	Project Team:
	Dong Hao Zhuo
	Steven Ho Chong Zeng
	Jie Wen Mai
	James Lee
	Jing Xiang Hou

Members

Member	Role	Main Jobs
Dong Hao Zhuo	CEO	Programmer, House Assemble, Finance Management
Steven Ho Chong Zeng	VPO	Second Programmer, Documentation, Circuit Designer
Jie Wen Mai	CMO	Hardware Designer, Mechanical Designer, Builder
James Lee	CFO	Second Hardware Designer, Second Mechanical Designer
Aromis Hou	COO	Organizer, Documentation, Research

Outline

* Project Overview
* Design Overview
* Progress and Finance
* Future Work

Outline

* Project Overview
* Design Overview
* Progress and Finance
* Future Work

Project Overview

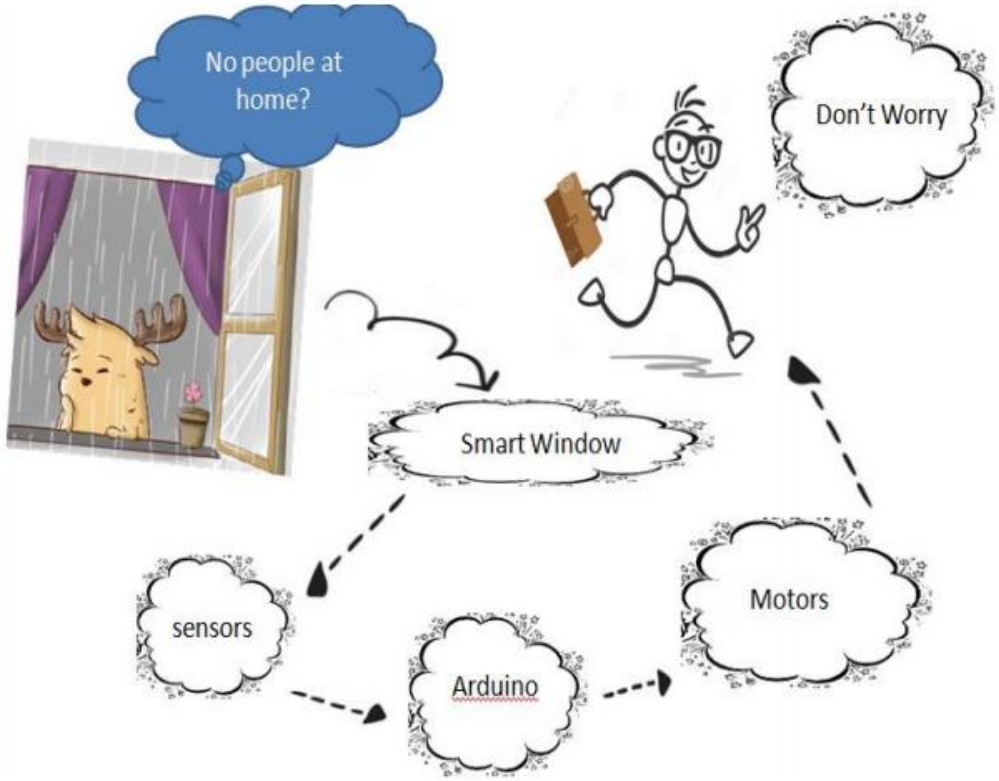
* Automatic Window Controller

Project Overview

* Motivation
  * Windows in Lab4

Project Overview

* Motivation
  * Prevent rain from getting into the house



Project Overview

* Marketable Audience
    - Residential Homes and Apartments
    - Office Buildings
    - Schools
    - Hospitals and Nursing Homes

Outline

* Project Overview
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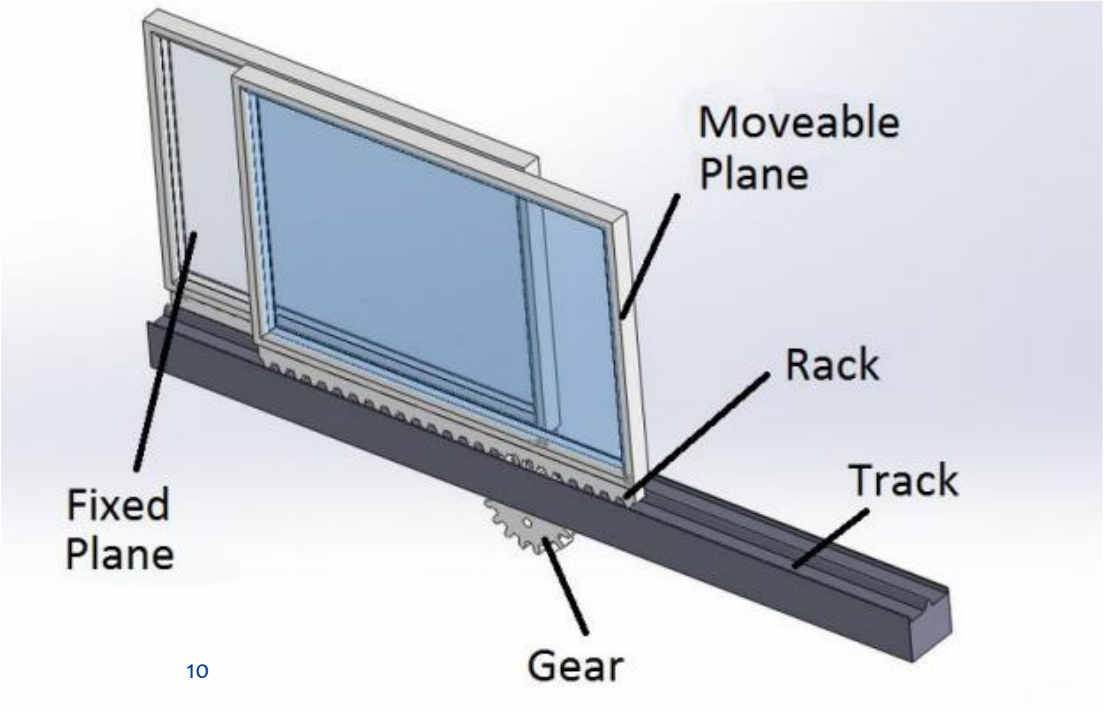
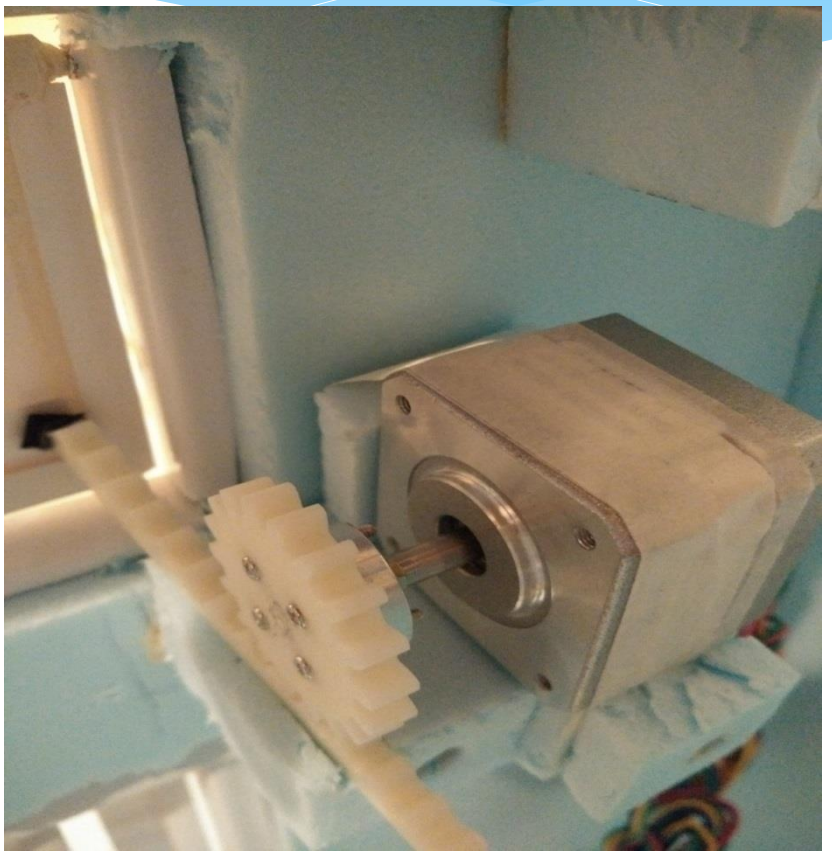
Design Overview

* Mechanical
  * Windows
    * Gliding Window



Design Overview

* Mechanical
  * Windows
    * Awning Window



Design Overview

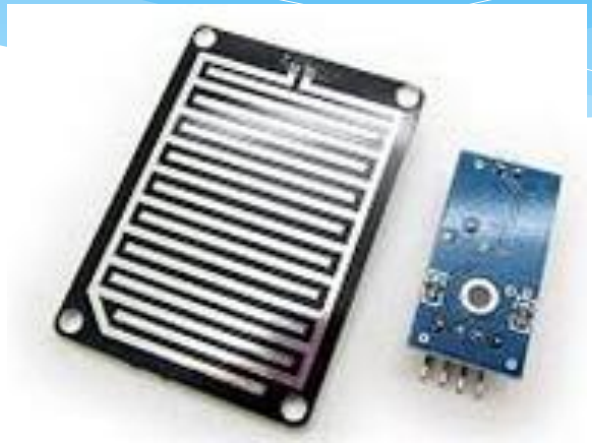
* Mechanical
  * Curtain

Design Overview

* Hardware
  * Arduino UNO
  * Sensors
  * EasyDriver
  * Motors
  * Remote Control
  * LCD
  * Temperature Switch

Design Overview

- Hardware
  - Arduino UNO
  - Sensors
    - Rain Sensor
    - Tem/Hum Sensor
  - EasyDriver
  - Motors
  - Remote Control
  - LCD
  - Temperature Switch

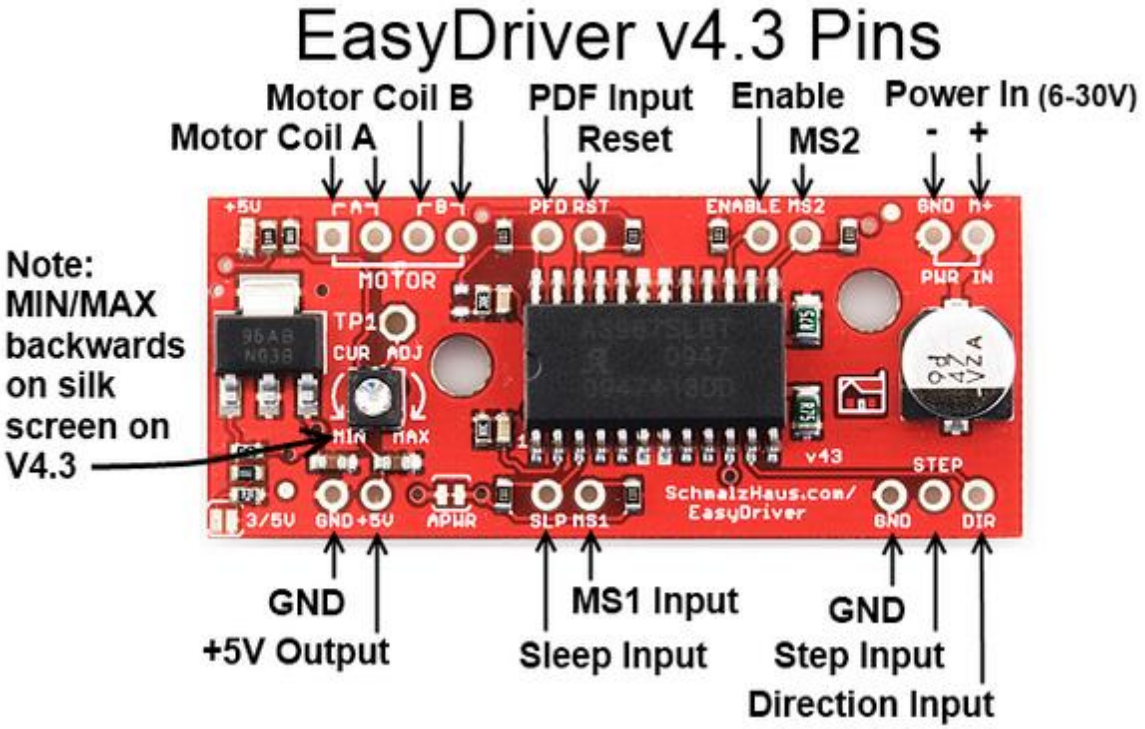


Design Overview

- Hardware
  - Arduino UNO
  - Sensors
    - Light Sensor
    - Gas Sensor
  - EasyDriver
  - Motors
  - Remote Control
  - LCD
  - Temperature Switch

Design Overview

* Hardware
  * Arduino UNO
  * Sensors
  * EasyDriver
  * Motors
  * Remote Control
  * LCD
  * Temperature Switch

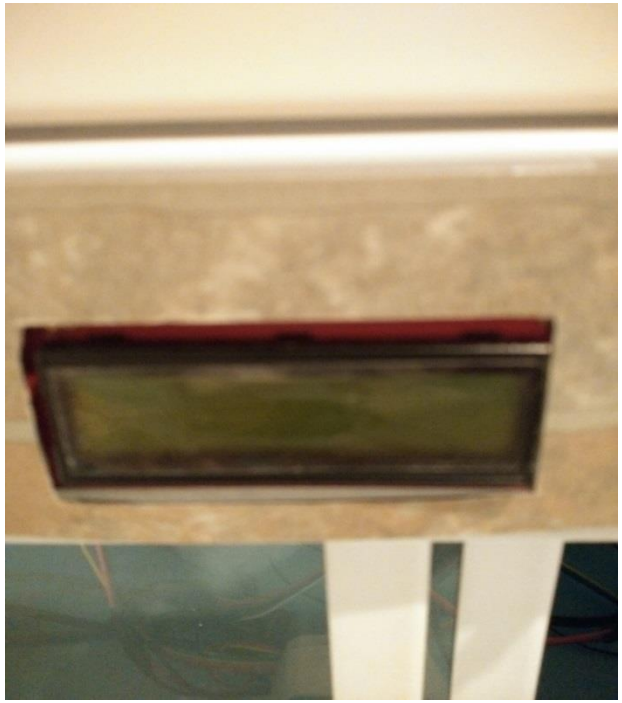


Design Overview

* Hardware
  * Arduino UNO
  * Sensors
  * EasyDriver
  * Motors
  * Remote Control
  * LCD
  * Temperature Switch

Design Overview

* Hardware
  * Arduino UNO
  * Sensors
  * EasyDriver
  * Motors
  * Remote Control
  * LCD
  * Temperature Switch

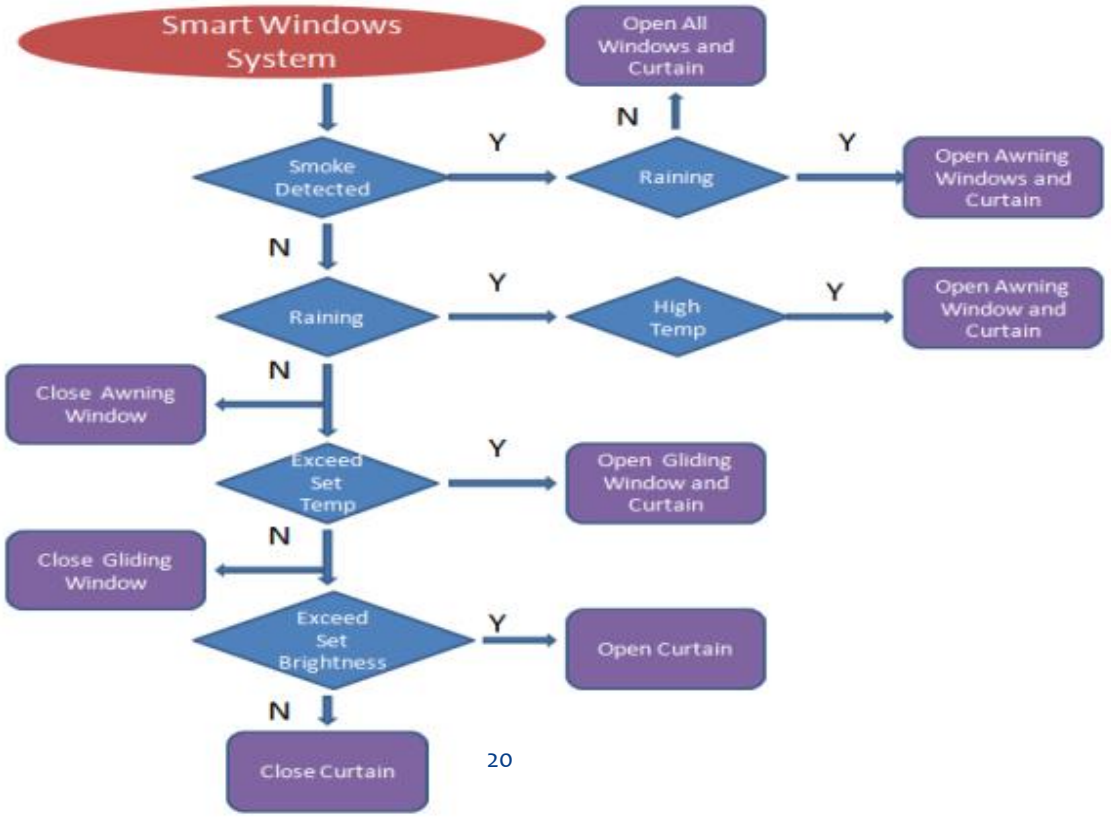


Design Overview

* Hardware
  * Arduino UNO
  * Sensors
  * EasyDriver
  * Motors
  * Remote Control
  * LCD
  * Temperature Switch

Design Overview

* Software
  * Logic Flow Chart for Automatic Control



Design Overview

* Software
  * Manual Control
    * A: Awning Window
    * B: Gliding Window
    * C: Curtain

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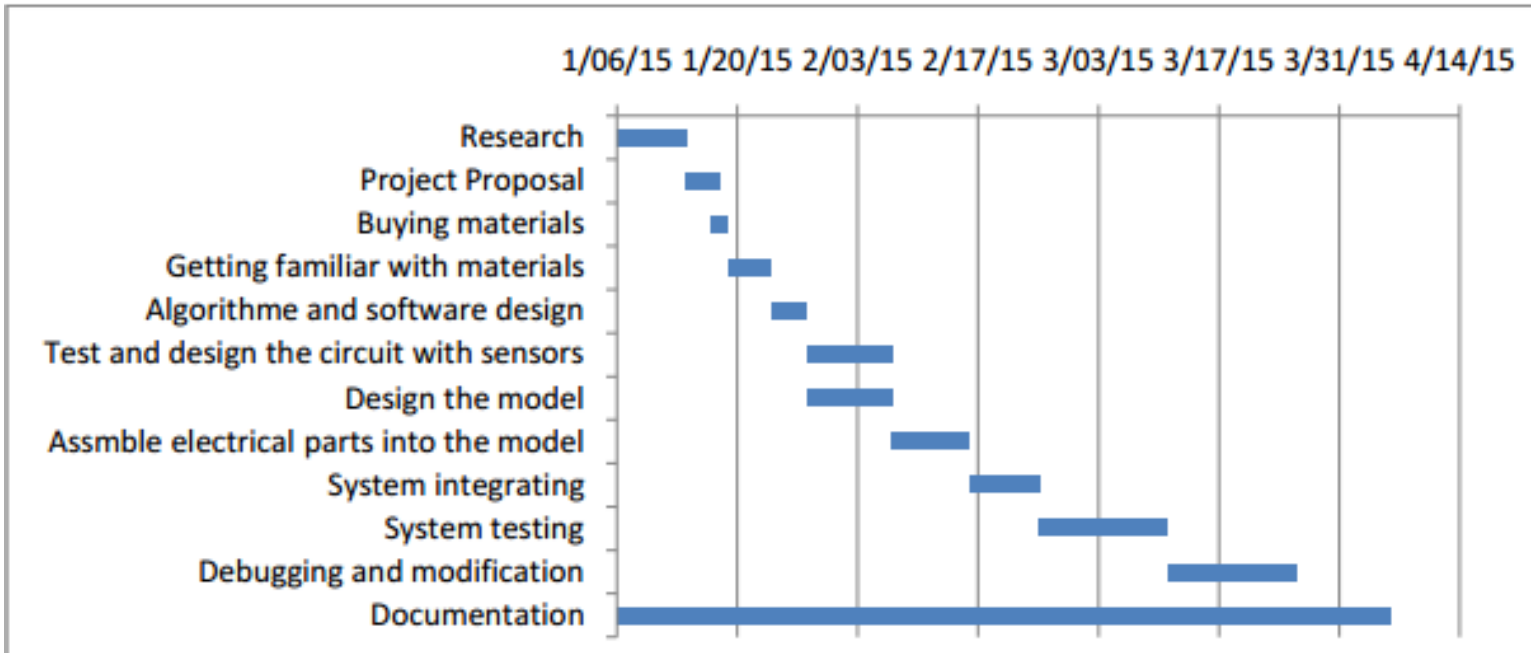
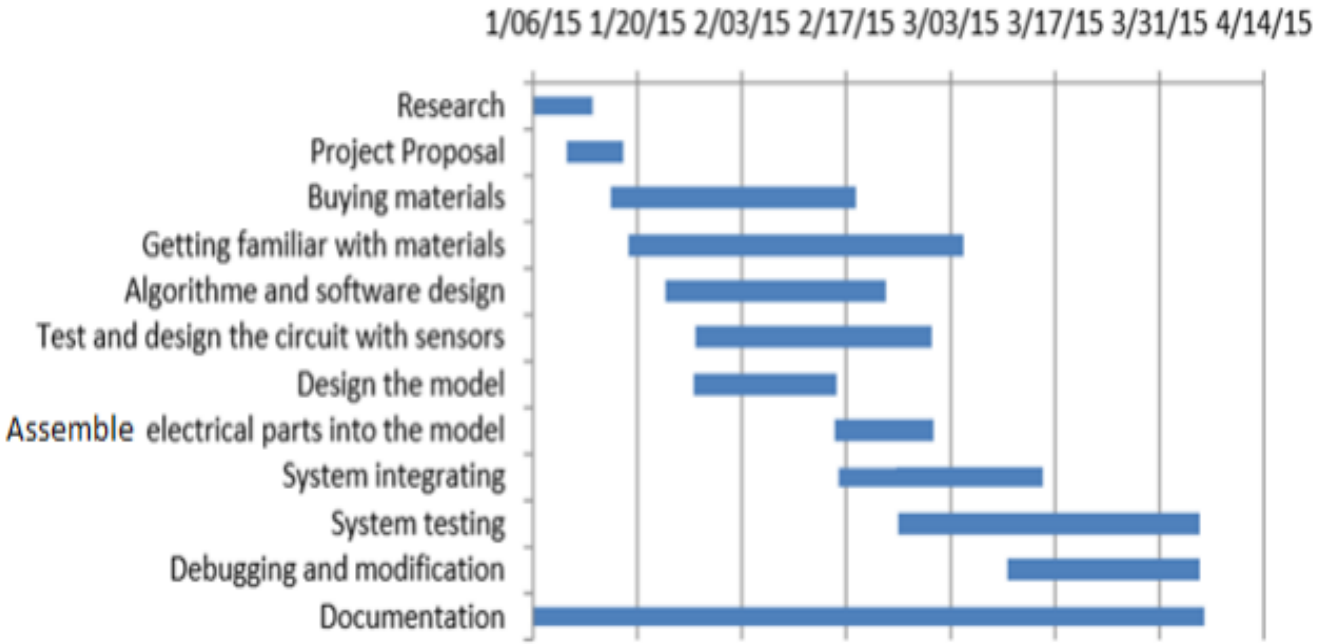
Progress and Finance

* Progress Timeline
  * Estimated



Progress and Finance

* Progress Timeline
  * Actual



Progress and Finance

* Finance
  * Estimated

Item	Price
Ply wood for framing	130
Rain sensor	50
Smoke detector	50
Carbon Monoxide Sensor	50
Hydraulics	40
Windows	160
Arduino Uno	70
Stepper Motors	45
Gears and connection components	50
PCB	45
Total Cost	690

Progress and Finance

* Finance
  * Actual

Components	Cost
Batteries(3V, 9V)	$38
4 Drivers	$143
6 sensors	$108
3 motors	$94
Arduino Uno	$32
Styrofoam	$28
Frame and track	$30
3D printed gear	$free
Wires	$15
LCD display	$34
Remote	$23
Battery holder	$8
Boards	$28
Curtain	$40
Decoration	$38
Total	$631

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Future Plan

* Wireless control
  * Remote control (like Myo)
  * Cell phone App
* Molecular level
  * Cancel the option of curtain
* Derive customized series
  * Apartment, Office building, Deluxe hotel

Business

* Potential Cooperative Enterprise
  * Activated Door Co.
  * Canador Inc.
  * Canadian Door Automation Inc.
* Starting Our Own Business

Learning Experience

* Team cooperation
* Organization
* Mechanical Design
* Professional Documentation
* Arduino Programming & Circuit Design

Thanks to

* Dr. Andrew Rawicz
* Steve Whitmore
* 3D printing from Gary Shum
* Jamal Bahari
* Lee's Electronic Components
* RP Electronics

Questions?