

SMART PONICS

James Fenske
Teja Vinukollu
Ruiyi Zhou

TEAM ROLES

Teja

Product Manager

Ruiyi

Communications and Design Engineer

James

Project Manager

DESIGN QUESTION

**HOW CAN WE
MAKE EARTH
GREENER
USING TECH**

TOO BROAD...
NARROWED IT

**GROW
PLANTS
EASILY
IN URBAN
ENVIRONMENT**

PRODUCT

Rooftop garden



Hydroponics

Controlled by phone



**WHY
YOU
NEED
IT**

BETTER
GREENER
EARTH



GROW FOOD YOURSELF



GROW
FLOWERS
YOURSELF



PERSONAS

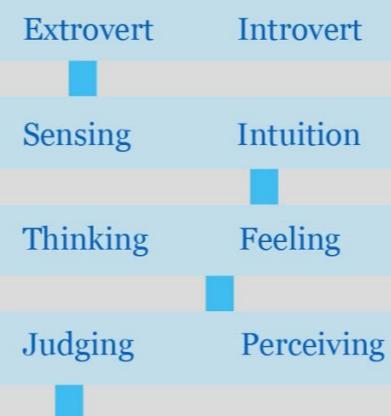
James "I need to keep the apartment attractive."

Apartment manager



AGE 35
EDUCATION BA
OCCUPATION Apartment Manager
STATUS Married

PERSONALITY

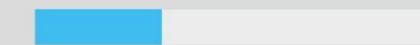


Technology Skills

IT and Internet



Software



Mobile Apps



Planting Related

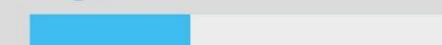
Knowledge



Time



Space



Goals

- Add facilities to the apartment to make it attractive
- Driven by business motives

Apartment Managing Duty

- Maintain apartment facilities
- Update facilities according to tenants' opinions

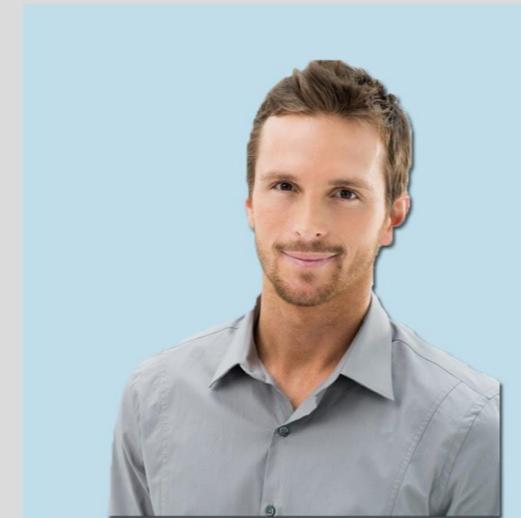
James owns Crescent Square at Redmond. There are 220 apartments in this building area. He leases these apartments to tenants. Majority of them are Microsoft Employees. He has no intention of gardening nor he cares about the environment. He has connections with other landlords and commands a good network in the area.

Secondary Persona

PERSONAS

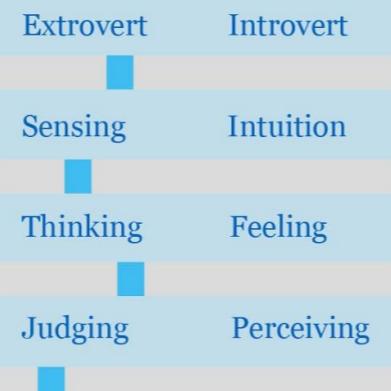
Mike "I love to grow plants, but I just can't take care of them."

Apartment tenant

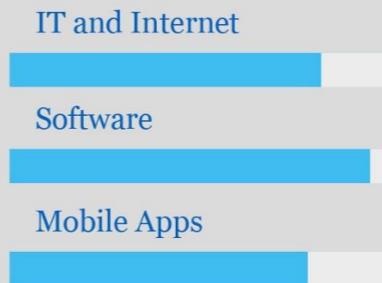


AGE 26
EDUCATION MS
OCCUPATION IT Manager
STATUS Single

PERSONALITY



Technology Skills



Planting Related



Goals

- Remotely control over his plants
- Get to know his plants' status
- Track temperature and moisture

Apartment Gardening Experience

- Used to grow tomatoes but failed
- Grows three pots of cactus in his apartment now

Mike moved into Bell Apartment since he began to work. He usually goes to work at 9:30 am, and goes back home at 6 pm. He lives alone. In leisure time, he goes to gym, parties with friends, plays video games and grows ornamental plants as a hobby, but doesn't have the time for more time-consuming plants.

Primary Persona

PERSONAS

Lisa

Apartment tenant



AGE 30

EDUCATION High School Graduates

OCCUPATION Full-time Mother

STATUS Married

PERSONALITY

Extrovert Introvert
A horizontal bar with a blue segment on the left and a light orange segment on the right, indicating a leaning towards introversion.

Sensing Intuition
A horizontal bar with a light orange segment on the left and a blue segment on the right, indicating a leaning towards intuition.

Thinking Feeling
A horizontal bar with a light orange segment on the left and a blue segment on the right, indicating a leaning towards feeling.

Judging Perceiving
A horizontal bar with a light orange segment on the left and a blue segment on the right, indicating a leaning towards perceiving.

"It's awesome that I can grow plants on my roof, but want to use everything I grow."

Technology Skills

IT and Internet



Software

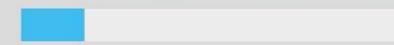


Mobile Apps



Planting Related

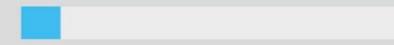
Knowledge



Time



Space



Goals

- Wants to grow tomatoes on the roof of her apartment
- Wants to sell extra produce to her neighbors

Apartment Gardening Experience

- None
- (But have experience in planting when she was young)

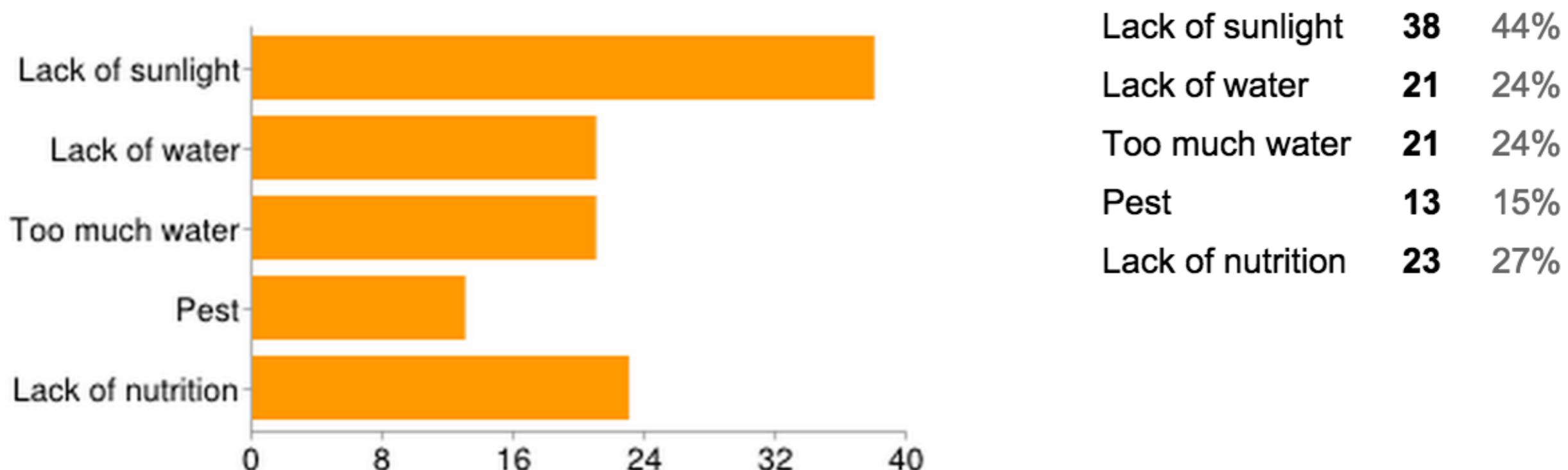
Lisa lives in an apartment with mobile enabled hydroponic gardens on its roof. She is a savvy iPhone user and is familiar using performance data apps such as ESPN Sports Center and Fitbit - apps that continuously update users with some sort of live stats. She signs up to lease a hydroponic plot for a small monthly fee and begins growing a tomato garden. At the end of the growing season, Lisa has a surplus of tomatoes and decides to sell her remaining crop to her apartment neighbors. Since she has historical growing and feeding data from her hydroponic app, she can show potential buyers what nutrients the plants were fed. She begins to grow more market vegetables year-round and continues to sell her surplus to neighbors and market goers who prefer buying local produce.

Supplementary Persona

SEVEN RESEARCH METHODS USED

Survey
Interview
Field Investigation
Historical Analysis
Competitive Product Survey
Secondary Research
Flow Diagram

Have your plants encounter any of the following problems?



SUNLIGHT

LEARN FROM EXPERT



EXPERIENCING THE GARDEN



POTENTIAL COMPETITORS



Link4



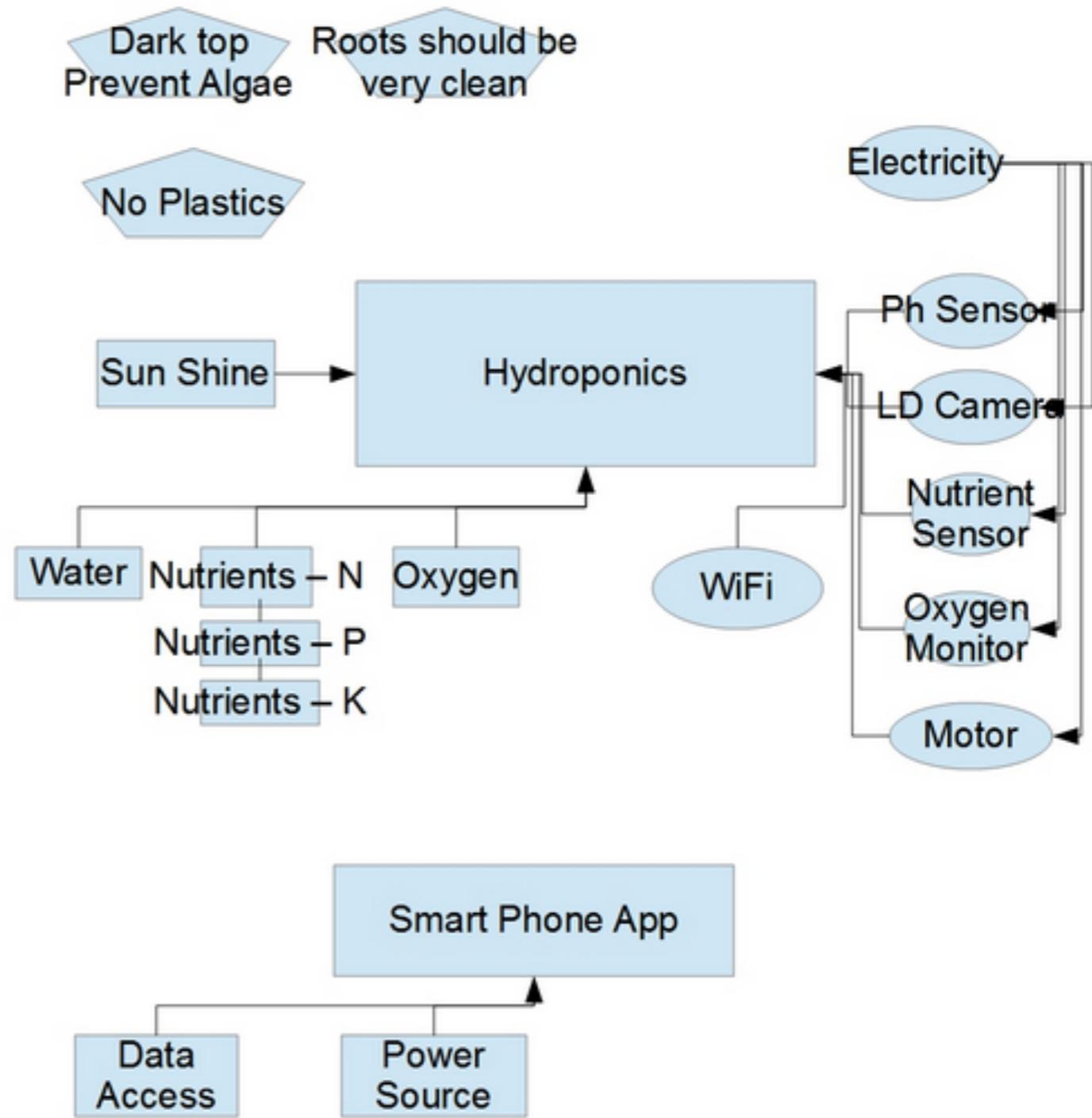
IntelliDose

SECONDARY RESEARCH



**Rooftop garden does exist
Hydroponics is better
Sustainability**

FLOW DIAGRAM



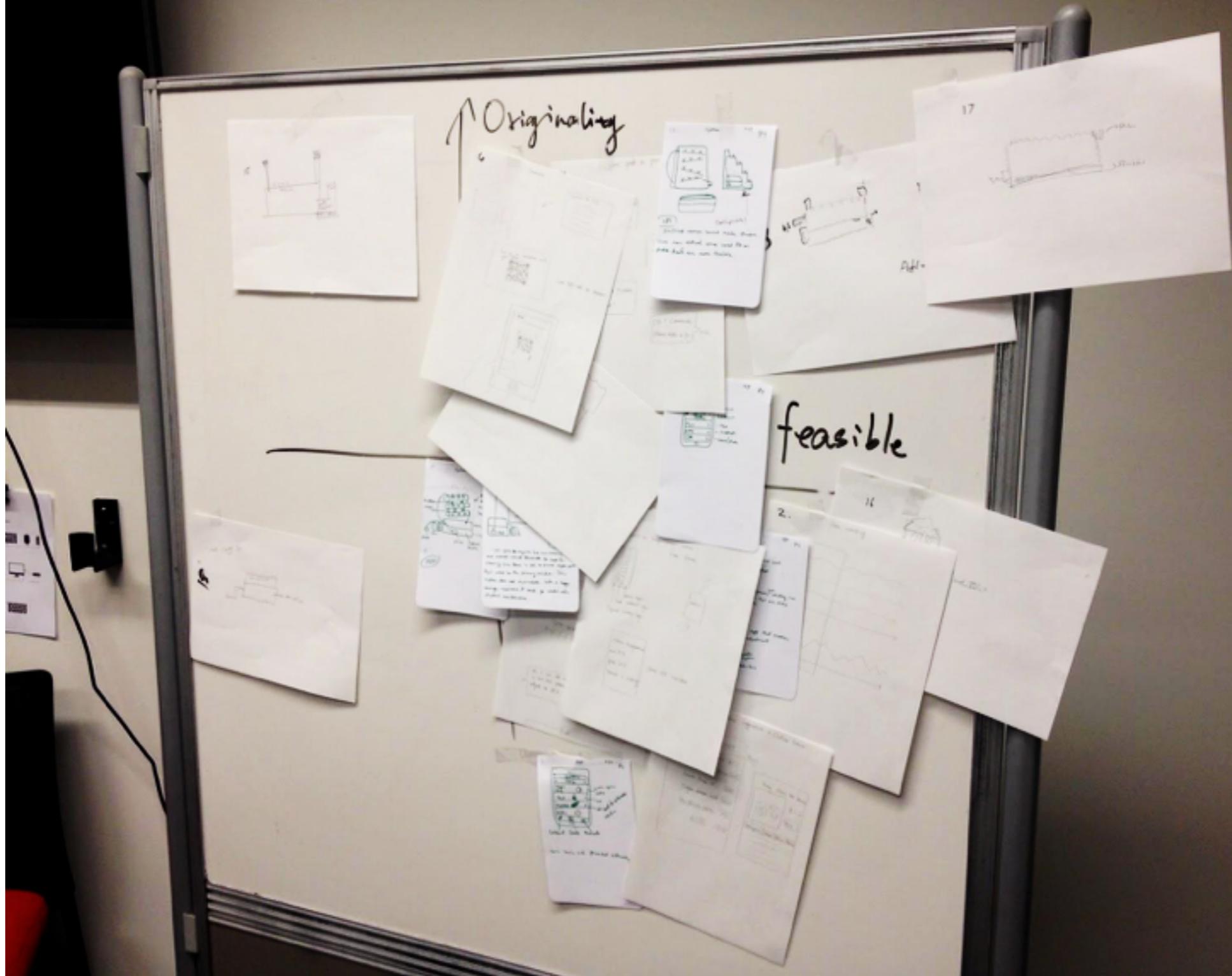
DESIGN

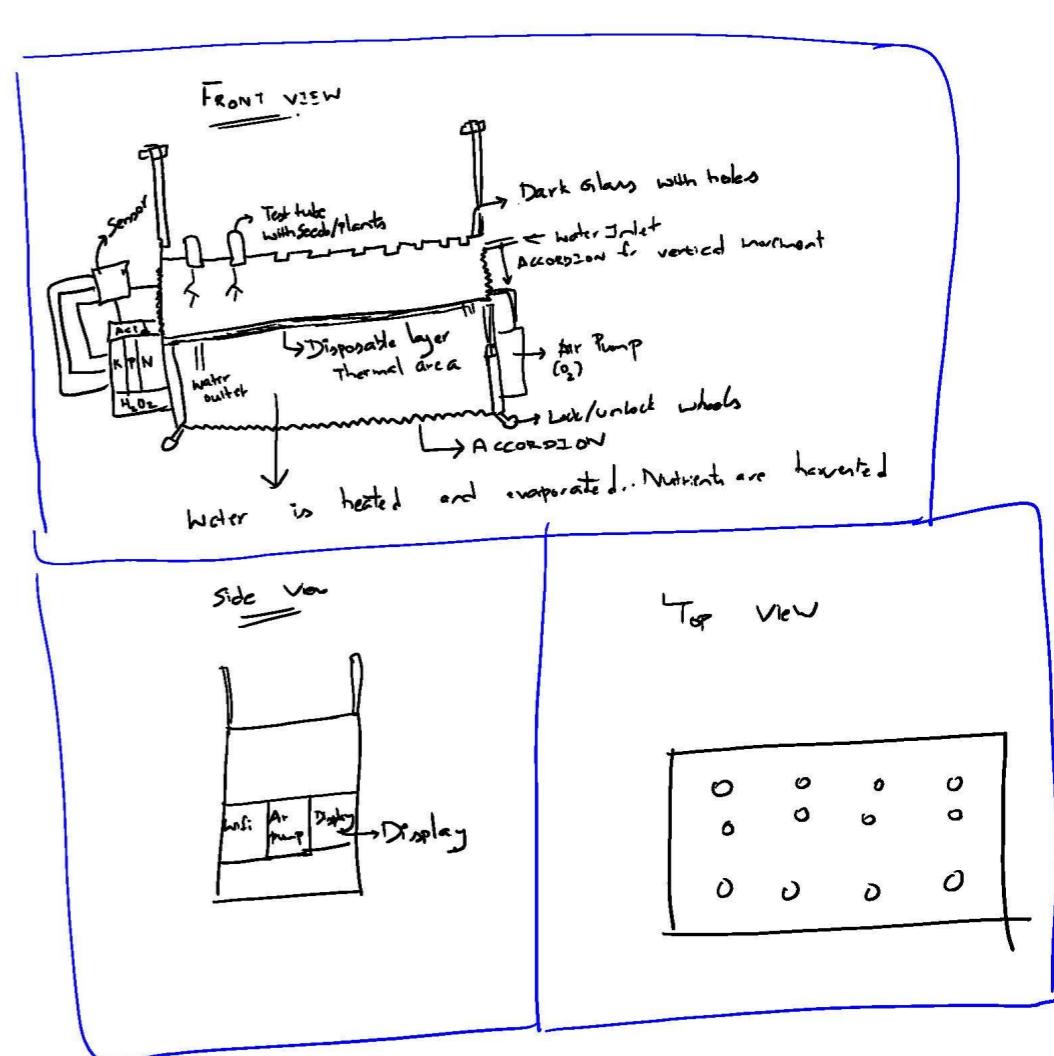
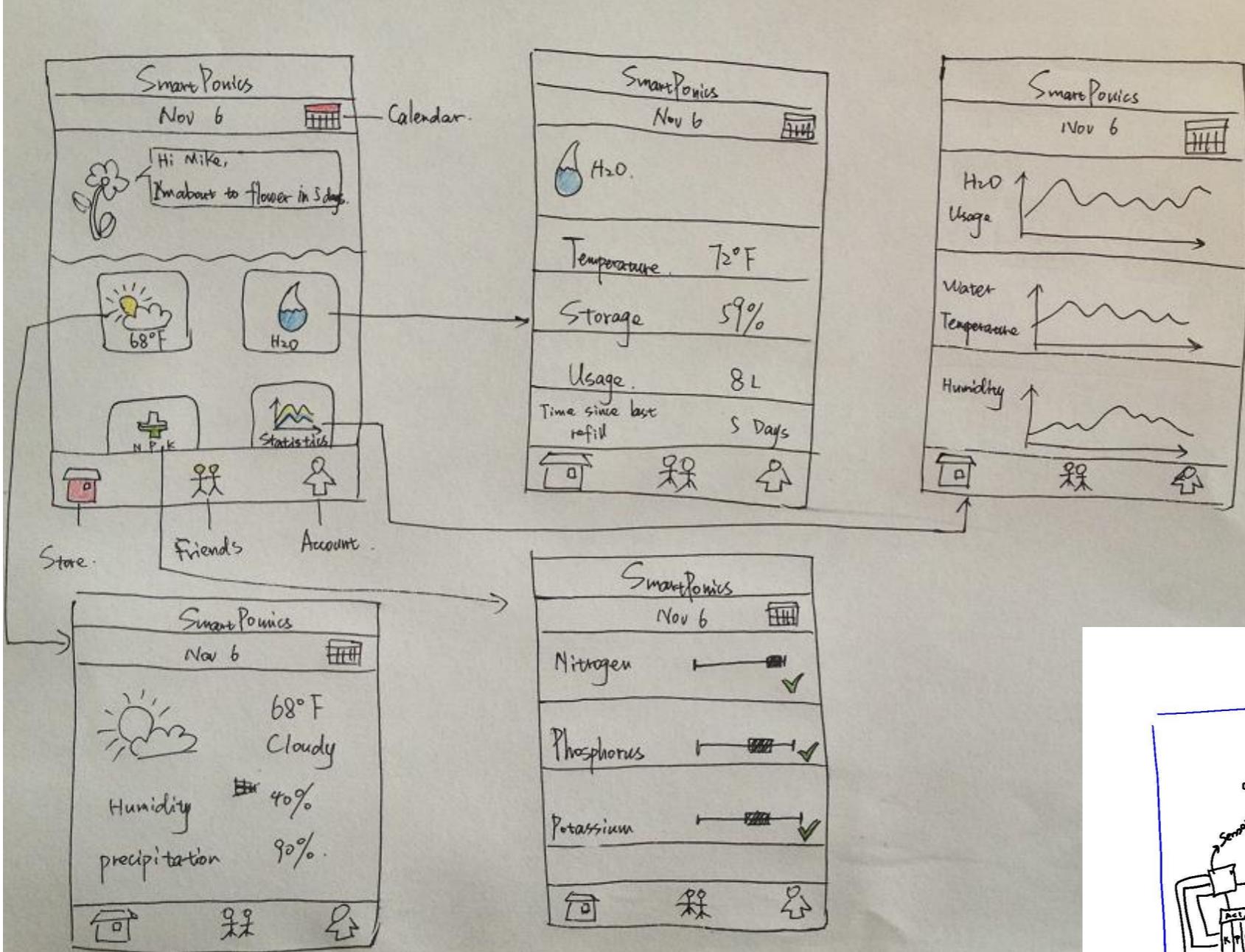
2 rounds of brainstorming
Design sketches
Pros&Cons
Sorted sketches into piles
Resketch

BRAINSTORMING

How to clean the reservoir
An automatic cleaning robot
A fungus that eats the waste
A replaceable plastic layer

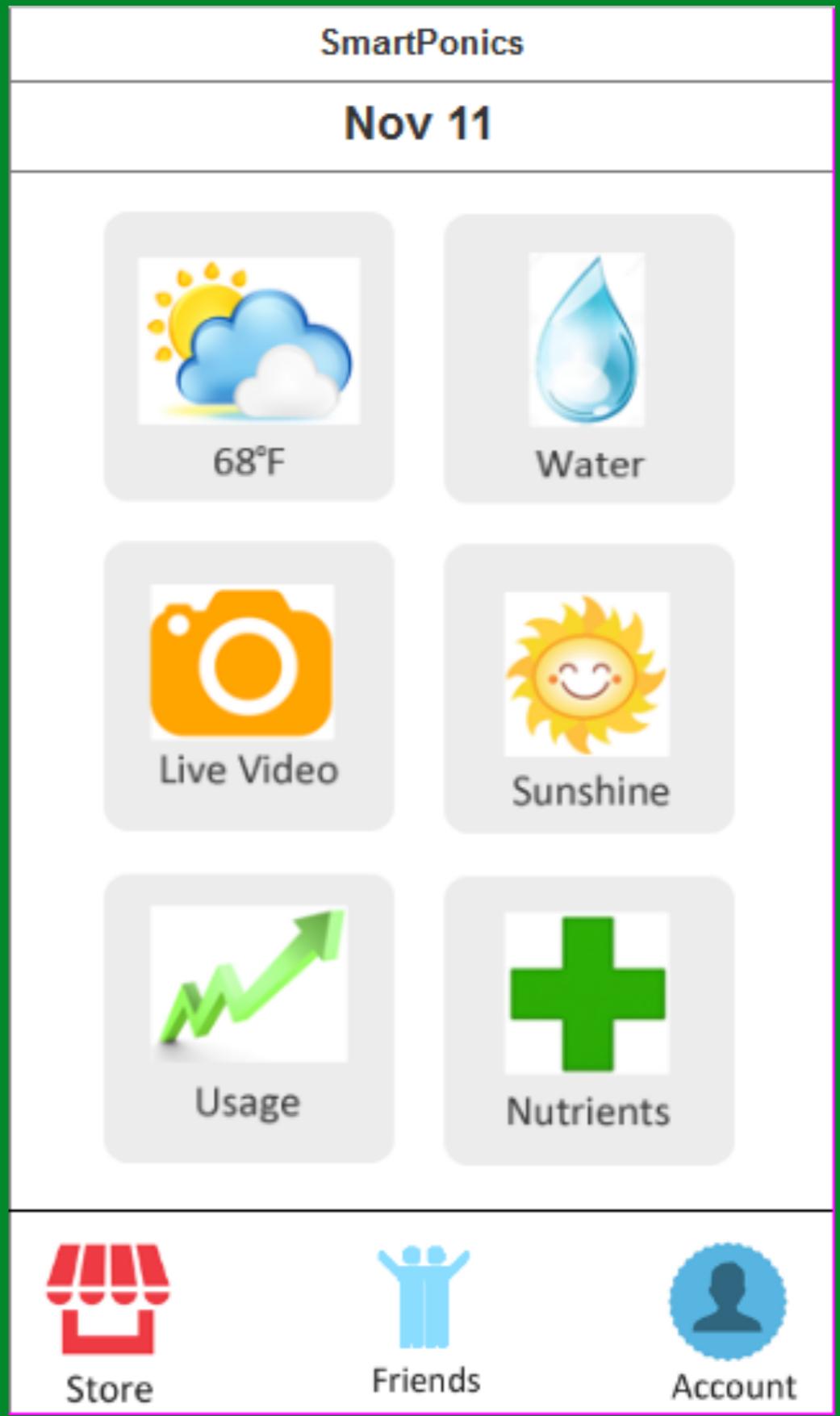
SKETCHES



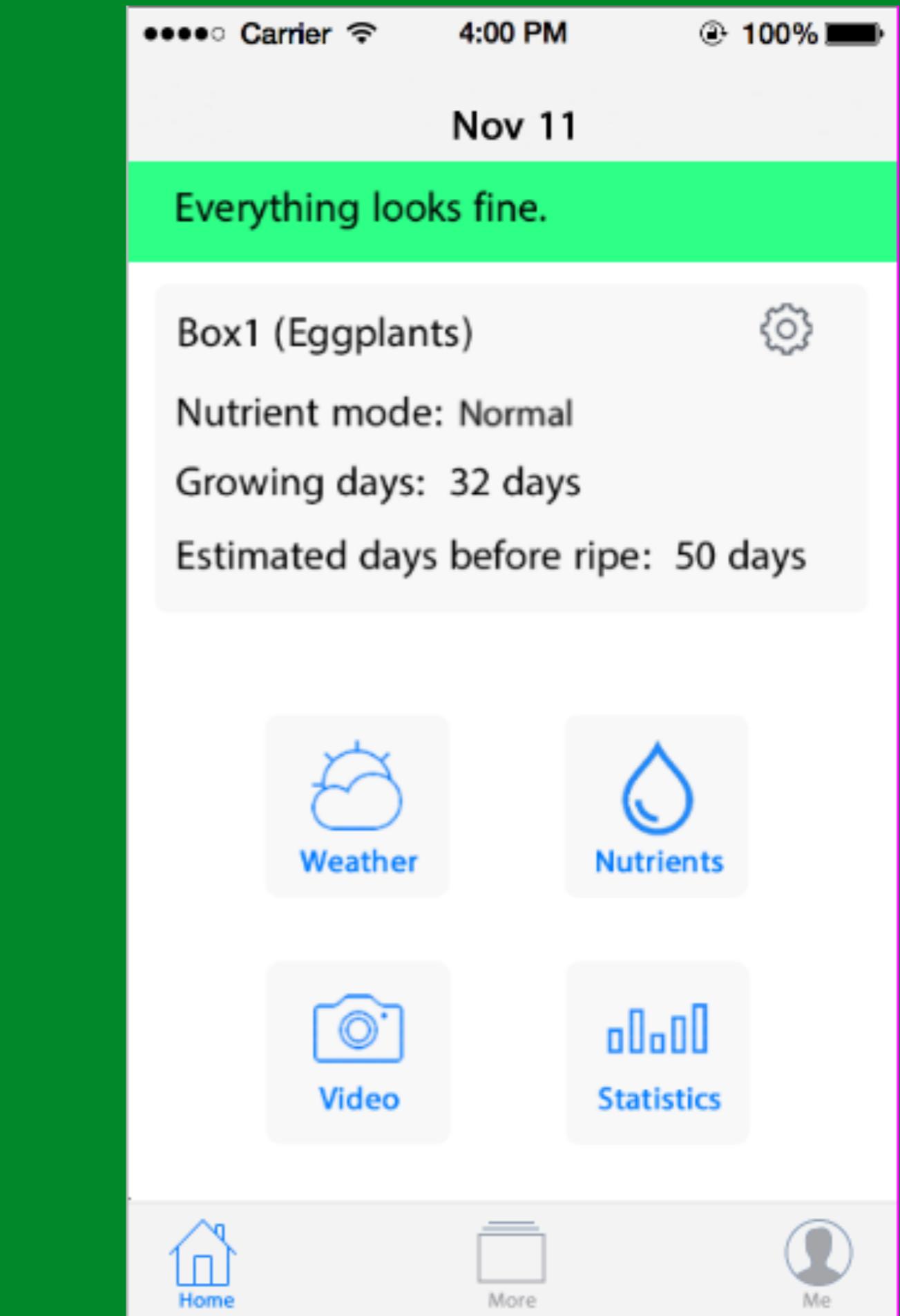


RESKETCHES

FIRST PROTOTYPE



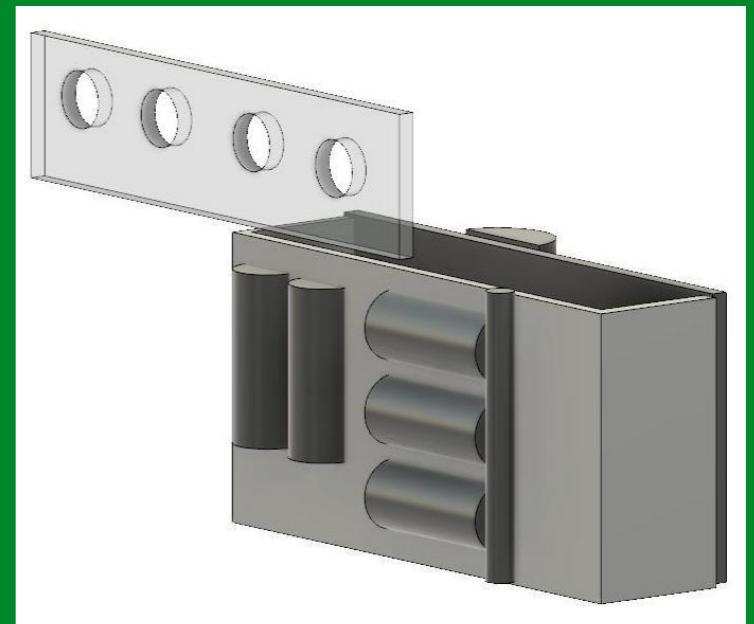
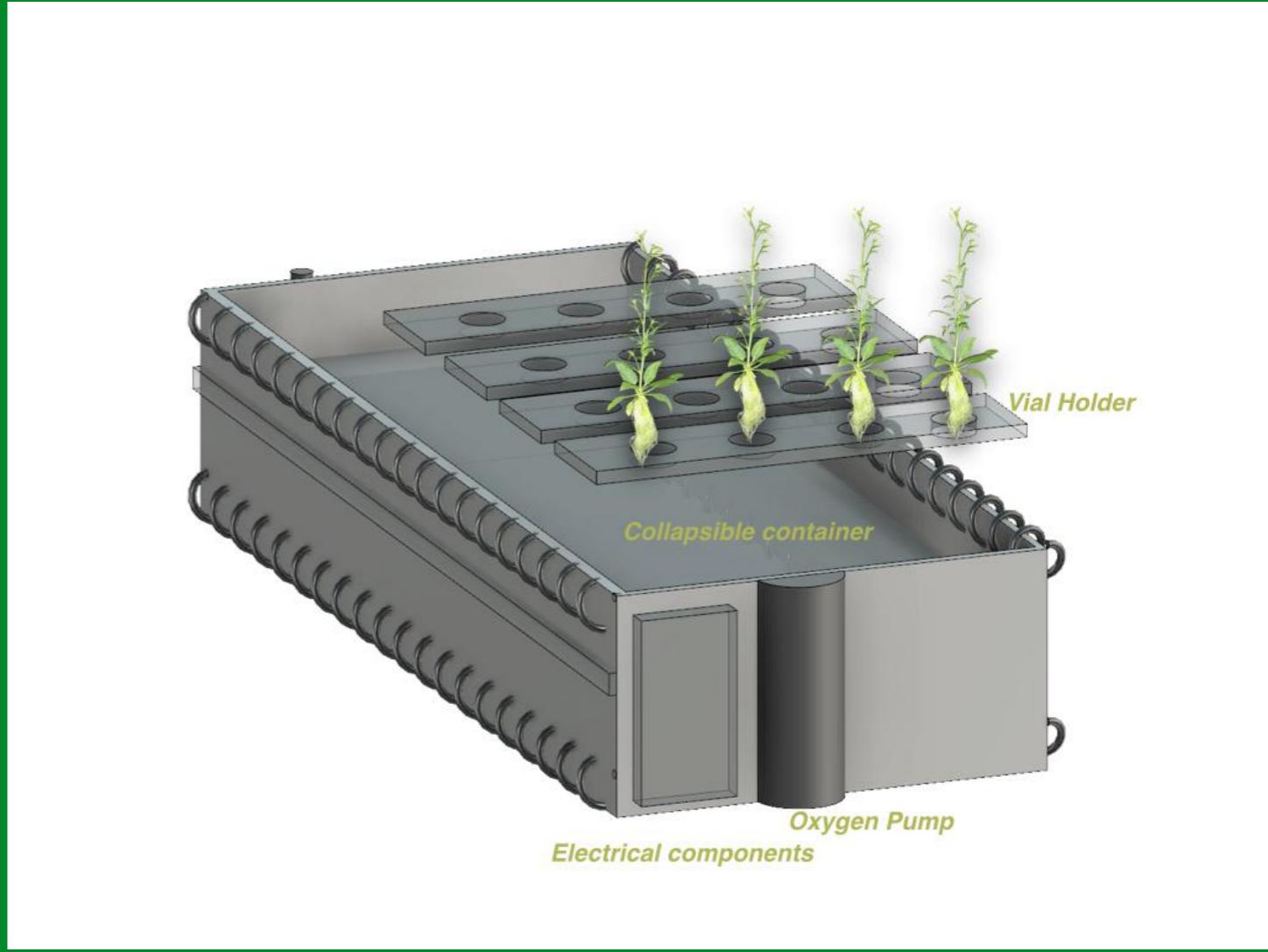
FIVE PROTOTYPES CREATED



**TEN
EVALUATIONS
CONDUCTED**

Uncertainty
How many users - 5

PHYSICAL PROTOTYPE MODELED



WHAT WENT WELL

Hardware + software

Efficient meeting

Solid design

WHAT CHALLENGES

Too many features

New knowledge

WHAT WE WOULD DO DIFFERENTLY

Having a graphic designer
Consult material engineers

FUTURE DIRECTIONS

- Build a physical prototype
- Evaluate in user environment
- Develop mobile application
- Re-iterate based on testing

REFLECTION

Awesome “Team” work

Divide and Conquer

Struggled a lot without SMEs

Overcame with hard work

THANKS

Questions

Suggestions

Comments

Compliments

**“Everything is valuable in our
pursuit of Greener Plant”**