

1. Concept Statement

The *Control Freak* (CF) will allow residents to remotely monitor and control electronic features of their home with a powerful, dynamic web application that can be accessed from any location or device. The user will be able to control features of their home including, but not limited to, alarms, door locks, lights, television, thermostat, washer, dryer, dishwasher, oven, garage door, and coffee maker. A focus on the simple, intuitive interface will give users information about their home while they are away, leaving them with a sense of security and ease. It will also allow certain devices to turn on or off when the user performs a specific action, such as leaving the house. The *Control Freak* will secure the users home and reduce the time it takes to perform everyday chores.

2. Describe how you decided on your type of prototype. Discuss aspects like horizontal, vertical, low/mid/high fidelity, and other prototyping categorizations. Reflect on the goals of your design from prior deliverables, and connect them to your decisions on the prototype.

We used our persona, our scenario, and feedback from our client to determine which type of prototype to build. We ultimately decided to use a wireframe because it is not significantly time-consuming while still depicting medium fidelity. The prototype will have a horizontal view of the system's features with a vertical focus on viewing and controlling devices from away from home, resulting in a T prototype.

This type of prototype will allow us to effectively determine if our design is efficient and effective, since it will cover various design goals previously determined in phase 1. Since we are using a T-prototype, the prototype will be able to effectively display the framework for all of the various features of our application. Specifically, this prototype will cover the goal "Quickly check to make sure all lights and outlets are turned off" in the most detail to ensure that users are satisfied with the number of steps it takes to complete these tasks and that the design is intuitive.

Overall, this prototype will allow users to turn on and off lights in detail and navigate to various screens and features of the application, including the login, map, favorites, logout, quick device shutoff, and user management.

3. Describe the process of building your prototype, including how you refined your design in building your prototype based on client feedback.

We started determining what type of prototype we wanted to build by looking at our persona, Steve, and the specific scenario we created in which Steve recently installs

Control Freak appliances and then takes a trip to Disney World with his family. We used this scenario to decide what features to focus on for our prototype. Since the Steve and his family are away, we decided to select a few specific appliances to check the status of and to control. We decided to focus on lights and outlets that specific objects are plugged in, which are Steve's lava lamp and Aubrey's straightener. Initially, we wanted to build a full-blown HTML website prototype that has the interface and navigation implemented. However, according to our client, Bobby Beaton, we were informed that a prototype should be something that is not time consuming and is something that we would not mind discarding. Our client suggested using paper and pencils in which we would direct the user to the corresponding page after they select a button; however, we thought it would be more beneficial to make a wireframe where the user will be directed to the corresponding page automatically. Initially, we were also thinking about developing T-shaped prototype, in which we would have a broad overview of the project, but only one or few features would fully be developed. Our client agreed with our decision, so that is what we decided to develop. As a result of discussion between members of the group and our client, we ended up developing a T-shaped, mid-fidelity wireframe prototype.

From there we decided to use our existing wireframe from phase 2 and make changes to add a more horizontal aspect in addition to the existing vertical aspect. We all contributed input on how to set up the screens and navigation of the wireframe. One member developed the wireframe using the information we came up with about the screens and navigation. We edited the the detailed tasks, turning on and off lights and outlets, and added other non-implemented navigation options to show other actions that will later be available. After coming up with the basic navigation and screens, we made the wireframe specific to the scenario and to the task that we decided to go into detail about. Finally, we evaluated the wireframe and made basic UI changes such as changing the on/off buttons to green/red circles.

4. The Prototype

<https://mogups.com/controlfreak/CLtQ07fR>

This link will take you to our prototype. We used a website called Mogups, which allows us to create pages and dynamically link them together to create a simulation of the *Control Freak*. It starts at the login screen, and from there you may either navigate freely through the app, or take our "guided tour", following the notes and descriptions on the side of the screen.

5. Describe your planned empirical evaluation. Discuss how it is related to the metrics identified in the phase 2 deliverable. Include benchmark tasks, data to be collected, plans for the results, what you anticipate learning, and your motivation for each of these.

Our empirical evaluation will consist of showing the prototype to a pseudo-random group of subjects, each of whom were previously unfamiliar with the app. We will ask them to perform a series of tasks using the prototype, and record metrics such as:

- time taken to complete task
- button clicks needed to perform task
- number of errors (number of times the subject found themselves at a “Not Implemented” page

The prototype we made for this phase is a T-prototype; therefore, by design, only certain features have been implemented fully. Thus, the only specific UX Goal from the target table submitted in phase 2 that is applicable to this prototype is the second goal:

<u>Work Role: User Class</u>	<u>UX Goal</u>	<u>UX Measure</u>	<u>Measuring Instrument</u>	<u>UX Metric</u>	<u>Baseline Level</u>	<u>Target Level</u>
Homeowner : Commuter	Quickly check to make sure all light and outlets are turned off	Time taken to check status	CF: Lights Page	Time spent on task	20 seconds	15 seconds

In our evaluation, we will expand greatly upon this goal. We will give the subjects tasks such as checking for specific lights or outlets, as well as toggling their status (on or off). The aggregation of the tasks we give them will fully test this specific feature of our prototype.

From the metrics we record, we will be able to analyze how well the design of our prototype functioned, and make appropriate changes in the next iteration.