

Vietnam and Japan
Joint ICT HRD Program

ITSS Software Development
**Chapter 9. External Specification
Design**

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- ➔ 1. External Specification Design Overview
- 2. Screen design
- 3. Screen transition diagram
- 4. Screen specification

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1. External Specification Design

- ◆ Also called input/output design
- ◆ Classified into the following kinds:
 - Report design
 - ◆ Design of input forms
 - ◆ Design of output reports
 - **GUI design: Screen design**
 - Data checks
 - ◆ Method for checking data
 - ◆ Method for correcting errors

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Steps for GUI design

1. Creating a screen image
2. Standardizing the screen configuration
3. Creating a screen transition diagram
4. Creating a screen specification

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From use case

- ◆ Based on use case and boundary classes which interact with users
 - Map these boundary classes to screens
- ◆ Based on input/output description in use case specification/scenario

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Screen design

- ◆ Standardize the screen configuration
- ◆ Use Front page (HTML), MS Word,... to design

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Standardizing

- ◆ **Display**
 - Physical size, resolution, and number of colors supported by displays
- ◆ **Screen:** divided into displayed objects called windows (Window)
 - Location of standard buttons (e.g., OK, Cancel, Register, Search)
 - Display location of messages, etc.
 - Display of screen title and menus
 - Consistency in expression of alphanumeric characters
 - Expression of sentences and detailed items
 - Color coordination

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Standardizing

◆ Control

- Style, size, color, and characters displayed
- Input check process
- Sequence of moving the focus (e.g., defining the tab sequence)

◆ Menu

- Design menus with consideration of the standard specification (common client area) of the screen

◆ Direct input from a keyboard

- Maintain consistency in the assignment of shortcut keys

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Standardizing

◆ Messages

- Determine how messages are displayed when a time-consuming process is executed (busy).

◆ Error

- Execute standardized processing if an error occurs

◆ Help

- Develop detailed Help information in accordance with the manual, and maintain consistency in terminology, descriptions, and explanations of methods.

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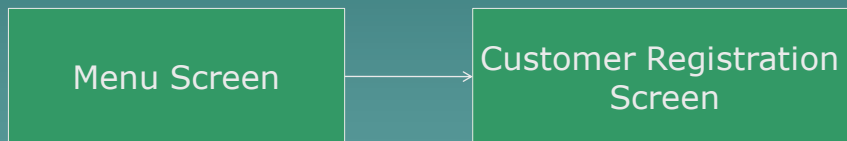
Display transition diagram

- ◆ Summarize the correlation of screens in the screen transition diagram
 - Classify the screens into the four patterns by focusing on the transition pattern
 - Link the screens in accordance with the classifications

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4 transition patterns

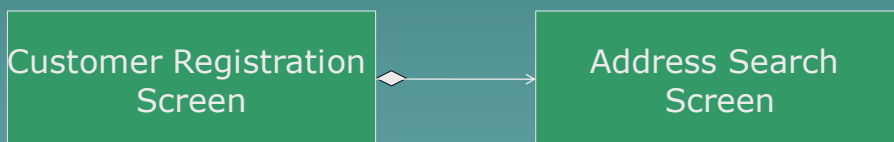
- ◆ 1. Simple screen transition: A conventional simple transition



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4 transition patterns

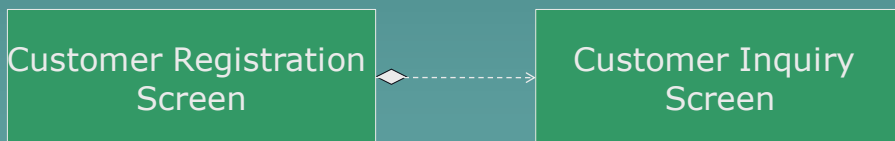
- ◆ 2. Transition to a child: Move to a pop-up screen. When a child screen is displayed on the parent screen, the underlying parent screen cannot be operated



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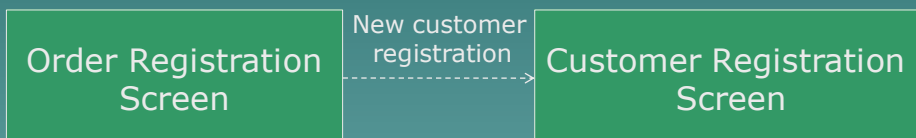
4 transition patterns

- ◆ 3. Transition to an independent child screen: move to a pop-up screen in the same way as for the transition to a child screen, parent screen and other screens can be operated while the child screen is displayed.

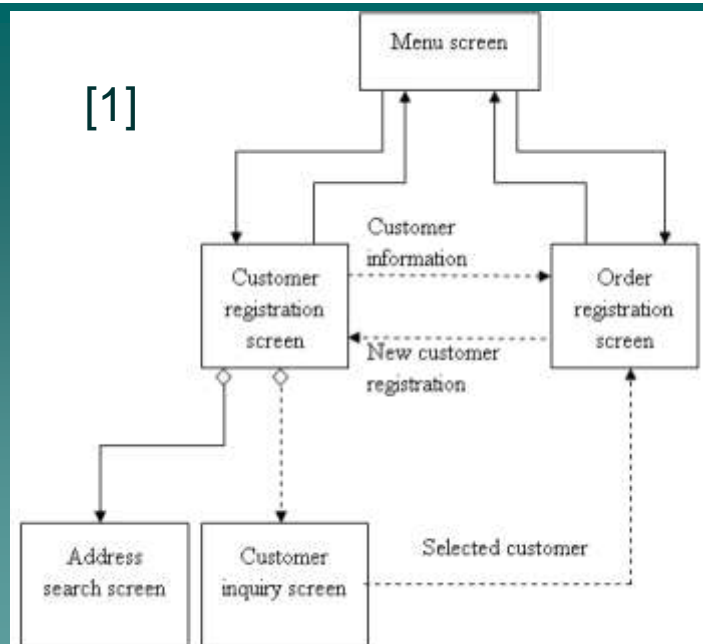


4 transition patterns

- ◆ 4. Transition to an independent screen: Start an independent new screen.



Link
the
screen



[1]: Section 3.2.1, pp 3-53


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4. Screen specification

- ◆ Decide on a detailed format for a screen specification
- ◆ Define field attributes based on the new screen information identified while deciding on screen images and the screen transition diagram

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Liquor sales basic system (general-purpose search subsystem for sales information)		Date of creation	Approved by	Reviewed by	Person in charge
Screen specification	Displaying detail table				
<div>Screen specification example</div> <div></div> <div>[1]: Section 3.2.1, pp 3-54</div>		Control	Operation	Function	
		Area for displaying detail table	Initial	-Displays in a table information meeting the conditions defined in the search specification screen. -This follows the setting specified in the display settings screen for display items and sequence of display.	
		Graph display button	Click	Displays the graph display screen	
		Table print button	Click	Displays the print preview screen	
		Return button	Click	Displays the search specification screen	

Screen specification

- ◆ Screen image
 - This is the screen image to be displayed. If screen images are created in advance with the screen design tool, attach a hardcopy.
- ◆ List of functions
 - Defines the names of parts such as the buttons on the screen, and summarizes their functions.
 - Provide descriptions of events for individual screens, attributes of parts, input check specifications and output specifications, etc.
- ◆ Defining the field attributes

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Defining the field attributes

- ◆ Decide on the field attributes of input and output items
- ◆ Summarize them in descriptions of items for screen display.
- ◆ The screen consists of multiple fields.
- ◆ Each field consists of a one-byte (equivalent to a single character) attribute at the beginning and a variable item

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Example: Defining the field attributes

Screen name	Order entry		[1]	
Item name	Number of digits (bytes)	Type	Field attribute	Remarks
Transaction category	3	Numeral	Green (blink)	Error items blink.
Customer code	5	Numeral	Green (blink)	Error items blink.
Customer name	30	Character	White	15 characters, left-justified
Product code	8	Numeral	Green (blink)	Error items blink.
Product name	22	Character	White	11 characters, left-justified
Quantity	6	Numeral	Green (blink)	Error items blink.
Unit price	7	Numeral	White	
Amount	9	Numeral	White	
Quantity in stock	10	Numeral, special character	White	Displayed in the format of ZZZ, ZZZ, ZZ9

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[1]: Section 3.2.1, pp 3-57

References

- [1] Textbook for Software Design & Development Engineers, No. 3 – System Development, Operations and Maintenance, 2nd Edition; Japan Information Processing Development Corporation, Japan Information-Technology Engineers Examination Center.

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Question?

