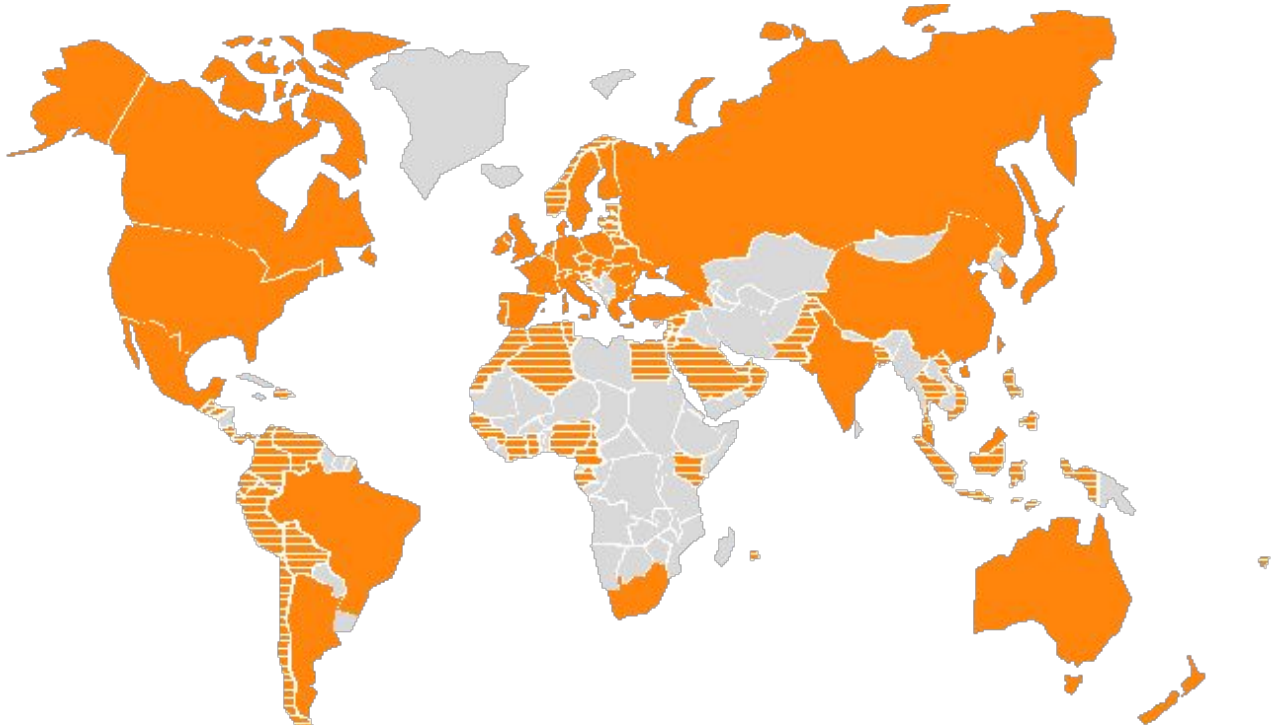
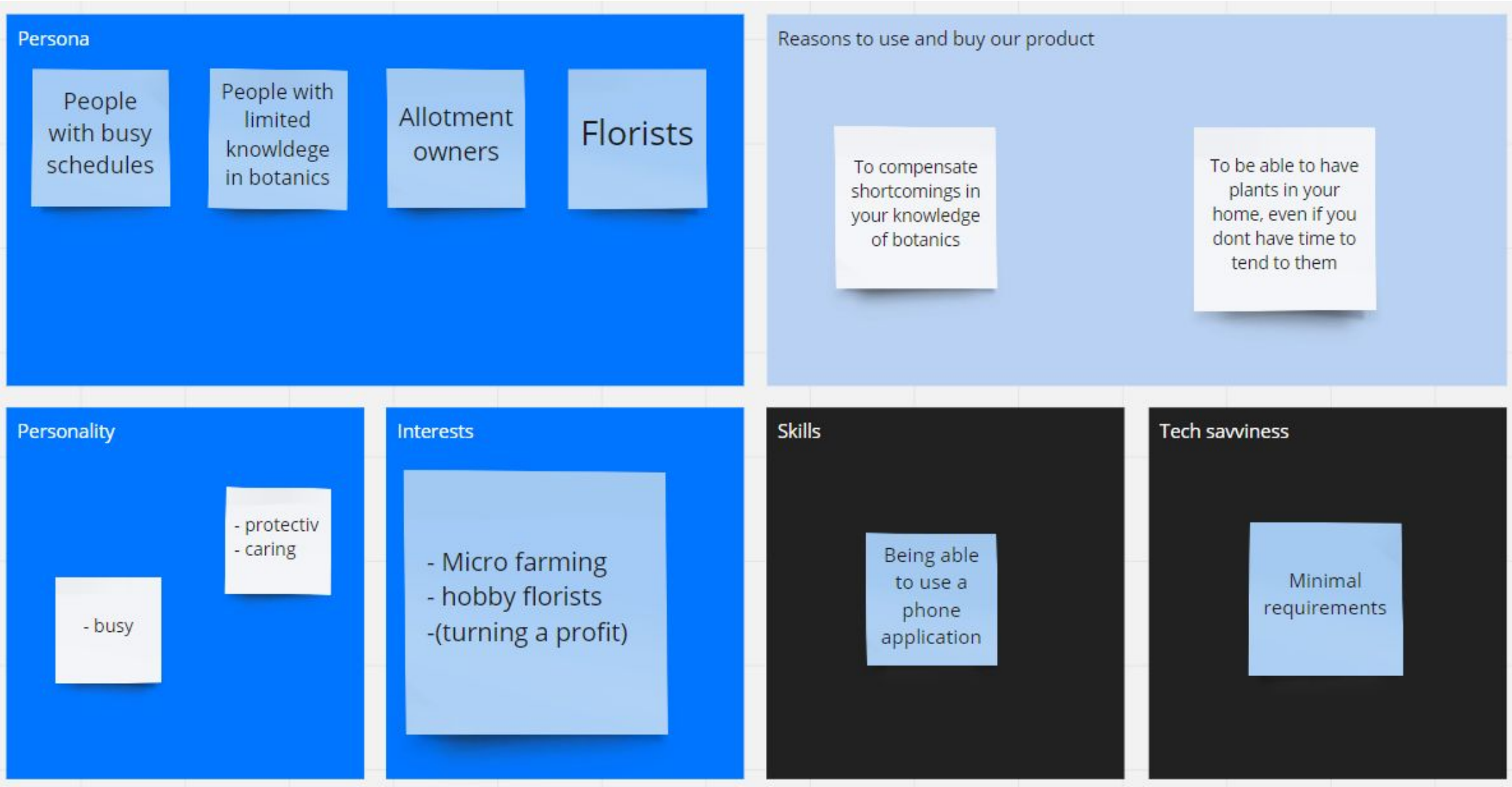


EESTECH Challenge | Human-Computer-Interaction | Local Round Duisburg

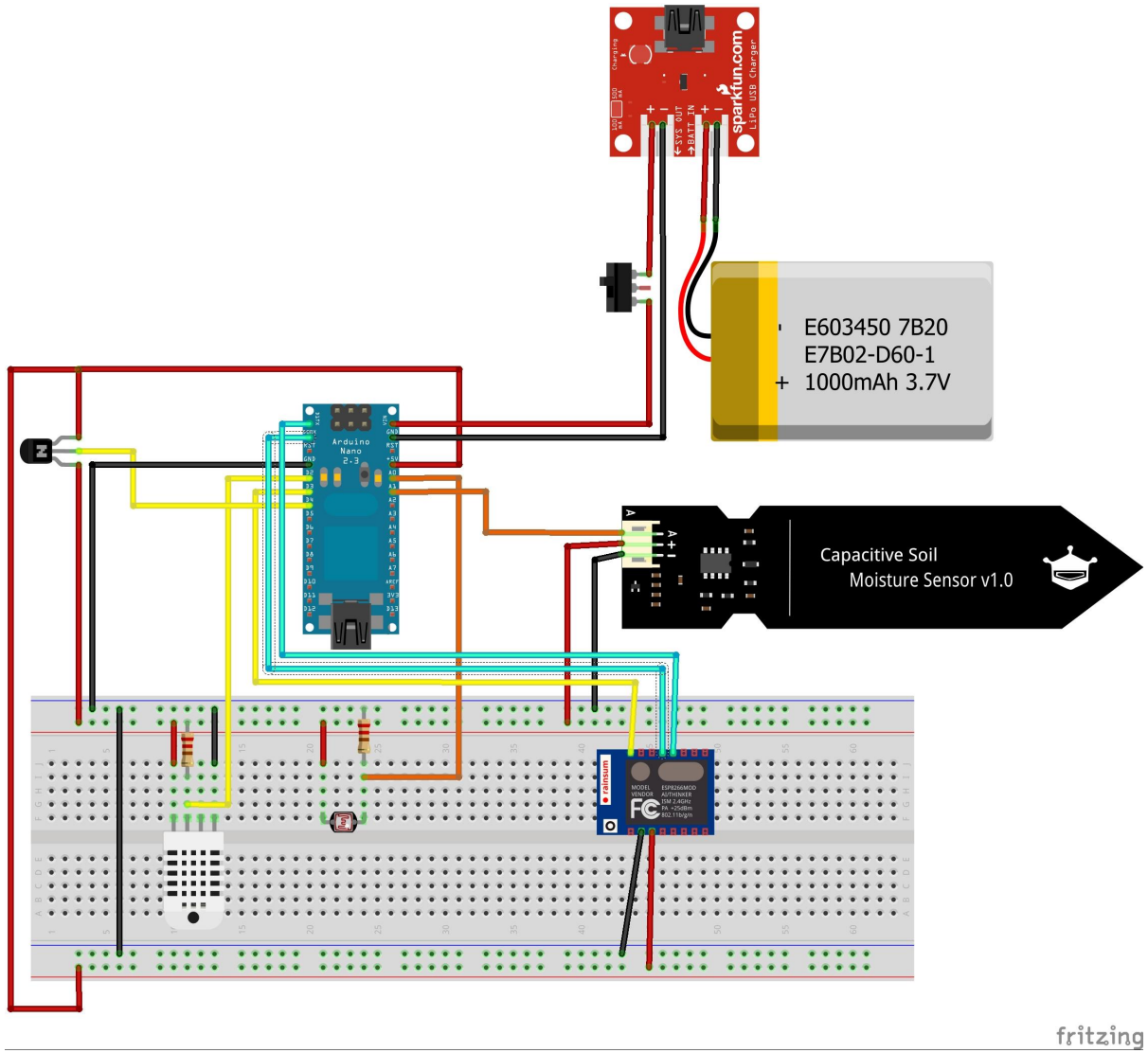
Concept Presentation Team LF

14. October 2020 | Fabian Mantica, Julian Weber, Sebastian Tenkamp
ifm electronic GmbH

Persona


Persona
People with busy schedules
People with limited knowldege in botanics
Allotment owners
Florists
Reasons to use and buy our product
To compensate shortcomings in your knowledge of botanics
To be able to have plants in your home, even if you dont have time to tend to them
Personality
- protectiv
- caring
- busy
Interests
- Micro farming
- hobby florists
-(turning a profit)
Skills
Being able to use a phone application
Tech savviness
Minimal requirements

Hardware



- Arduino Nano Board
- Capacitive Soil Moisture Sensor
- Temperature and humidity sensor
- Photoresistor
- Wifi-Modul
- USB LiPoly Charger
- Lithium Polymer Battery
- Cable, On-Off-Switch, Resistor, NPN-Transistor

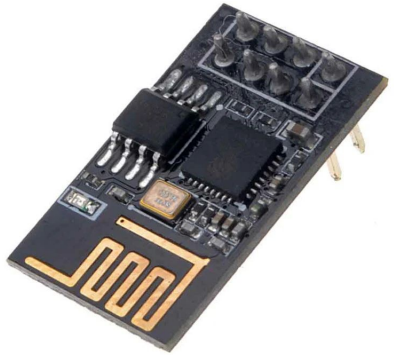
➢ **All shown parts are planned to be on one specific made custom PCB and put into a housing**

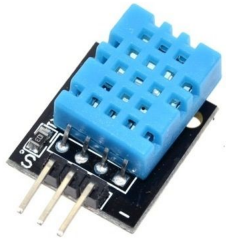
Hardware

Possible housing solution

source:
https://labeuker.nl/home-automation/mi-flora-in-home-assistant/

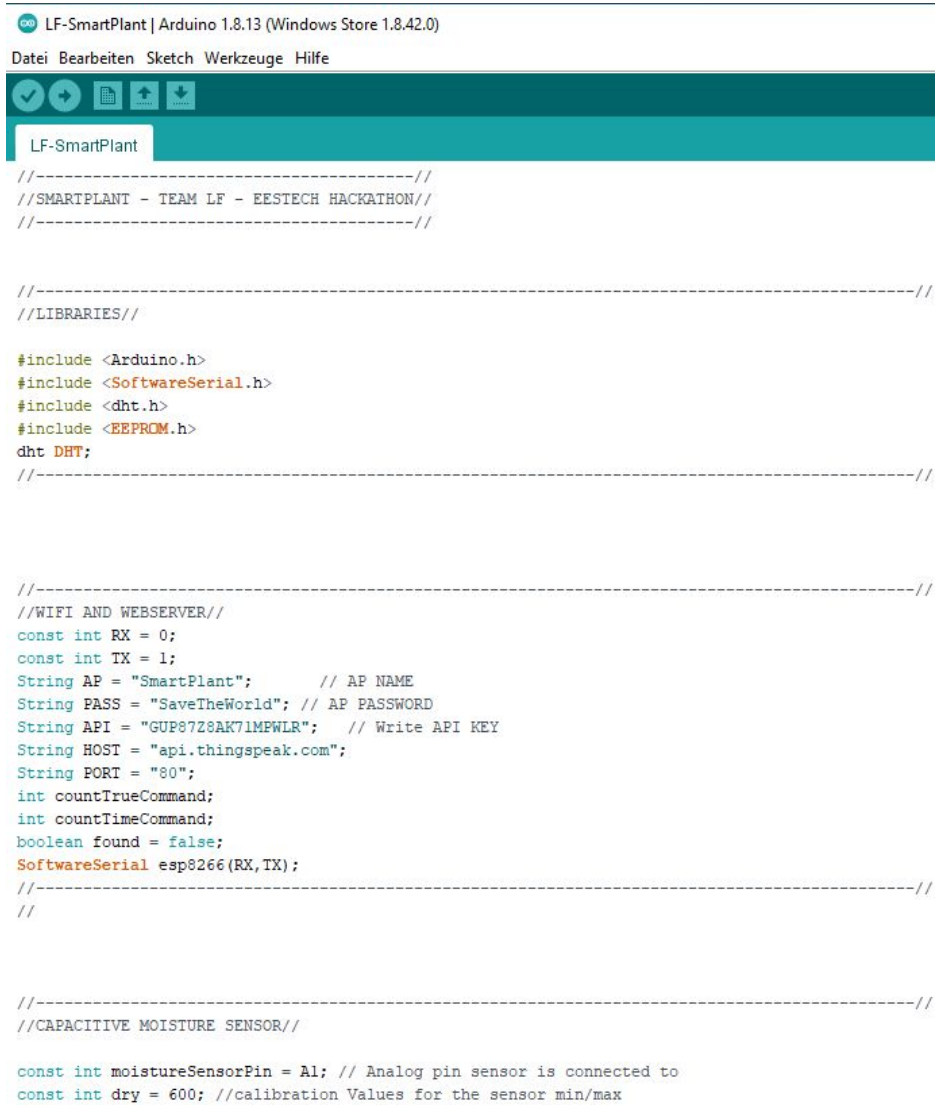
Sensors/Modules





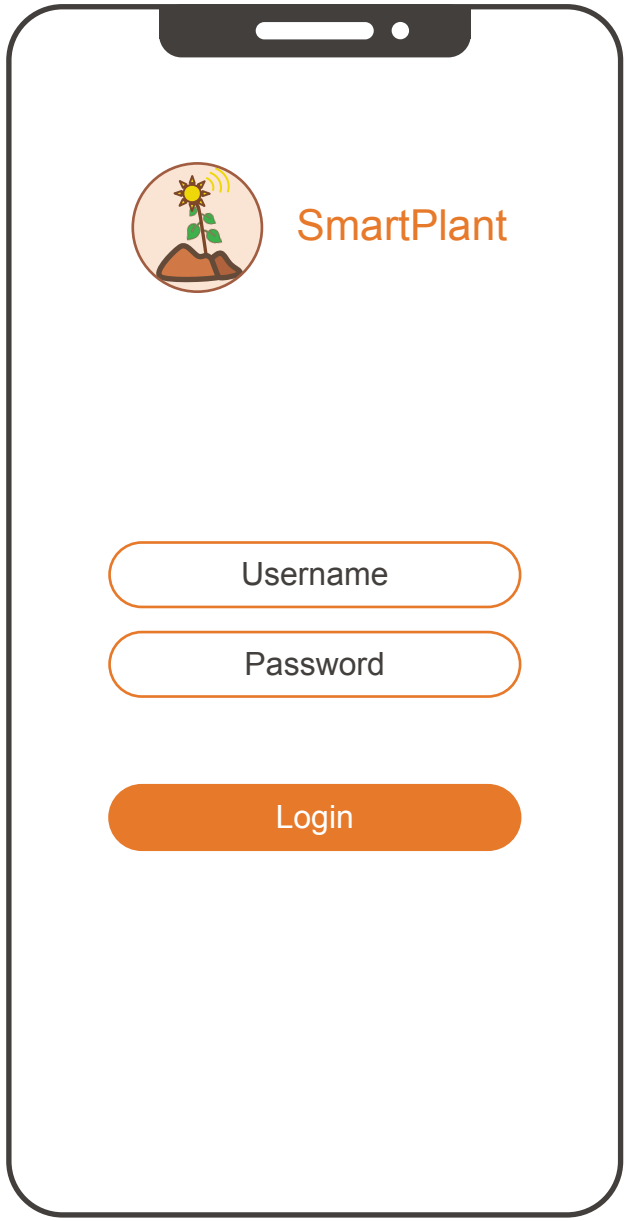
Capacitive Soil Moisture Sensor	**ESP8266 WiFi-Module**	**Temp. and Humidity Sensor (DHT11)**	**Photoresistor**
-used to measure moisture level of soil (0 - 100%) -better than non capacitive moisture sensors: no *corrosion,* no *false values* with fertilizer -only uses one analog input	-used to set up device and connect to the internet -most known WiFi-module for use with mikrocontrollers -reliable connection -very power efficient	-used to measure air humidity and temperature -sufficient measuring range for home use: temp: 0 - 50 degrees Celsius humidity: 20 - 80% -small and cheap	-used to measure light level with variable resistance as indicator for light exposure -simple, reliable, small and cheap

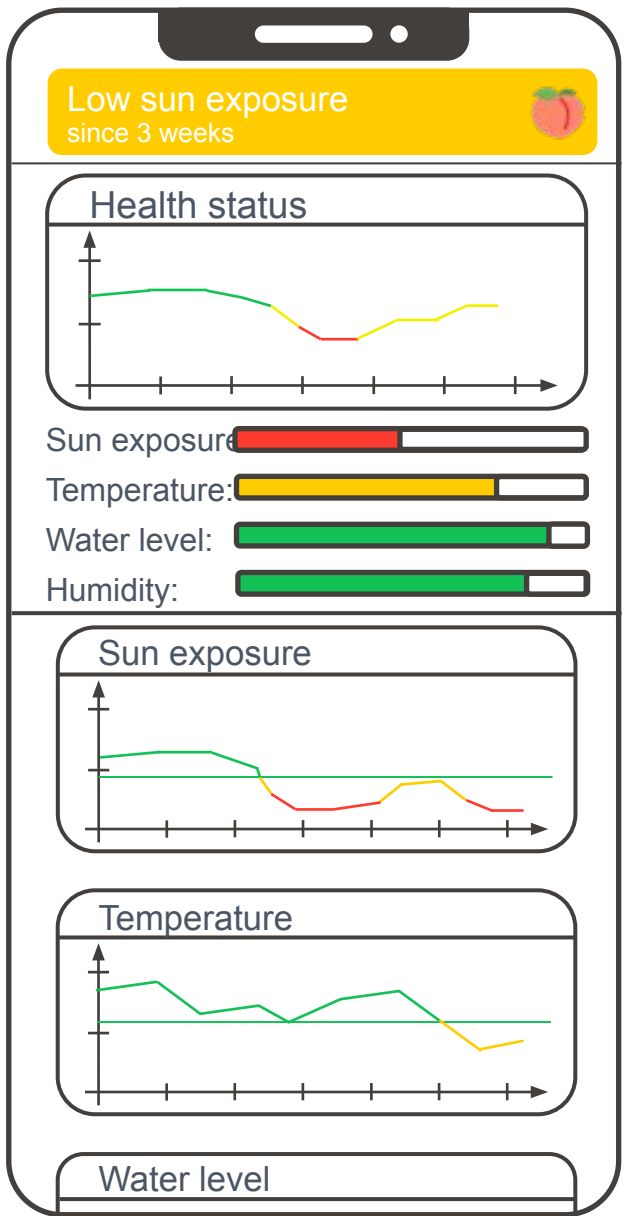
Software



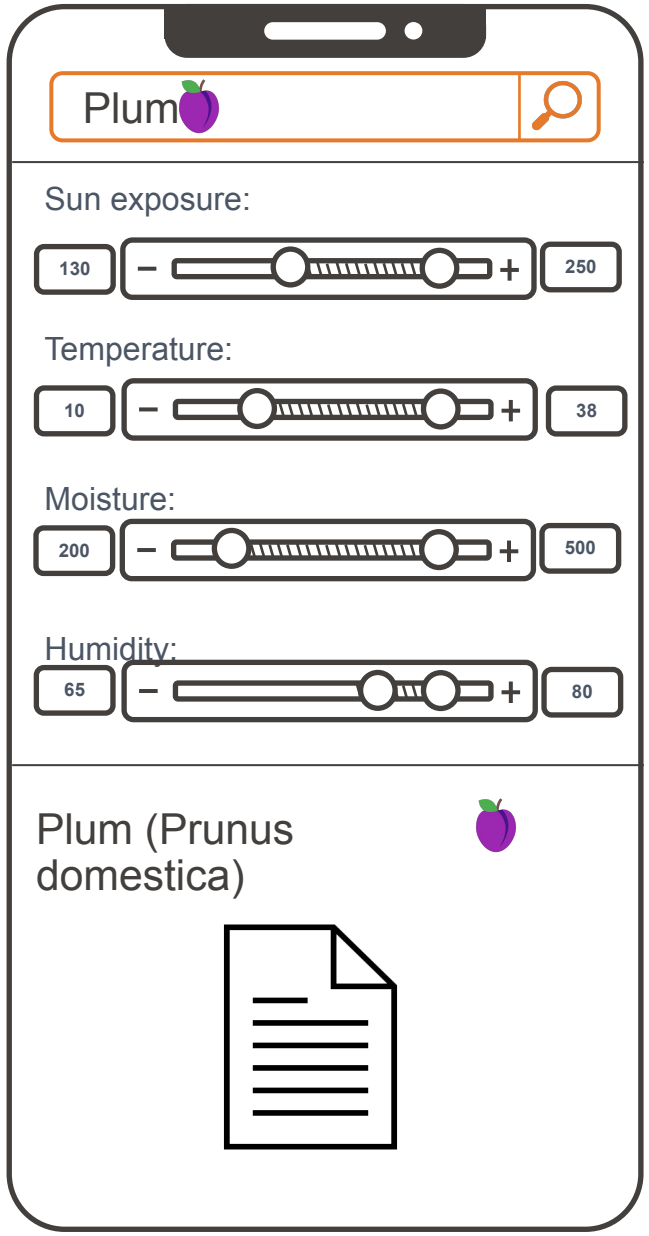
- mikrocontroller code written with Arduino IDE
- code offers WiFi connection for first time configuration
- permanent connection to the internet after configuration
- sensor values are read every few minutes and then send to a online database (thingspeak.com) automatically
- a smartphone App (not developed yet) is receiving the data and evaluates the values
- depending on plant type which can be chosen from a library, the user gets information about the health status of the plant
- if the status is bad he gets a recommendation what to do best to improve the health status (e.g. watering, put to a place with more light)

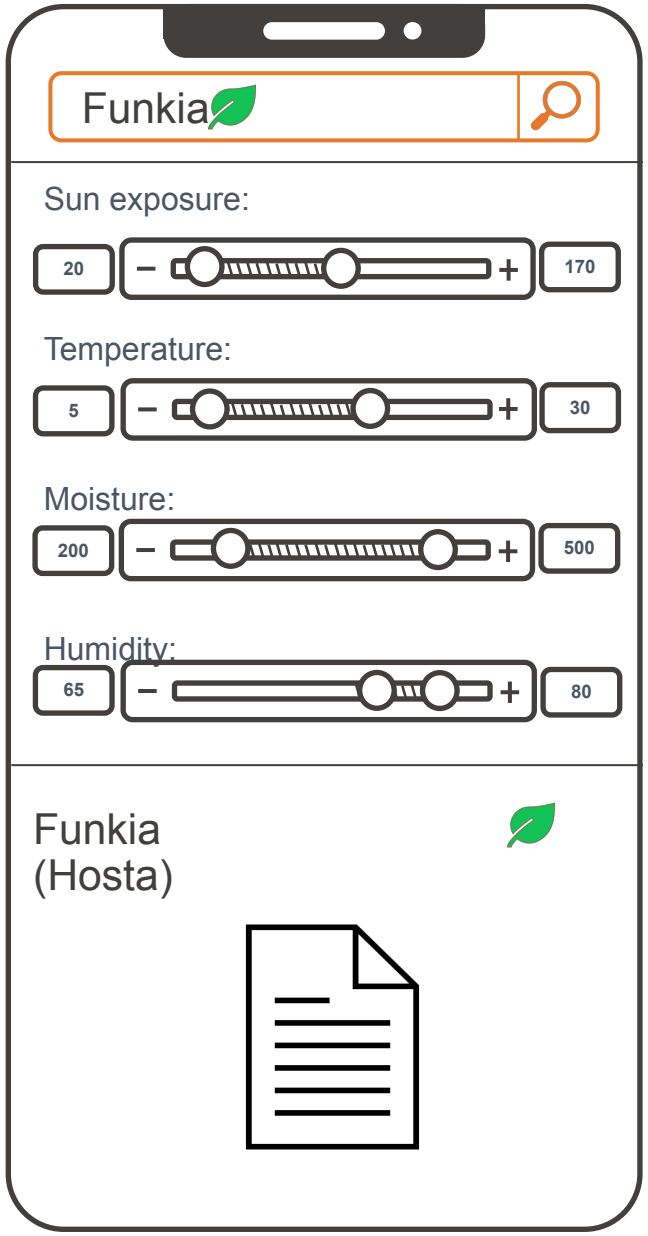
Smartphone App





Smartphone App





Future

App Development

SmartPlant

-expand database

-userbased algorithms to suggest parameters

Add-Ons

-offer various add-ons like self-watering feature in a soft- and hardware bundle

-internet connection over mobile network as add-on

Community Support