Nicholas Hjelmberg

Test Manager - Sweden

TESTIFICATION

Learning Testing through Gamification

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Learning Testing Through Gamification

Standard Glossary of Terms used in Software Testing

acceptance criteria Ref: IEEE 610

The exit criteria that a component or system must satisfy in order to be accepted by a user, customer, or other authorized entity.

acceptance testing
Ref: After IEEE 610 **See Also:** user 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.

actor

User or any other person or system that interacts with the test object in a specific way.

actual result Synonyms: actual outcome

The behavior produced/observed when a component or system is tested.

alpha testing

Simulated or actual operational testing by potential users/customers or an independent test team at the developers' site, but outside the development organization. Alpha testing is often employed for commercial off- the-shelf software as a form of internal acceptance testing.

audit
Ref: IEEE 1028

An independent evaluation of software products or processes to ascertain compliance to standards, guidelines, specifications, and/or procedures based on objective criteria, including documents that specify: the form or content of the products to be produced, the process by which the products shall be produced, and how compliance to standards or guidelines shall be measured.

audit trail Ref: After TMap

A path by which the original input to a process (e.g., data) can be traced back through the process, taking the process output as a starting point. This facilitates defect analysis and allows a process audit to be carried out.

authentication See Also: authorization

Don’t Learn how to Do - Learn how to Think

*When you **know** a solution to a given puzzle, it’s hard to find another one.*

*When you **don’t know** the solution, you’re more likely to find your own.*

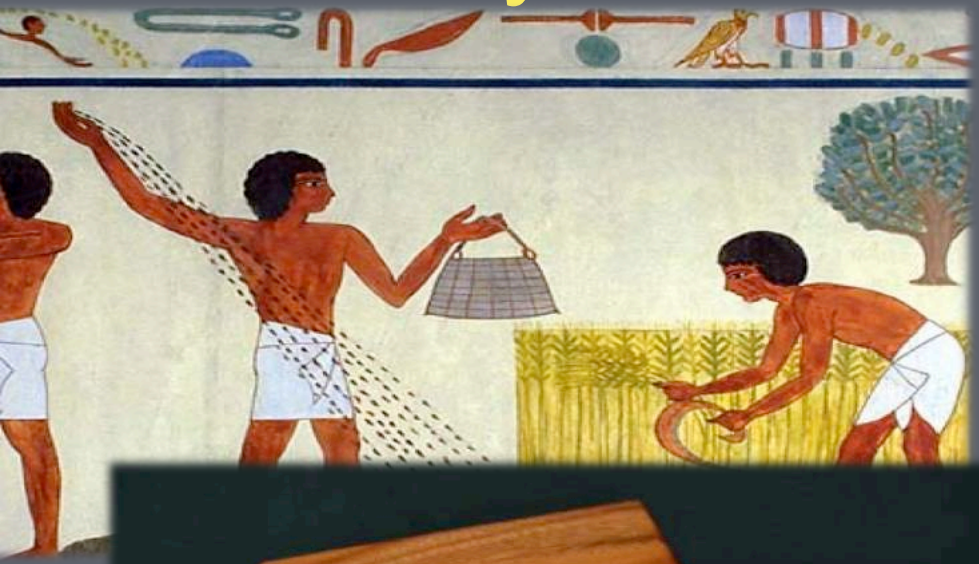
*Not knowing others’ solutions helps keep your **own ideas fresh**.*

Dr Reiner Knizia

Encourage Creative Thinking

- Motivation
- Context
- Concrete
- Social
- Answers
- Feedback
- Rewards

Historically Games have Represented Life…

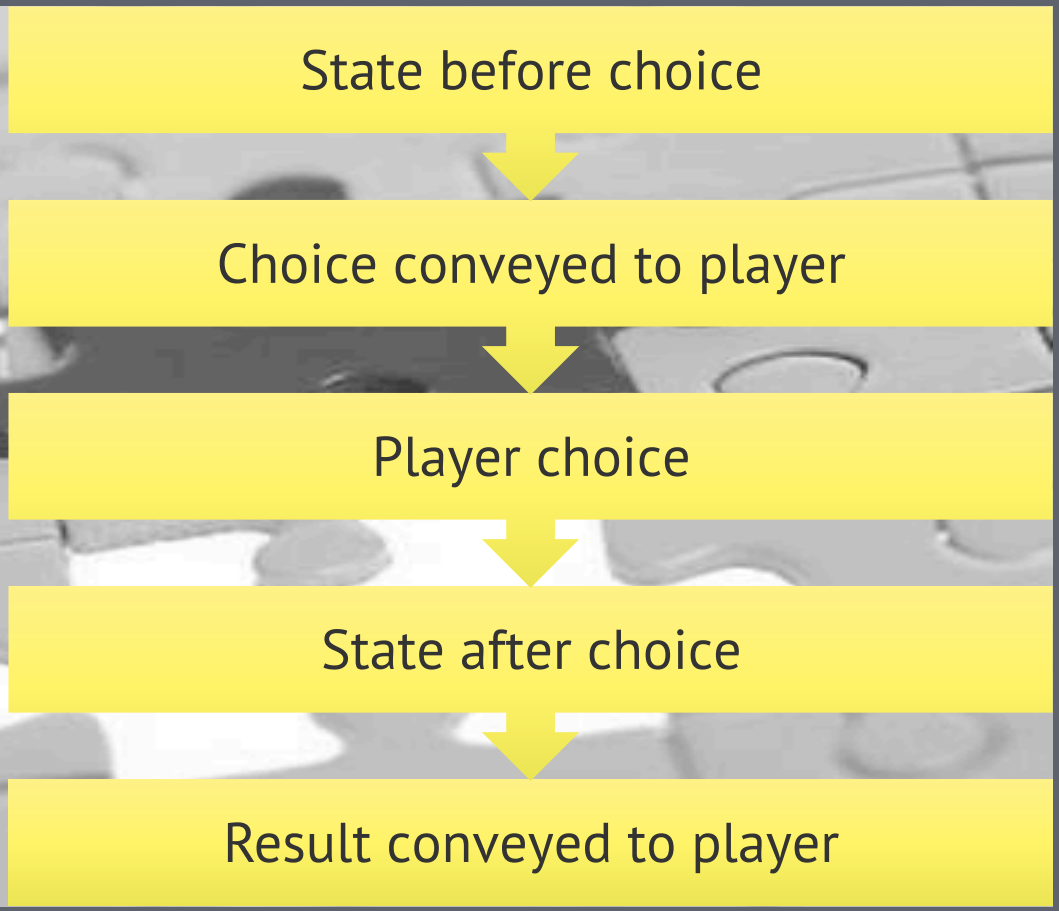


...and Games Continue to do so in Our Time

”A Game is actually a System”

*”A game is actually what computer science describes as a **state machine**. It is a system that can be in different states. It contains **input** and **output** functions as well as definitions of what state and what input will lead to what following **state**.”*

Jesper Juul, Play Time, Event Time, Themability”



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authentication See Also: authorization

”It is the Goal that is Important, not the Winning”

1. *A game should put you in a testing **role***
2. *A game should give you a testing **goal***
3. *A game should let you face typical testing **challenges***
4. *A game should offer you meaningful testing **decisions***

UKSTAR

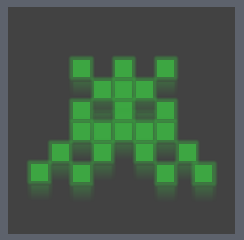
1. Testing Role

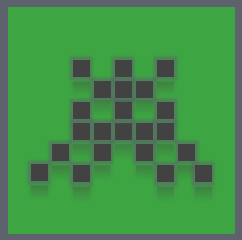
Play a tester

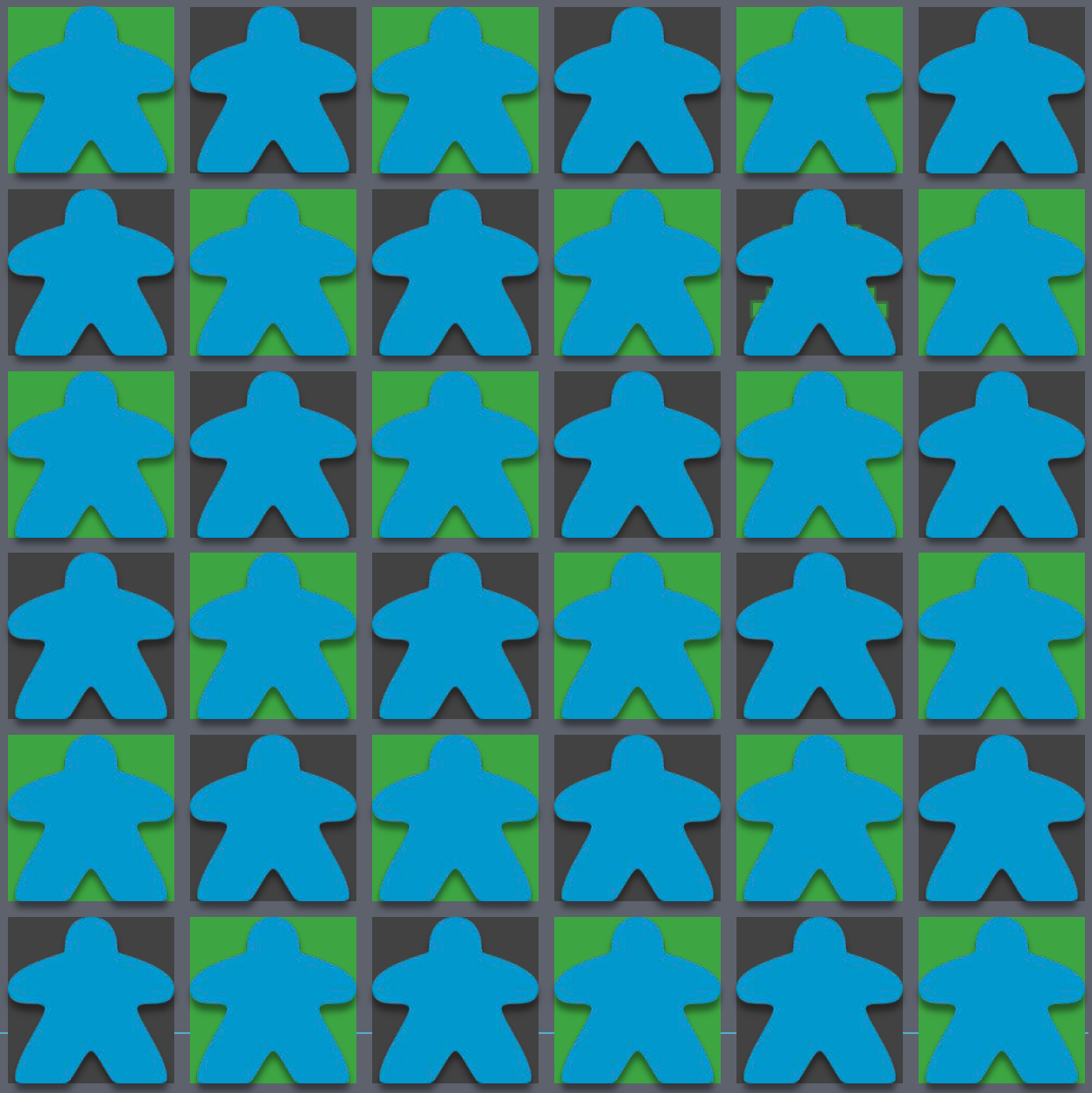
Play in a test environment

2. Testing Goal

Find bugs

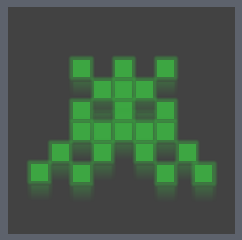


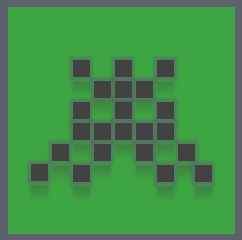


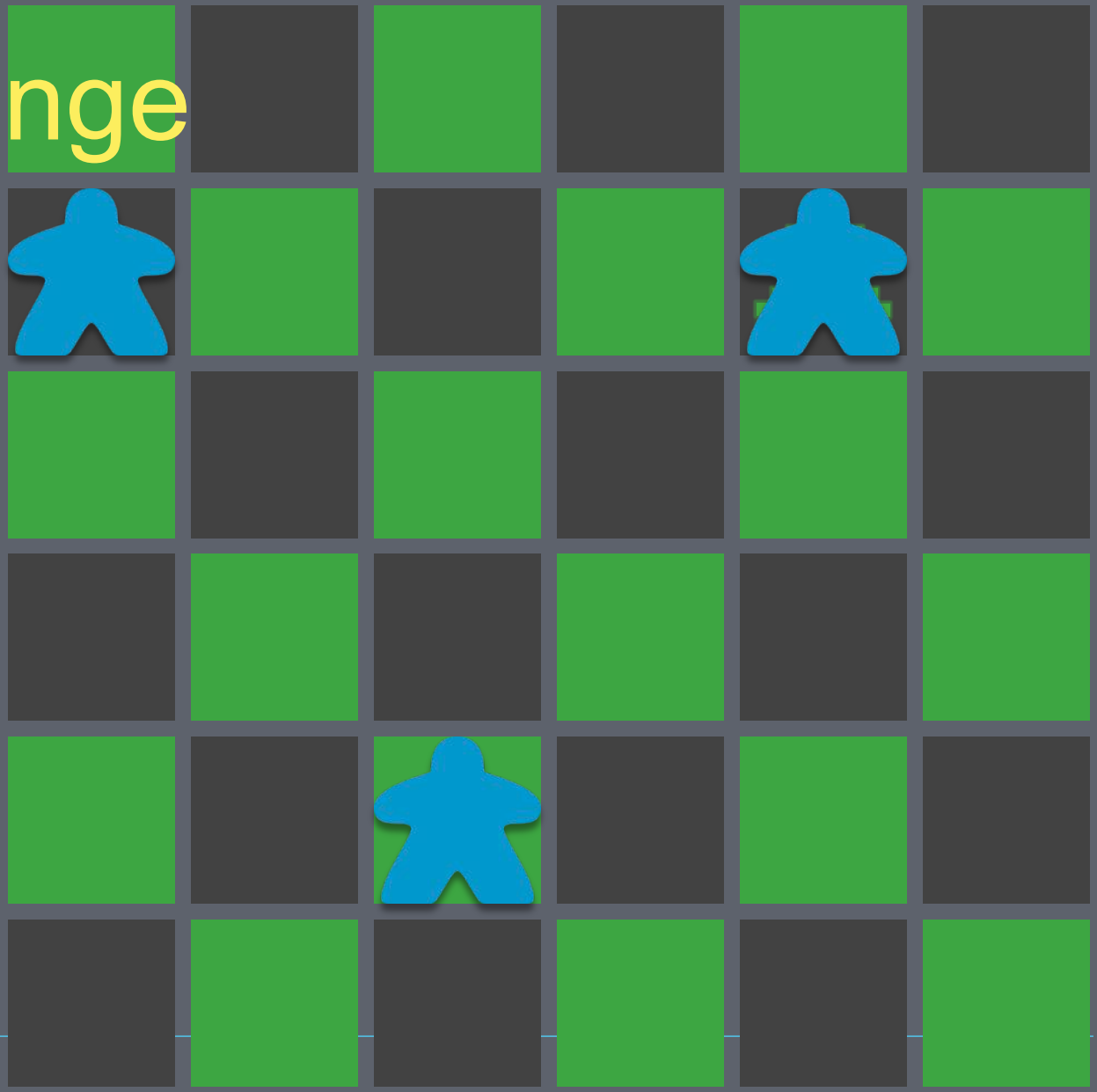


3. Testing Challenge

Few testers

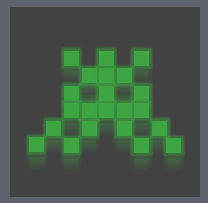


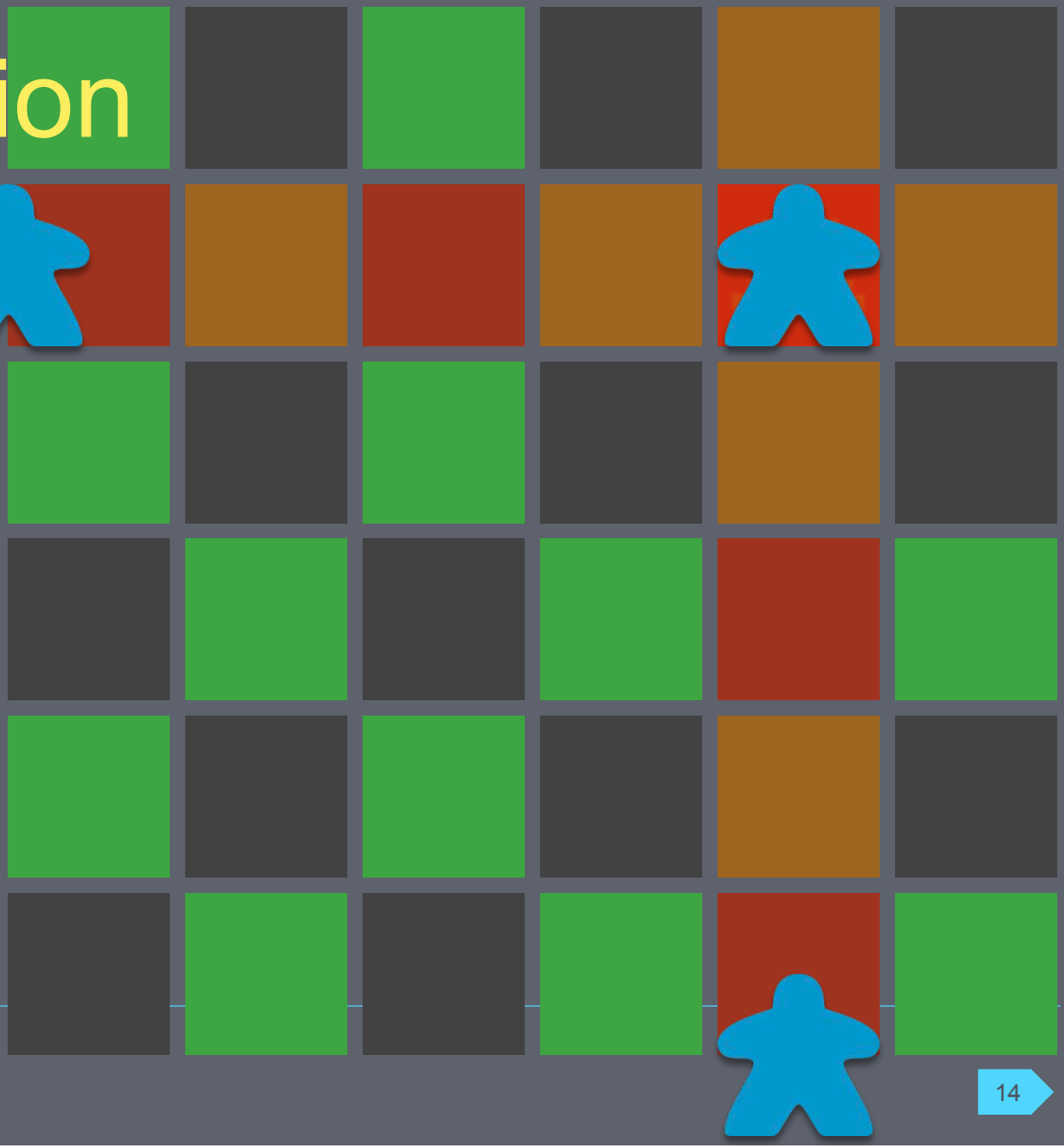




4. Testing Decision

Prioritize



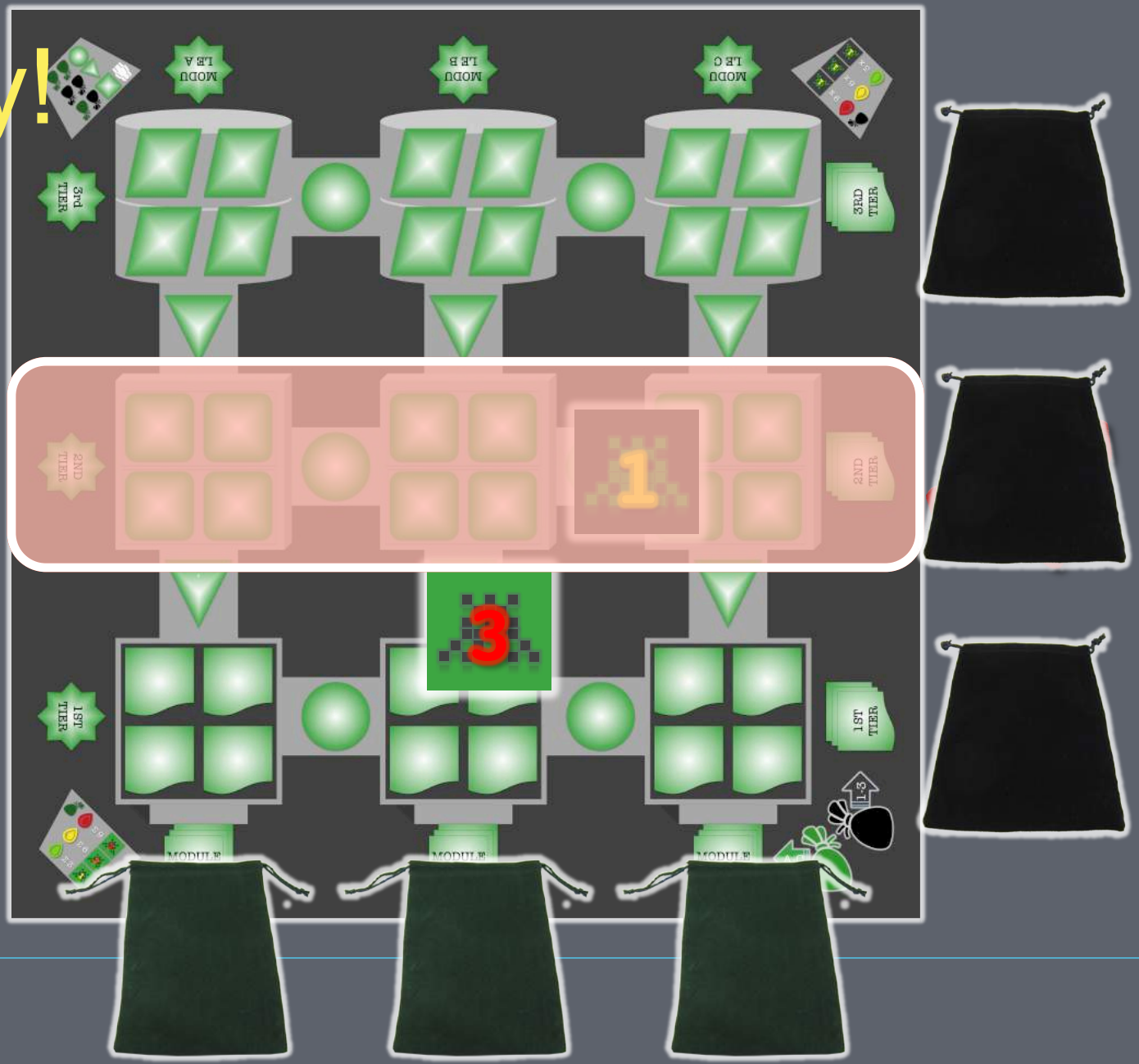


Let's Play!

Analyze!

Test!

Close!



Player Decisions = Tester Decisions

How should I allocate my time between analysis and test?

Which areas have high severity and complexity?

When should I stop testing in one area and move to next?

When should I close the test?

Find the Bug - Think like a Tester!

Plan
Time and resources

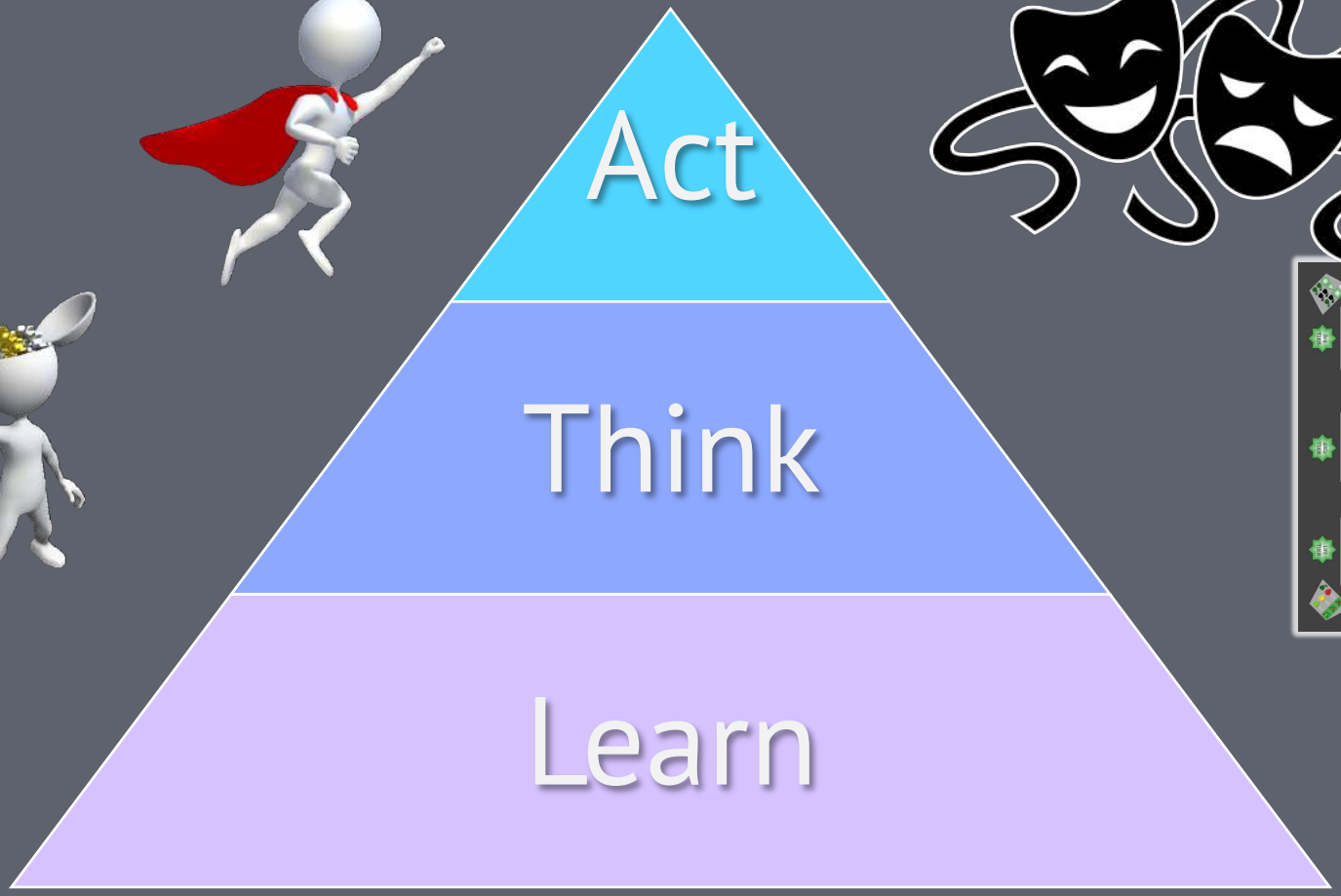
Analyze
Defect density

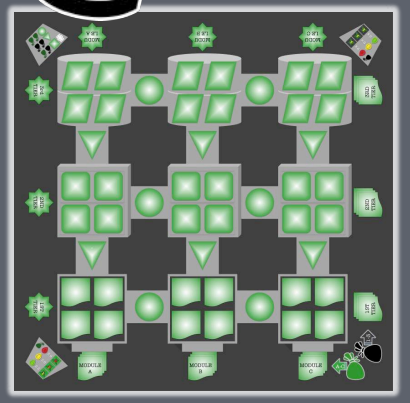
Design
Risk-based testing

Execute
Bug reporting

Close
Closure decision

Learn – Think - Act





”A Game gives Experience a Meaning”

”Within narrative we order and reorder the givens of experience. We give experience a form and a meaning.”

J. Hillis Miller, ”Narrative”

Narrative play

Situation: Where am I?

Character: Who am I?

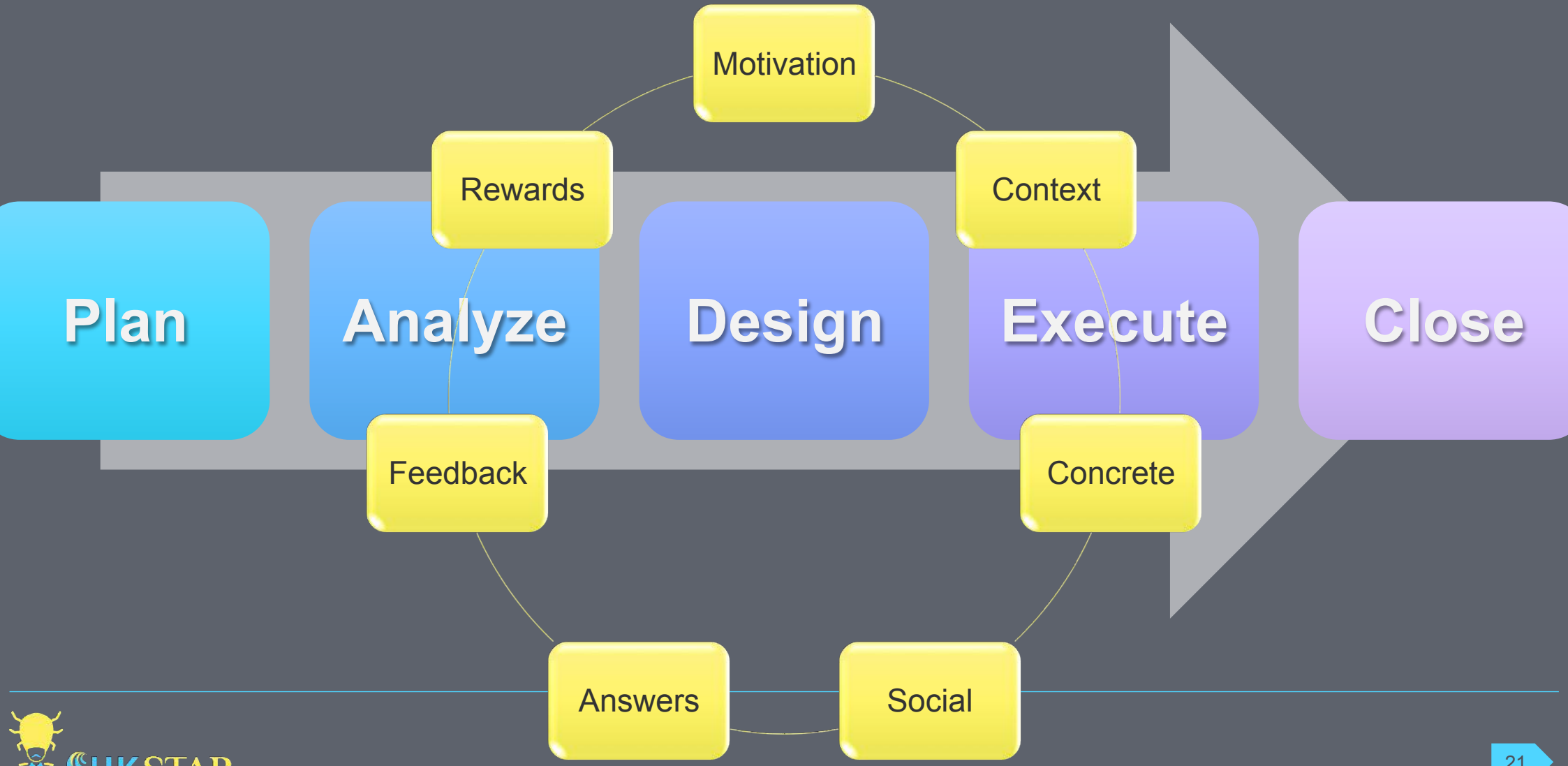
Form: What happens?

”Distill the Key Parts into a Game Form”

*”Consider the challenge of distilling an epic story into a game, I started to develop a general approach that I call the ’**scripted game system**’. Essentially, this is a method of distilling the key parts of a story and presenting them in game form.*

Reiner Knizia, ”The Design and Testing of Lord of the Rings”

Act like a Tester

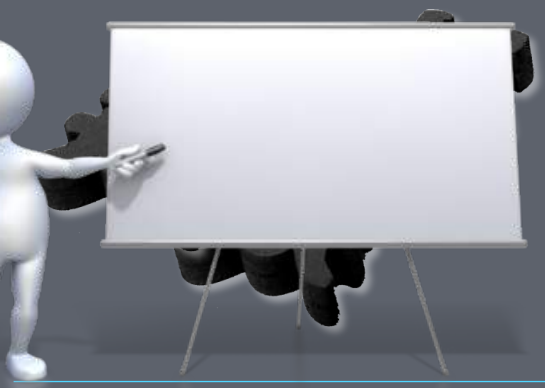


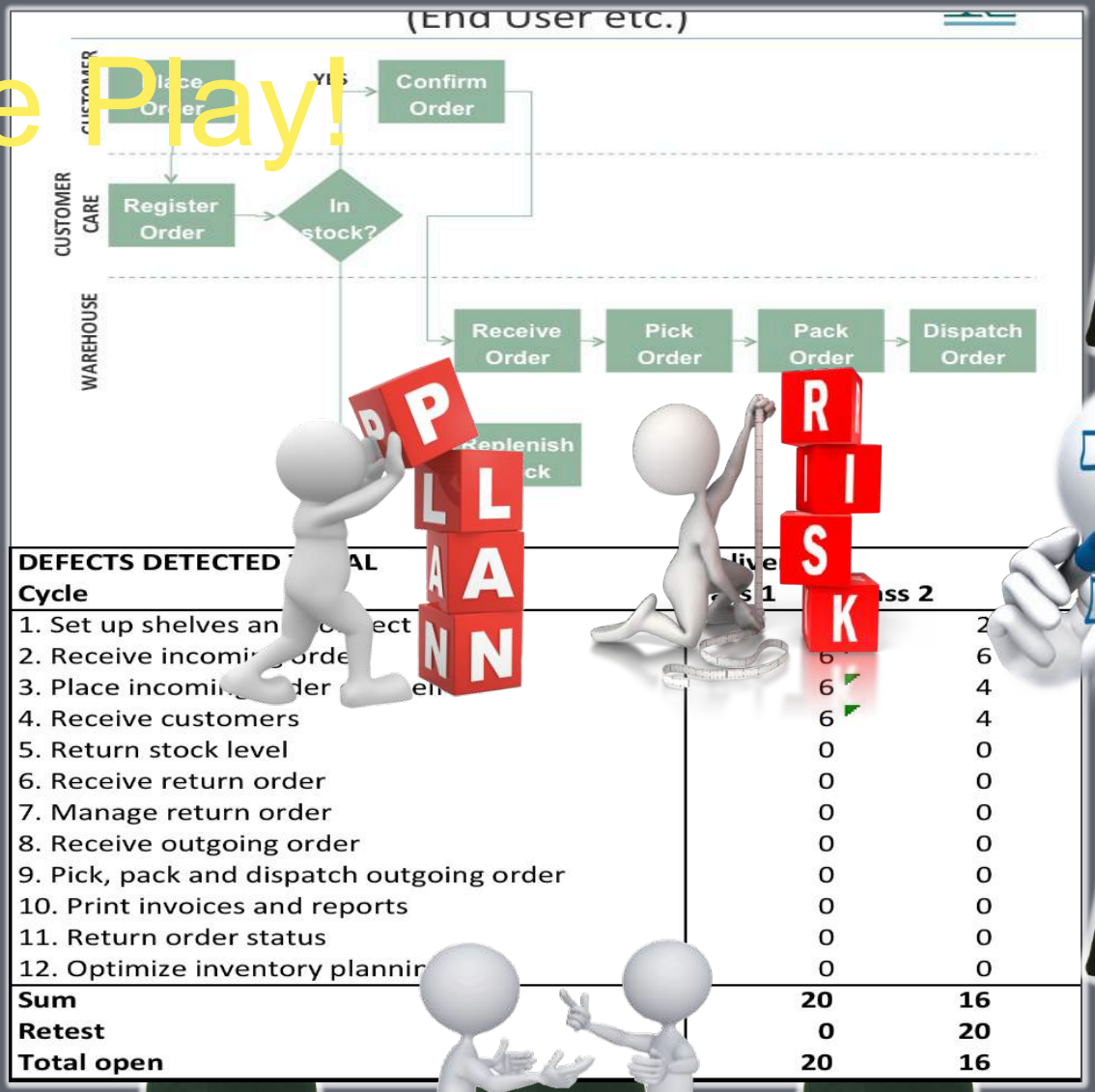
Let's Role Play!

Analyze!

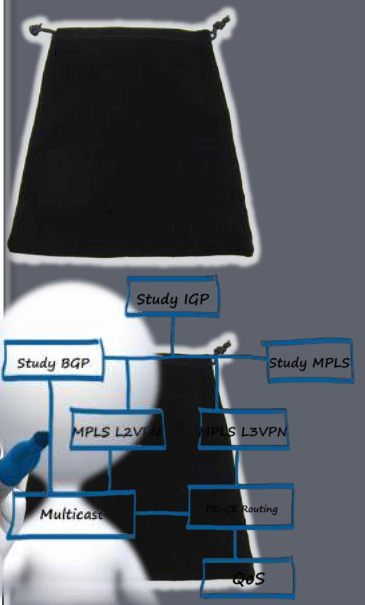
Test!

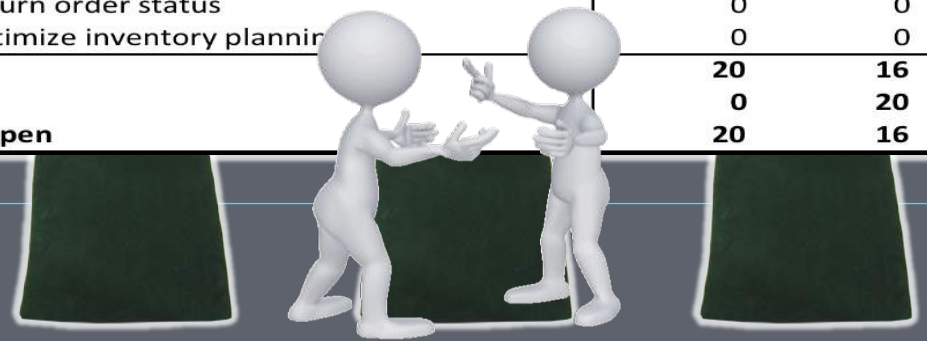
Close!





DEFECTS DETECTED AL		
Cycle	s 1	ss 2
1. Set up shelves an ect		2
2. Receive incomi orde	6	6
3. Place incomi der el	6	4
4. Receive customers	6	4
5. Return stock level	0	0
6. Receive return order	0	0
7. Manage return order	0	0
8. Receive outgoing order	0	0
9. Pick, pack and dispatch outgoing order	0	0
10. Print invoices and reports	0	0
11. Return order status	0	0
12. Optimize inventory plannir	0	0
Sum	**20**	**16**
Retest	**0**	**20**
Total open	**20**	**16**





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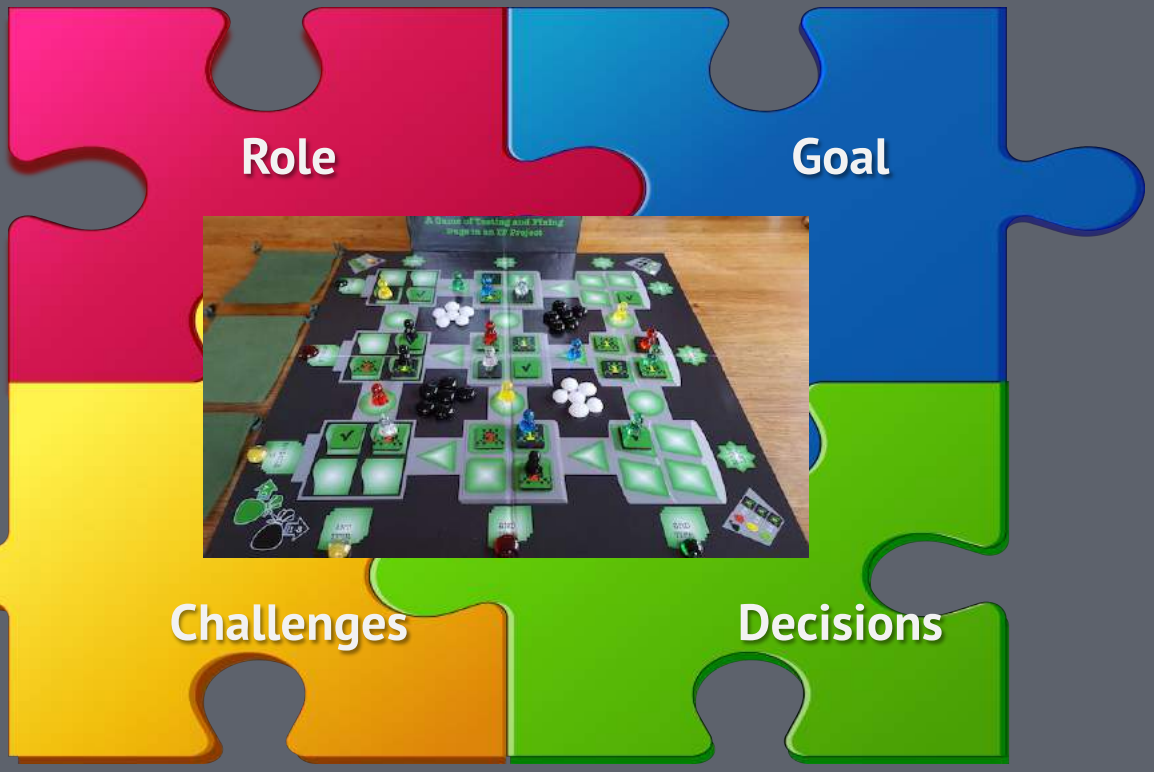
Find the Bug! in ”Real Life”

Testification: Think and Act like a Tester



Thank you for your Attention!

Nicholas Hjelmberg

Test Manager - Sweden

APPENDIX

Find the Bug – Agile!

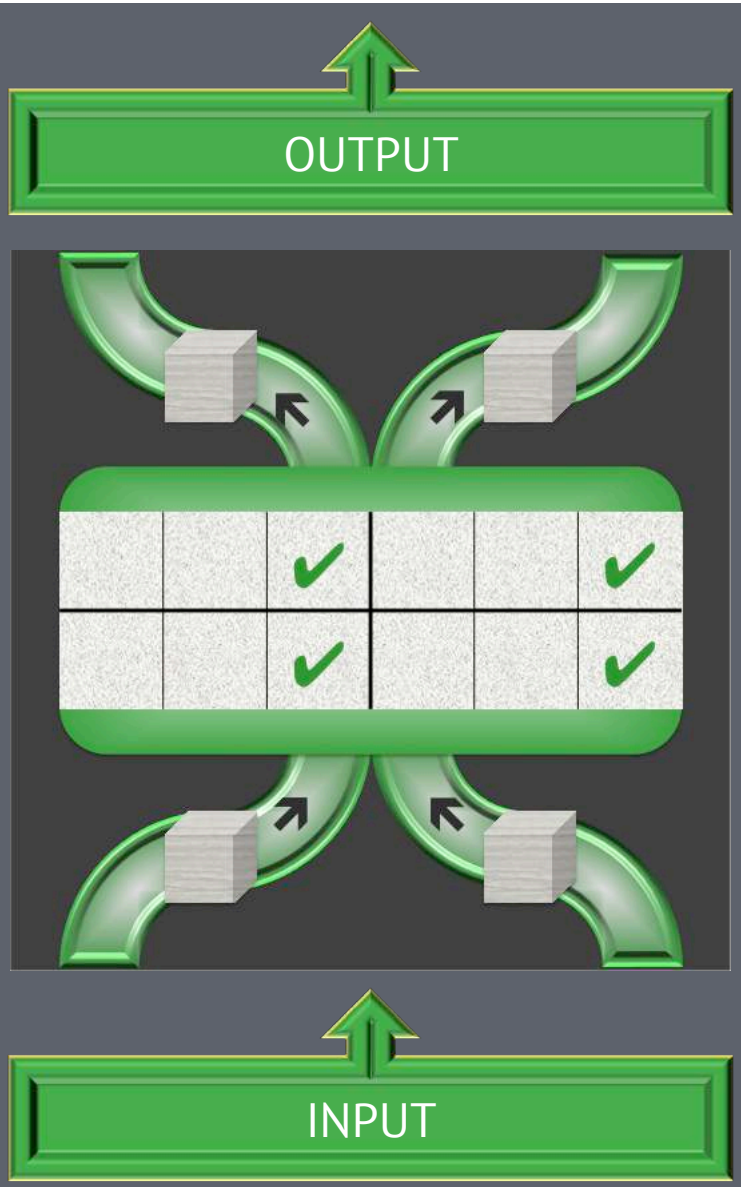
Role Playing, Detailed Contents

1. Testing Role

Play a scrum master

Play with components

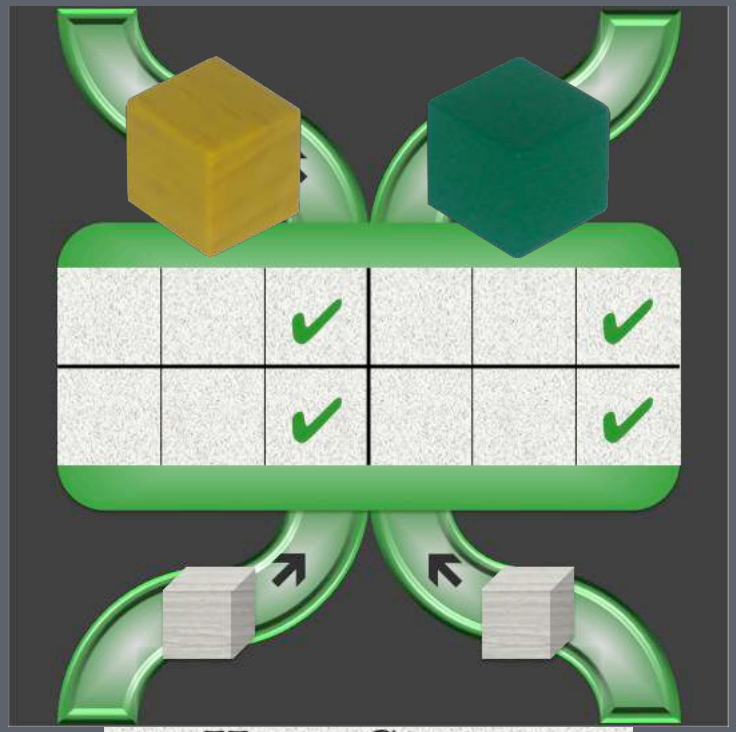
with input and output

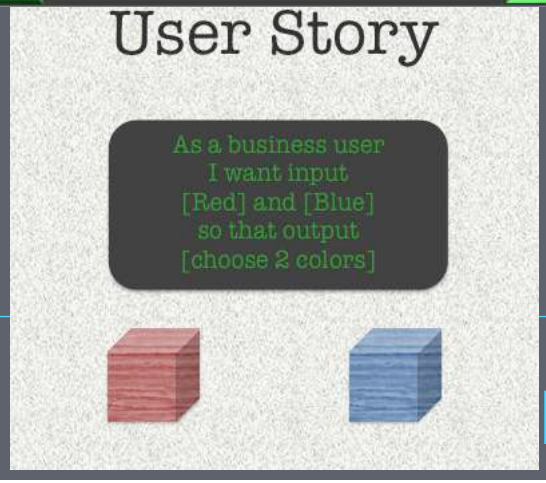


2. Testing Goal

Implement user stories

As a [player]
I want [input]
so that [output]



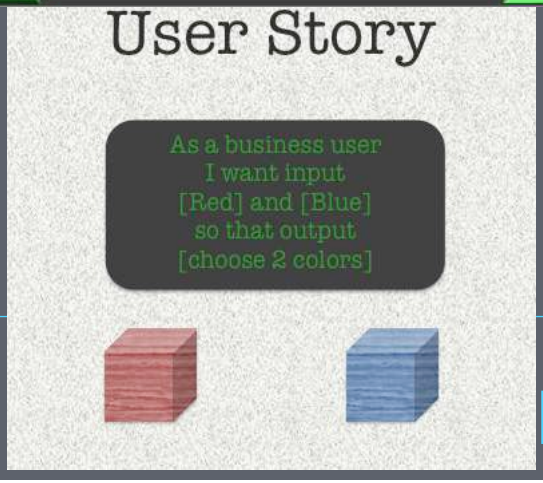


3. Testing Challenge

Test-driven development

Fail tests

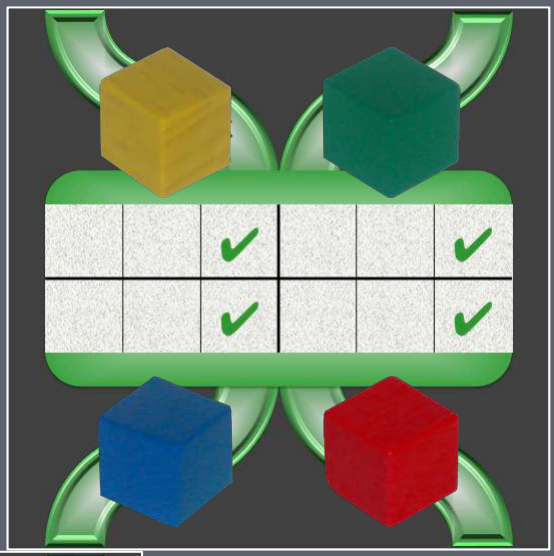
Pass tests

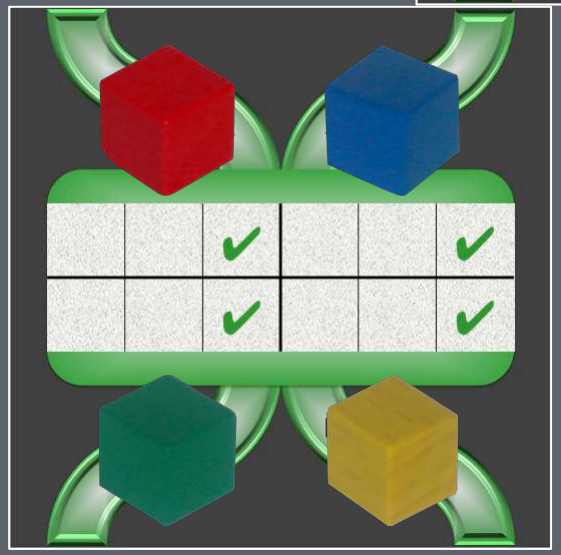


4. Testing Decision

Early & continuous delivery

(The Agile Manifesto)





Player Decisions = Scrum Decisions

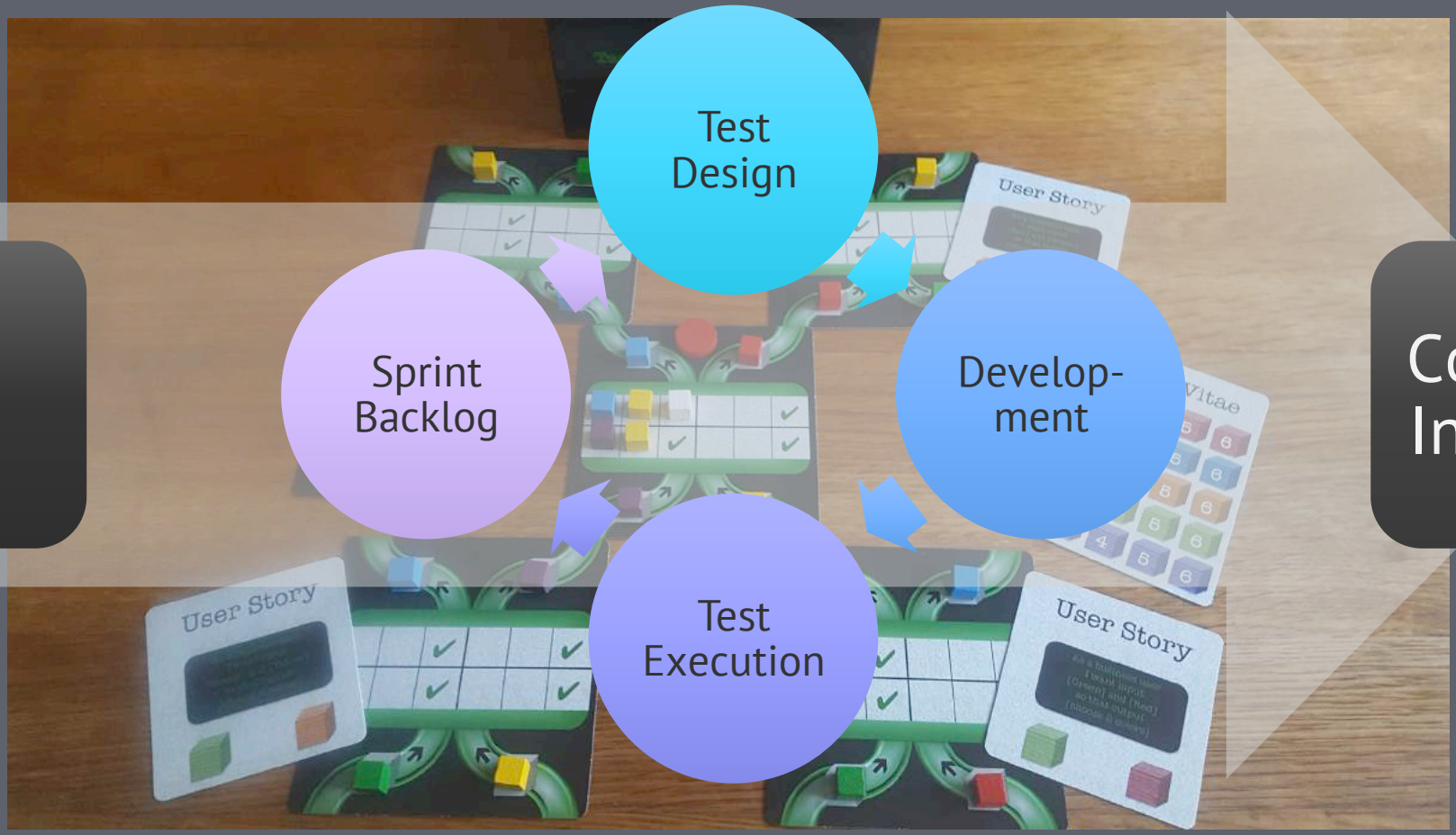
How do product owners create testable user stories?

How are the code and test data repositories managed?

How do testers and developers cooperate in test-driven development?

How is the continuous integration managed?

Find the Bug Agile – Think like Scrum

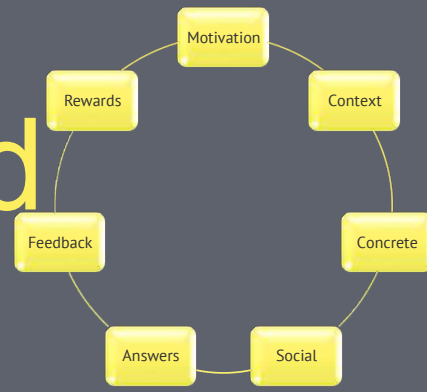


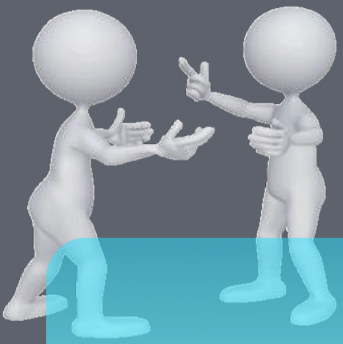
Product Backlog

Continuous Integration

Plan

Plan with the End in Mind





Interview

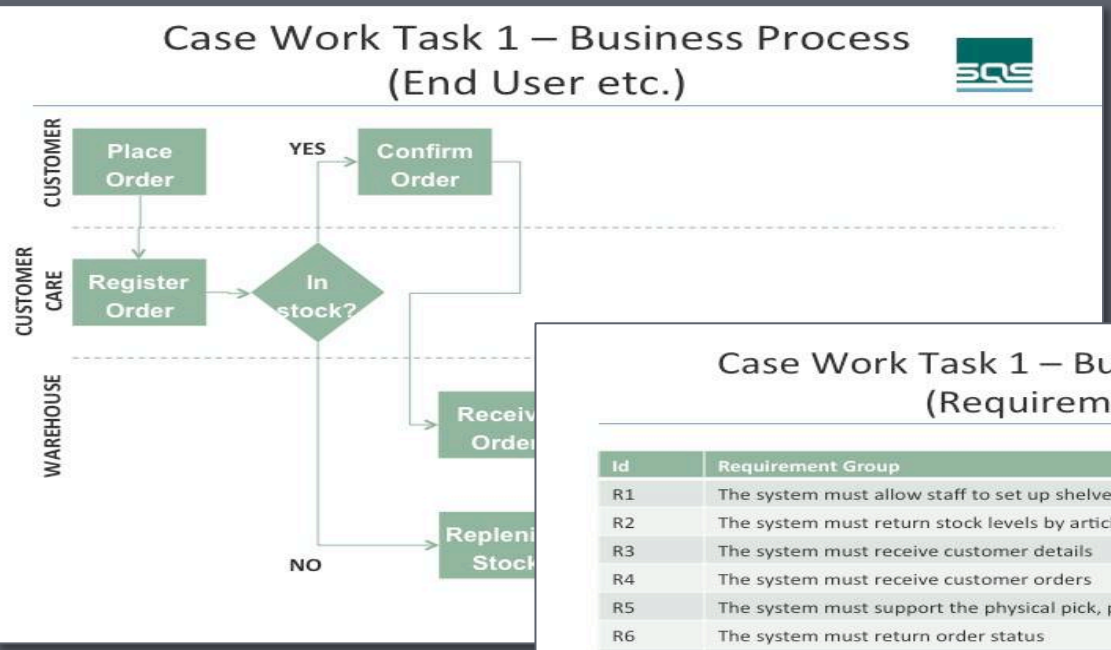
Artefacts

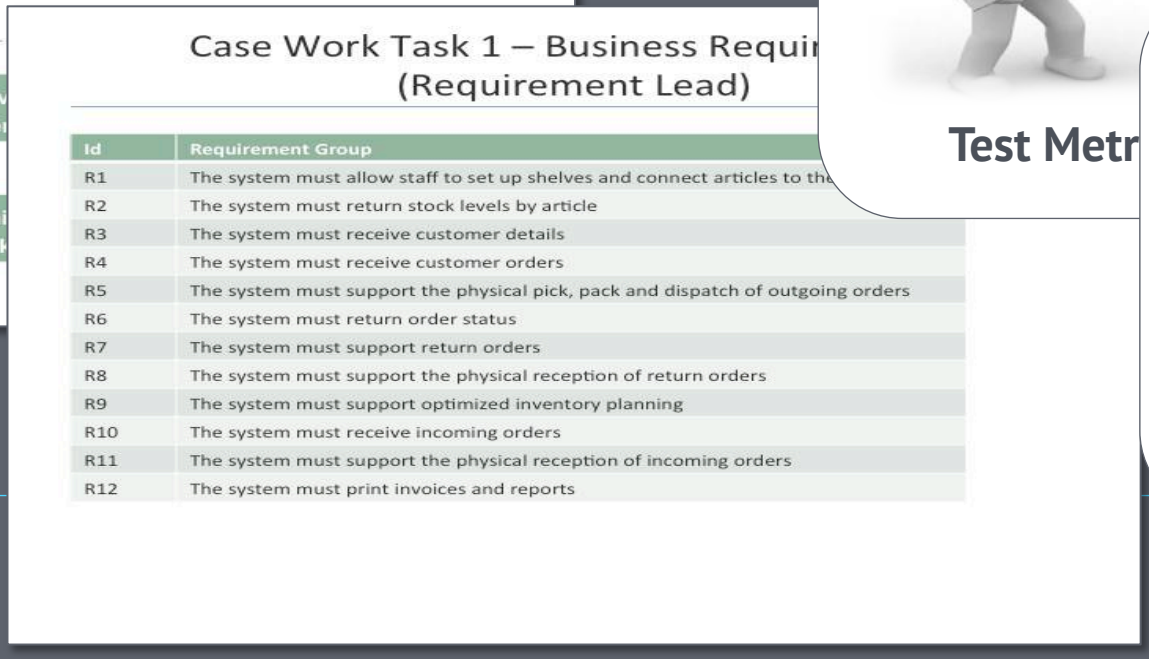
Test Plan

Mitigations

Sample Game Components

Artefacts





Id	Requirement Group
R1	The system must allow staff to set up shelves and connect articles to th
R2	The system must return stock levels by article
R3	The system must receive customer details
R4	The system must receive customer orders
R5	The system must support the physical pick, pack and dispatch of outgoing orders
R6	The system must return order status
R7	The system must support return orders
R8	The system must support the physical reception of return orders
R9	The system must support optimized inventory planning
R10	The system must receive incoming orders
R11	The system must support the physical reception of incoming orders
R12	The system must print invoices and reports

Mitigations

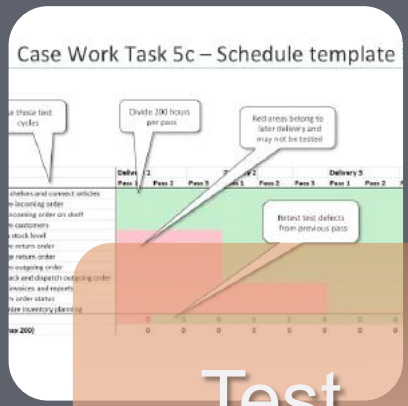
Analyze

Analyze with a Quality Mindset

Artefacts

Risks

Risk-based Testing

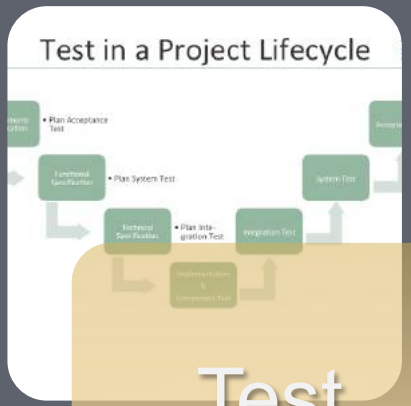


Test Schedule

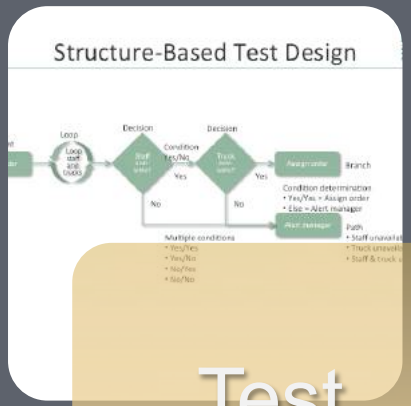
Design

Test the Right Things and test Things Right

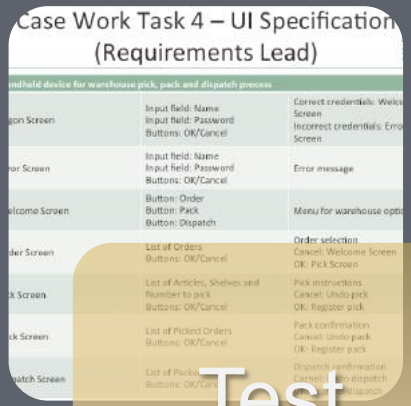
Artefacts



Test Level



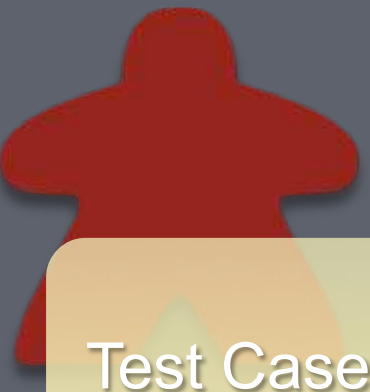
Test Method



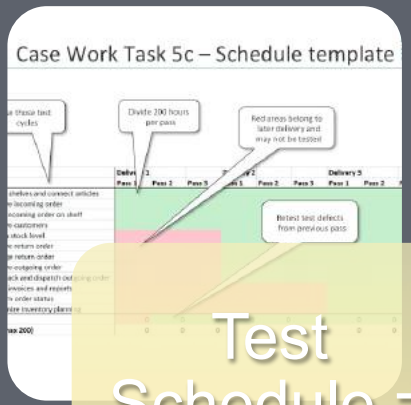
Test Cases

Execute as Planned
Replan Execution

Execute



Test Cases = ”Test Hours”



Test Schedule = Hour Allocation

- Risks
+ Mitigations

Found Bugs

Sample Execution

S DETECTED TOTAL	Delivery 1			Delivery 2			Delivery 3		
	Pass 1	Pass 2	Pass 3	Pass 1	Pass 2	Pass 3	Pass 1	Pass 2	Pas
p shelves and connect articles	2	2	1	1	0	0			
ive incoming order	6	6	3	1	0	0			
incoming order on shelf	6	4	0	1	0	0			
ive customers	6	4	0	1	0	0			
rn stock level	0	0	0	0	0	0			
ive return order	0	0	0	4	3	3			
					3				
					4				
					6				
					4				
					6				

Unexpected Event 1

Your testers complain that no stock levels are returned to the ERP system. When investigating, the integration test lead admits that INT11 failed the test.

You may not test cycle 5. Return stock level until Delivery 3. In addition, you lose 20 testing hours during Delivery 2, Pass 1.

MITIGATION

Entry and Exit Criteria

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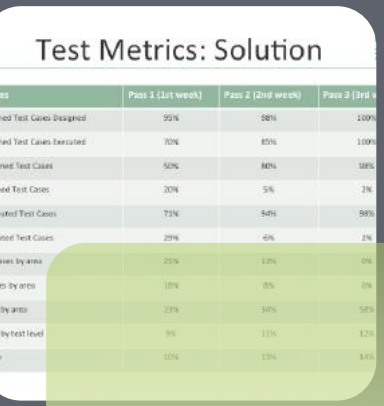
Close

Close when everything is properly packed



Test Result

Test Presen-tation

Lessons Learned

Continuous improve-ment