

MEETING TWO

FUNCTIONS WITH *PARROT* AR DRONE 2.0

AR DRONE

- HD Camera 720p, 30FPS
- WiFi
- 3-axis gyroscope, accelerometer, and magnetometer
- Pressure sensor
- Ultrasound sensor
- 60FPS vertical camera
- Carbon fiber tubes
- Fully-reparable
- 4 brushless in-runner motors – 28500 RPM
- Micro ball bearing
- Tempered steel propeller shaft
- Water resistant motor controller
- ~~Emergency stop~~

WRITING COMPUTER (OR ROBOT PROGRAMS)

- "Computers are *lazy*, and arguably *stupid*"
- text files ➡ words ➡ ASCII / UNI-8 😬 ➡ bits, or 010110
- text editors vs. IDEs
 - text editors
 - MS Word
 - Notepad
 - TextEdit
 - Sublime
 - Integrated Development Environment
 - Xcode
 - Eclipse

NODE.JS & NODE'S AR-DRONE

- <http://nodejs.org/download/>
- `$ npm install git://github.com/felixge/node-ar-drone.git`

THE CODE

- Introductory code, save as **repl.js**, like a .doc or .pdf
- `var arDrone = require('ar-drone');`
- `var client = arDrone.createClient();`
- `client.createRepl();`

//don't worry about what's occurring here; we will cover it soon

- Open this in Terminal / Console
 - `ls` – gives folders in current directory
 - `cd` – specifies movement between directories
 - `node` – opens files with node.js

FUNCTIONS

- Most basic component in computer science
- Take *arguments* in parentheses ()
- Called on an *object*, usually
- Our *object* is the drone

REALTIME ACTIONS

- AR-Drone assumes the object
 - `drone>`
 - `drone>`
 - `drone>`
- Basic Drone Functions
 - `takeoff()`
 - `land()`
 - `up(speed), down(speed)`
 - arguments
 - scaled 0 to 1; like 0 to 100%
- More functions
 - `stop()`
 - `back(speed), front(speed)`
 - `left(speed), right(speed)`
 - `clockwise(speed)`
 - `counterClockwise(speed)`
- Even More!
 - <https://github.com/felixge/node-ar-drone#client-api>

RETRO-FIT FUNCTIONS

PLANS OF ACTION

- Save a **repl.js** that has the functions that you want to run

- Object isn't assumed here

- Declare this first

- **var** arDrone =
require('ar-drone');
- **var** drone =
arDrone.createClient();

/ don't worry about what's occurring here; we will cover it soon */*

- Example retro-fit code file

```
var arDrone = require('ar-drone');  
var drone  = arDrone.createClient();  
drone.takeoff();  
drone.after(5000, drone.up(.2));  
drone.after(5000, drone.down(.1));  
drone.after(1000, drone.stop());  
drone.land();
```




SEND US A REPL.JS FOR CLUB FAIRE!
THE DRONE CAN DO FLIPS TOO; SEE ONLINE