openSAP

TOUCH IOT
WITH SAP LEONARDO

PROTOTYPE CHALLENGE

REQUIREMENTS SUBMISSION

Story

Story

An Aquaponics system is an eco-friendly and closed system that uses the symbiotic relationship between fishes, bacteria and plants in order to grow plants without soil and save water. The only intrant into an Aquaponics system is food for fishes. An Aquaponics system can exist at different scales for personal or commercial objectives. In order to maintain the right balance of this symbiotic relationship for the well-being and growth of fishes and plants, several parameters have to be controlled. If values of parameters are out of predefined value range, user has to be warned in order to take appropriate corrective actions. Parameters to be controlled are:

Water	Air
• Water Temperature • Water Level • Water Acidity (pH) • Water Hardness (GH) • Oxygen in water (DO) • Nutrients in water (NO2, NO3, Fe, ...).	• Air Temperature • Humidity • CO2 • Light

The purpose of this prototype is to control the main parameters for a small scale aquaponics system for home usage. Intent is to provide the means of home aquaponics system control for users interested to grow fishes and plants at domestic level in order to achieve first step to food autonomy. There should be one sensor device for controlling water, one for temperature and one for light. Parameters should be measured at least once per day, with the option to define the measurement frequency. Overview of parameters should be displayed on a mobile device. Alert should be sent to user when one or several parameters are out of initially defined value range with suggestion of corrective action.

Persona

Phyllis

The Food Self-Sufficient Aquarist

"I like to control my Aquaponics system remotely and be able to harvest the fruits of my crop."

About

- 60, retired, 7 years of aquarium experience
- Concerned with future of food
- Discovered recently urban agriculture in general and aquaponics in particular
- Would like to be food and energy self-sufficient

Responsibilities	Main Goals
• Select fish food • Select fish varieties for Aquaponics system • Select plants to grow in Aquaponics system • Define initial settings for Aquaponics system	• Achieve some food self-sufficiency through controlled domestic Aquaponics • Being able to run and control an aquaponics system remotely • Be able to expand my Aquaponics system when needed
Needs	**Pain Points**
• I need to be able to control Aquaponics system automatically and visually • I need to be warned when something is not right • I need to get suggestions about corrective actions	• Don't know if there is enough light • Don't know if water has appropriate nutrients • Need to be present near Aquaponics system to control various indicators regularly

Point of View (PoV)

As a Food Self-Sufficient Aquarist (Persona / User),

I need a way to control automatically the balance of my Aquaponics system (Need),

so that my fishes and plants can remain in good conditions and grow (Why / Insight).

UX Journey

Actions	Go near the Aquaponics system	Check fishes	Check plants	Check water temperature, acidity, dissolved oxygen, hardness, nutrients (NO2 / NO3, Fe)	Check Light, ambient temperature and humidity	Check pump flow and piping system	Take corrective actions if necessary
Mindset		• Fishes swim up and down and look healthy • Fishes scales look normal	• Foliage looks green without stains and bigger than yesterday • Flowers buds do not hatch and get rotten	• Very long routine, I wish I would see all measures in once and get alerted when something is wrong! • I need to buy new test strips • Is there something wrong with water that impacts flowers hatching? • I wish I could be automatically advised about corrective actions	• Big leaves make shade to small plants • Do I use the right light for photosynthesis? • How much electricity am I using for artificial lighting?	• Water looks clear • Water level is a bit low • Bubbles are produced in the fish tank, so siphon operation is OK	• Let's add some fresh water in the fish tank
Feeling	☺	☺	😐	☹	☹	☺	☺
Touch Points	Aquaponics system	Fishes	Plants	Water	Light	Pump and piping system	Fish Tank

Prototype

Mme Phyllis D.
10, Bld Alsace Lorraine
33000 Bordeaux - FRANCE

RiseBox Ultime
AQPN-RSBX-0015

Mapped Connected On

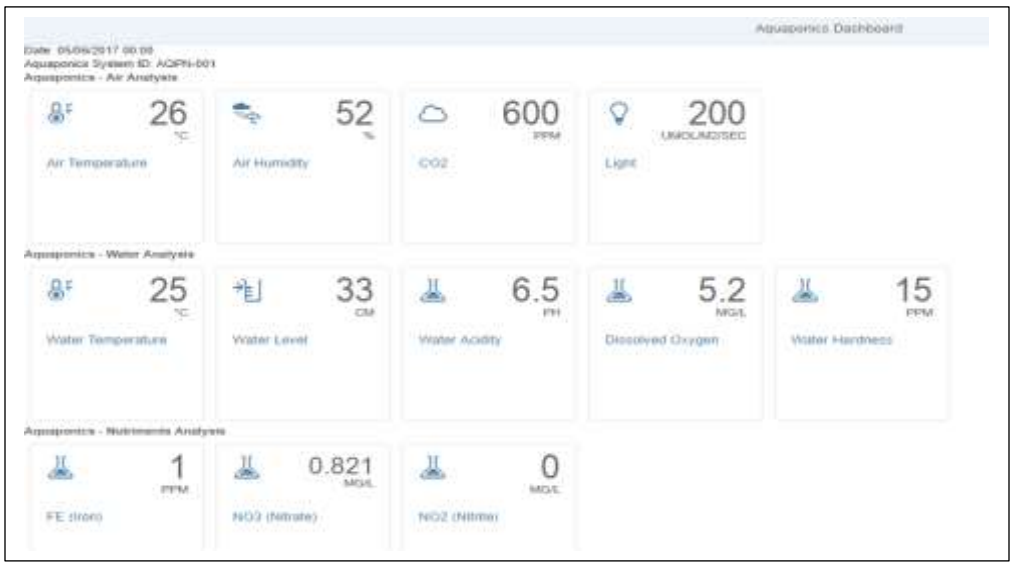
Phyllis D. - Owner

Notify

Water Temperature
22 °C *4:00 pm*

*Average **Water Temperature** too **high** on June 5th, 2017*
*Average **Air Humidity** too **low** on June 6th, 2017*
*Average **Water Temperature** too **high** on June 8th, 2017*

Aquaponics Dashboard



History of daily averages in selected period interval