NICCI Chatbot Service

The Smart Virtual Assistant

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Chatbots are systems based on artificial intelligence that we interact with in natural language via text or voice interface. NICCI (NIC Chat Interface) is a smart and intelligent chatbot service developed by NIC Rajasthan. NICCI can be integrated with any portal without coding requirement. The service uses proximity rules, bot rules and language rules for maximum weighted reply. It also has an audio support.

NICCI (NIC Chat Interface) is a dynamic and smart chatbot service developed by NIC Rajasthan to provide chatbot interface to any portal. The virtual assistance service has been developed in a way so that it may be plugged with any application portal without any programming requirements. It is a voice-enabled service, and as soon as a query is asked by a user, it breaks the query into meaningful words to find out a suitable reply. NICCI assesses user's query to give related responses by typing on the bot and also through speech. Using this service, users can quickly receive responses of any queries related to the domain and that too without any staff engagements. NICCI is very useful for citizen specific portals where 24x7 assistance is required. It is noteworthy that the service is Hindi enabled i.e., any query asked in Hindi is answered appropriately.

The bot is supported by a Content Management System (CMS), which is used to enhance bot knowledge, configure and to monitor the progress of the chatbot. Unanswered queries are also stored and provided to the portal admin through CMS so that it may be suitably answered to enhance the knowledge of the bot.

NICCI chatbot service was launched by Shri Abhay Kumar, Principal Secretary, Department of Information Technology & Communication, Government of Rajasthan, during a State-level function held in Jaipur. The service has been integrated with the Civil Registration System, Pehchan, used for birth, death and marriage registrations in the State. With the help of this service, citizens are quickly receiving answers related to acts, rules, registration process and any new developments in the civil registration process in the State. With the popularity of NICCI in the Pehchan portal, citizens are more interested in raising queries through the chatbot rather than calling the toll-free helpline. With this success, NICCI is being integrated within other portals of the State.

Salient Features

- Dynamic and configurable chatbot service
- CMS for configuration and setting
- Maintains ranking of questions
- Voice-enabled responses
- Secured chatbot
- Portal specific hit counter
- Responsive chatbot may be configured for any portal or Mobile App
- Bot rules
- Regional language support
- Offensive dialogues with the bot are muted
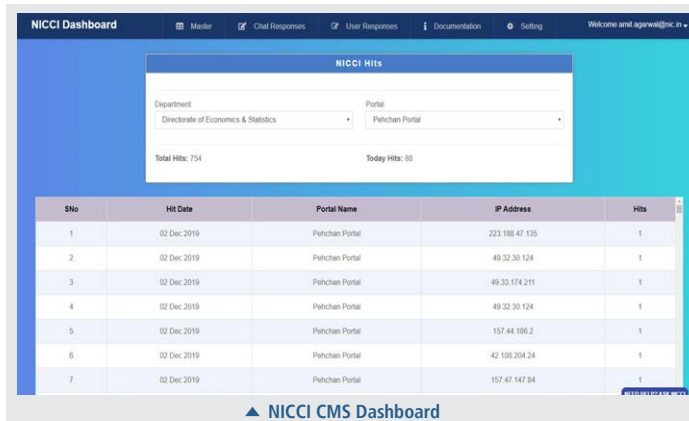- User's star rating
- User's feedback

Tarun Toshniwal
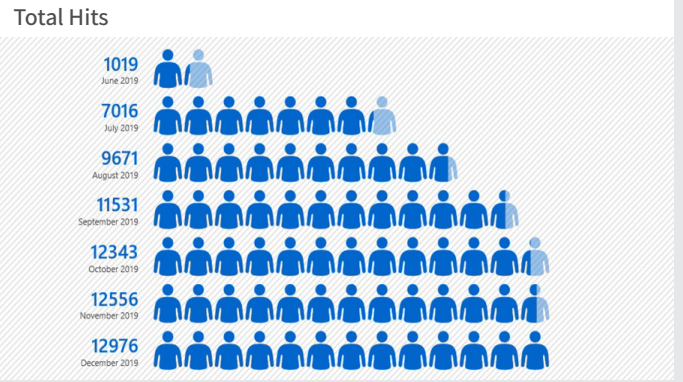Dy. Director General & SIO
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Shri Abhay Kumar, Principal Secretary, Dept. of IT & Communication and Planning inaugurating NICCI Chatbot

▲ NICCI CMS Dashboard

▲ Progress of NICCI chatbot service

Technologies Used

- Chatbot is developed in JAVA Script, ASP.Net with C#.
- Backend database is SQL Server.

Content Management System

A CMS has been developed for maintaining and enhancing contents of the chatbot. The portal administrator has access to the CMS where multiple portals of the same administrator can be mapped. The administrator can maintain responses related to the portal through the CMS. Bilingual responses (Hindi and English) can also be maintained to enable the bilingual chatbot interface. CMS also maintains unanswered queries i.e., queries that were asked by users but could not be replied by the bot due to insufficient knowledge. These queries can be answered through the administrator dashboard so that bot knowledge can be enhanced, and the same query from a user can be suitably answered next time.

It also shows the ranking of questions, hit counter and related options to the portal administrator. Chatbot background color, font, portal logo, portal name and helpline number to be displayed on the bot can also be configured through the CMS. These options can be tested on the CMS before making them live.


▲ NICCI chatbot interface

Benefits

- Generic chatbot can be plugged in with any portal.
- User-friendly and easy-to-use interface
- 24x7 digital assistance specially for citizen-centric portals
- Improved citizen service/ satisfaction
- Used to monitor satisfaction level data
- Regional Language Support
- Query answered by speaking to cover larger audience
- Cost-effective solution
- Learning to enhance knowledge base

Way Forward

- NICCI chatbot will be integrated with other portals to provide assistance to citizens.
- Speech recognition interface is to be developed so that typing can be avoided, and users may ask queries by talking to NICCI in natural language.
- User feedback and rating will also be collected online.
- More functioning related to Natural Language Processing (NLP) will be adopted. ∎
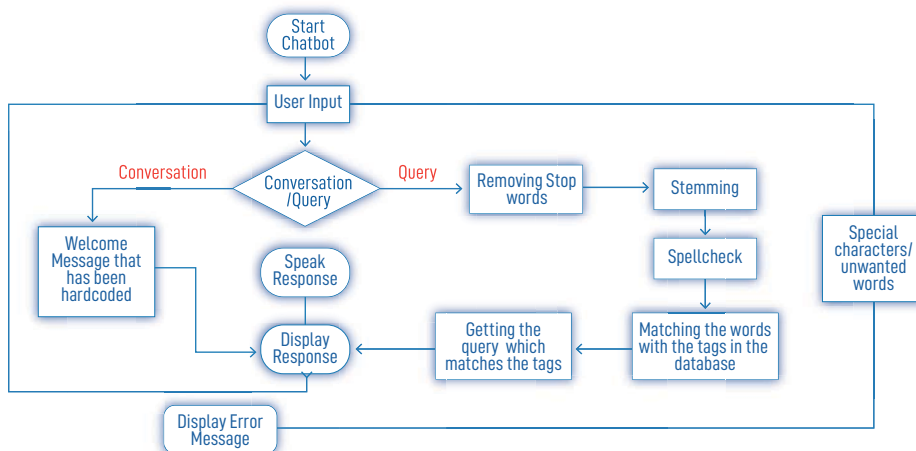
▲ NICCI chatbot workflow

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