

# TESSEL

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*Programming microcontrollers with node.js*

# WHAT IS THE TESSEL?

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- Comes with a number of modules with various functionalities.

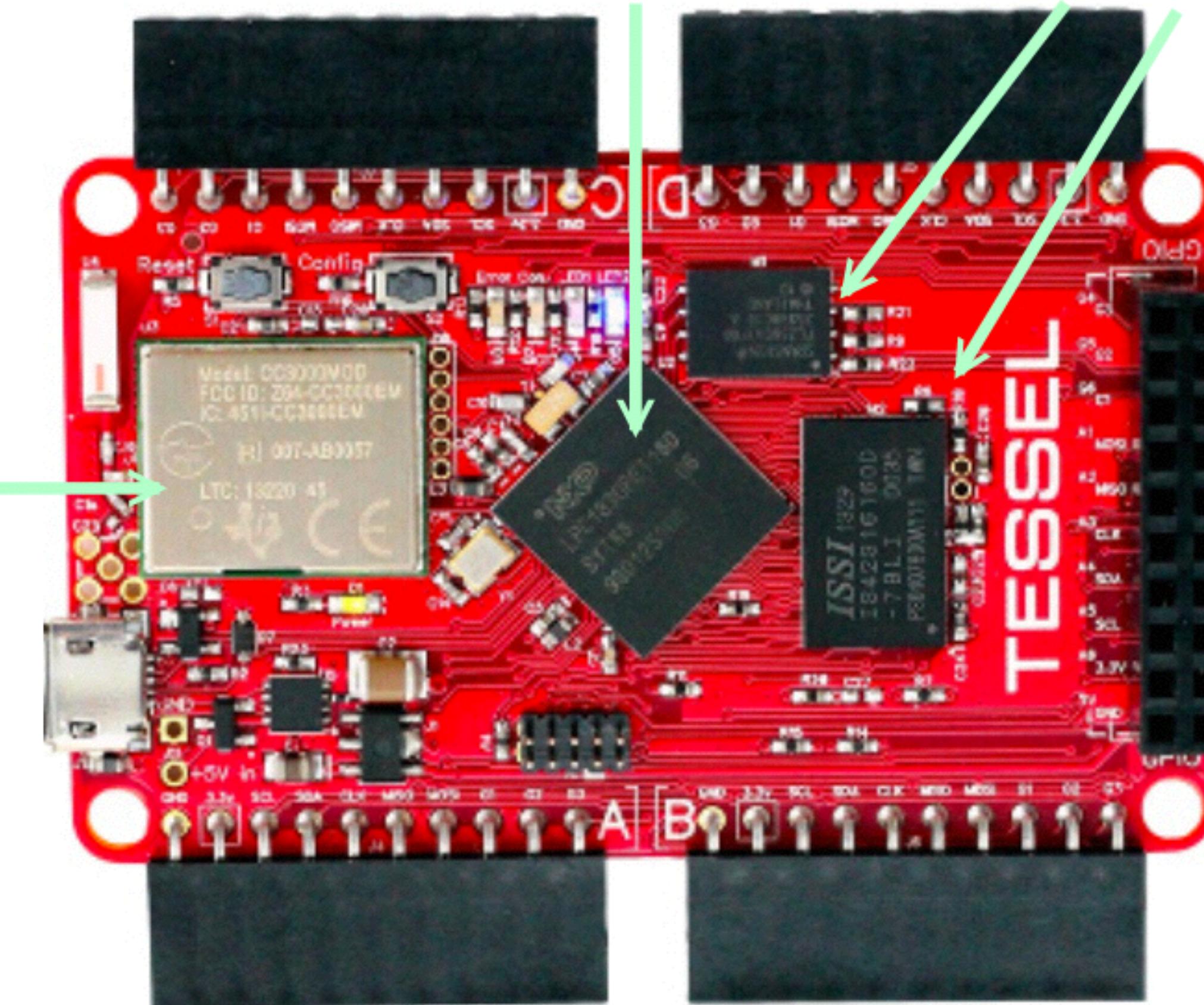
# WHAT IS THE TESSEL?

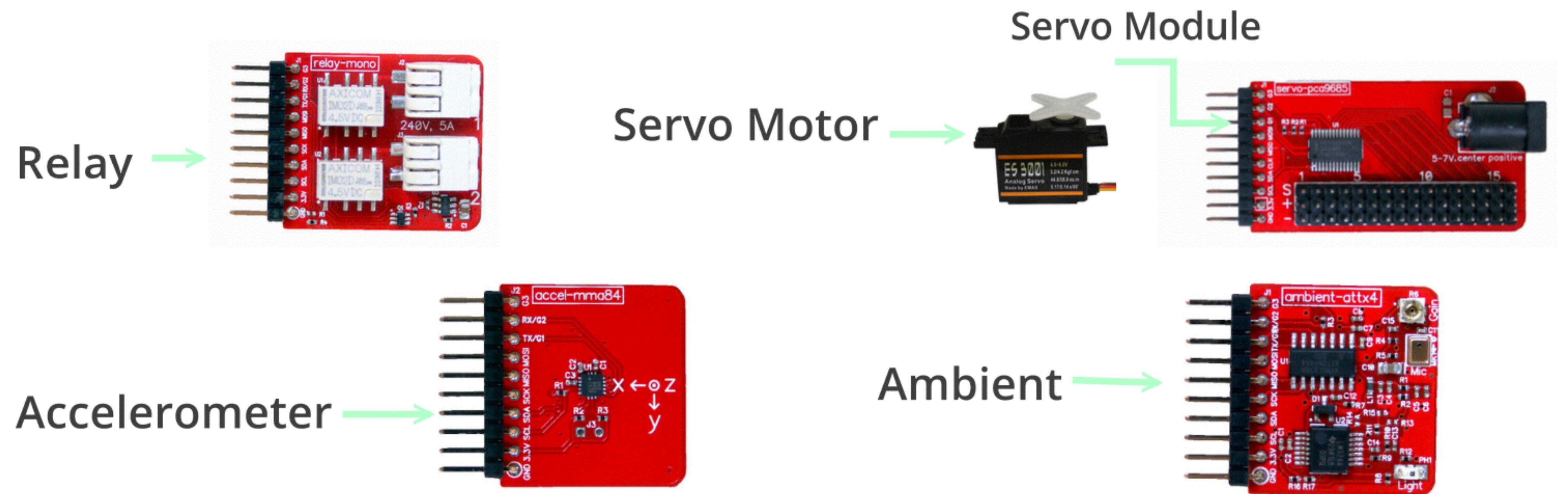
- **Multi-purpose microcontroller that runs node.js natively.**
- **Comes with a number of modules with various functionalities.**
- **Allows for the building of programs that interface with the real world.**

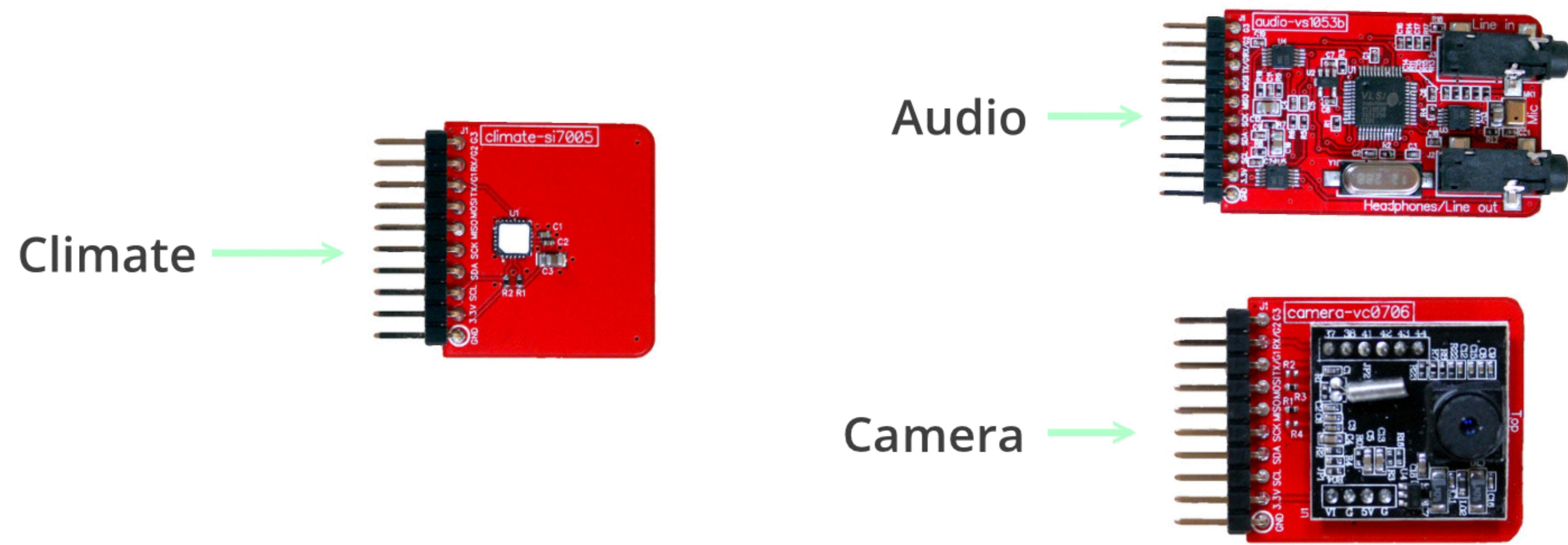
The Internet

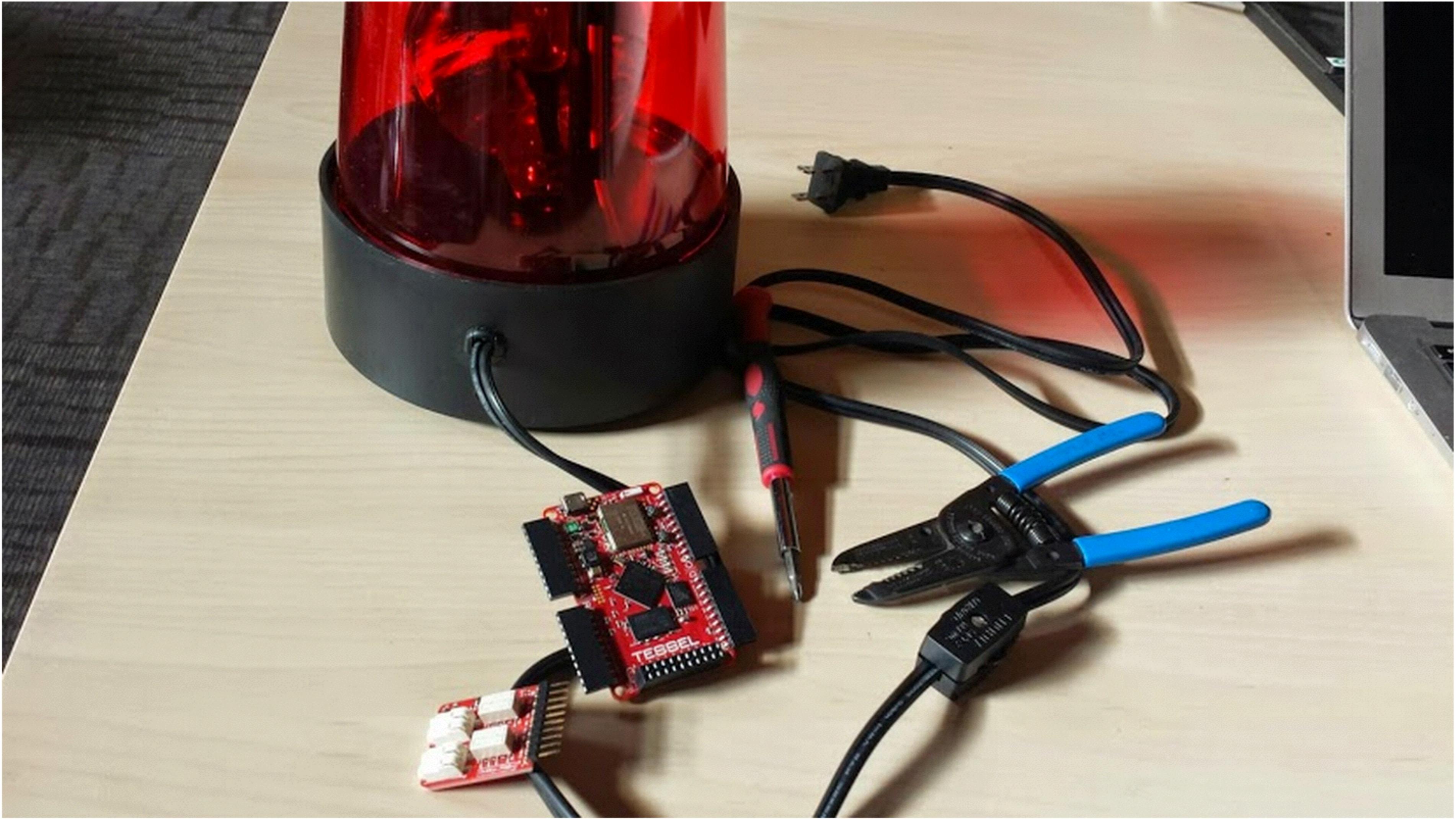
The Brain

Memory











# Building a Sleep Tracker for Your Dog Using Tessel and Twilio



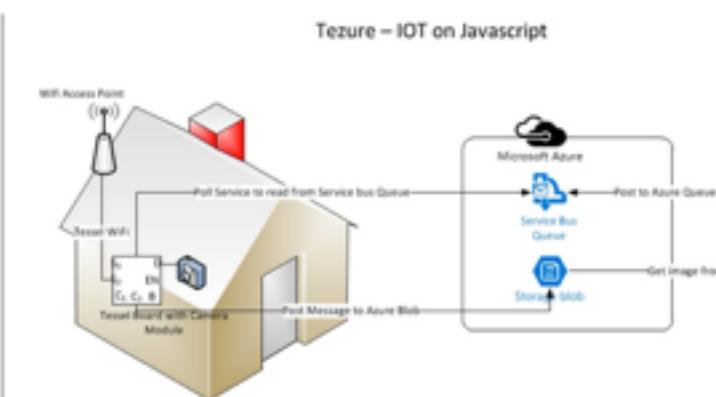
## YOLOGRAM!!!!!!

**YOLOGRAM** is a super amped up script that crushes a rocking yogram when you yolo your tessel into the air. It then tweets your image on the @tesseltweet account. [Sample Twitter](#)

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Project Title

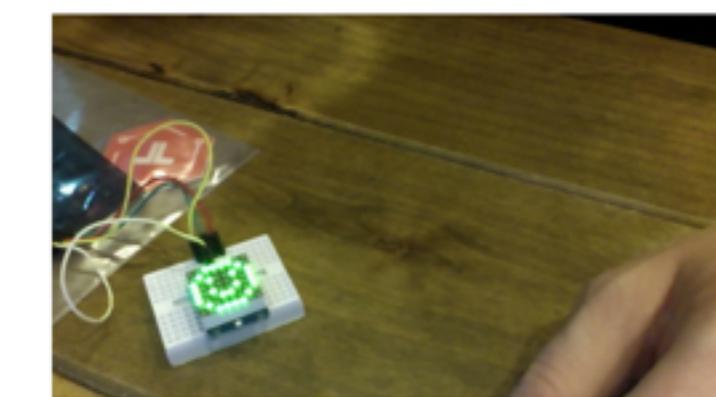
Filter by modules:



### Tezur Spycam

spbreed

276 views



### backpack-ht16k33

adkron

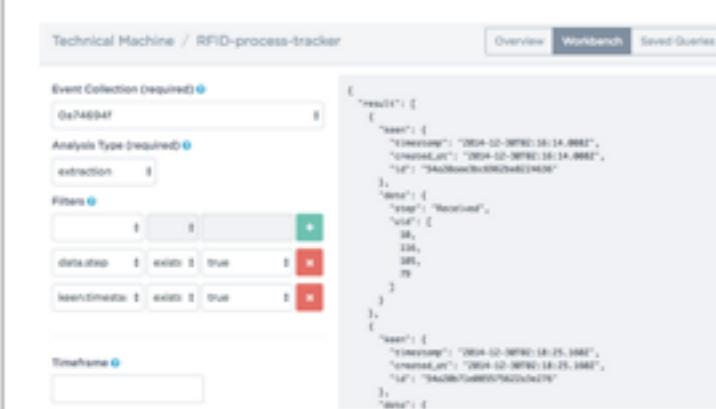
214 views



### Coffee Profile

adkron

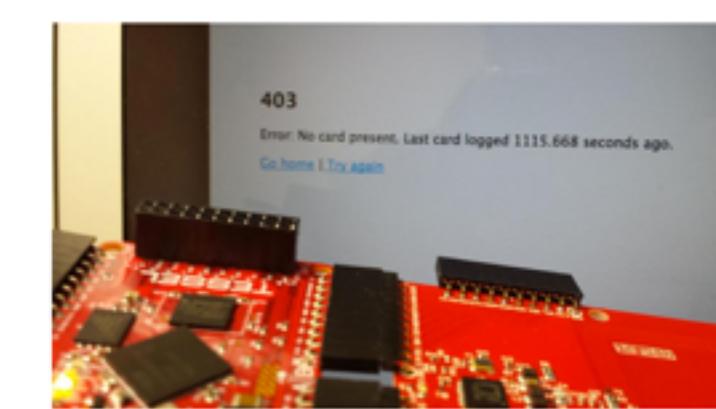
770 views



### RFID Process Tracker

ifoundthemeaningofo life

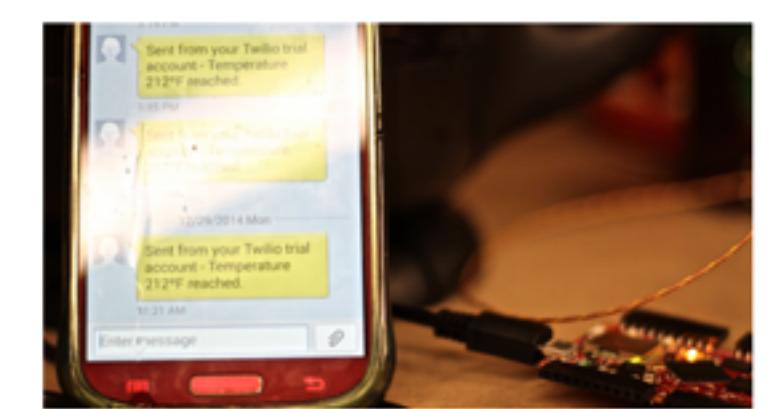
827 views



### RFID Webapp Authorization

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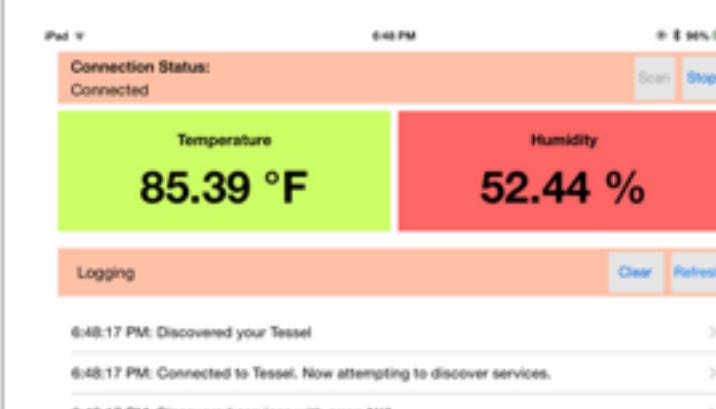
571 views



### "Hot Enough" Text

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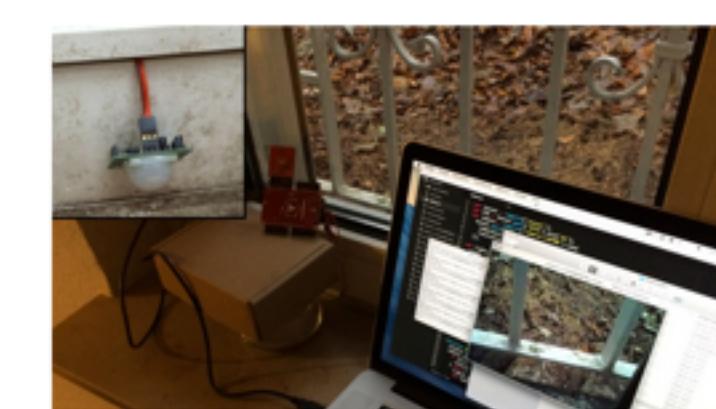
1039 views



### iOS App with Climate + BLE Module integration

rbobbins

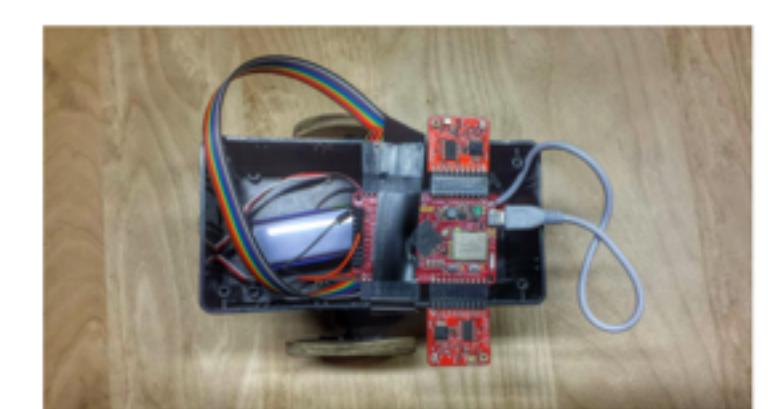
713 views



### phototrap with PIR

nikolaibibo

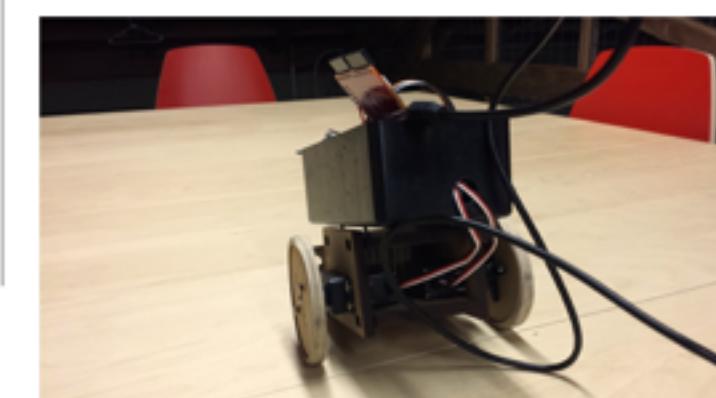
664 views



### Sound-Reactive "Flinching" Robot

ifoundthemeaningofo life

346 views



Devices in view:

208.85.197.81.249.244

56.121.22.46.120.184

105.105.60.123.235.203 Myo



# TESSEL HACK DAY

- All participants will be broken into competing teams.
- Each team is given a pre-packaged assortment of modules — think Iron Chef.
- With given modules (civilized bartering is acceptable), produce the coolest project of the day!

# HIGHLY INTERACTIVE

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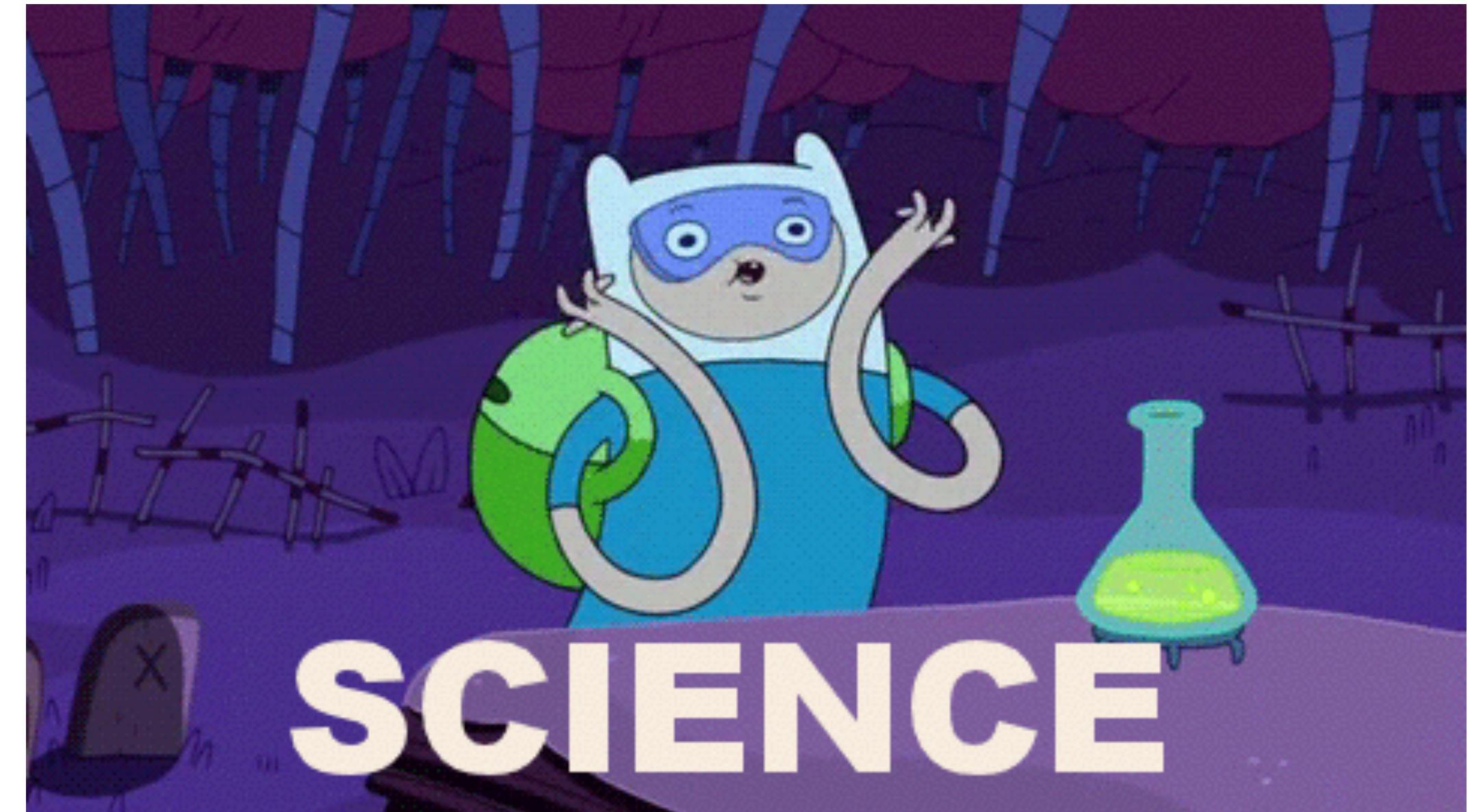
*Project that displays amazing ways  
Javascript can interact with the real  
world*



# HIGH CREATIVE CHARGE

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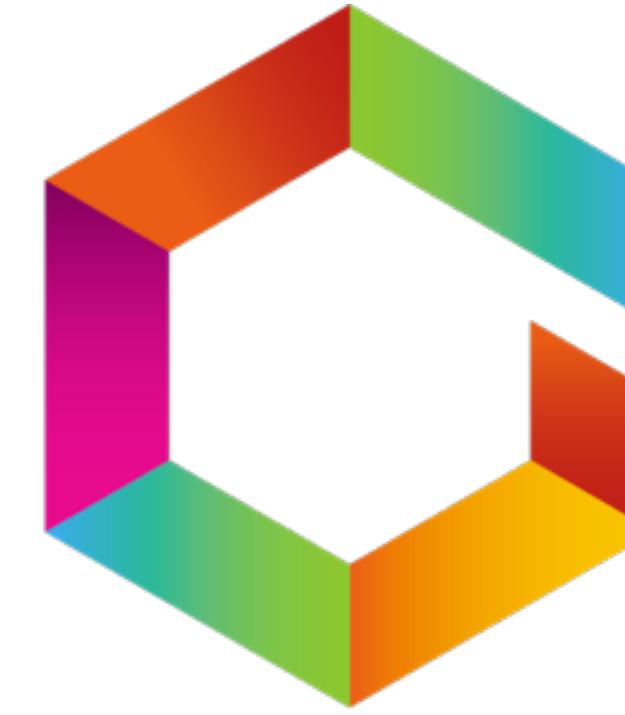
*Most novel solution to a problem  
nobody knew about, especially if no  
problem existed in the first place*



# CAMPUS SOLUTION

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*Awesome project that solves a problem specifically for Grace Hopper Academy campus*



# GRACE HOPPER ACADEMY

# DEBUGGING THE WIFI

- **tessel wifi -d**
  - Disconnects from WiFi – may not work
- **Power cycle**
  - Turn it off and back on again
- **tessel wifi -d**
  - If it didn't work the first time
- **tessel wifi -l**
  - To make sure you can get a list of WiFi networks
- **tessel wifi -n <network> -p <password>**
  - Reconnect

# WORKING WITH YOUR TEAM

- **Problem:** Only 1 Tessel to a team of 3-4 people.
  
- **Solutions:**
  - Divide the work!
  - Pair/mob program.
  - Ask Ayana or fellows for guidance.

# WORKING WITH THE TESSEL

- **Install nvm and downgrade to node v0.12**
- **Offload as much work as possible OFF the Tessel**
  - The Tessel operates best when it is messaging off sensor data, not computing it
- **Try to put a minimal amount of libraries on the Tessel**
  - e.g. build raw Node servers rather than use Express!