

# OOAD vs. SASD

**Team : T1**

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# **1. MODELING ORDER**

# Modeling Order (OOAD)

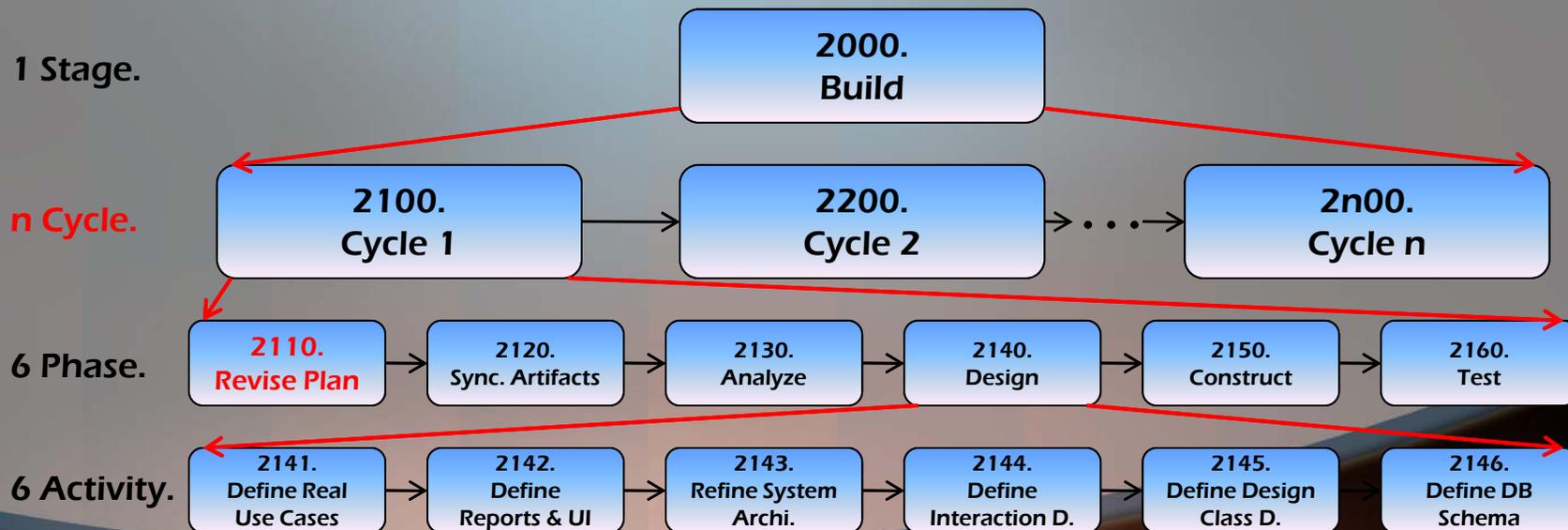
- OOAD

- OOAD have big 3 stages. 1000, 2000, 3000



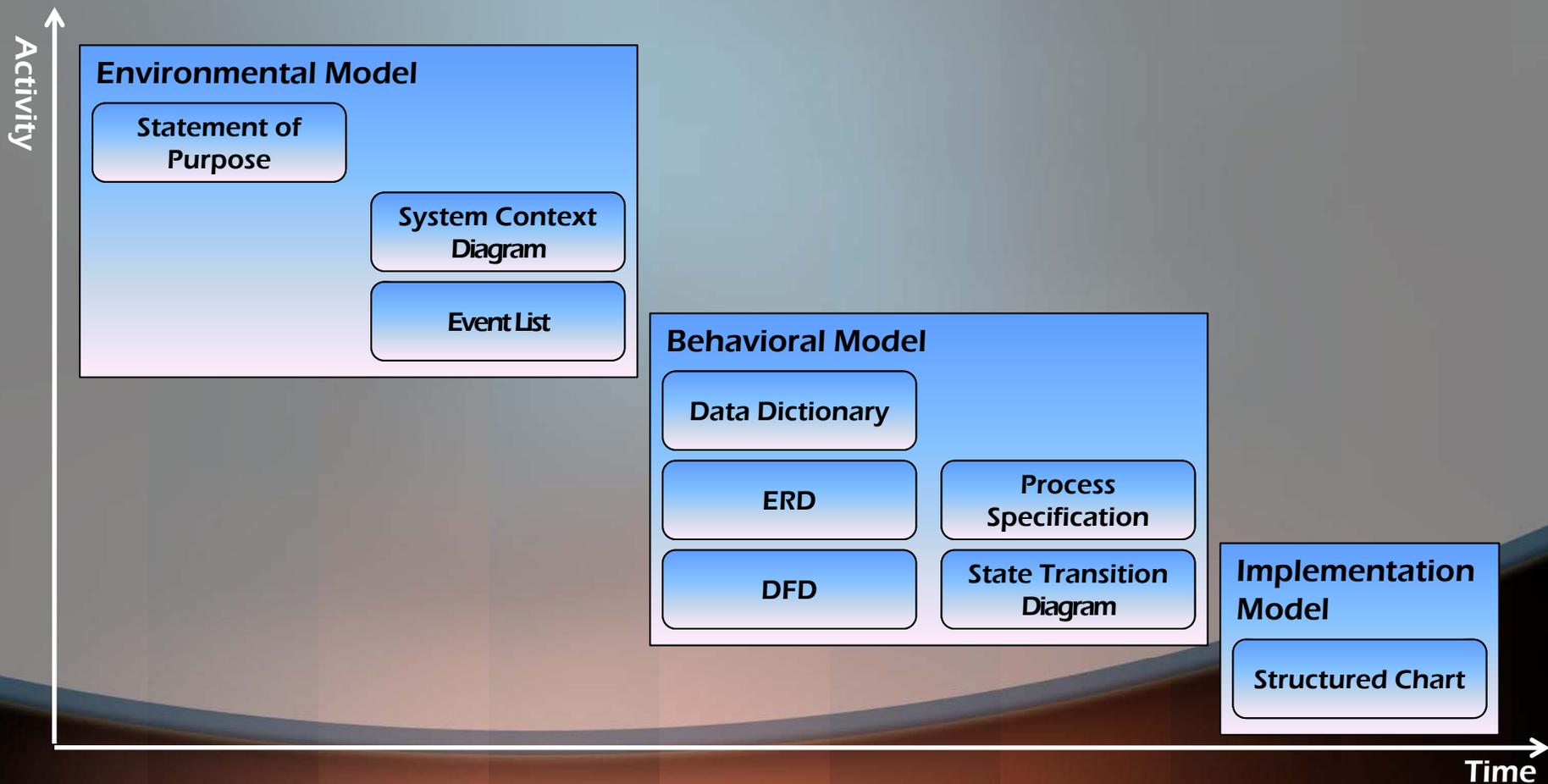
- And each big stages has smaller stages and Iteration and Revise each Level

- Ex) 2000. Build stage have many Cycles, and Each cycle have Phases and Each Phase have Activities



# Modeling Order (SASD)

- SASD
  - SASD have many Models, and Each Models have several stages.
  - It is similar with OOAD, but SASD not Iteration and Revise each Level



# Modeling Order (Compare)

- **Similar**

- OOAD and SASD have many level for Software Modeling and Analysis.
- And Modeler must be low through the steps to the next is going to step

- **Differences**

- OOAD have iteration each stage, Iteration in the Modeling reduces errors and mistakes. In the worst case of OOAD to the beginning of each stage is when you get back or go next cycle and excute revise.
- In the worst case from the beginning to the SASD will be required to re-modeling.

## **2. FOR USERS**

# For Users(OOAD)

- OOAD

- Use Cases of the OOAD to create the default user and should be investigated for the event. And it will start based on modeling.
- OOAD uses Use cases that obtained from the user and the event list from system
  - Ex) First Use Case in ERS OOAD

Use Case	1. Reservation
Actor	Admin, Guest
Purpose	Enter information in the system
Overview	To use the elevator, enter the information will be essential.
Type	Primary
Cross Reference	System Functions: R1.1, R1.2, R12.1 Use Case: "Reservation", "Cancel", "Login Admin"
Pre-Requisites	None
	(A) : Actor, (S) : System
Typical Courses of Events	1. (A) Actor input Guest.goal to system. 2. (S) Compare ctrl_panel.max_floor and Guest.goal 3. (S) If Guest.goal is on domain of ctrl_panel.max_floor, Guest.goal save in ctrl_panel.goal
Alternative Courses of Events	N/A
Exceptional Courses of Events	Line 1: If Guest.goal is not on domain of ctrl_panel.max_floor, Print out error message to LCD

# For Users (SASD)

- SASD

- SASD is modeling use mainly Process in systems data.
- Process input data, a series of operations to produce the output data is a process.
  - Ex) SASD Process Specification 1.9

Reference No.	1.9
Name	Admin input data calculator
Input	Admin data
Output	Setting value
Process Description	<p>Char형의 <b>Admin data</b>를 관리자모드 접속과 환경 설정(초과무게, 층수 제한)을 위한 값으로 <b>Setting value</b>로 저장한다.</p> <p><b>L</b>정수 : 관리자모드로 로그인시 비밀번호 값</p> <p><b>W</b> 정수 : 최대 무게 설정 값</p> <p><b>F</b> 정수 : 층 수 제한 값</p> <p>위와 같은 3가지의 데이터 형태가 저장된다.</p>

# For Users (Compare)

- Similar
  - OOAD and SASD using Systems event and process for Modeling
- Differences
  - SASD have not mainly considered for users event.
  - Our Team think, When it implemented the program in SASD, At sometimes, some users who is use that program think this program is more discomfort than developed program for OOAD.

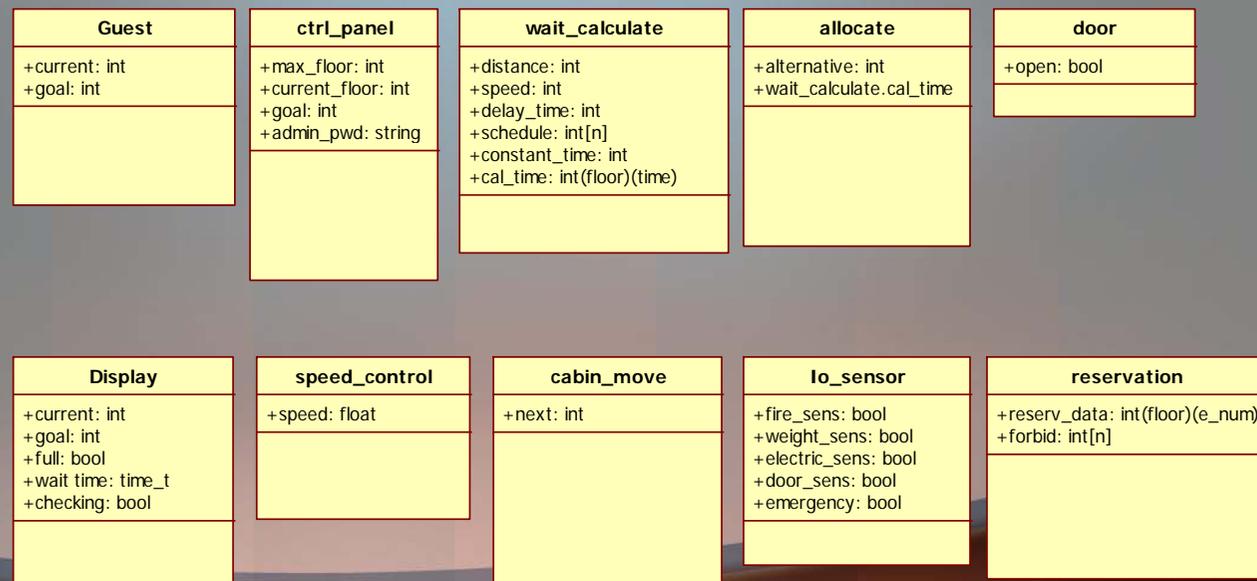
# **3. FOR MODELER AND PROGRAMMER**

# For Modeler and Programmer 1(OOAD)

- OOAD

- OOAD, for develop program use for Object Oriented Programming Language(ex. C++, JAVA, C#, ..., etc)
- Object is party of behaviors and types.
- In OOAD make Class diagram for create and use object.
- OOAD is searching objects and represents the relationship between objects for developing program.

- Ex) ERS's Class's skeleton

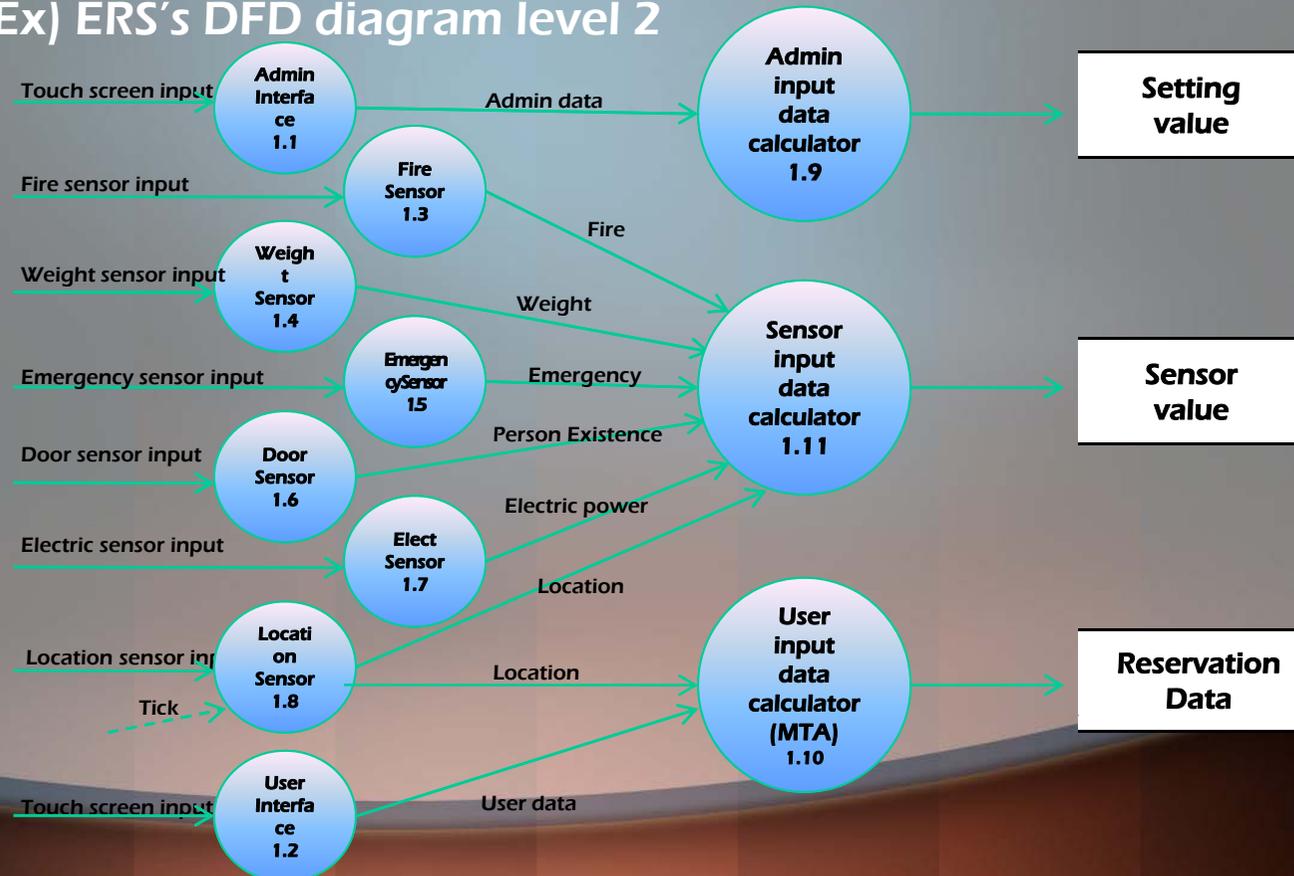


# For Modeler and Programmer 1 (SASD)

- SASD

- SASD, for develop program use for Structured Programming Language (ex. C, ..., etc)
- Use process for make function
- SASD make DFD(Data Flow Diagram) for develop program

- Ex) ERS's DFD diagram level 2



# For Modeler and Programmer 1 (Comp.)

- Differences

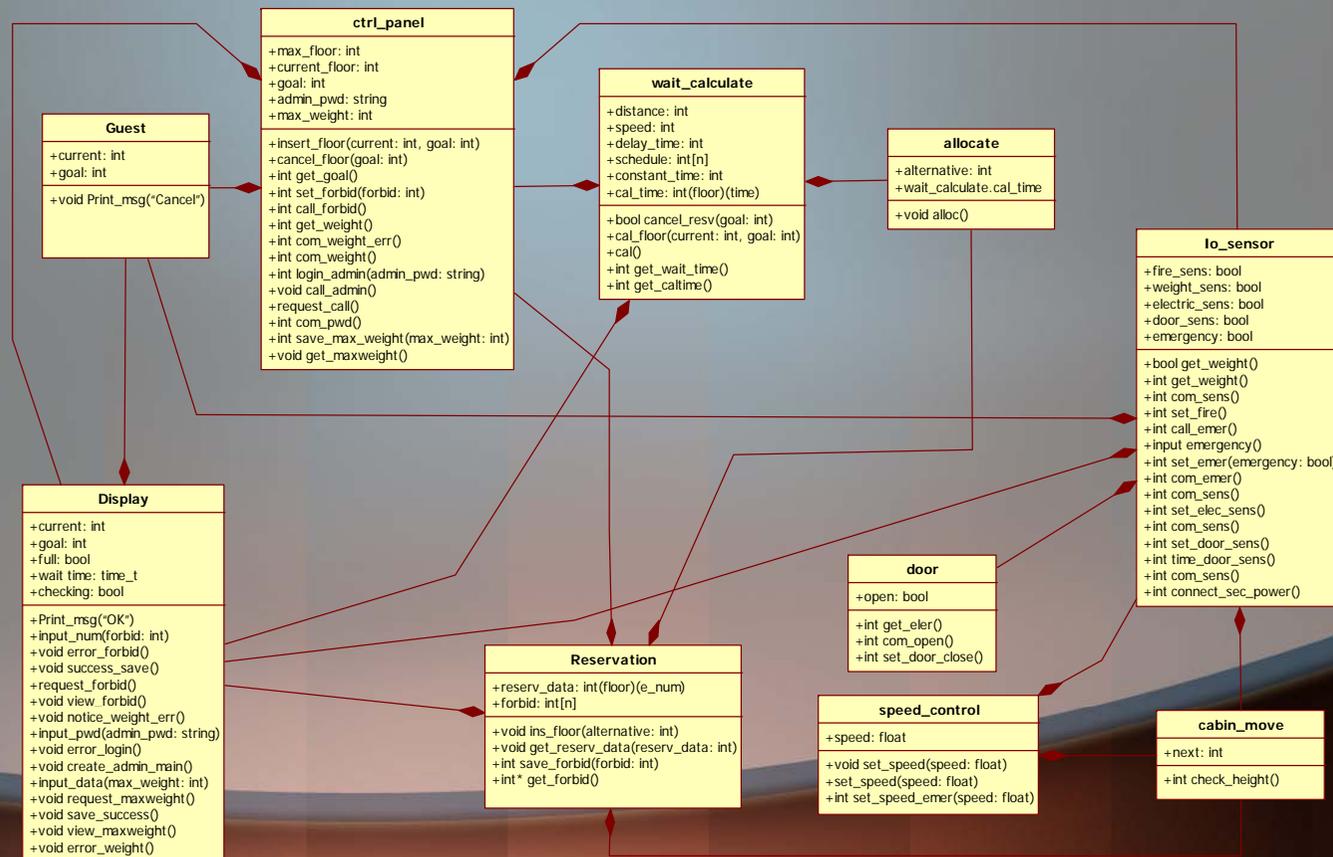
- OOAD Modeler find object and OOAD Programmer is use object for develop program.
- SASD Modeler find process and SASD Programmer is use process for develop program.
- What the difference is that during the two can not do better.
- But it is important for modeler and programmer. Because some system is more easily develop for SASD. Another some system is more easily develop for OOAD.
- Example, ERS is more simple and more easily understand in SASD.
- In case of embedded system(ex. ERS) have more simple structure than PC software, because SASD is more fit. And no need to encapsulate too.
- In case of PC software is more complex and have more data than embedded system because OOAD is more fit. And need to encapsulate for secure data from another object.
- Because, Modeler and Programmer should choose method carefully.

# For Modeler and Programmer 2(OOAD)

- OOAD

- Object oriented is more difficult understand for programmer than structured.
- And class diagram is more and more complexity in bigger software.

- Ex) ERS's class diagram

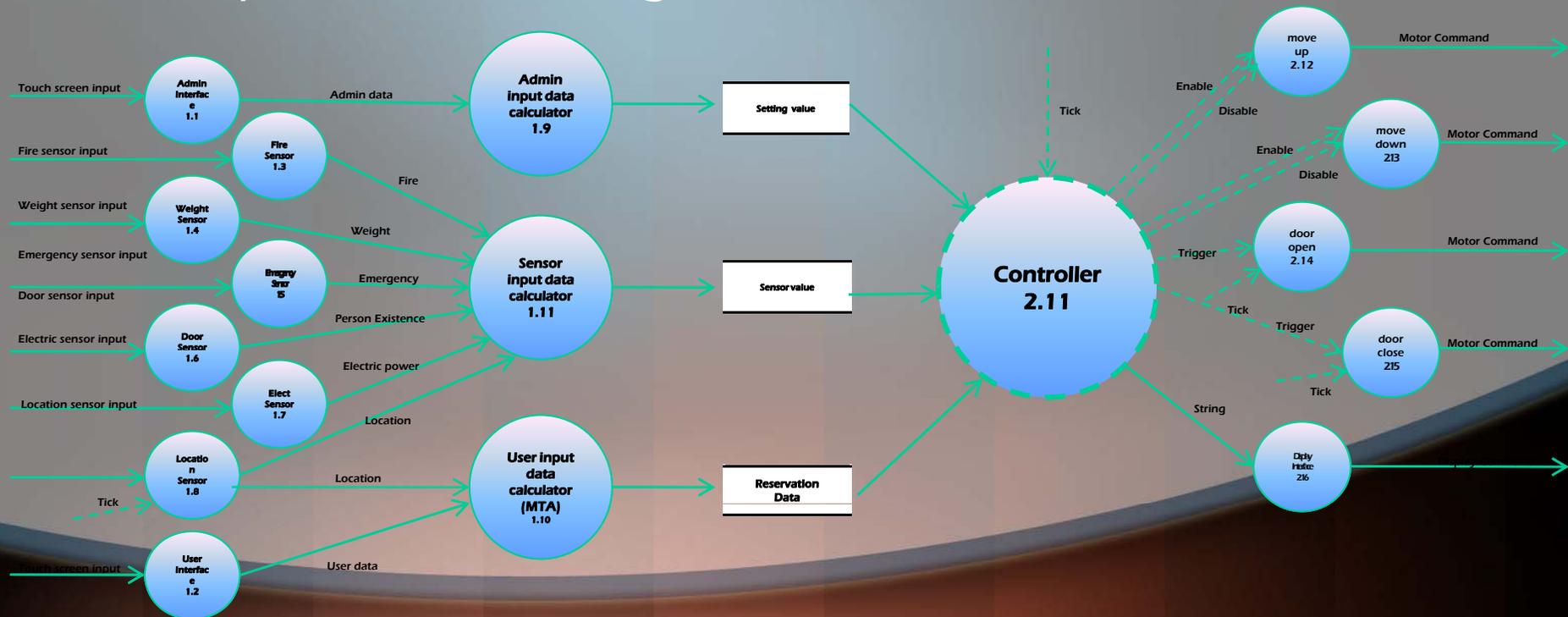


# For Modeler and Programmer 2(SASD)

- SASD

- Structured programming is very simple
- And programmer is easy for understand and for develop
- SASD's DFD so simply view the data input, processing and data output.
- Shows the system to be intuitive.

- Ex) ERS's Data Flow Diagram. Level. final



# For Modeler and Programmer 2(Comp.)

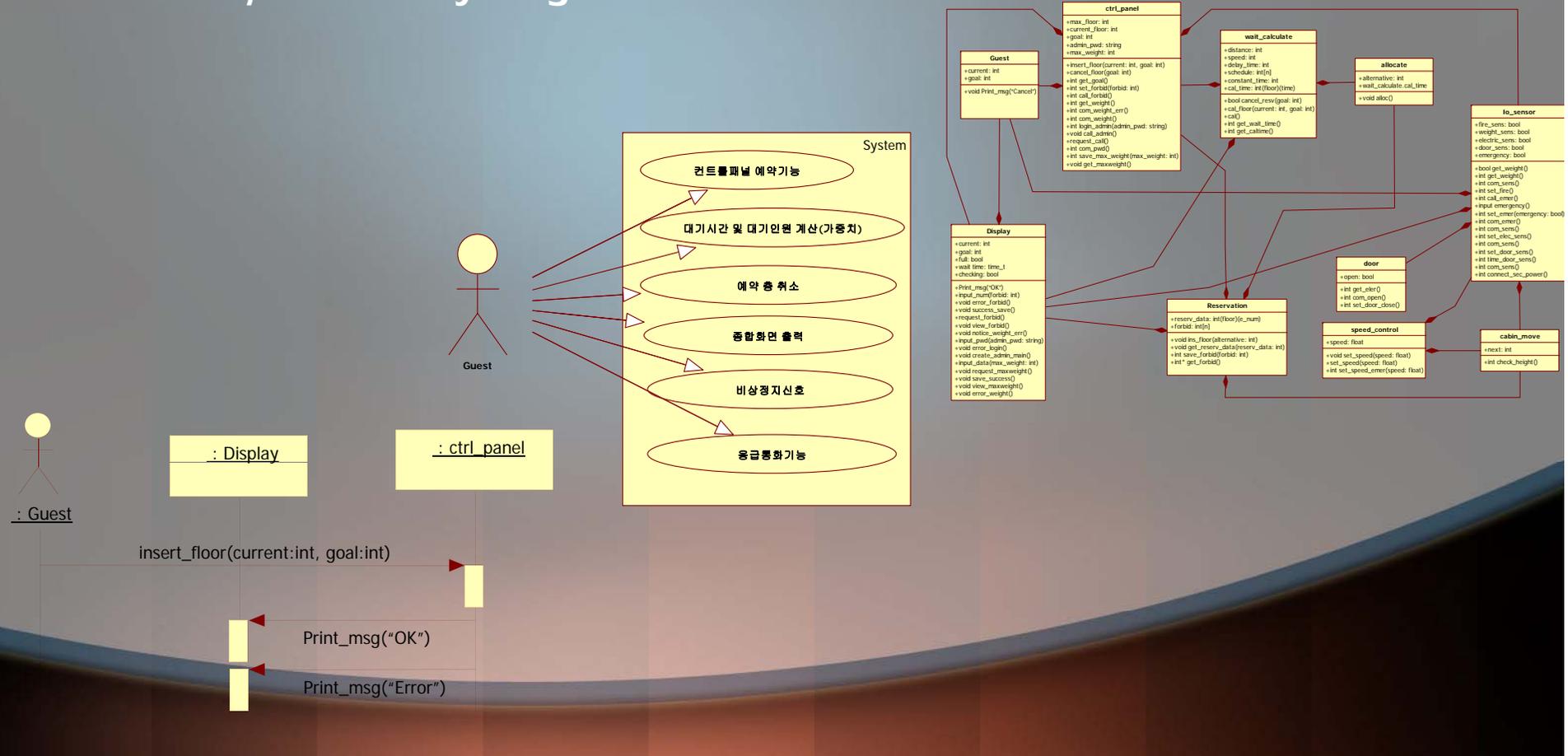
- Differences

- SASD is more simple and easy for understand and SASD view intuitive system
- Because programmer more quick and easy develop software.
- OOAD is more complex and hard for understand.
- And understand concept of object is hard for programmer.
- Because programmer is more feel the burden.
- But programmer exactly understand of concept of object, who can more complex software development.

# For Modeler and Programmer 3(OOAD)

- OOAD

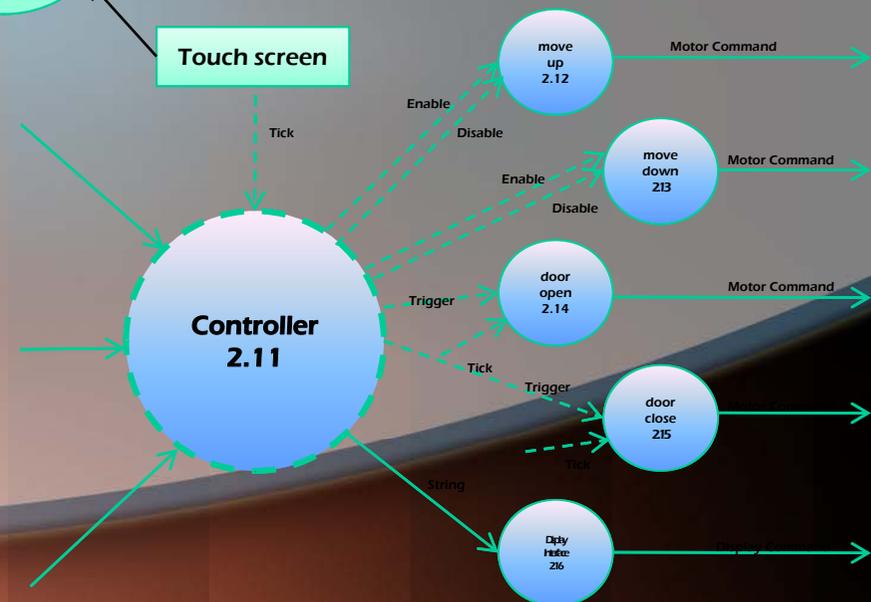
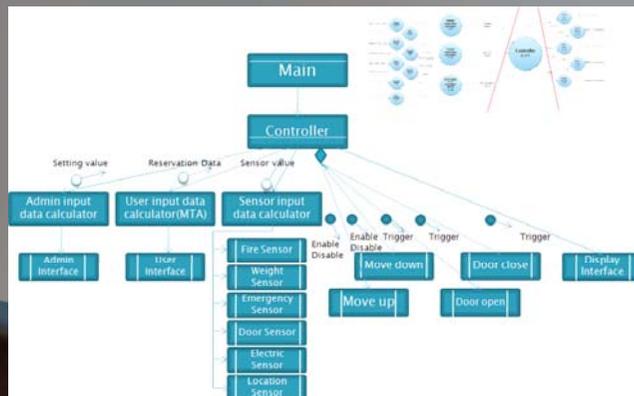
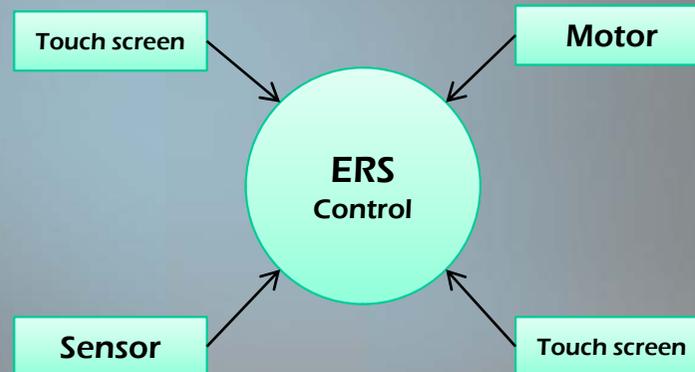
- OOAD have official Standard.
- In OOAD Modeler use Modeling language for UML
- And Modeler use tools for UML(ex. Star UML, RUP..., etc)
  - Ex) ERS's many diagrams for UML



# For Modeler and Programmer 3(SASD)

- SASD

- SASD does not have official Standard.
- In SASD use some promised notation that is suggested someone's thesis
  - Ex) ERS's many diagram and charts



# For Modeler and Programmer 3(Comp.)

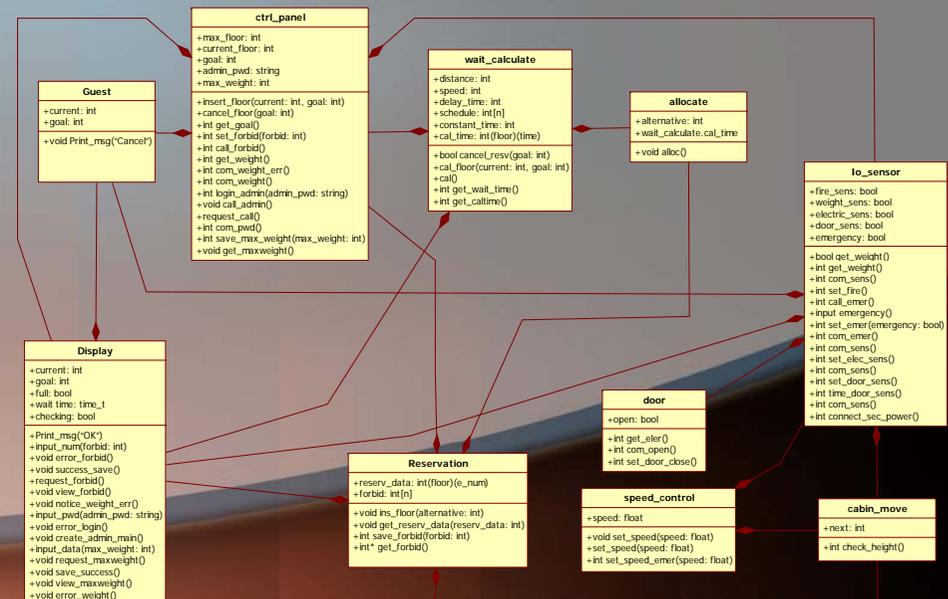
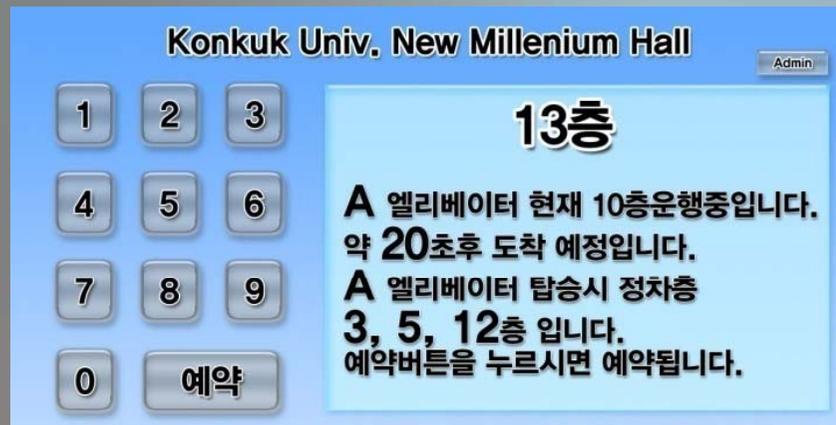
- Differences
  - OOAD have official Standard.
  - SASD does not have official standard.
  - In OOAD Modeler and programmer not should be promised in advance.
  - But in SASD Modeler and programmer should be promised in advance what notation use for expression.
  - If Modeler and programmer has not promised in advance that cause confusion to the modeler, and programmer.
  - And that cause need more time for develop software.

# For Modeler and Programmer 4(OOAD)

- OOAD

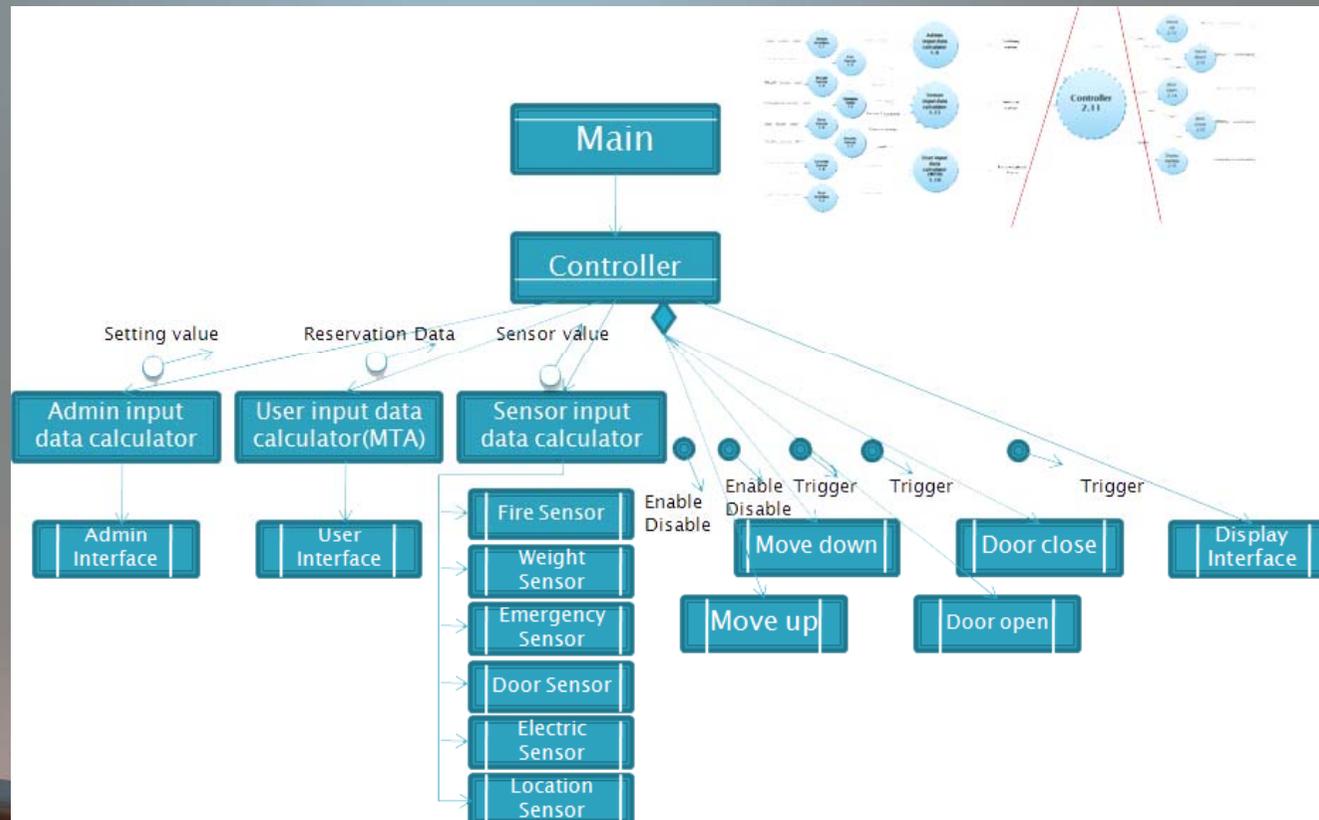
- OOAD make the UI prototype and class skeleton(function and variable)
- Therefore Programmer is a little more quality detail to enable programming to attract.

- Ex) ERS's UI prototype and Class diagram



# For Modeler and Programmer 4(SASD)

- SASD
  - SASD is provides an abstract model.
  - Therefore, SASD is dependent on the programmer rather than the modeler.



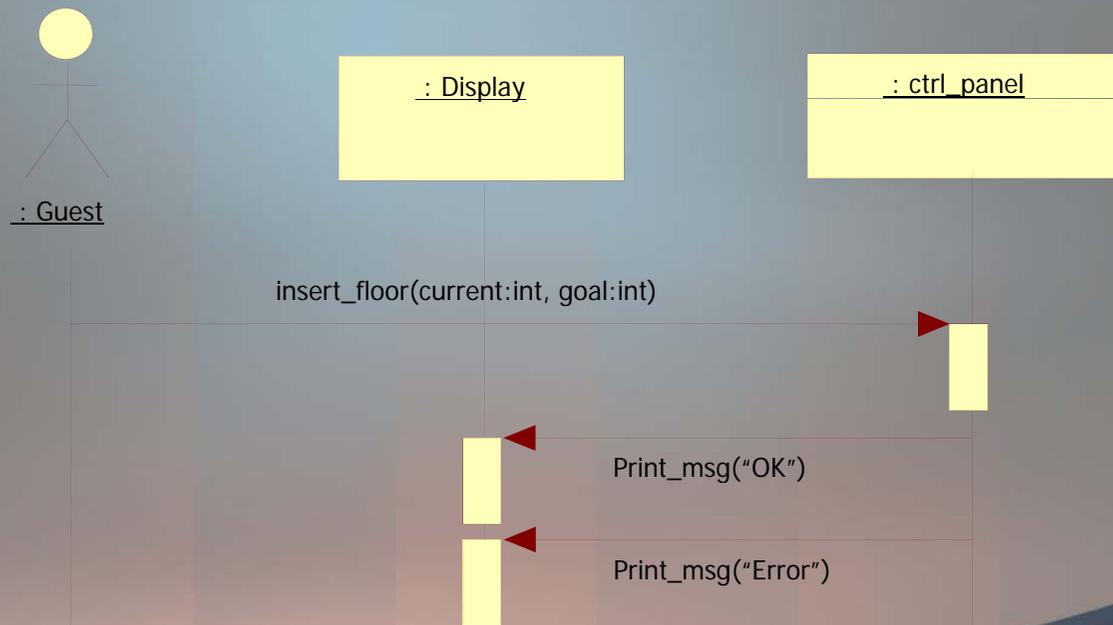
# For Modeler and Programmer 4(Comp.)

- Differences

- OOAD model is more quality detail model for real coding.
- SASD model is more abstract model for real coding.
- Therefore, OOAD provides a significant convenience to the programmer.
- And SASD is dependent on the programmer rather than the modeler. (In the past, The role of a programmer and was responsible to the modeler.)
- because SASD is more costly for real coding step.

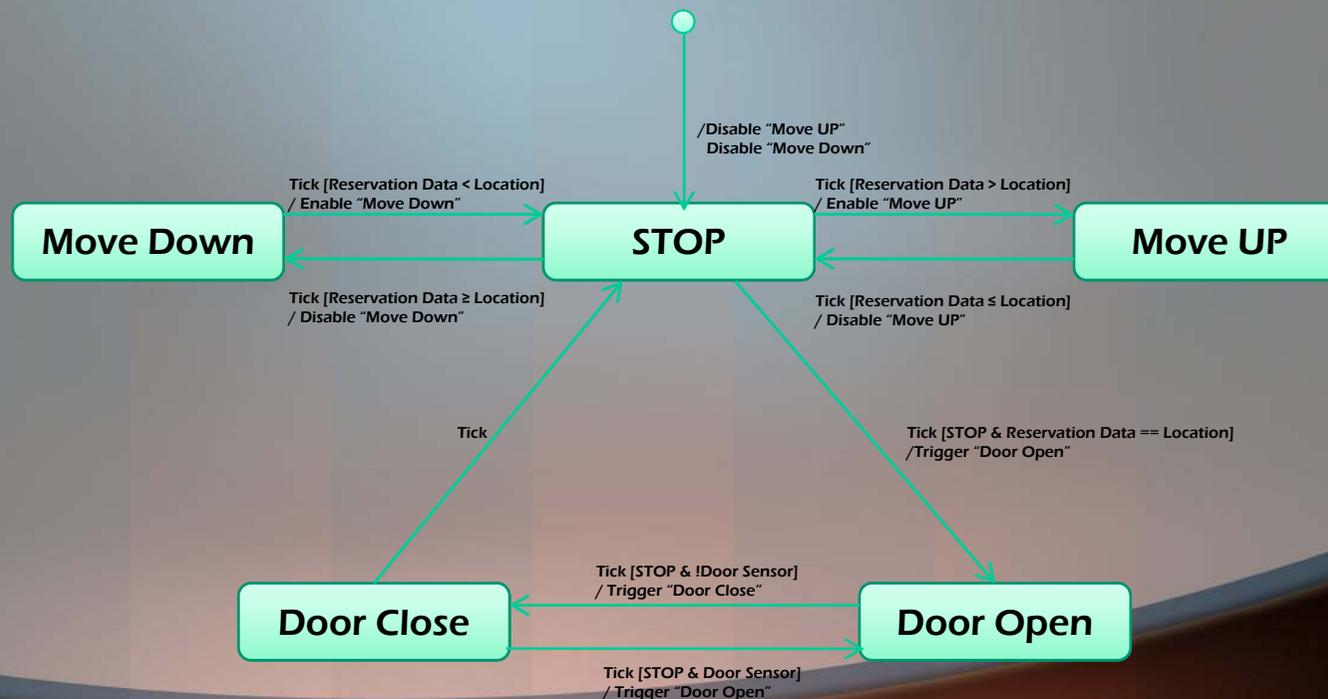
# For Modeler and Programmer 5(OOAD)

- OOAD
  - OOAD is provides interaction each class
  - It is not provides system state.
  - It considered Event from user or system
    - Ex) ERS's Interaction Diagram



# For Modeler and Programmer 5(SASD)

- SASD
  - SASD is provides system's state.
  - It considered system's state.
  - It is more easily understand system internal state for programmer.
    - Ex) ERS's controller state



# For Modeler and Programmer 5(Comp.)

- Differences

- SASD is provides System state diagram.
- OOAD is provides interaction class diagram.
- SASD is more quality situation for the system's many event.
- OOAD is more quality situation for the program in one event.
- See at a glance the System's internal situation, SASD is good.
- To see how functions works internally, OOAD is good.

# **4. FOR CEO**

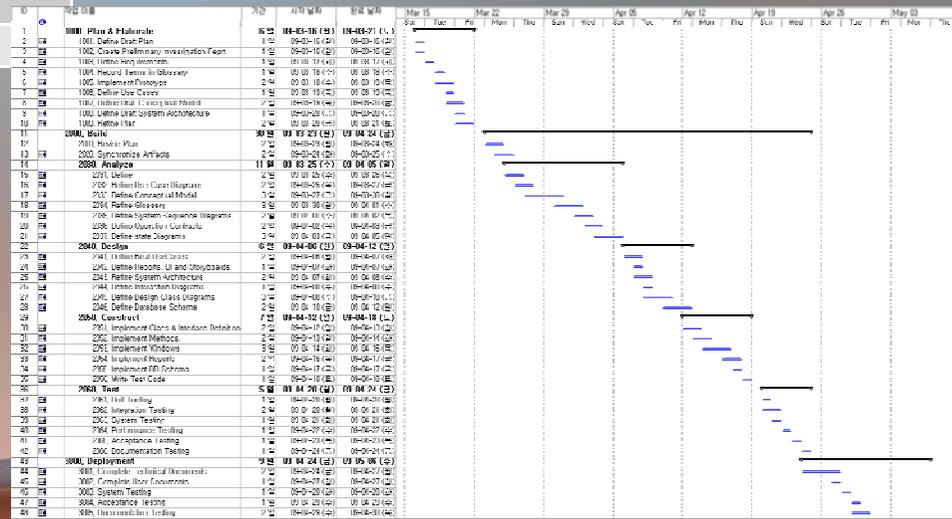
# For CEO (OOAD)

- OOAD

- In OOAD presentation, CEO can see prototype for software.
- And CEO can see develop time.
- And CEO can see risk, market and environment.

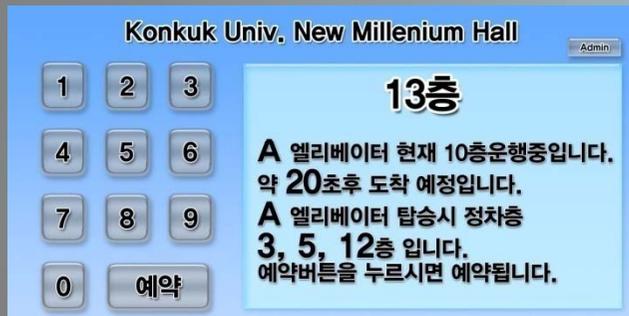
- Ex) ERS's Risk management and Scheduling

Risk	Probability	Significance	Weight
First Adoption of OSP	4	4	16
Lack of elevator Knowledge	4	5	20
Lack of OO Experience	3	4	12
Lack of Tool skill	3	3	9
Lack of C++	2	4	8
Lack of UML	2	4	8
Lack of Database	2	3	6
Team Communication	1	2	2



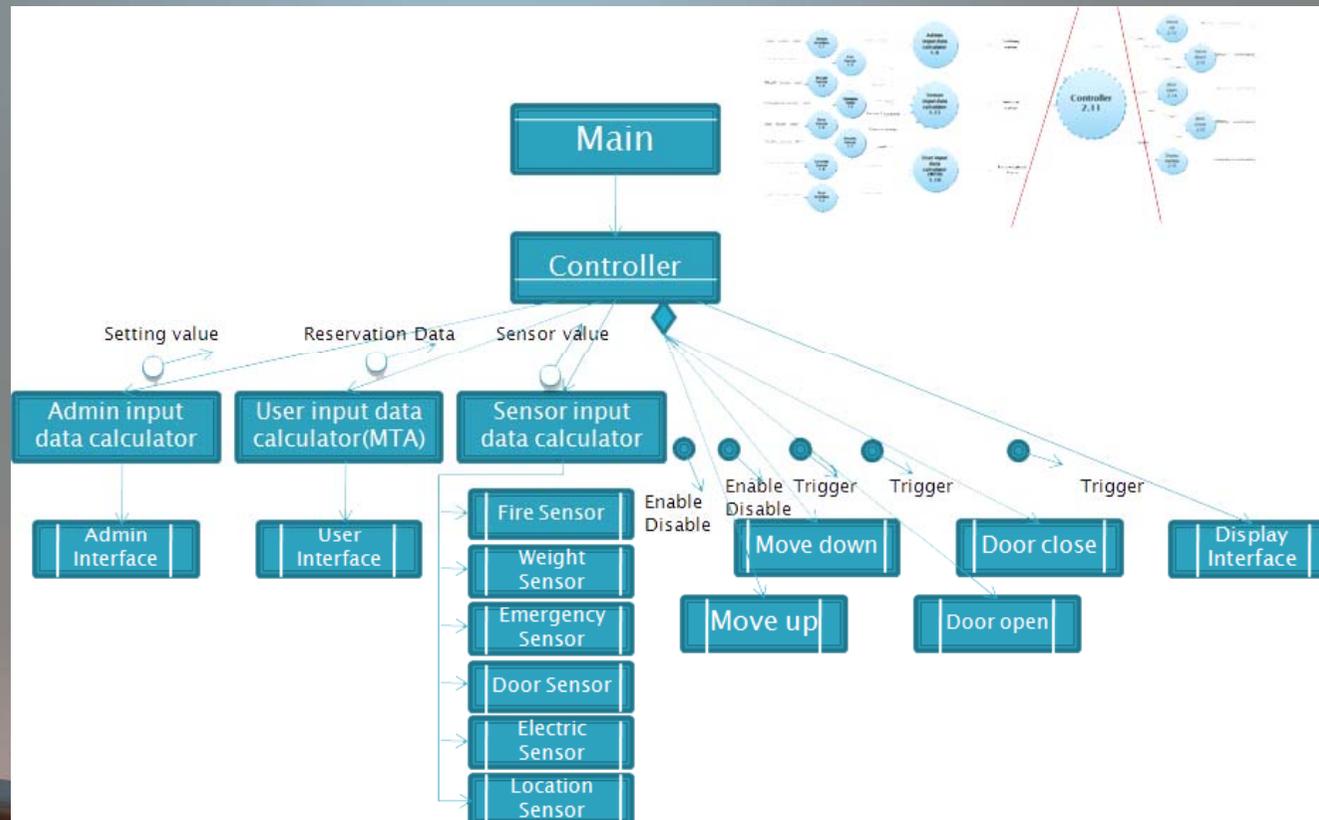
# For CEO (OOAD cont'd)

- OOAD(cont'd)
  - In OOAD CEO can see UI and Storyboard
    - Ex) ERS UI and some Storyboards



# For CEO (SASD)

- SASD
  - In SASD have not any for audience(CEO)
  - And if audience(CEO) have not any knowledge of programming, audience(CEO) is not understand any contents of SASD
    - Ex) ERS's Structured Chart



# For CEO (Compare)

- Difference
  - OOAD have course of UI, Storyboard, Risk and Environment.
  - This course is more easy understand than another course for CEO
  - Because CEO is The program development and investment decisions can be expected.
  - But SASD is need to knowledge of programming or SASD.
  - Audience(CEO) who have not any knowledge of programming and SASD, is not understand any part of SASD presentation
  - That will cause difficult of investment for development.

**5. SUMMARY  
(09 SPRING SUMMARY)**

# Summary (OOAD vs. SASD)

- **OOAD vs. SASD Summary**
  - We think OOAD have many advantages in Software Modeling and Analysis than SASD.
  - But OOAD is not good about all part than SASD.
  - OOAD is more systematic and easily for presentation another people than SASD.
  - And OOAD and SASD's different is more focus on where to focus.
  - OOAD focus to support many people(CEO, Programmer, Modeler, Presentation audience)
  - But SASD focus to support some people(Programmer, Modeler)
  - Because OOAD is developed later than SASD. Thus OOAD looks like better than SASD.

# Summary (09 Spring summary)

- 09 Spring Summary
  - OOAD and SASD are method of architect of software development.
  - Each method is very different many part.
  - The difference is that the development of programming language that is thought to be associated with.
  - And, Each method association that I think that time will be developed.
  - In 2009 spring, T1 use each method for develop ERS.
  - First we have many problem for prepare OOAD 1<sup>st</sup> presentation, new tools should be used and forget how to start coding to the development.
  - And, at prepare of OOAD 2<sup>nd</sup> presentation, We could prepare a little more comfortable.

# Summary (09 Spring summary Cont'd)

- 09 Spring Summary(Cont'd)
  - And, at prepare SASD presentation, We had other problems that is our head fixed to OOAD.
  - But, After a little time, We were able to adapt gradually.
  - We use modeling for each method. And we said above several think about each method.
  - We said modeling order, for user, for modeler and programmer and for CEO.
  - Sometimes it is better to SASD, but sometime it is better to OOAD.
  - Through the experience of each method can be a better computer science engineer for software development.
  - Thank you.

***Thank you for a semester.***