Sprint Report 4

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<u>Overview</u>

This sprint report is to give an update on the progress of the Remote Home team on the development of home devices controlled by a user's smart phone. This report will cover a recap of progress that has been made last year. Additionally, it will cover the progress made this year in the top level iOS framework, the iOS mobile application, the domain name resolution server, and the garage door hardware. Finally this report will give a list of prototypes for this sprint.

<u>Sprint 1-3 Progress</u>

Last year the Remote Home team was given the task of developing a system that allows users to control devices in their home, such as a garage door, from an application on their iPhone. The system was designed to have a "base station" in the house that coordinates communication to and from the application with numerous devices in the house. The system was also designed to have a centralized dynamic domain name resolution server to allow users to connect their application with a specific base station in their house, without the user needing to have a static IP address. The devices in the house will be connected to the base station using Bluetooth wireless technology. The system was designed to allow new types of devices to easily be included into the system.

James started developing a top level iOS framework that will link a user with a specific base station and all of the devices associated with the base station. The framework also manages the devices associated with the base station and allows the user to register new devices and remove devices that are currently on the system.

Joshua created a prototype garage door opener application that the user will use when controlling their garage door. He also began developing a dynamic domain name resolution server that will store the IP addresses of every base station, so that a user's application can communicate directly with the base station located in their home. He finally started developing a communication protocol that will allow a base station to update its IP address on the dynamic domain name resolution server.

Chris started by gathering the necessary hardware for the project, e.g. garage door opener, and Arduino microcontroller. After gathering the hardware Chris then began working on controlling the garage door opener over serial communications.

iOS Framework

James completed developing and debugging the top level frame work over the Christmas break. base stations and devices can now be registered on the system.

Resolution Server

Joshua continued developing the dynamic domain name resolution server, running into some issues when connecting to the iOS framework. These issues are currently being resolved and the resolution server should be completed before the next sprint.

Hardware

This sprint Chris acquired the Bluetooth shield, the final piece of hardware need required for the project. Chris also successfully controlled the garage door opener over serial communication using the Arduino. This shows a proof of concept in opening a garage door using an Arduino. The next step is to control the garage door opener using the Bluetooth shield.

Prototypes

The Remote Home team produced two prototypes this sprint. The first prototype was the iOS framework developed by James. The client is now able to register both base stations and devices on the system. The second prototype is a garage door opener controlled over serial communication using an Arduino.