

# Developing an Aquaponics Interface

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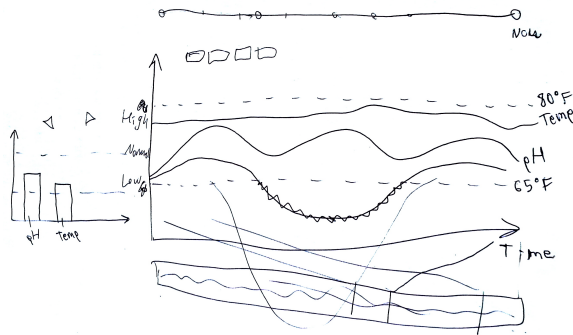


Figure 2. Initial sketch in response to system operator's desire to see all information at a glance.

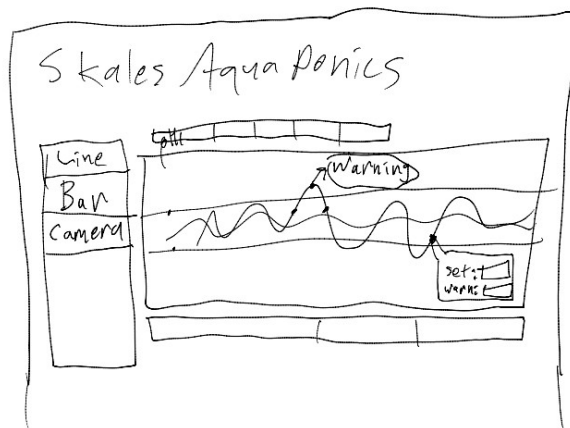


Figure 3. Refinement upon first sketch.

## ABSTRACT

Abstract.

## Author Keywords

Aquaponics; sustainability; value sensitive design;

## ACM Classification Keywords

H.5.2. Information Interfaces and Presentation: User Interfaces

## INTRODUCTION

Introduction

## RELATED WORK

*Aquaponics*

See Figure 1.

*Value Sensitive Design*

Blah [1]

## METHODS

Intro to methods

**Value Sensitive Design**

Some stuff about VSD

Although we identified an extensive list of potential stakeholders, we decided to focus on only a few principle ones (see Table 1).

*Direct Stakeholders*

*Indirect Stakeholders*

**Iterative Design**

D3.js: [?]

## RESULTS

Blah

## CONCLUSION

Blah

## FUTURE WORK

*Additional Stakeholders*

Fish

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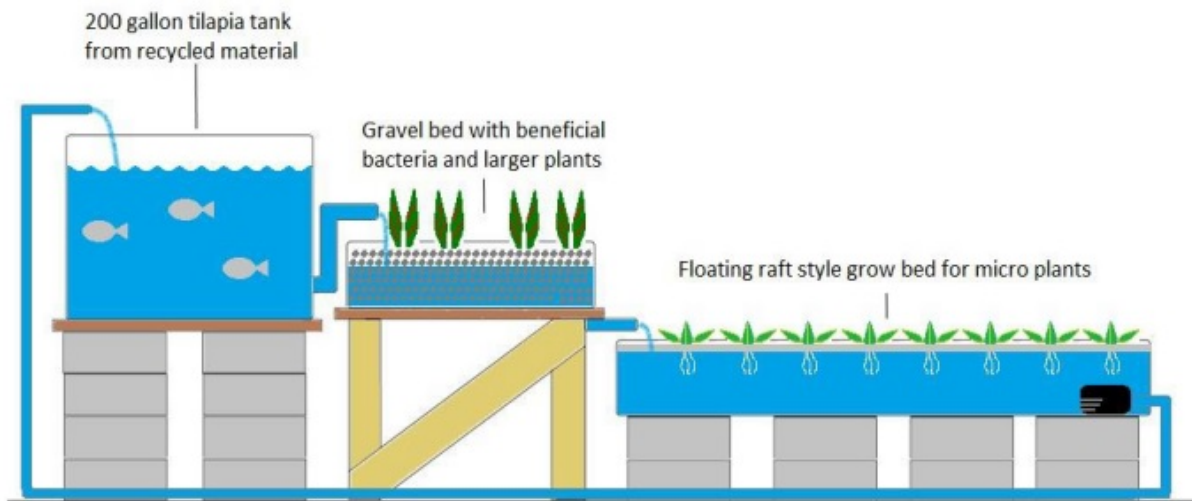
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## REFERENCES

1. Batya Friedman, P. H. K. J., and Borning, A. "Value Sensitive Design and Information Systems". *Human-Computer Interaction and Management Information Systems: Foundations* (2006).
2. D3.js - Data-Driven Documents. <http://d3js.org/>.

Direct Stakeholders	Benefits/Harms	Values	Conflicts
System managers	<u>Benefits:</u> Able to fix problems more quickly <u>Benefit or harm:</u> Less time doing maintenance and tending plants by hand <u>Harm:</u> Could be alerted of emergencies at any time	Human welfare Autonomy Calmness Free time away from work Interaction with nature Physical interaction with systems Awareness (of system functioning)	Physical interaction with systems and awareness may conflict with calmness and free time away from work
Owners of system	<u>Benefits:</u> System reduces labor and maintenance costs Produce organic and high quality food <u>Harms:</u> Could suffer financial loss if system breaks down	Ownership and property Efficiency	
Indirect Stakeholders	Benefits/Harms	Values	Conflicts
Restaurants and restaurant customers	<u>Benefits:</u> Know about where their food comes from Provide feedbacks or improvements to owner <u>Harms:</u> Could be lied to if presented with false information	Trust Accountability Environmental sustainability Autonomy Ownership and property (restaurants)	Ownership and property (in the form of profitability) may compete with environmental sustainability

Table 1. Paired down list of stakeholders



The Skales Prototype includes (from left to right): a 200 gallon tank where tilapia are raised, a grow bed with gravel media and microorganisms to process the fish waste into fertilizer, and a floating raft bed ideal for growing microgreens and herbs. A recirculating pump will return the water to the fish tank.

Figure 1. Skales Cooperative aquaponics system

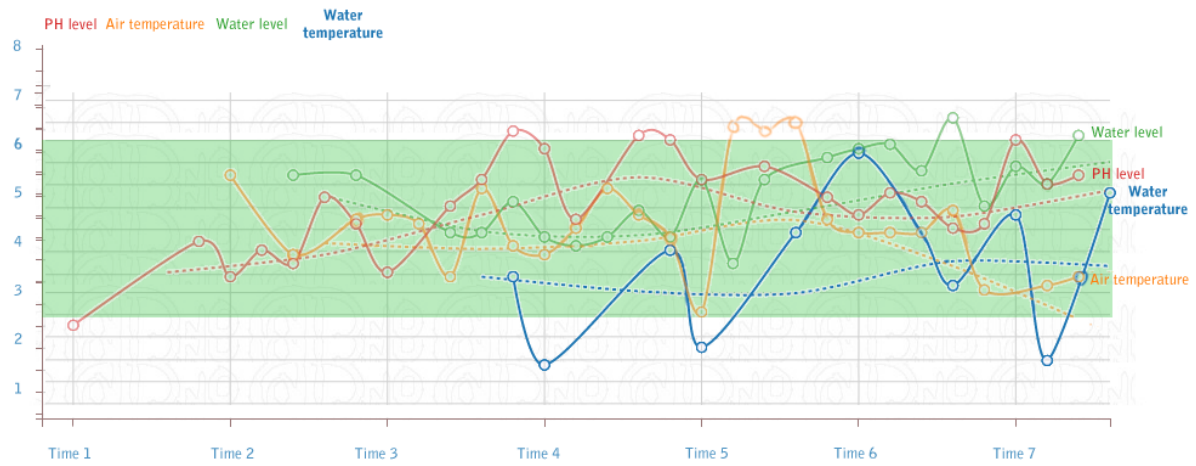


Figure 4. Color mockup based on D3.js aesthetics.