DIY Google Home with Google Assistant

On a Raspberry Pi

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PotentialLabs

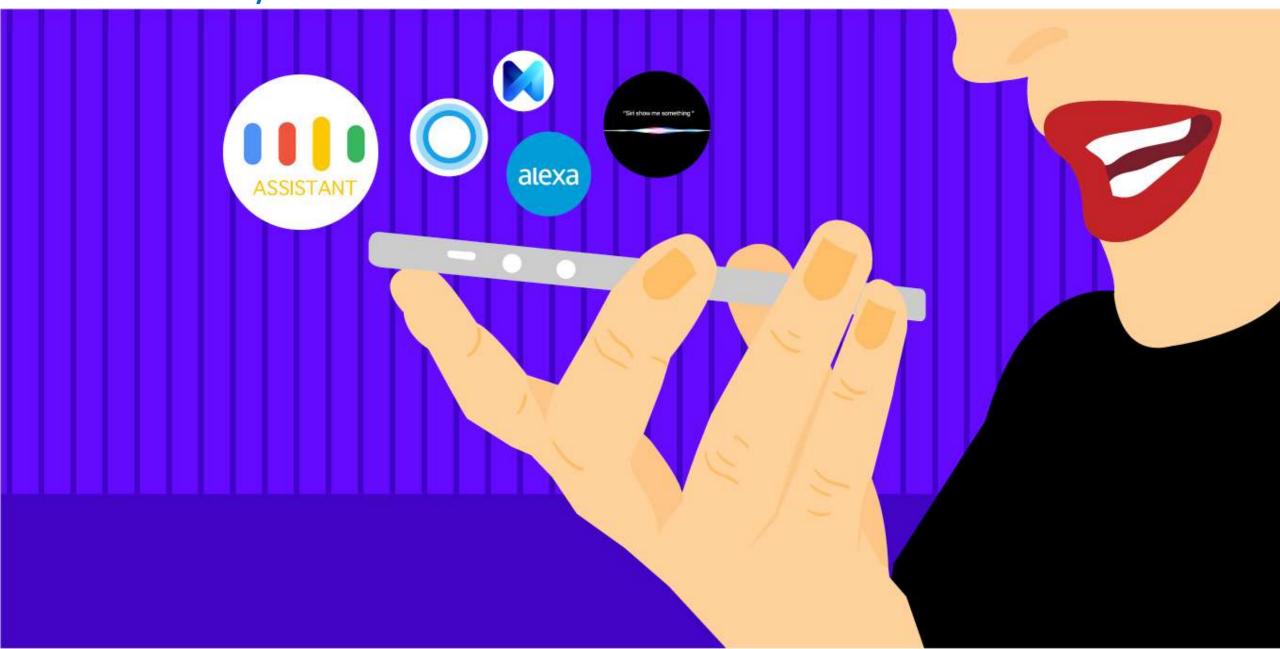




Agenda

- Intro to Google Home
- Building Google Home with Assistant on Raspberry Pi
- Interfacing with Stuff

We already have Voice Assistants on Phone...









Google Home; Why build one?



Not available in India yet, so let's build one instead ©





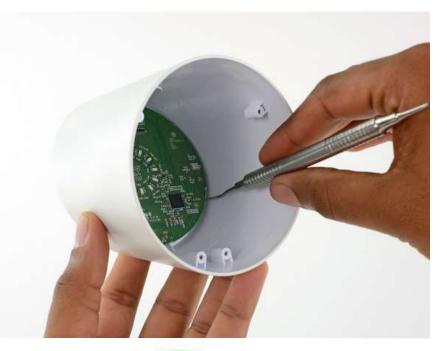




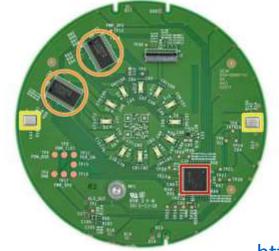


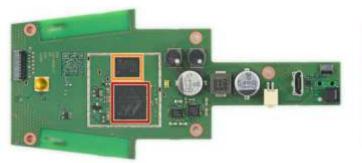


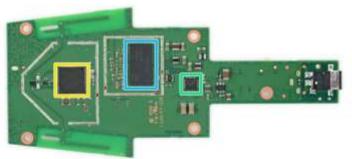
Teardown of Google Home



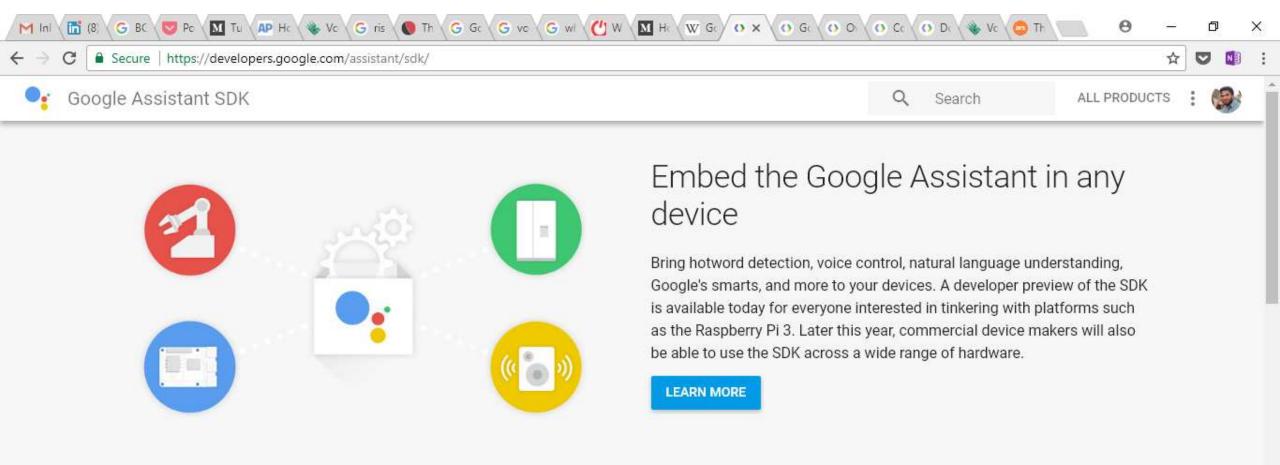








https://www.ifixit.com/Teardown/Google+Home+Teardown/72684

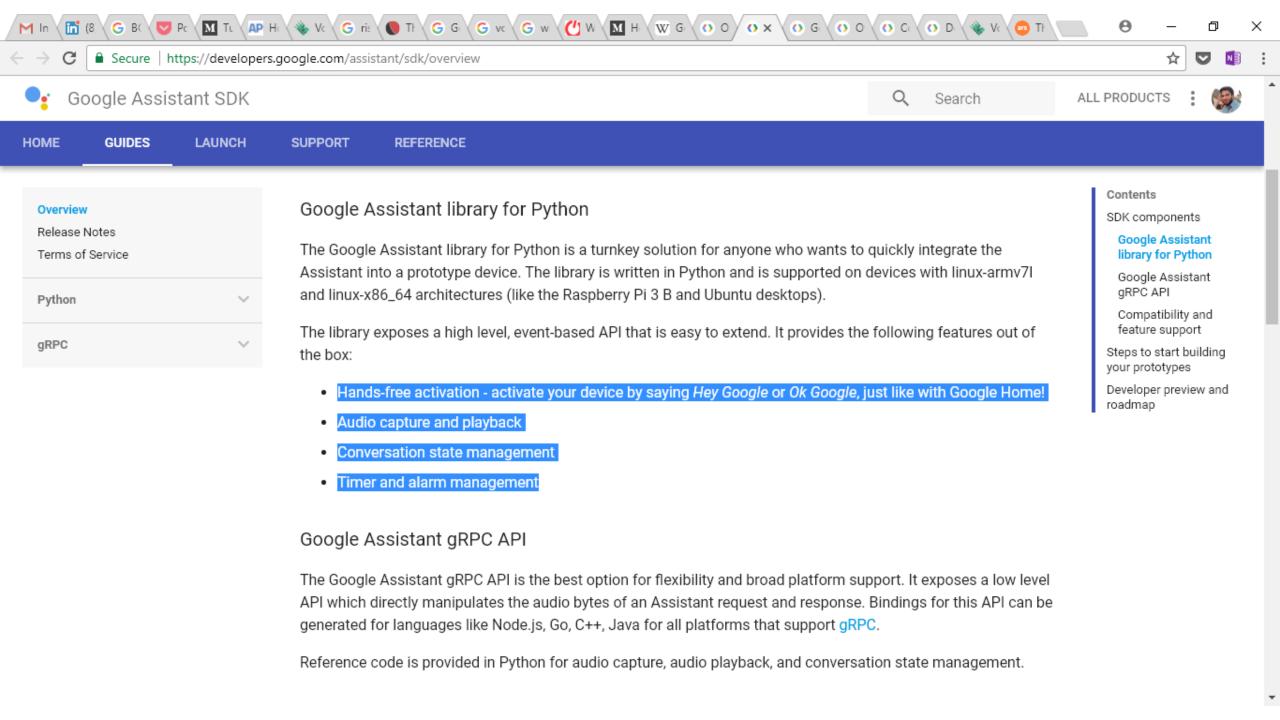


Go from zero to prototype in minutes

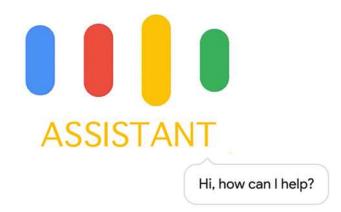
Build a prototype quickly with a Python-based library. And for those of you on other platforms, use our gRPC API and generate bindings for languages like Go, Java (including support for Android Things), C#, Node.js, and Ruby to give you the flexibility you need.

START PROTOTYPING





Where does the Assistant live?





"Ok, Google: Let's build it..."

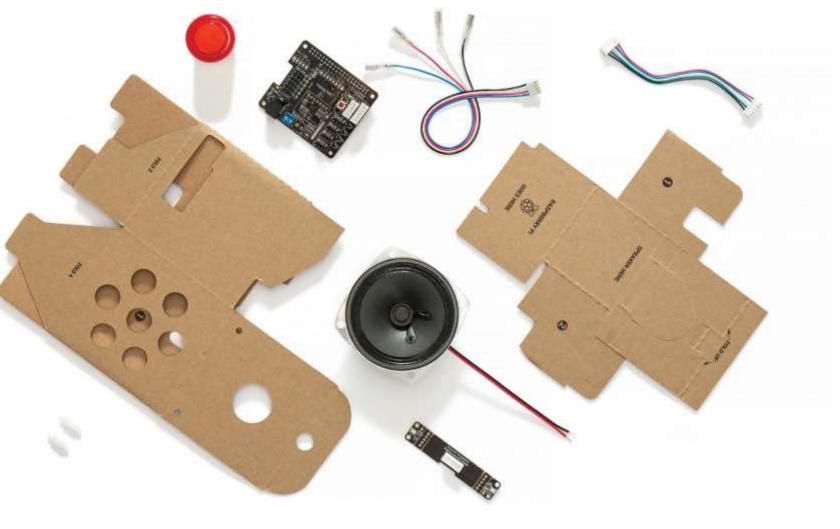
- Configure and Test the Hardware, Audio, N/W Access etc.
- Configure Dev Project & Account Settings
- Setup the Python SDK & Library

"Ok, Google"

AIY Projects Voice Kit







Hardware

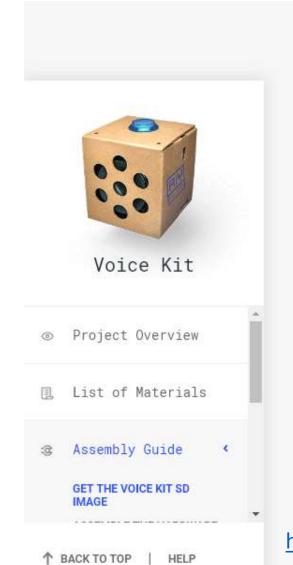
- Raspberry Pi 2/3,
 Power Supply, SD
 Card etc
- Microphone (USB) Logitech USB
 Webcam with Mic
- Speaker (Simple 3.5mm)







Download and Flash the Image containing SDK



① Get the Voice Kit SD Image

You'll need to download the Voice Kit SD image using another computer. Both of the next steps can take several minutes for your computer to complete, so while you're waiting, get started on "Assemble the hardware" in the next step.

- 1 Get the Voice Kit SD image
- (2) Write the image to an SD card using a card writing utility (Etcher.io is a popular tool for this)

BUILDING ON ANDROID THINGS

Our default platform and instructions are for Raspbian Linux. However, you can also build on Android Things, an IoT solution using Android APIs and Google services. Skip down to the **Maker's Guide** for instructions.

https://aiyprojects.withgoogle.com/voice#assembly-guide-1-get-the-voice-kit-sd-image

Boot the Device, SSH &/ VNC

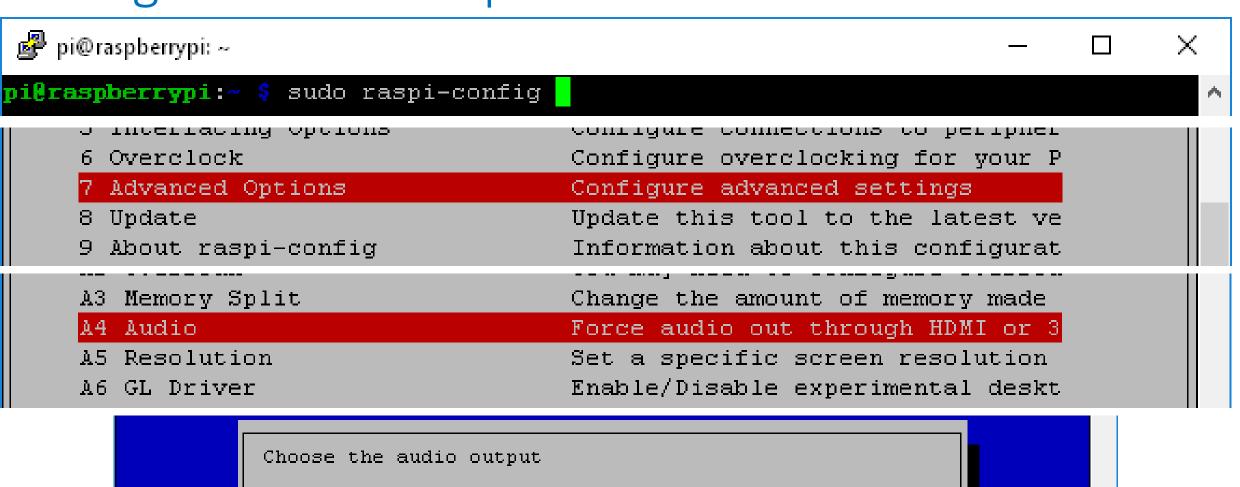


Configure and test Speaker

O Auto

2 Force HDMI

speaker-test -t wav



| Force 3.5mm ('headphone') jack

Configure and test Mic

```
pi@raspberrypi: ~
pi@raspberrypi:~ 💲 arecord -1
**** List of CAPTURE Hardware Devices ****
card 1: U0x46d0x81b [USB Device 0x46d:0x81b], device 0: USB Audio [USB Audio]
 Subdevices: 1/1
 Subdevice #0: subdevice #0
sudo nano /etc/asound.conf
arecord --format=S16 LE --duration=5 --rate=16000
file-type=raw out.raw
aplay --format=S16 LE --rate=16000 out.raw
```

Configure a Dev Project on gCloud

- https://developers.google.com/assistant/sdk/develop/python/configdev-project-and-account
- https://aiyprojects.withgoogle.com/voice#users-guide-1-2--turn-on-the-google-assistant-api
- Activity Controls Page, enable these
 - Web & App Activity
 - Device Information
 - Voice and Audio Activity

Setup the Python SDK & Library



Google Assistant SDK

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ALL PRODUCTS



HOME GUIDES

LAUNCH

SUPPORT

REFERENCE

Overview Release Notes Terms of Service Python Overview Get Started Set Up Hardware and Network Access Configure and Test the Audio Configure a Developer Project and Account Settings Download the Library and Run the Sample Next Steps Reference Troubleshooting

Best Practices

gRPC

Download the Library and Run the Sample



Follow these instructions to download the library and run the sample. Run all of the commands on this page in a terminal on your device (either directly or via an SSH connection).

Configure a new Python virtual environment

Use a Python virtual environment to isolate the SDK and its dependencies from the system Python packages.

(Recommended) For Python 3:

- \$ sudo apt-get update
- \$ sudo apt-get install python3-dev python3-venv # Use python3.4-venv if the package cannot be f
- \$ python3 -m venv env
- \$ env/bin/python -m pip install --upgrade pip setuptools
- \$ source env/bin/activate

For Python 2:

- \$ sudo apt-get update
- \$ sudo apt-get install python-dev python-virtualenv
- \$ virtualenv env --no-site-packages

Contents

Configure a new Python virtual environment

Get the library and sample code

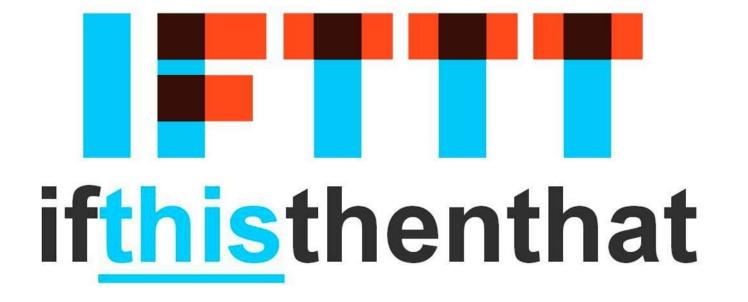
Run the sample

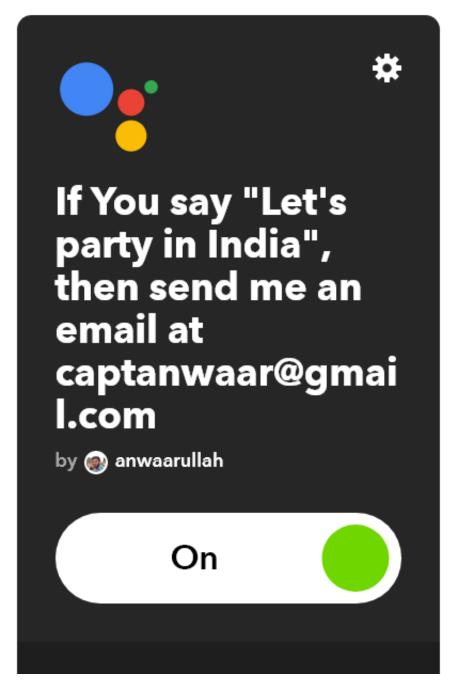
Next steps

Demo!

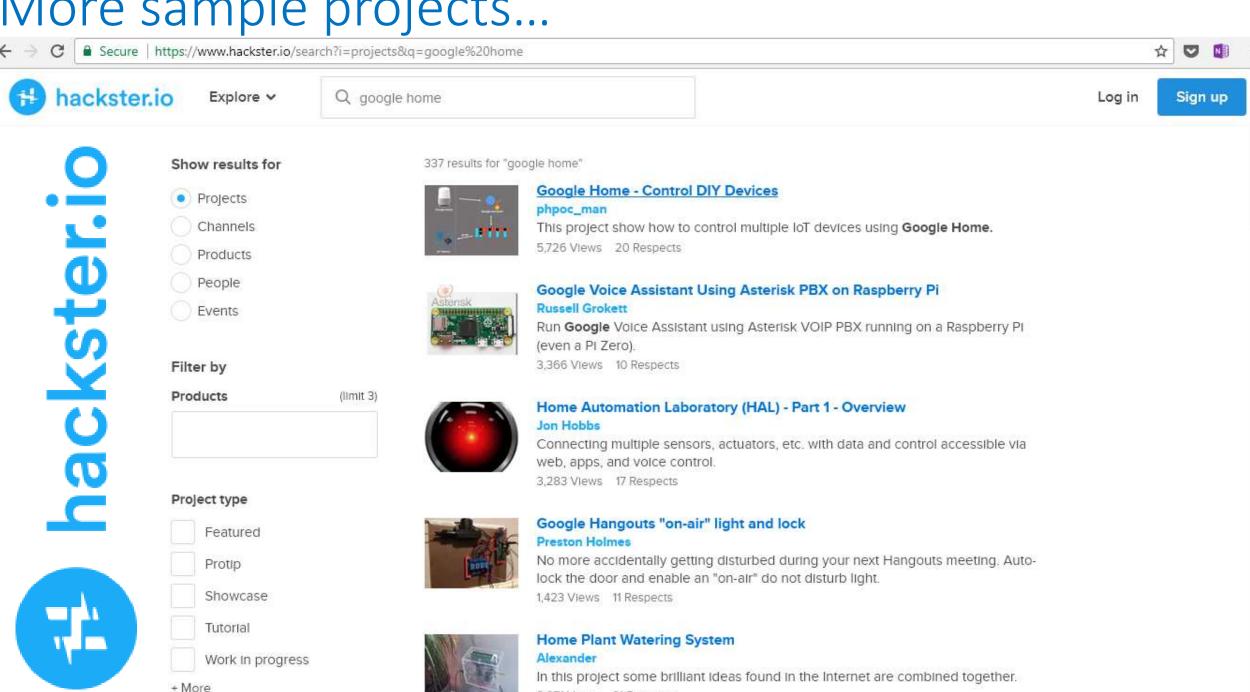


Let's integrate it with IFTTT





More sample projects...



8 871 Views 31 Respects

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