

BYOB- Build Your Own Bot

BYOB + VANI = Single window destination for Bot lifecycle

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As was mentioned by multiple speakers in RAISE2020, BYOB aims to ‘democratize AI’ beyond the realms of technical personnel. BYOB aims to empower change-makers in the government domain like Mr. Ranjitsinh Disale (Global Teacher Award Winner 2020), a simple school teacher, who used technology to revolutionize education in the village he was posted to. With this platform we’re making a paradigm shift in NIC’s chatbot services VANI (Virtual Assistance by NIC) by automating the entire integration & business logic development through giving the control in user’s hands.



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With the aim of pushing AI beyond labs and professional spheres, BYOB will act as a bridge between creating an AI agent and making it functional with business logic and features (which is currently being done by VANI framework). It will automate the entire process of creating a bot from scratch. Right from teaching how to build a bot, to coming up with a finished product. It will eliminate the current dependency on humans to integrate their AI agent with VANI framework. This platform is effectively opening up VANI framework to the users now, instead of keeping it limited to the VANI Server.

BYOB provides an easy and a single point destination for managing multiple bot lifecycles by each user. It also has an Orchestration layer to automate the administration of all bots at all stages and generating automated alerts etc. as and when required. NIC has at present made 16 chatbots online and many are in different stages of development. This Orchestration layer is meant to smoothen this task of administering these bots.

Technology Brief

As shown in figure 1, BYOB service automates the user side and a lot of integration work for each user.

Orchestration service will automate all the backend management for administration activities like UAT reviews, sending timely reminders to users, creating/ updating bot entries, etc. This service will be like a tracker which monitors the status of every bot of every user, sending periodical email notifications to the user regarding their bot status if need be, archiving/ disabling a bot if not updated or not put in production for a long time.

Features

- A single point home dashboard to monitor the progress of all the chatbots that the user has created, as is shown in figure 2
- AI agent platform agnostic – Currently made for Google’s Dialogflow, more platforms like NIC’s own upcoming NVIDIA Jarvis platform and others will be integrated eventually.
- Connectivity with AI agent platform as shown in figure 3
- A rich array of features like ‘API reference’, ‘Display Web URL’, and others, to choose from shown in figure 4
 - **API Reference & OTP Authentication (Initial API)** - To display a result like application status etc. using your API
 - **Display Web URL**- To display a web URL as a response to the user
 - **PDF Modal Window**- To pop up a PDF modal window as a response to the user
 - **Chat End** - This feature will end the conversation with a good bye message and disable the text area of the chat window. You will be required to select the intent name against which you wish to close the chat session
 - **Others** - For a requirement which doesn’t fit in any of the features provided. You may send in your requirement with a proper justification to byob.vani@nic.in
 - More features in pipeline
- Dashboard service available from testing stage to monitor and tune chatbot performance pre-and post-deployment
- Zero coding experience for user
- Other options like edit, review, and delete bots

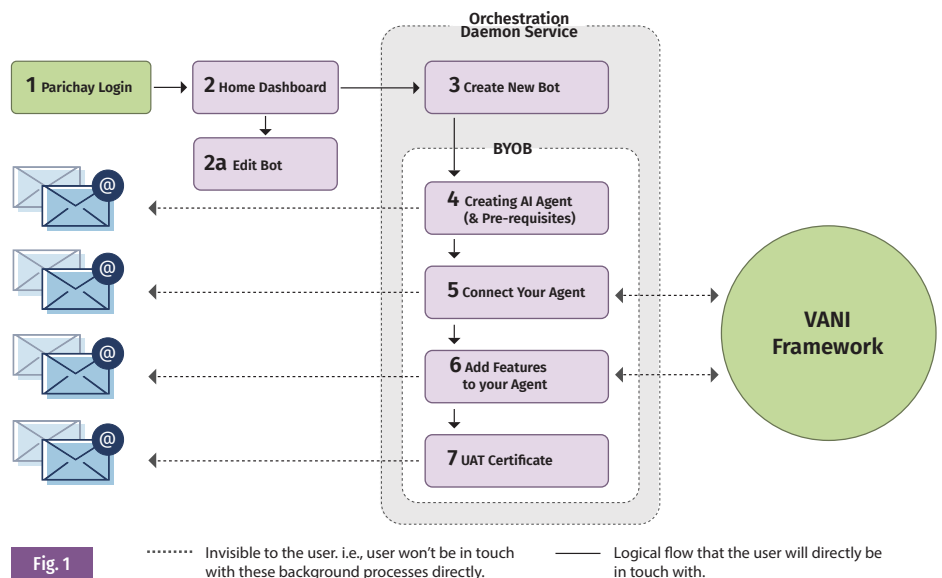




Fig. 2

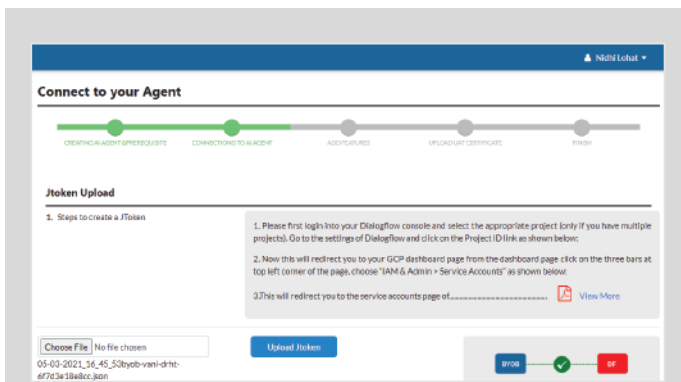


Fig. 3

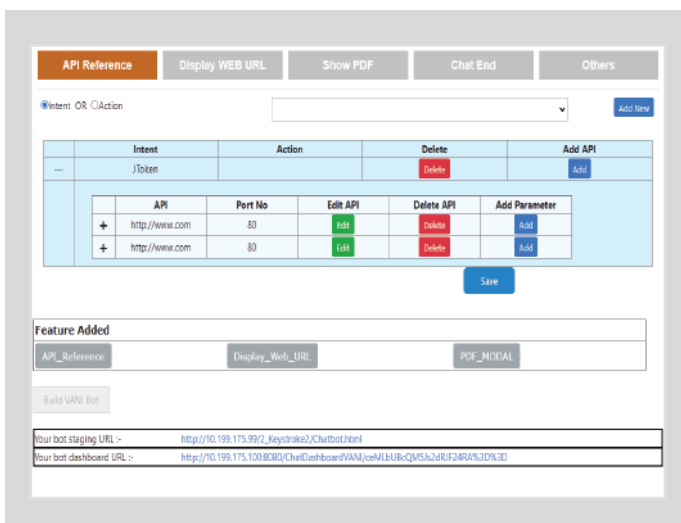


Fig. 4

How Does the Software Work?

The users registered for VANI in AI as a Service will be able to access the service on <https://byob.nic.in>.

BYOB interacts and synchronizes with existing NIC services like Parichay, NIC-Email, VANI Framework, and VANI Dashboard. (VANI Chat Transfer to be integrated soon). Once logged-in through Parichay, a user is met with their home dashboard where they can see all the chatbots they've created and what stage each chatbot is in. From here, a user can take three actions for each bot – Review, Delete, and Edit. There's also a separate option to create a new chatbot.

To create a new chatbot, a user is given resources like 'Things to Know Before Creating a Chatbot', 'Features' Guide', some tutorials w.r.t. the AI agent platform that they selected. Once a user is ready with AI agent, they are educated about creating authentication tokens on their respective platforms and uploading on

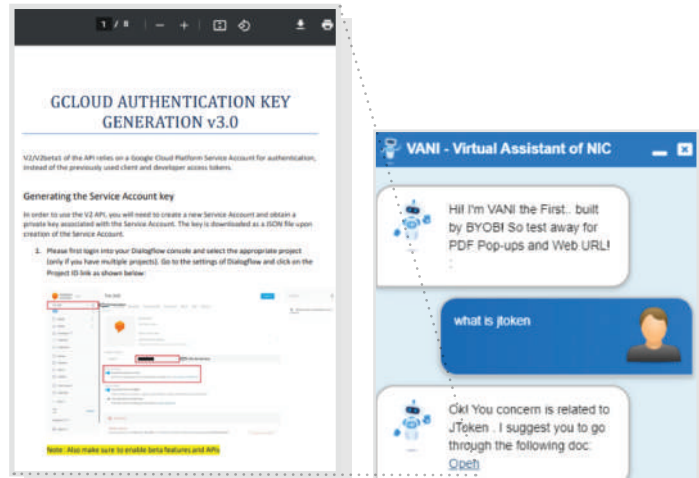


Fig. 5

BYOB portal. BYOB establishes the agent connectivity with agent platform in the background through VANI. Next, a user adds features (refer figure 4) depending on their use case, and generates a testing URL, along with a dashboard URL for tuning and training purpose. The user now has a test bot with GUI to test, look and feel how their bot will perform in real life figure 5, complete with all the features that the user selected. Once a user is satisfied after a thorough testing, they're supposed to sign a UAT (User Acceptance Testing) certificate and upload it for review. Once approved by Admin, production URL and scripts generated by VANI are shared with the user.

An underlying, yet an important subservice of BYOB is its Orchestration Layer from administration perspective. It is majorly divided into two modules, each module having its own submodule – Actions and Alerts Centre. Orchestration also monitors the progress of every bot. Bots which are observed to be inactive in development stage after a certain amount of time are auto-archived, thus rendering the user unable to make any further changes. Action Centre allows the admin to take actions for – UAT Review (Accept, Reject, Question), Unarchive bots, or forcefully archive bots upon observing suspicious activity.

Alert Centre allows the admin to send custom notification to a specific user or broadcast to all users in a special scenario outside the bounds of simple bot creation/ edit cycle like maintenance notification, etc.

Benefits

- Makes AI accessible to non-AI trained workforce
- Faster turnaround time for creating and editing chatbots since there's no actual coding involved. the actual AI part is taken care of by AI agent platform and business logic along with GUI are taken care of by BYOB and VANI Framework. Since VANI, and soon enough BYOB as well, are well audited projects with all the relevant firewall rules already in place, user gets a secure product by the end of the cycle in a very short amount time. This in general, along with coding effort would've taken months at the very least

Application Areas

There's hardly any field left in the world which doesn't see application of chatbots. In Indian context, we can use BYOB to create multilingual chatbots for farmer welfare, Jeevan Pramaan, students' results announcement, raising tickets/ grievances, and many more.

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