eYantra IoT Smart Assistant & IFTTT for IoT

Onkar Sathe, Rohit Rathi

Mentors: Omkar Manjrekar, Vikrant Fernandes, Deepa Avudiappan

Abstract

A web or an app interface for IoT may not always be easy for people to work with, especially if they aren't used to such kinds of applications.
But what if you could tell someone to do things on your behalf?
eYantra IoT Smart Assistant (eYISA) is inspired from the goal to bring the magic of IoT to the fingertips of users and accessible over voice commands.
In AWS IoT writing rules is hard and not that much intuitive you also need to know SQL (for AWS IoT Rule Engine).
And it's difficult to select devices over which you want to write rules. A simple GUI needed to write rules to invoke the actions on devices.

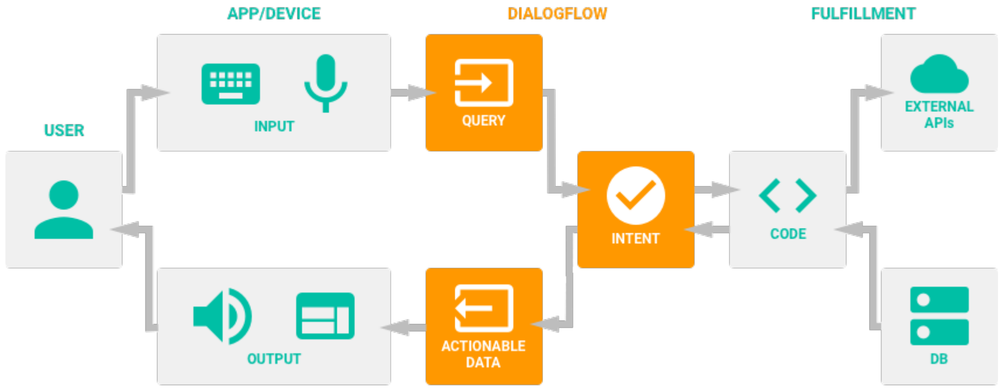
Objectives

eYantra Iot Smart Assistant:

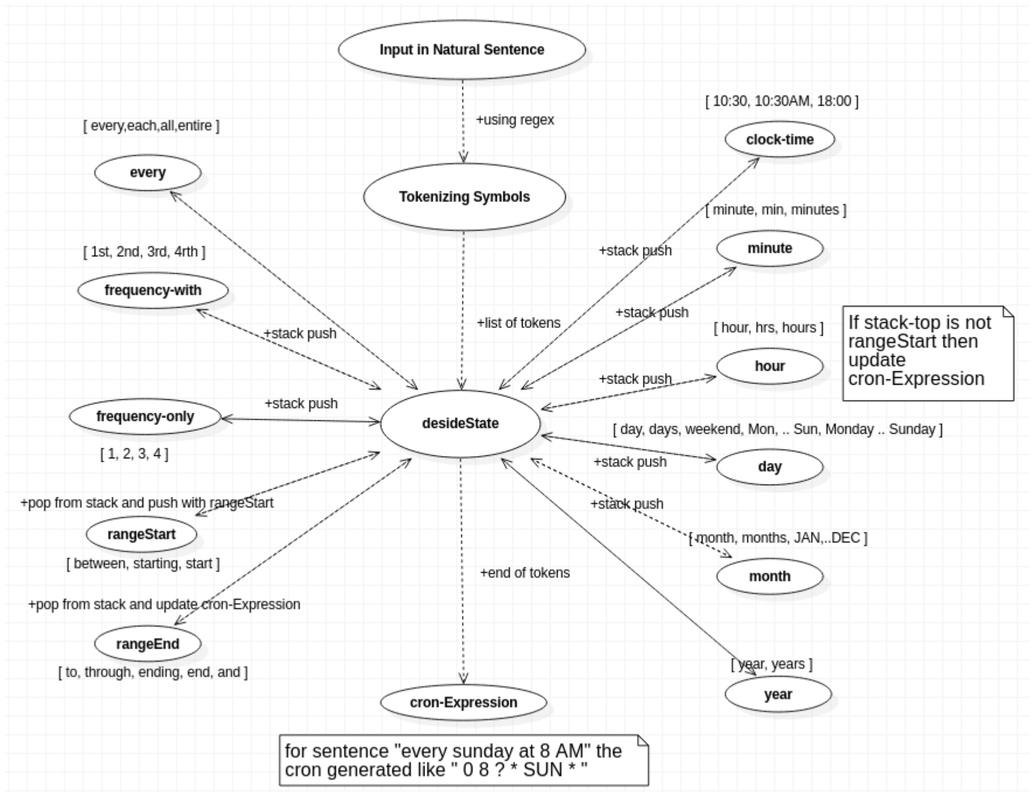
- Building an NLP based assistant to access eYantra IoT platform through text and voice control over the Web portal and through Google Assistant!
- Assistant has to understand all the frequent queries that are performed on IoT platform.

If This Then That - abbrev as IFTTT

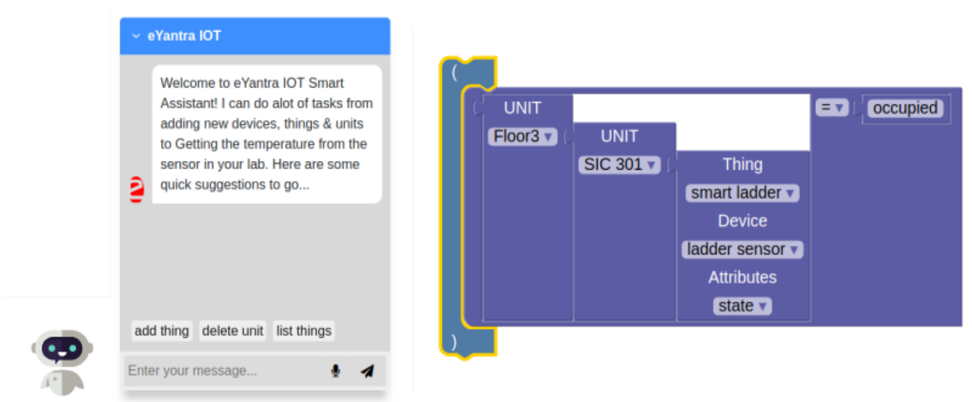
- Developing flexible block based GUI for IFTTT rules as an alternative to conventional ways of writing rules using code/SQL.



Workflow of IoT Assistant

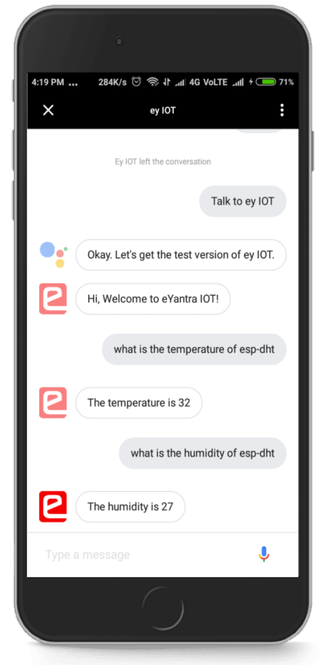


natural-cron.js State Diagram



Web interface of chatbot and IFTTT using Blockly

Results & Achievements



- eYISA is available over Google Assistant as well as web interface of IoT platform. This makes it accessible over **400 million+** wearable and handheld devices.
- Assistant works dynamically to handle different devices and sensors.
- Cron/Schedule expressions can be automatically generated from normal english phrases. Developed our own JS library for generating cron expressions from english phraes (natural-cron.js). Implemented using **Push-Down automata** based design

Future Scope

- After increasing the efficiency of the assistant through more training, especially working with Hindi phrases then it can be used anywhere
- Assistants can be made dynamic enough to adapt to other APIs, So APIs are accessible over Natural Language of users even in form of text or voice.