Wireless Control of Household Appliances

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Tentative House Plan

bathroom

Bathroom Light

kitchen

Kitchen Light

Bedroom Light

Fan

living room

bedroom

Dining Room Light

Living Room Light

Sprint #1 Accomplishments

- Server setup
  - LAMP stack on Raspbian. (Raspberry Pi Debian)
- Python core code
  - Transport data over a socket
  - Manipulate GPIO Pins on Raspberry PI
- Investigation into web application hosting technologies
  - Python integration of server/client socket communication
  - Partial setup of webpage on Raspberry Pi
- Identification of project requirements
  - User and Technical

Project Components

Website
- **Login**
- **Dashboard**
  - View information from Pi add-ons.
  - Manage add-ons. (Add, Delete, and Set status)
  - Change login info.

Scripts
- Turn on specified pins.
- Turn off specified pins.

Database
- **Add-on Information**
  - pins, state, type
- **Tasks**
  - Register a new add-on.
  - Remove an add-on.
  - Enable/Disable an add-on.
- **Login Information** (password)

Pin Monitor Program
- Retrieve tasks from database.
- Keeps a collection of registered add-ons.
- Tracked add-ons can be active or in-active.
- Monitor the pins of enabled registered add-ons.
- Alert website when an add-on status changes.
  - cURL

Sprint #2 User Stories

Required:

- As a user, I want to have an initial design of the screen layout
- As a user, I want to have design standards for UI/UX elements
- As a user, I want to be able to control across multiple devices

Stretch Goals:

- As a user, I want to have a login screen (non-functional)
- As a user, I want to have a home screen (non-functional)

Sprint #2 UI/UX

Setup:

- Conceive and design login and home page
- Create folders for CSS, PHP, and additional resources (ex. photos)
- Design UI standards for HTML elements (headings, text, buttons, etc.)

Stretch Goals:

- Begin development and implementation of designed UI/UX

QA Test Cases of Sprint #1

- Communication over a socket between two devices over LAN
  - Success
- LAN accessible Apache web page
  - Success
- Manipulation of GPIO Pins (Ex: turning on a light)
  - Success
- Execute Python code from a web page
  - Failed, pushed to Sprint #2

Demo