SimHome Google Home (Hub) Documentation

Backend Host:

Google Home is hosted on the Pluto server using tmux, a tool that keeps windows and processes in a session. Tmux allows Google Home mechanism to be continuously run on the Pluto server without being terminated even if the administrator logged out. Currently we are using ngrok to create an endpoint so that Google Home console can get access to it

To get access to the code:

1. ssh lin@pluto.calit2.uci.edu (please ask team lead for the password)
2. Enter "tmux ls" in the terminal to get all the tmux sessions running on the server.
3. Enter "tmux a -t SimHomeGoogleHomeSmartAuditor" to enter Google Home session
4. npm start
5. Press "CTRL+b" "d" to detach from the session.

The full tmux cheat sheet can be found here: https://tmuxcheatsheet.com/
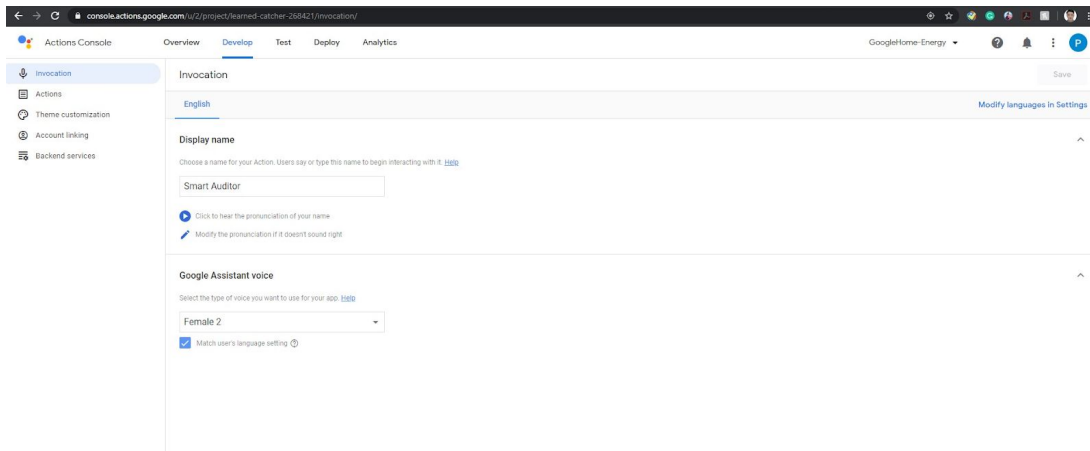
Coding Language:
JavaScript(Node)

Code Libraries:
Express - To run the backend webhook
Actions-on-google - provides tools to talk with our diaflow agent
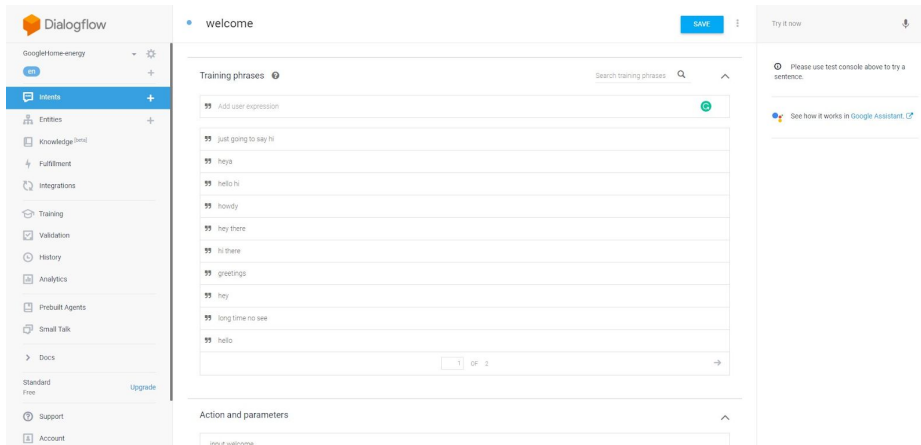
Console Section Explanation:

Main Page

In the "Develop" section, you can modify the configuration of the Google Assistant. They are all temporarily set so please change them base on further requirement.

Dialogflow:

The natural language process is hosted on Dialogflow.

Log into the Simhome account on [Dialogflow](#) to access the agent for google smart speakers. Here is where you can configure the agent's intent behavior, add new intents, modify small talks, edit webhook URL, etc.

Intents: It is an end-user's intention for one conversation turn. Intentions are triggered by the user's keywords and are then sent to the backend to be fulfilled.

Entities: entities are part of the Dialogflow's NLP, in order to capture keywords/phrases to send back to the backend. There are prebuilt entities such as time-period, location, etc. You can also define custom entities yourself.
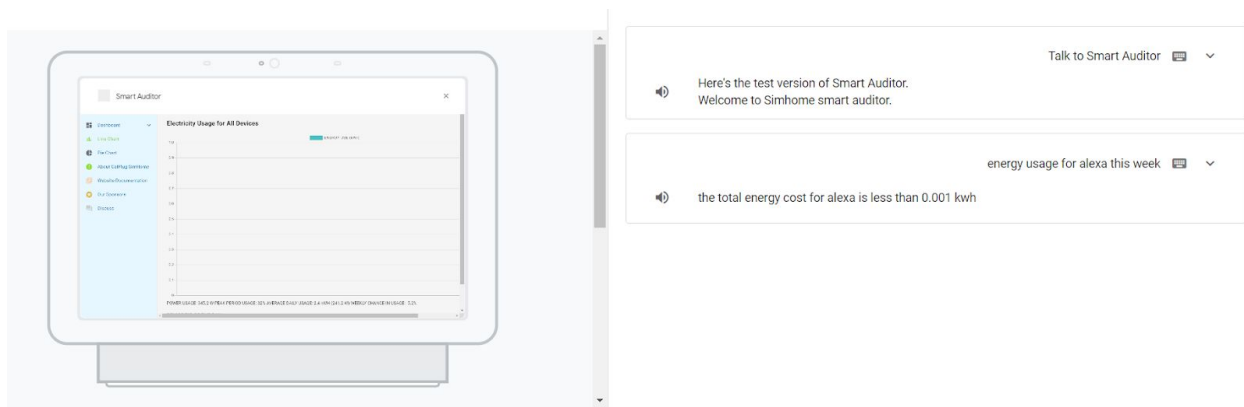
Fulfillment: A fulfillment fulfills an intent. It is a dynamic response we build to provide the User-based on their intent.

Small Talk: Small talk is used to provide responses to casual conversation. This feature can greatly improve the end-user experience by answering common questions outside the scope of your agent.
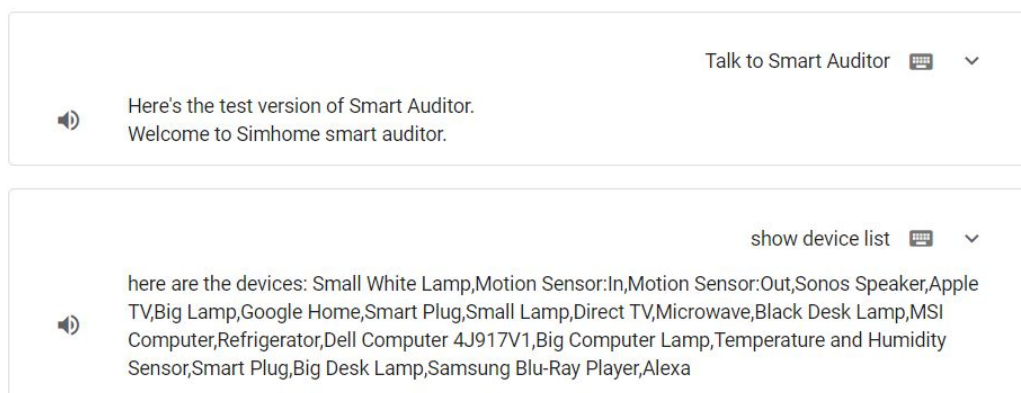
Be aware that Dialogflow has migrated from V1 to V2. Some APIs and other function names might change. We have switched the code to V2 accordingly, yet you need to use V2 to have further implementation.
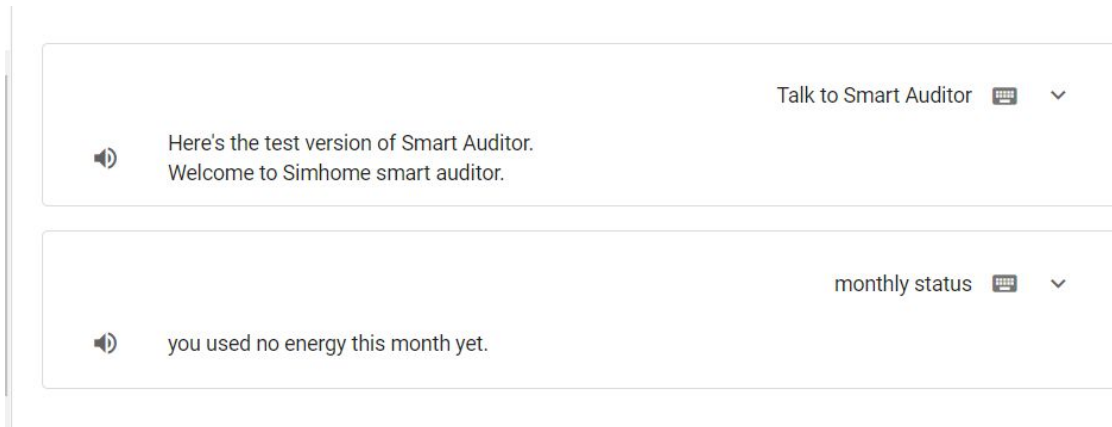
Command List:
- "How much energy did alexa use this week?": Energy audit for a specific device for a specific month
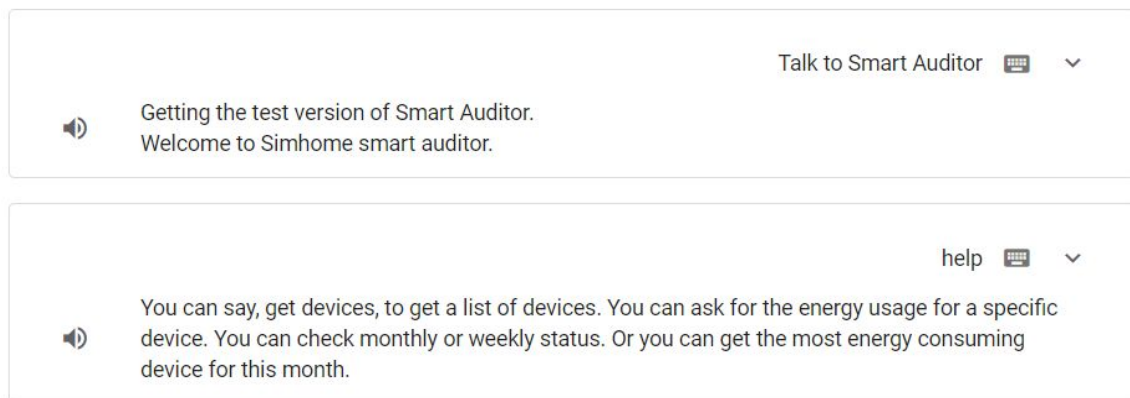   - Can display a graph when used on nest hub

- Show device list: Get a list of devices

- Monthly status / weekly status: Get a monthly/weekly total of all device's energy usage

    - User can then ask for the top 3 energy-consuming device

- Help: Help for list of commands

Google Home Hub:

Google Home Hub is a Google Home device that has a touch screen on it. It enables not only voice command, but also visual interaction with users.

References: