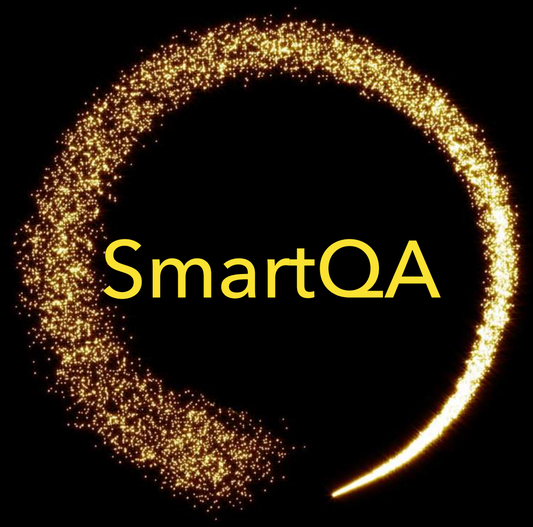

IST Masterclass
Session #2

"Diving into IST"

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www.stagsoftware.com

TOPICS

Session testing - Key aspects

Deep dive into IST

Concept #1 - EUT granularity

Concept #2 - Levels, Types & Techniques

Concept #3 - Test scope

Concept #4 - User story & granularity

Sprint test strategy

Session testing - Key aspects

A session is
not just about checking,
which is compliance.

It is about
reconnaissance,
exploring,
questioning,
diving deep,
to understand well,
hypothesising potential issues,
designing scenarios
and finally validation.

Observe. Take notes. Be lightweight.

Use keywords, short phrases to record information.
Be free form in writing, write anywhere, any direction.
Use pictures, doodles, mind-map(s), word-art.

Observe. Take notes. Be lightweight.

Use keywords, short phrases to record information.
Be free form in writing, write anywhere, any direction.
Use pictures, doodles, mind-map(s), word-art.
Use Post-Its. Use simple editor, note-pad.
Be liberal with colours.
Tag information -

as questions, ideas, observations, scenarios,
stuff to check-out, potential issues and bugs.

Given that we have less time to do,
we need **clarity**, **focus** and **adaptation**.

Given that we have less time to do,
we need **clarity**, **focus** and **adaptation**.

Start with given clarity, and then enhance.
Sift information to set up initial objective.
Expand understanding, continually revise and reorient.

Testing in short sessions is not random,
due to lack of precise information.

Testing in short sessions is not random,
due to lack of precise information.

It is about **constantly defogging**.
It is staying focused and continually reorienting.
It is knowing that it is a journey and not the end.

What does it take

to test in short sessions?

What does it take
to test in short sessions?

Being focussed, but being open.
Being purposeful, but meandering curiously.
Plan session objectives, but adapt and revise.

powerfully fluid

Deep dive into
Immersive Session Testing

testing is exploration

testing is **scientific** exploration

and exploration is a human activity
aided by tools & technology

what is the first thing you do
before you embark on an exploration?

do a survey “reconnaissance"

RECONNAISANCE | **EXPLORATION** | **RECOUP**

Get a big picture of system and create maps to explore

who are the end users (persona)
what are the needs i.e.system elements (entities)
what are the expectations (attributes)
where will it be used (environment)

Landscaping

Landscaping

do survey, understand the big picture

Landscaping

do survey, understand the big picture

e.g ELearning system

Persona
Administrator
Student
Supervisor

persona

who are the end users

Landscaping

do survey, understand the big picture

e.g ELearning system

Persona
Administrator
Student
Supervisor

persona

who are the end users

entities

what do you want to test

component, features requirements, flows

Feature
Create User
Upload content
Requirement
Go through lessons in courses
Take final assessment
Flow
Complete course, by taking it and doing the final assessment

Landscaping

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Administrator
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Migration
All course info of 2.5, 2.7, 3.0 to be 'migrate-able'
Performance
Video streaming should commence in a max of 2s with 500 concurrent users.

attributes

what do you want to test **for**

Landscaping

do survey, understand the big picture

e.g ELearning system

Persona
Administrator
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persona

who are the end users

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attributes

what do you want to test **for**

environment

where do you want to test on?

Environment	
OS	Mac, Windows, Linux
Browser	Firefox, Chrome, IE11
Database	Mongo,MySQL,PostgreSQL
MobileOS	Android,IOS
Device	Laptop,Tablet,Mobile

now that you have done the survey, what next?

now that you have done the survey,
what next?

create maps

to guide you and chalk out routes

RECONNAISANCE | **EXPLORATION** | **RECOUP**

Get a big picture of system and create maps to explore

who uses what - Persona Map
what is expected of what - Scope Map
what affects what - Interaction Map
where is it used - Environment map

Mapping

Persona map

map out who uses what

Persona map

map out who uses what

persona

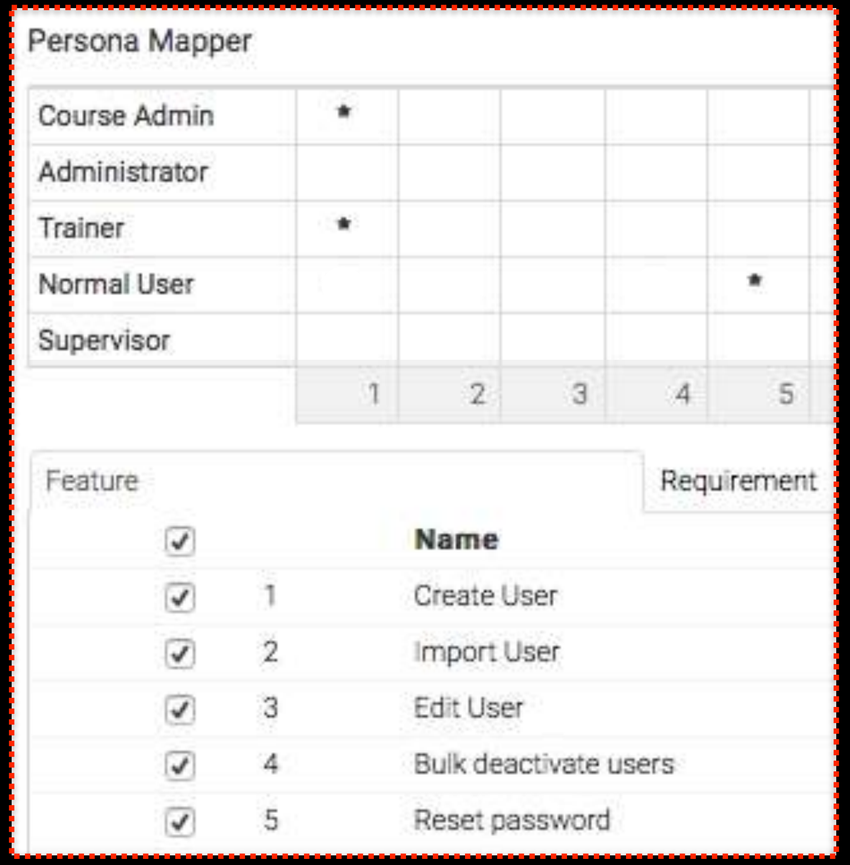
who are the end users

→ who uses what →

entities

what do you want to test

component, features requirements, flows



Scope map

map out user's expectations

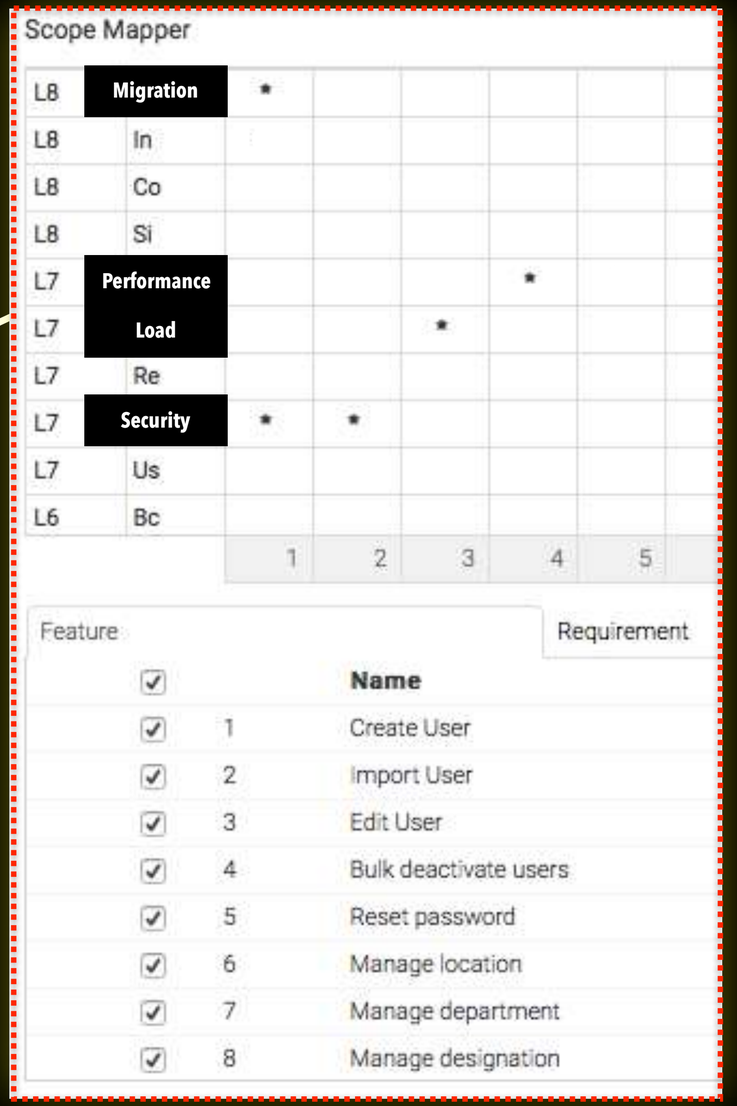
Scope map

map out user's expectations

what-to-test-for-what

attributes

what do you want to test **for**

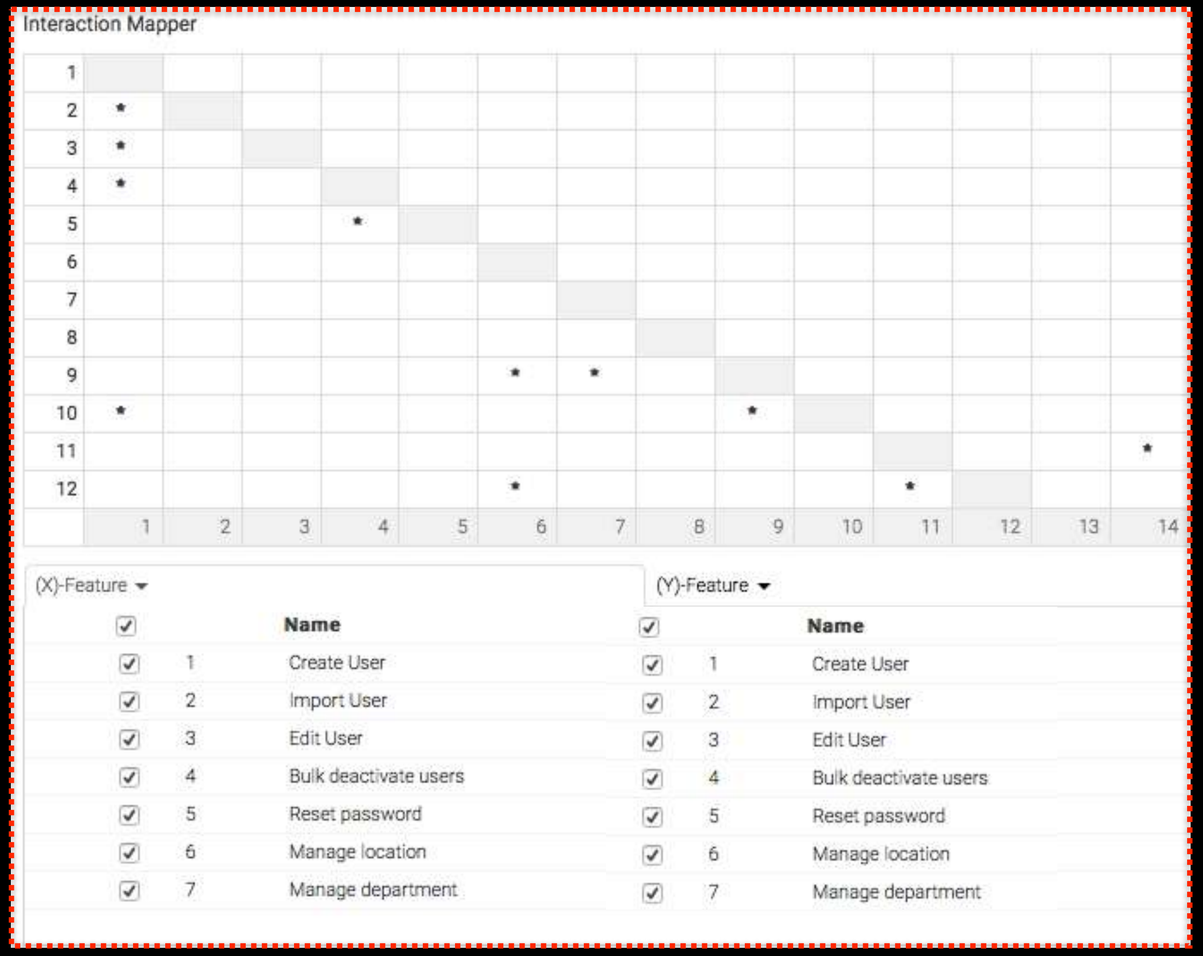


Interaction map

map out what may affect what, to intelligently regress

Interaction map

map out what may affect what, to intelligently regress



entities

what do you want to test

component, features
requirements, flows

F1 –> F2

F1 –> Flow3

Environment map

map out environments to test on

environment
where do you want to test on?

Env #1
Env #2
...

Client Environment	
1	Mac,Safari
2	Windows,Chrome
3	Windows,IE11
4	Linux,Firefox

now that we have the maps, what do we do next?

chalk out routes

the approach/plan

Now you are ready to explore.

the approach/plan is really
(a simple cartesian product)

{What-to-test x **Test-for-what** x **Where-to-test}**
{What-to-(re)test x **(re)Test-for-what** x **Where-to-(re)test}**

Now you are ready to explore.

RECONNAISANCE

EXPLORATION

RECOUP

Dive deep to understand entities and then evaluate them

understand what entity does/should do
what are conditions governing behaviour?
what are the acceptance criteria?
what may be potential issues probable?

RECONNAISANCE

EXPLORATION

RECOUP

Dive deep to understand entities and then evaluate them

understand what entity does/should do.
what are conditions governing behaviour?
what are the acceptance criteria?
what may be potential issues probable?

come up with scenarios to try out
come up with smart checklist to check/test
create suites, review, revise
note down issues, suggestions, observations

understand that

a map is not the terrain

as you explore, observe, learn, adapt, improvise, refine

observe, learn, adapt, improvise, refine

…the landscape

- **persona**
- **entities**
- **attributes**
- **environment**

…the maps

- **persona map**
- **scope map**
- **interaction map**
- **environment map**

…route

- **session plan**

…explore

- **L9**: End user value
- **L8**: Deployment correctness
- **L7**: Attribute correctness
- **L6**: Environment correctness
- **L5**: Flow correctness
- **L4**: Behaviour correctness
- **L3:** Structural integrity
- **L2**: Interface correctness
- **L1**: Input correctness

ok, what next?

rest and recover

i.e. stop, analyse and refine

RECONNAISANCE

EXPLORATION

RECOUP

Analyse what has been done, learn and course correct

how is test quality - adequate?
what is test progress - on track?
how is system quality - how clean?

Dashboard

RECONNAISANCE

EXPLORATION

RECOUP

Analyse what has been done, learn and course correct

how is test quality - adequate?
what is test progress - on track?
how is system quality - good enough?

sharpen system understanding
revise scenarios, smart checklists
revise plan(s)

Landscape, Maps, Scenarios,

Plan, Scope,Checklists

Dashboard

stop, analyse and refine

adequacy
scenarios
good enough

progress
are we
on track?

quality
how good is
the system?

Dashboard

stop, analyse and refine

adequacy scenarios good enough	**progress** are we on track?	**quality** how good is the system?
Inputs	**Activities** (plan vs.actual)	**Outcomes**
1. Attributes considered? 2. Environ. considered? 3. Scenarios at all levels? 4. +/- distribution ok? 5. All personas covered?	1. wrt attributes 2. wrt attributes 3. wrt entities 4. wrt interactions 5. wrt persona	1. wrt attributes 2. wrt attributes 3. wrt entities 4. wrt interactions 5. wrt persona
Use Maps+Routes	Use Maps+Routes+Exec Info	Use Maps+Routes+Exec Info

Summarising...

Landscape
do survey, understand the big picture

Persona map
map out who uses what

Scope map
map out user's expectations

Interaction map
map out what may affect what

Environment map
map out environments to test on

Reconnaissance
do survey, make maps

Summarising...

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Environment map
map out environments to test on

Session plan
chalk out routes

Design
create test scenarios

Reconnaissance
do survey, make maps

Exploration
observe, search, learn, refine

Summarising...

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chalk out routes

Design
create test scenarios

Dashboard
stop, analyse and refine

Reconnaissance
do survey, make maps

Exploration
observe, search, learn, refine

Recoup
stop, analyse and refine

Concept #1 - EUT granularity

WHAT TO TEST? Entity Under Test (EUT)

structural
COMPONENT

Basic building block

WHAT TO TEST? Entity Under Test (EUT)

technical **FEATURE**	Basic offering from system
structural **COMPONENT**	Basic building block

WHAT TO TEST? Entity Under Test (EUT)

user REQUIREMENT	Enables an user to do a task
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WHAT TO TEST? Entity Under Test (EUT)

business FLOW	A set of tasks by different users to accomplish a business objective
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technical FEATURE	Basic offering from system
structural COMPONENT	Basic building block

Concept #2 - Levels, Types & Techniques

satisfy QUALITY level

by TEST for ISSUES

L1 Input correctness	**Input validation test** - Limits, duplicates, data type, non-unique, data dependency

satisfy QUALITY level

by TEST for ISSUES

L2 Interface correctness	**Interface correctness test (Data/UI) -** UI interface, Data, Message, File format
L1 Input correctness	**Input validation test** - Limits, duplicates, data type, non-unique, data dependency

satisfy QUALITY level

by TEST for ISSUES

L3 Structural correctness	**Structural test -** Resources, Exceptions, Timeouts, Synchronisation, Side effects, Coverage
L2 Interface correctness	**Interface correctness test (Data/UI) -** UI interface, Data, Message, File format
L1 Input correctness	**Input validation test** - Limits, duplicates, data type, non-unique, data dependency

satisfy QUALITY level

by TEST for ISSUES

L4 Behaviour correctness	**Functional test-** Behaviour correctness	**Access control test-** Roles & access issues
L3 Structural correctness	**Structural test -** Resources, Exceptions, Timeouts, Synchronisation, Side effects, Coverage	
L2 Interface correctness	**Interface correctness test (Data/UI) -** UI interface, Data, Message, File format	
L1 Input correctness	**Input validation test** - Limits, duplicates, data type, non-unique, data dependency	

satisfy QUALITY level

by TEST for ISSUES

L5 Flow correctness	**Use case test-** Higher order behaviour	**End-to-end test -** Business flow issues
L4 Behaviour correctness	**Functional test-** Behaviour correctness	**Access control test-** Roles & access issues
L3 Structural correctness	**Structural test -** Resources, Exceptions, Timeouts, Synchronisation, Side effects, Coverage	
L2 Interface correctness	**Interface correctness test (Data/UI) -** UI interface, Data, Message, File format	
L1 Input correctness	**Input validation test** - Limits, duplicates, data type, non-unique, data dependency	

satisfy QUALITY level

by TEST for ISSUES

L6 Environment correctness	**Configuration test-** compatibility issues	
L5 Flow correctness	**Use case test-** Higher order behaviour	**End-to-end test -** Business flow issues
L4 Behaviour correctness	**Functional test-** Behaviour correctness	**Access control test-** Roles & access issues
L3 Structural correctness	**Structural test -** Resources, Exceptions, Timeouts, Synchronisation, Side effects, Coverage	
L2 Interface correctness	**Interface correctness test (Data/UI) -** UI interface, Data, Message, File format	
L1 Input correctness	**Input validation test** - Limits, duplicates, data type, non-unique, data dependency	

satisfy QUALITY level

by TEST for ISSUES

L7 Attribute correctness	**Load test**	**Performance test**	**Security test**	**Volume test**	**Attribute issues**
L6 Environment correctness	**Configuration test-** compatibility issues				
L5 Flow correctness	**Use case test-** Higher order behaviour	**End-to-end test -** Business flow issues			
L4 Behaviour correctness	**Functional test-** Behaviour correctness	**Access control test-** Roles & access issues			
L3 Structural correctness	**Structural test -** Resources, Exceptions, Timeouts, Synchronisation, Side effects, Coverage				
L2 Interface correctness	**Interface correctness test (Data/UI) -** UI interface, Data, Message, File format				
L1 Input correctness	**Input validation test** - Limits, duplicates, data type, non-unique, data dependency				

satisfy QUALITY level

by TEST for ISSUES

L8 Deployment correctness	**Deployment test**	**Data migration test**	**Installation & CFG test**		
L7 Attribute correctness	**Load test**	**Performance test**	**Security test**	**Volume test**	**Attribute issues**
L6 Environment correctness	**Configuration test-** compatibility issues				
L5 Flow correctness	**Use case test-** Higher order behaviour	**End-to-end test -** Business flow issues			
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satisfy QUALITY level

by TEST for ISSUES

L9 End user value	**User acceptance test**				
L8 Deployment correctness	**Deployment test**	**Data migration test**	**Installation & CFG test**		
L7 Attribute correctness	**Load test**	**Performance test**	**Security test**	**Volume test**	**Attribute issues**
L6 Environment correctness	**Configuration test-** compatibility issues				
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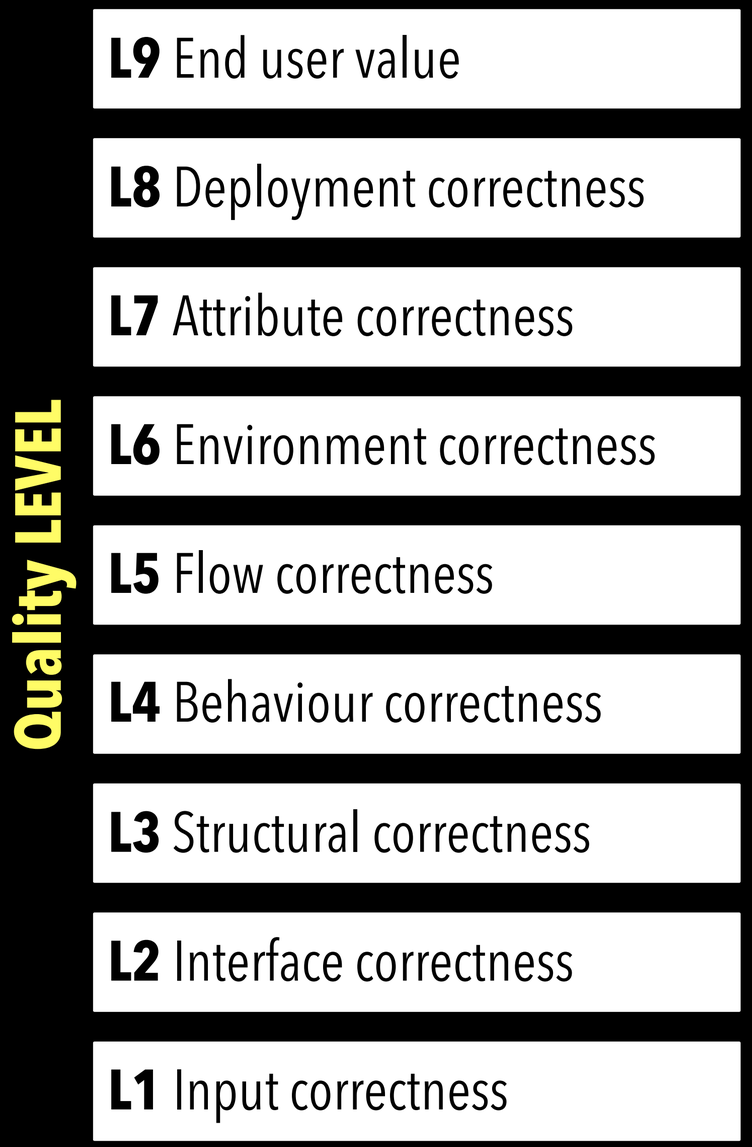
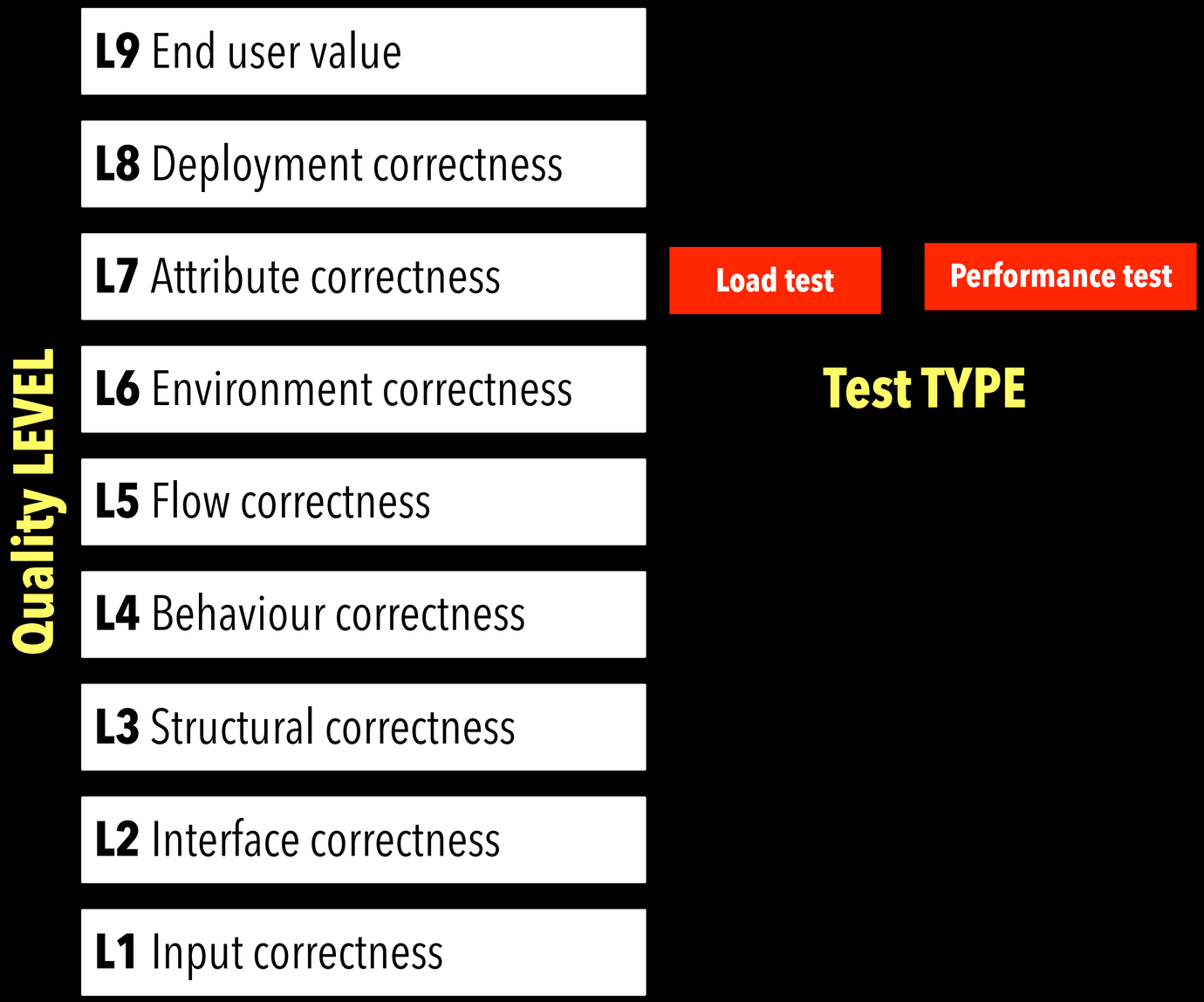
L2 Interface correctness	**Interface correctness test (Data/UI) -** UI interface, Data, Message, File format				
L1 Input correctness	**Input validation test** - Limits, duplicates, data type, non-unique, data dependency				

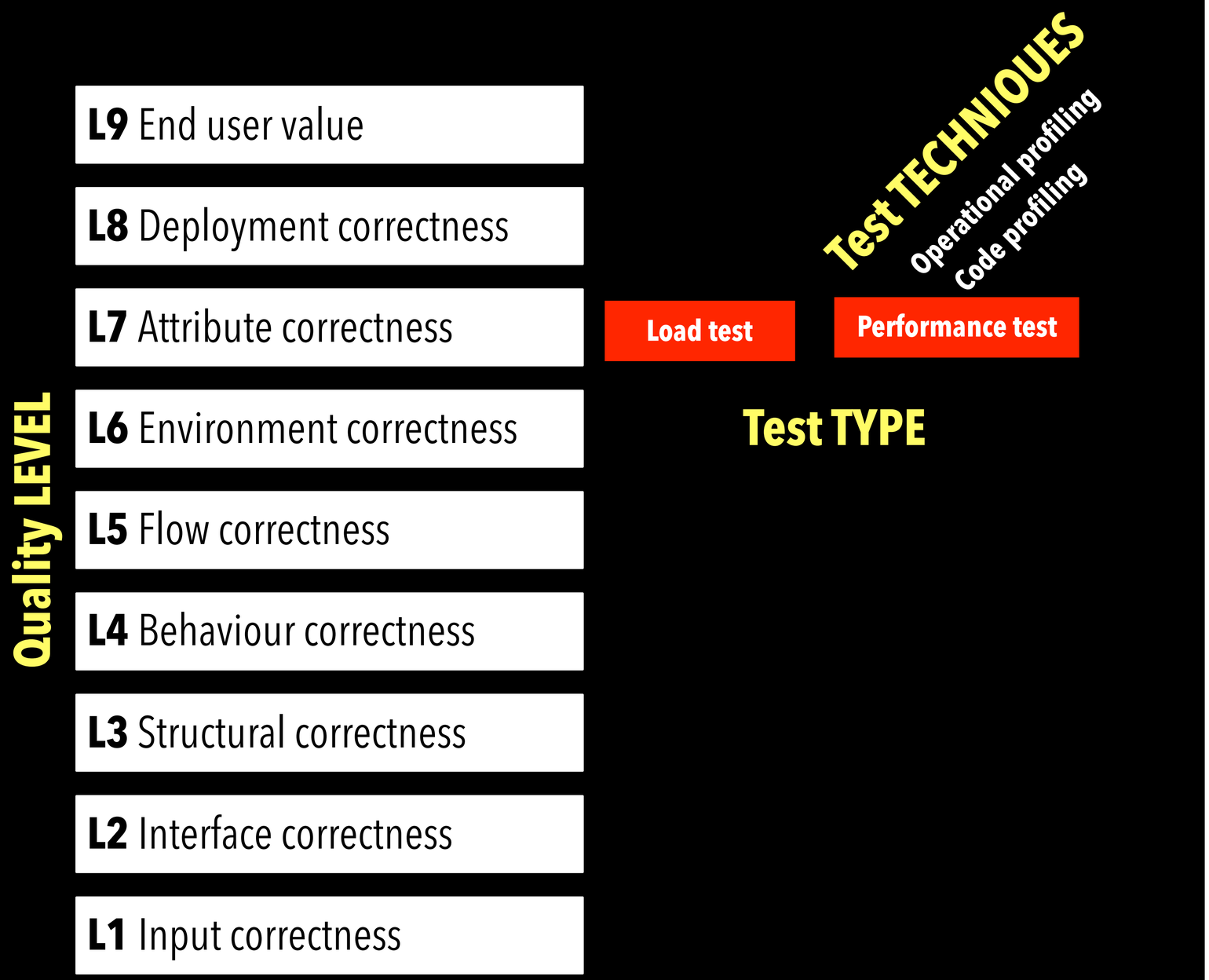


View user's expectation of quality as a series of **levels** to attain.



View user's expectation of quality as a series of **levels** to attain.

To attain a level, defects that affect this level must not be present
=> we must conduct **specific** tests



View user's expectation of quality as a series of **levels** to attain.

To attain a level, defects that affect this level must not be present
=> we must conduct **specific** tests

To do a test, we need to come up with test scenarios/cases
=> we need test **techniques**

Concept #3 - Test scope

WHAT TO TEST? Entity Under Test (EUT)

business FLOW	A set of tasks by different users to accomplish a business objective
user REQUIREMENT	Enables an user to do a task
technical FEATURE	Basic offering from system
structural COMPONENT	Basic building block

WHAT TO TEST? Entity Under Test (EUT)

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TEST FOR WHAT?

- **L9** End user value
- **L8** Deployment correctness
- **L7** Attribute correctness
- **L6** Environment correctness
- **L5** Flow correctness
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- **L2** Interface correctness
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QA TEST

DEV TEST

TEST FOR WHAT?

- **L9** End user value
- **L8** Deployment correctness
- **L7** Attribute correctness
- **L6** Environment correctness
- **L5** Flow correctness
- **L4** Behaviour correctness
- **L3** Structural correctness
- **L2** Interface correctness
- **L1** Input correctness

Concept #4 - User story & granularity

An user story is seen as a modern way of communicating the end user's needs and expectations in a sweet and simple format that can be easily modified.

This brevity/simplicity hides information leading to understanding in the small and potentially missing the big picture.

"As a <specific user/persona/role>"
I want <desired feature/issue that needs to be solved>,
so that <benefit from the feature>"
+ Acceptance Criteria

(www.scrumalliance.org)

User Story **is**

- **I**ndependent
- **N**egotiable
- **V**alue adding
- **E**stimable
- **S**mall
- **T**estable

User story & Entity

user
REQUIREMENT

Most often user story is this

User story & Entity

business FLOW	String user stories to see a business flow
user REQUIREMENT	Most often user story is this

User story & Entity

business FLOW	String user stories to see a business flow
user REQUIREMENT	Most often user story is this
technical FEATURE	One can spot feature(s) in a user story Sometimes extension user stories may look like this.

User story & Entity

business FLOW	String user stories to see a business flow
user REQUIREMENT	Most often user story is this
technical FEATURE	One can spot feature(s) in a user story Sometimes extension user stories may look like this.
structural COMPONENT	User story is never this

Sprint test strategy

Testing in a sprint

is about

Testing in a sprint

is about

entity	tech FEATURE	user REQUIREMENT	business FLOW

Testing in a sprint

is about

entity	tech FEATURE	user REQUIREMENT	business FLOW
that is	New	Enhanced	Fixed

Testing in a sprint

is about

entity	tech FEATURE	user REQUIREMENT	business FLOW
that is	New	Enhanced	Fixed
to	Test	Re-test	

Testing in a sprint

is about

entity	tech FEATURE	user REQUIREMENT	business FLOW
that is	New	Enhanced	Fixed
to	Test	Re-test	
for	Functionality (L5)	Attributes (L6-L9)	

Testing in a sprint

is about

entity	tech FEATURE	user REQUIREMENT	business FLOW
that is	New	Enhanced	Fixed
to	Test	Re-test	
for	Functionality (L5)	Attributes (L6-L9)	
via	Scripted	Unscripted	

Testing in a sprint

is about

entity	tech FEATURE	user REQUIREMENT	business FLOW
that is	New	Enhanced	Fixed
to	Test	Re-test	
for	Functionality (L5)	Attributes (L6-L9)	
via	Scripted	Unscripted	
by	Human	Machine	

an USER STORY could spec a FEATURE

User Story #1

technical
FEATURE

TF1

an USER STORY could spec a FEATURE, REQUIREMENT

User Story #1

technical
FEATURE

TF1

user
REQUIREMENT

TF1 TF2 TF3

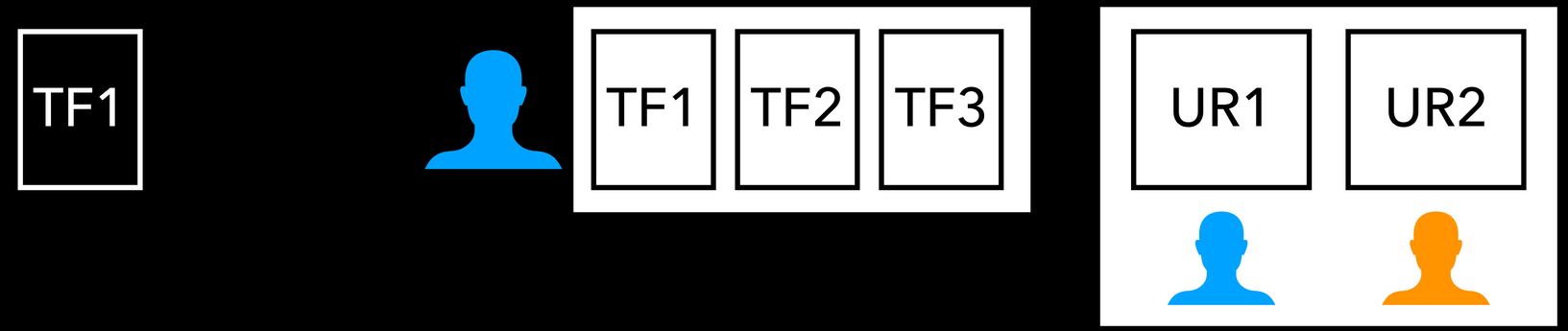
an USER STORY could spec a FEATURE, REQUIREMENT, FLOW

User Story #1

technical
FEATURE

user
REQUIREMENT

business
FLOW

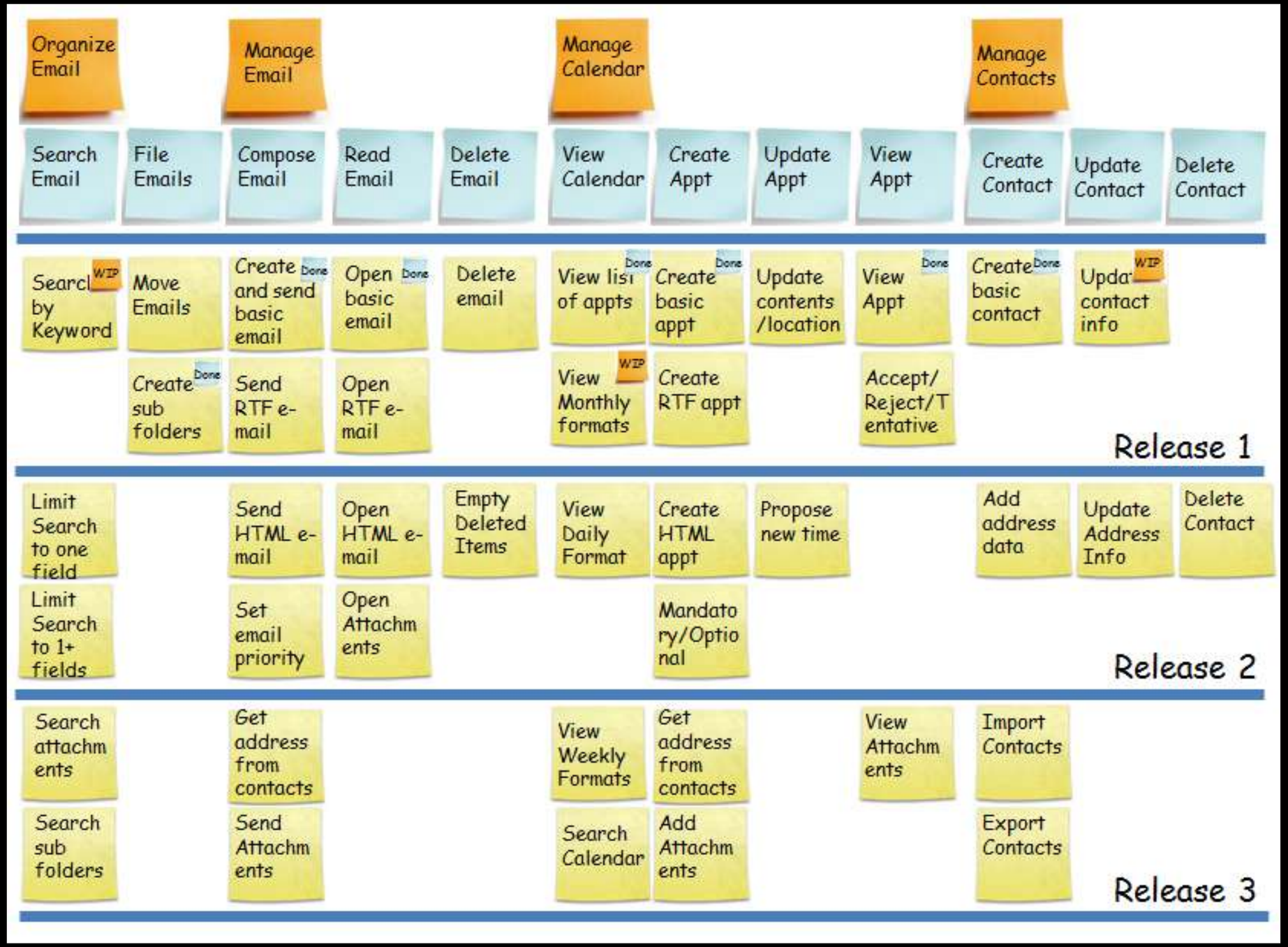


an EPIC is collection of USER STORIES

Theme

Epic

User Story

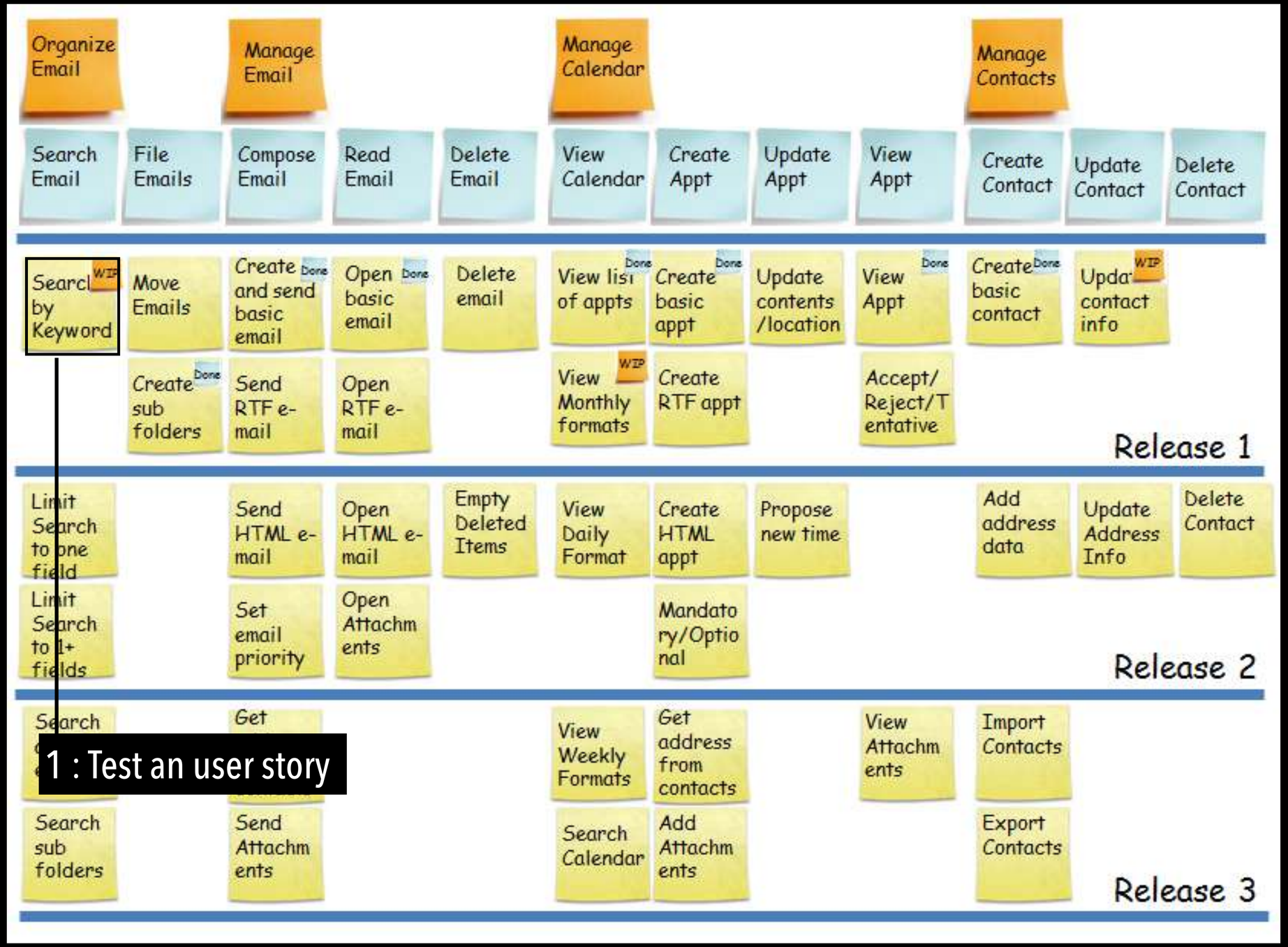


Theme/Epic/Stories example from https://bit.ly/2Gw6PZC

Theme

Epic

User Story



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Epic

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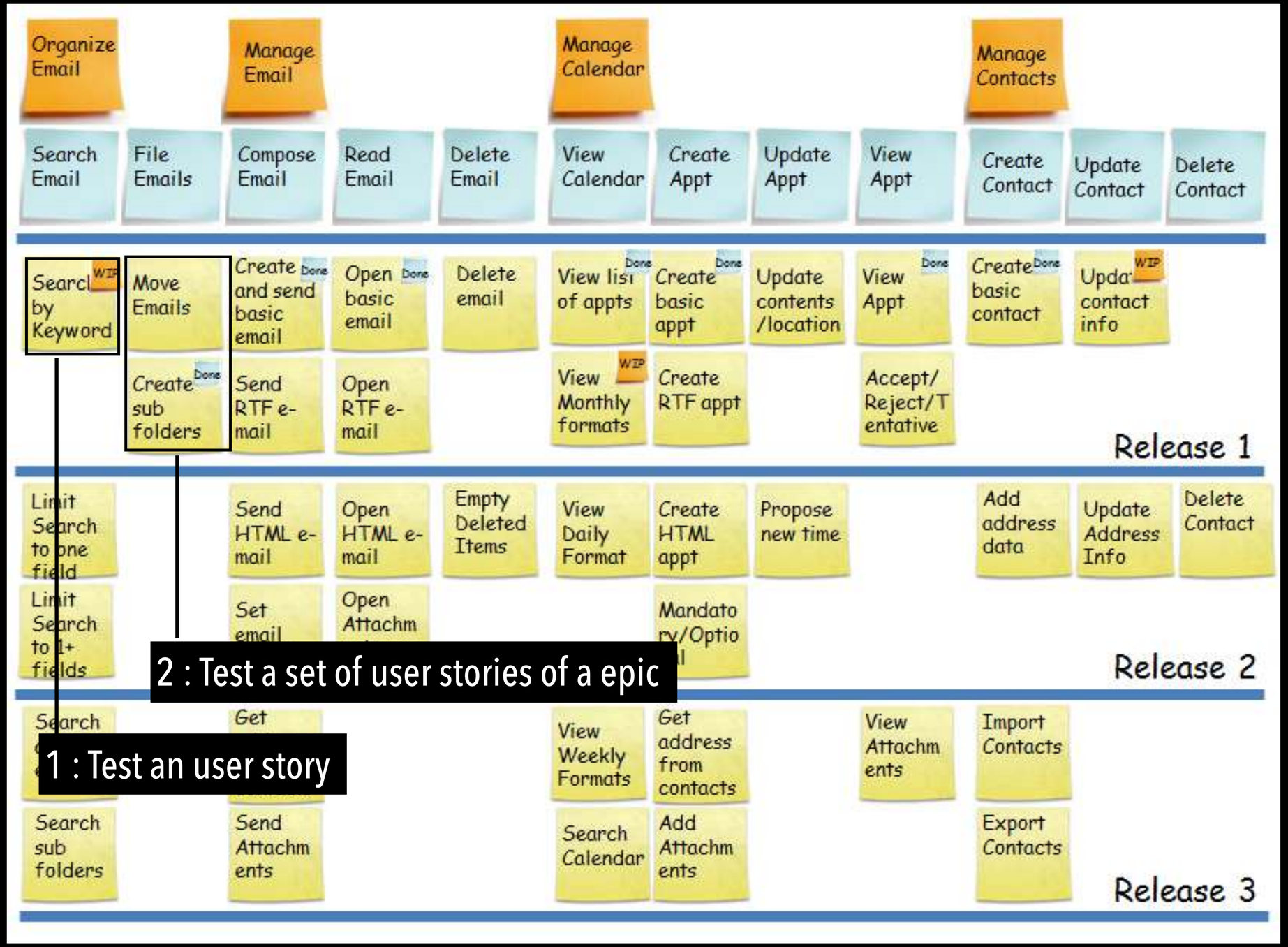

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Epic

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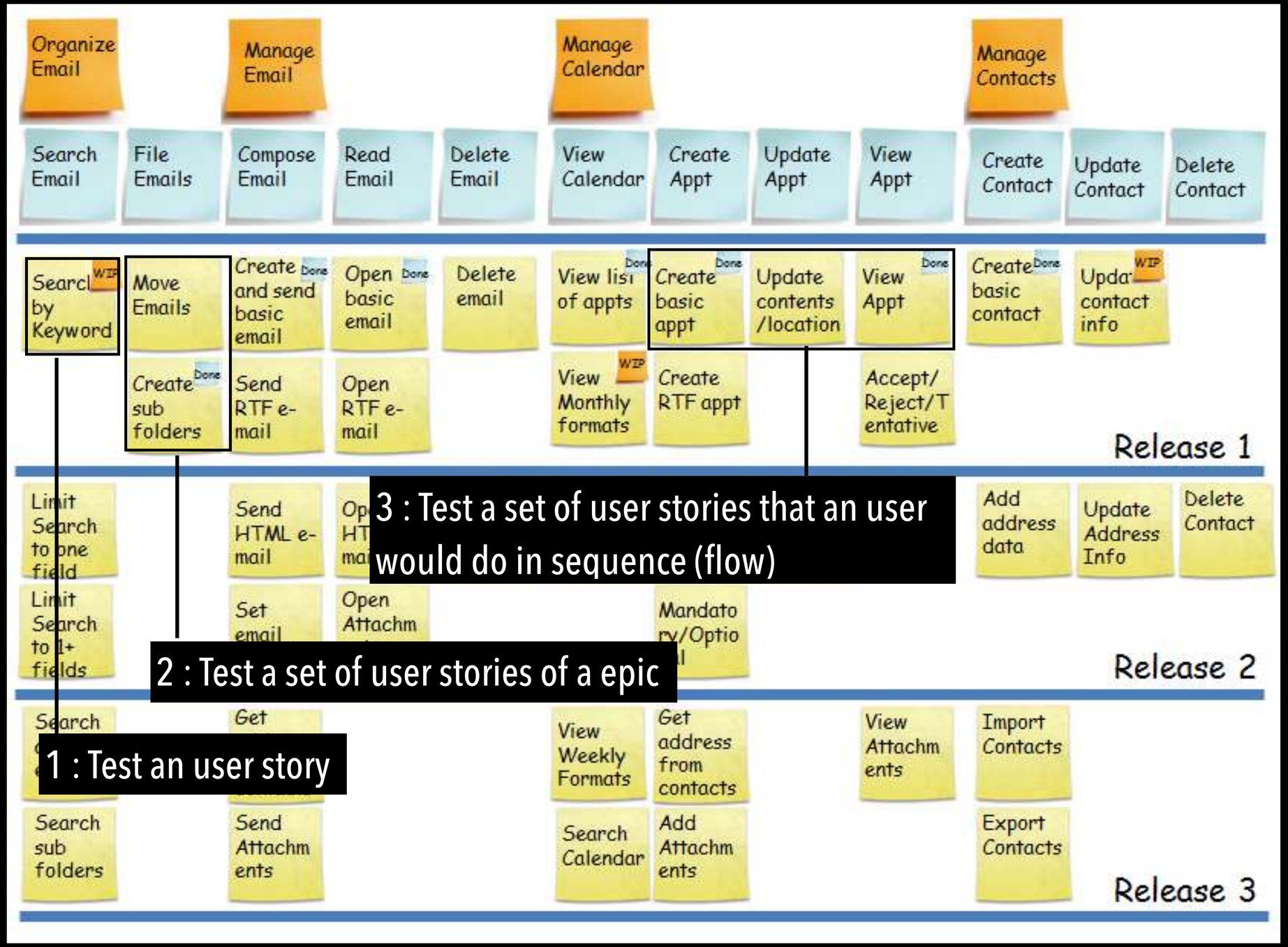

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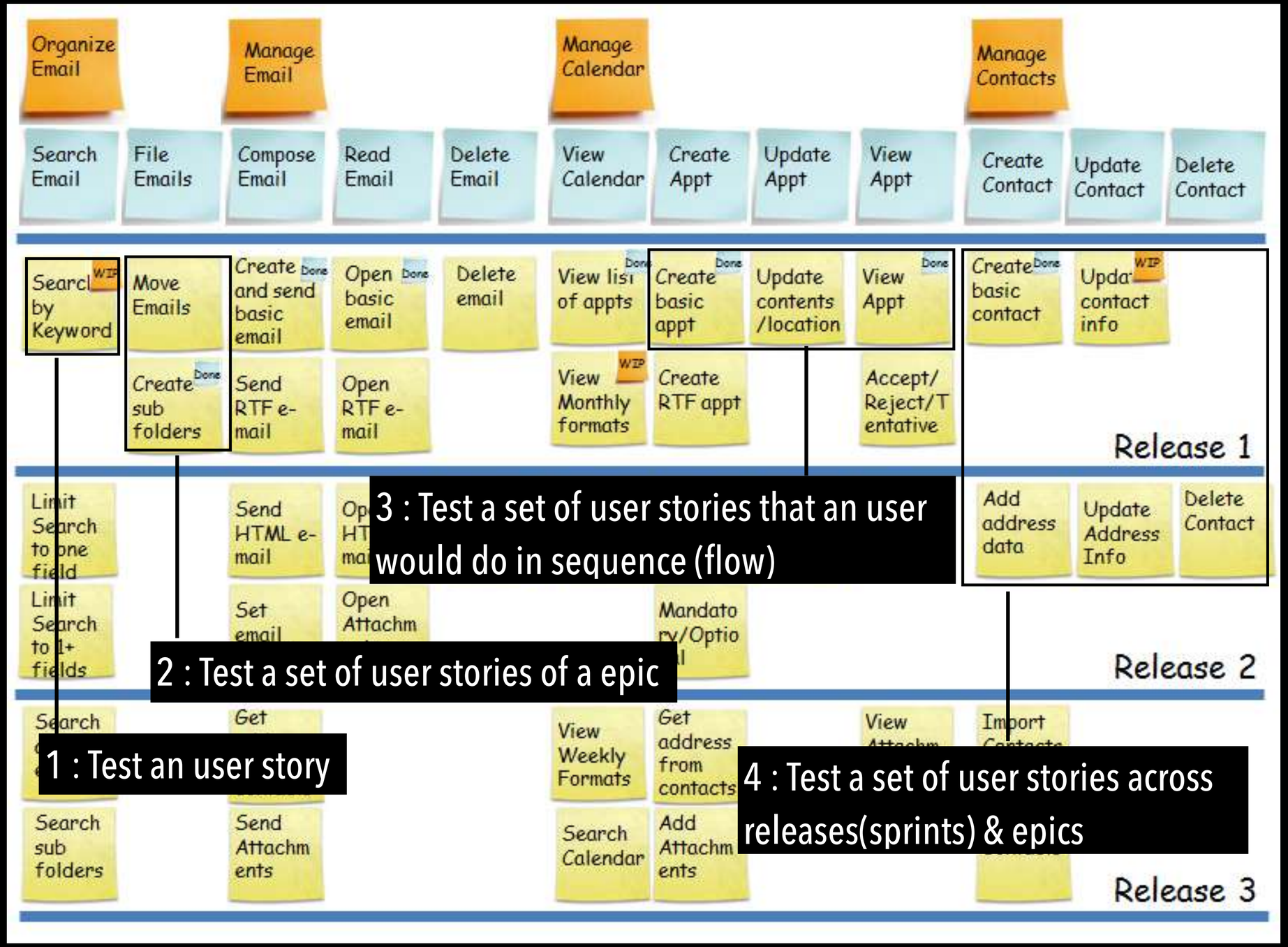
Theme

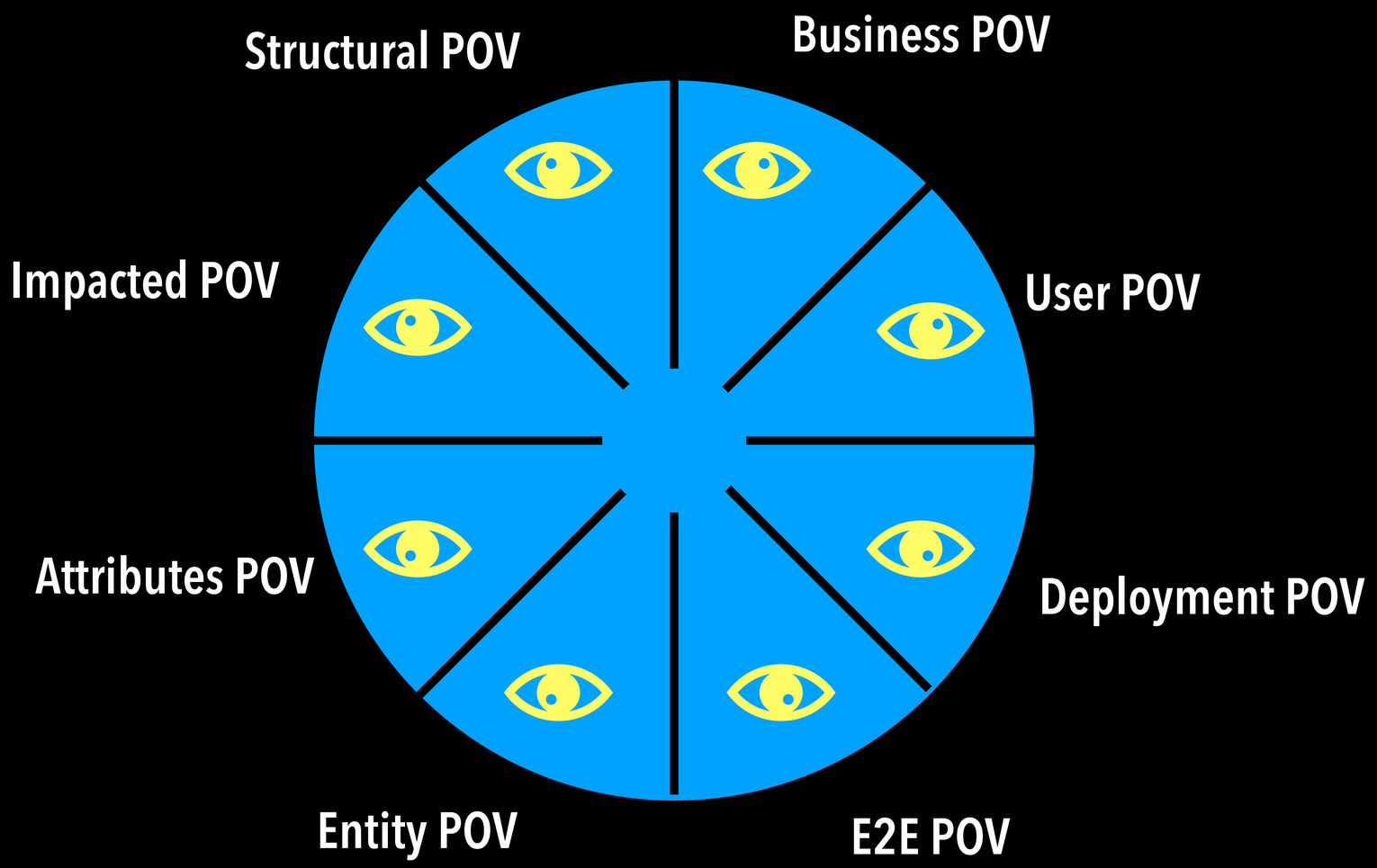
Epic

User Story



Theme/Epic/Stories example from https://bit.ly/2Gw6PZC

Validation POVs - Remember ?



Discussion

“Sprint validation practice”

How do you go about validation in a sprint ?
Understanding, planning/scoping, design, evaluation.

Thank you.

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