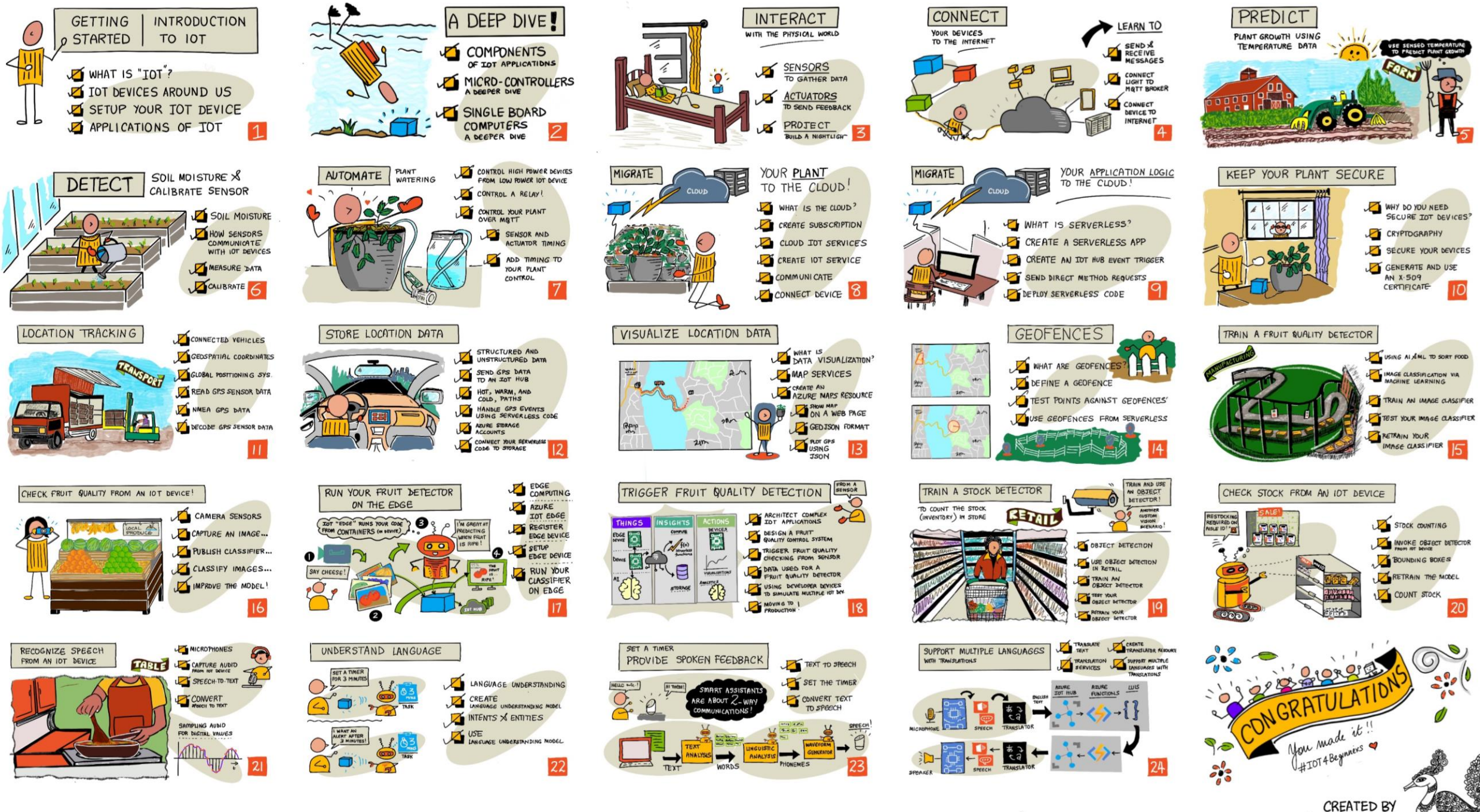
IoT for Beginners

AKA.MS/IOT-BEGINNERS


GETTING STARTED | INTRODUCTION TO IOT
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CONGRATULATIONS
You made it!!
#IOT4Beginners
CREATED BY @SKETCHTHEDOCS

AKA.MS/IOT-BEGINNERS-KITS

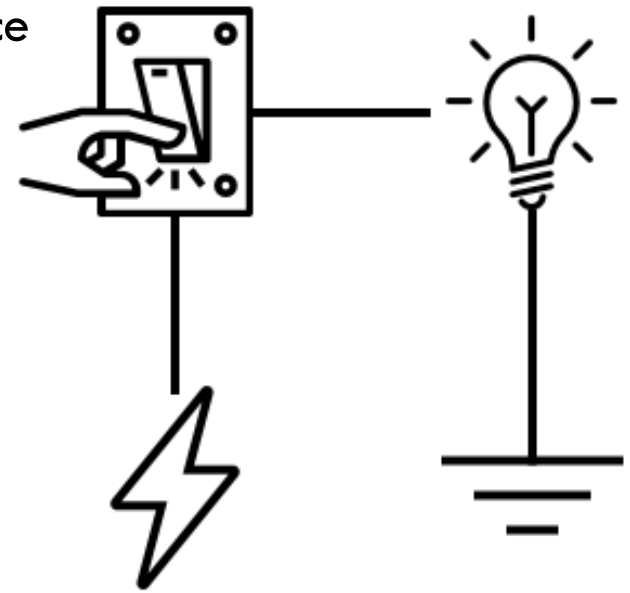
AUTOMATE

PLANT WATERING

- CONTROL HIGH POWER DEVICES FROM LOW POWER IOT DEVICE
- CONTROL A RELAY!
- CONTROL YOUR PLANT OVER MQTT
- SENSOR AND ACTUATOR TIMING
- ADD TIMING TO YOUR PLANT CONTROL

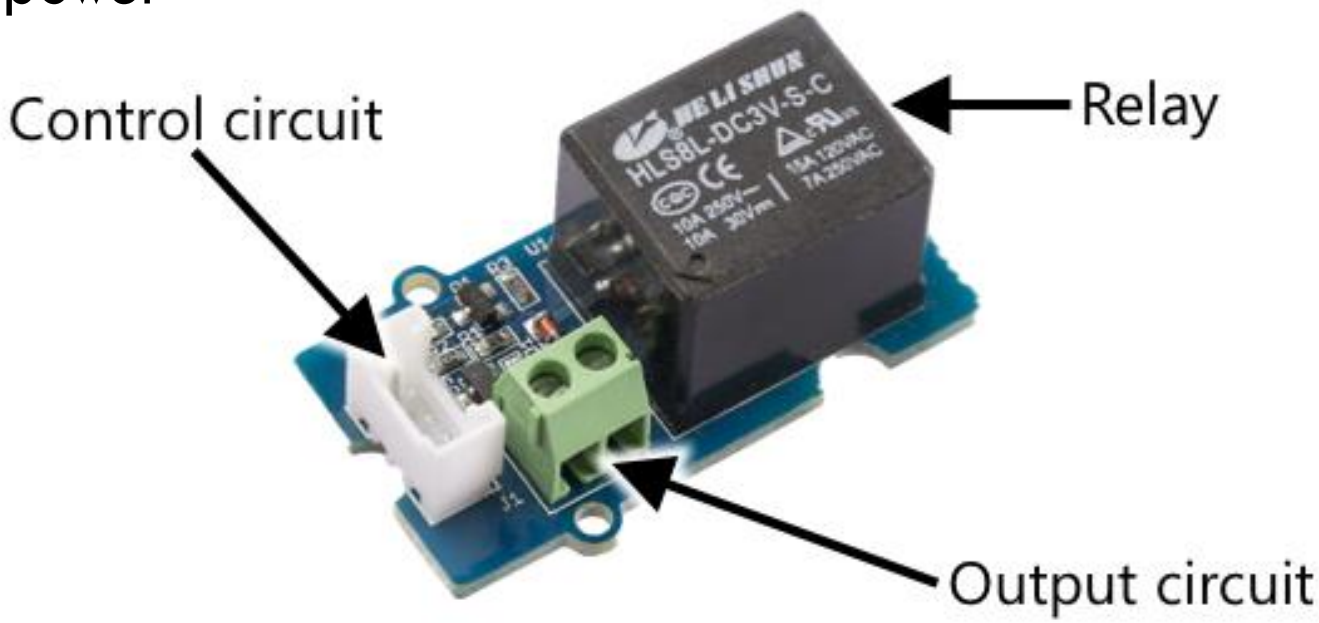
CONTROL HIGH POWER DEVICES FROM LOW POWER DEVICES

- IoT devices use a low voltage
- Pumps use higher voltages
- How can we control a pump from an IoT device
  - Separate power supply to the pump
  - Switch for that power supply controlled by the IoT device



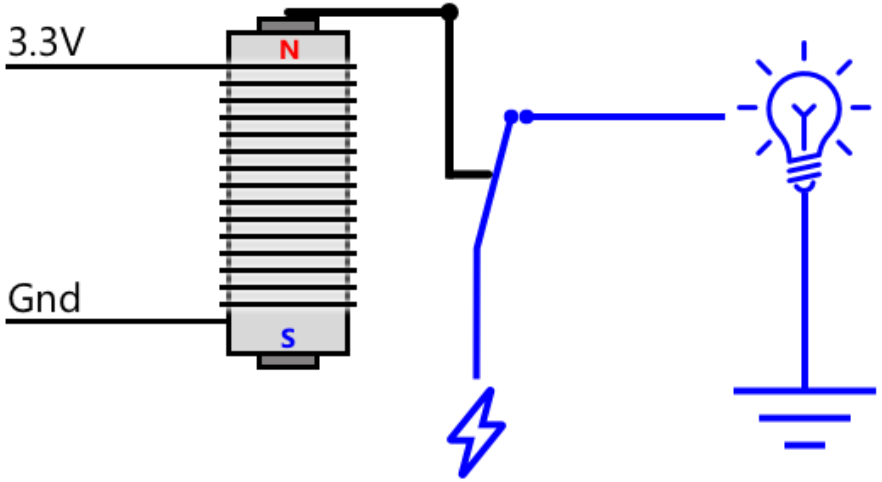
RELAY

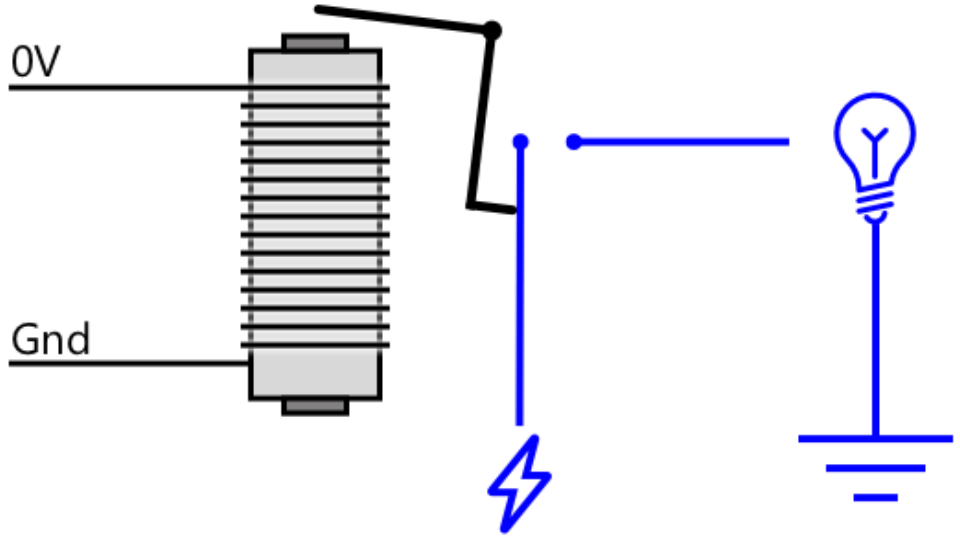
- Relays are electromechanical switches
- Low power to control the switch
- Switch can turn on/off higher power



RELAY

- Power to the relay turns on a magnet, moving a mechanical switch
- Remove the power and the magnet turns off, releasing the switch





RELAY HARDWARE

DEMO: CONTROL THE RELAY

Connect the relay

Program the device

DEMO: CONTROL YOUR PLANT OVER MQTT

Send soil moisture data over MQTT

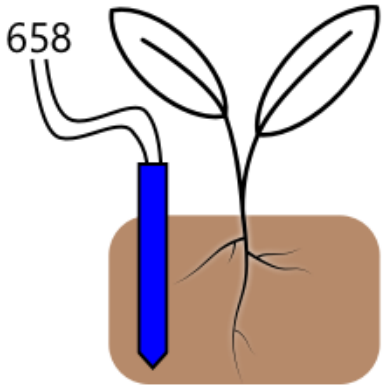
Send commands to control the relay over MQTT

SENSOR AND ACTUATOR TIMING

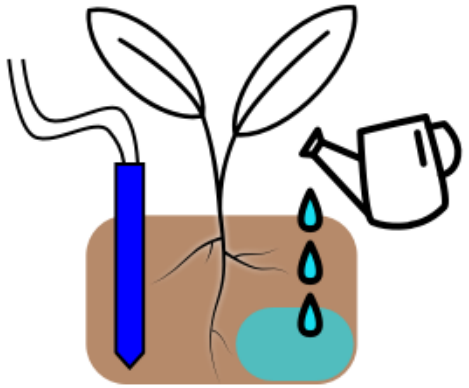
SOIL MOISTURE TIMING

SOIL MOISTURE TIMING

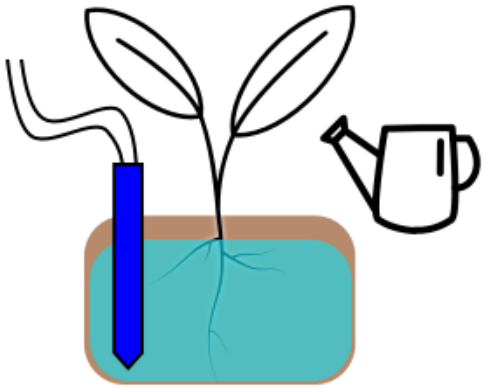
- Better to add water, wait, then measure.
- Add more if needed
- Too little can be fixed by adding more, too much can't be fixed



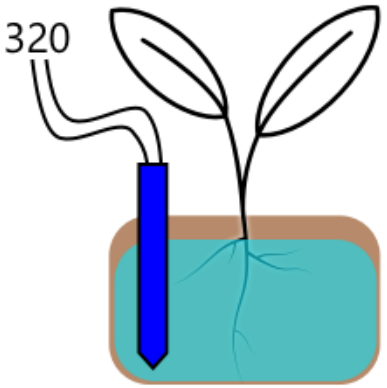
Step 1 - take measurement



Step 2 - add water



Step 3 - wait for water to soak through the soil



Step 4 - retake measurement

ADD TIMING TO OUR SERVER

- Check telemetry
- Check the soil moisture level
- If ok
  - Do nothing
- If too low
  - Send a command to turn the relay on
  - Wait 5 seconds
  - Send a command to turn the relay off
- Wait 20 seconds, then repeat

DEMO: ADD TIMING TO OUR SERVER