related to the banking activities. It separate the intent by domain specific, each domain have different functionalities that responded according to the user queries. Admin have to add the multiple user expression, so there by train the agent for dynamic responses. The agent must identify the conversational agent during the particular intent will be triggered. The actions are the intended based on the user query and context either in English or Hindi because queries are differs from user by user. Train the conversational agents in webhook by custom payload method to identify the user desired context.

4.2 REQUESTING QUERY

The bot start their interaction between user and system by sending greeting message to user. User have to ask their query in textual method either in English or Hindi languages.

4.3 IDENTIFYING USER CONTEXT

The proposed chatbot has done a very basic NLP. If a user enter some queries that specified intent will be triggered. When an intent is matched, it will make an HTTP POST request to the webhook with an json object containing information about the matched intent. After receiving request, the webhook can perform required tasks. For example, the webhook might use information from the request to look up a context in database based on user queries. As the queries description can change from person to person. The same question may be asked differently from multiple user. One user may ask the query so simple and clearly. While another user may ask the same question negatively. So it is necessary to find the exact context asked by the user. Finally, the webhook should respond back with the instruction for what the chatbot should do next.

4.4 RETRIEVING QUERY RESPONSE

Every intent must contain a response that's returned to the user in both languages. There are two primary ways chatbot can return a response to the user either with a pre-defined static response or with a response generated from a webhook. The static response can define one or more static text responses that will be returned when a user input matched that particular intent. Example- Greetings messages. In another way, the webhook response basically used to generate dynamic responses based on user queries. It follow up multiple context to describe the exact intent of the user queries.

5. ALGORITHM

5.1 THE PORTER STEMMING ALGORITHM

A consonant in a word that does not contains the vowels letters and alphabet 'Y'. A term with a common stem will usually have similar meanings, For Example:

CONNECT

CONNECTED

CONNECTING

CONNECTION

CONNECTIONS

Frequently, the performance of a system will be improved if term groups such as this are coalition into a single term. This may be overcome by removal of the suffixes such as -ED, -ING, -ION, -IONS to leave the single term CONNECT. This process will reduce the total number of terms in the system and hence reduce the size and complexity of the data in the system, which is always advantageous.

6. CONCLUSION

This proposed chatbot will never fail to generate the desired response to the user that makes the communication between user and bot effective and updation in knowledge about the banking system.

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