Story

My houseplant watering challenge

Every one of us has the same challenge again and again when going on vacation:

"Who is taking care of my plants within the house or flat while I am away for 1, 2 or even more weeks?"

Wouldn’t it be great to have a fully automated solution at home, which takes care of the watering while I am away? Ideally it would even do a better job than myself, by giving only water, when a houseplant is thirsty!!!

But how can we solve this issue for everyone of us?

Here we go ...
May I present Frank’s sensor- and drone-based plant-watering solution “Happy plants 4.0”.
It is there for fully automating the watering process, for all your plants in the house or flat, even if they are distributed across multiple levels. And as a bonus, a nice user-friendly mobile app keeps you always up to date on the status of your beloved plants!
**Persona**

**Frank**

*Houseplants owner*

Next vacation is coming up soon. I feel uncomfortable to ask my neighbors again to look after my plants. They messed up 2 of them last time, giving too much water.

**About**

- 54 years’ old
- Owns a home for 20 years’ now
- Loves the nature, hiking and sailing
- Has around 15 houseplants across 2 levels
- Goes on vacation for 1 week or longer at least 2 times a year

**Responsibilities**

- Buying new houseplants
- Disposal of old/dried plants
- Repot of grown up plants
- Fertilizing and watering of plants

**Main Goals**

- Make all the plants survive his vacations
- Optimize the watering for the plants (only when they need water and only the amount they need)

**Needs**

- Solution which supports/fulfills the main goals, ideally in a fully automated way
- Need for a permanent solution, instead a one-time solution (see pain point 2)

**Pain Points**

- During longer vacations, some of the plants will not survive if they are not watered, which forces me to buy new ones
- I don’t like to organize a person each time looking after my plants
- As I am not an expert for each and every houseplant, I have challenges to take care of my plants in an optimal way to keep them healthy
Point of View

As a *houseplants owner*,

I need a way to *supply water during my absence*,

so that *my plants survive the vacations, especially the ones which take longer than a week*. 
<table>
<thead>
<tr>
<th>ACTIONS</th>
<th>Setup for Plants – part 1: Stick the water-funnel with its humidity sensor into the potting soil of all the participating plants</th>
<th>Setup for Plants – part 2: Capture all the plants and their data incl. sensor id’s within “Happy Plants 4.0”</th>
<th>Setup for Plants – part 3: Determine plant locations (water-funnel): Fly the drone manually to the plants</th>
<th>Setup around Water: Apply water tank to drone Fill water reservoir(s) determine their locations using the drone</th>
<th>Match &amp; sync data between “Happy Plants 4.0”-software and the drone</th>
<th>Start system: Watch live and enjoy how the software, drone and the sensors doing the work</th>
<th>Enjoy vacation and monitor your happy plants via your mobile device</th>
</tr>
</thead>
<tbody>
<tr>
<td>MINDSET</td>
<td>I am excited can’t wait to see it live great idea: sensor as part of the funnel Some doubts if the whole thing will “fly”</td>
<td>Quite some effort to setup each houseplant but I know it is required for the whole system to work, so let’s do it</td>
<td>This is really fun and Perfect way, to get this admin task done, but I am happy that I got only 15 plants to manage</td>
<td>What is the best solution for the reservoir? How much water do I need for the 2 weeks of absence? 1 container only? Lets have a 5 liter bucket in addition</td>
<td>Simple to do, but I hope I did not forget anything Hope this doesn’t take long, I like to see it now</td>
<td>Watering should start soon, as I kept 2 plants quite dry (on purpose) Overwhelming just watching the drone</td>
<td>That’s a relaxing vacation and I am still excited The status reporting and live-video is crazy</td>
</tr>
<tr>
<td>FEELING</td>
<td>😊</td>
<td>😊</td>
<td>😊</td>
<td>😊</td>
<td>😊</td>
<td>😊</td>
<td>😊</td>
</tr>
<tr>
<td>TOUCH POINTS</td>
<td>Install. Guide Water-funnels Plants</td>
<td>“Happy Plants 4.0”- software</td>
<td>“Happy Plants 4.0”-drone</td>
<td>Water tap, water, water reservoir(s) “Happy Plants 4.0”-drone</td>
<td>“Happy Plants 4.0”-software</td>
<td>“Happy Plants 4.0”-mobile app</td>
<td>“Happy Plants 4.0”-mobile app</td>
</tr>
</tbody>
</table>
Prototype

The 1st mockup refers to the 2nd column of the user story:

**Basic Data**

- **Plant name:** Chrysalidocarpus Lutescens - Living Room
- **Mark as favorite:** Yes
- **Plant type:** Gold Fruit Palm
- **Current height:** 85 cm
- **Ground plan / Floor assignment:** Ground floor

**Sensor assignment**

Please choose a free sensor by clicking on icon in the plan:
The 2nd mockup refers mainly to the last column of the user story, but indicates also some of the functions needed for other parts of the user story:

<table>
<thead>
<tr>
<th>Humidity Level</th>
<th>Plant Name</th>
<th>Humidity Level</th>
<th>Last Watering</th>
</tr>
</thead>
<tbody>
<tr>
<td>105%</td>
<td>Chrysalidocarpus Lutescens - Living Room</td>
<td>95%</td>
<td>Yucca Elephantipes - Bathroom</td>
</tr>
<tr>
<td></td>
<td>Last watering: Yesterday</td>
<td></td>
<td>Last watering: 26.06.</td>
</tr>
</tbody>
</table>

Current Status:

- **Live video**
- **3 ORDERS**
  - Active watering orders
- **12.5 LITERS**
  - Water reservoir status
  - Next: Tulbaghia violacea...
  - Percentage left: 52%

Other features include:
- Display complete list
- New plant
- Display watering orders
- New reservoir
- Ground plan
- Register Sensor
- Sync Plant Data
The 3rd mockup refers also to the last column and is the detailed info you get when clicking on a plant within the dashboard: