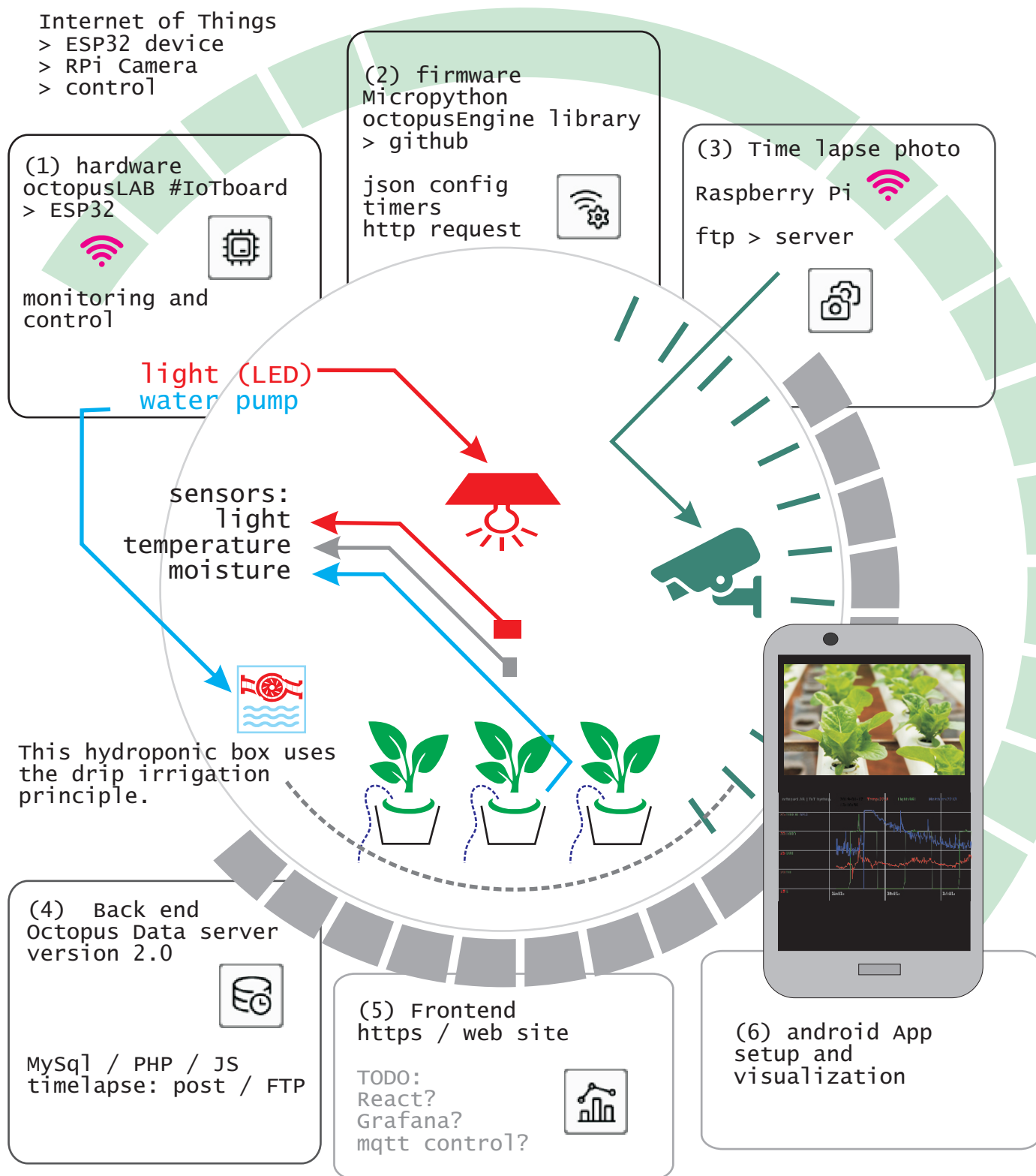# octopusLAB | parallel garden 🌱 monitoring & control

This project consists of two projects that form a compatible outcome product: hydroponics system itself, and IoT device that is being developed in order to collect data about the growing process, optimize costs, and to take control over the system.

Internet of Things
> ESP32 device
> RPi Camera
> control

(1) hardware
octopusLAB #IoTboard
> ESP32

monitoring and
control

(2) firmware
Micropython
octopusEngine library
> github

json config
timers
http request

(3) Time lapse photo

Raspberry Pi

ftp > server

light (LED)
water pump

sensors:
light
temperature
moisture

This hydroponic box uses
the drip irrigation
principle.

(4) Back end
Octopus Data server
version 2.0

MySql / PHP / JS
timelapse: post / FTP

(5) Frontend
https / web site

TODO:
React?
Grafana?
mqtt control?

(6) android App
setup and
visualization

https://github.com/ParallelGarden/Hydroponics-in-a-box
https://github.com/octopusengine/octopusLAB_parallel_garden

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