POWERGATE

HOW TO CREATE TEST CASE

THE TALENT POOL IN VIETNAM

PowerGate Software
The Talent Pool in Vietnam

CONTENTS

- Duration: 2 hours

- Agenda:
  - Design test case
  - Write test case
  - Test case checklist

TEST CASE

- Detail design

- SRS

- Test Plan

→ Test Preparation →

- Test case

- Test script

- Test data

CONCEPTS

- **Test Case**: A set of test inputs, execution conditions, and expected results developed for a particular objective, such as to exercise a particular program path or to verify compliance with a specific requirement.

- **Test Script:** scripts that use for testing or check the output

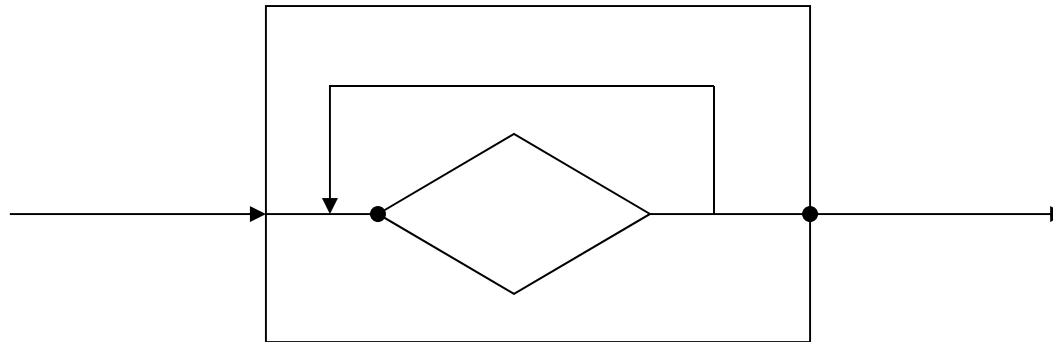- **Test Data:** data is using for testing

WHY TEST CASE?

- Design scenario (test conditions) before test execution

- Predict expected result

- Help new testers familiar with existing application/system without reading requirement

GOOD TEST CASE

- Has a high probability of finding errors

- Clear of purpose

- Well organized

- Reviewable

- Maintainable

- Useful to other testers

DESIGN TEST CASE

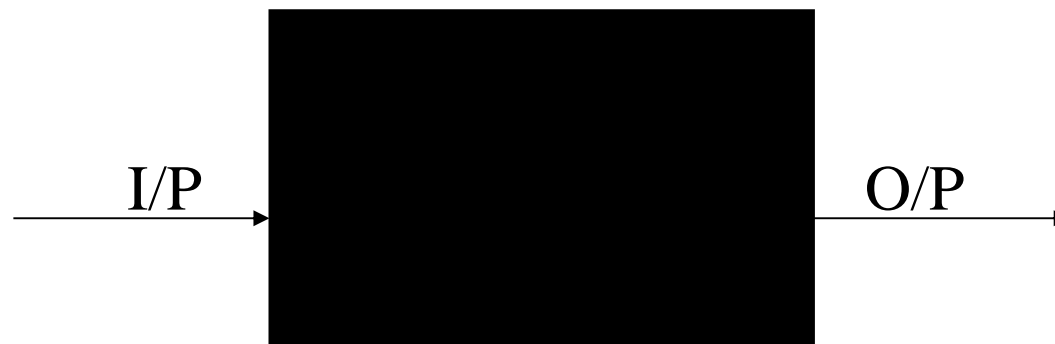- **White Box Testing:** Uses specific knowledge of programming code to examine outputs

WHITE BOX TESTING - EXAMPLE

- Instruction coverage

- Decision coverage

- Condition coverage

- Decision/Condition coverage

- Multi condition coverage

DESIGN TEST CASE

- ## Black Box Testing:
  - Assess how well a program meets its requirements
  - Focusing on testing functional requirements

$$\text{I/P} \longrightarrow \blacksquare \longrightarrow \text{O/P}$$

BLACK BOX TESTING - EXAMPLE

- A large IT company is in the process of revising salary structure for its employees.
  The salary will be revised on the check point for all employees with at least one year seniority

- The rule for salary revision are provided below:
  - Check point: 90 -> 100: Increase existing salary by 20%
  - Check point: 80 -> 89: Increase existing salary by 15%
  - Check point: 75 -> 79: Increase existing salary by 10%
  - Check point: < 75: No increase

BLACK BOX TESTING - TECHNIQUE

- **Expand Conditions into Test Cases using**
  - Boundary Value Analysis: a minimum or maximum input, internal, or output value specified for a system or component
  - Equivalence Partitioning: one or a few cases are chosen to represent an entire equivalence class
  - Decision Tables
- **Case study**

TEST CASE STRUCTURE

- Test case specifications

- Test procedures

- Pass/ Fail criteria: List all results that decide test case is passed or failed

- Dependencies: List all test cases that must be done before performing this case

TEST CASE SPECIFICATIONS

- List cases/scenario that will be tested
  - Interface
  - Test with valid data
  - Test with invalid data:
    - Mandatory field
    - Min, Max length
    - Incorrect type, format
    - Boundary, etc

TEST PROCEDURE

- Test actions taken by the actor when executing a test case

- Test input: the actual values input by the actor at each step/action

- Expected result: the expected response from the application for a given step/action

- Pass/Fail criteria: List all results that decide test case is passed or failed

- Inter-case dependencies: List all test cases that must be done before performing this case

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TEST SCRIPT

- Recorded automatically

- Coded manually: using test tools or standard programming languages like VB, C/C++, Java or SQL

  - Test stub: temporary implementation of part of a program for unit test purposes

  - Test driver: program which sets up an environment to call a module (or function) for testing

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TEST DATA

- Prepare data test for scenarios
  - Tools
  - Manual

GUI TEST CASE

- Aesthetic conditions

- Navigation conditions

- Validate text fields

- Validate number fields

- Validate date fields

GUI TEST CASE - VALIDATE TEXT FIELDS

- Check mandatory fields

- Max length

- Special characters/htlm tags (name, email, address, password)

- Space at the beginning and the end of string

- Full-size, haft-size characters (Japanese)

- Case-sensitive or not

- Unicode

GUI TEST CASE - VALIDATE NUMBER FIELDS

- Check mandatory fields

- Max/Min values

- Integer/Decimal numbers

- Positive/Negative numbers

- Check conversion of format (decimal symbol, digit grouping symbol, display leading zero)

- Display decimal symbol, digit grouping symbol, leading zero

GUI TEST CASE - VALIDATE DATE FIELDS

- Check mandatory fields
- Check date format (inputted date, conversion of inputted date)
- Compare inputted date to current date (if required)
- Compare dates based on business rules
- Compare "From Date" to "To Date"
- Check format date with regional setting

TEST CASE TEMPLATES

- Word

- Excel

TEST CASE REVIEW CHECKLIST

- Who will use TC checklist?

- Why do have to use TC checklist?

  - Check template of test plan

  - Check required information in TC

- Template

PRACTICE – CREATE TEST CASE

- Create GUI/Functional Test case for Alumni project