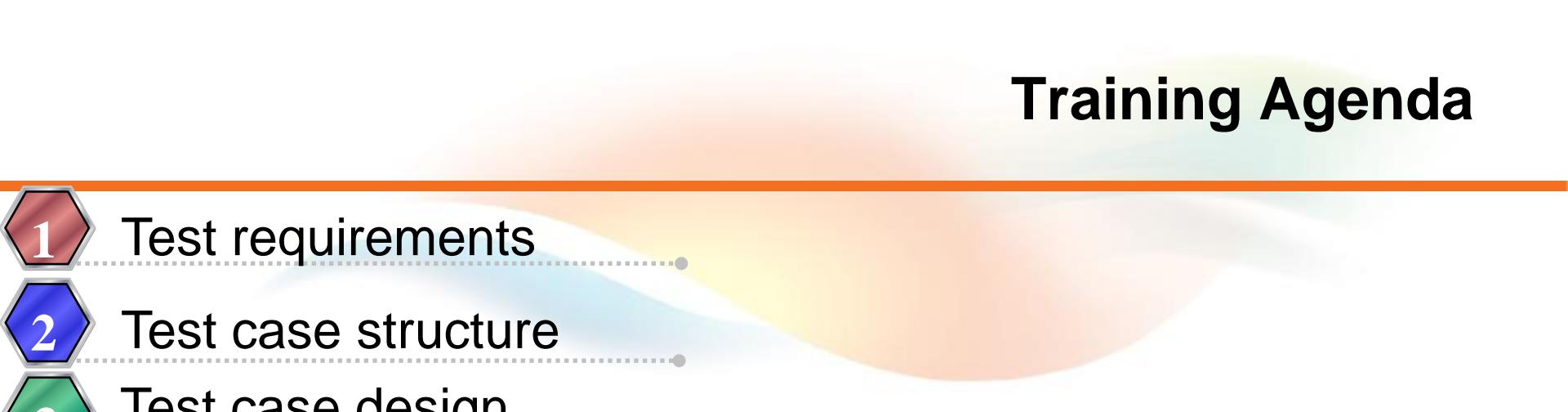


# Test Design

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

# Training Agenda

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- 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
<b>GUI Test Case</b>				
	Form			
	View			
	Brower compatibility			
<b>Functional Test Case</b>				
	By business rule			
	Workflow			
	Role & Permission			
<b>Non-Functional Test Case</b>				
	Performance			
	Usability			

### 3. Test Case Design

- 1 use case  $\Leftrightarrow$  1 function  $\Leftrightarrow$  1 screen/window  $\Leftrightarrow$  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!!!