The Software Testing Canvas

Phil Robinson
www.philrobinson.info

Objectives

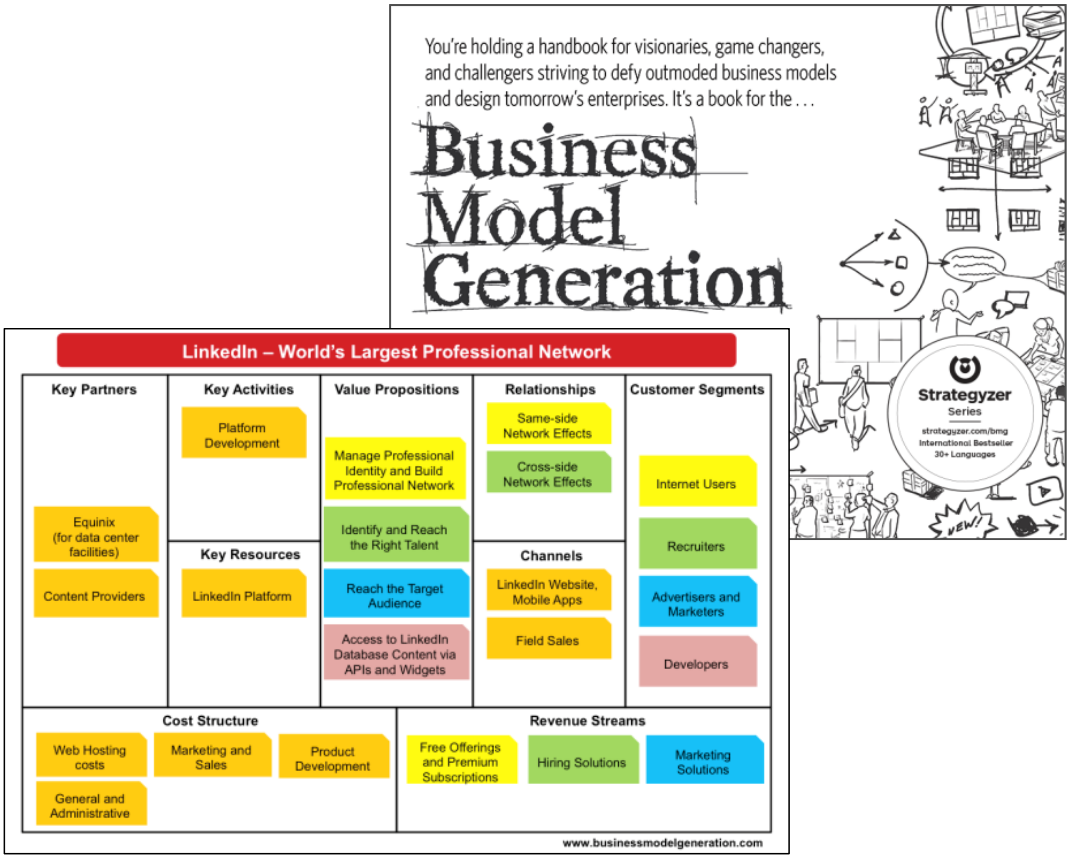
- Understanding of how the Software Testing Canvas…
  - prompts a team to consider five fundamental software testing questions
  - serves as a visual framework for organising what the team discover
  - encourages team collaboration and creativity
- Ability to…
  - populate the Software Testing Canvas
  - use the Software Testing Canvas to develop both traditional and agile software testing strategies
- Experience working with the software testing canvas

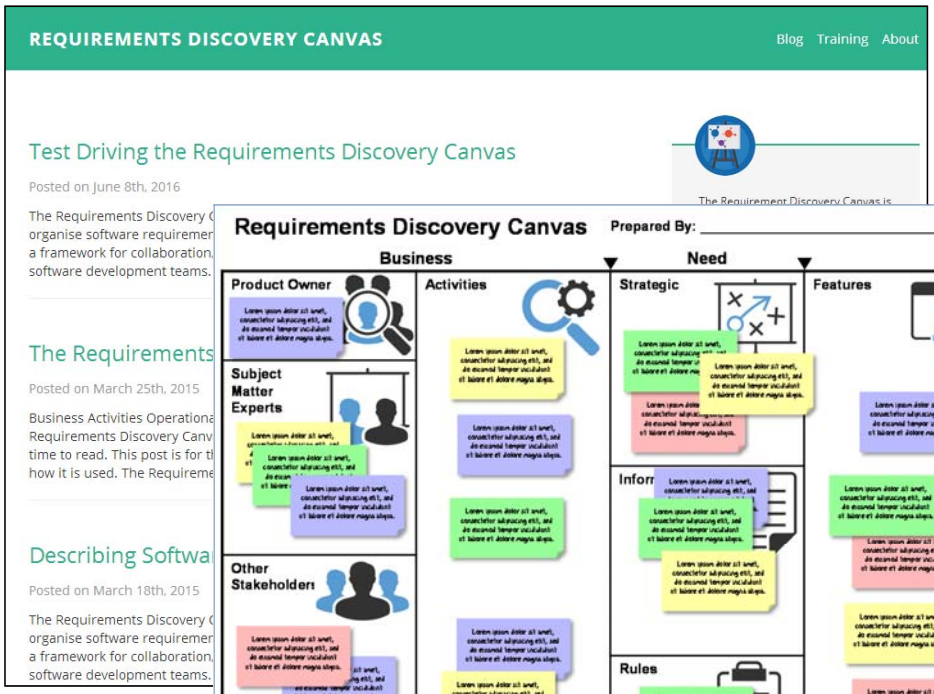
Agenda

- What is a canvas?
- Problems with software testing
- Five fundamental testing questions
  - Target (what?)
  - Objective (why?)
  - Design (how?)
  - Agent (who or what?)
  - Execution (how?)
- Defining strategies

What is a Canvass?

Business Model Canvas




REQUIREMENTS DISCOVERY CANVAS
Blog Training About
Test Driving the Requirements Discovery Canvas
Posted on June 8th, 2016
The Requirements Discovery
organise software requiremer
a framework for collaboration.
software development teams.
The Requirements
Posted on March 25th, 2015
Business Activities Operationa
Requirements Discovery Canv
time to read. This post is for t
how it is used. The Requireme
Describing Softwa
Posted on March 18th, 2015
The Requirements Discovery
organise software requiremer
a framework for collaboration.
software development teams.
The Requirement Discovery Canvas is

Requirements Discovery Canvas
Prepared By:
Date:
Business
Need
Solution
Product Owner
Activities
Strategic
Features
Vision
Subject Matter Experts
Interfaces
Other Stakeholders
Rules
Components
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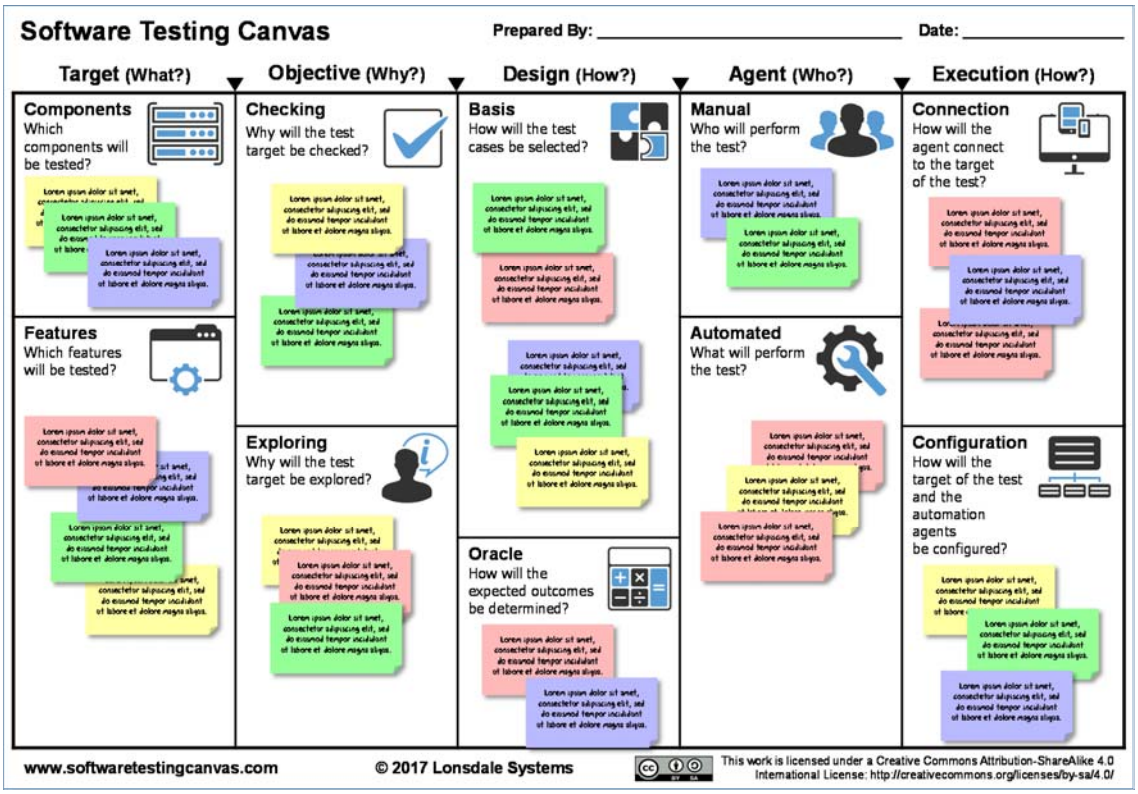
Software Testing Canvas
Prepared By:
Date:
Target (What?)
Objective (Why?)
Design (How?)
Agent (Who?)
Execution (How?)
Components
Which components will be tested?
Checking
Why will the test target be checked?
Basis
How will the test cases be selected?
Manual
Who will perform the test?
Connection
How will the agent connect to the target of the test?
Features
Which features will be tested?
Automated
What will perform the test?
Exploring
Why will the test target be explored?
Configuration
How will the target of the test and the automation agents be configured?
Oracle
How will the expected outcomes be determined?
www.softwaretestingcanvas.com
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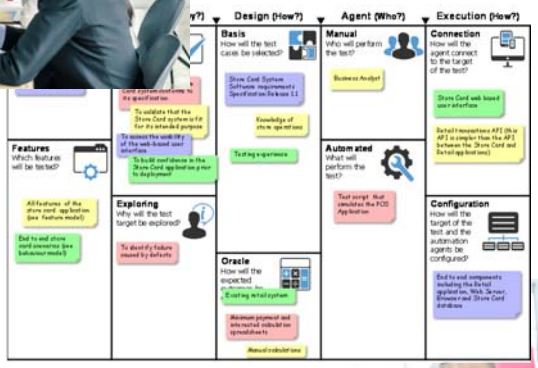
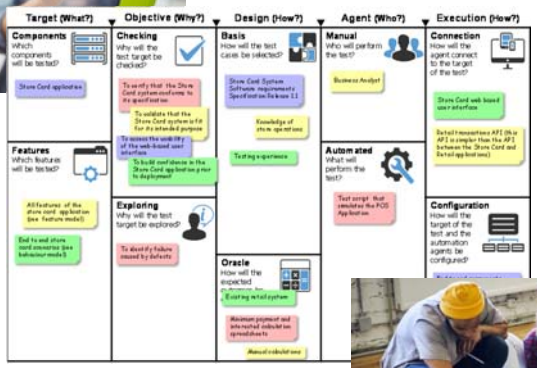
Summarises the wisdom of experts on a single page



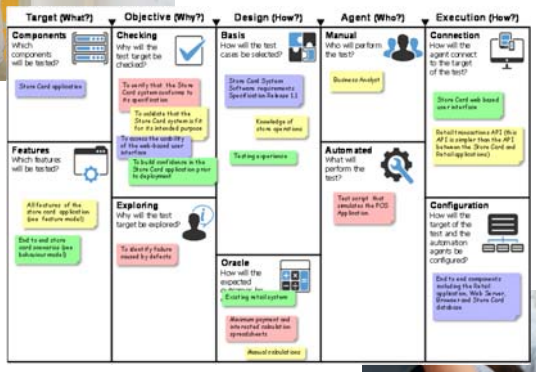
Easy for non-experts to understand

Provides an agenda and focus for team facilitators



Encourages team creativity and collaboration

Prompts the team to consider fundamental questions



Serves as a visual framework for organising what the team discover

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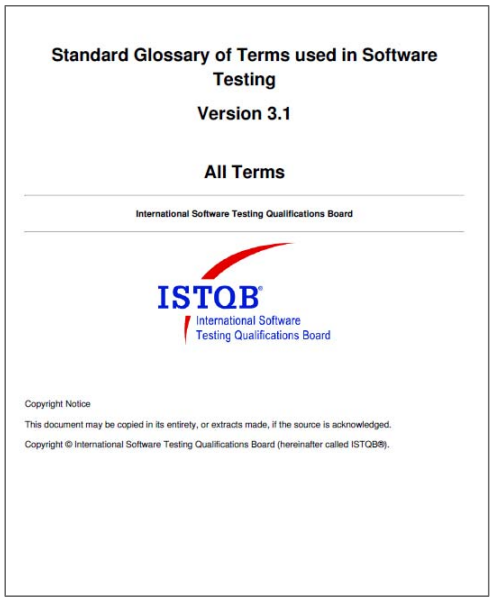
Problems With Software Testing

Software Testing Terminology



Standard Glossary of Terms used in Software Testing

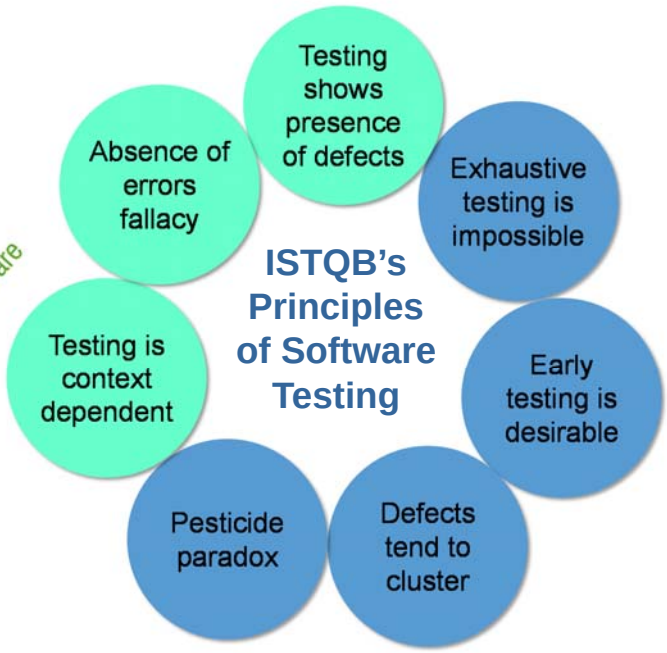
Version 3.1

All Terms

International Software Testing Qualifications Board

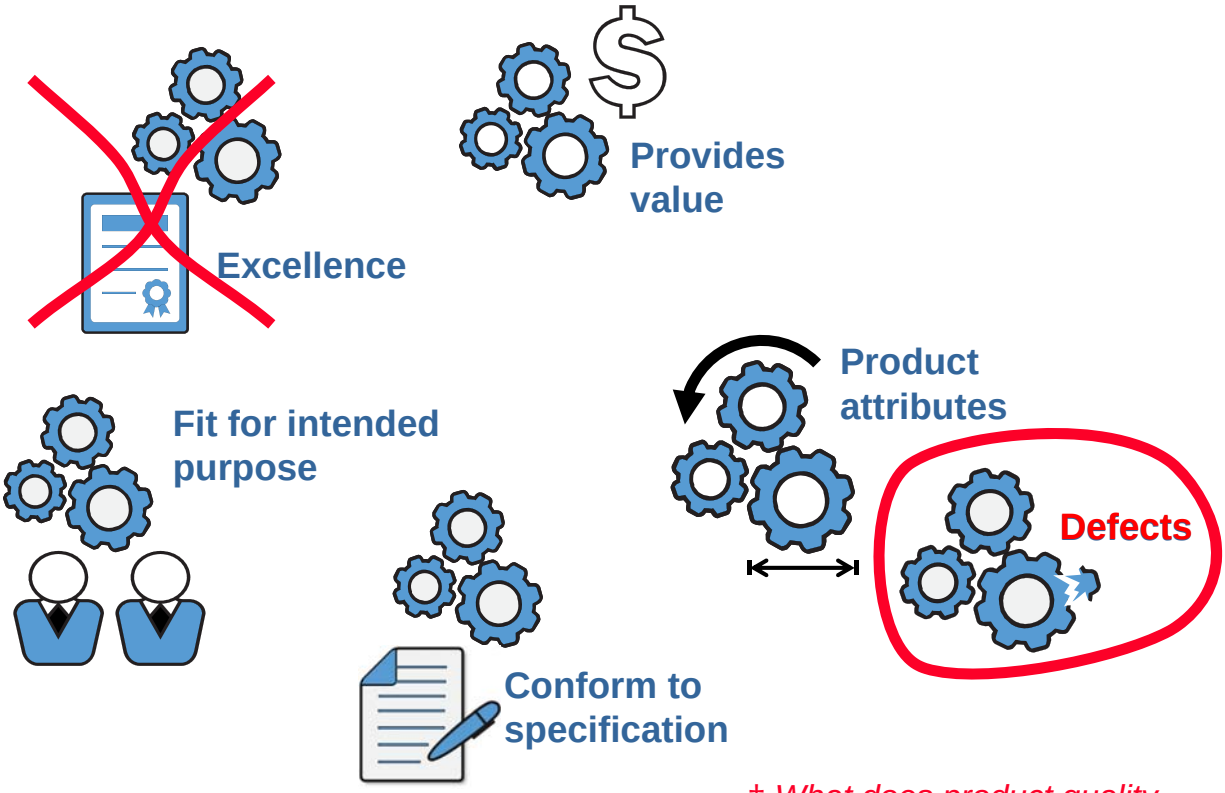
ISTQB International Software Testing Qualifications Board

Software Testing Myths



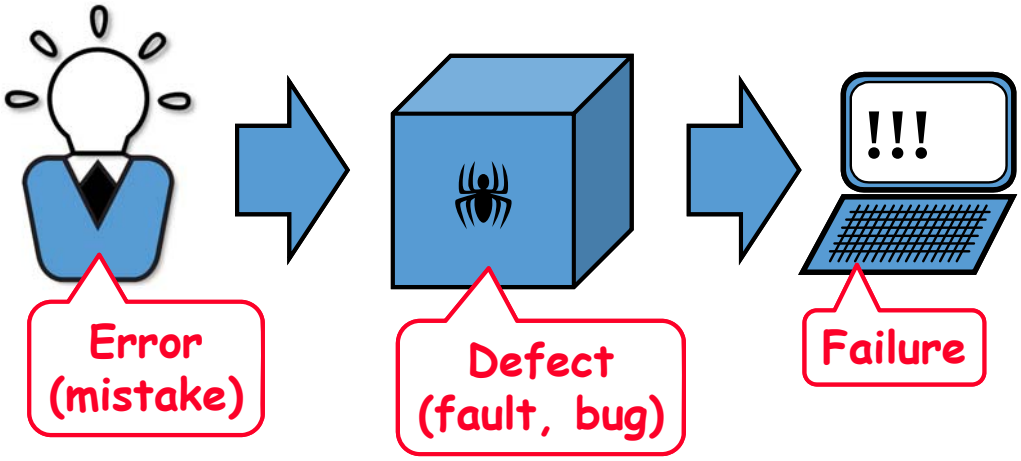
Software Testing and Quality

Definitions of Quality‡

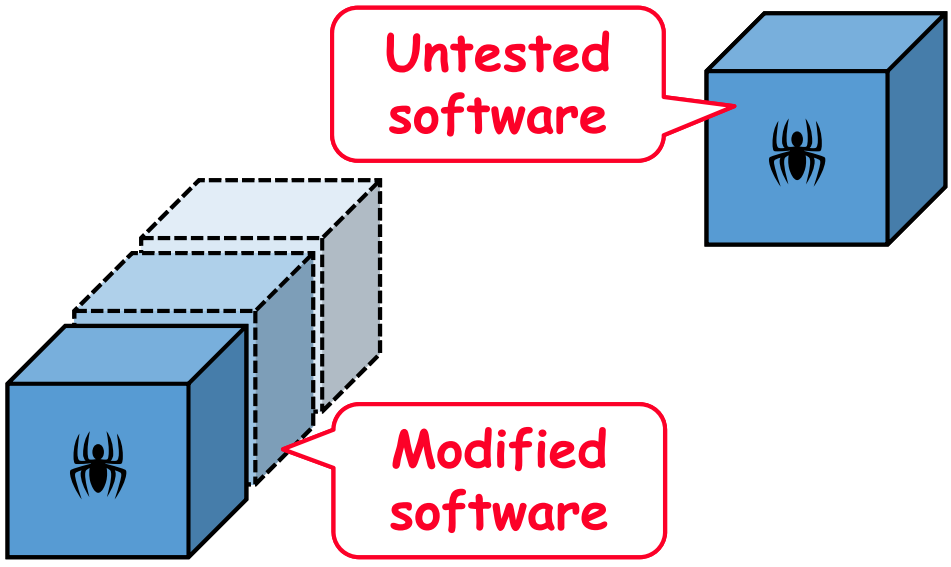


‡ *What does product quality really mean?, David A. Garvin*

Software Defects

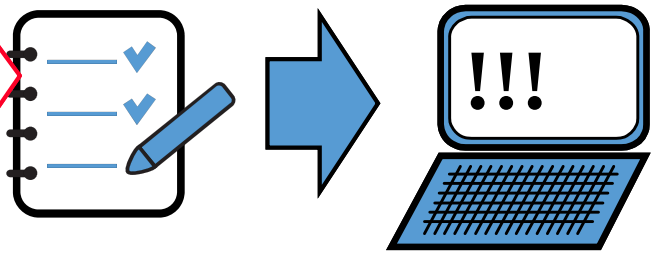


Software Defects



Configuration Defects

- Supporting applications
  - Email
  - Calendar
  - …
- Platform services
  - Database
  - Imaging
  - Printing
  - …
- Communications



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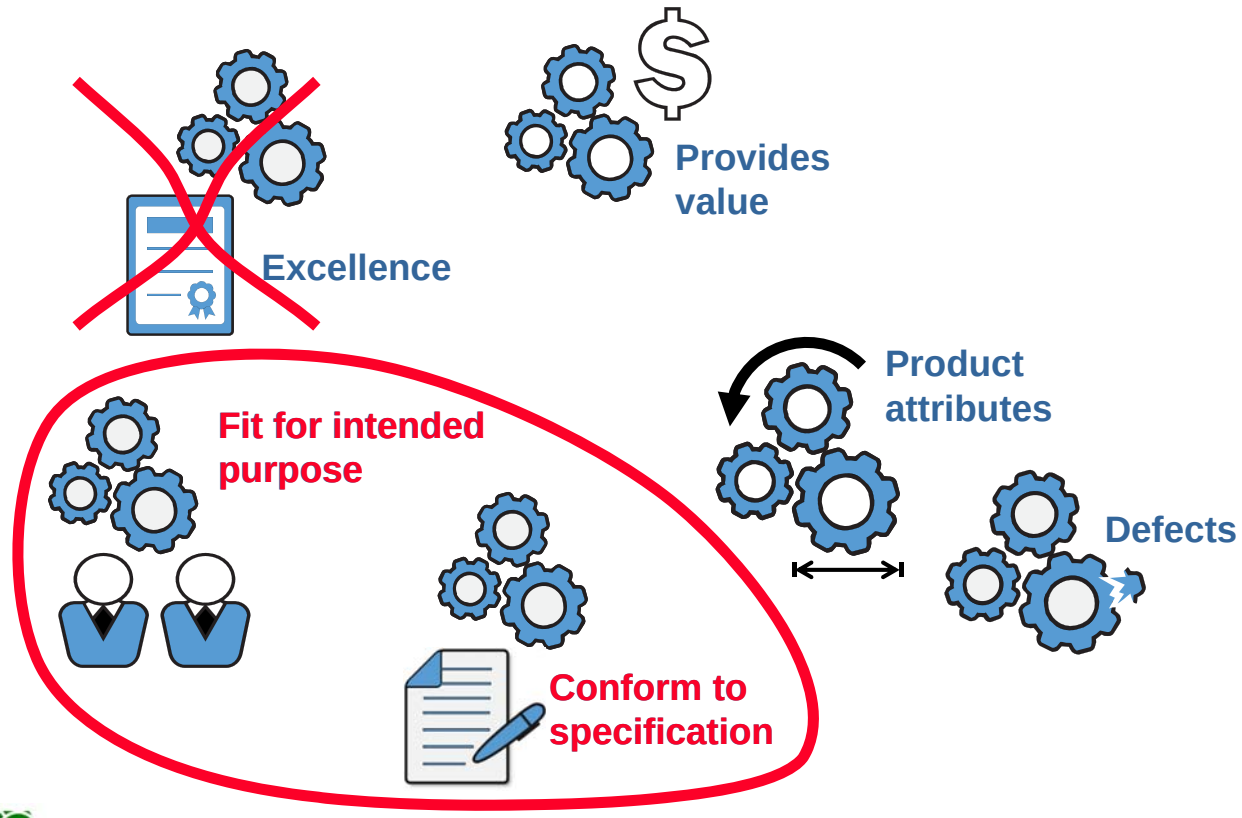
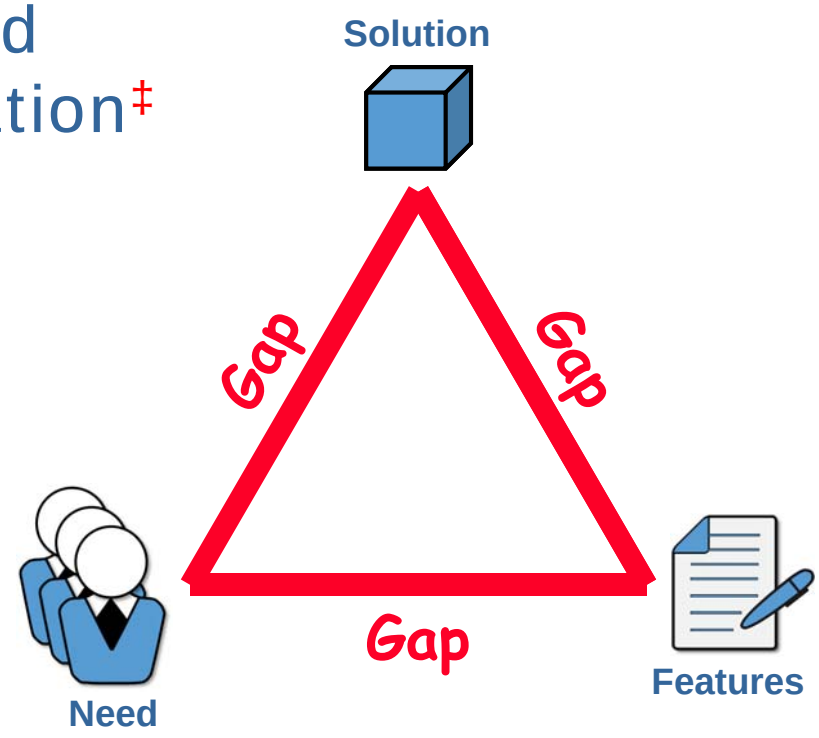
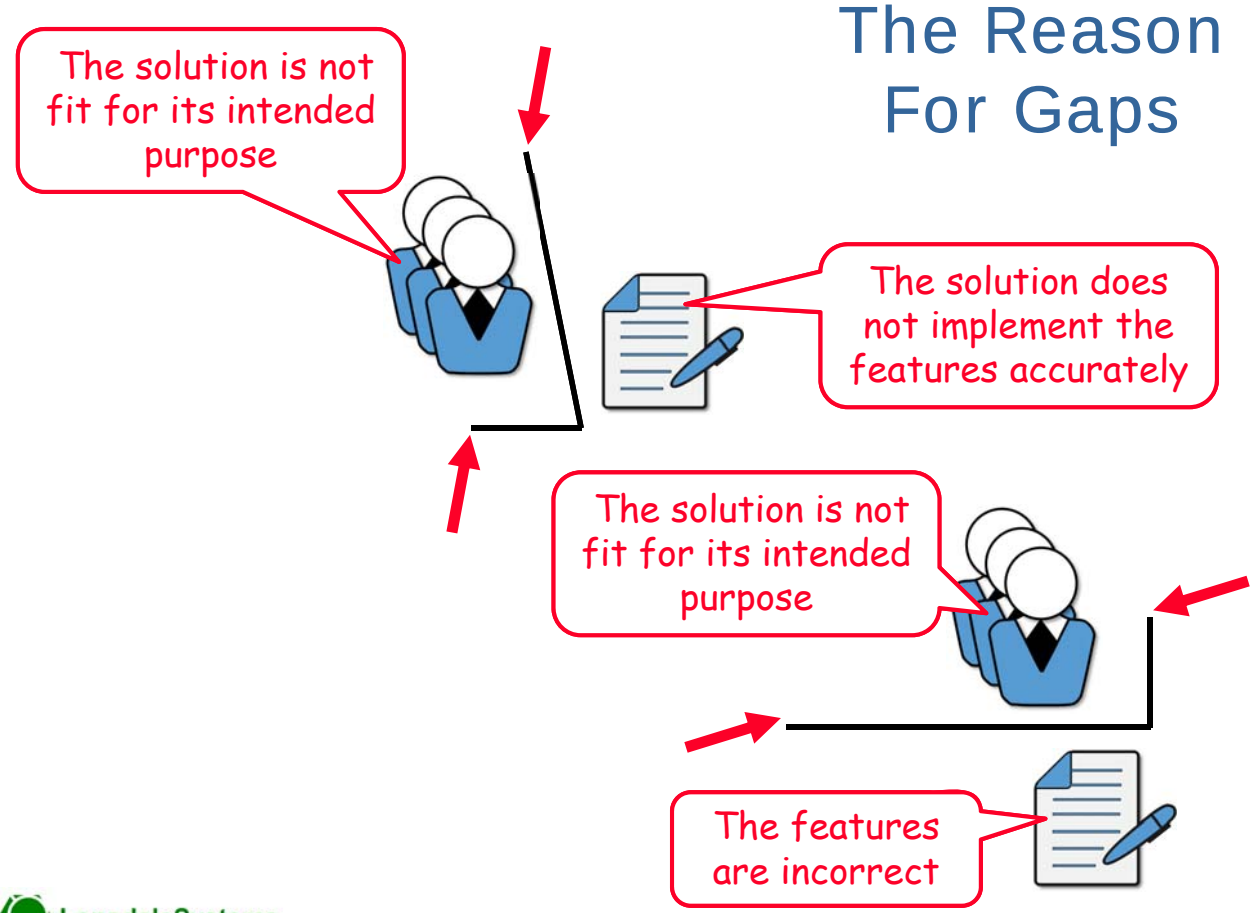


Verification and Validation‡

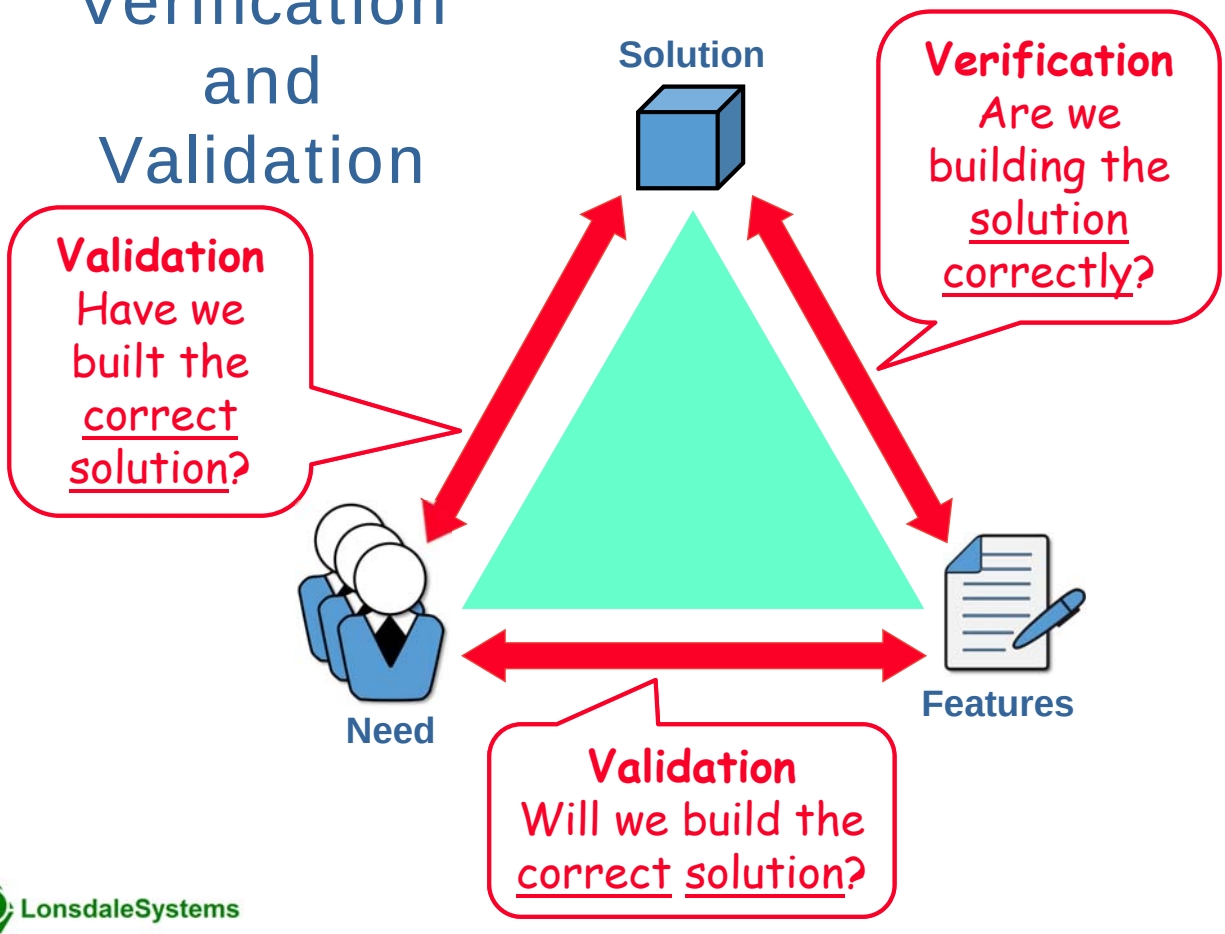


‡ *The triangular life cycle model, Phil Robinson*

The Reason For Gaps



Verification and Validation



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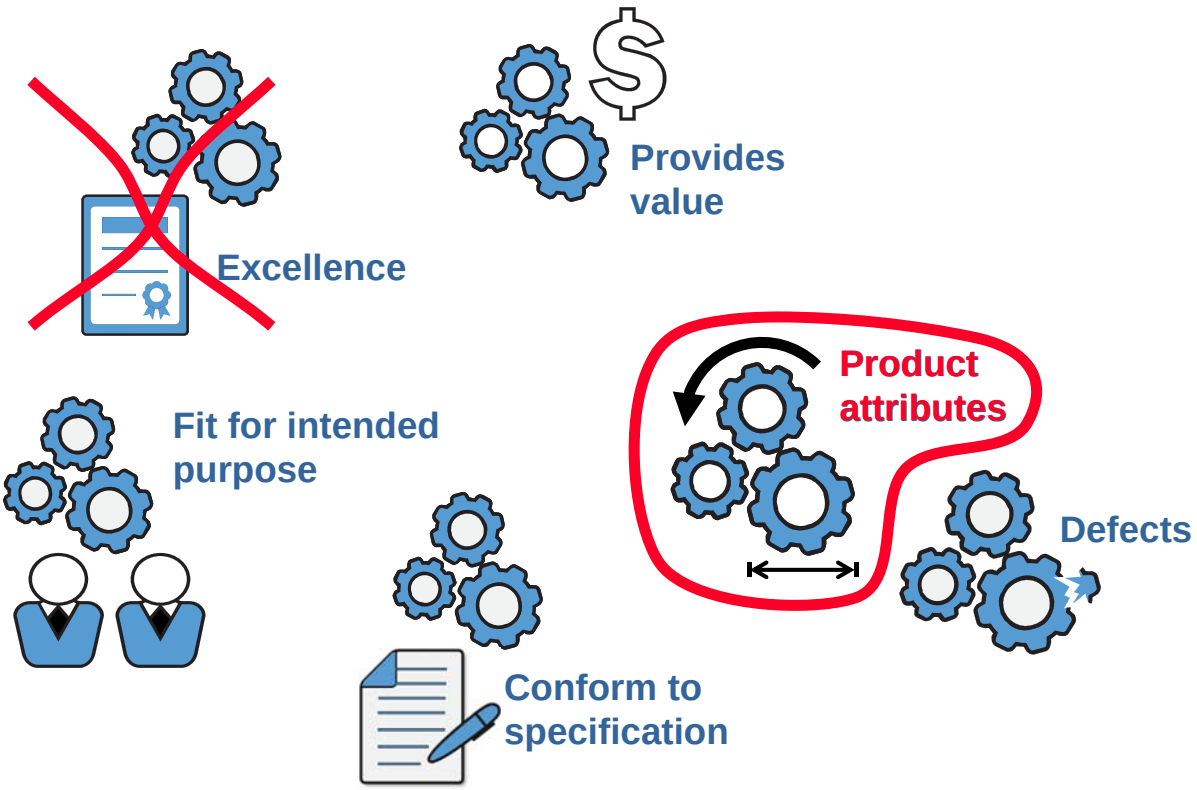
Definitions of Quality



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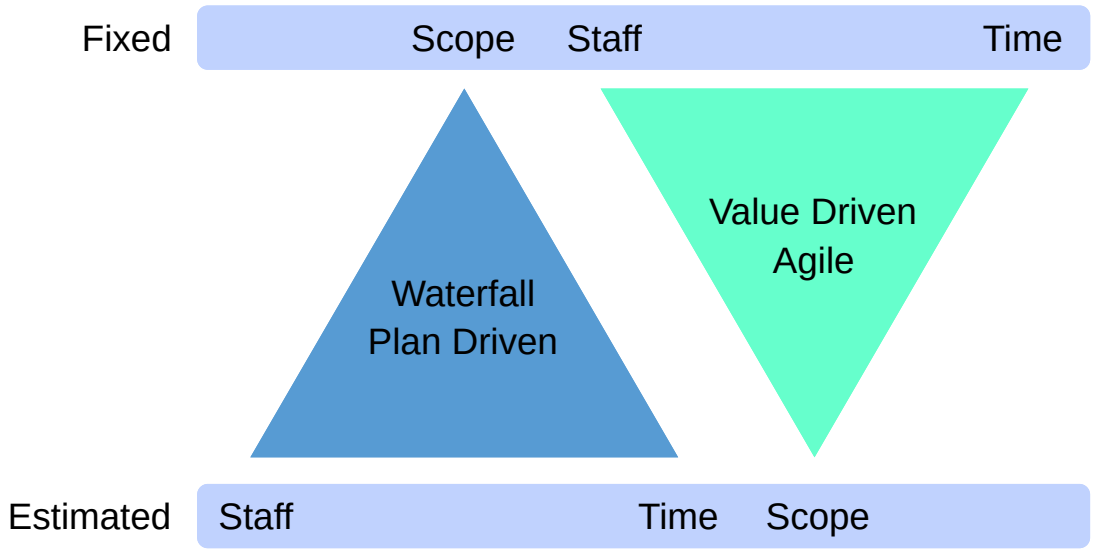
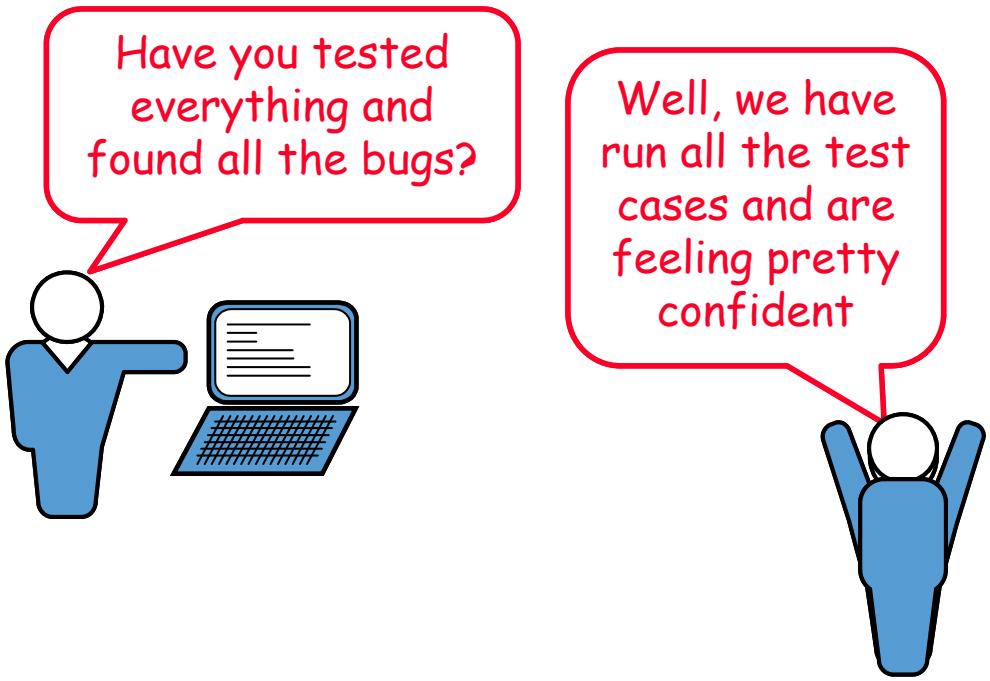
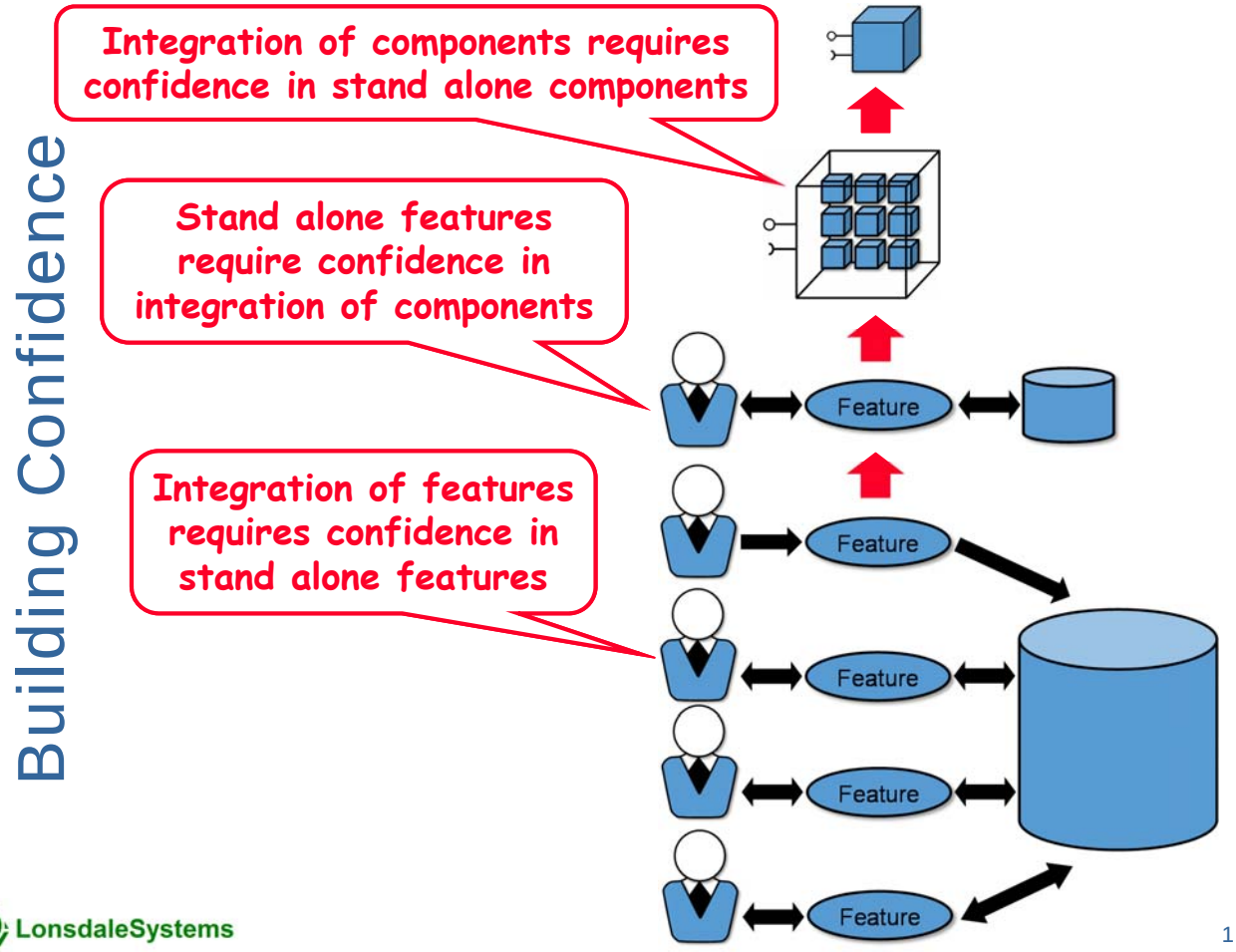
Definitions of Quality

Value



One More Thing! “Confidence”





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5. Confirming software provides value

4. Measuring non-functional attributes of software

6. Building confidence in the reliability of software

Solution

3. Identifying failures caused by defects
a) New software
b) Modified software
c) Configuration

1. Validating that software is fit for its intended purpose

Software Testing Objectives

2. Verifying that software conforms to its specification

Need

Spec

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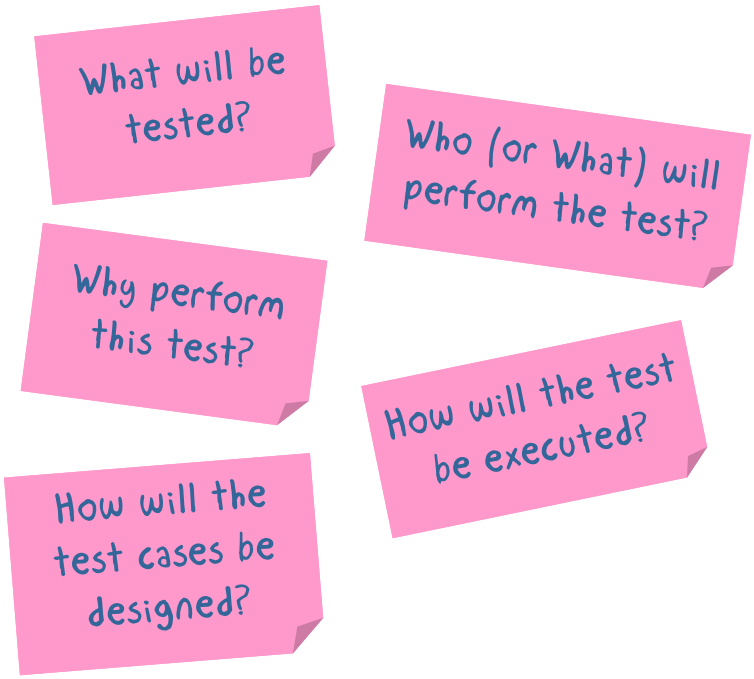
Five Fundamental Testing Questions

Five Testing Questions



What will be tested?

Which components will be tested?

Test Levels‡

Local definitions often differ and contradict

Frequently linked to project phases rather than the target of the test

Not useful for planning, executing and managing testing

component testing: The testing of individual software components.

integration testing: Testing to expose defects in the interfaces and interactions between integrated components

Components are constructed from other components!

"Integration" of what?

system testing: Testing the integrated system to verify that it meets specified requirements.

"Systems" can be components of "solutions"!

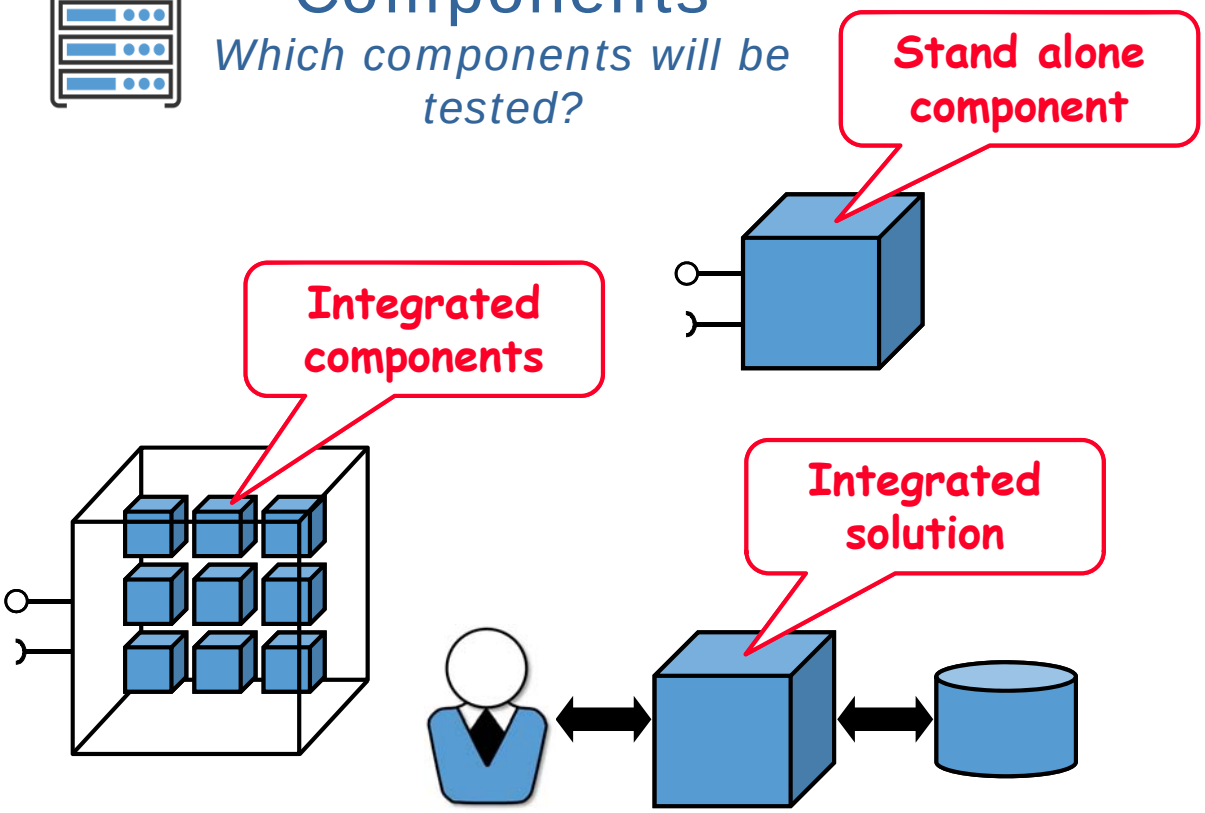
acceptance testing: Formal testing with respect to user needs, requirements, and business processes conducted to determine whether or not a system satisfies the acceptance criteria and to enable the user, customers or other authorized entity to determine whether or not to accept the system.

"Acceptance" of what?

‡*ISTQB Standard glossary of terms used in Software Testing Version 3.1*

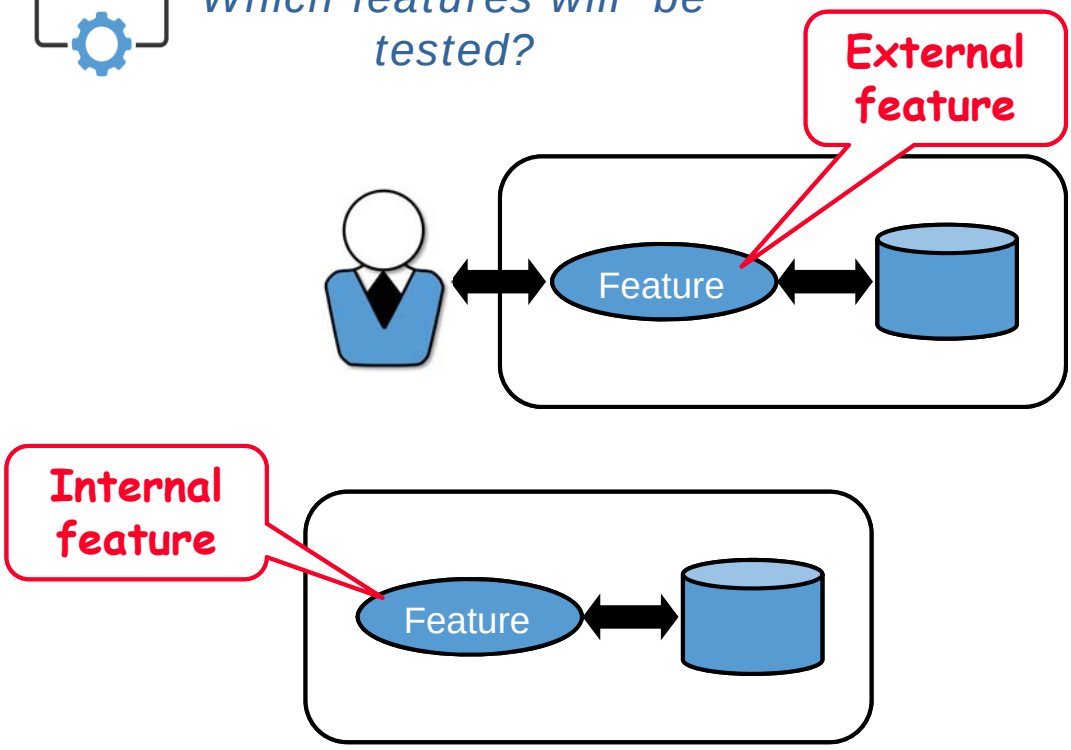
Components

Which components will be tested?



Features

Which features will be tested?



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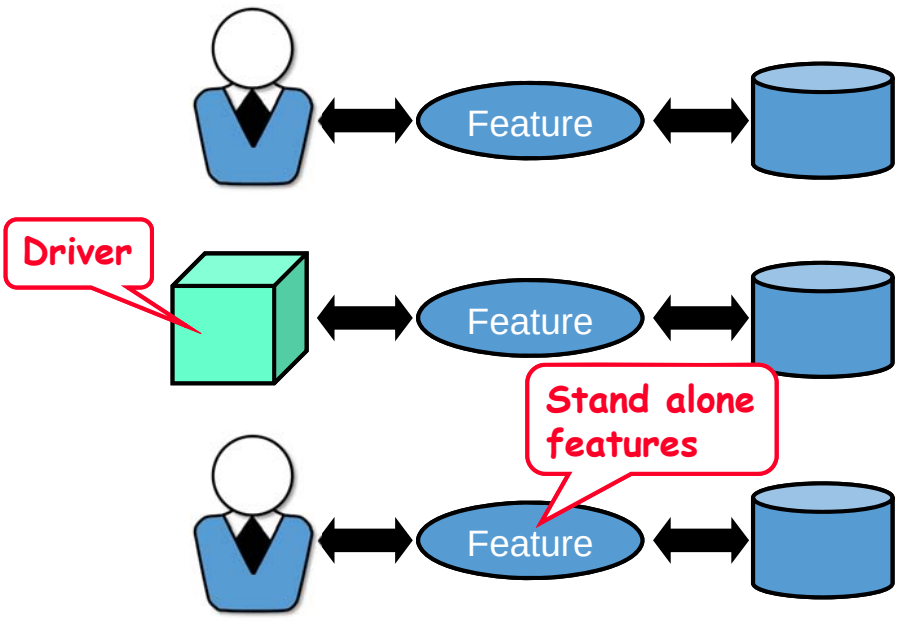

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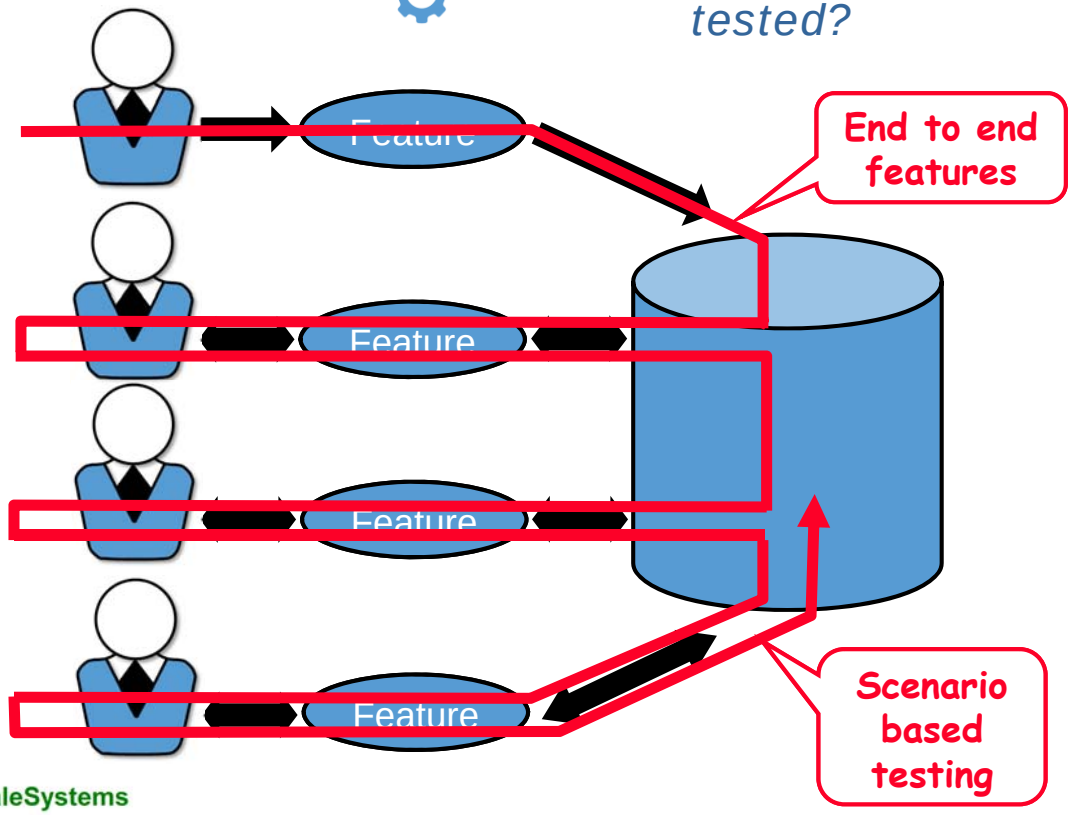

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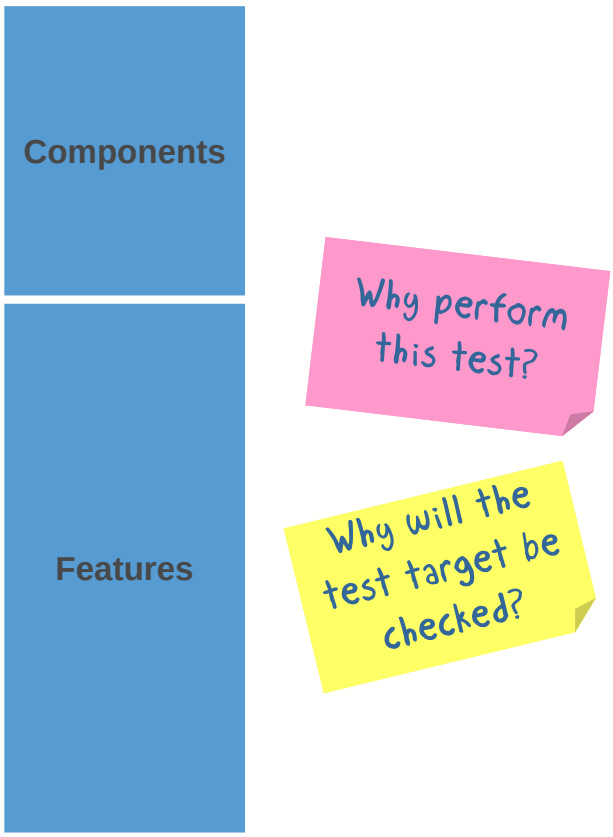

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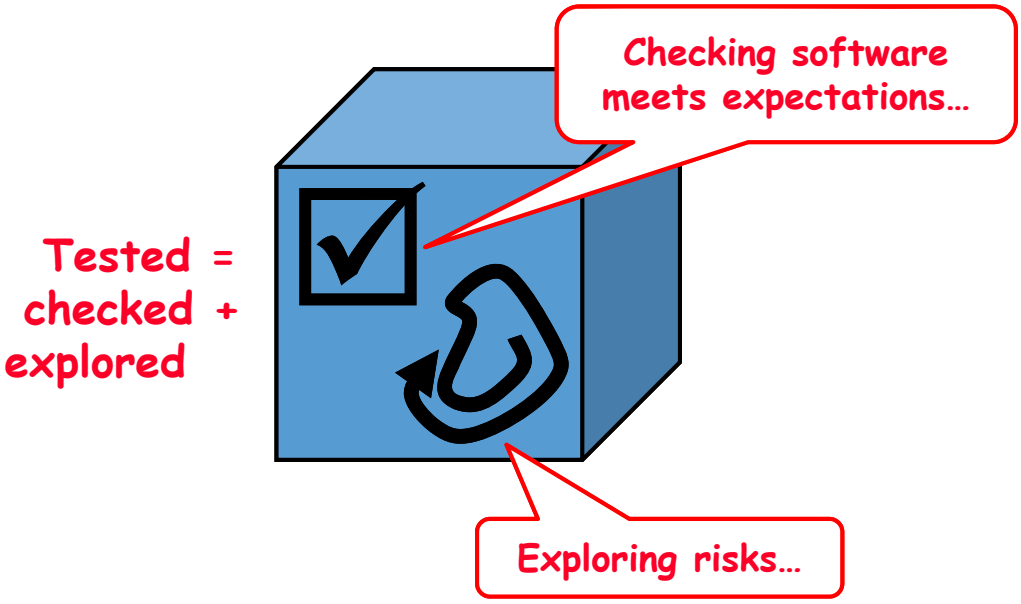
Two Ways to Test Software‡



‡ *Explore It! Reduce Risk and Increase Confidence With Exploratory Testing, Elizabeth Hendrickson*

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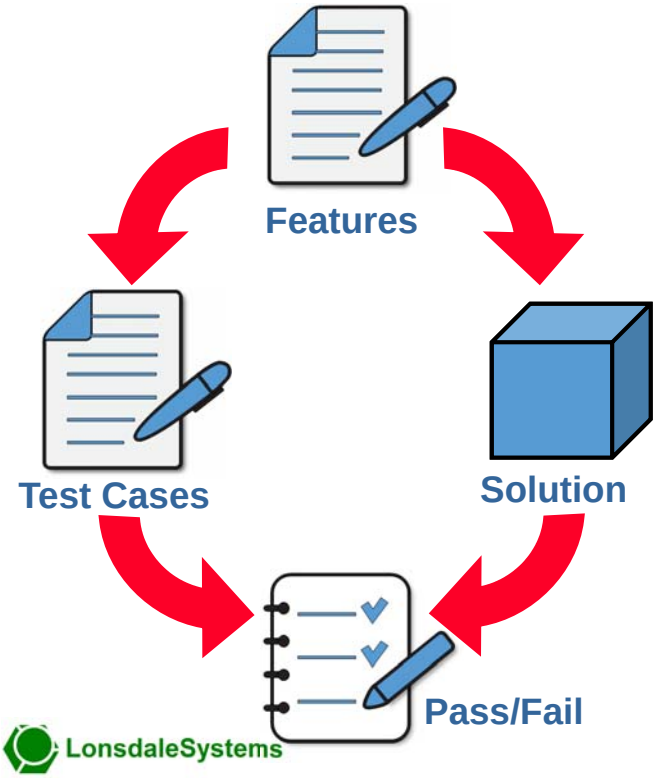
Checking

Why will the test target be checked?



1. Check (validate) software is fit for its intended purpose
2. Check (verify) that software conform to its specification
   - 3.b Check errors have not been introduced into modified software (regression)
4. Check the values of non-functional attributes of the software
5. Check the software provides value
6. Build confidence in software by checking it meets its expectations

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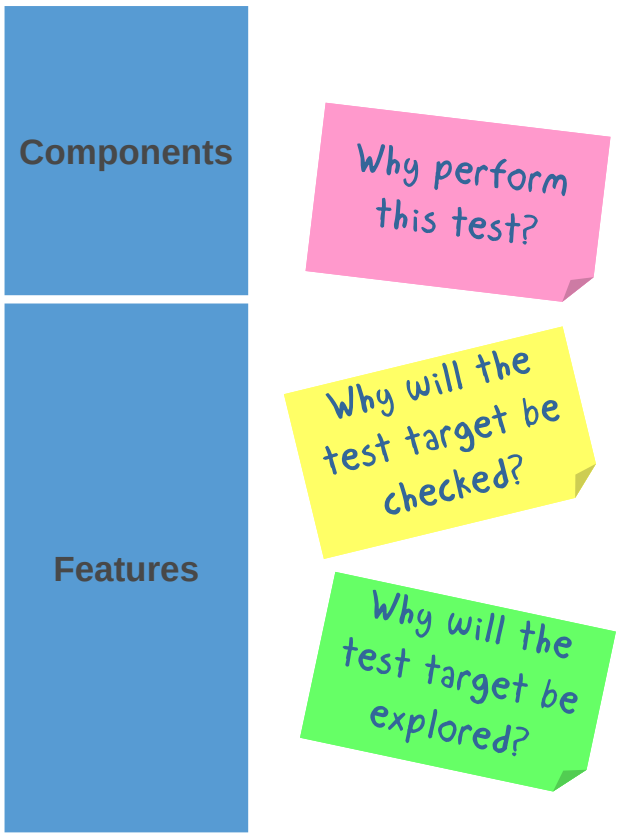
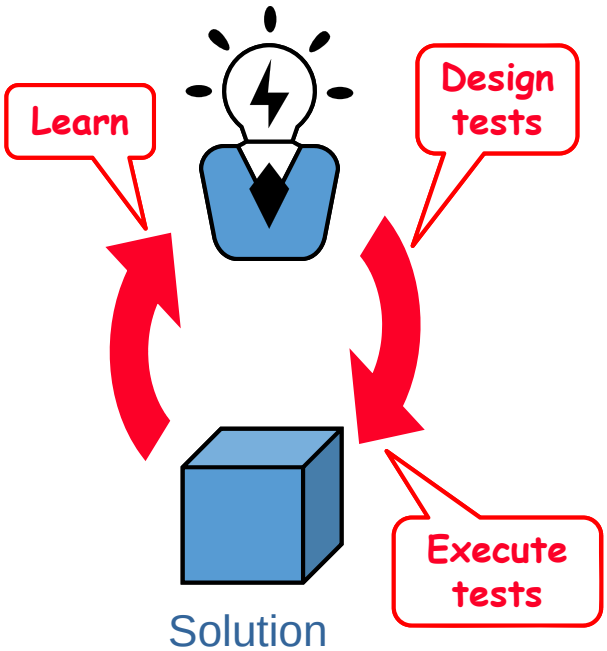
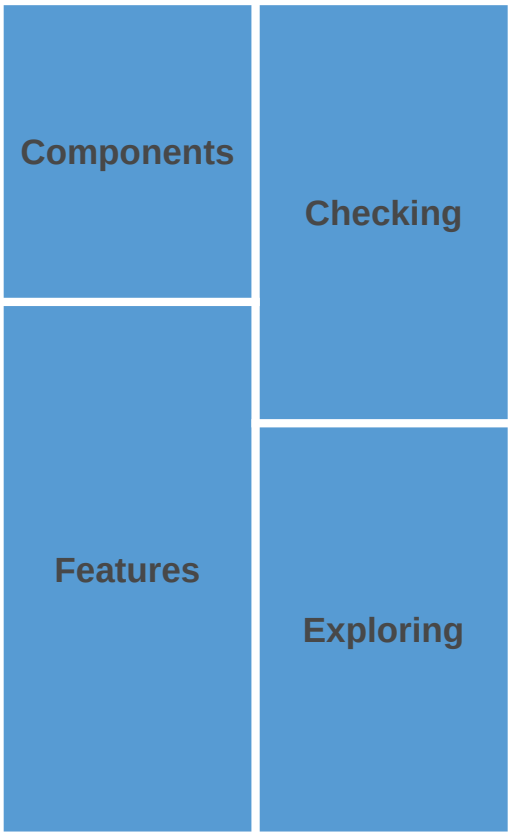


Exploring

Why will the test target be explored?



3. Identify failures in
   a) New software
   b) Modified software
   c) Solution environment
4. Measure non-functional attributes of the software under exceptional conditions (stress test)
6. Build confidence in the software by reducing risk

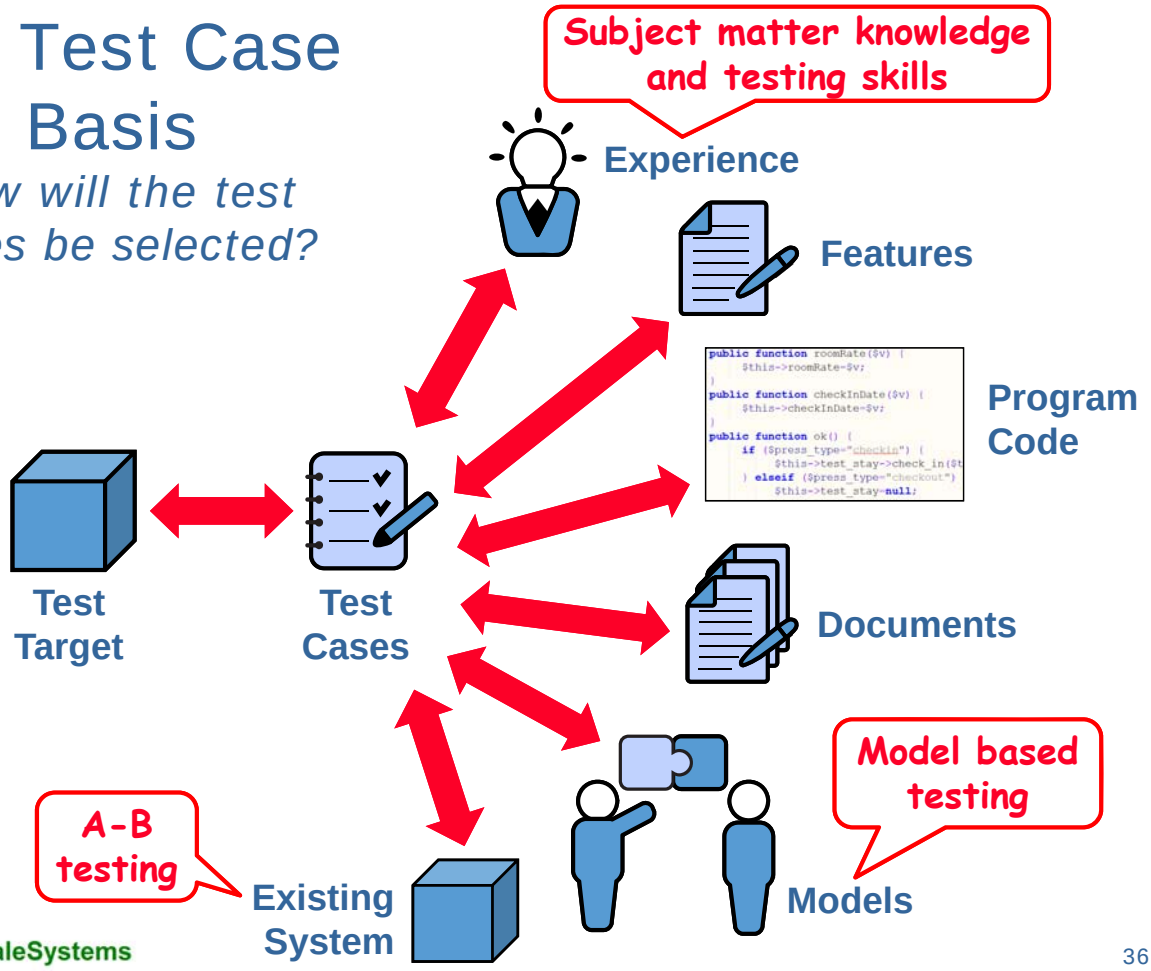


How will the test cases be designed?

How will the test cases be selected?

Test Case Basis

How will the test cases be selected?



Test Case Basis

How will the test cases be selected?

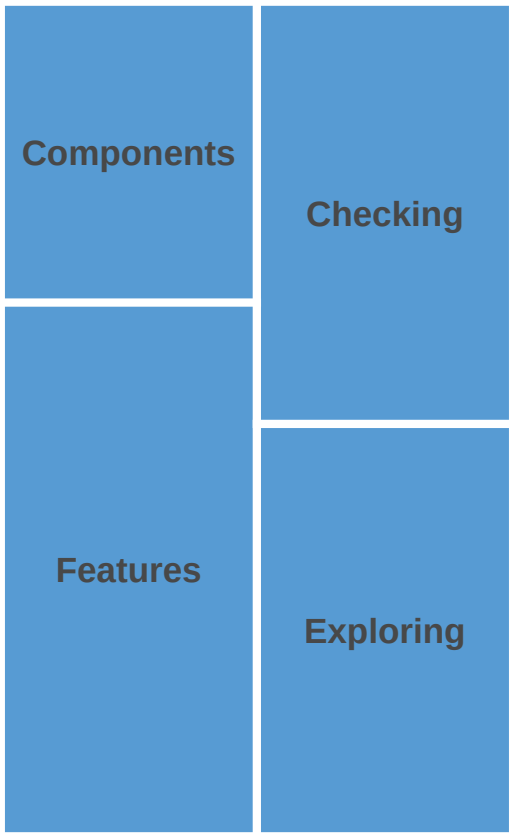
☑ Test To Pass

Tests at designed to check that a component or solution meets its expectations

☒ Test To Fail

Tests designed to identifying failures (negative testing)

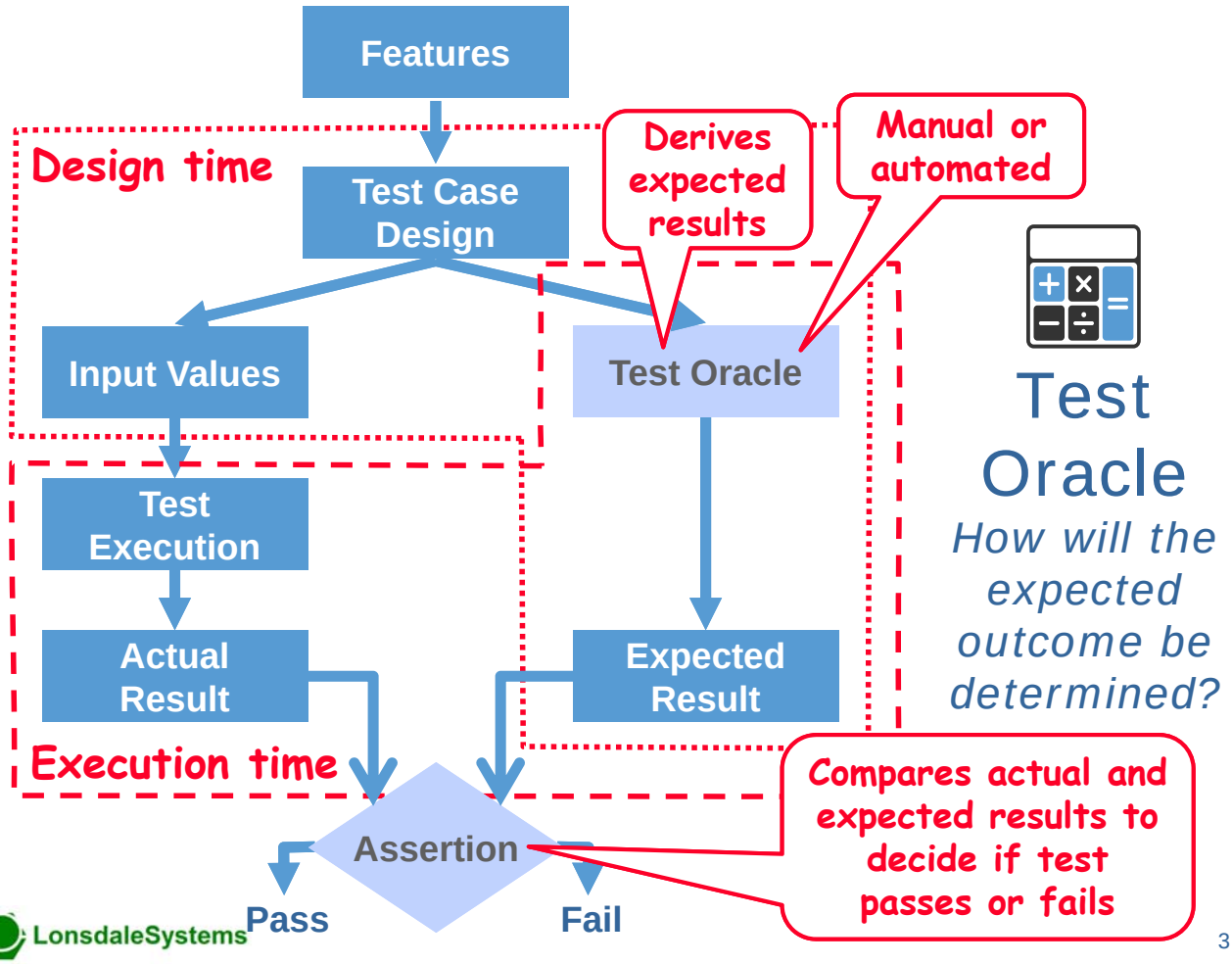
Related to the tester's attitude rather than a specific test approach or test design technique



How will the test cases be designed?

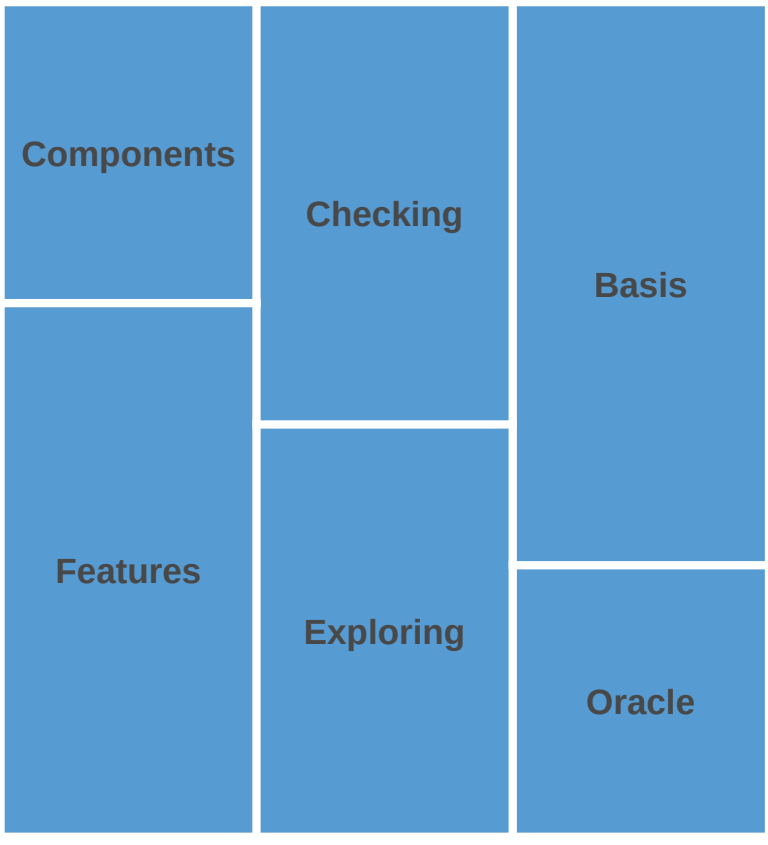
How will the test cases be selected?

How will the expected outcome be determined?



Test Oracle

How will the expected outcome be determined?



Who (or What) will perform the test?

Who will perform the test?

Agent

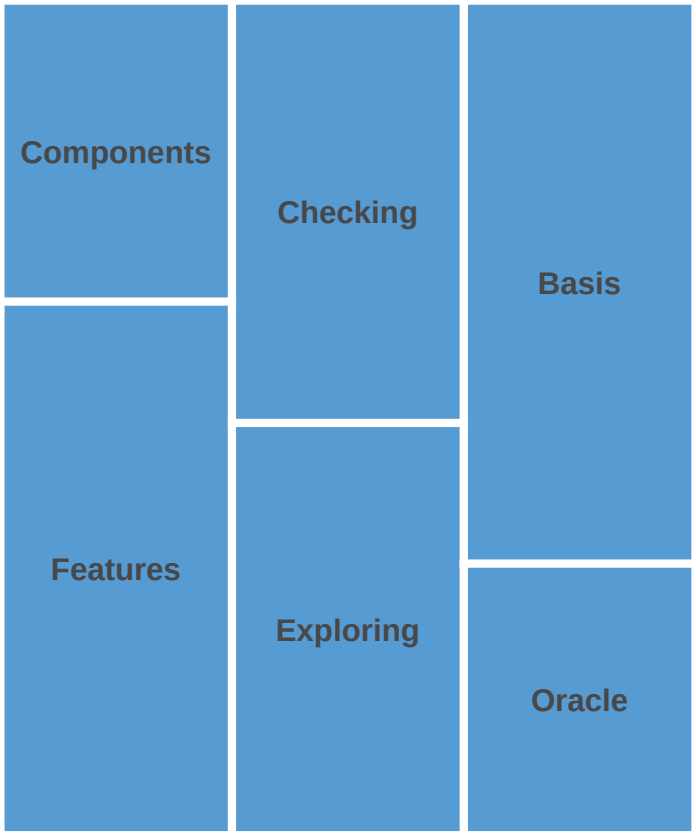
Who will perform the test?

Developer
Technical specialist

Test Analyst

Automated

Business Analyst
Subject Matter Expert

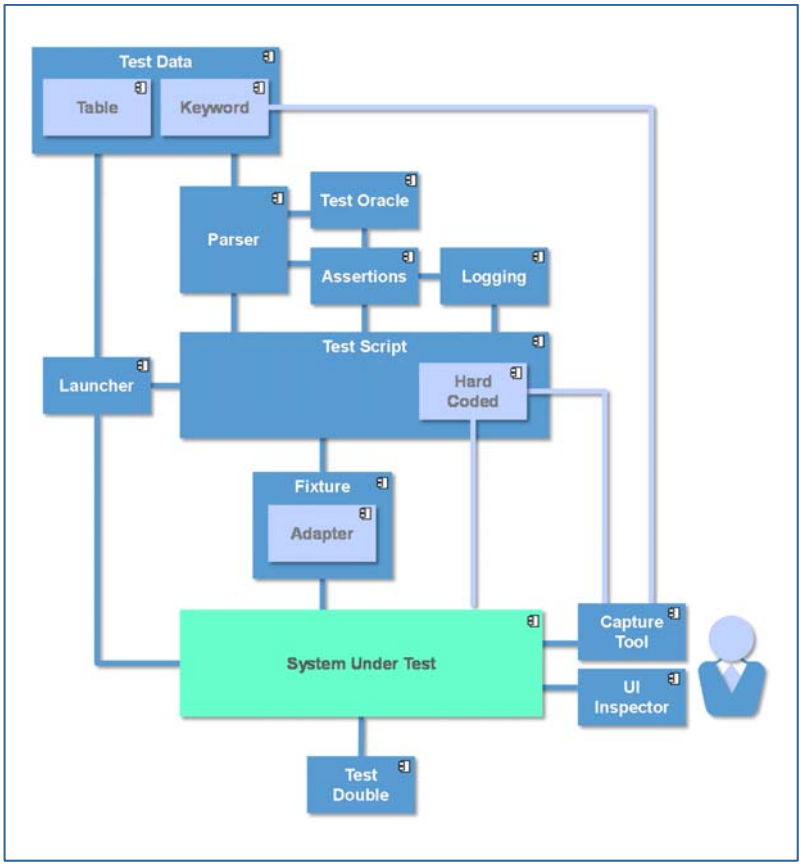


Who (or What) will perform the test?

Who will perform the test?

What will perform the test?

The Test Automation Reference Model



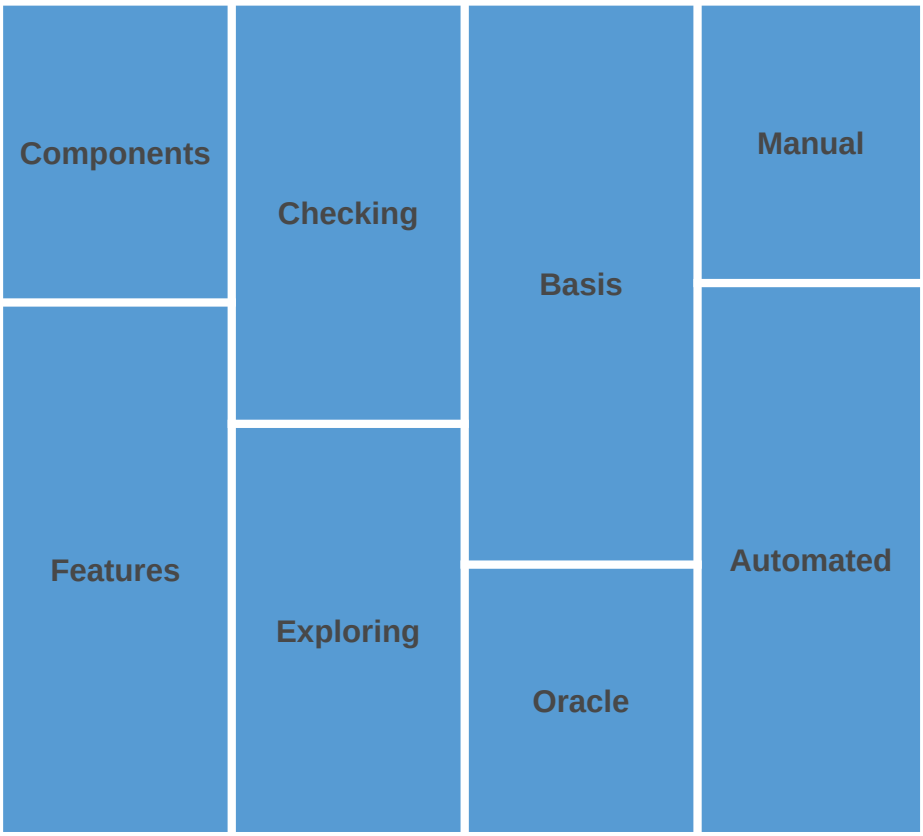
Agent

What will perform the test?

Test Automation Heat Map

	Manual Checking	Manual Exploring	Automated
1. Fit for intended purpose (validation)			
2. Conform to specification (verification)			
3. Identifying failures			
a) New software			
b) Modified software			
c) Configuration			
4. Measuring non-functional attributes			
a) Requires judgement			
b) Requires endurance‡			
5. Confirming software provides value			
6. Building confidence			
a) Expectations			
b) Risk			

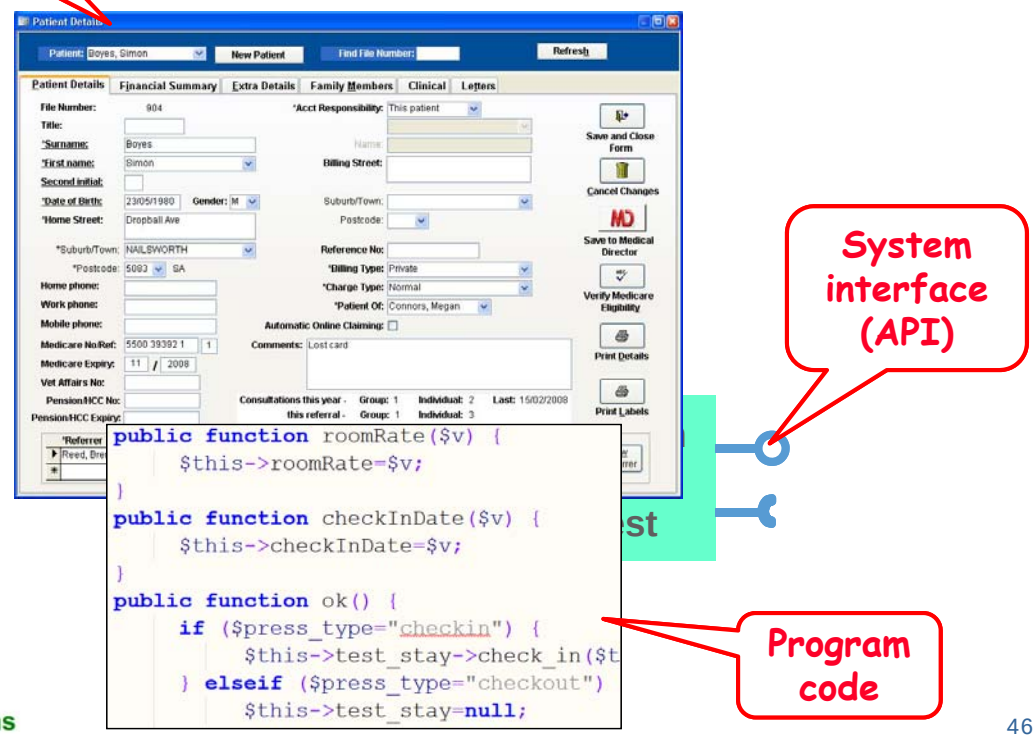
‡ frequent test repetition, large volume of users or test cases, long duration test



Connection

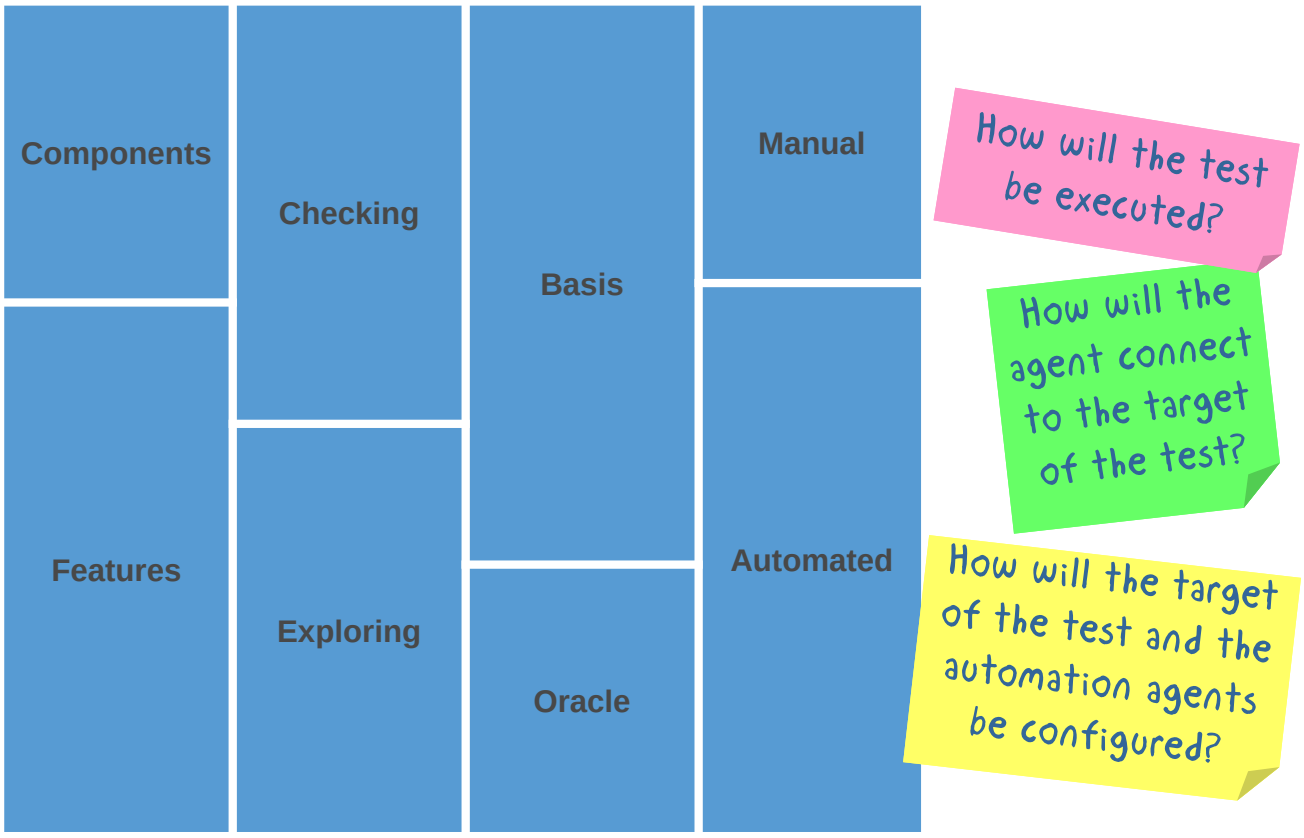
How will the agent connect to the target of the test?

User interface (UI)



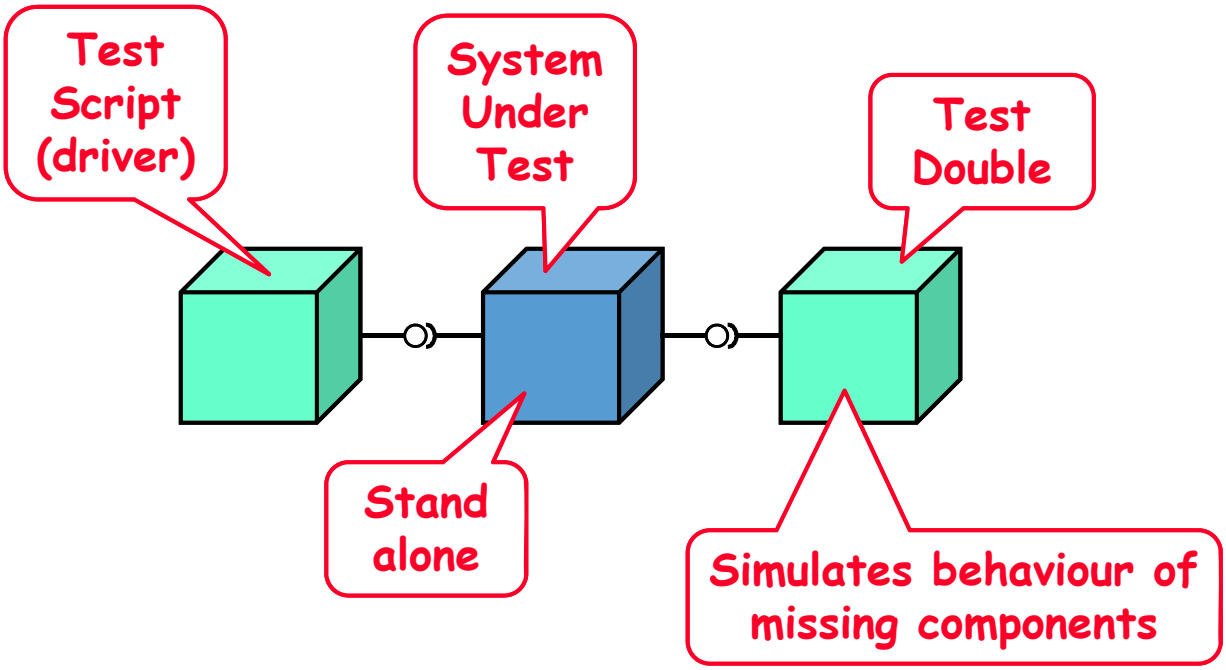
System interface (API)

Program code



Configuration

How will the target of the test and the automation agents be configured?



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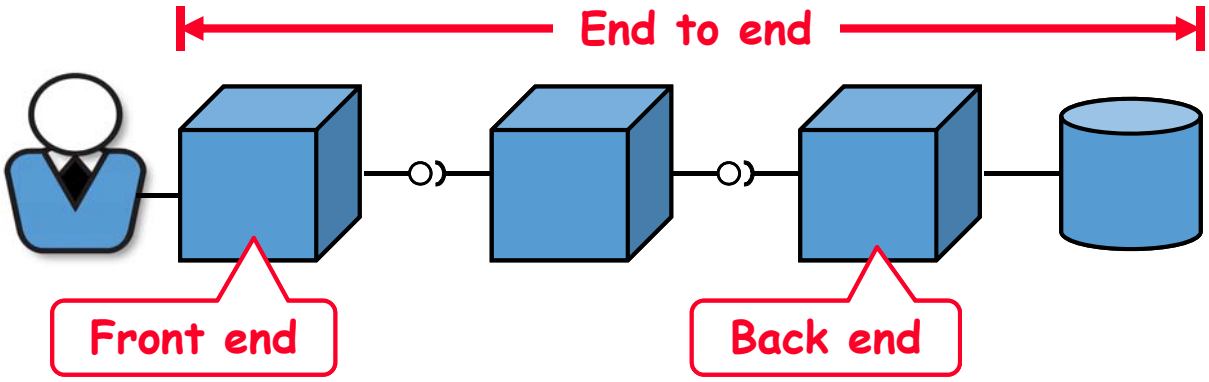

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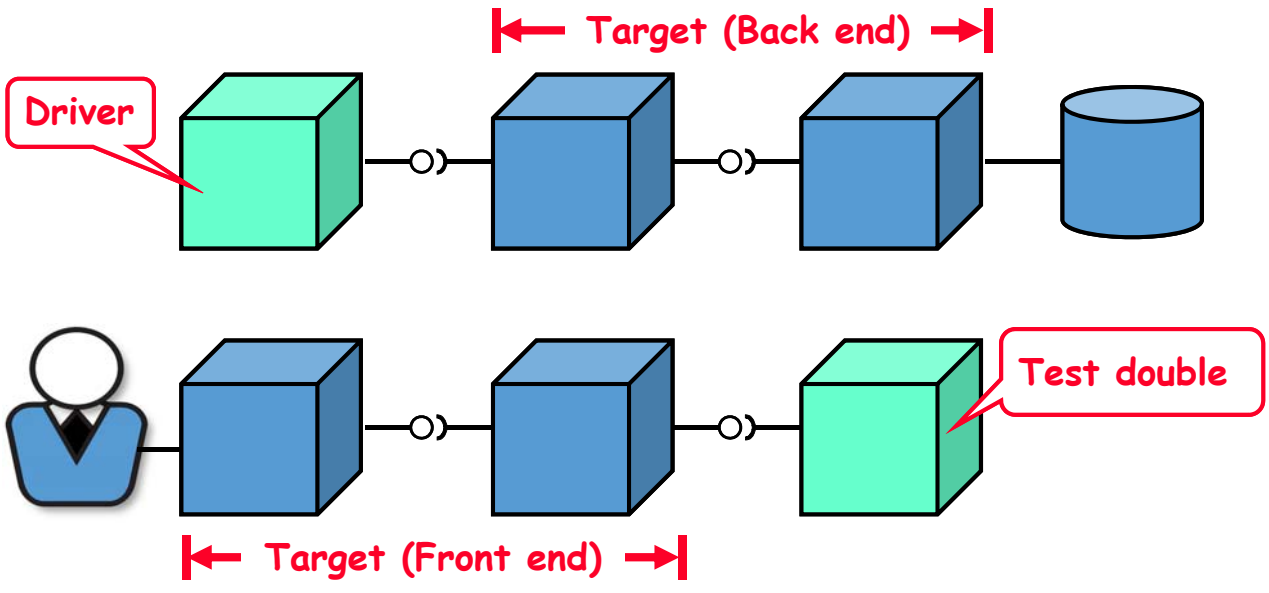
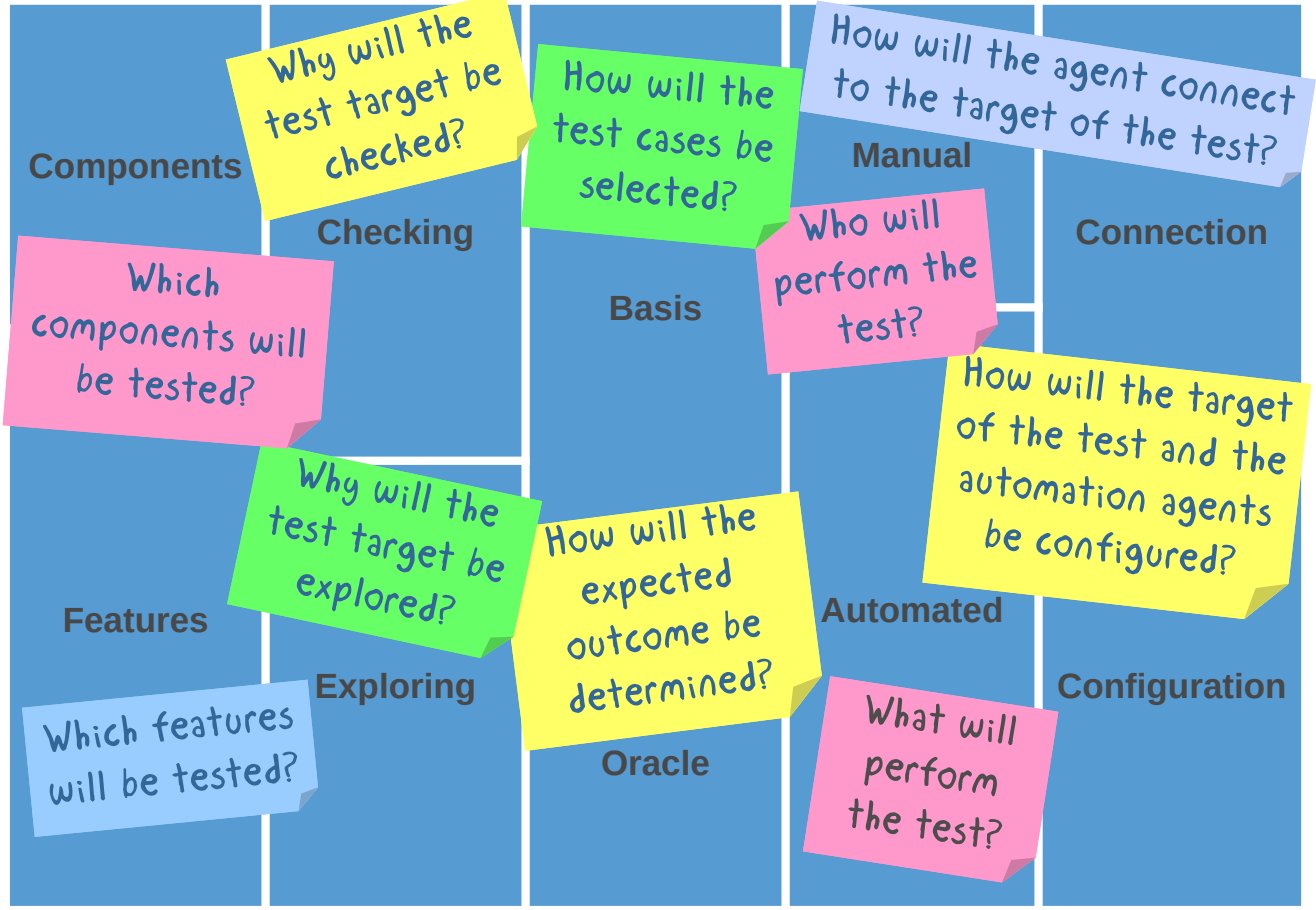
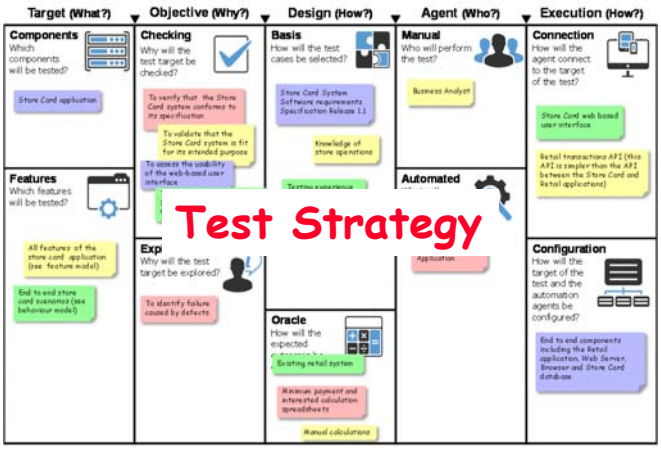


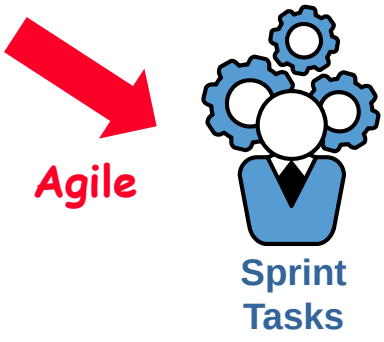


Target (What?)	Objective (Why?)	Design (How?)	Agent (Who?)	Execution (How?)
Components Which components will be tested? Store Card application	**Checking** Why will the test target be checked? To verify that the Store Card system conforms to its specification To validate that the Store Card system is fit for its intended purpose To assess the usability of the web-based user interface To build confidence in the Store Card application prior to deployment	**Basis** How will the test cases be selected? Store Card System Software requirements Specification Release 1.1 Knowledge of store operations Testing experience	**Manual** Who will perform the test? Business Analyst	**Connection** How will the agent connect to the target of the test? Store Card web based user interface Retail transactions API (this API is simpler than the API between the Store Card and Retail applications)
Features Which features will be tested? All features of the store card application (see feature model) End to end store card scenarios (see behaviour model)	**Exploring** Why will the test target be explored? To identify failure caused by defects	**Oracle** How will the expected Existing retail system Minimum payment and interested calculation spreadsheets Manual calculations	**Automated** What will perform the test? Test script that simulates the POS Application	**Configuration** How will the target of the test and the automation agents be configured? End to end components including the Retail application, Web Server, Browser and Store Card database

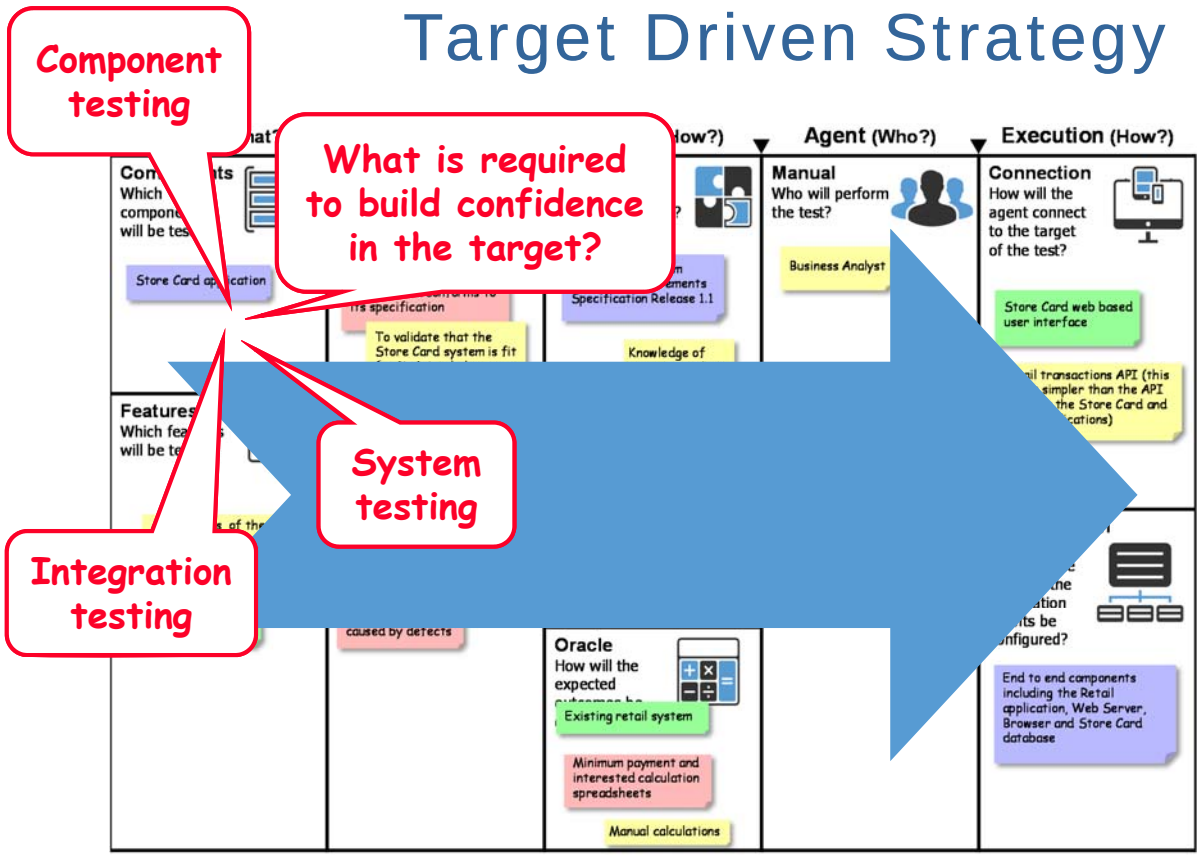
Defining Strategies

Traditional and Agile Strategies

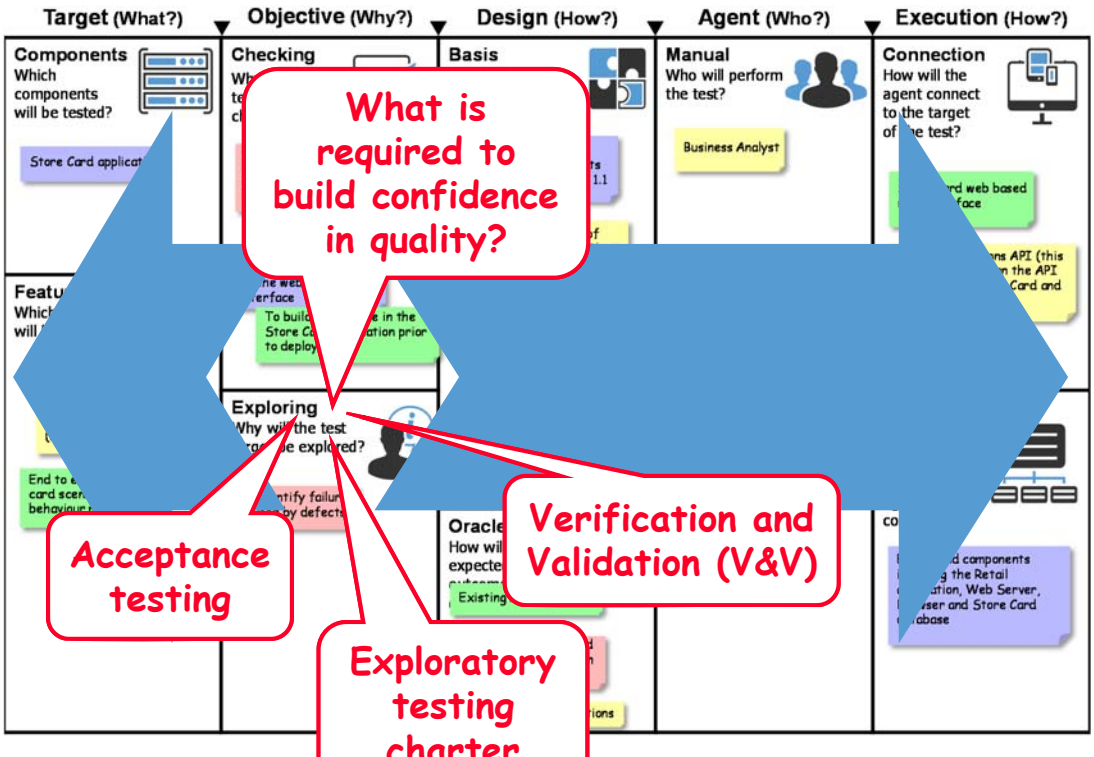




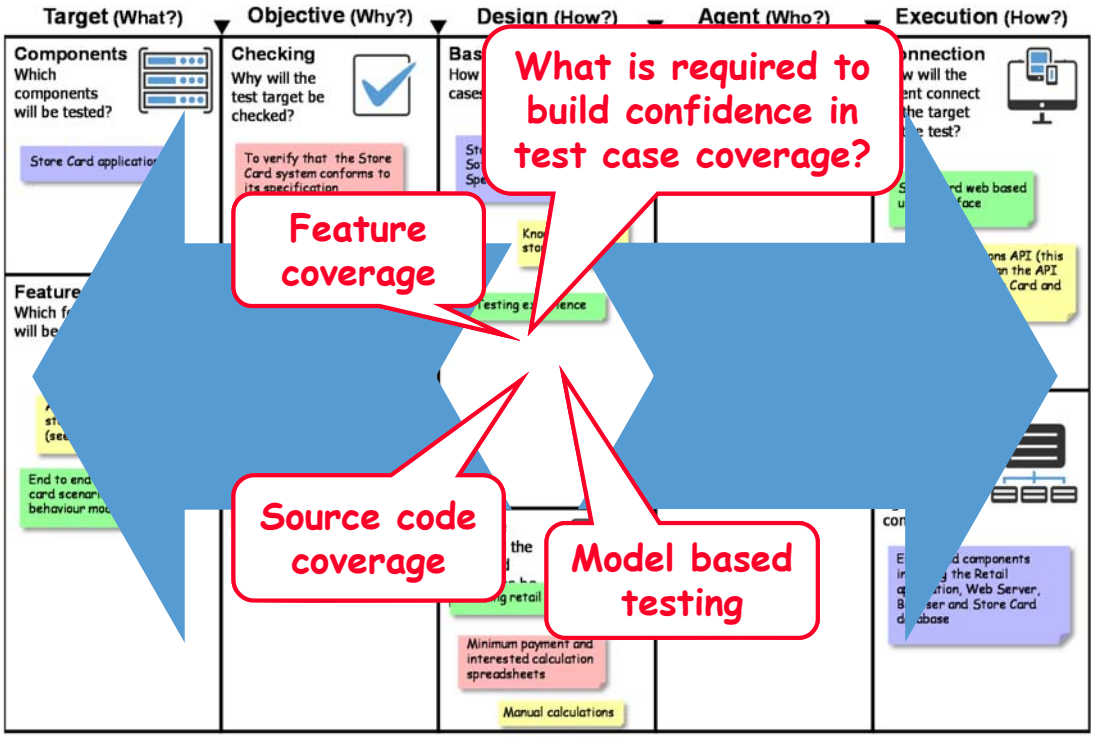
Target Driven Strategy



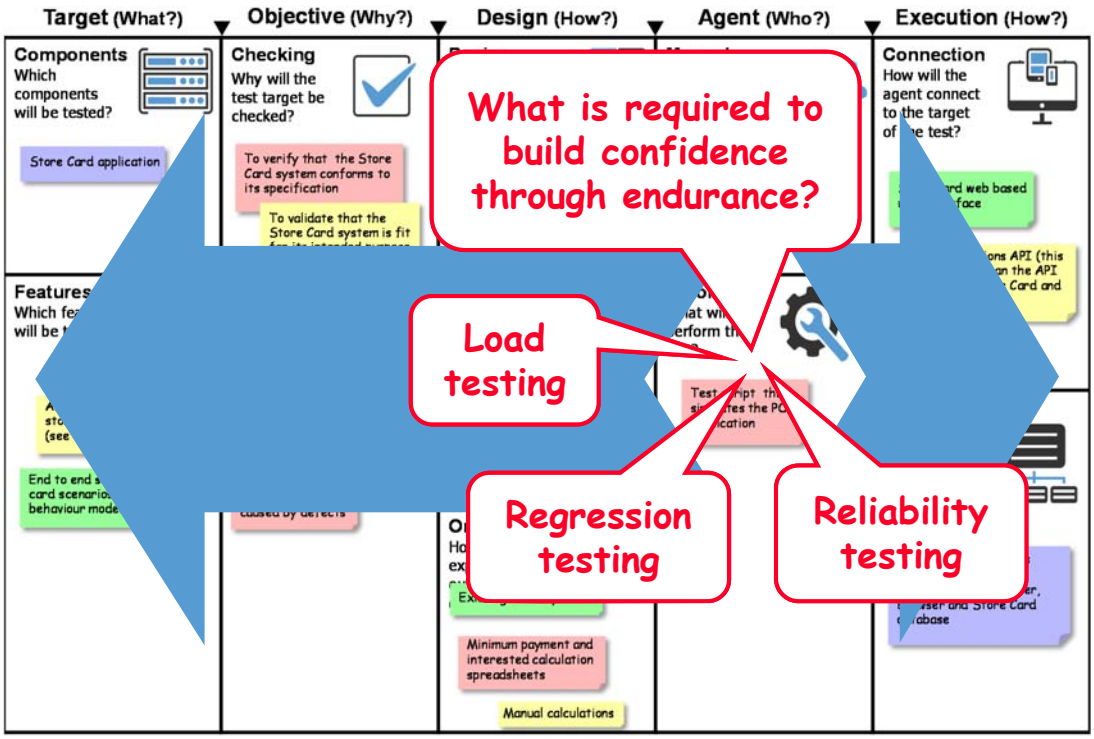
Objective Driven Strategy



Basis Driven Strategy



Automation Driven Strategy



Exploring Strategies