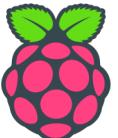
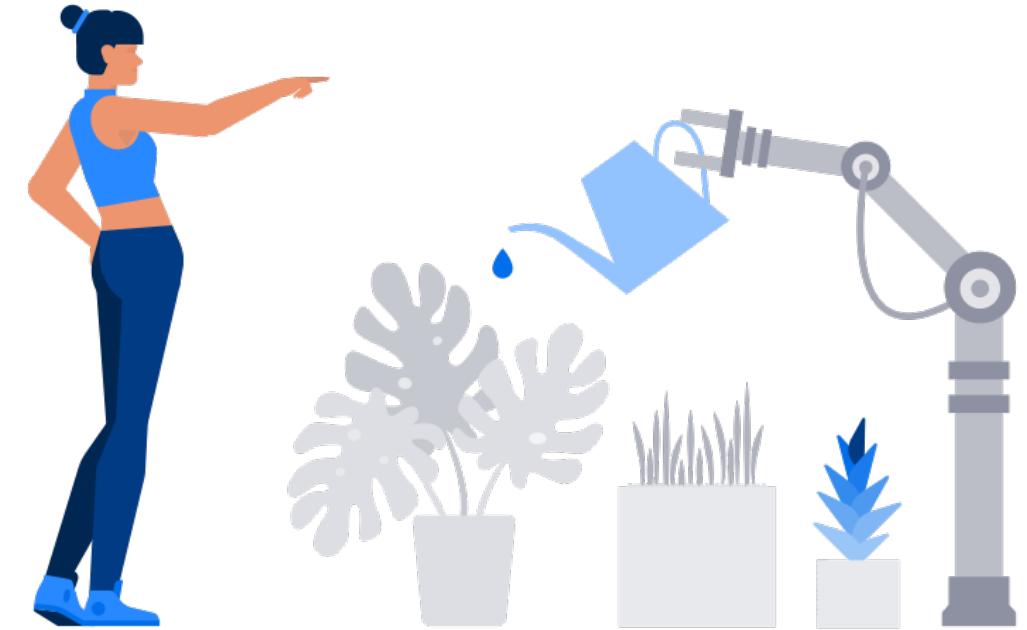




Care Garden

Jardín Inteligente – Avance 1

Murrieta Villegas Alfonso
Reza Chavarría Sergio Gabriel
Valdespino Mendieta Joaquín
Cárdenas Cárdenas Jorge
Garrido Sánchez Samuel Arturo



Materiales

Hasta el momento se cuenta:

8 Motores de Agua de 6V – 80/120 l/P

Controlador L298N (1)

Jumpers Macho – Hembra

Estaño, Cautín, Cinta aislante

Protoboard (para pruebas)

Resistencias 220 Ω, 390 Ω, 1 KΩ, 2.2KΩ.

Arduino Uno, Sensor de Luz

Sensor de Movimiento PIR

Sensor de temperatura y humedad ambiental

Sensor de nivel de agua (analógico)

Macetas, Carrito

Botones (prueba)

Motores DC (2)

4 Fuente (4 baterías AA, 6V)

Kola Loka

LEDS indicadores

Cable (10 metros)

Sensor Calidad Aire

Tubo PTFE 1.75mm (8 metros)

4 puentes H L298, etc.

Por adquirir:

- Cámara Raspberry
- Humificador

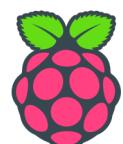
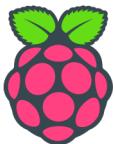


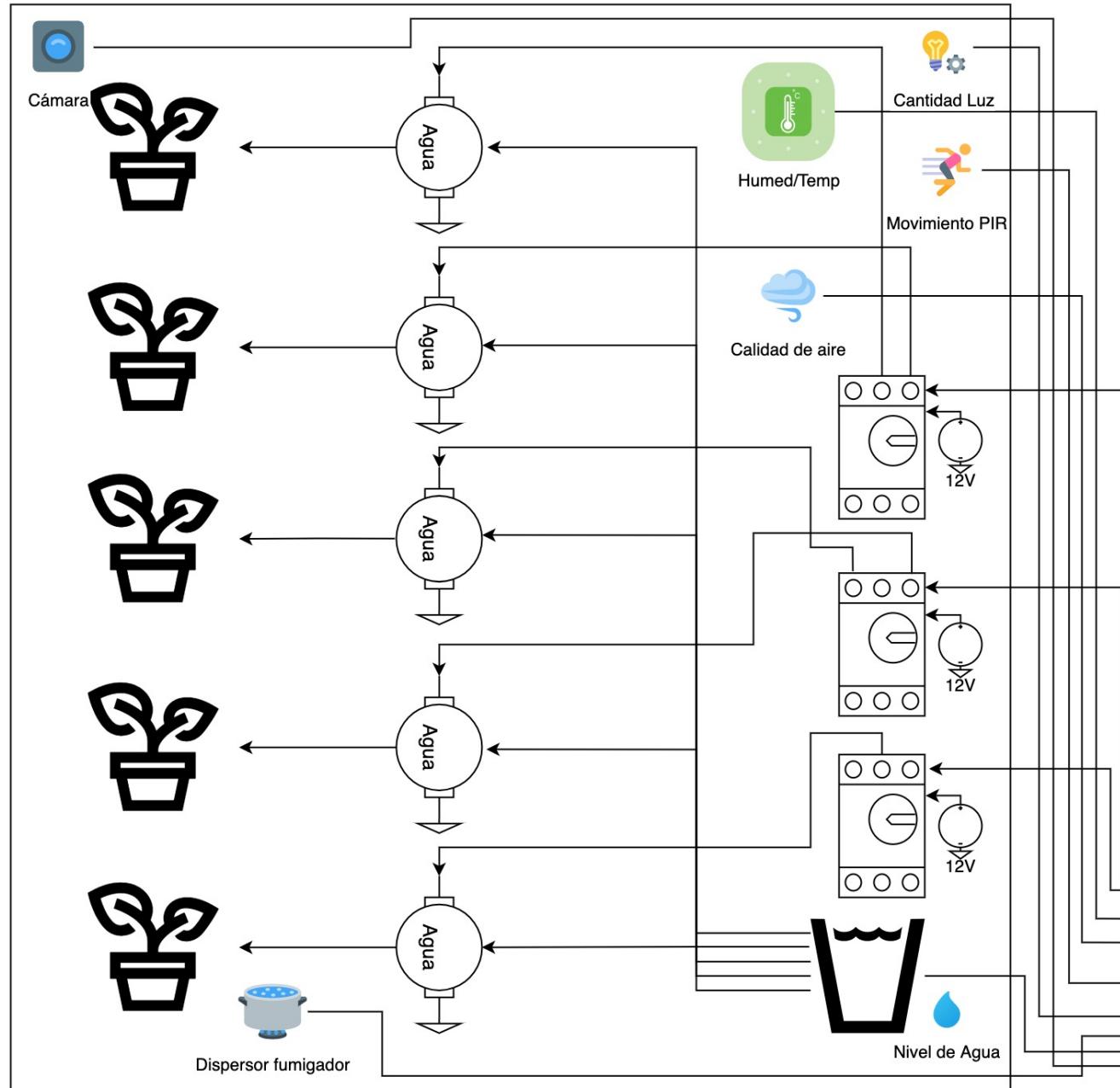
Diagrama y Arquitectura

La arquitectura para realizar el jardín es a siguiente.

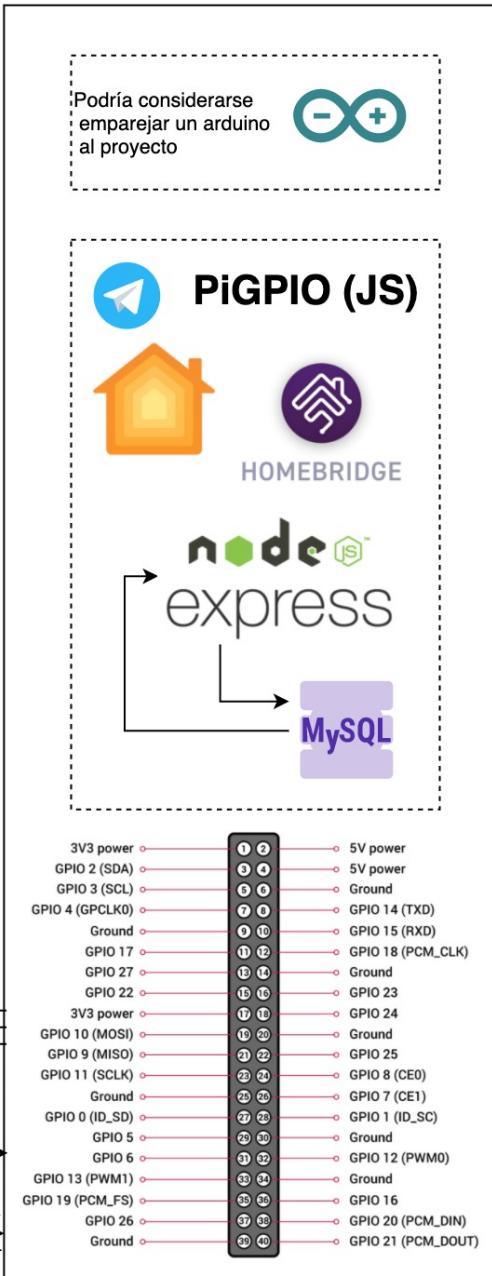
Como parte de las necesidades se encuentra el backend, que podría ser realizado en Flask o ExpressJS.



Plantas



Raspberry



Base de datos

La base de datos

MARIADB

Se instaló correctamente y se elaboró la siguiente base de datos.

De igual forma se instaló:

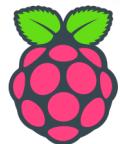
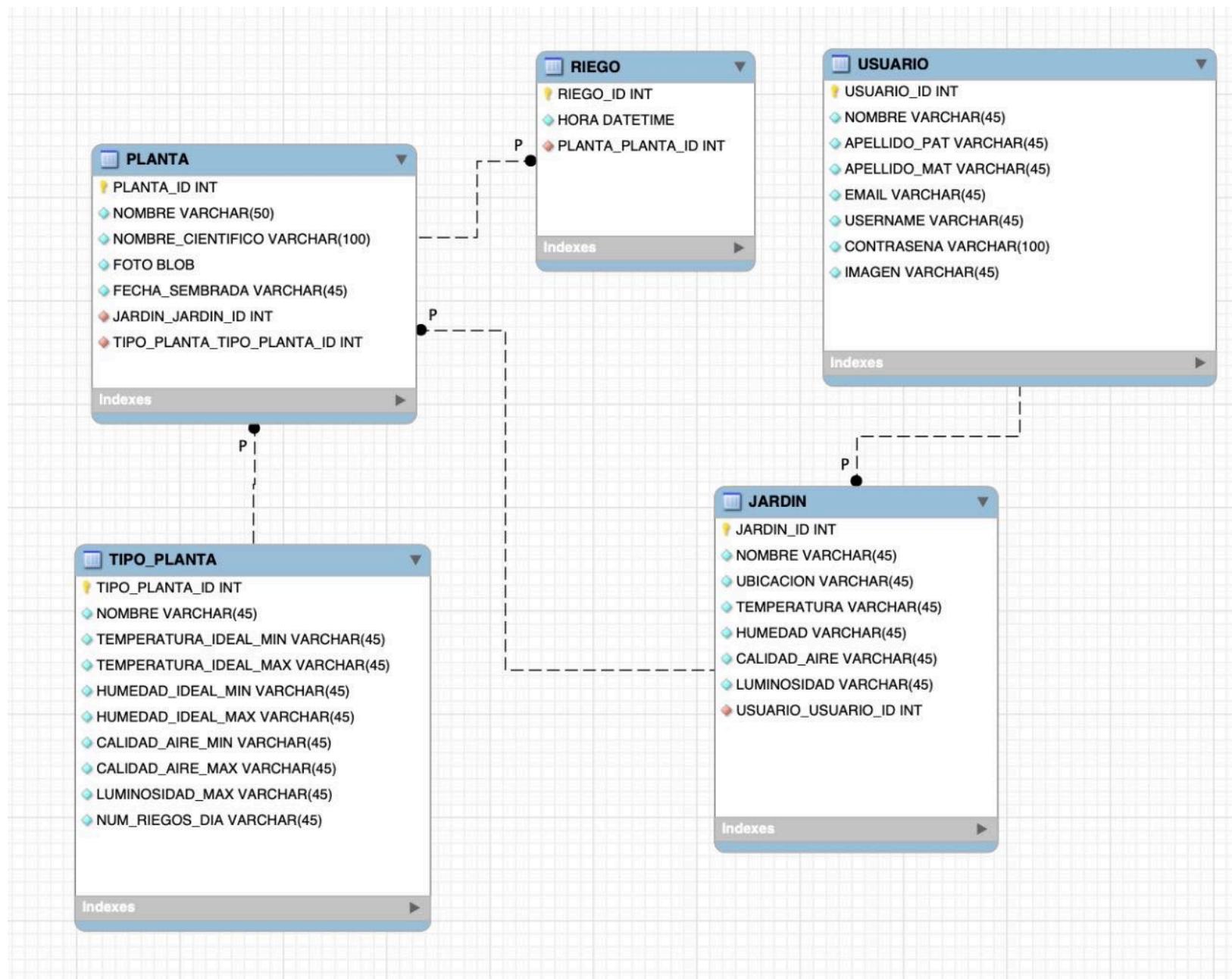
- Flask
- NodeJS, ExpressJS

```
● ● ● samuelarturogarridosanchez ~ pi@raspberry-sgs: ~ -- ssh pi@192.168.1.65...
pi@raspberry-sgs:~$ sudo mysql -u root
Welcome to the MariaDB monitor. Commands end with ; or \g.
Your MariaDB connection id is 39
Server version: 10.3.29-MariaDB-0+deb10u1 Raspbian 10

Copyright (c) 2000, 2018, Oracle, MariaDB Corporation Ab and others.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

MariaDB [(none)]>
MariaDB [(none)]>
```

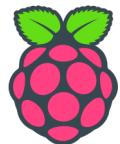


Homebridge

Ya se encuentra instalado y se añadió a la aplicación Home en iOS y Google Home en Android

The screenshot shows the Homebridge configuration interface at 192.168.1.65:8581. The main dashboard displays the following information:

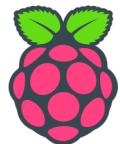
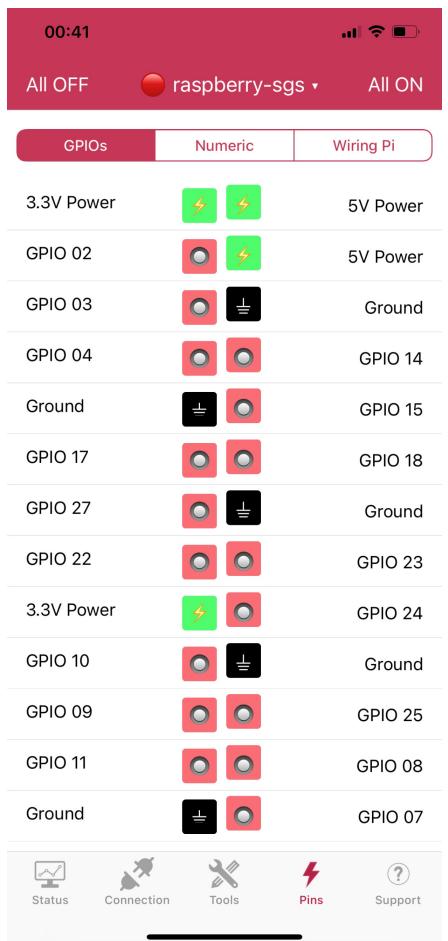
- Homebridge:** Up To Date (v1.3.5), Homebridge Not running - View Logs, Plugins 1 Plugins Out Of Date.
- System Metrics:** CPU Load 9%, Temp 38°C, Memory Total 3.7 GB, Available 3.27 GB, Uptime 1m Server, 1m Process.
- QR Code:** A large QR code with the identifier 910-28-422. Below it, instructions say "Scan this code with the camera on your iOS device to add to Apple Home."
- System Information:** Timezone: GMT-0500, OS: Raspbian GNU/Linux Buster (10), Hostname: raspberry-sgs, IP Address: 192.168.1.65.
- Footer:** homebridge-config-ui-x v4.41.2 - © 2021 oznu



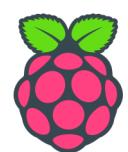
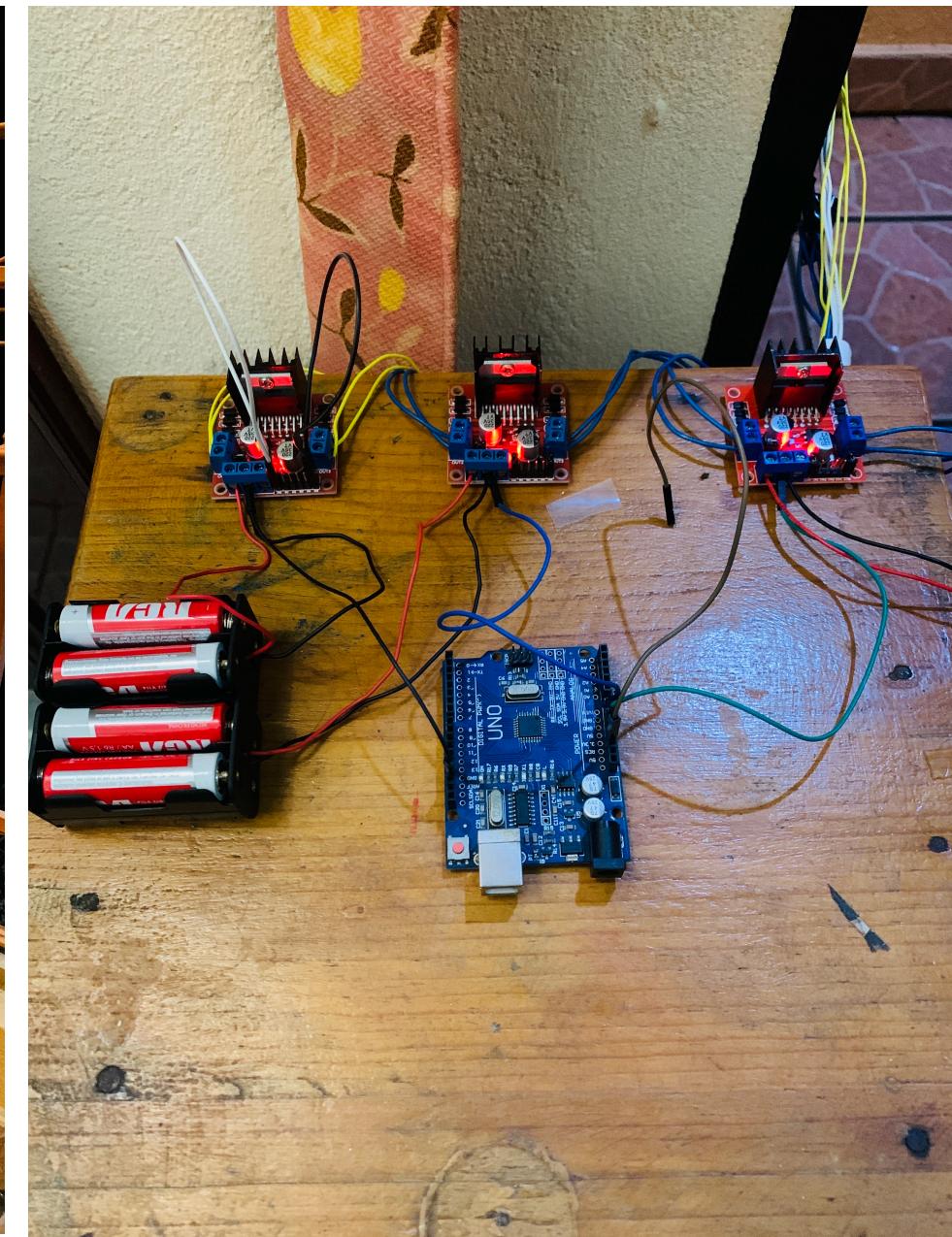
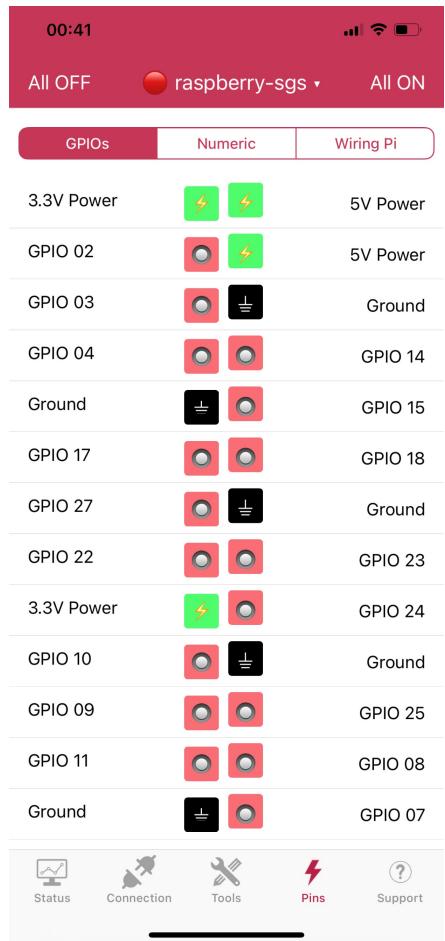
The screenshot shows the Home app on an iOS device. It displays the following details for the "Raspberry Jardín" bridge:

- Accessory Status:** This accessory is not responding.
- Bridge Details:**
 - Room: Bedroom
 - Manufacturer: homebridge.io
 - Serial Number: 0E:7B:7B:F9:DB:40
 - Model: homebridge
 - Firmware: 1.3.5
 - HomeKit Certified: No
- Actions:** Remove Bridge from Home (warning: removes all accessories).

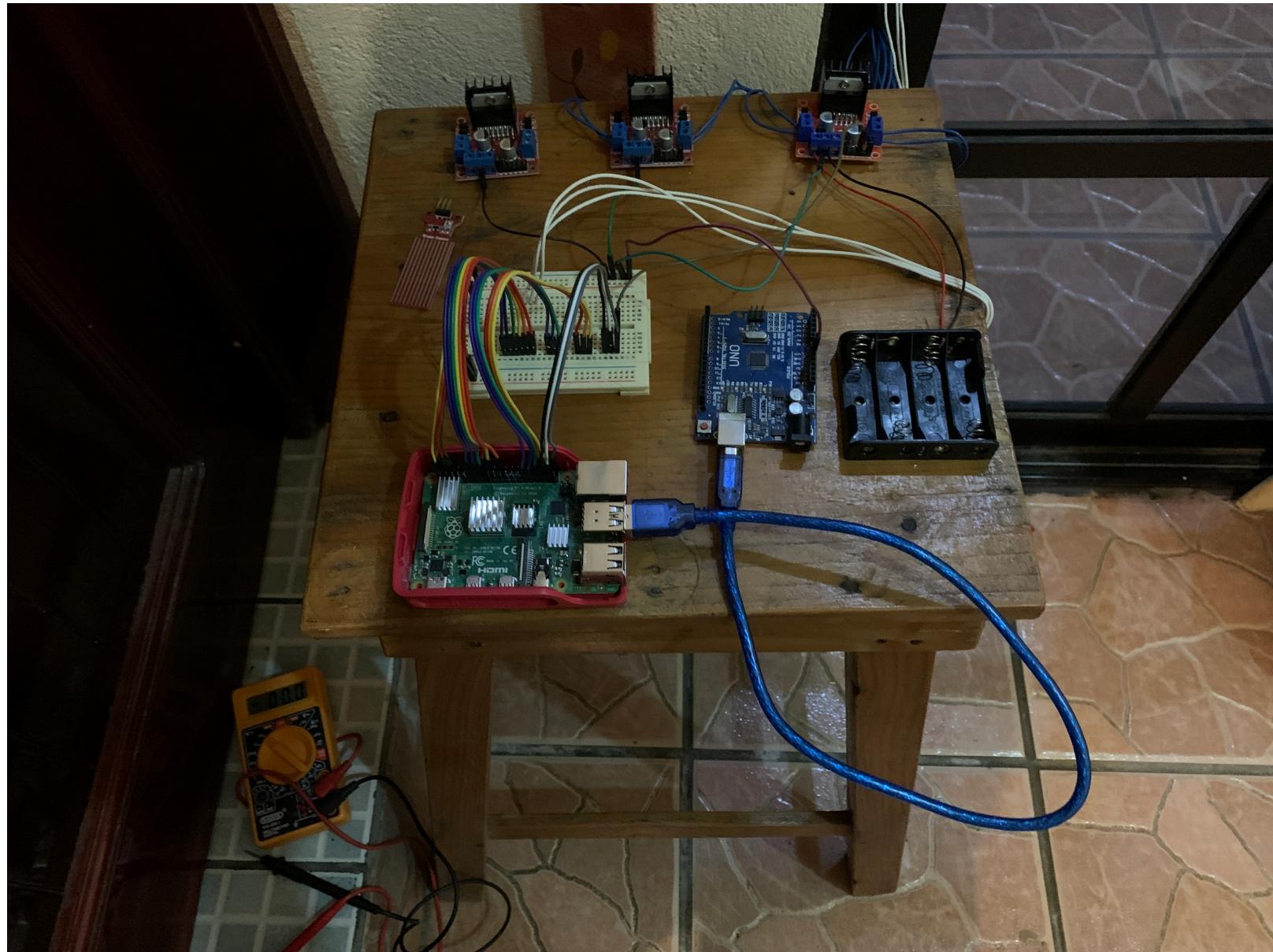
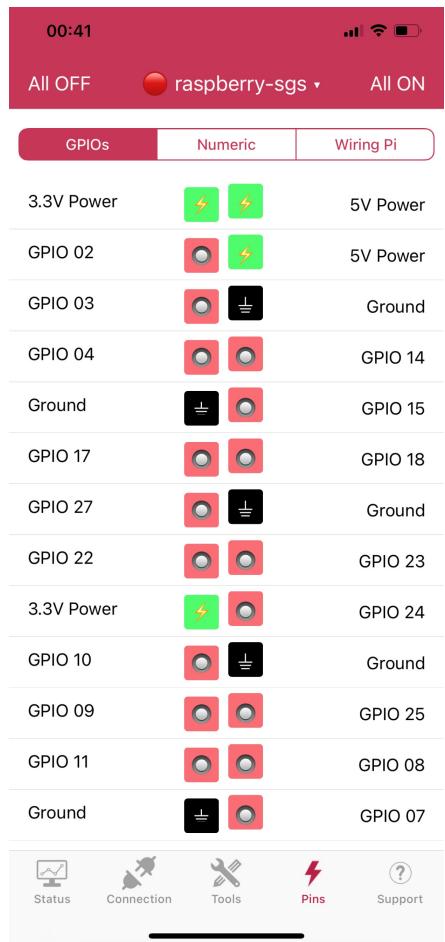
Evidencias



Evidencias



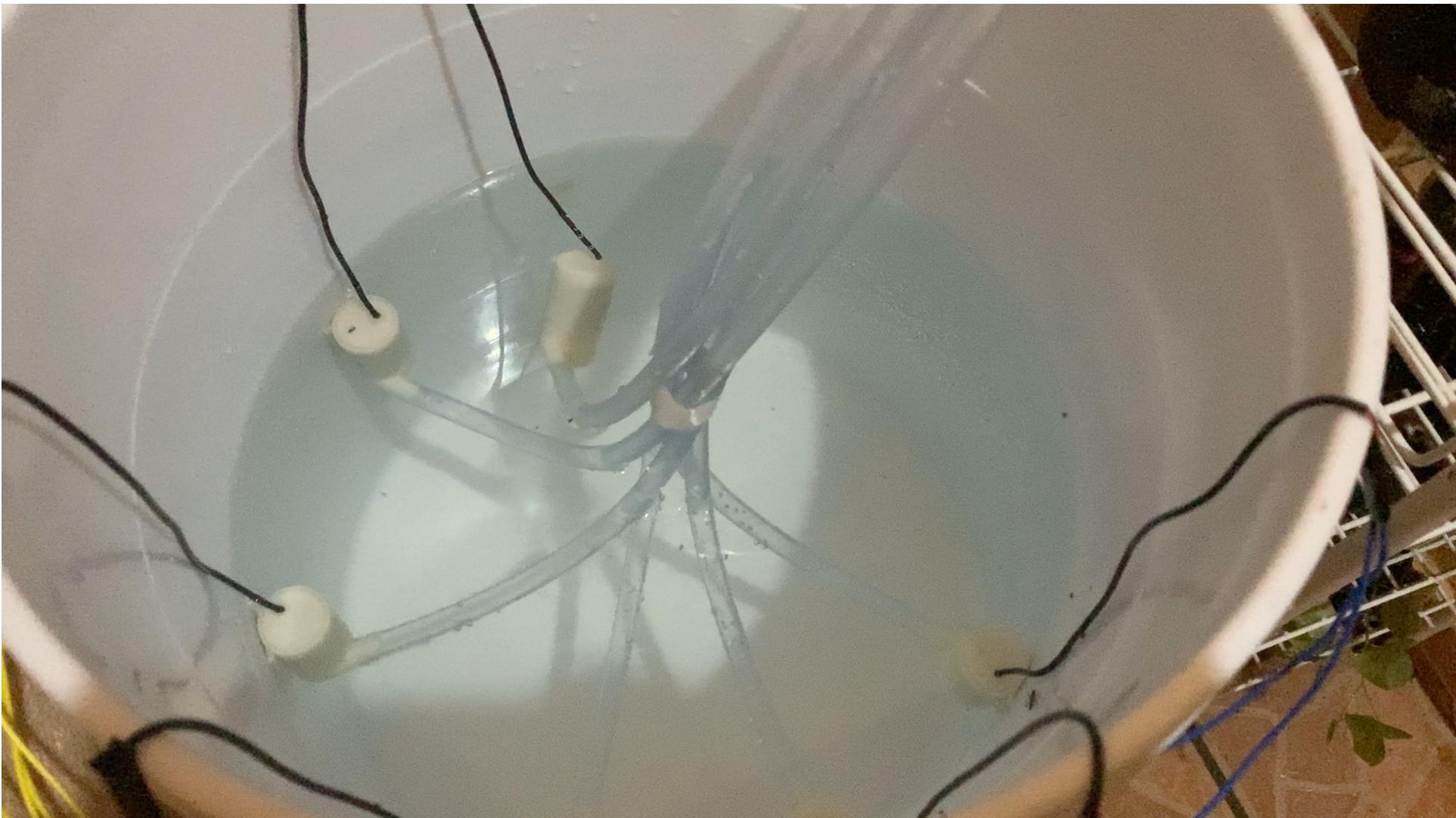
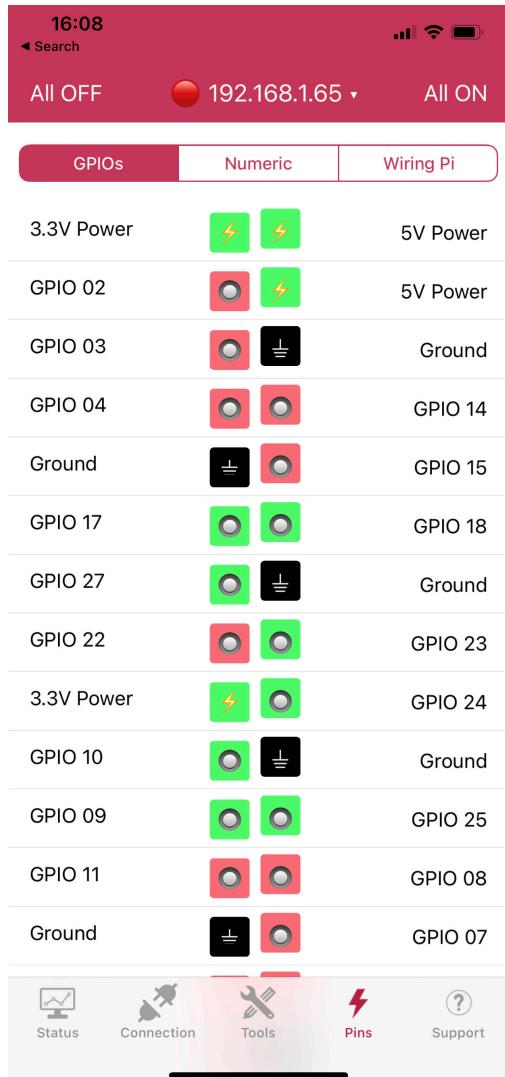
Evidencias



Evidencias



Evidencias



Conclusiones

La implementación de los componentes de las prácticas están teniendo un uso efectivo en el desarrollo del sistema. La implementación de funcionalidades hace uso de la modularidad y la escalabilidad de un sistema embebido.



Además de eso, al implementar una base de datos potenciará a un manejo óptimo del sistema.

