

The background features a light gray gradient. On the left side, there is a complex network diagram with numerous black dots (nodes) connected by thin gray lines. Scattered across the entire background are various geometric shapes, including triangles and polygons, some of which are outlined in a light gray color. The overall aesthetic is modern and technological.

IoT Smart Vase

Grupo 3:

Ricardo Barreto - [REDACTED]

Pedro [REDACTED] [REDACTED]



Project description

IoT Smart Vase is an intelligent watering system that measures several meteorological variables and will water the plant, with the aid of a water pump, when it deems necessary.

There is also a companion Android application where the user can visualize the sensor's readings and set an ideal soil moisture level. Through the app, it is also possible to water the plant manually.

Variables measured:

1. Soil Moisture
 2. Temperature
 3. Humidity
 4. Luminosity
- 

Commercial Products



Lua

Smart planter with
"feelings"

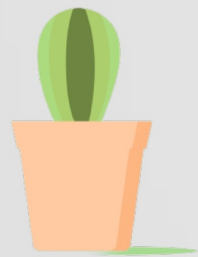
<https://vivien-muller.fr/lua>

Xiaomi Smart Pot

Smart vase by xiaomi



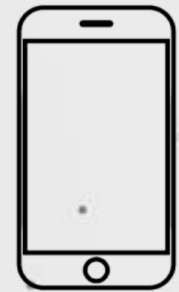
General Architecture



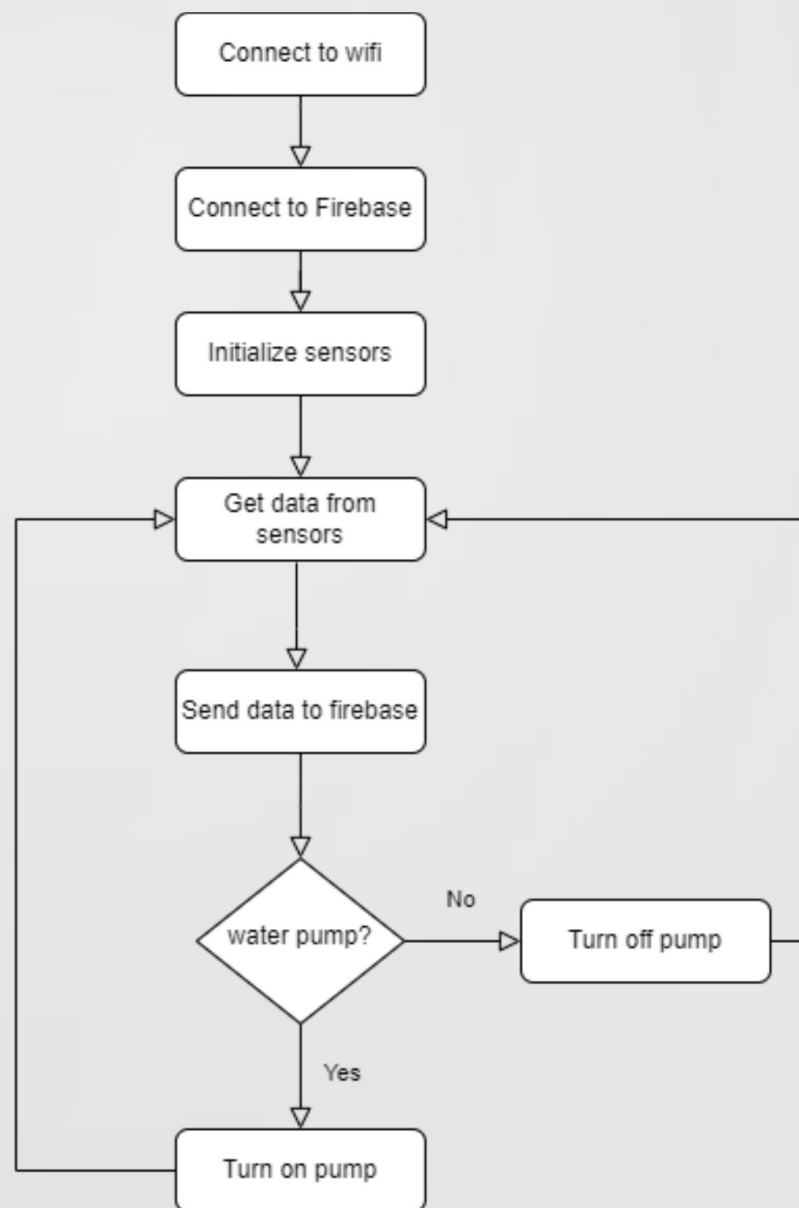
Wifi



Firestore Database

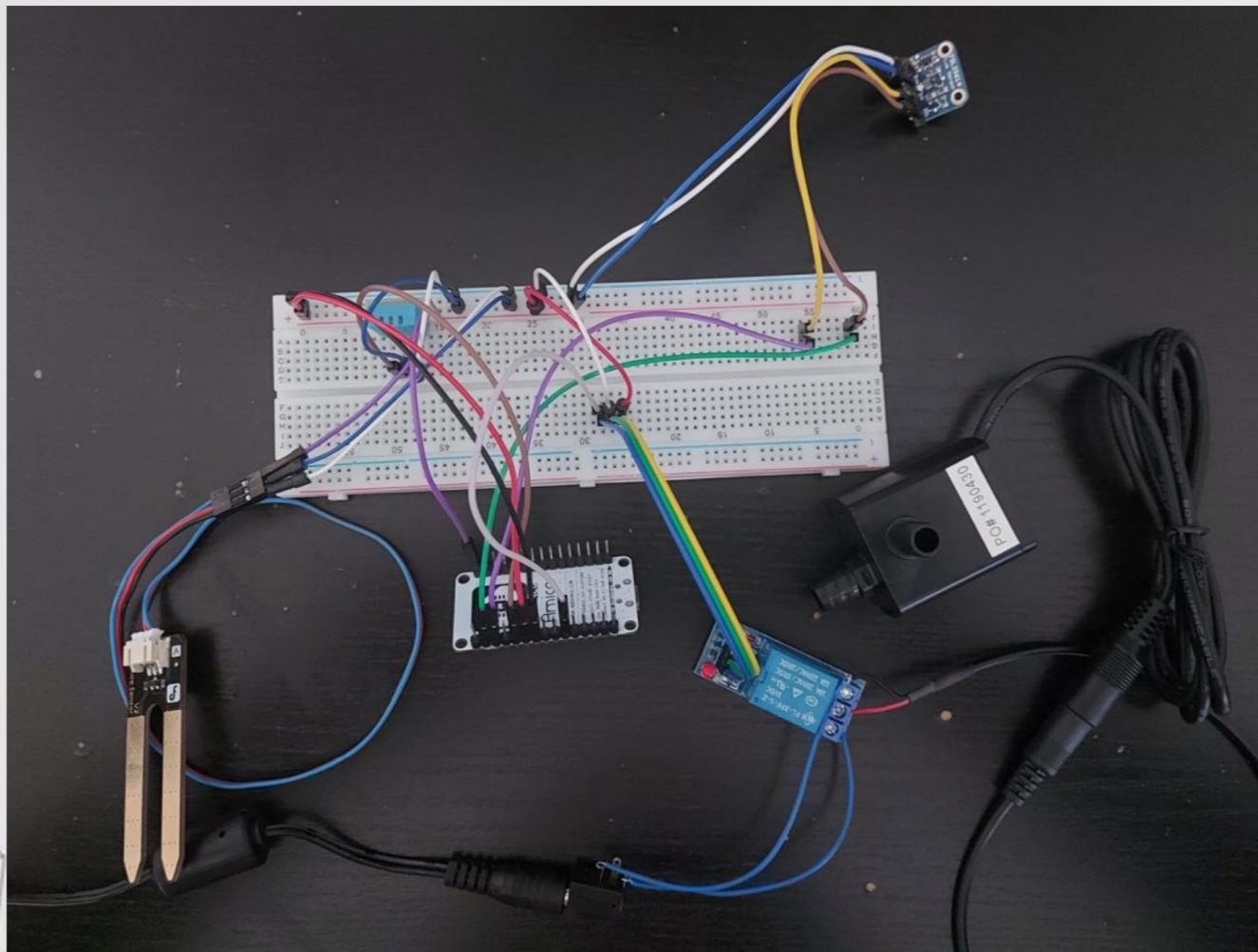


Android App



Flow diagram

Hardware Photo



Database platform

Database: Google Firebase



iot-garden-d17b7-default-rtdb

```
..... humidity: 0
..... ideal_moisture: 0
..... luminosity: 0
..... moisture: 0
..... pump: false
..... temperature: 0
```



Description of App functionalities



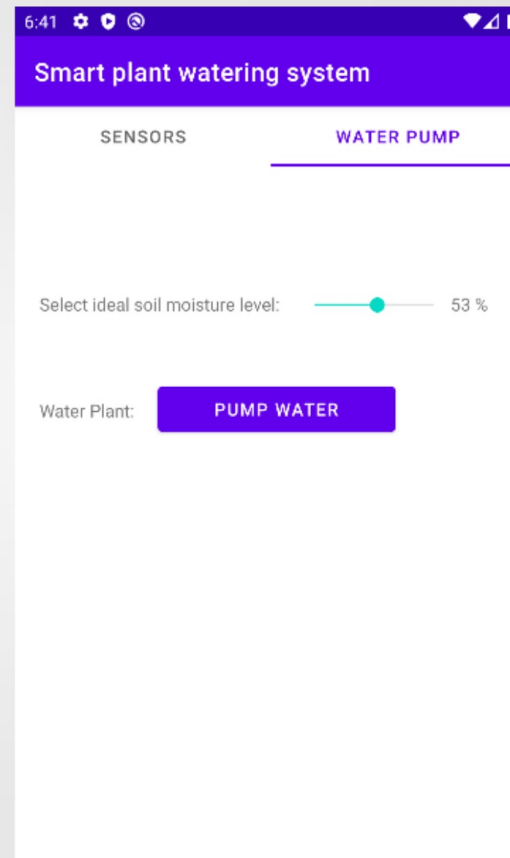
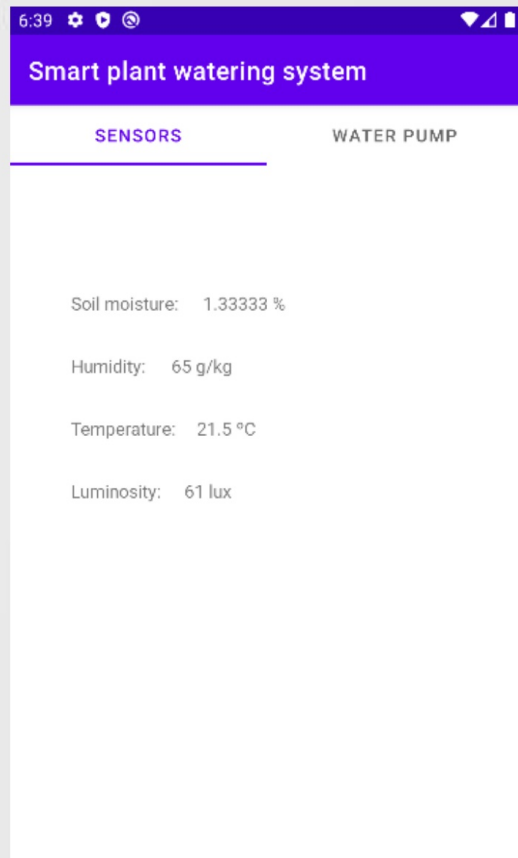
The Andorid app functionalities are displayed in 2 different tabs:

The first tab allows users to observe the sensor's readings.

On the second tab, there is a widget (slider) where the user can select the ideal soil moisture level.

There is also a button that if selected will override the smart controller and water the plant, reagardless of the moisture level.

Snapshots of the Android application



Future development

- Set personalized conditions for different species of plants.
- Design a simple PCB / module for easy to use purposes.
- Design a feedback control algorithm for better control.

