

Motivation & Audience

People with dementia may forget even the basic necessities of life, such as drinking water. As a result, many dementia patients suffer from dehydration without even realizing it. A better water reminder system would help reduce dehydration in people with dementia.


Features & Algorithms

- Device tracks how often a user drinks & how much they consume with each drink
- Device reminds the user to drink through audio and phone notifications
 - Time-based algorithm to determine whether or not to send a reminder
- Settings for water goal & maximum time between drinks are customizable
- App stores data on the cloud so caretakers can access it remotely

Requirements

Level 1 Requirement	Prototype 1	Prototype 5 (final)
The device shall track how much water a user drinks each time he/she picks up the cup.	Yes	Yes
The device shall track how much water a user drinks over the course of a day.	No	Yes
The device shall remind the user to drink.	No	Yes
The cup portion of the device shall be able to hold liquid without leaking.	Yes	Yes
The cup portion of the device shall hold between 8 and 12 oz of liquid.	Yes	Yes
The cup portion of the device shall weigh no more than 200 g.	Yes	Yes
The cup portion of the device shall be hand washable.	Yes	Yes
The user shall have a Bluetooth compatible Android device.	Yes	Yes

Competitors




Pros:

- Customizable reminders

Cons:

- No app
- Time-based reminders



Pros:

- Works with any bottle

Cons:

- No app
- Does not track consumption




Pros:

- Has app
- Tracks consumption

Cons:

- Big
- No voice reminder




Pros:

- Shows water quality

Cons:

- No app
- Time-based reminders



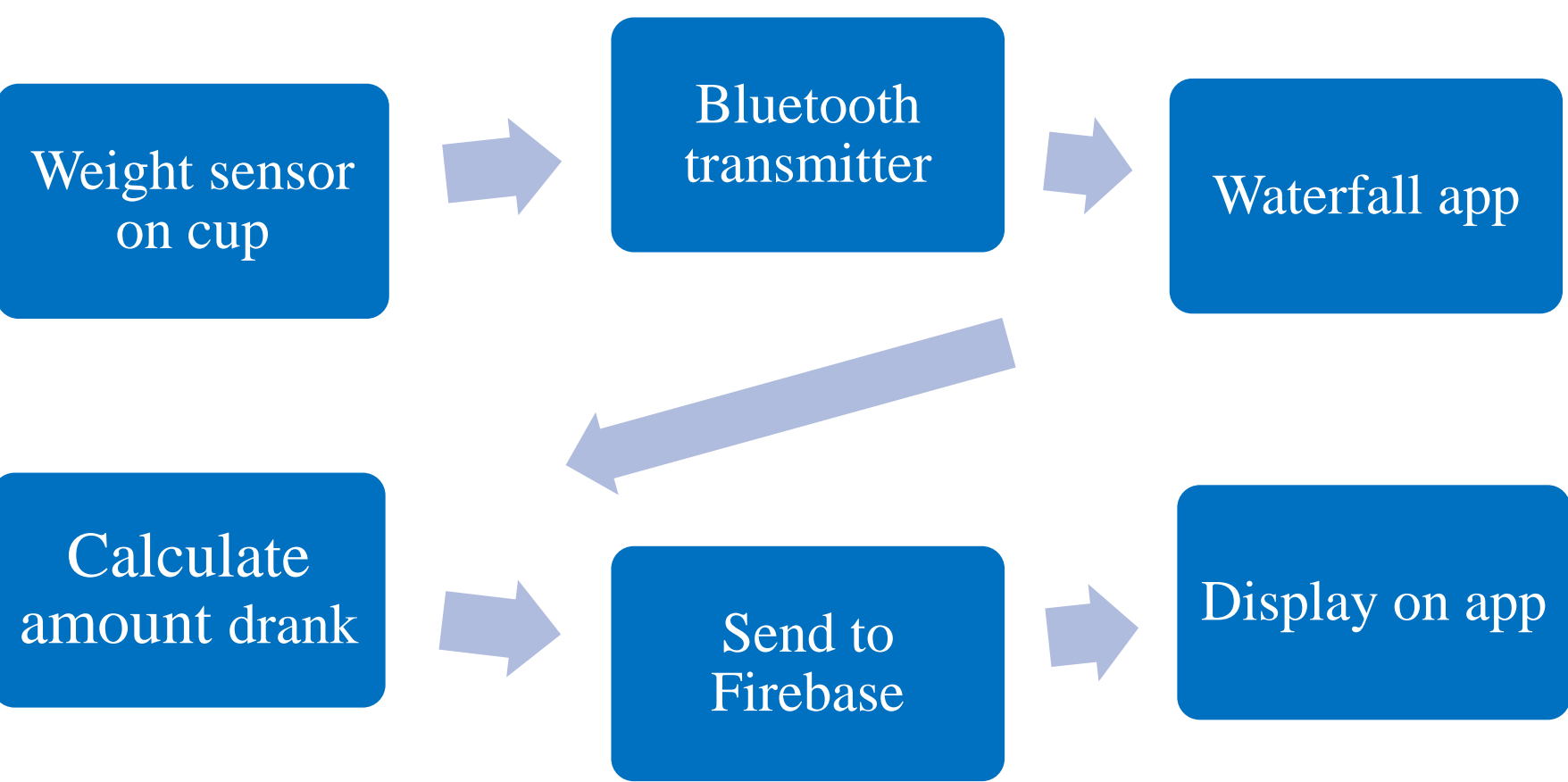
Pros:

- Easy to use
- Fun to use

Cons:

- No app
- No reminders at all

Data Flow Chart



App Screenshots

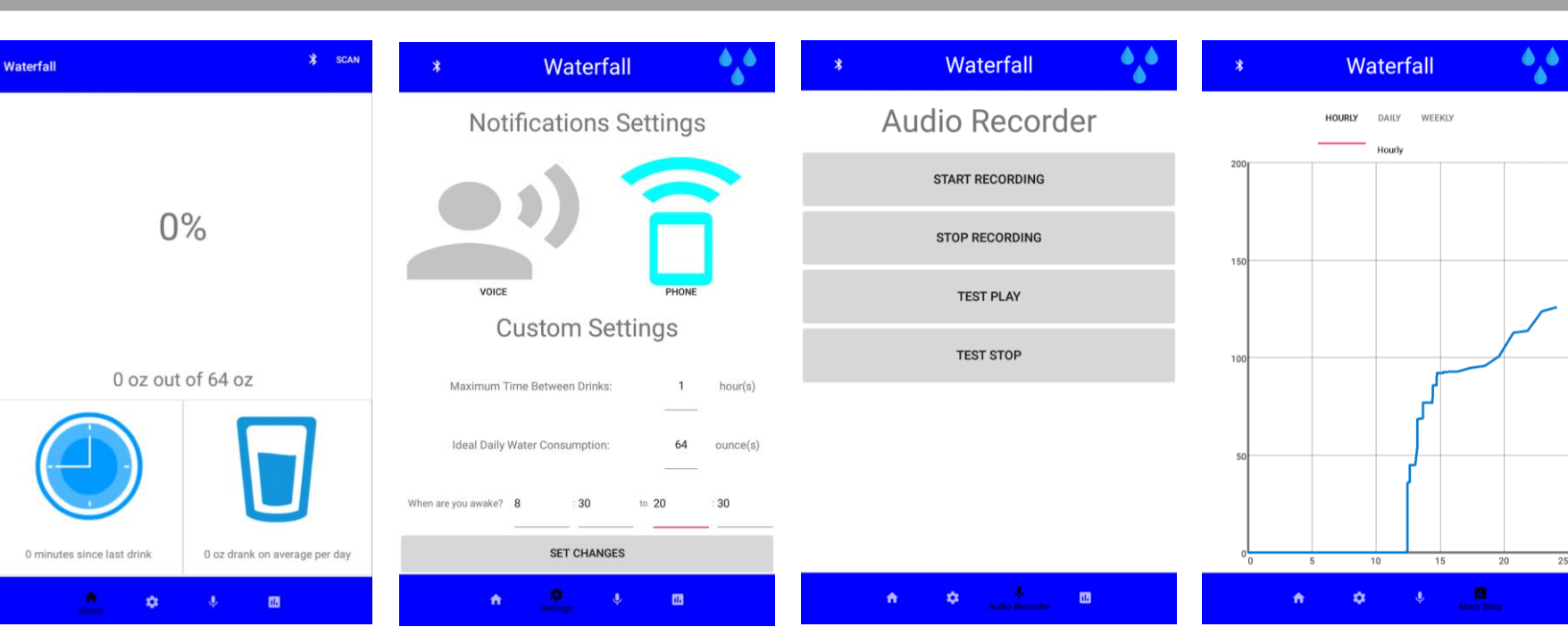


Figure 2. The home, settings, audio, and stats pages are shown above.

On the home page, users can see a brief overview of statistics. They also pair their app with the cup on this page. Users customize settings on the settings page and record messages on the audio page. On the stats page, users can see more detailed water consumption statistics.

Hardware Iterations

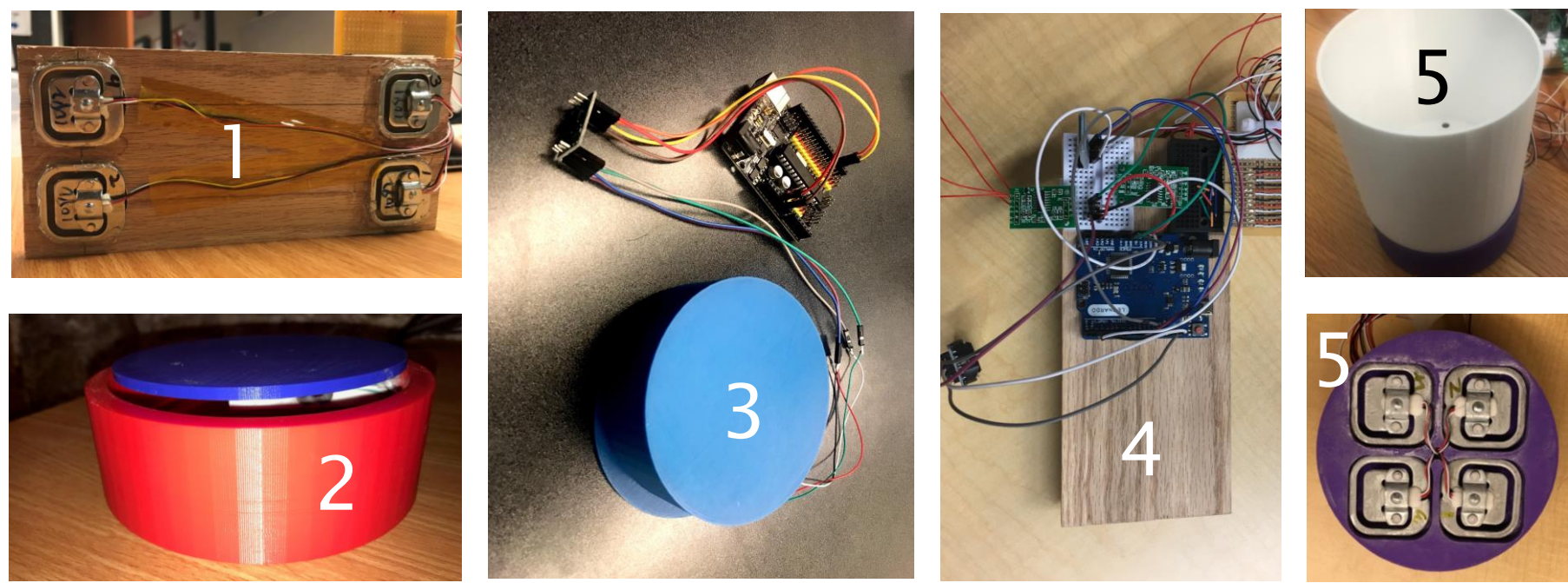


Figure 1. Prototypes 1-5 are shown above. The iterations differ by the sensors used, the size of the prototype, and whether or not they can be attached to a cup. Design studies were conducted to verify the accuracy and precision of the sensors used.

Future Work

- Make the battery life longer & establish a stronger Bluetooth connection
- Alter the water consumption algorithm to be more accurate
- Make the cup smaller and lighter so it is easier to pick up

Services Used

