Progress Presentation-I

e-Yantra Summer Internship-2018

NLP-Smart Assistant for eYantra IOT
&
IFTTT for IOT

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Overview of Project

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NLP-Smart Assistant for eYantra IOT

- Objective
  1. Building a NLP based assistant to access eYantra IOT platform through text and voice control over the Web portal and through Google Assistant!
  2. Devloping flexible block based GUI for IFTTT rules as an alternative to conventional ways of writing rules using code/SQL.
- Deliverables
  1. The assistant should at least be able to perform all the frequent queries that take place on IoT platform.
  2. User should see device data in the chat interface itself.
  3. A web chatbot interface to be integrated with IoT Platform
  4. Validations of IFTTT rules with minimization of Lambda functions.
  5. Final application should show CRON rules being implemented for irrigation.

Overview of Task

Task.no	Task	Deadline
1	Understanding e-Yantra IoT Platform and its APIs	2 days
2	Getting familiar with Dialogflow and required programming languages	3 days
3	Gathering phrases to train the agent.	3 days
4	Adding entities and intents	3 days
5	Take actions on the output of phrases returned by API properly and ask for missing information if any	2 day
6	Testing this and the speech interface and retraing on more examples if required.	3 days

Task.no	Task	Deadline
7	Develop a proper web interface to be integrable with IoT platform designing throughout the website.	2 days
8	Integration with E-Yantra platform and a demo application	1 day
9	Learning VueJs and component designing	4 day
10	Designing algorithm for converting UI bloks to lambda code with loose coupling	4 days
11	Testing and improving efficiency	1 days
12	Documentation	2 days

What we have done so far...

- Understanding eYantra IoT Platform and its APIs
- Learning about DialogFlow & RasaNLU and how a virtual assistant works behind the scenes

- Understanding the working of AWS-IoT and connecting ESP8266-DHT sensor to it for testing of the assistant

What we have done so far...

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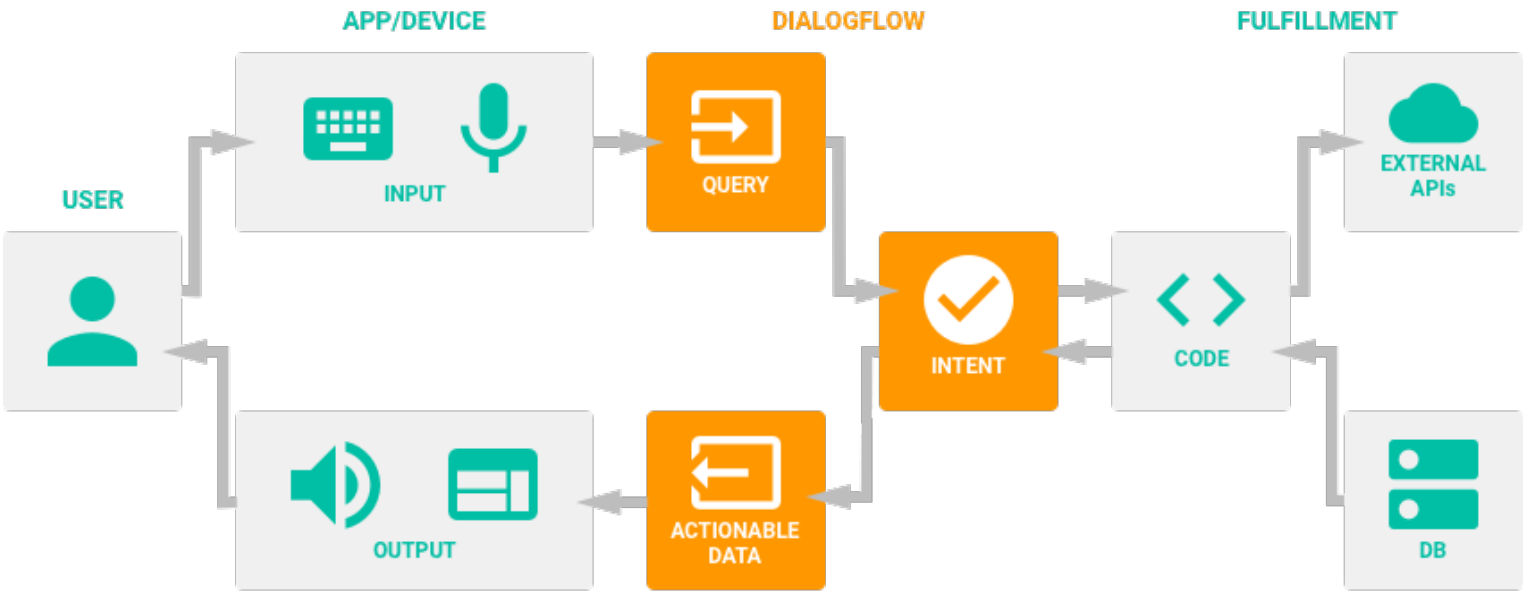
- Teaching the assistant to talk and listen with Intents
- Webhook in JavaScript for providing data & rich UI responses



Flow of the IoT Assistant

What we have done so far...

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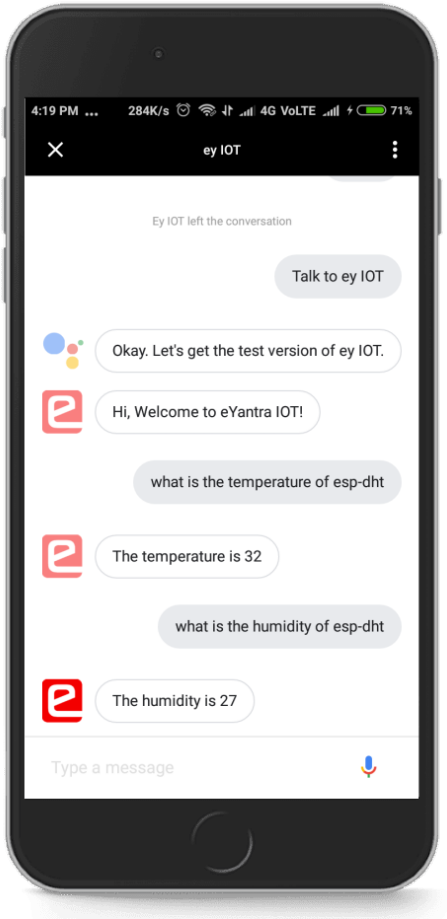
- Integrating the IoT assistant with Google Assistant
- Secure user authentication based on OAuth2 token system
- Authenticated user can access and control devcies & sensors on IoT platform anytime, from anywhere around the world through internet



Challenges faced and How we solved them...

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- Implementing OAuth2 Token based authentication between assistant and IoT Platform
- Teaching the assistant to understand IoT words & phrases like Sensor names, Units, Things and properties like temperature, humidity, etc

Future Plans

- Integrating the assitant in IoT platform's website with chatbot UI
- Making the assistant dynamic enough to handle variety of devices & sensors with their properties
- Assistant will be able to handle other complex commands on IoT platform like Crons from natural language and generating Rules.
- Creating block based GUI fot IF-This-Then-That Rules on IoT platform and covertig them to code for proper linking with AWS Lambda

Thank You

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THANK YOU !!!