

# Review on the Design Model of the Team 5

Top-down description

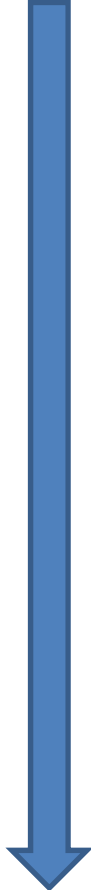


Table of Contents

- 1. Introduction..... 4
  - 1.1 General Description..... 4
  - 1.2 Purpose of this Document ..... 4
  - 1.3 Potential Users of this Document ..... 4
  - 1.4 Major Design Decisions ..... 4
  - 1.5 Constraints and Assumptions ..... 4
  - 1.6 Definitions, Acronyms and Abbreviations..... 5
- 2. Architectural Design..... 6
  - 2.1 **Deployment Diagram..... 6**
  - 2.2 Class Diagram Relationship ..... 7
- 3. Design Class ..... 12
  - 3.1 System Class ..... 12
  - 3.2 Home Security Function..... 14
  - 3.3 Home Surveillance Function ..... 20
  - 3.4 Home Management Function..... 30
  - 3.5 Communication Management Function ..... 42
- 4. State Diagram ..... 50
  - 4.1 State diagram for verifying user..... 50
  - 4.2 State diagram for home security function..... 51
  - 4.3 State diagram for home surveillance function ..... 52
  - 4.4 State diagram for home management function ..... 55
  - 4.5 State diagram for Communication management function..... 56
- 5. Traceability between Analysis Model and Design Model ..... 59
- 6. Lesson Learned..... 61
- 7. References ..... 63
  - ※ **Who did what**..... 63

Needs subsubsections such as 2.2.1, 2.2.2.

Should be able to know who designs which components. "Who did what" is crucial for maintenance and revision

No index

※ **Who did what**

- 김근우
  - Class diagrams, CRC cards, State diagrams, Traceability table that relate to Home Surveillance Function.
  - Lesson Learned.
- 박다혜
  - Class diagrams, CRC cards, State diagrams, Traceability table that relate to System, Home Security Function, Home Management Function.
  - Document refinement.
- 오은수
  - Overall class diagram.
  - Class diagrams, CRC cards, State diagrams, Traceability table that relate to Communication Function.

# 1. Introduction

## 1.1 General Description

Safehome system targets all residents who live in the house. Functions of Safehome system can be divided to 4 parts; Home security functions, Home surveillance functions, Home management functions and communication management functions. Home security functions monitor occurrence of abnormal situations. Home surveillance functions provide user to watch inside the house while user is out by cameras. Home management functions controls lightings and appliances in the house. Communication management functions do relevant jobs for answering machine and personal phone book. Safehome system is controlled by both control pane and PC.

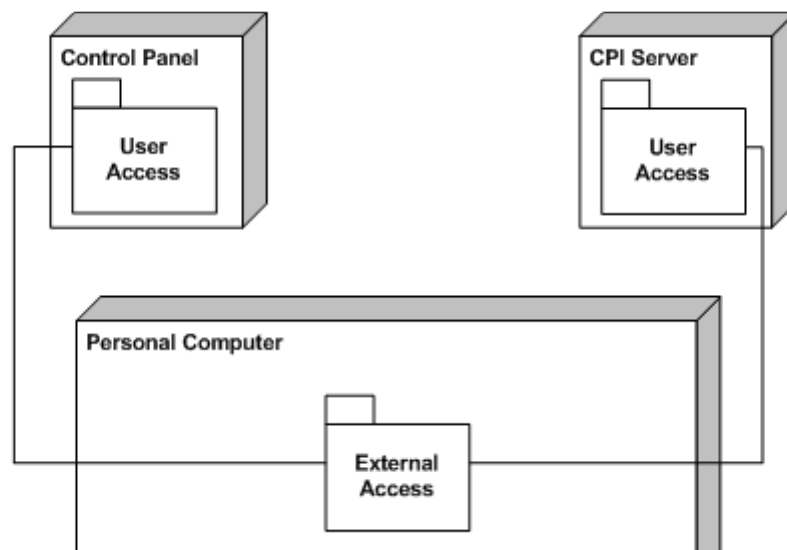
## 1.2 Purpose of this Document

Team5 has not described overall detailed description of the Safehome system in the previous doc neither

# 2. Architectural Design

We will show deployment diagram and overall class diagram in component level. These diagrams provide blue prints of design model.

## 2.1 Deployment Diagram

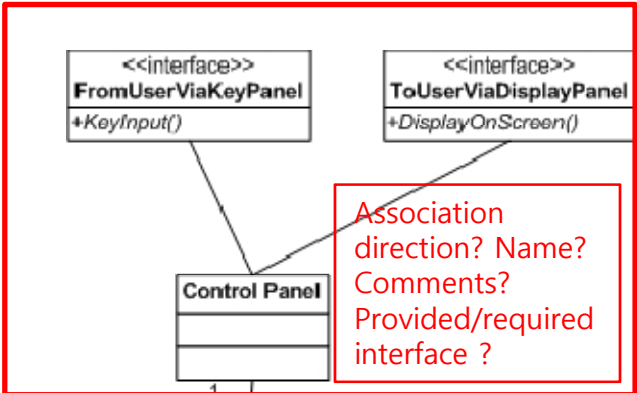
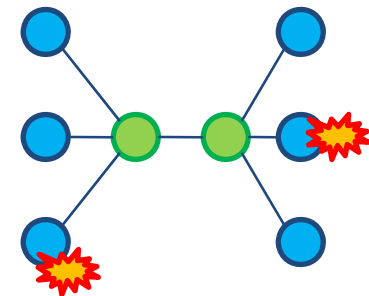
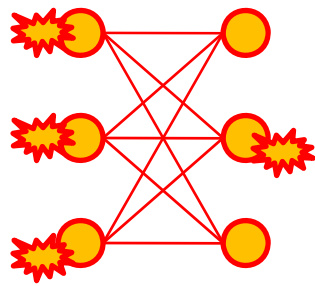


Good to show deployment diagram In a top-down view

CPI server has not been described in the Safehome system in the previous doc either

Consistency and traceability of work outputs are crucial. Team5 fails to achieve those assets.

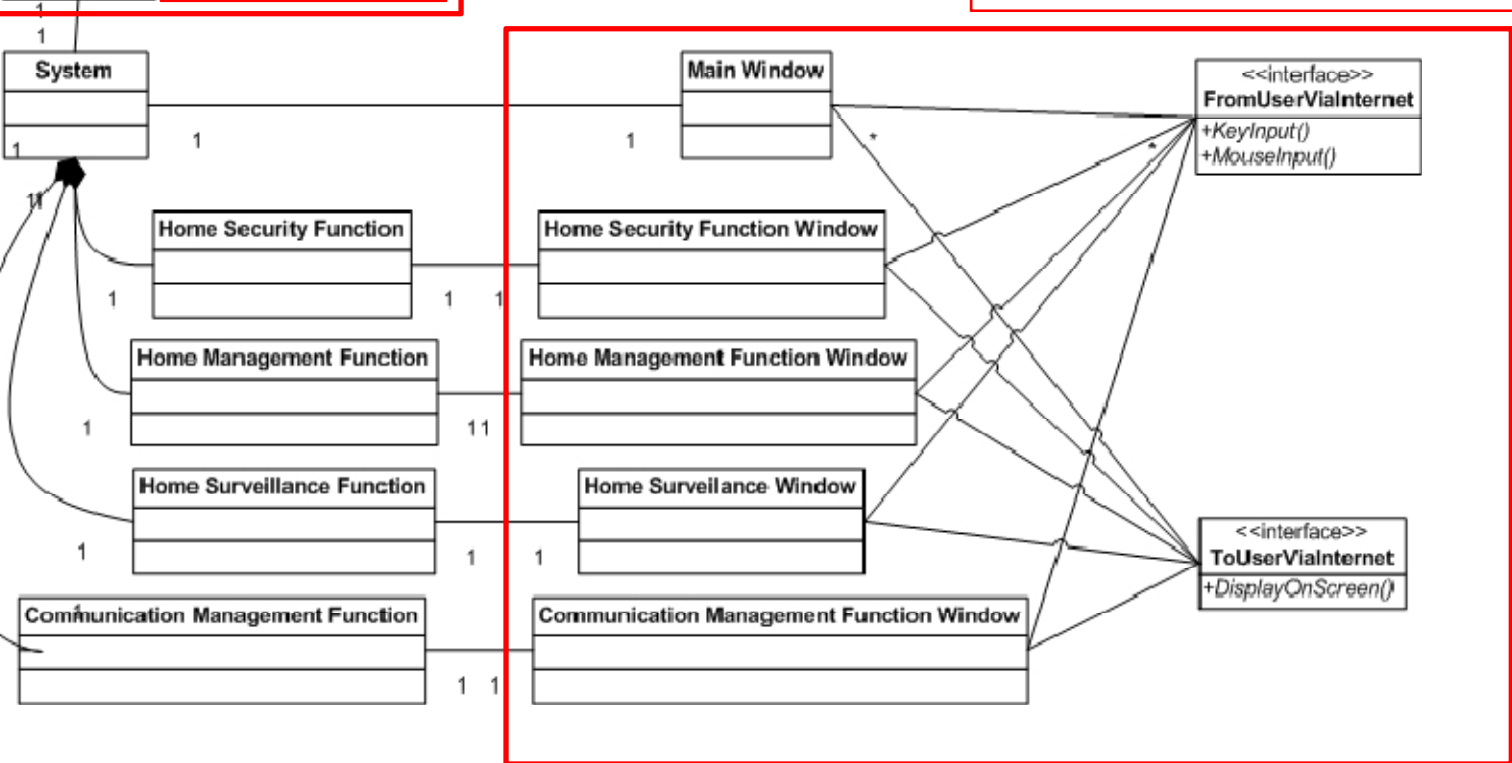
Tightly coupled connection is bad

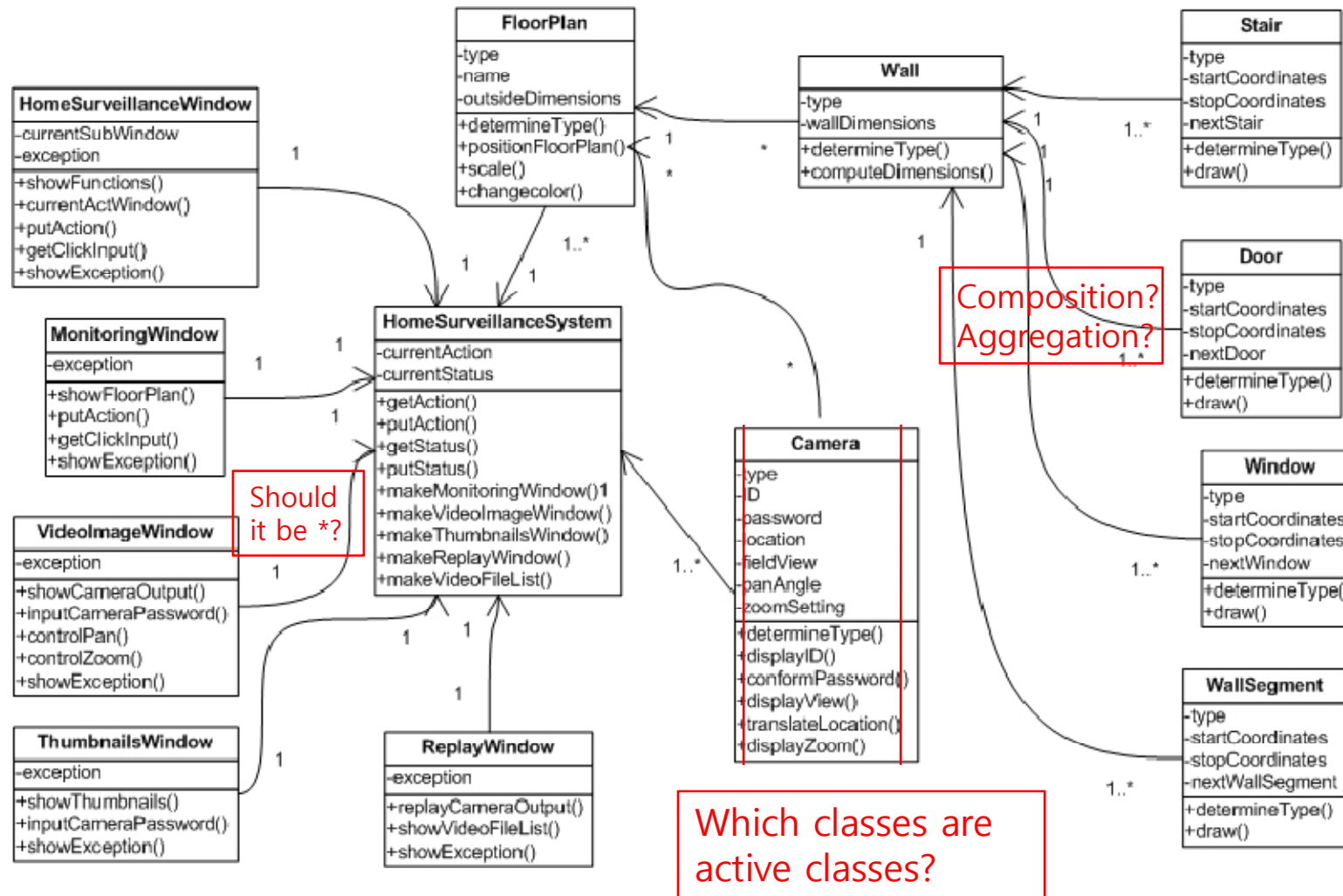


Control panel is UI, too

In most cases, UI should be decoupled from the target system due to different characteristics

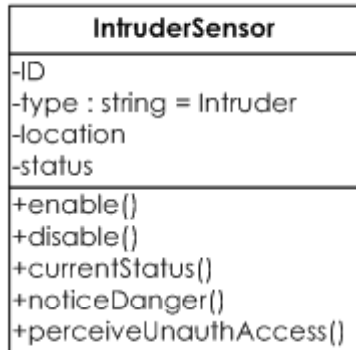
Bad class name





### 3.2.4 INTRUDERSENSOR

- Class Diagram



Inherited from Sensor class

See Sensor class for description of inherited attributes and operations.

- ✓ type: "Intruder" (default value)
- ✓ perceiveUnauthAccess(): Perceives unauthorized access to the house.

- CRC Card

Class: <u>IntruderSensor</u>	
Sensor that monitors unauthorized access outside the house.	
Responsibility	Collaborator
Monitors unauthorized access outside the house	

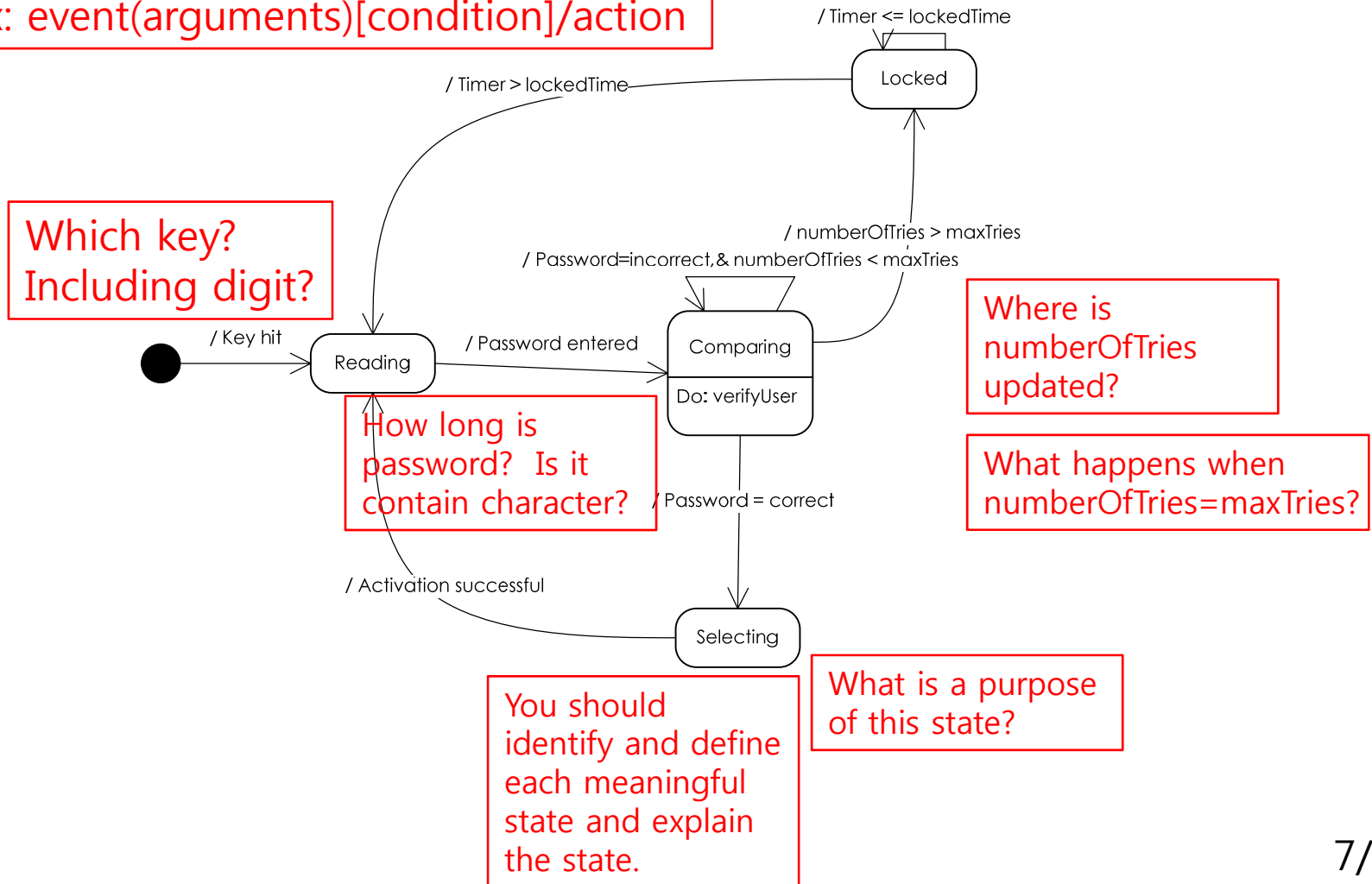
CRC index cards should provide handy survey of collaboration and responsibility. Thus, it would be better to group them separately

Page number?  
Quick links?

Only monitoring? Why not detect unauthorized access and notify it to the HomeSecurityFunction?

State diagram should represent internal behavior of component in detail. Should be more complete than activity diagram

Syntax: event(arguments)[condition]/action



## 5. Traceability between Analysis Model and Design Model

This table shows traceability between analysis model and design model. Left-most side of table shows use case descriptions in analysis report and other sides show related classes and related state diagram in current design report.

Use-case Description	Related Class	Related State Diagram
2.2.1.1 SENSOR MONITORING FOR UNAUTHORIZED ACCESS	3.2.1 HomeSecurityFunction 3.2.4 IntruderSensor	4.2 State diagram for home security function
2.2.1.2 SENSOR MONITORING FOR FIRE	3.2.1 HomeSecurityFunction 3.2.5 FireSensor	
2.2.1.3 SENSOR MONITORING FOR SMOKE AND CO LEVELS	3.2.1 HomeSecurityFunction 3.2.7 AirSensor	
2.2.1.4 SENSOR MONITORING FOR WATER LEVELS IN BASEMENT	3.2.1 HomeSecurityFunction 3.5.6 WaterSensor	
2.2.1.5 ARM/DISARM SAFEHOME	3.2.1 HomeSecurityFunction	
2.2.4.1 Enable/Disable answering function	3.5.2 Answering Machine Function	4.5.1 Answering Machine Function 4.5.2 Answering Machine Function User Interface
2.2.4.2 Manage message	3.5.2 Answering Machine Function 3.5.3 Message	4.5.2 Answering Machine Function User Interface
2.2.4.3 Leave message	3.5.2 Answering Machine Function 3.5.3 Message	4.5.1 Answering Machine Function
2.2.4.7 Manage phone number	3.5.4 Personal Phone Book 3.5.6 Phone Number Record	4.5.3 Personal Phone Book
2.2.4.8 Manage group	3.5.4 Personal Phone Book 3.5.5 Phone Number Record	4.5.3 Personal Phone Book
2.2.3.1 CONTROL LIGHTINGS	3.4.1 HomeManagementFunction 3.4.3 Lighting	4.4 State diagram for home management function

Good, but not complete.  
Where is relationship between swimlane and sequence diagram?

Where is state diagram for verifying user?