06 Test plan

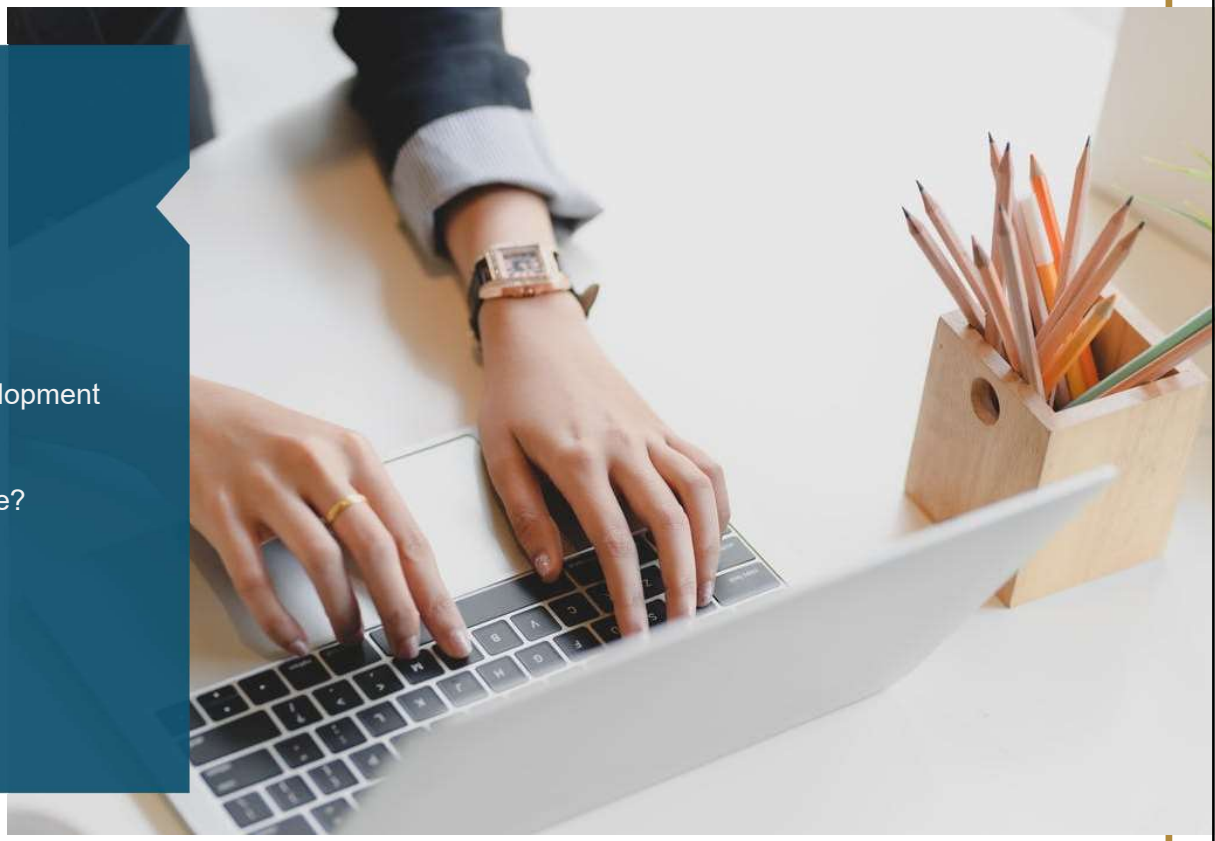
PowerPoint by Wanida Khamprapai

Software testing is the process of analyzing a software item to detect the differences between existing and required conditions and to evaluate the features of the software item.

IEEE definition

Basic questions

- When does testing start?
- When does it complete?
- What techniques should be applied during software development to get acceptable quality at acceptable cost?
- How can we assess the readiness of a product to release?
- How can we control the quality of a product to release?



How to design test cases?

Tests are defined in terms of their adequacy against certain criteria and according to specifications.

Test design

- The central activity in test design is to identify inputs to and the expected results from a system to verify whether the system possesses certain features. A feature is a set of related requirements.
- The test design activities must be performed in a planned manner in order to meet some technical criteria, such as effectiveness, and economic criteria, such as productivity.

Test case

- A good test case has a high probability of finding an as-yet undiscovered error.
- A successful test case is one that uncovers an as-yet undiscovered error.
- A specification to be satisfied by one or more test cases.

How to design test cases?

Example: Function for check price validity

A registered user inputs his bid price. Inputted price is checked against auction's previous price is higher, then the given bid price is valid for placing a bid, if not, then the price is not valid for placing a bid.

Input (Test cases)	Expected results
• Price as double value, which is not negative and higher than previous auction's price.	• Given bid price is valid for placing a bid.
• Price as double value, which is negative or lower than previous auction's price.	• Given bid price is not valid for placing a bid.

How to design test cases?

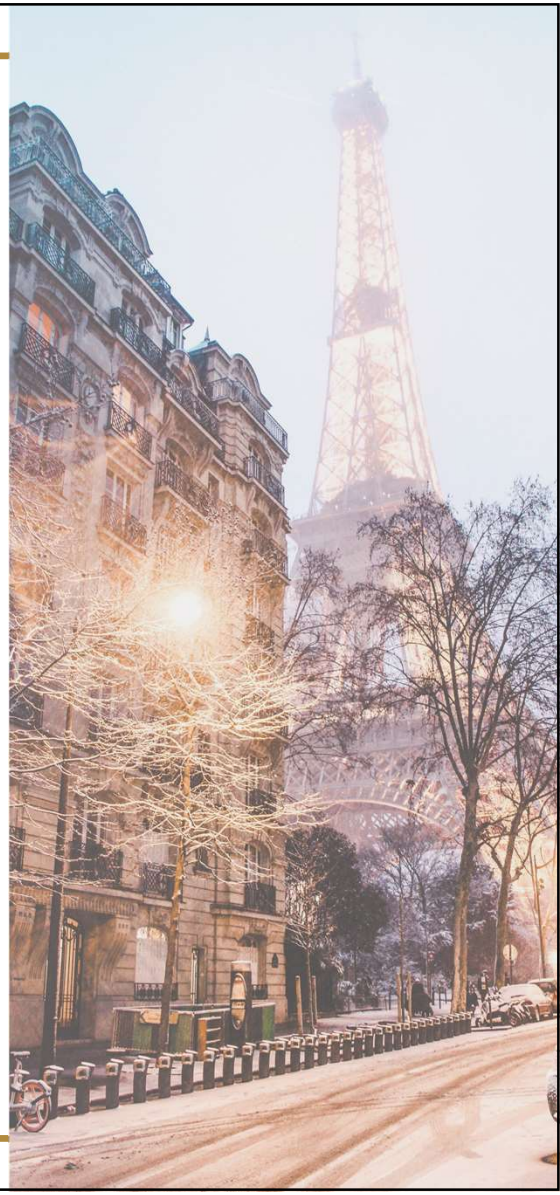
Example: ฟังก์ชันสำหรับตรวจสอบเวลาสำหรับการประมูล

ผู้ใช้ต้องลงชื่อเข้าใช้งานก่อนจากนั้นจึงสามารถตรวจสอบเวลาสำหรับการประมูลได้ ถ้าเวลาการประมูลเริ่มแล้วแต่ยังไม่หมดเวลาผู้ใช้สามารถกดเปิดการประมูลได้ ถ้ายังไม่ถึงเวลาเริ่มประมูลหรือหมดเวลาประมูลแล้วผู้ใช้ไม่สามารถกดเปิดการประมูลได้

Input (Test cases)	Expected results

Test plan

- A test plan is a document that outlines the approach, scope, objectives, resources, and schedule for a testing project. A well-defined test plan helps ensure that testing efforts are organized, effective, and aligned with the project's goals.
- The testing project manager would prepare and document a detailed plan that would cover at least the following sections.
  - **Scope**: Describes what is in scope and what is out of scope. It will include a list of applications, modules, functionalities, and test objectives.
  - **Strategy**: Describes how testing will be done. Will it be only manual or automated also? Which techniques to be used and at what level the testing should be done?
  - **Milestones**: Describes start and end dates of various phases/tasks.
  - **Entry/Exit criteria**: Describes what the preconditions to enter a specific STLC phase and what should be completed to go to the next phase.
  - **Resource requirement**: Provides details of what hardware, software, and human resources are required.
  - **Roles and responsibilities**: Describes who will be playing various roles and what they are responsible for.
  - **Risk management**: Describes all potential risks which can impact the quality or timeline of the project and what steps to be taken to mitigate the same.
  - **Assumptions**: Describes all the assumptions taken while planning.



Test scenario

A test scenario is a detailed document of test cases that cover end to end functionality of a software application. There is a detailed testing process due to many associated test cases. Before performing the test scenario, the tester has to consider the test cases for each scenario.

Test scenarios can serve as the basis for lower-level test case creation. A single test scenario can cover one or more test cases. Therefore, a test scenario has a one-to-many relationship with the test cases.

Characteristics of scenario testing

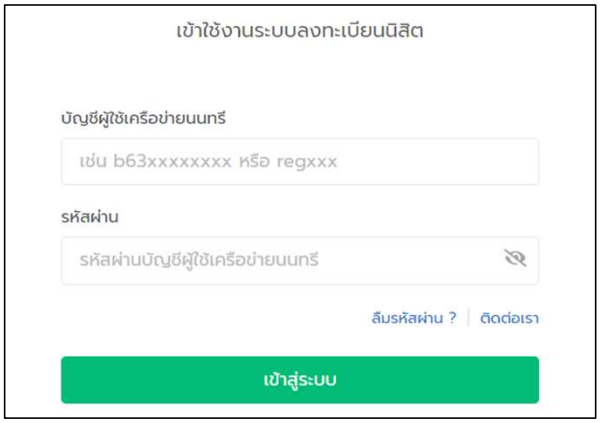
- **Coherent** – The test scenarios should be based on a coherent story about how the software application is used.
- **Credible** – They should be credible and focus on something that could happen in the real world.
- **Motivating** – They should motivate the stakeholders to get the issues fixed in case of the failed test scenario.
- **Complex** – The test scenarios normally involve a complex program or application flow.
- **Easy to evaluate** – The test result of the test scenario should be easy to evaluate as they involve complex logic.

Test scenario

Example: Function for verify user login

- Verify that the user can log in with the correct identities
  - Checking that a user with the correct Nontri account and correct password should be allowed to log in.

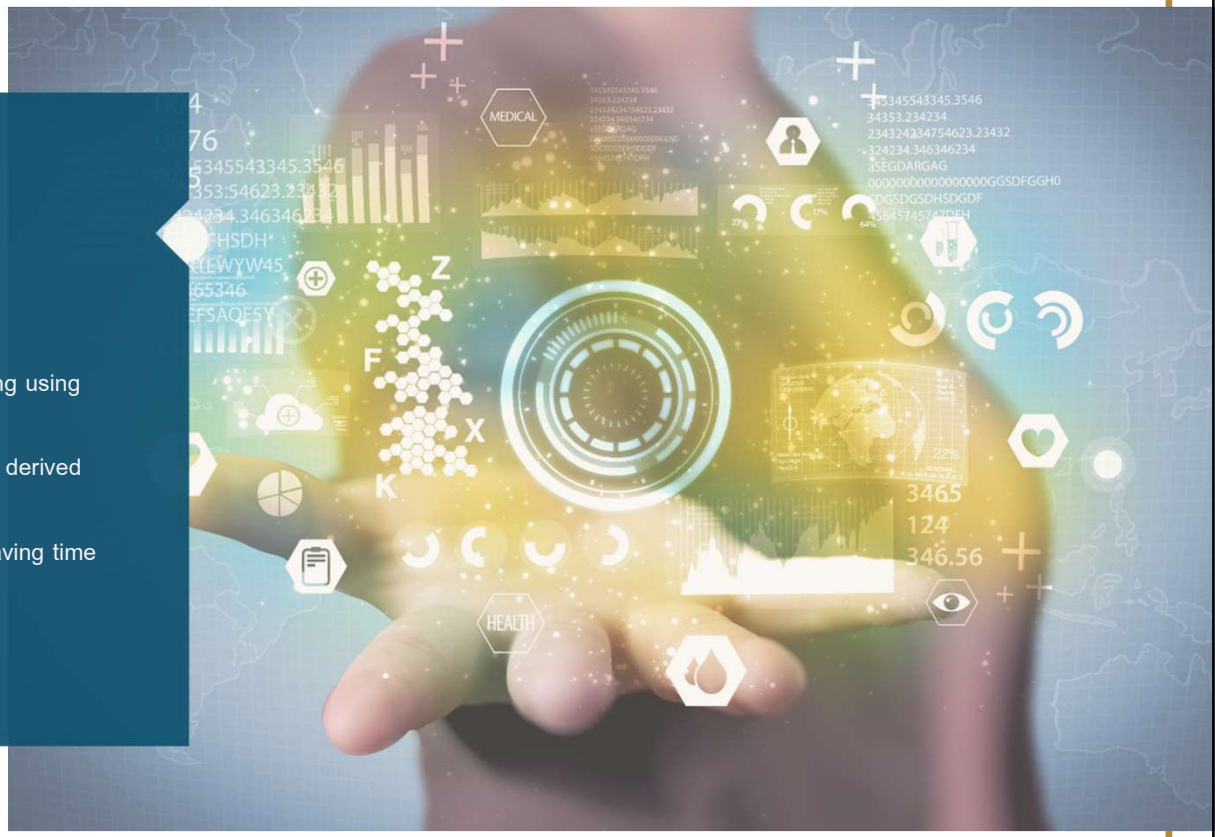
- Verify that the user is not able to log in with the incorrect identities
  - Checking that a user with the correct Nontri account and incorrect password should not be allowed to log in.
  - Checking that a user with an incorrect Nontri account and correct password should not be allowed to log in.
  - Verifying that users with incorrect Nontri account and incorrect passwords should not be allowed to log in.



Test scenario

Advantages of test Scenario

- Scenario testing can be carried out relatively faster than testing using test cases.
- It can ensure good test coverage since the test scenarios are derived from user stories.
- It saves a lot of time. Hence, these are better with projects having time constraints.



Test scenario

Project name:	Test designed by:
Module name:	Test designed date:
Pre-condition:	
Post-condition:	
Test execution step:	

No.	Test cases	Test data	Expected results	Actual results	Test result (Pass/Fail)	Comments

Test scenario

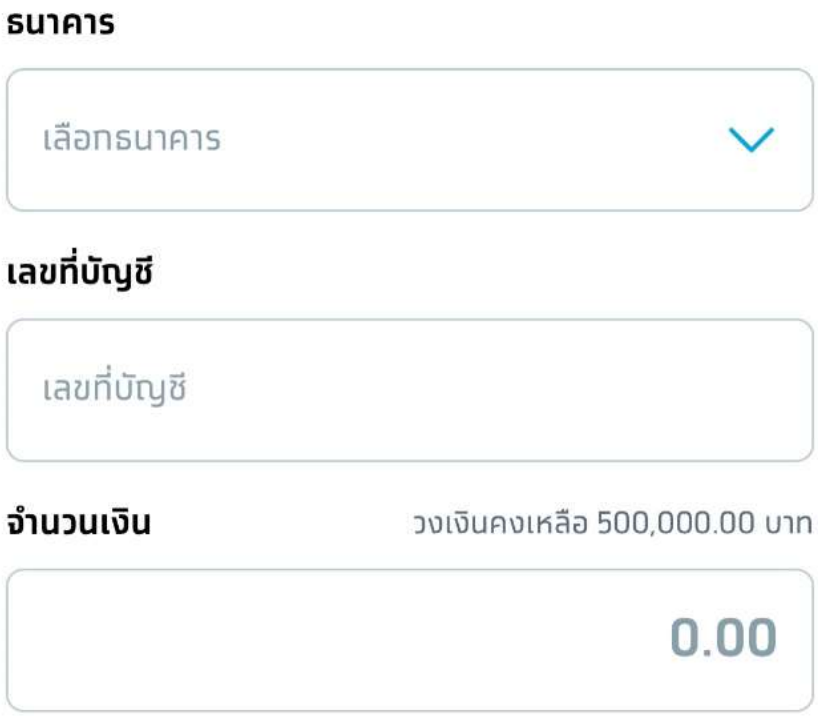
Example: The booking for the flight

The scenario: Customer makes flight reservation

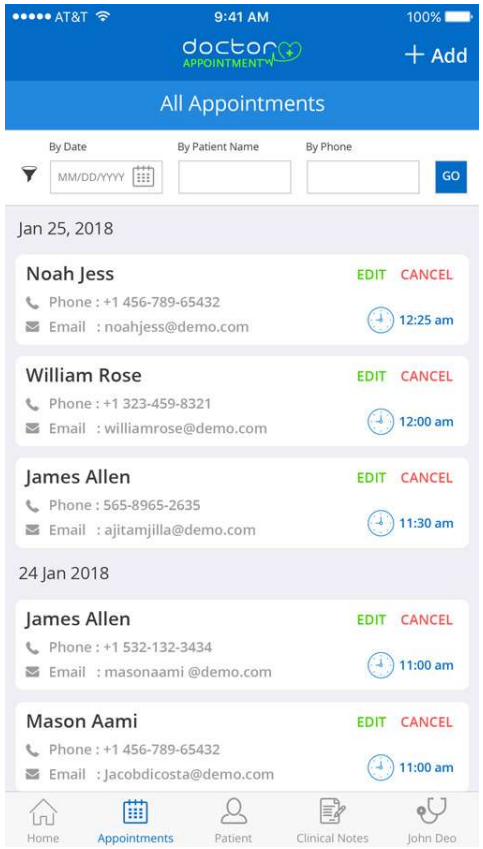
Pre-conditions	Steps	Post-conditions
• Round trip is available • Customer has logged in successfully • Credit card is valid	A - Select trip type (return journey) A - Enter travel details A - Press 'search' button S - Available options displayed A - Select one option S - Passenger information page displayed A - Fill Passenger details S - Payment page displayed A - Fills credit card details and press 'Book Tickets' S - interacts with Accounting system S - Confirmation message is displayed	• Reservation has been made • Seats are assigned and removed from inventory • Credit card transaction is posted • Customer is still logged in • 'Update' and 'Cancel' buttons are enabled

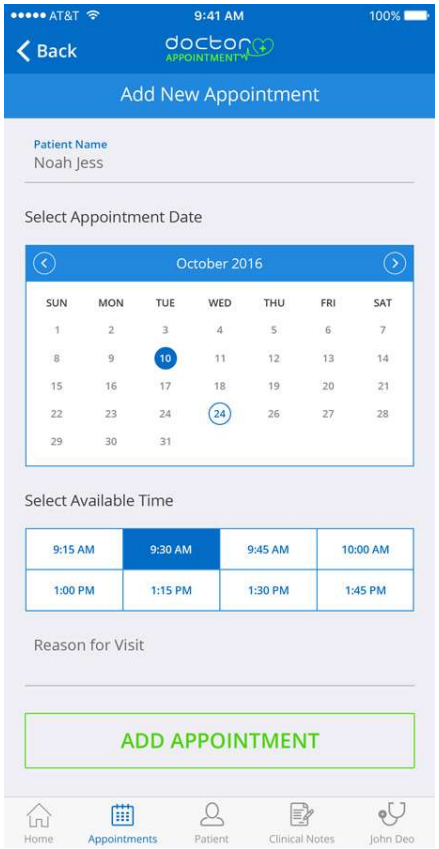
Note: In steps, A- Represents action taken by Actor and S- represents response by the System.

Test scenario



Test scenario





Questions & Answers