



Test Design

University of Information Technology
Lecture: MSc. Nguyen Thi Thanh Truc
Email: trucntt@uit.edu.vn

- **Duration:** *1 Hours*
- **Purpose:** *Introduce how to create test cases with different requirements*
- **Audience:** *Testers*

Training Agenda

- 1 Test requirements
- 2 Test case structure
- 3 Test case design

1. Test Requirements

➤ A system normally includes:

- **Functional requirement:** a number of use cases, functions, present for business of the system.
- **Workflow:** the relationship of use cases
- **Non functional requirement:**
 - Performance
 - Usability...

2. System Test Case Structure

- GUI test cases
- Functional test cases
- Non-Functional test cases

Test Case ID	Test Case Description	Test Pre-Condition	Test case procedure	Expected Output
	GUI Test Case			
	Form			
	View			
	Browser compatibility			
	Functional Test Case			
	By business rule			
	Workflow			
	Role & Permission			
	Non-Functional Test Case			
	Performance			
	Usability			

3. Test Case Design

- 1 use case ⇔ 1 function ⇔ 1 screen/window ⇔ 1 group of test cases
 - Test cases for 1 function include:
 - User interface test cases
 - Form, View, Browser compatibility test cases...
 - Functional test cases
 - Field validation test cases: validation for difference kind of data
 - Workflow test cases...
 - Non-Functional test cases
 - Performance test cases...
- =>Test cases are numbered and managed

3. Test Case Design

User Interface Test Cases

- Based on screen design/ prototype
- Test User interface
 - Interface: size, position, menu, look and feel, field alignment...
 - Objects: buttons, checkbox, text box, list box, links, combo box...
 - Object/control type
 - Editable
 - Mandatory
 - Default value
 - Max length
 - Enable/disable
 - Hide/Un-hide...
 - Access methods: tab keys, mouse movements, accelerator key, tool tip...

3. Test Case Design

Browser compatibility test cases

- Define test cases for specific browser, eg: IE6, IE7, etc.
- Each test case should present for a screen/window in specific browser.

3. Test Case Design

Functional test cases

- Test cases with valid/invalid data
- Test cases for defined business rules in SRS
- ⇒ Using test techniques to design functional test cases
- Test techniques can be:
 - Equivalent Partition
 - Boundary Value
 - Decision Table
 - State Transition
 - Use case

Refer to “Test Design Techniques_v1.0.ppt” file

3. Test Case Design: Functional test cases

Field validation: Combo box fields

- Verify list values of look up field/ combo box field
- Verify default value of combo box field
- Verify sorting in look up fields (normally order by alphabet)
- Verify selecting values in combo box field

3. Test Case Design: Functional test cases

Field Validation: Text Fields

➤ Single line of text

- Verify mandatory
- Verify auto trim
- Verify encode (input the text with html tag)
- Verify max length
- Verify case-sensitive (text field in searching)

➤ Multi line of text / Rich text fields

- Verify mandatory
- Verify displaying of vertical scroll bar when input multi line of text
- Verify inputting multi line of text with format text (bold, italic, colour, link, attachment) to rich text fields
- Verify wrap text
- Verify table, link, image
- Verify links, attachments

3. Test Case Design: Functional test cases

Field Validation: Date Fields

➤ Check mandatory fields

- Check date picker
- Check date format (inputted date, conversion of inputted date)
- Compare inputted date to current date (if required)
- Compare “From Date” to “To Date” (if required)
- Compare dates based on business rules
- Display of date field when change Regional setting
- Date < min date

3. Test Case Design: Functional test cases

Field Validation: Numeric Fields

➤ Check mandatory fields

- Check max value/min value
- Check integer/decimal number
- Check positive/negative number
- Check conversion of format (decimal symbol, digit grouping symbol, display leading zero)

3. Test Case Design: Functional test cases

Field Validation: Attach Fields

- Attachment with various file types (.doc, .xls, .pdf, etc.)
- Attachment with file size > 50Mb
- Cancel adding attachment (by clicking [Cancel] button on browser page)
- Remove the attachment files

3. Test Case Design: Functional test cases

Workflow test cases

➤ Test workflow

- Define pre-condition
- Define Action, Role, Status for each step in workflow.
 - Example



Microsoft Office
Excel Worksheet

3. Test Case Design

Performance test cases

- Verify if response time of operations in system meet customer's expectation or web application standard or not.
- Normally measure response time for 1 user using the system (not for concurrent users) but on a specific volume data.
- Each test case defined for a specific functions which want to measure the performance
- Functions should be measure performance
 - Core functions/features of system
 - View/Report which contains many data
 - Search function
 - Agent/Time schedule feature



QUESTIONS AND ANSWERS



Thank you!!!