

# IoT with MIT App Inventor

## Fundamental

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# What is IoT?

**Bring computing off the screen and into the world of everyday things!**

The Internet of Things (IoT) refers to interfaces between everyday objects and the Internet, opening up a universe of new applications, smarter devices, and wider opportunities. With MIT App Inventor IoT, you can enter this universe as a creator, not just a consumer, even if you've never programmed before.

# What you can do?

You can develop IoT applications the same way you develop any other MIT App Inventor mobile apps. Now you can program devices, sensors, appliances, instruments, robots— anything that can be connected. Not only that, you can incorporate smartphone capabilities into your IoT creations.

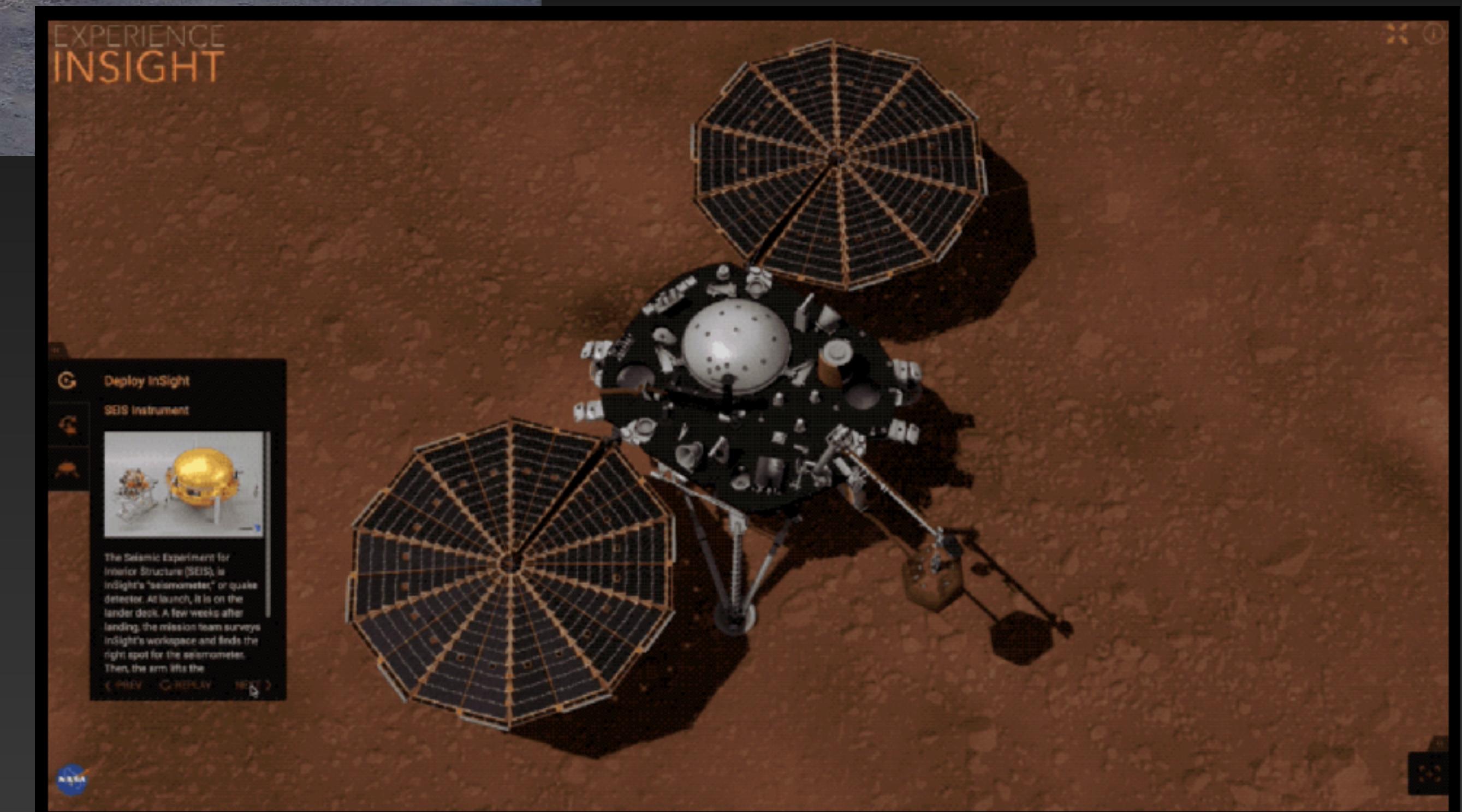
If you build an app that turns a light on and off, you can make the light respond to voice commands.

If you build a heart monitor, you can store the results on the Web or email them to trainers.

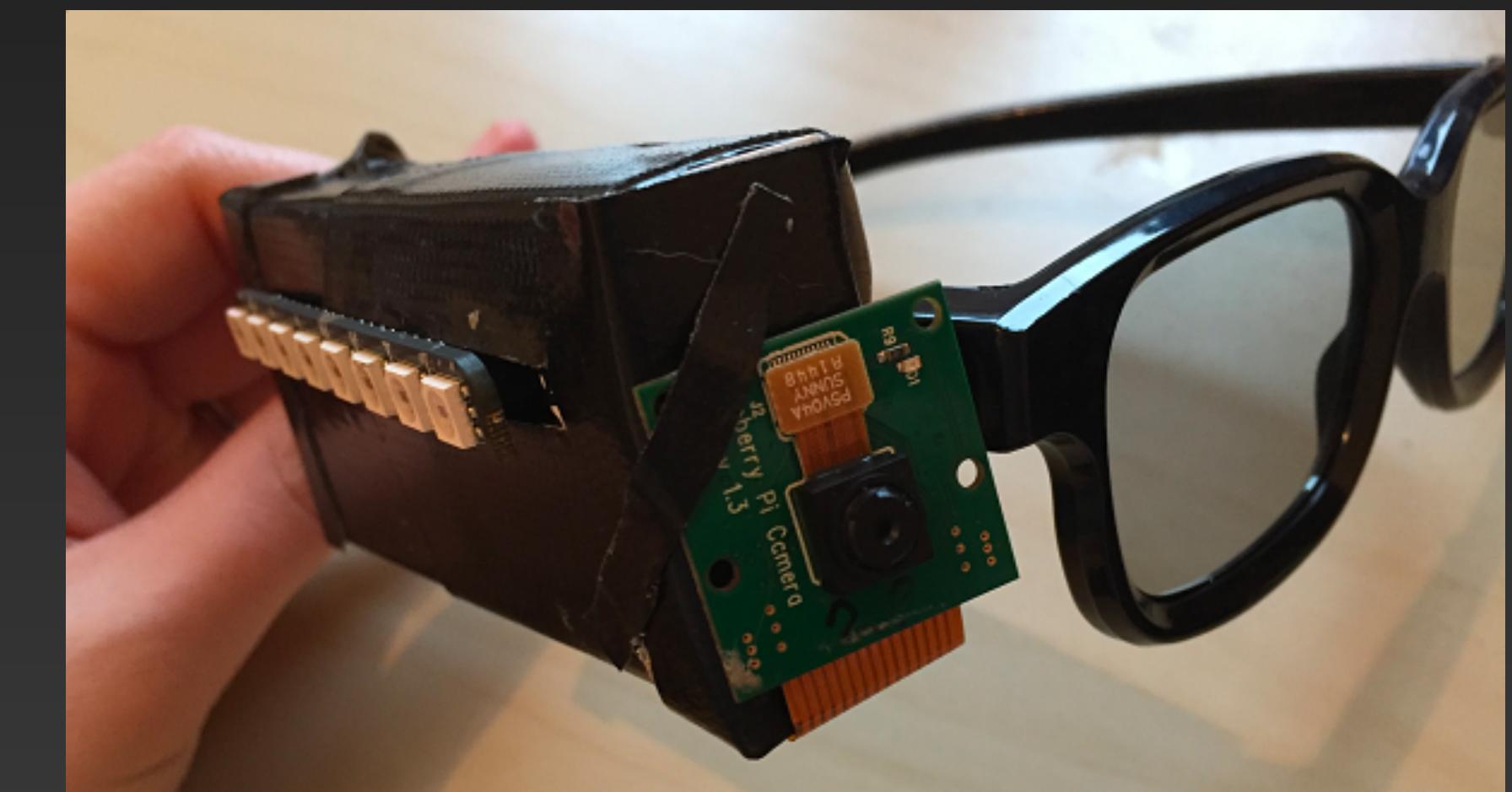
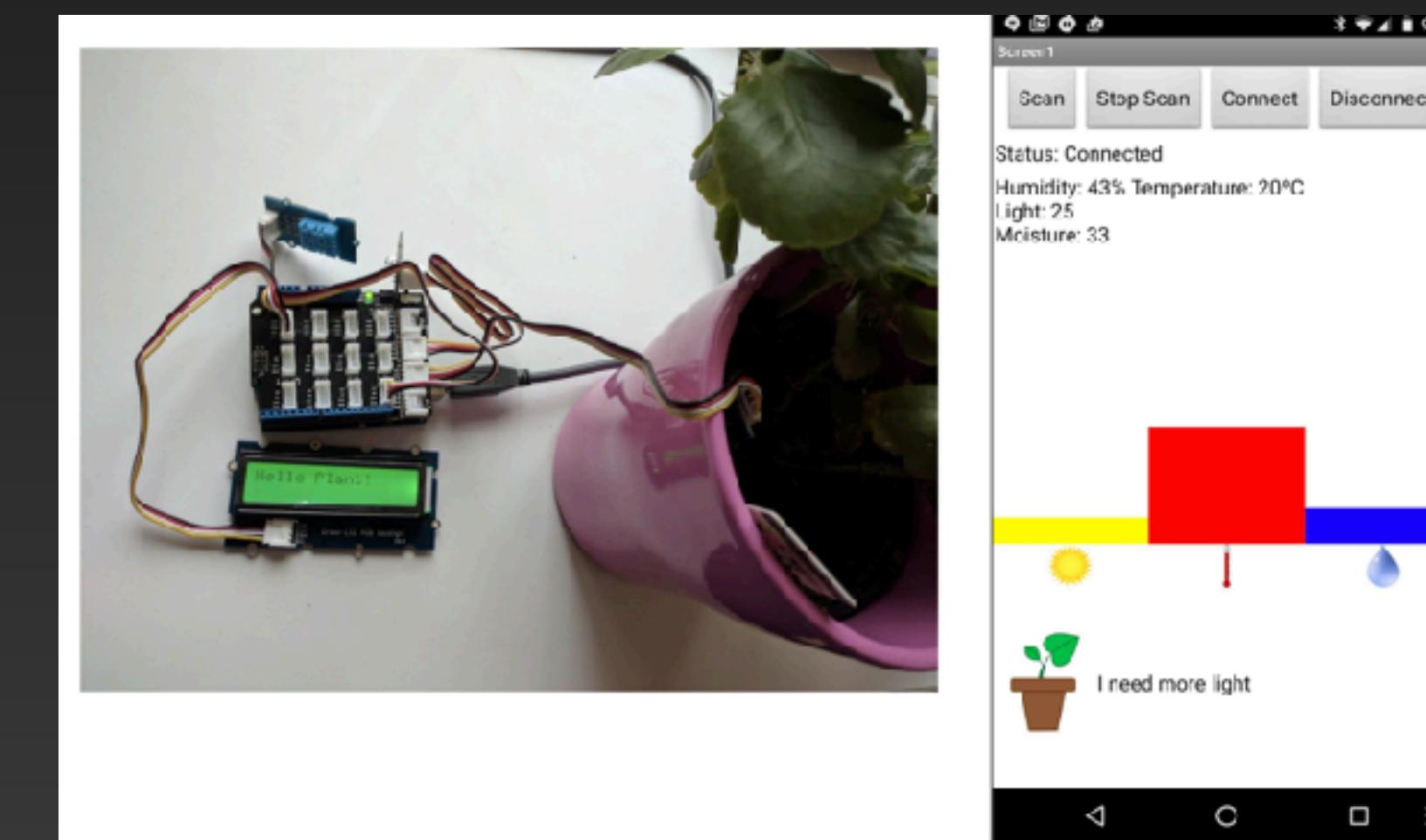
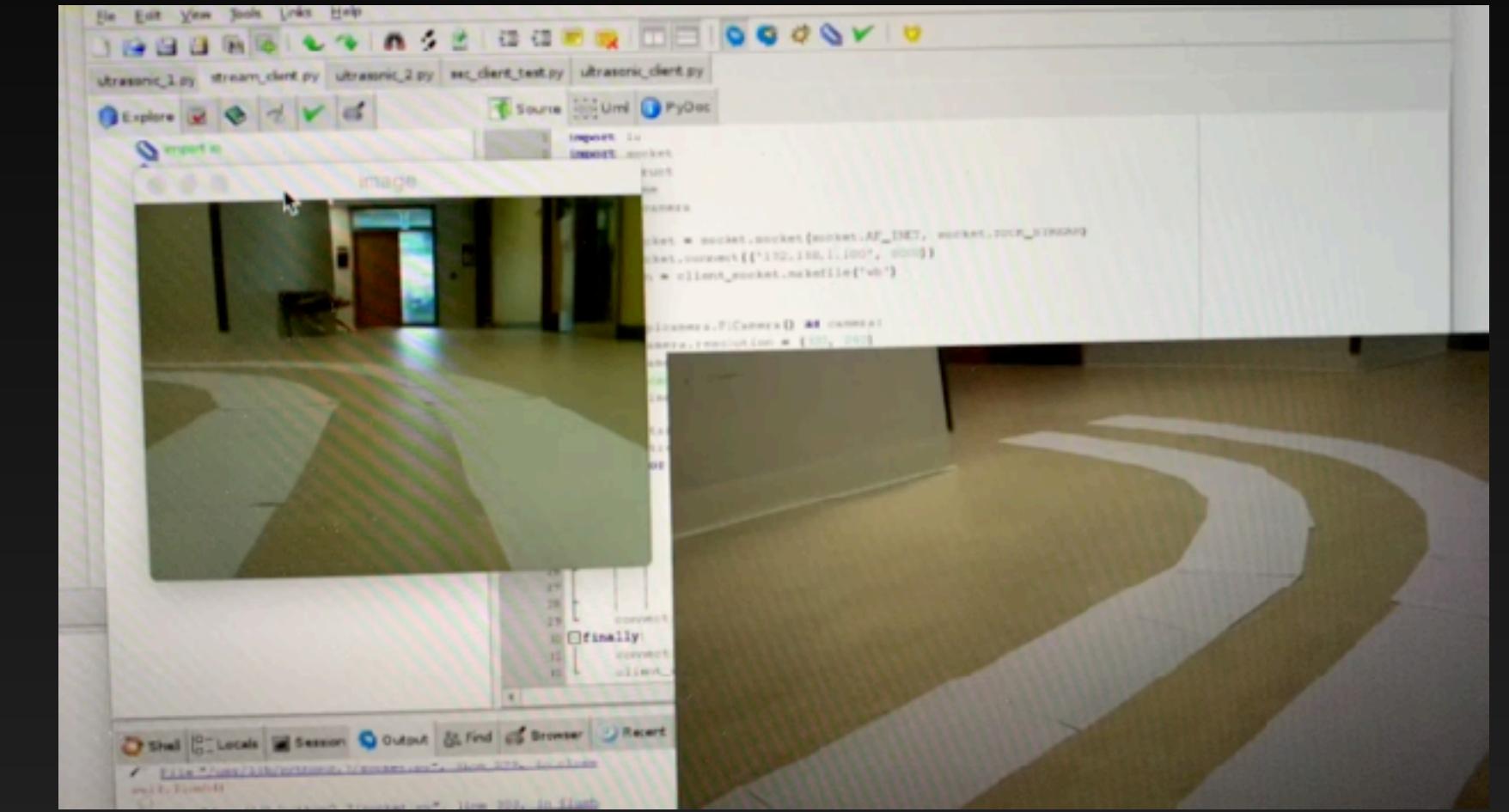
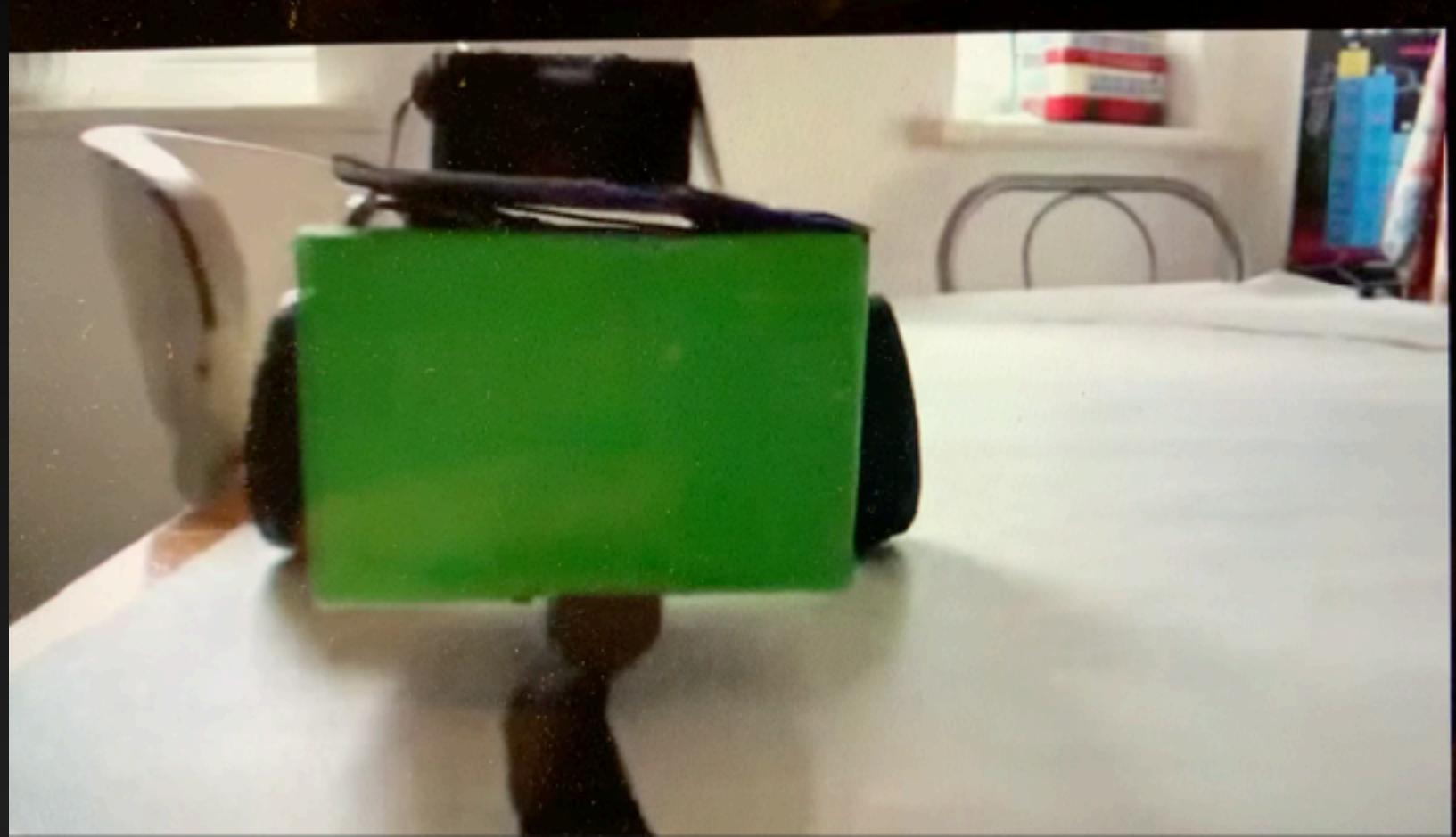
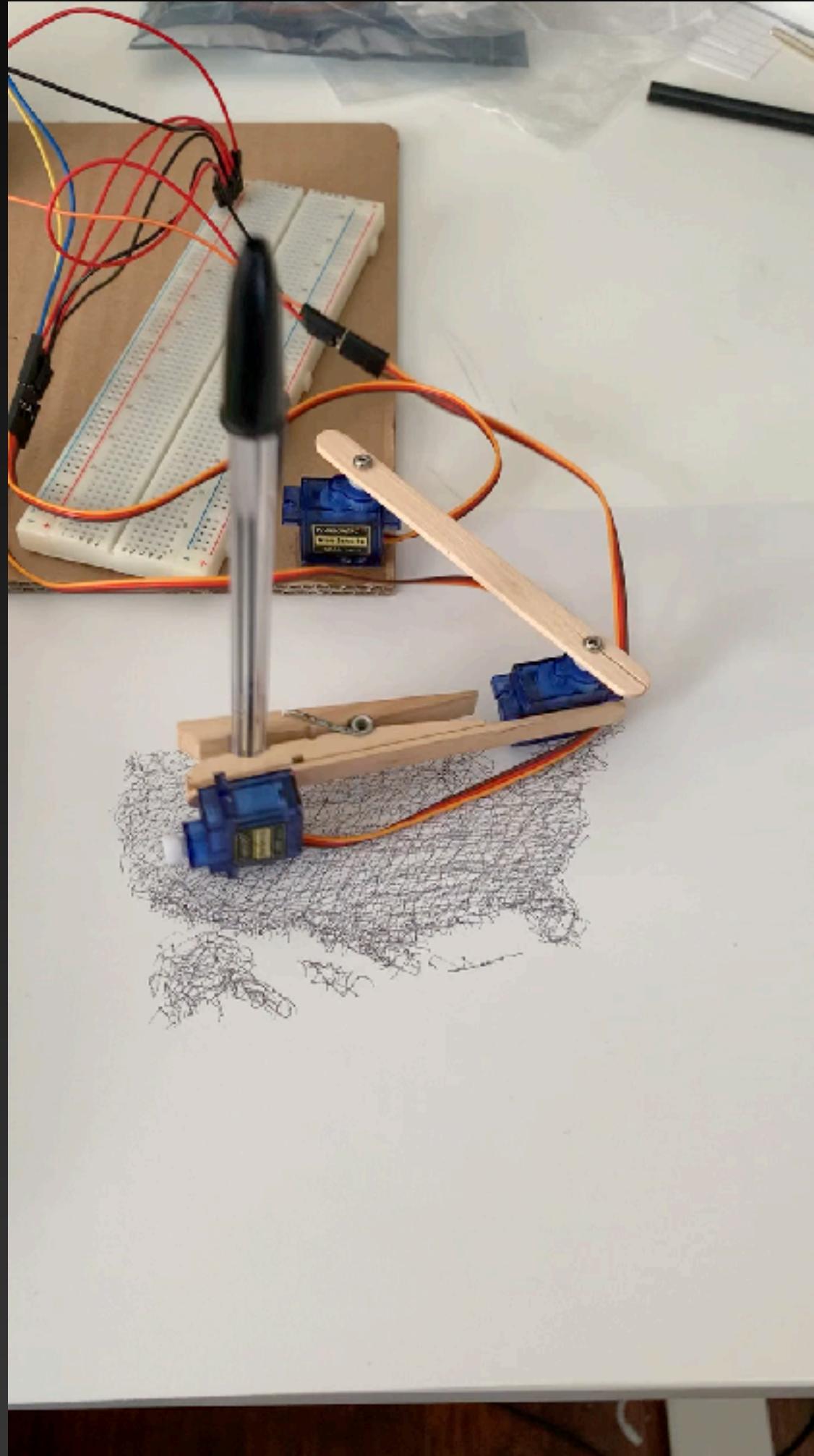
If you program a mobile robot, you can add geolocation to the robot's sensing abilities.

And many more...

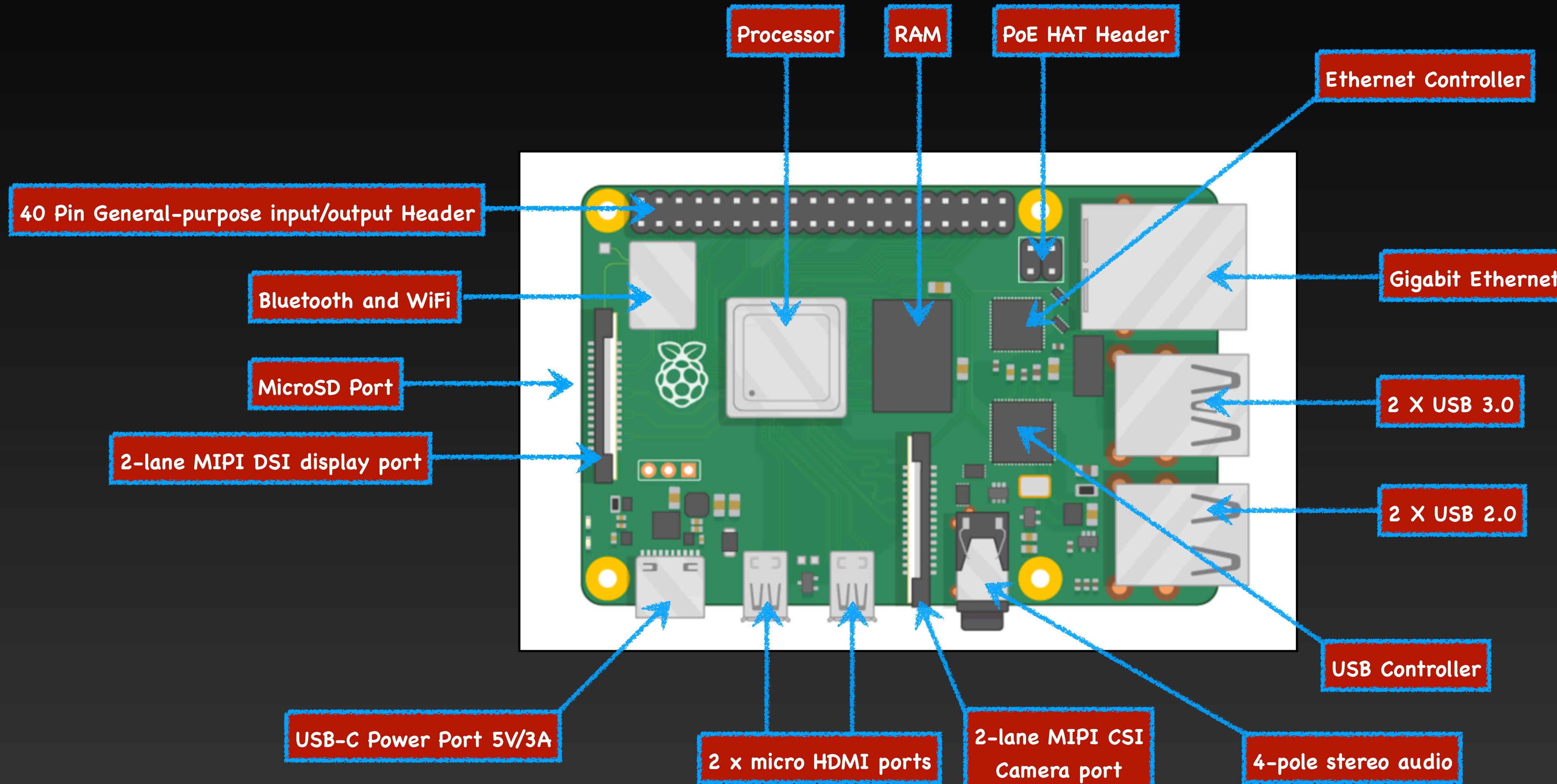
# Model 3



# Advanced Projects!

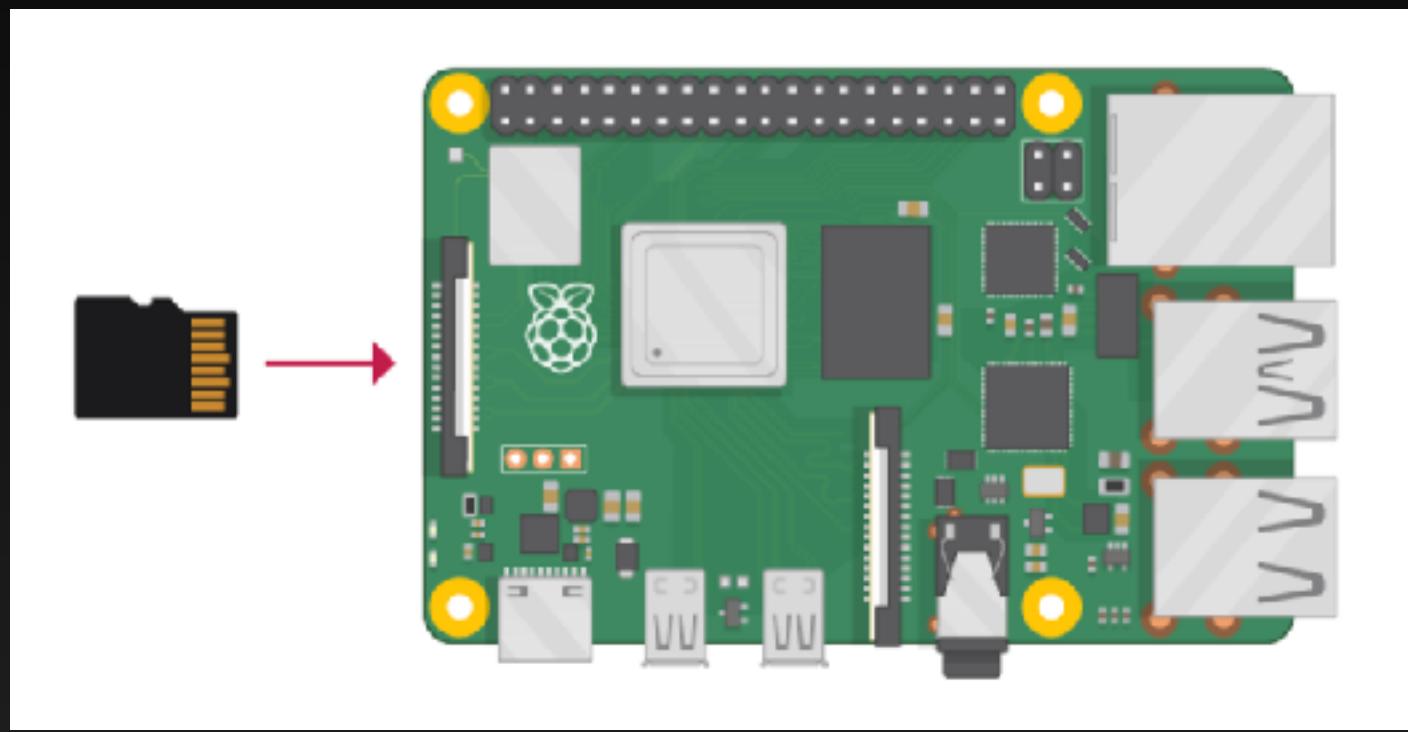


# Parts of Raspberry Pi 4

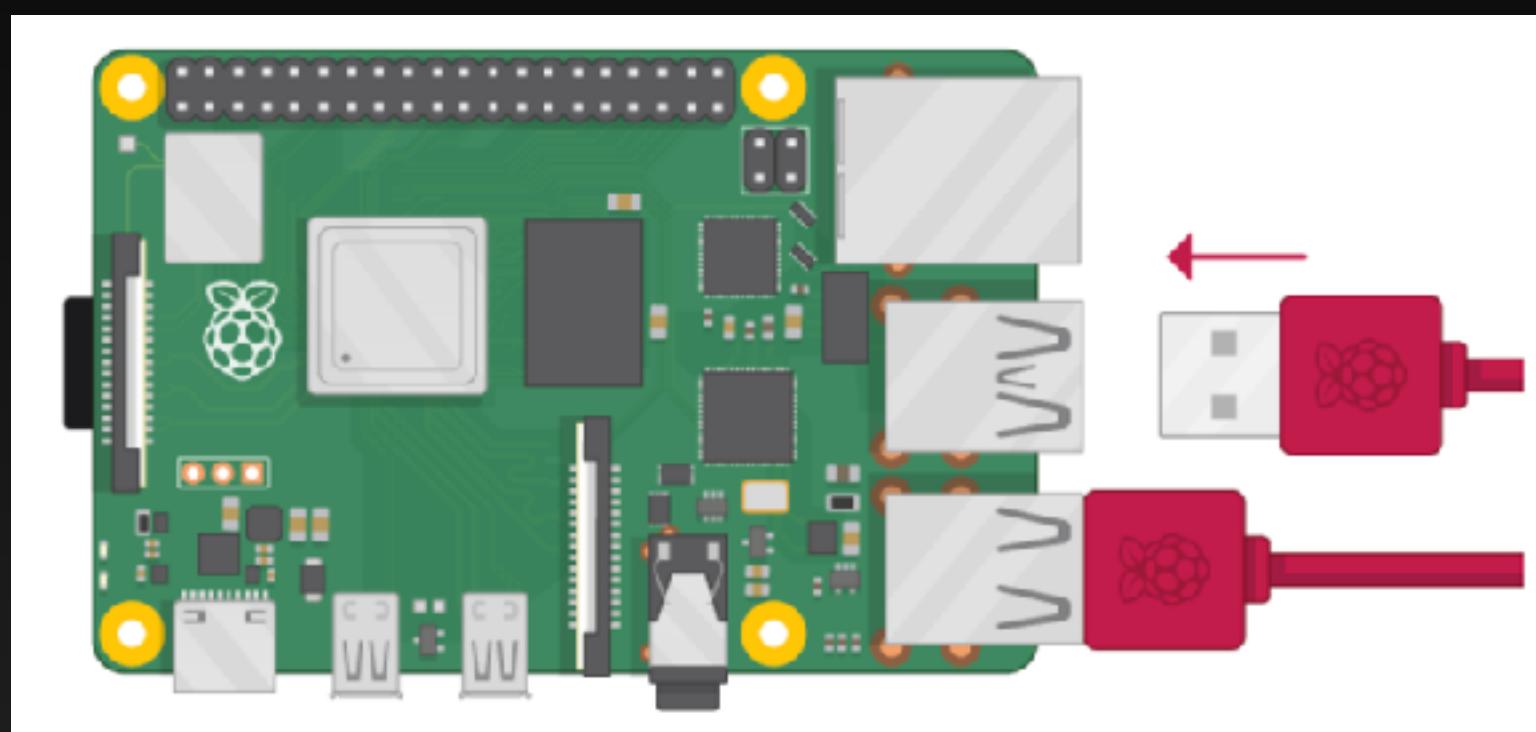


# Connect your Raspberry Pi

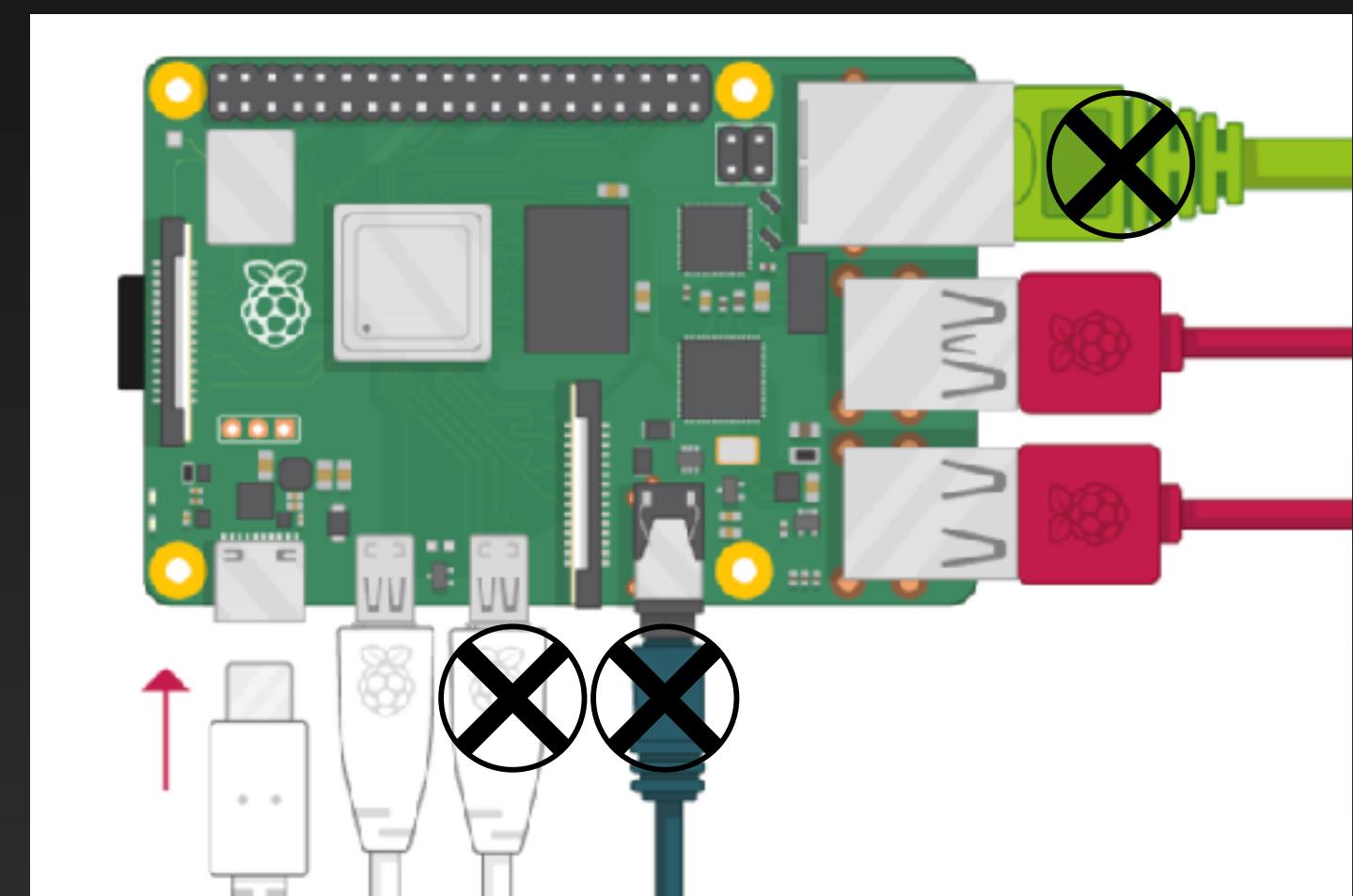
Insert microSD card with OS



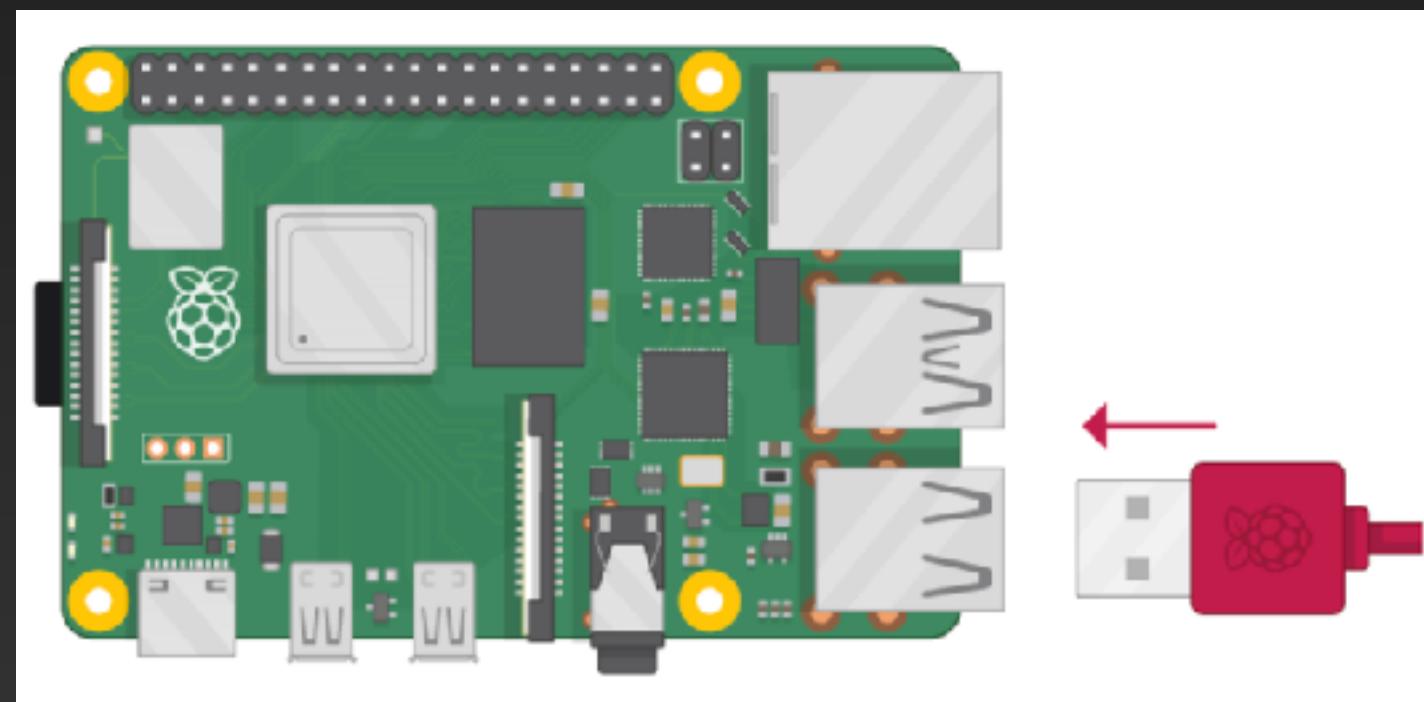
Connect keyboard



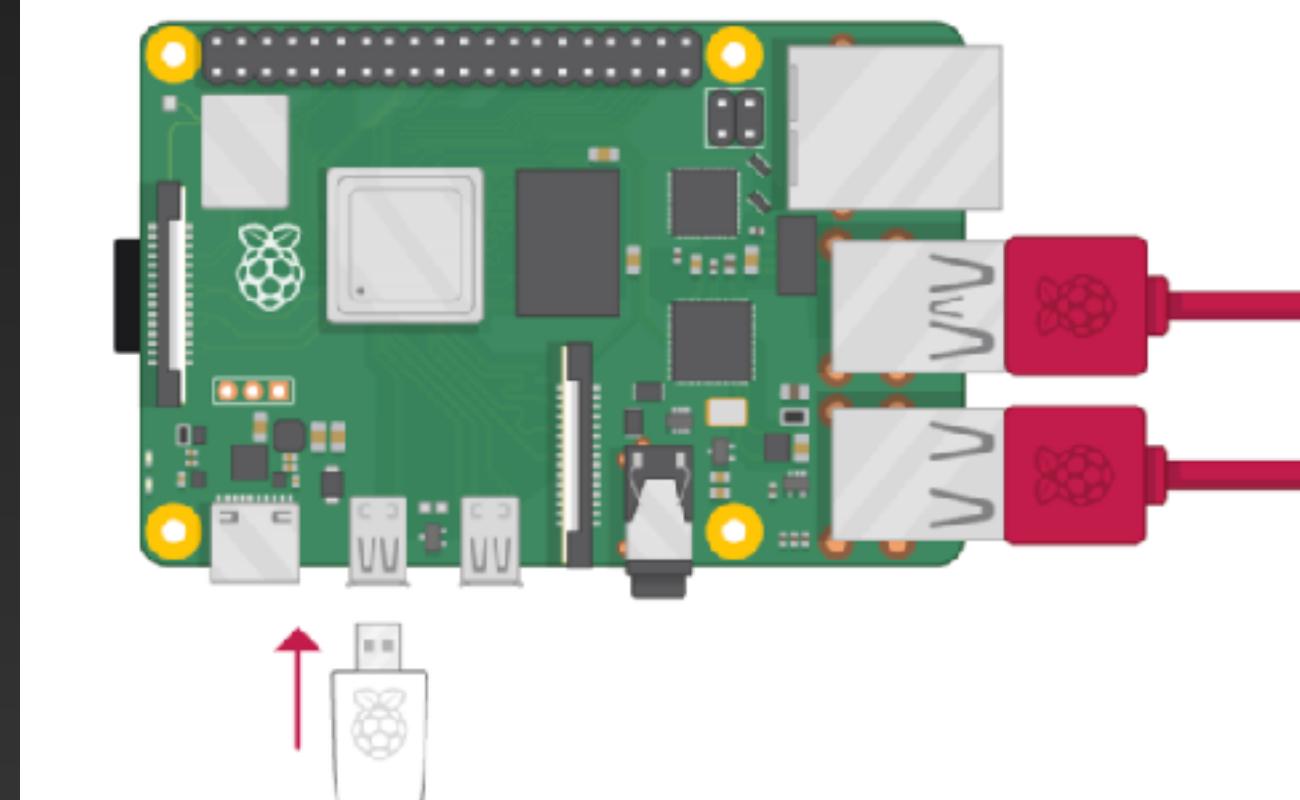
Connect Power



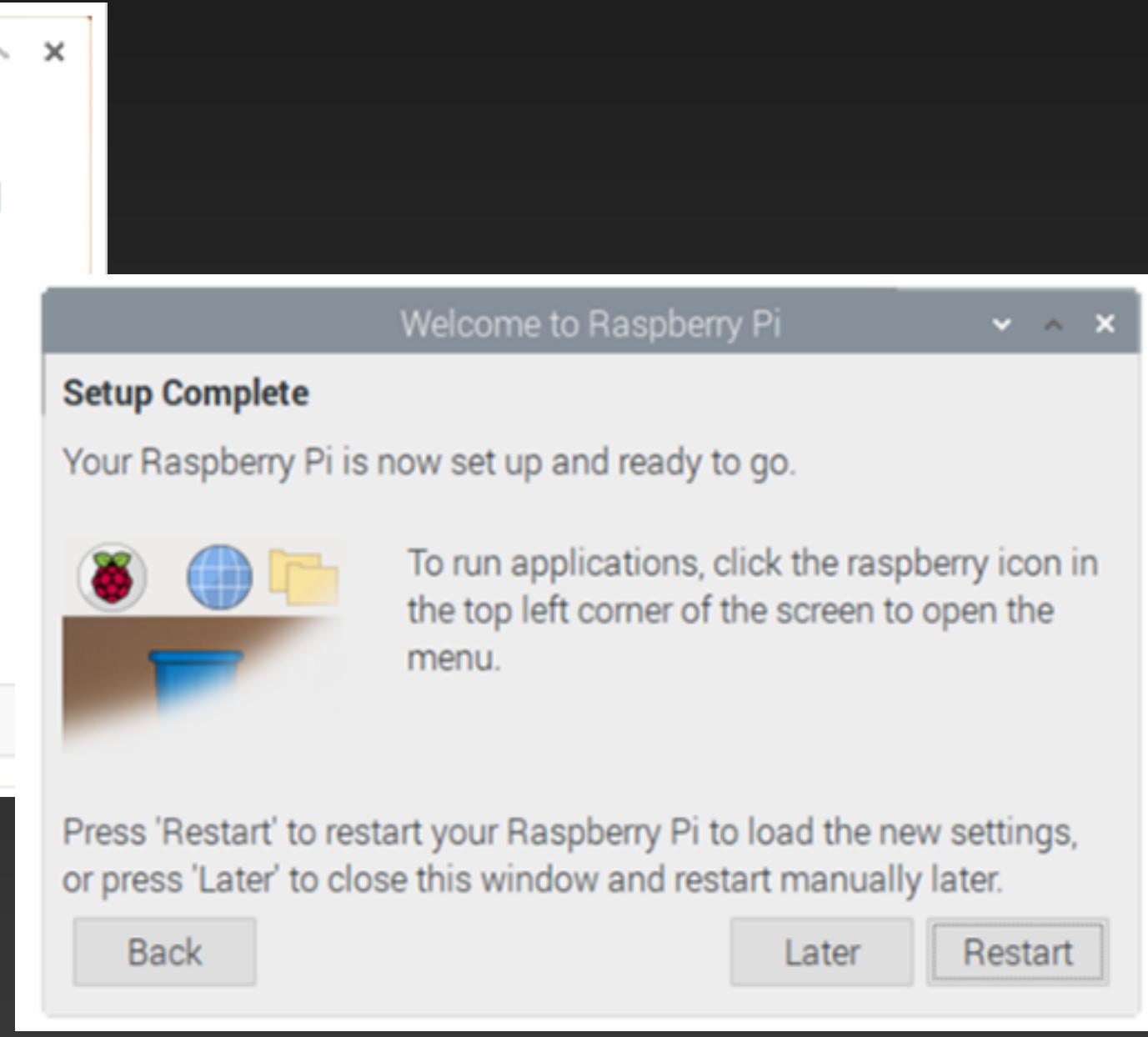
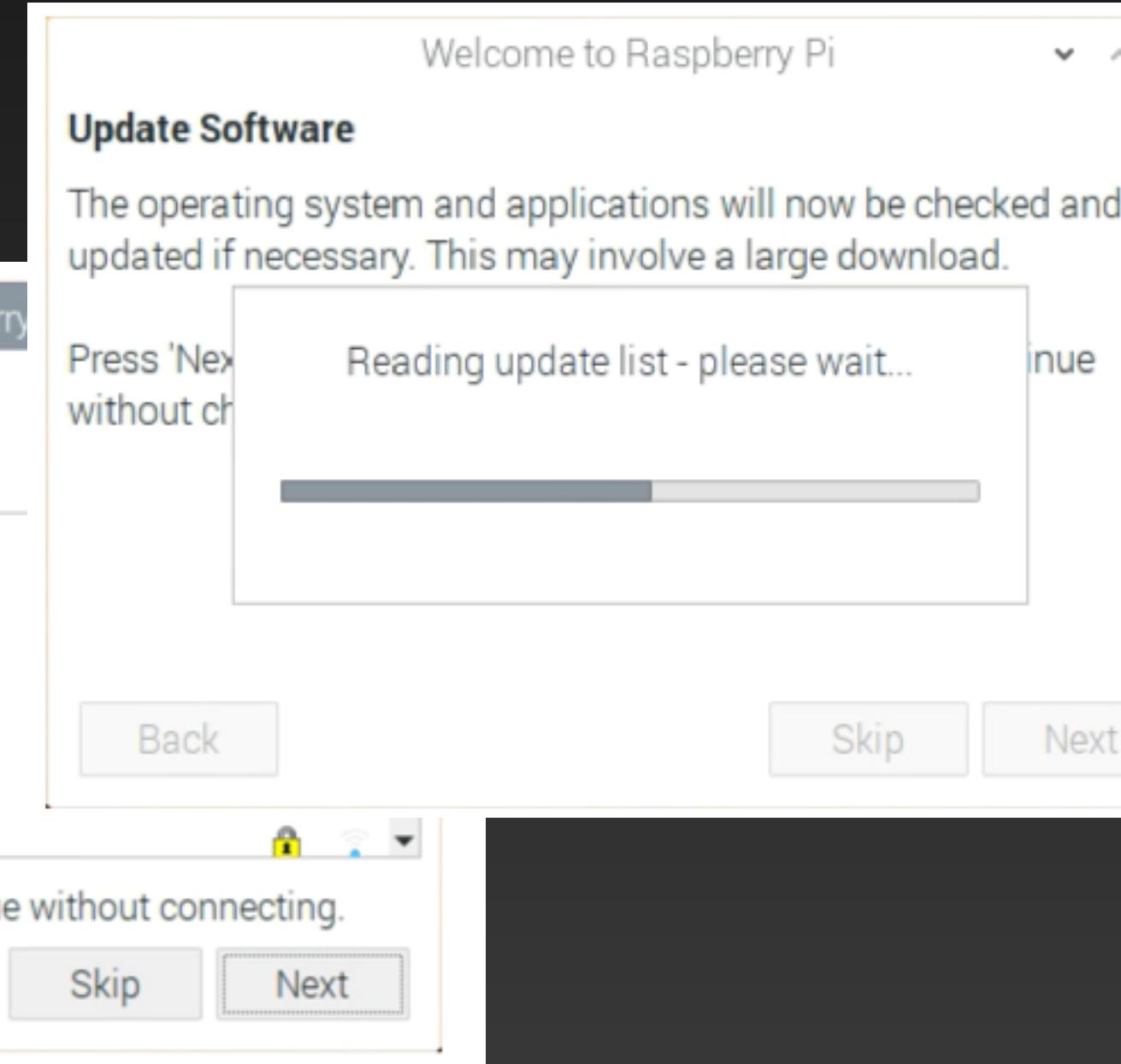
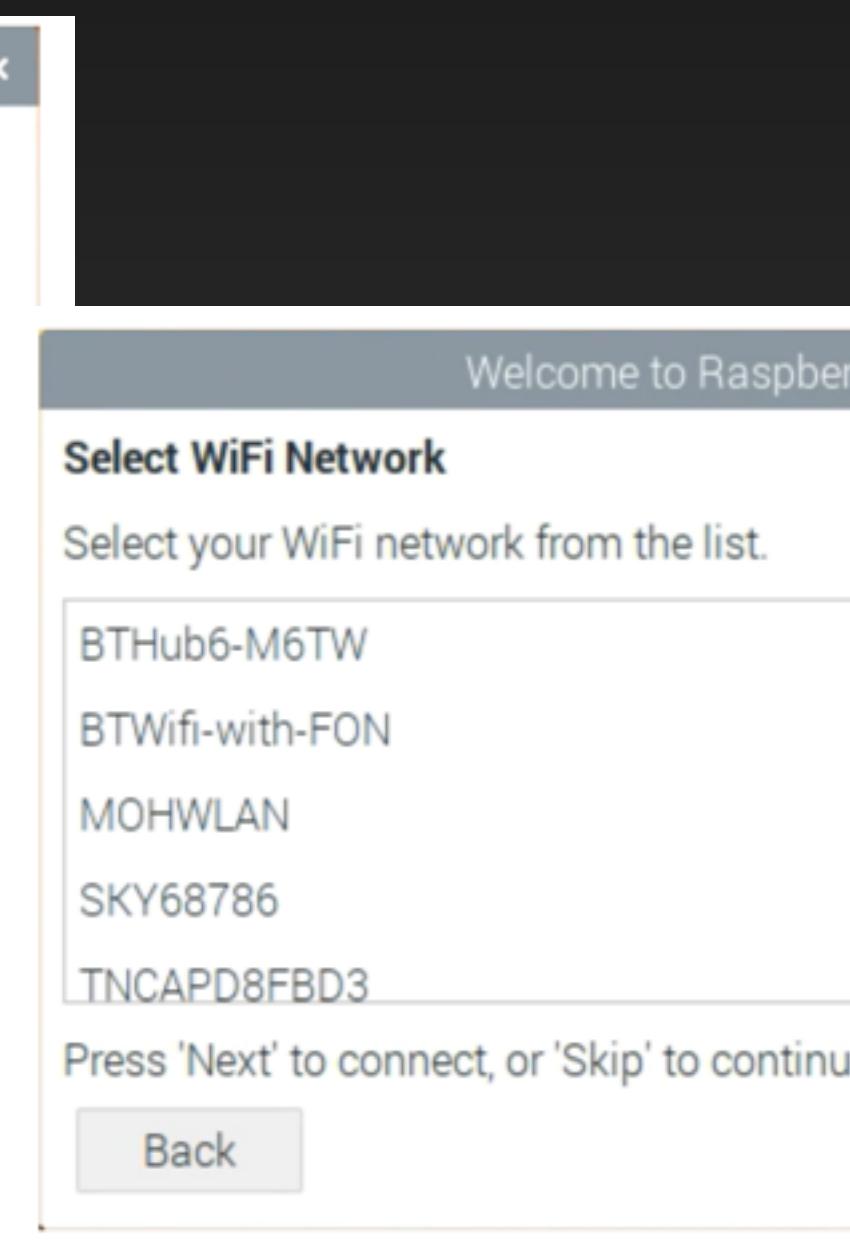
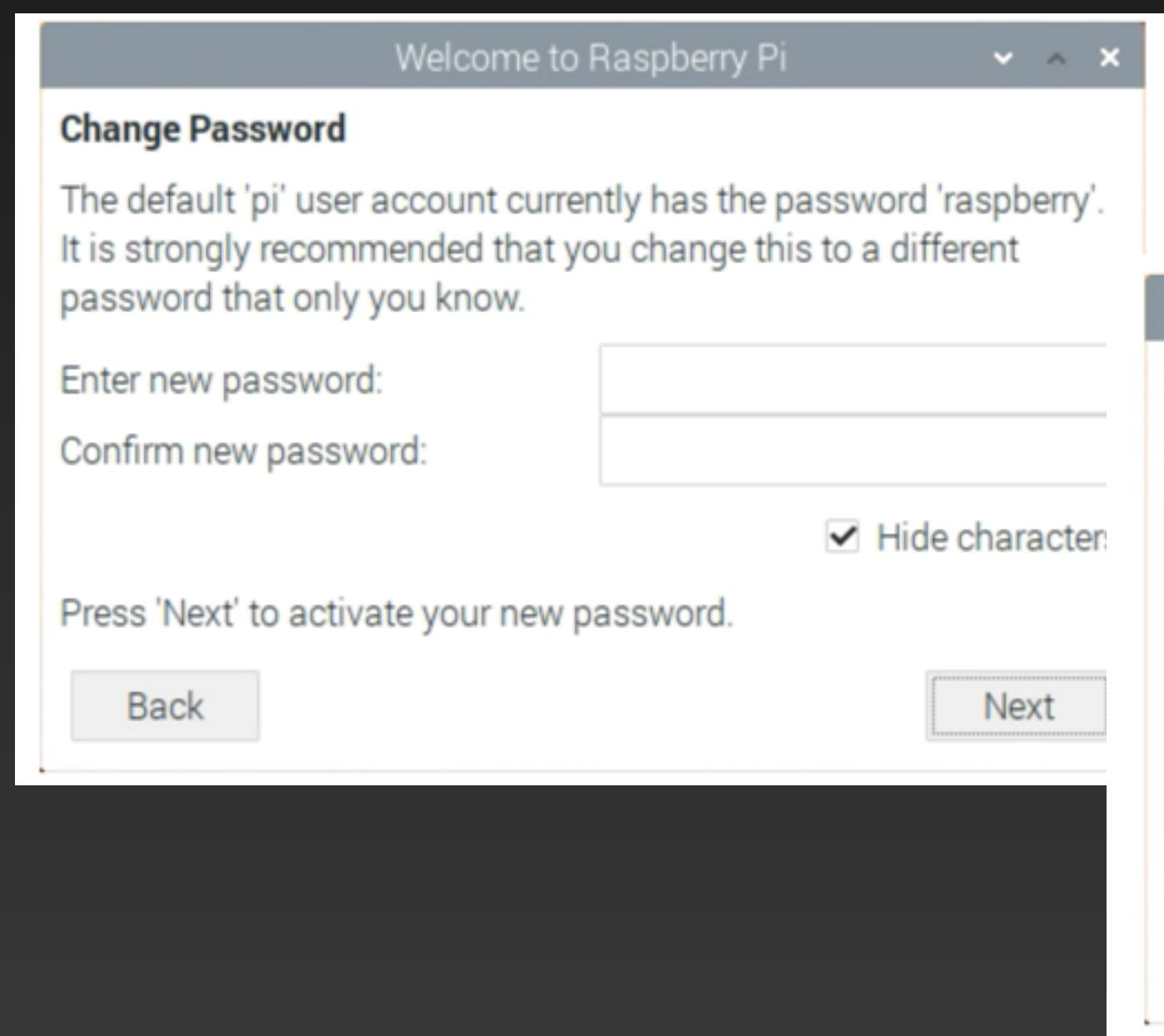
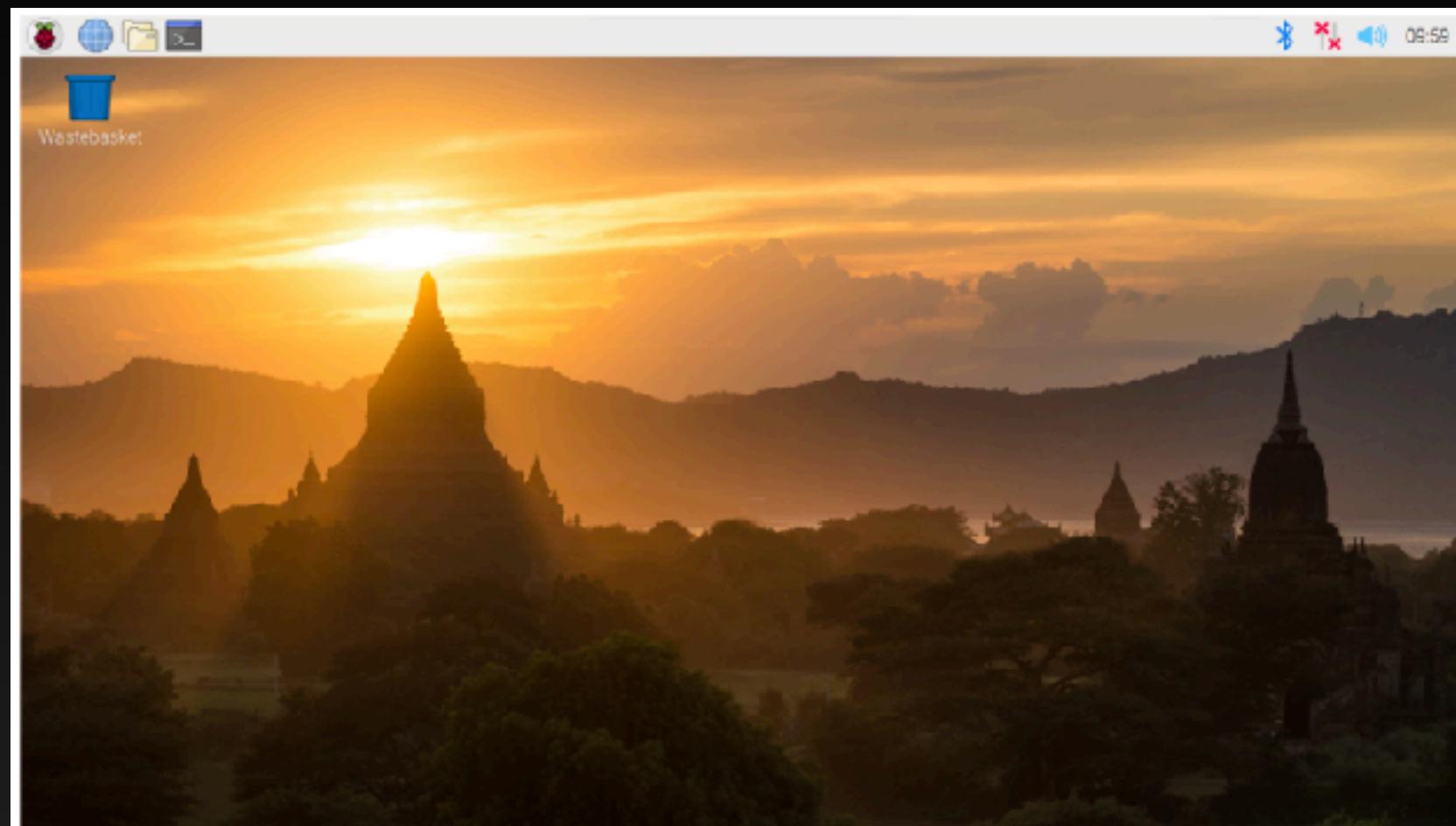
Connect mouse cable



Connect HDMI



# Initial setup

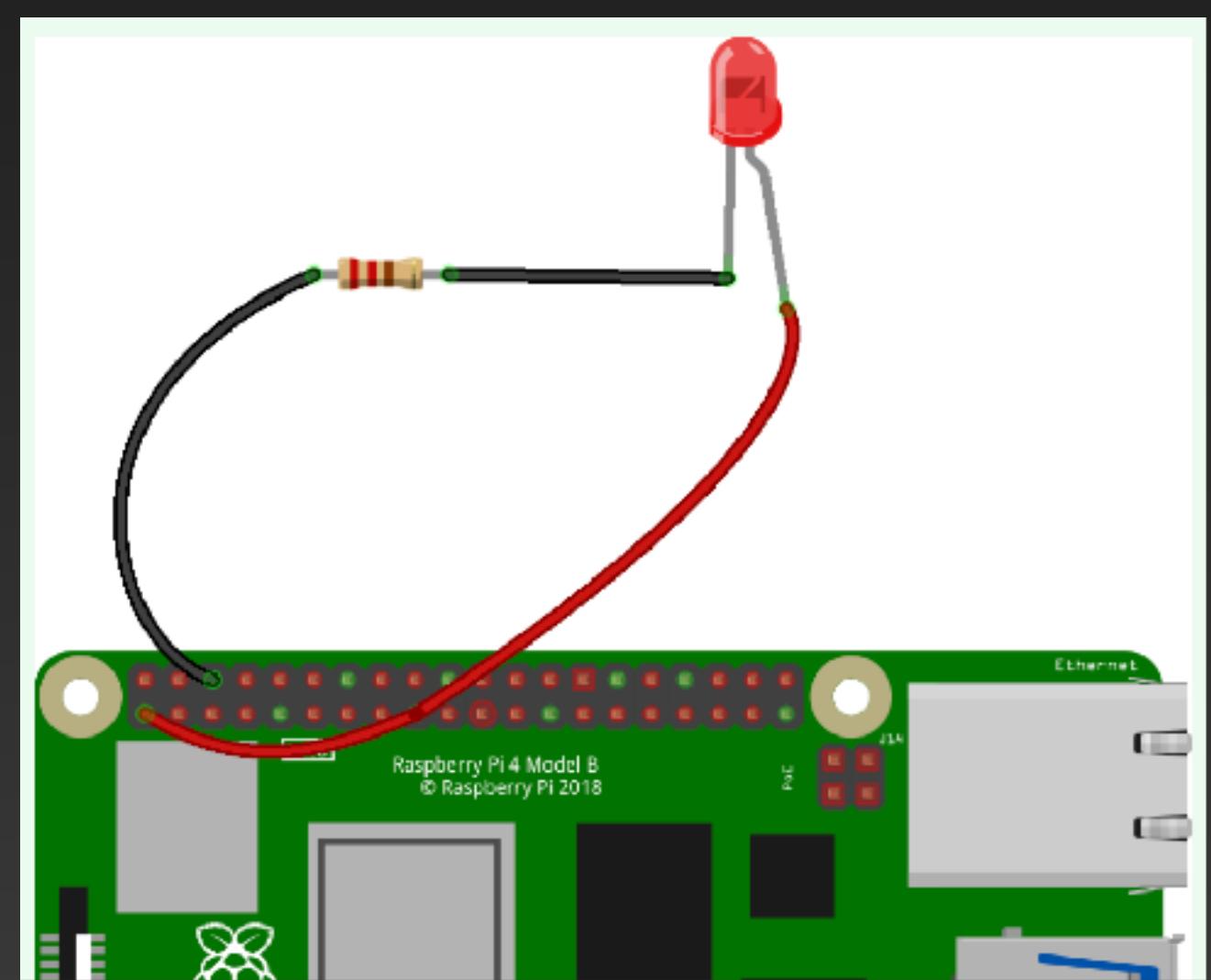
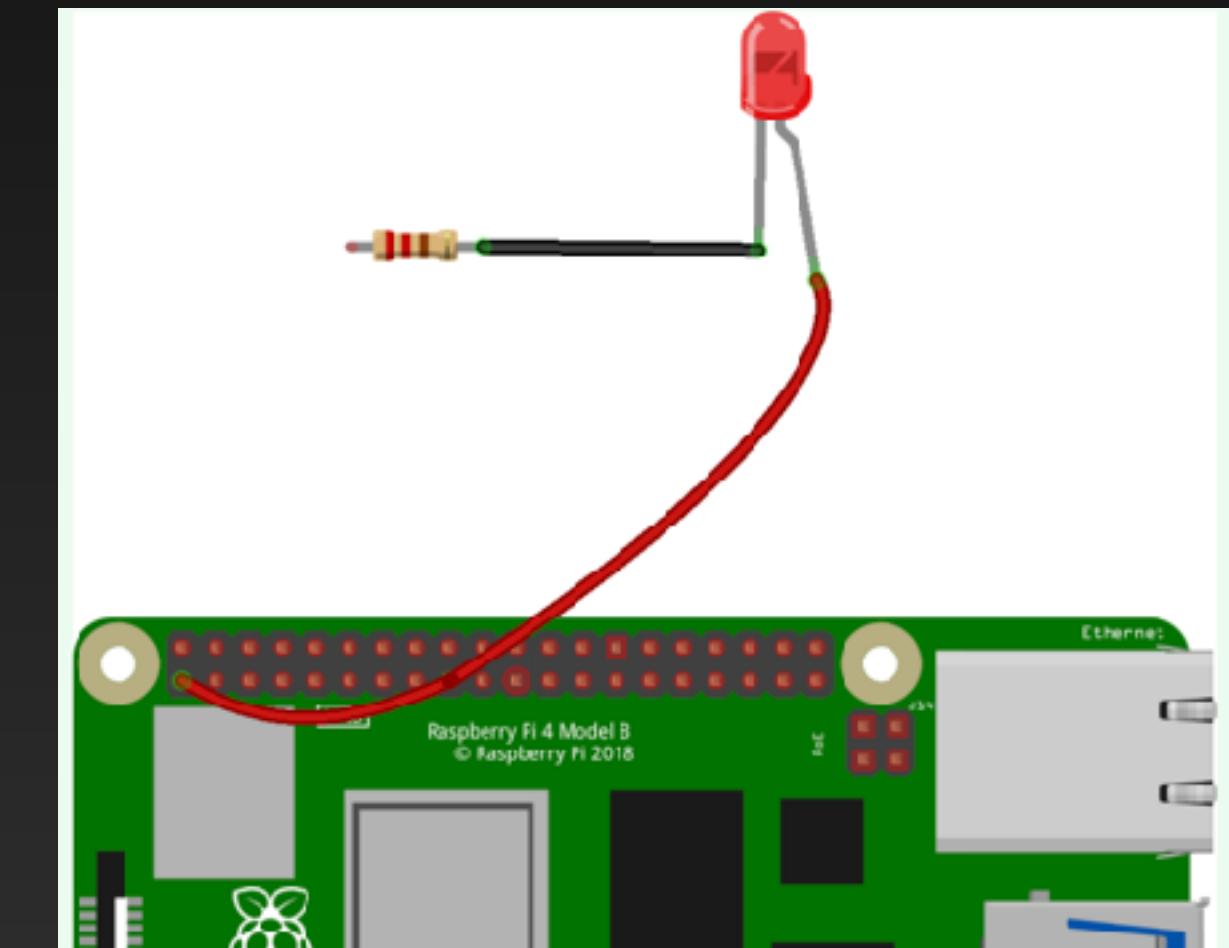
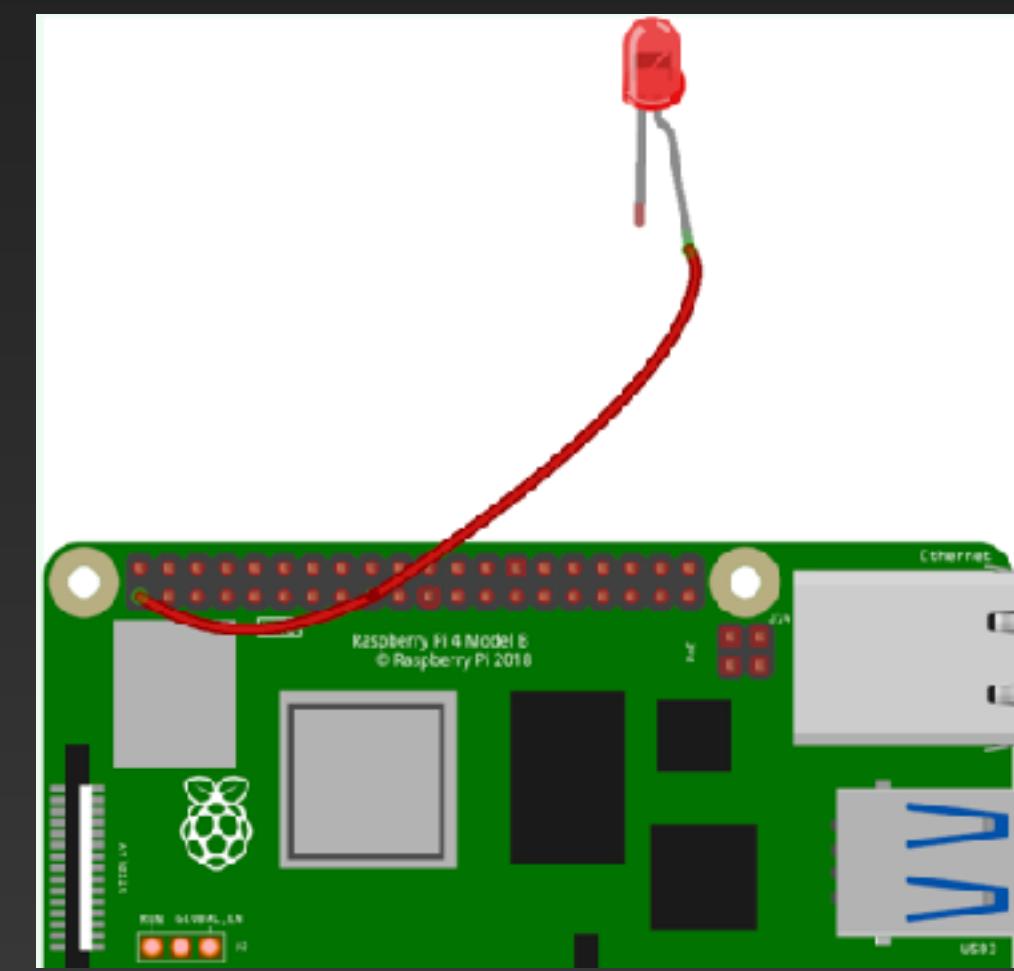
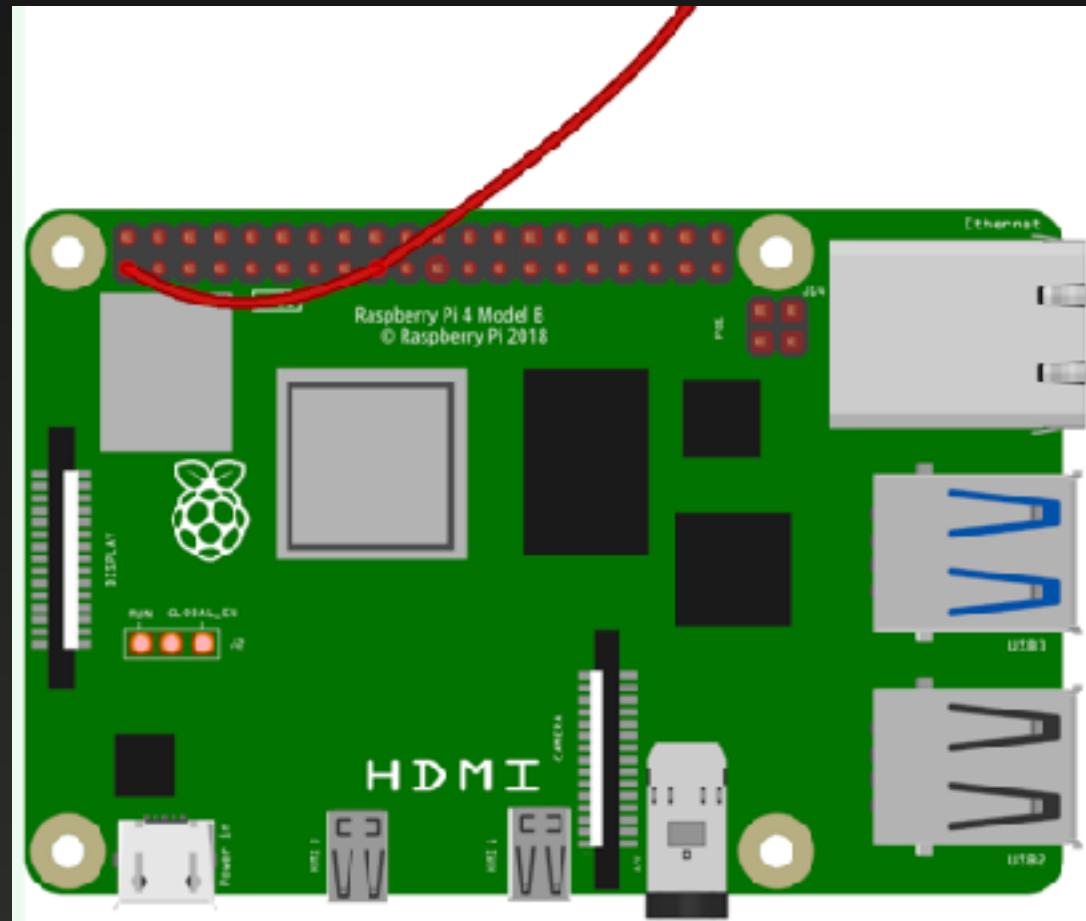


# Test your circuit! An LED project

## Hardware

- A Raspberry Pi computer
- 3x F-F jumper cables
- an LED ( usually volt 1.8V)
- a resistor (the lower resistance, the better!)  $\Omega = V/A$   $\Omega = (3.3V - 1.8V) / 3mA = 500$

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# Test your circuit! An LED project

Home project

Try to use different resistors to test your LED and see what's the differences with the setup in class?

- 10k
- 220R

Try to provide power through 5 volt(First row, first pin) to LED, what can you see?