



# Solar Decathlon Smart Home Control

Presentation 2

11/18/2014

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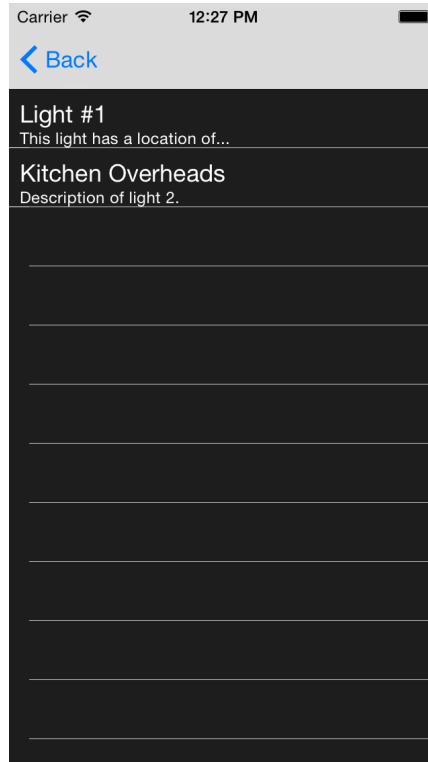
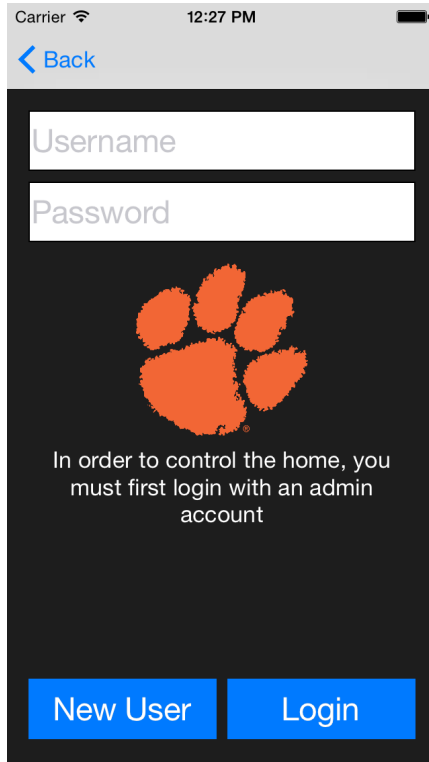
# Background

1. Solar Decathlon, 2015
2. Allow Clemson & Judges to Control House
3. Allow Visitors to Observe Stats of House
  - a. All Up-To-Date
4. Access Control (Admin accounts)

# Objectives Overview

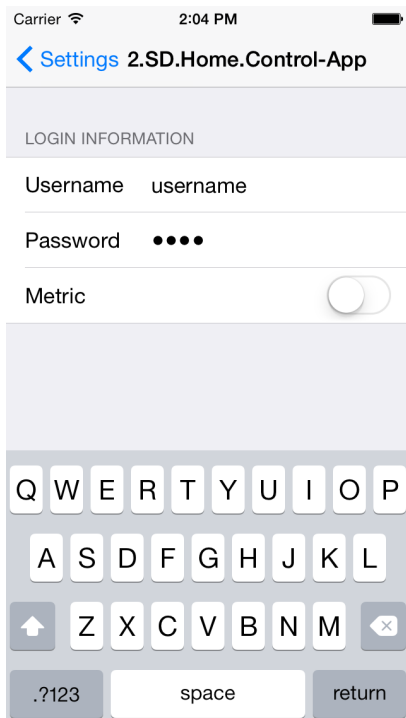
1. All UI prototypes completed with charting
2. PHP scripts created with updated database design
3. Chart functionality added; user system started; manuals started

# UI Progress



Login screen  
Any device  
UITableView  
Uses Prototype Cells

# Preference Bundle



## Key

### ▼ iPhone Settings Schema

#### ▼ Preference Items

#### ▼ Item 0 (Group - Login

Title

Type

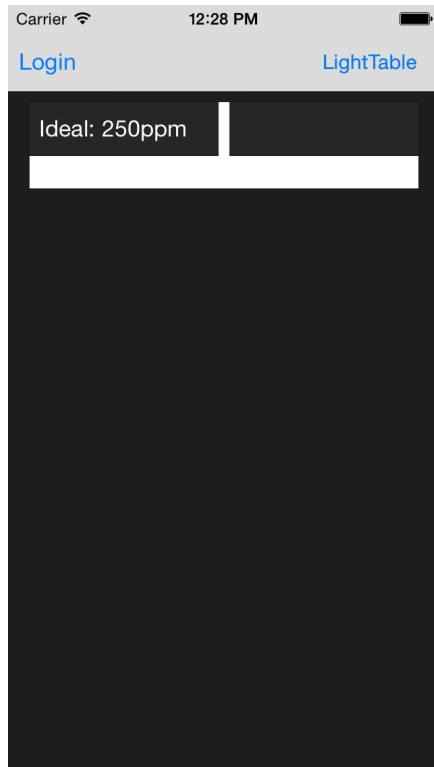
► Item 1 (Text Field - Username)

► Item 2 (Text Field - Password)

► Item 3 (Toggle Switch - Metric)

Strings Filename

# Problems with UI



```
2014-11-18 12:27:40.011 2.SD.Home.Control-App[19024:1285370] CUICatalog: Invalid asset name supplied:
2014-11-18 12:27:40.012 2.SD.Home.Control-App[19024:1285370] Could not load the "" image referenced from a nib in the bundle with identifier "com.ThunderDucklings.--SD-Home-Control-App"
2014-11-18 12:27:40.028 2.SD.Home.Control-App[19024:1285370] Unable to simultaneously satisfy constraints.
```

Probably at least one of the constraints in the following list is one you don't want. Try this: (1) look at each constraint and try to figure out which you don't expect; (2) find the code that added the unwanted constraint or constraints and fix it. (Note: If you're seeing `NSAutoresizingMaskLayoutConstraints` that you don't understand, refer to the documentation for the `UIView` property `translatesAutoresizingMaskIntoConstraints`)

```
(
    "<NSLayoutConstraint:0x7fc40ad56490 H:|-(0)-[UIView:0x7fc40b9701d0] (Names: '|':UIScrollView:0x7fc40ad55c00 )>",
    "<NSLayoutConstraint:0x7fc40ad3f4b0 UIScrollView:0x7fc40ad55c00.leading == UIView:0x7fc40ad55b30.leadingMargin>",
    "<NSLayoutConstraint:0x7fc40ad5e8b0 UIView:0x7fc40b9701d0.leading == UIView:0x7fc40ad55b30.left>"
)
```

Will attempt to recover by breaking constraint

```
<NSLayoutConstraint:0x7fc40ad56490 H:|-(0)-[UIView:0x7fc40b9701d0] (Names: '|':UIScrollView:0x7fc40ad55c00 )>
```

# What's Wrong?

Looking ahead for devices...

With:

- UIScrollView

- UITableView Prototype cells

This is part of next week's milestone for us.

# Future of UI

Graphical lighting controls

With blueprints

\*Not adaptive to all homes

Still under consideration



# Database Update

## What's Changed?

- Added power consumption table
- Added Scene & Light Scene table
- Added Set Ideals table (removing fields from the other tables and adding them to this one)

Users Table	
user_id	Int
username	TEXT
password	TEXT
isAdmin	BOOL

Temperature Table	
temperature_id	Int
currentTemp	Decimal(4,1)
isOnorOff	BOOL
time	DATETIME

Humidity Table	
humidity_id	Int
currentHumidity	Int
isOnorOff	BOOL
time	DATETIME

Water Consumption Table	
waterConsumption_id	Int
currentUseinGal	Int
time	DATETIME

Power Consumption Table	
powerConsumption_id	Int
currentUseinWatts	Int
time	DATETIME

Light Bulb Table	
lights_id	Int
name	TEXT
intensity	Int
isOnorOff	BOOL

1 → many  
Legend:  
Yellow highlighted row is primary key  
Light Blue highlight is foreign key

Carbon Dioxide Level Table	
co2Level_id	Int
currentPPM	Int
time	DATETIME

Motion Detector Table	
motion_id	Int
detectingMotion	BOOL
time	DATETIME

Scene Table	
lightsScene_id	Int
name	TEXT
description	TEXT

Light Scene Table	
lightsScene_id	Int
light_id	
scene_id	
shouldControl	BOOL
state	BOOL

Set Ideals Table	
ideals_id	Int
setTemp	Decimal(4,1)
setHumidity	Int
goalWaterConsumption	Int
warningPPMC02	Int
idealPowerinWatts	Int

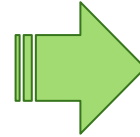
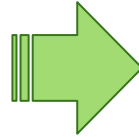
# PHP Scripts

## Demo

- Login to admin, changing temperature on app changes setTemp in Set Ideals table
- The current Temp on home screen & detail view change based on the currentTemp in temperature table.

# Chart Functionality Added

- Project in current form not quite ready for the charts
- However, I've tried to brush up my demo a little bit



?

# Future Plans (11/25)

1. UI Complete, Not all "hooked up"
  - a. AutoLayout for devices
2. Implemented all PHP scripts into app
3. Manuals (roughly) completed

# Acknowledgements & References

- Hex -> UIColor Converter: <http://www.touch-code-magazine.com/web-color-to-uicolor-convertor/>
- Change font color of nav title: <http://stackoverflow.com/questions/8755970/how-to-change-front-color-of-navigation-bar-title>
- Make UINavigationController transparent: <http://stackoverflow.com/questions/2315862/make-uinavigationbar-transparent>

Thank You!