H_2OW low

...can you go?

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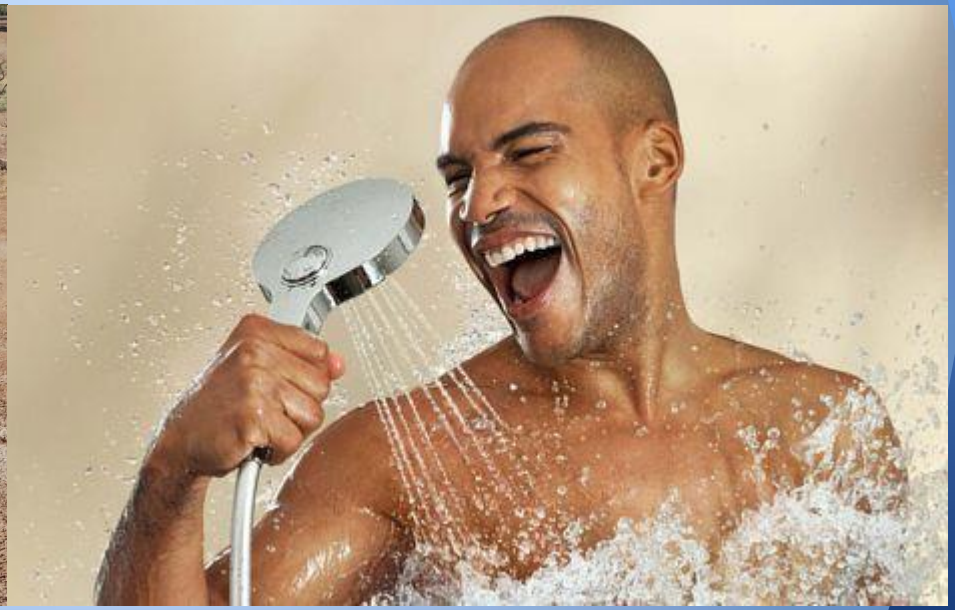
Overview

1. Problem & Solution
2. Contextual Inquiry
    a. Description
    b. Result
3. Task Analysis
4. 3 Representative Tasks
5. 3 Application Ideas
6. Summary

The Problem



Can you read this…?

The solution lies in

H_2OW $_{low}$!

Contextual Inquiry Description

- How do people use water?
- Are they interested in conservation?
  - If so, are they engaged in it?
  - What motivates/discourages them?
- How much do they know about their water usage?

Who we recruited

- Students
  - They are our primary target group!
- Recruited on campus/graduate residence.

Tasks

Contextual Inquiry Results

- “I am not above the average!”
- Can’t quantify water use.
  - response: “5 gallons for a shower”
- Anonymous consumption/lack of accountability.

Task Analysis

- Who will use the system?
  - Groups such as students / families / work colleagues
- What tasks do they perform?
  - Evaluate their personal water consumption
- What tasks are desired?
  - Sustainable use

Task Analysis

- How are tasks learned?
  - Competition / constant reinforcement
- Where are the tasks performed?
  - Hopefully everywhere!
- Relationship between customer & data?
  - Currently 0! e.g 5 gallons / shower
  - Water bill (0.0025$/gallon)

Task Analysis

- What other tools do customers have?
  - Manual entry
  - Requires active checking
  - No incentives
- How do users communicate w each other
  - Currently THEY DON’T!
  - Live competitive tracking / chat function

Task Analysis

- How often are tasks performed?
  - Multiple times daily
- What are the time constraints?
  - Until the event finishes
- What happens when things go wrong?
  - Lose competition
  - Global drought, sad times

3 Representative Tasks

- simple:
  - automatically import water usage data
- moderate:
  - make conservation a competition
- complex:
  - allow cities to collect data about population water usage patterns

3 Application Ideas

- Competition
  - Significance: medium (less long term)
  - Feasibility: high (easy to do between dorms)
  - Interest: high (students are competitive, possibly prize incentives)

3 Application Ideas

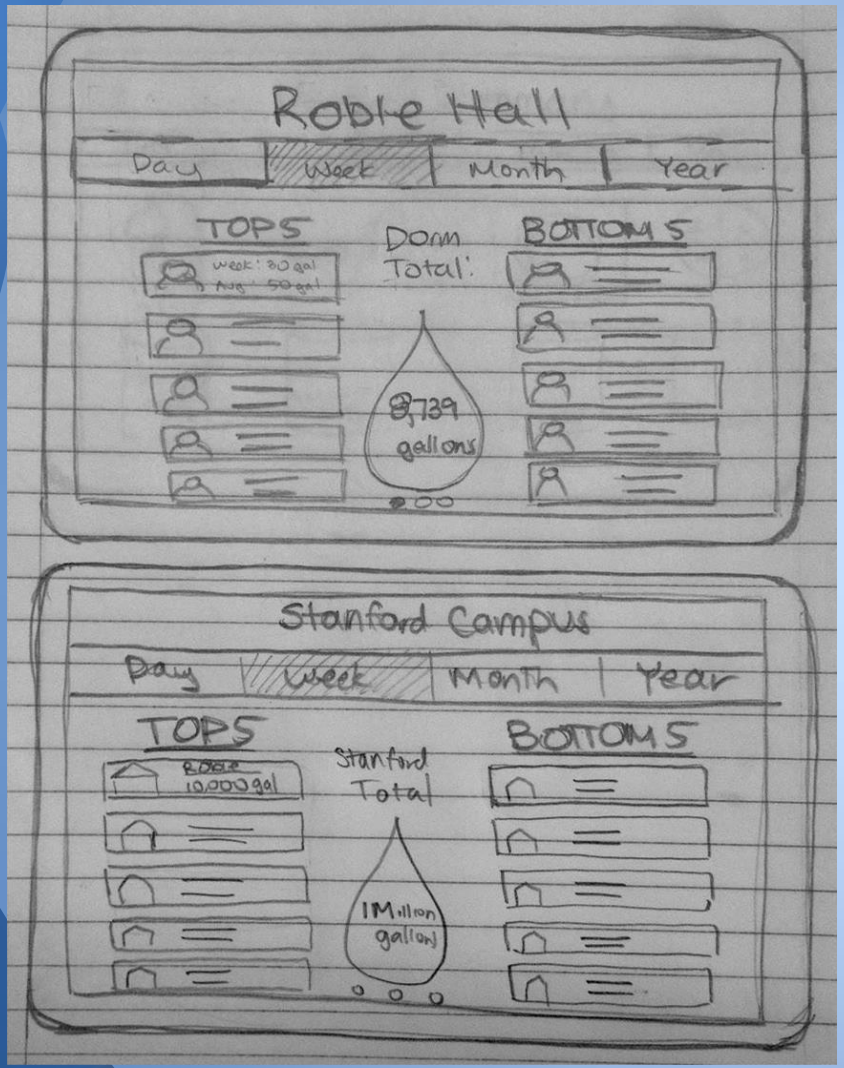
- Charity
  - Significance: high (helps people in need)
  - Feasibility: medium (deals with charities)
  - Interest: high (support good cause)

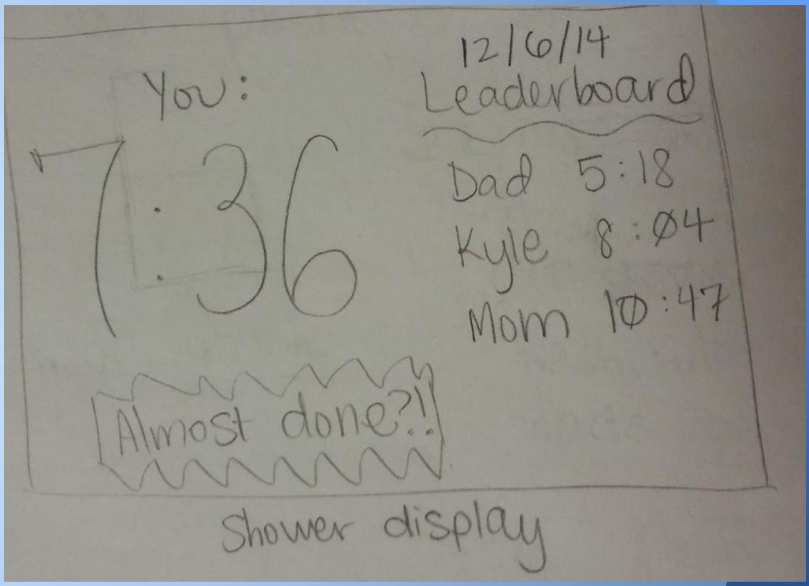
3 Application Ideas

- Education
  - Significance: high (true goal is long term behavioral change)
  - Feasibility: high (regular factlets pop up)
  - Interest: low (requires regular checking)

Our top choice

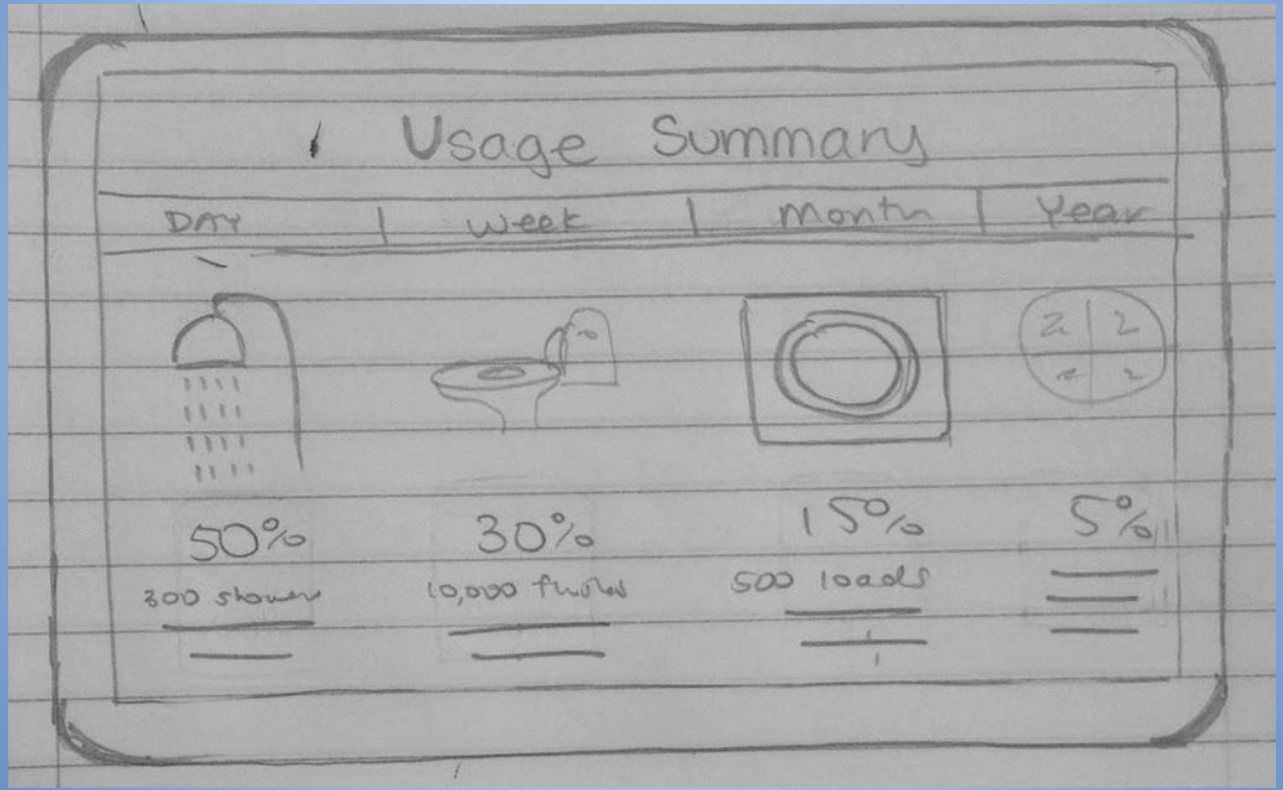
- Combats the two problems uncovered through contextual inquiry:
  - lack of accountability
  - no motivation
- Makes data collection painless and automatic
  - comprehensive, integrated in the home, easy


Roble Hall
Day
Week
Month
Year
TOPS
Dorm Total:
BOTTOMS
8,739 gallons
Stanford Campus
Day
Week
Month
Year
TOPS
BOTTOMS
Stanford Total
1Million gallons

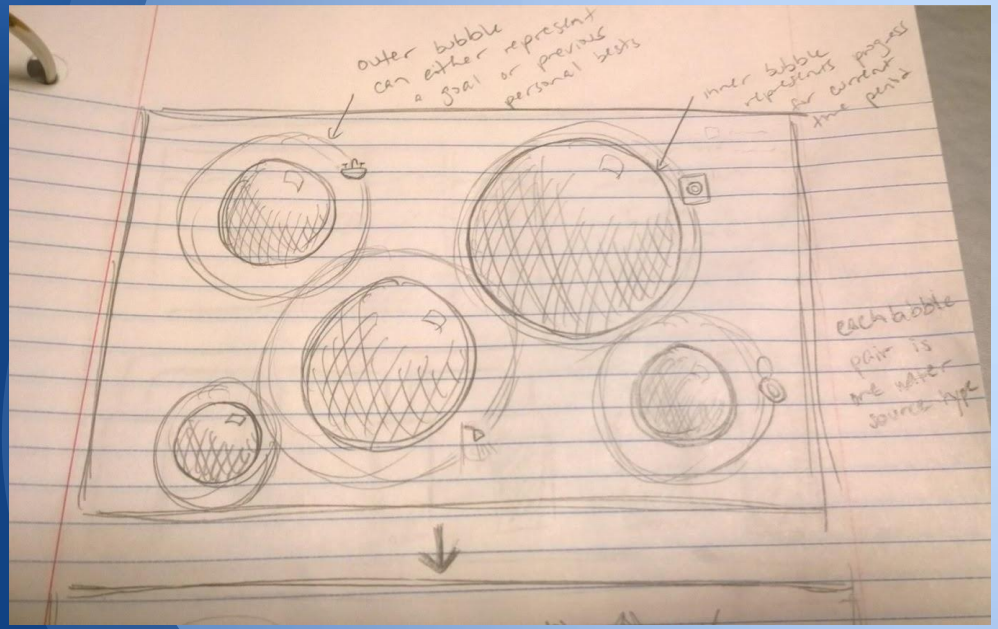

12/6/14
You:
7:36
Leaderboard
Dad 5:18
Kyle 8:04
Mom 10:47
Almost done?!
Shower display

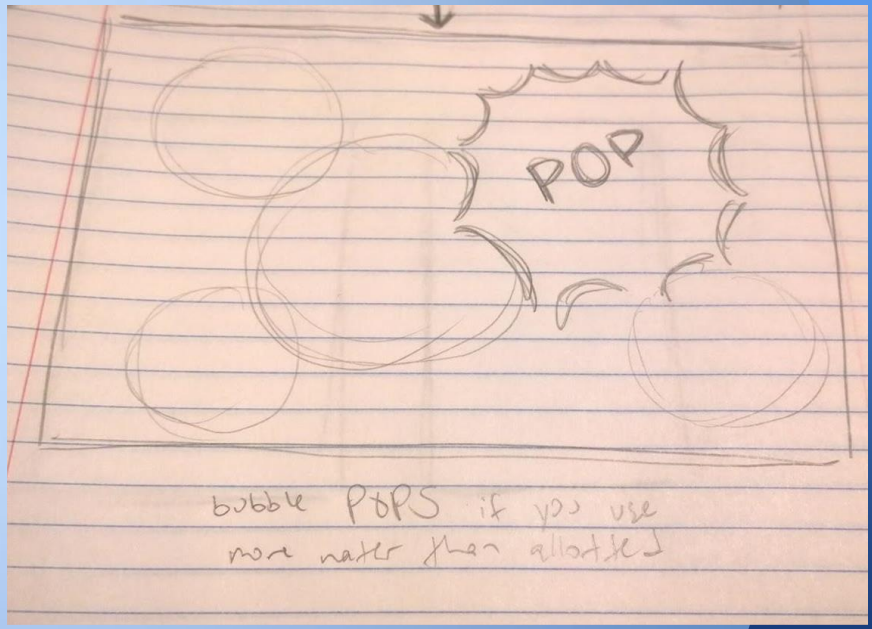
Refrigerator display

Zoomed in

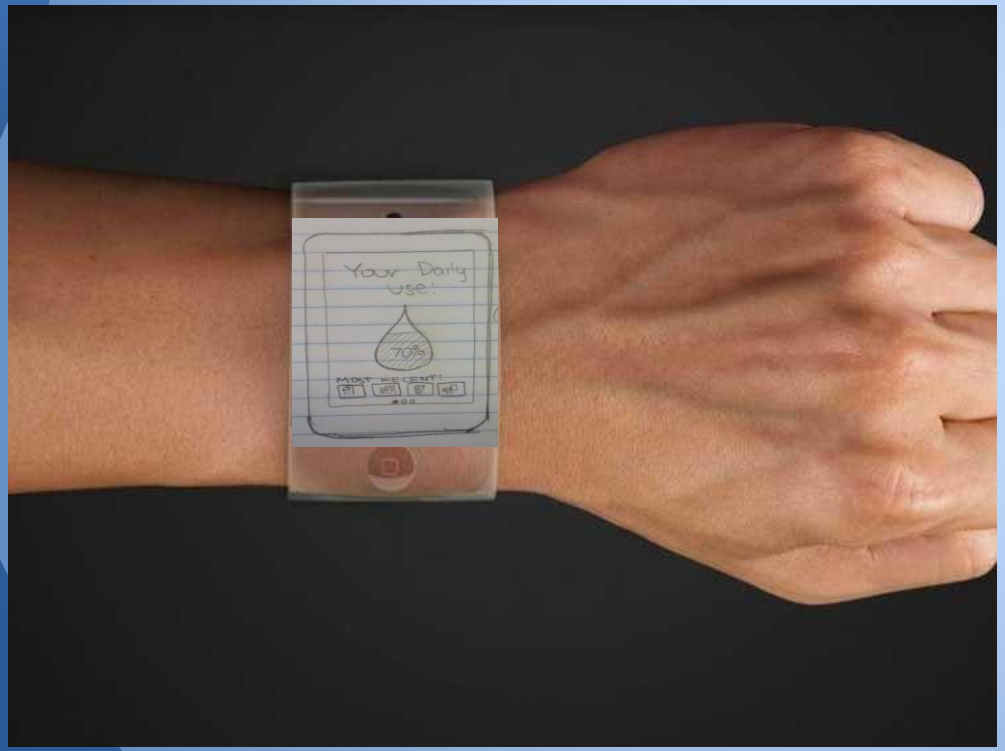

Usage Summary
Day
Week
Month
Year
50%
300 showers
30%
10,000 flushes
15%
500 loads
5%

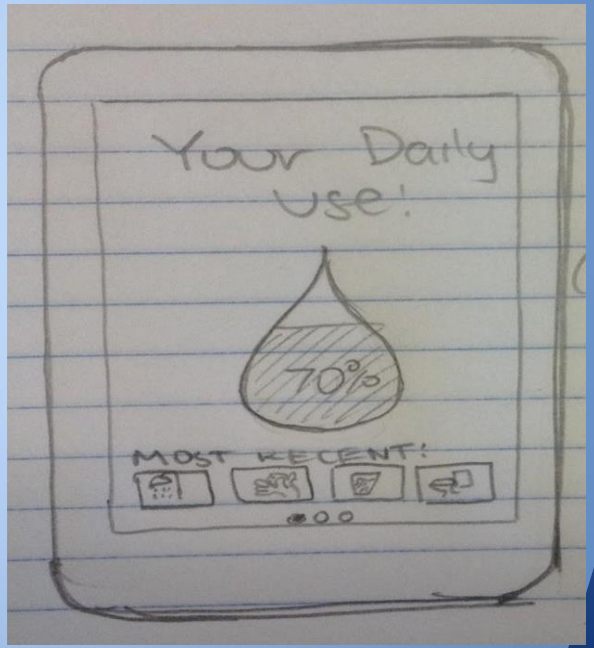
Other examples



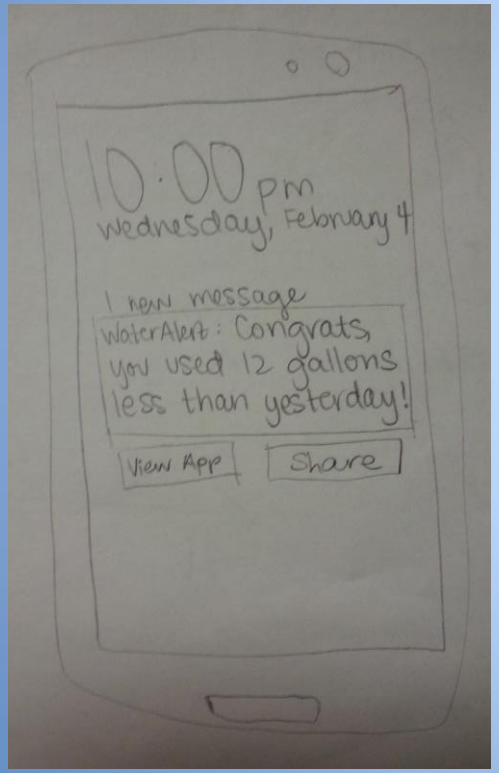


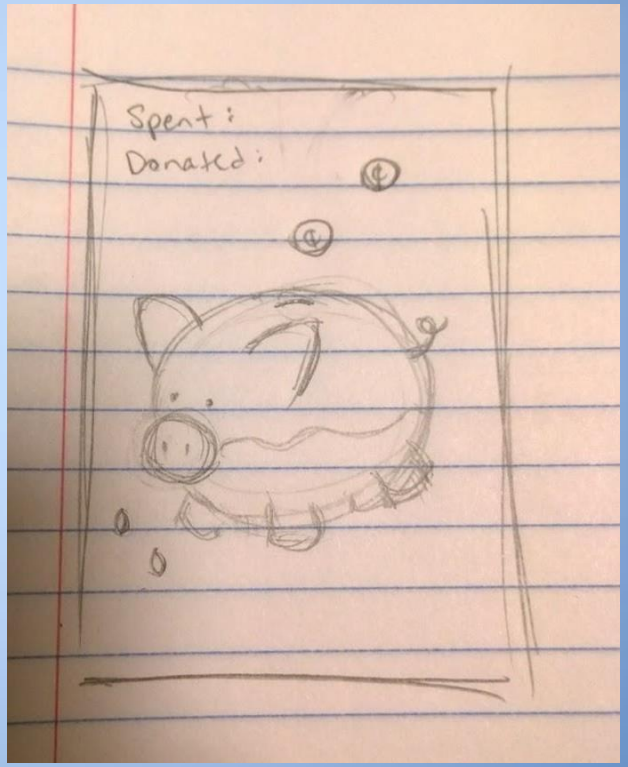
Wearable



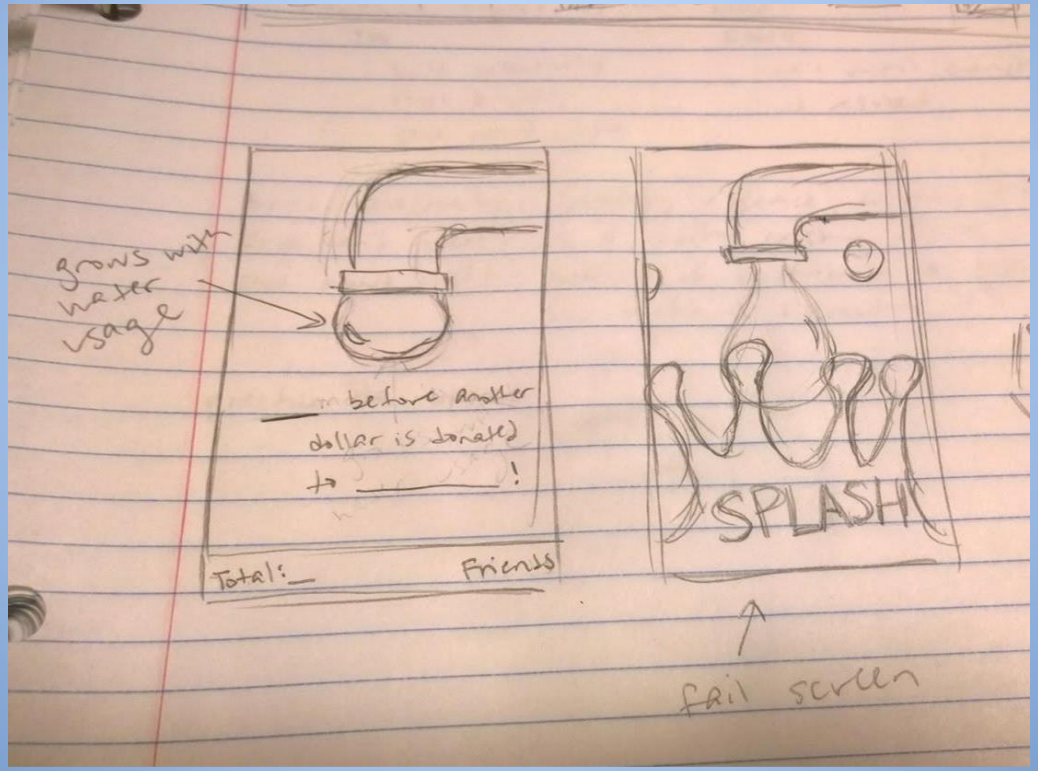


Phone apps


10:00 PM
Wednesday, February 4
1 new message
WaterAlert: Congrats, you used 12 gallons less than yesterday!
View App
Share


Spent:
Donated:

Other examples



Summary

- Comprehensive in-residence system
- Automatically tracks water use
- Set personal and residence goals
- Compare performance to others!

“Moisture is the essence of wetness, and wetness is the essence of beauty.” - Derek Zoolander