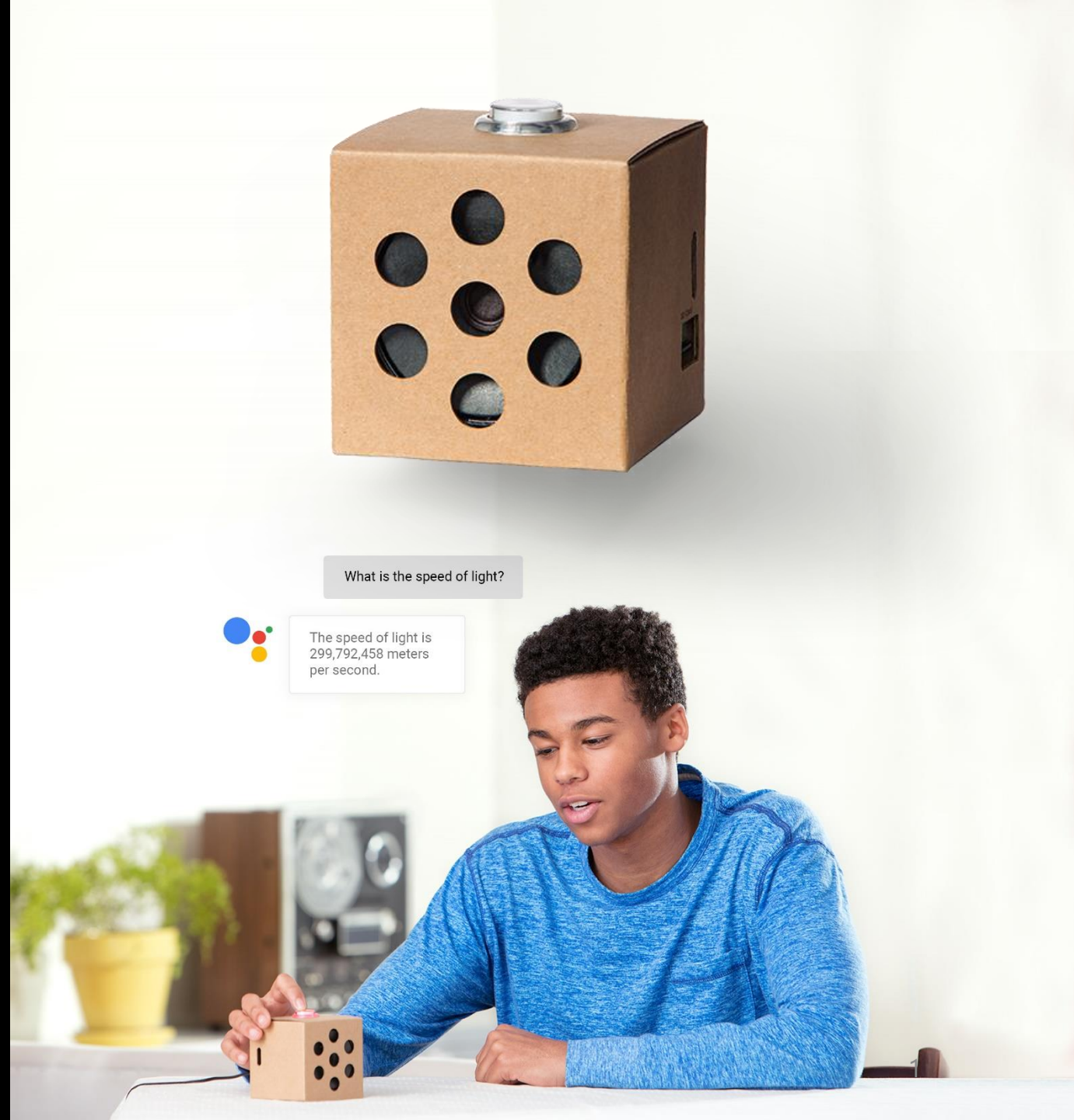


Google AIY Voice Kit

– Make workshop–

Copyright.q2ok



What is the speed of light?



The speed of light is 299,792,458 meters per second.

Goal & Limit

Goal
&
Limit



- AI 이해 및 간접 체험
- Google Assistant
- 라즈베리파이 speak를 활용한
- 인공지능 스피커 제작



- 깊이 있는 Python 언어
- 다른 언어로써의 활용
- 다른 프로그램과의 연동

Curriculum

Curriculum

1일차



- AI 이해
- 회로구성 및 제작
- os img setup

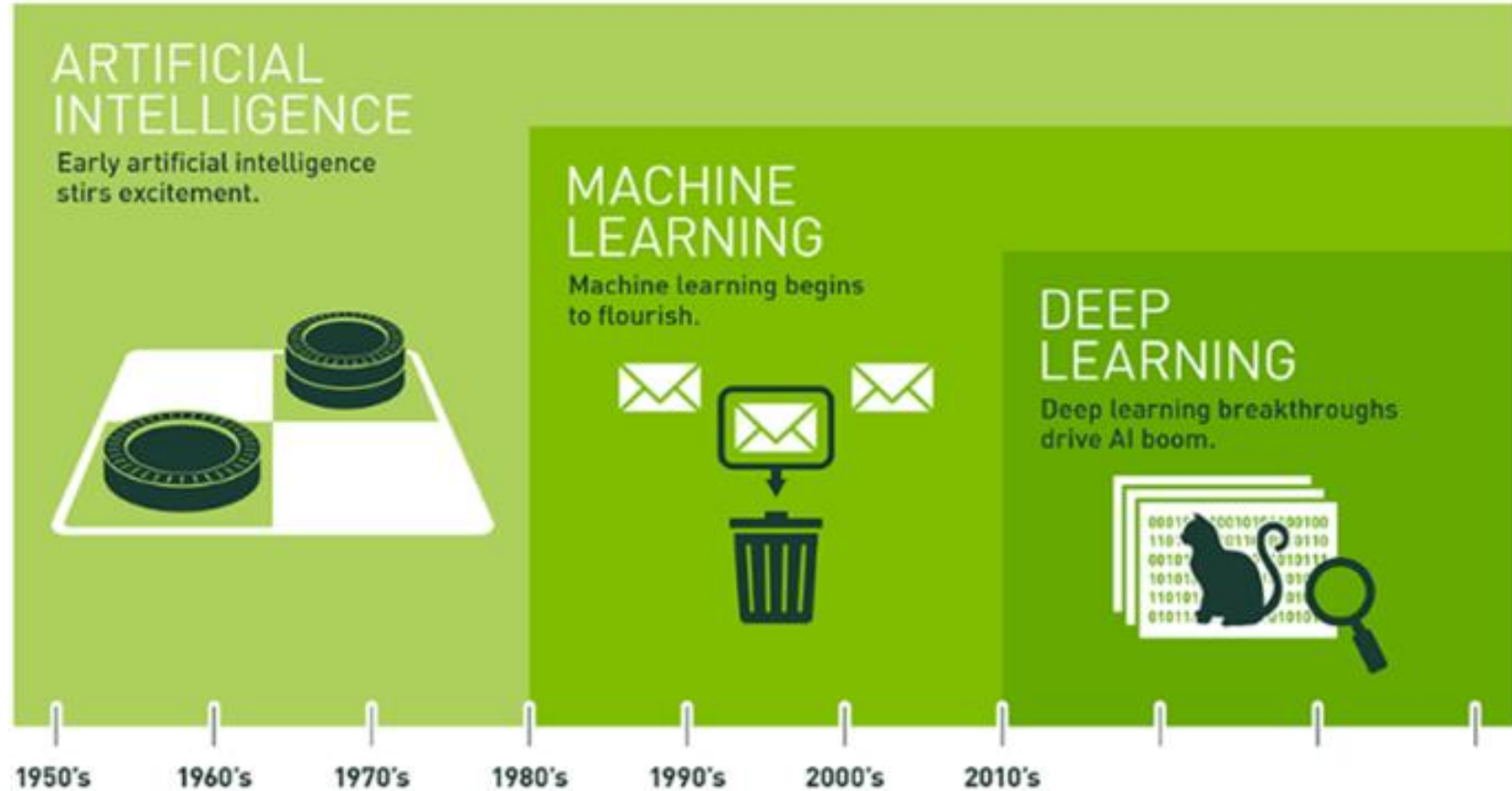
2일차



- 미비 된 메이킹 진행
- 예제 코드 실행 및 리뷰

AI 인공지능

AI / ML / DL



Since an early flush of optimism in the 1950s, smaller subsets of artificial intelligence – first machine learning, then deep learning, a subset of machine learning – have created ever larger disruptions.

- 인공지능(AI) > ML(머신러닝) > DL (딥 러닝)

기업

Google

facebook



PYTORCH
Deep Learning with PyTorch

Clova⁺
kakaoni

amazon



kt

Curriculum

- <http://www.hani.co.kr/arti/economy/it/870696.html> (삼성 sds 사이다 팀 스타우승)

AIY

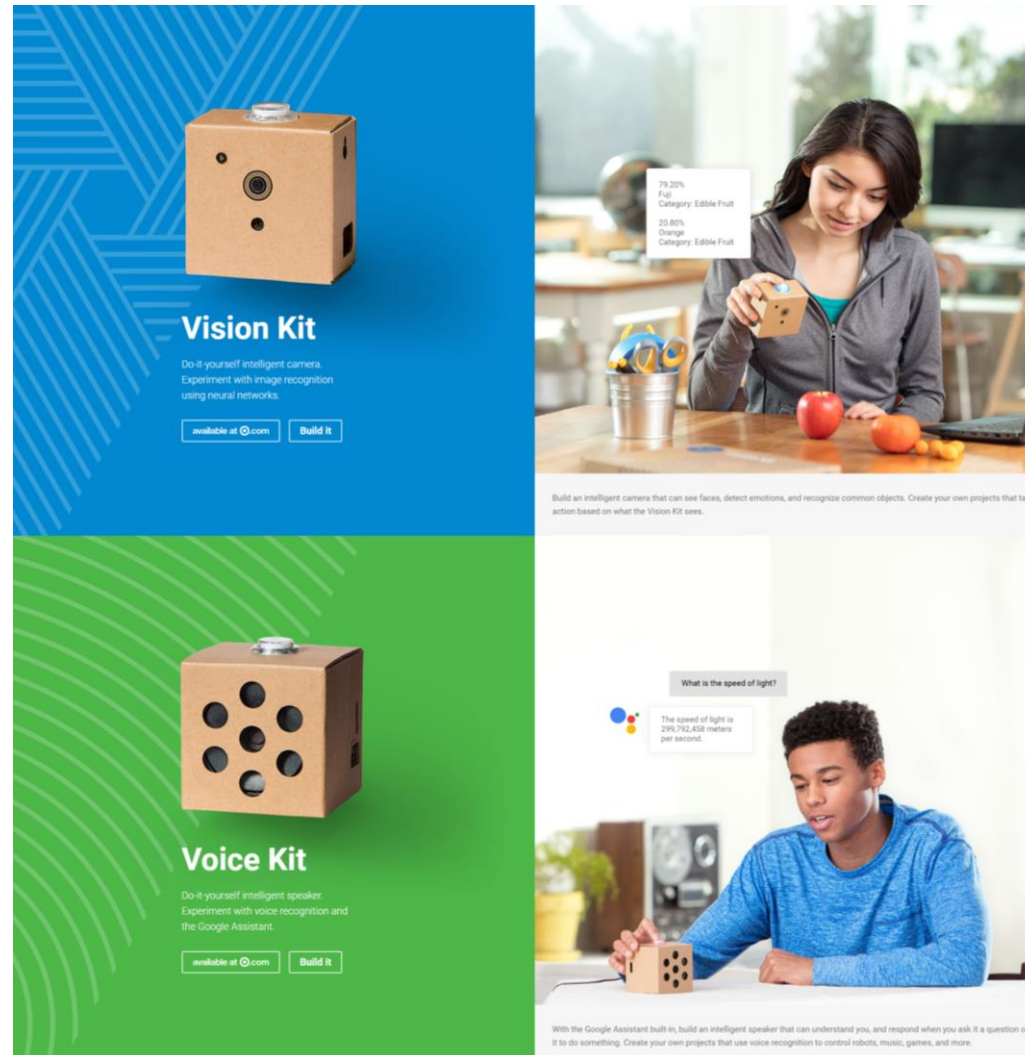


Do-it-yourself artificial intelligence

Made by you
with Google

AIY project with google

GOOGLE AIY PROJECT



The image displays two promotional cards for Google AIY projects. The top card, for the Vision Kit, has a blue background and shows a cardboard box with a camera lens. It includes the text 'Vision Kit', 'Do-it-yourself intelligent camera. Experiment with image recognition using neural networks.', and a 'Build it' button. The bottom card, for the Voice Kit, has a green background and shows a cardboard box with multiple microphones. It includes the text 'Voice Kit', 'Do-it-yourself intelligent speaker. Experiment with voice recognition and the Google Assistant.', and a 'Build it' button. To the right of these cards are two photographs: one of a woman using the Vision Kit to identify fruit (an apple and an orange) with on-screen labels showing confidence percentages (79.20% for Fuji, 20.80% for Orange), and another of a man using the Voice Kit to answer a question about the speed of light, with an on-screen response from Google Assistant.

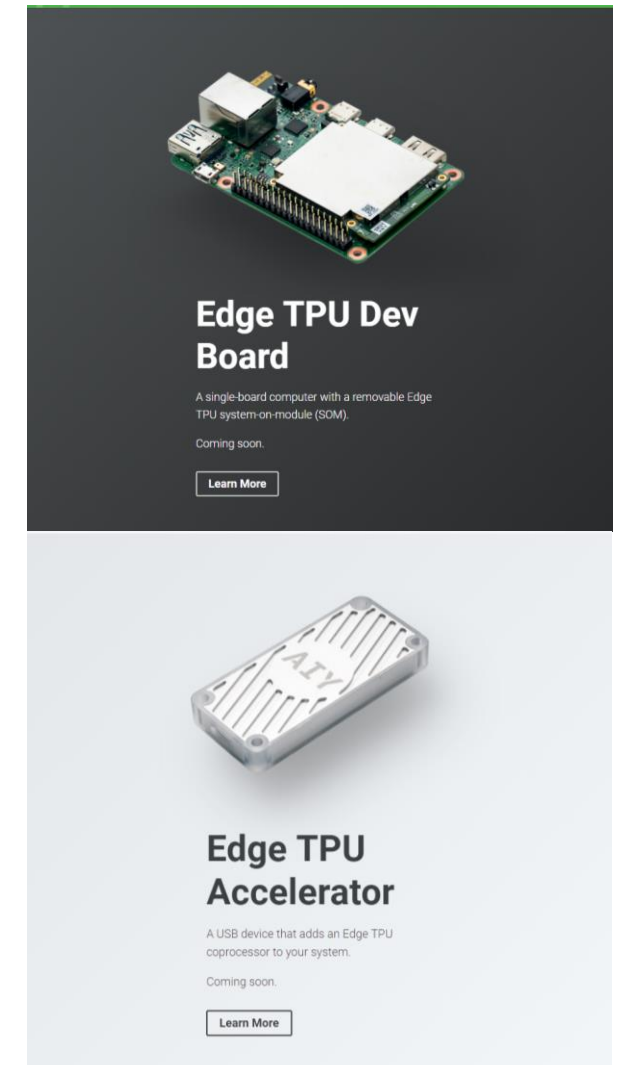
Vision Kit
Do-it-yourself intelligent camera.
Experiment with image recognition
using neural networks.
[available at @com](#) [Build it](#)

Voice Kit
Do-it-yourself intelligent speaker.
Experiment with voice recognition and
the Google Assistant.
[available at @com](#) [Build it](#)

Build an intelligent camera that can see faces, detect emotions, and recognize common objects. Create your own projects that take action based on what the Vision Kit sees.

What is the speed of light?
The speed of light is 299,792,458 meters per second.

With the Google Assistant built in, build an intelligent speaker that can understand you, and respond when you ask it a question or tell it to do something. Create your own projects that use voice recognition to control robots, music, games, and more.



The image displays two promotional cards for Google AIY hardware. The top card, for the Edge TPU Dev Board, features a dark background and shows a green circuit board with a white TPU module. It includes the text 'Edge TPU Dev Board', 'A single-board computer with a removable Edge TPU system-on-module (SOM).', 'Coming soon.', and a 'Learn More' button. The bottom card, for the Edge TPU Accelerator, features a light blue background and shows a small, rectangular silver USB device. It includes the text 'Edge TPU Accelerator', 'A USB device that adds an Edge TPU coprocessor to your system.', 'Coming soon.', and a 'Learn More' button.

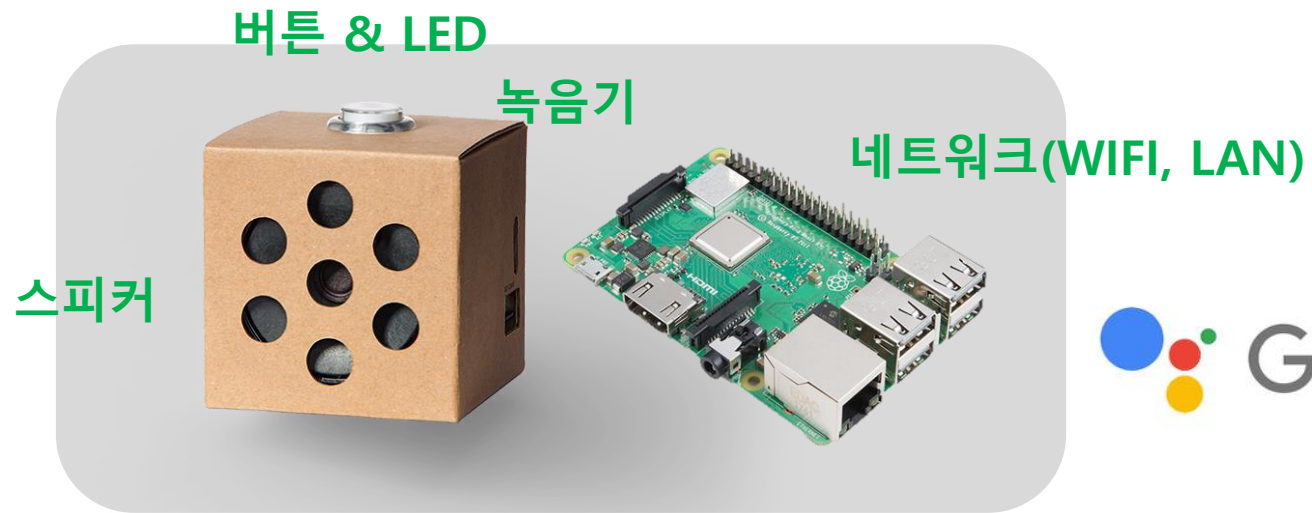
Edge TPU Dev Board
A single-board computer with a removable Edge TPU system-on-module (SOM).
Coming soon.
[Learn More](#)

Edge TPU Accelerator
A USB device that adds an Edge TPU coprocessor to your system.
Coming soon.
[Learn More](#)

- <https://aiyprojects.withgoogle.com/>

voice kit 구조

Android

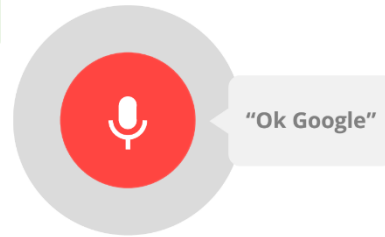


Google 어시스턴트

프로그램
(python)

인공지능 스피커

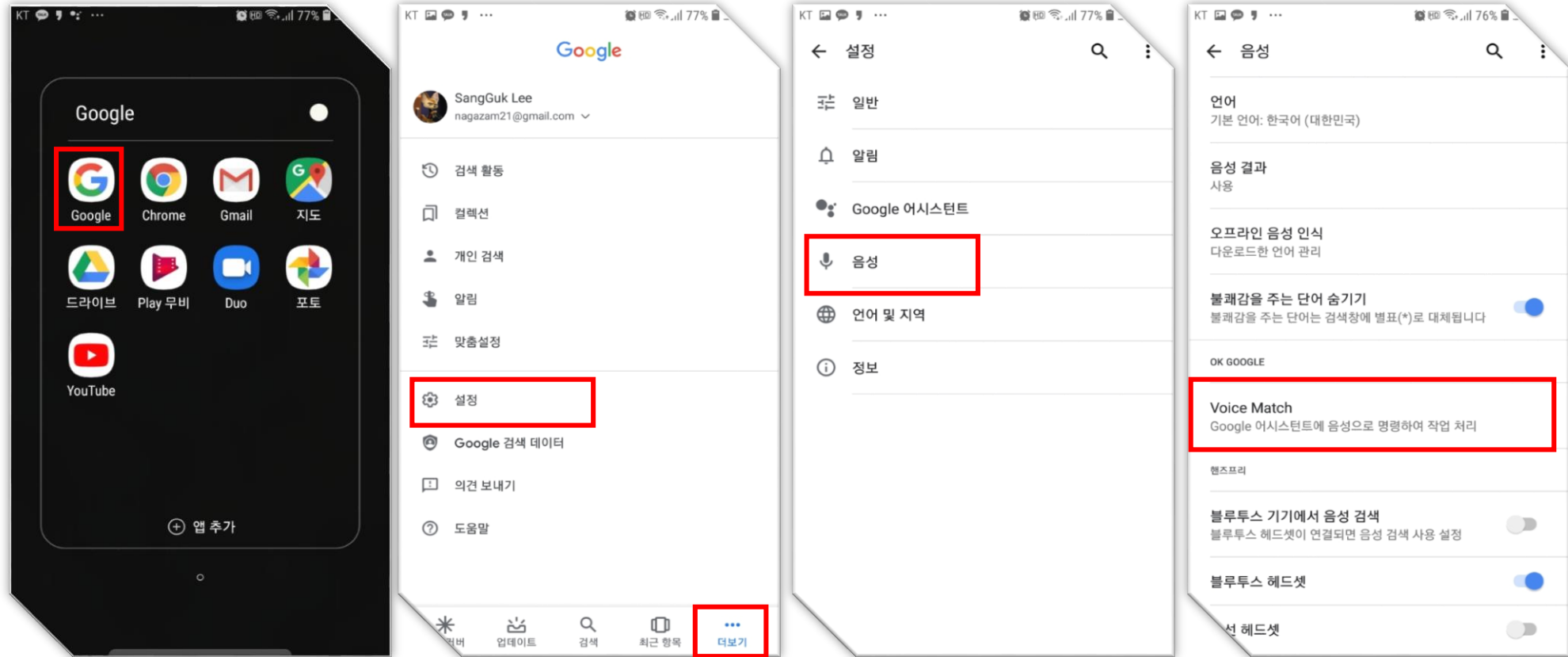
Android



여러분들은 이미 하나 씩 가지고 계십니다.

ok google

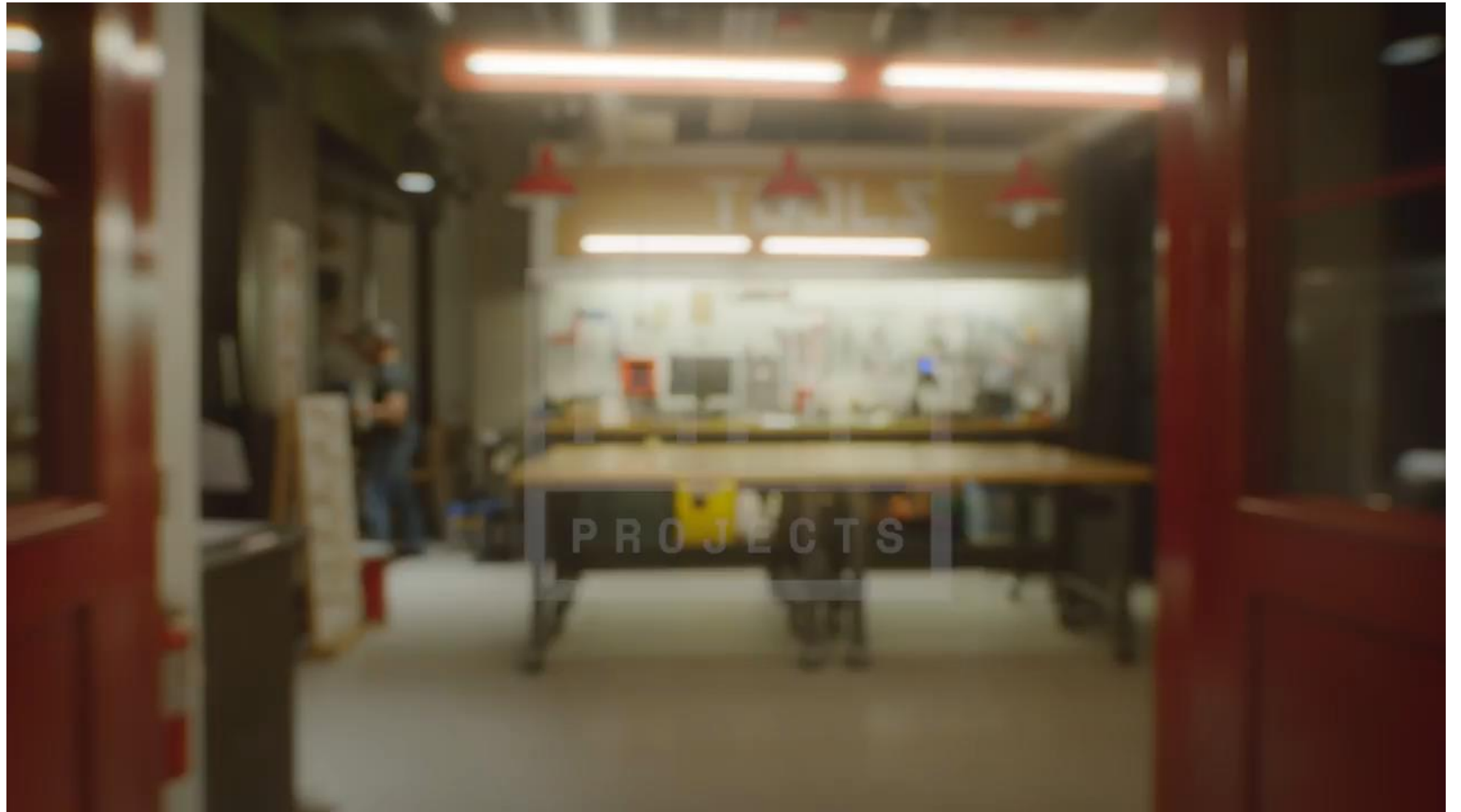
ok Google



GOOGLE 앱 > 더보기 > 설정 > 음성 > voice Match > voice Match로 액세스 활성화

intro

Introduce



- <https://www.youtube.com/watch?v=upwcDQnQhls&feature=youtu.be>

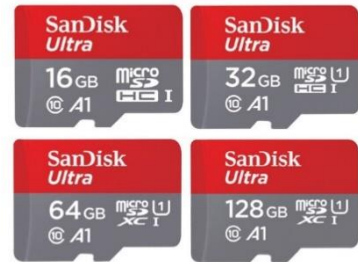
kit



추가 필요

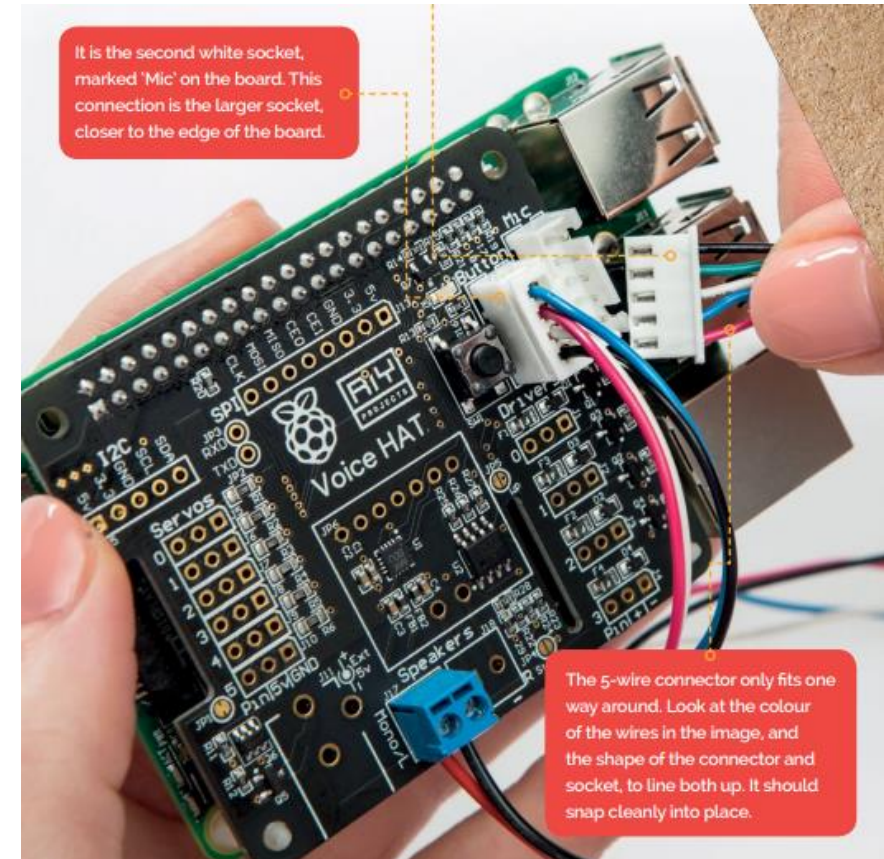
material

SanDisk



- <https://aiyprojects.withgoogle.com/voice/#project-overview>

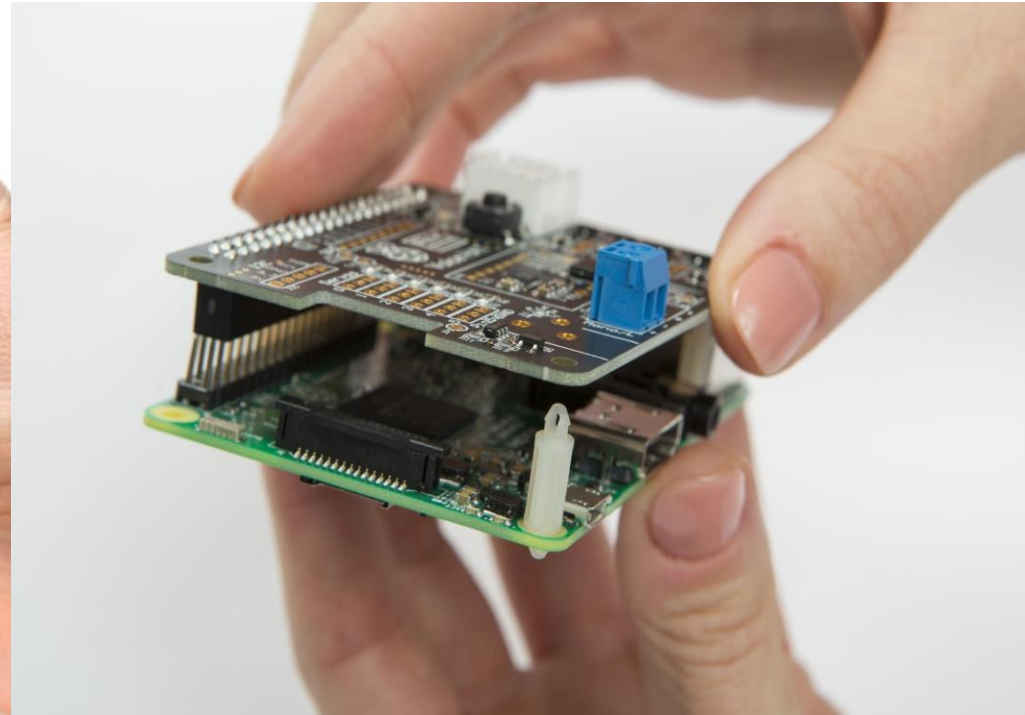
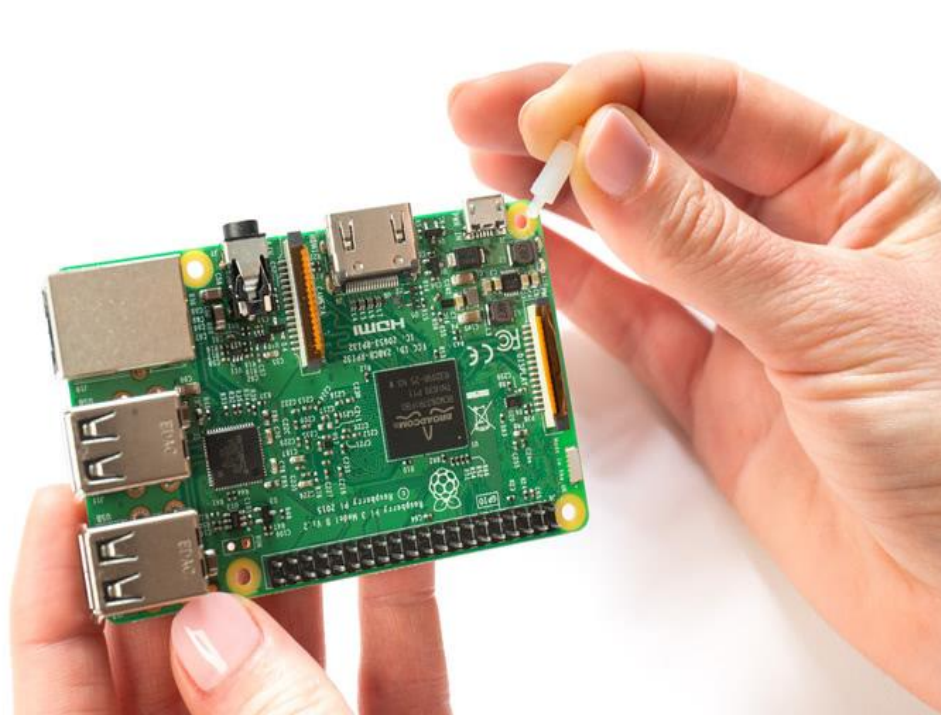
① Hardware Assemble



- <https://aiyprojects.withgoogle.com/voice-v1/>
- 유입물 16페이지 ~ 19페이지
- 부품 구성 진행

Making start 하드웨어 조립

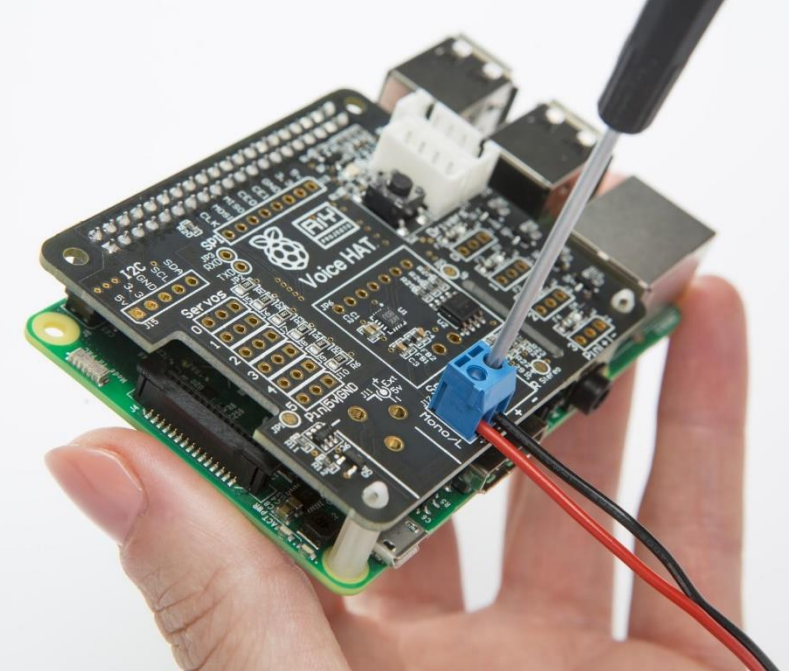
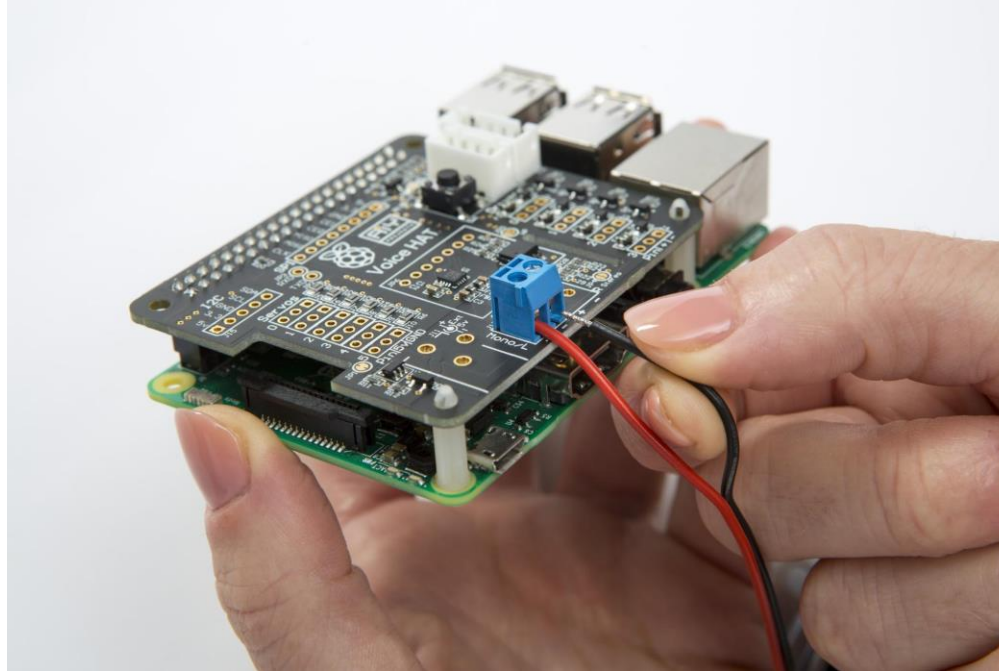
GOOGLE
AIY
PROJECT



- 라즈베리파이와 두 개의 플라스틱 standoff 로 쉴드 와 고정

Making start 하드웨어 조립

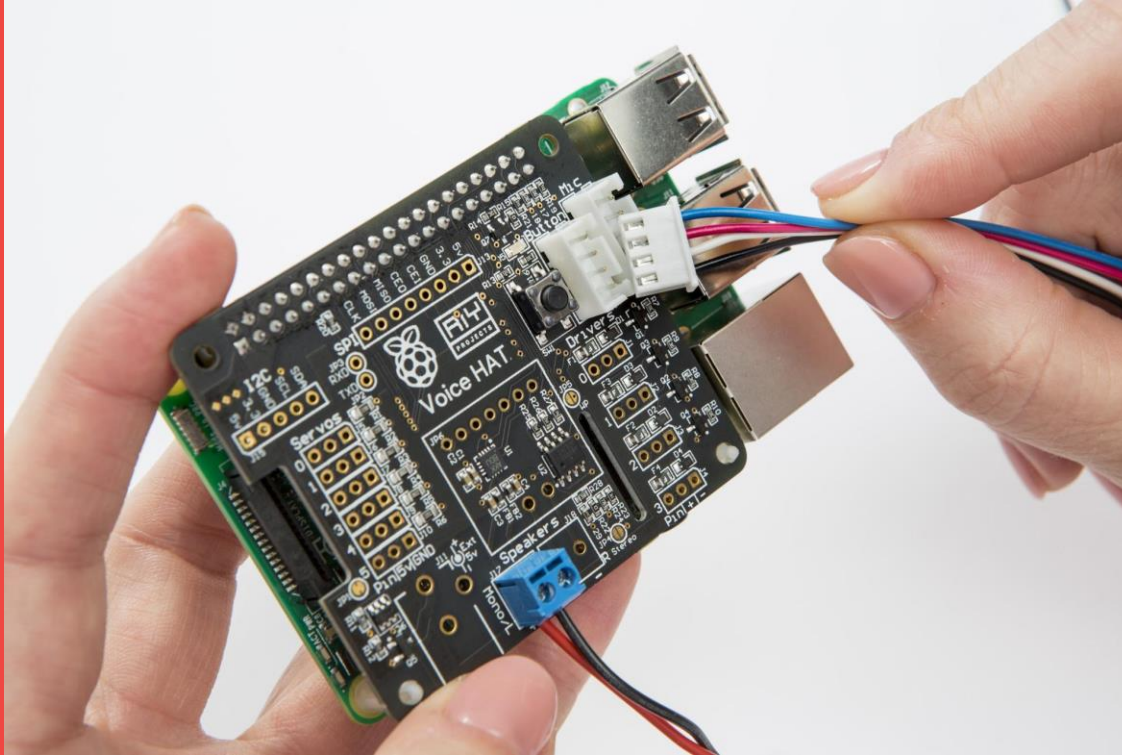
GOOGLE
AIY
PROJECT



- 스피커 연결
- 빨간색 전선과 검정색 전선 연결
- **빨간 +** **검정 -**
- 드라이버로 와이어 고정 후 전선 잡아 당겨서 안전한지 확인

Making start 하드웨어 조립

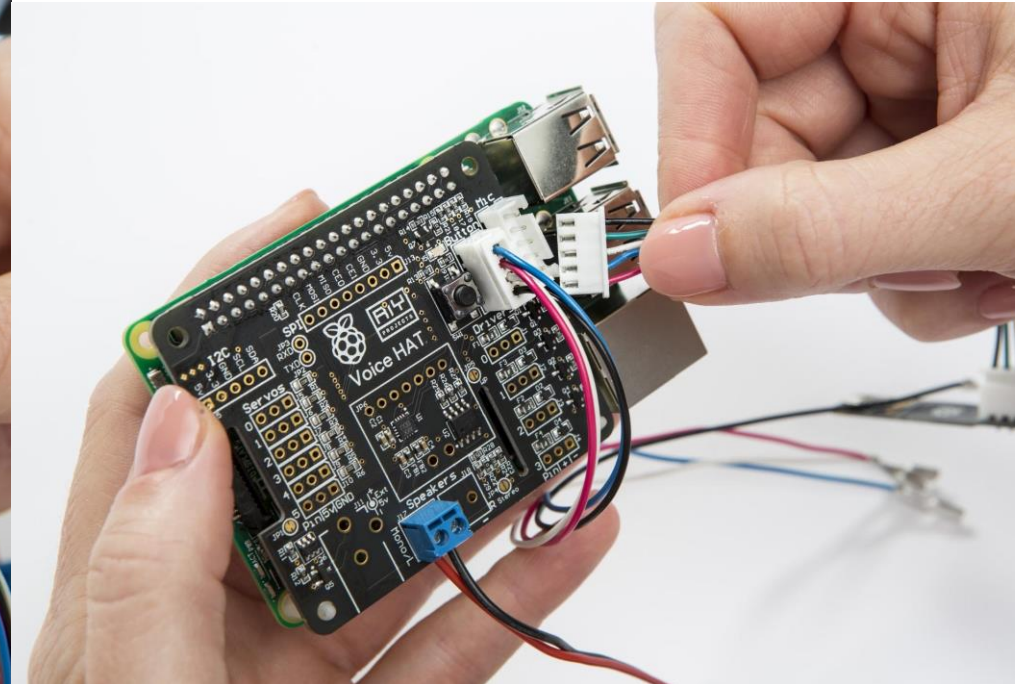
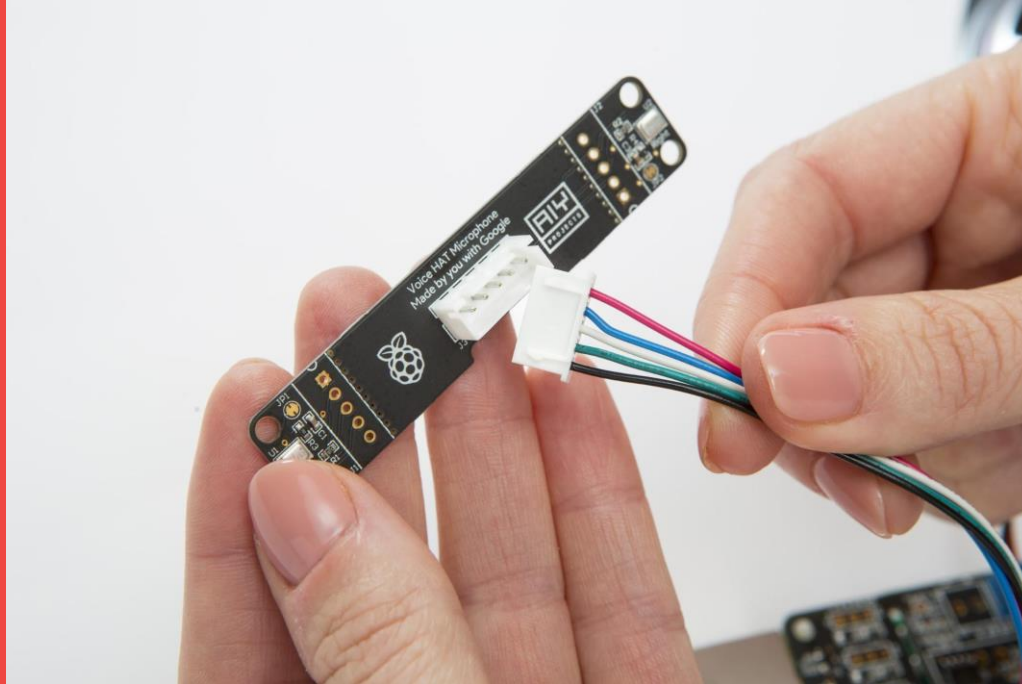
GOOGLE
AIY
PROJECT



- 4개 선 버튼 케이블을 찾아서 흰색 단자 부분을 쉴드 보드의 button 부분 단자에 꽂기

Making start 하드웨어 조립

GOOGLE
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PROJECT



- 라즈베리파이와 두 개의 플라스틱 standoff 로 쉴드와 고정

② BOX FRAME



- <https://aiyprojects.withgoogle.com/voice-v1/>
- 유입물 20~33

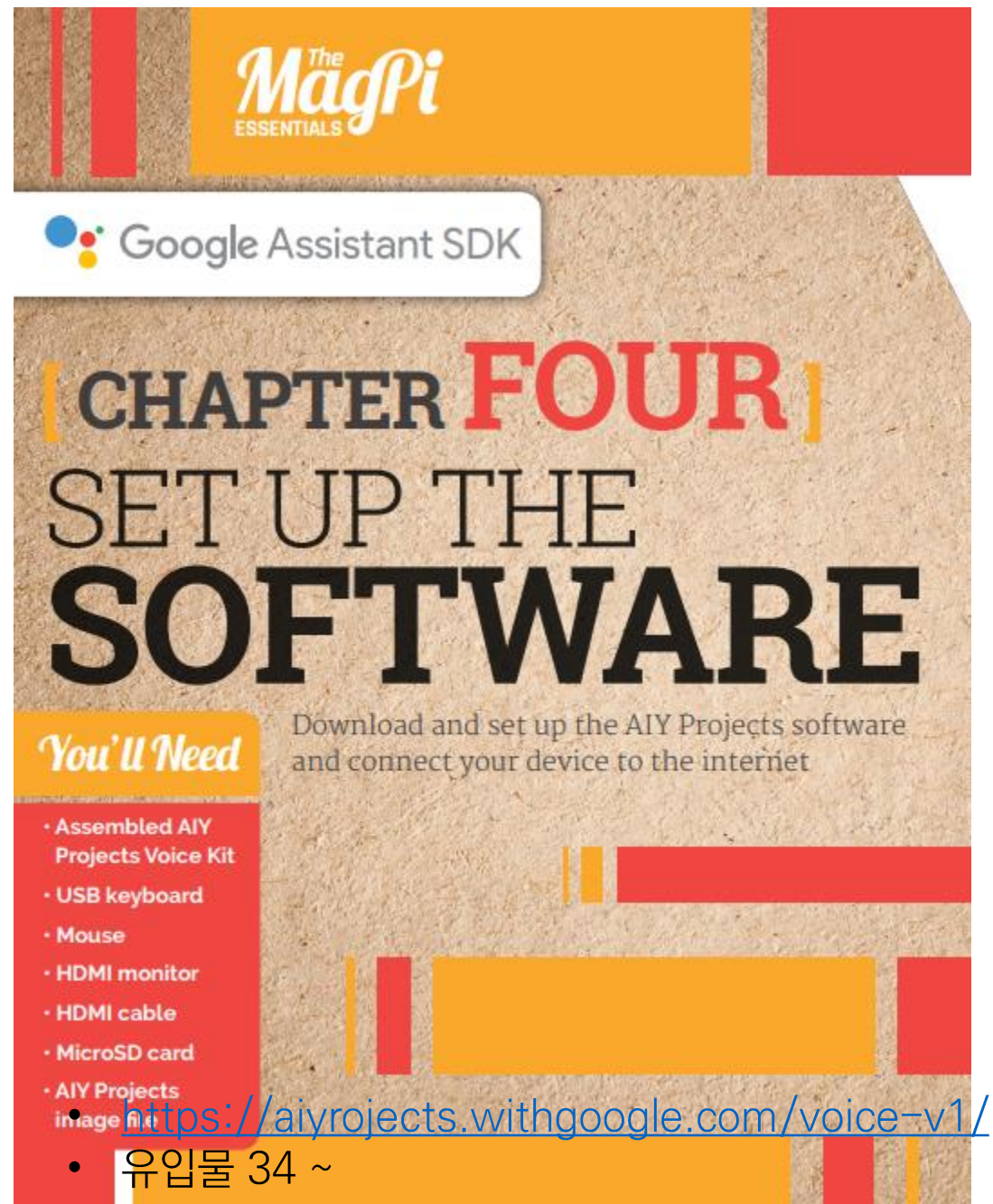
box 조립 frame 완성

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PROJECT



- 유입물 20 ~ 33
- <https://aiyprojects.withgoogle.com/voice-v1/>
- https://www.raspberrypi.org/magpi-issues/Essentials_AIY_Projects_Voice_v1.pdf

③ software setup



img 다운로드

GET THE VOICE KIT SYSTEM IMAGE

The Voice Kit requires a special version of the Raspbian operating system that includes some extra AIY software. So before you begin, you need to download the Voice Kit system image and flash it to your MicroSD card.

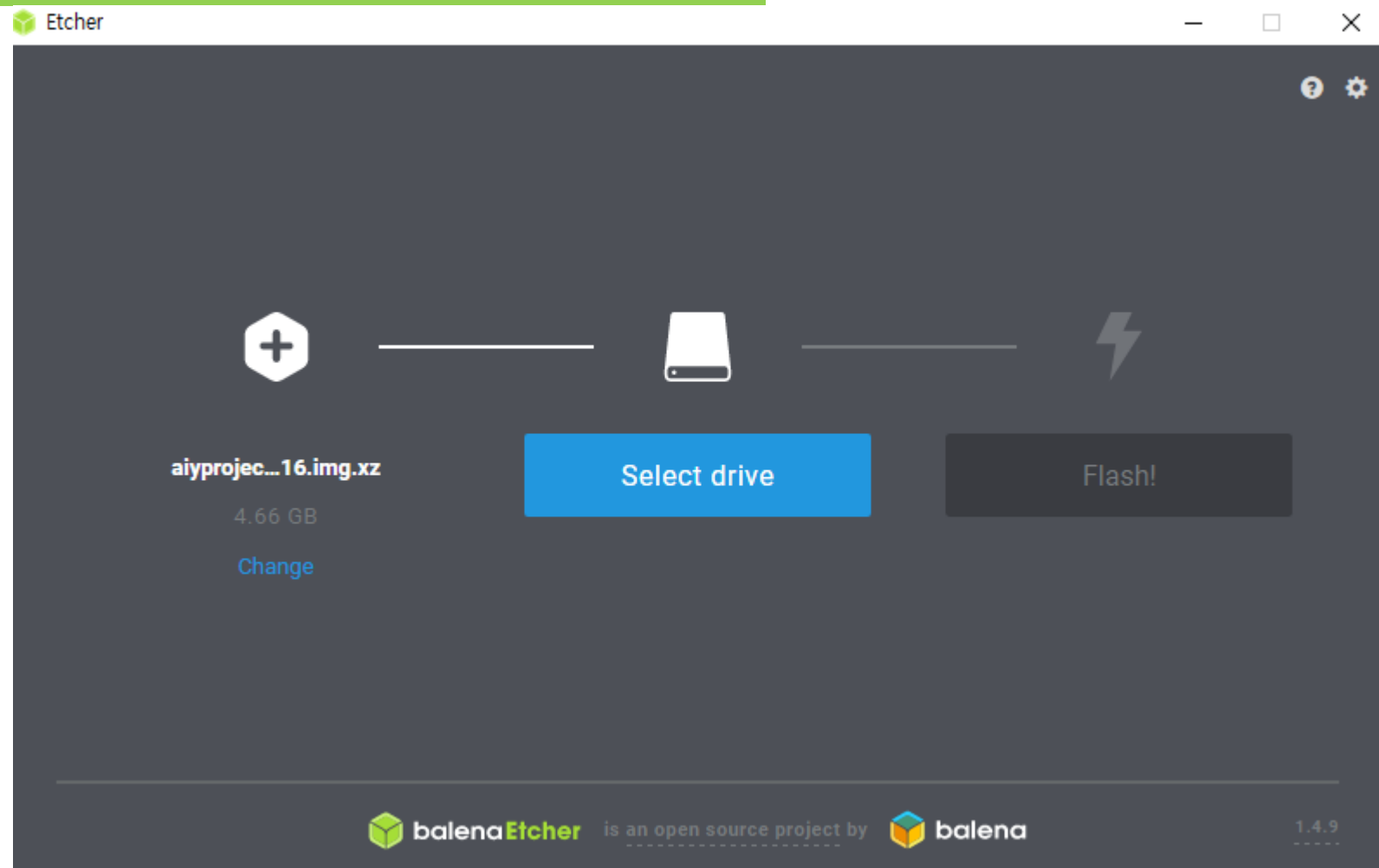
- ① Download the latest `.img.xz` file from the [releases page on GitHub](#).
- ② Use an adapter to connect your MicroSD card to your computer.
- ③ Use a program such as [Etcher](#) to flash the `.img.xz` file onto your MicroSD card. (Etcher is free and works on Windows, Mac OS, and Linux.)

Flashing the system image onto the card can take a several minutes. So while that's going, start assembling the kit. Once the kit is assembled, you'll put the card into it.

- <https://aiyprojects.withgoogle.com/>
- >Voice KIT > [follow the assembly instructions for the earlier version](#).
- >> <https://github.com/google/aiyprojects-raspbian/releases>
- img.xz 파일 다운로드(1.2G)
- balenaEtcher-

img 다운로드

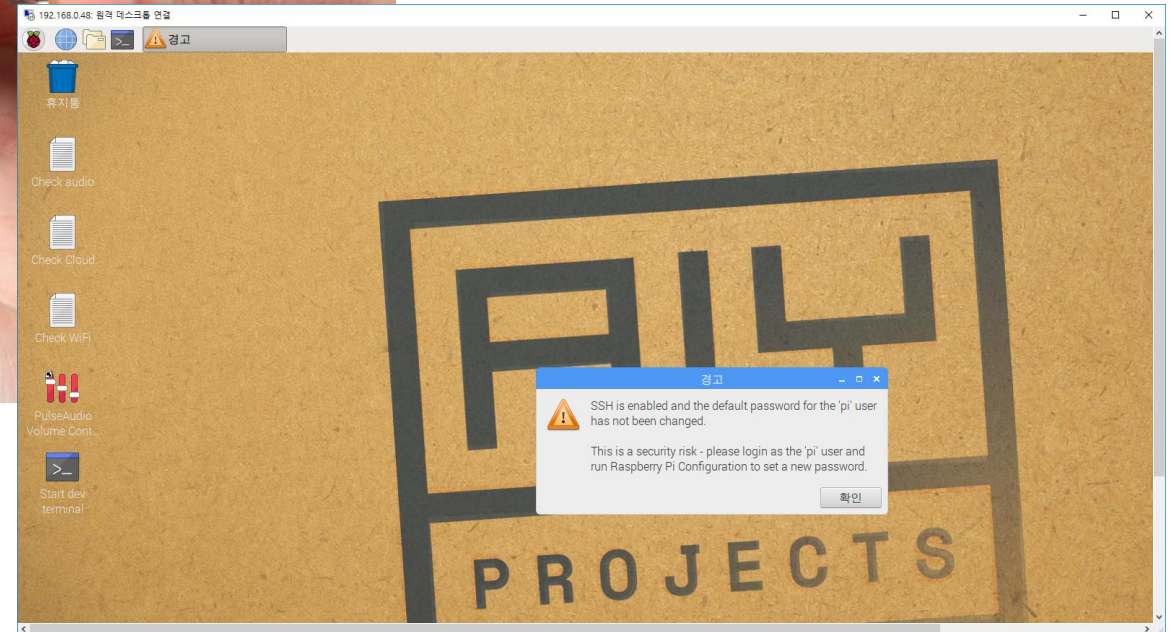
GOOGLE
AIY
PROJECT



- img.xz 파일 선택
- 드라이브 선택 주의
- flash 진행 약 10분 소요

부팅 시작

GOOGLE
AIY
PROJECT



- img.xz 파일 선택
- 드라이브 선택 주의
- flash 진행 약 10분 소요

셋팅

- 1) WIFI on / Bluetooth off
- 2) check Audio / alsamixer
- 3) check Wifi
- wifi 주소확인하기 (ifconfig)
- xrdp 설치 sudo apt-get install xrdp
- 한글폰트 설치 sudo apt-get install fonts-unfonts-core

GOOGLE
AIY
PROJECT



Google Cloud platform

GOOGLE
AIY
PROJECT

- 구글 가입
- 크로미엄 브라우저 실행
- <https://console.developers.google.com>
- 로그인 / new projet create
- 라이브러리 - google assistant API 사용설정
- 인증 정보 : create credentials >> choose Oauth client ID
 > name set > 어플리케이션 유형 “기타”
 > 다운로드 JSON

/home/pi/Downloads/json 파일 옮기기 /home/pi/assistant.json 이름 경로 변경

<https://myaccount.google.com/activitycontrols>

활성화

Google ASSISTANT API

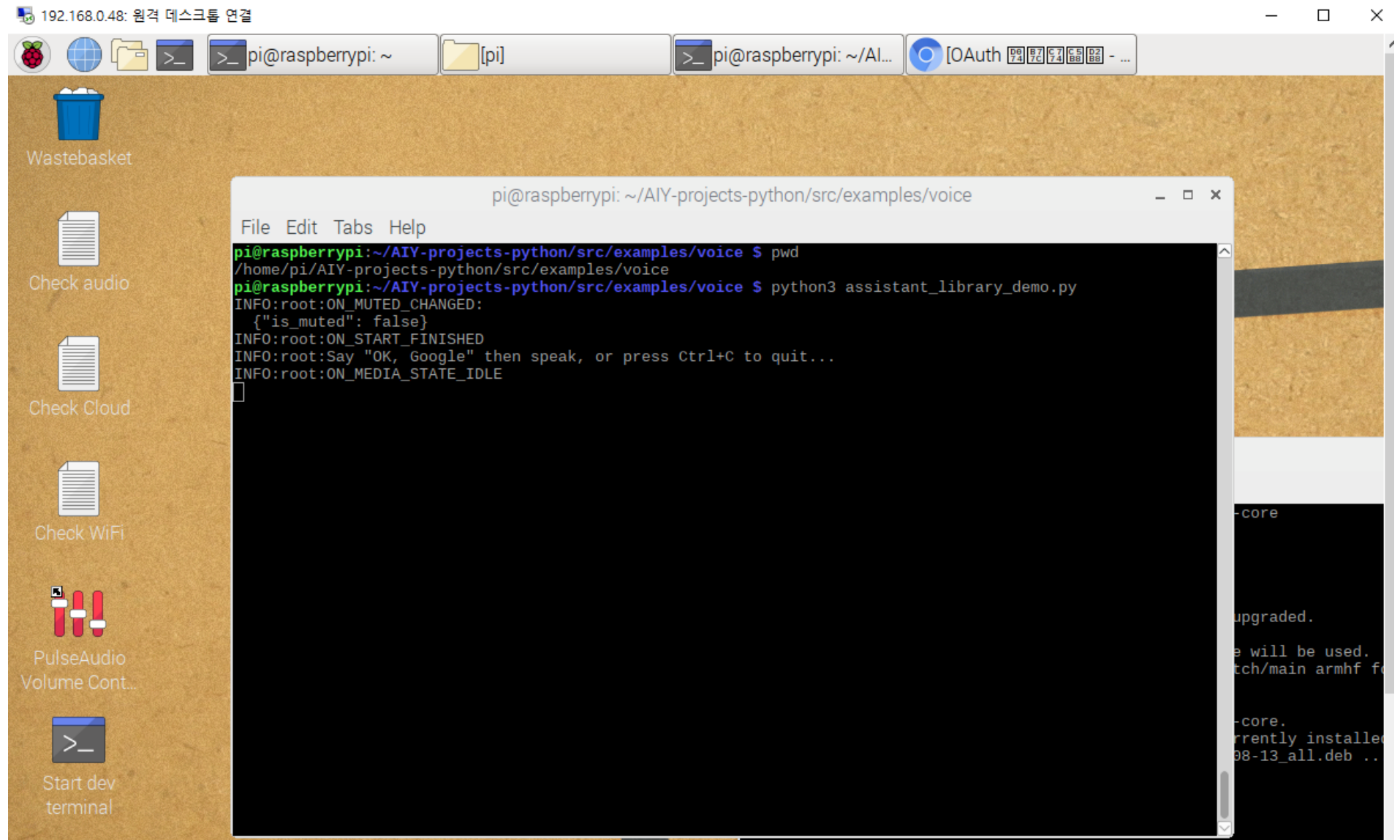
GOOGLE
AIY
PROJECT



구글 어시스턴트(Google Assistant)는 [구글](#)이 개발하고 2016년 5월 [자체 개발자 콘퍼런스](#)에서 발표한 [지능형 가상 비서](#)이다. [구글 나우](#)와 달리 구글 어시스턴트는 양방향 대화에 참여할 수 있다.

실행시켜보기

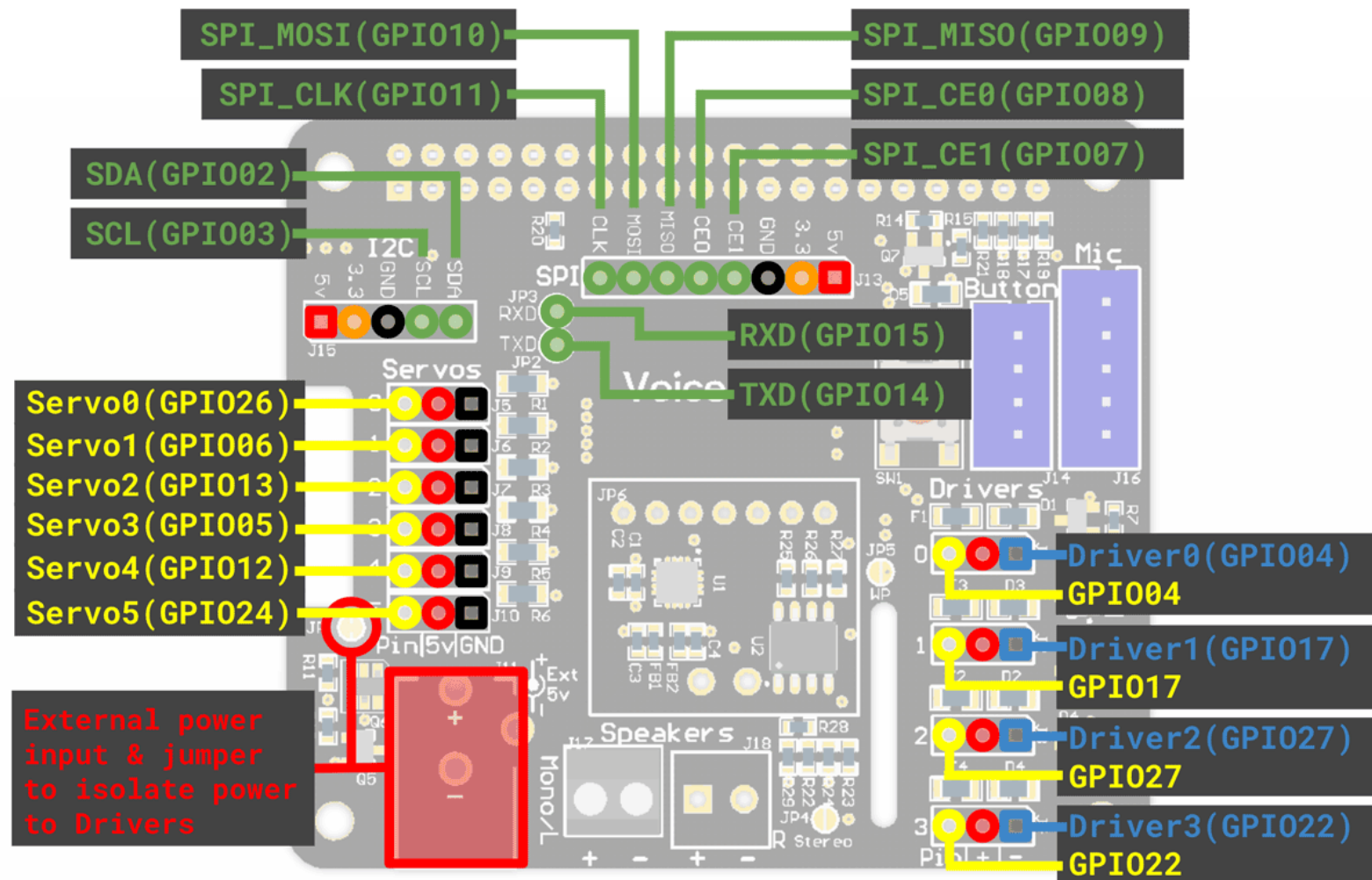
GOOGLE
AIY
PROJECT



한글 지원

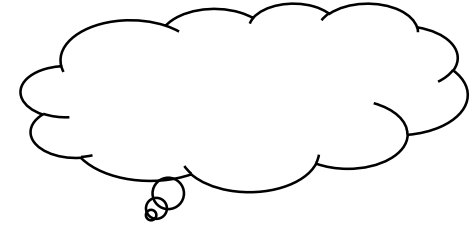
GOOGLE
AIY
PROJECT

<https://note.fumika.moe/2>



질문 해보기

GOOGLE
AIY
PROJECT



- <https://github.com/google/aiyprojects-raspbian/releases>