



We would be grateful if you could use Wi-Fi only for the workshop purposes and turn off all unrelated apps, updates etc., so as we could prevent ourselves from Wi-Fi lag.



Exploratory Testing and how to implement it in your organization

Jeroen Rosink

TestCon Vilnius

October 16th 2018



Test scene investigation

- > Who has an ISTQB certificate?
- > Who usually makes test scripts upfront?
- > Who knows and applies exploratory testing every now and then?
- > Who uses the same way of testing most of the times?
- > Who knows at least three out of these terms:
 - > Detailed scripting, global scripting, session based testing, bug hunts, test tours, pure exploratory testing
- > And who applied at least three out of six?

Goal of the workshop

Please tell me your name, role/function
and your personal goal with this tutorial

Please keep it short

My goals: Learn and experience
different ways of exploratory testing

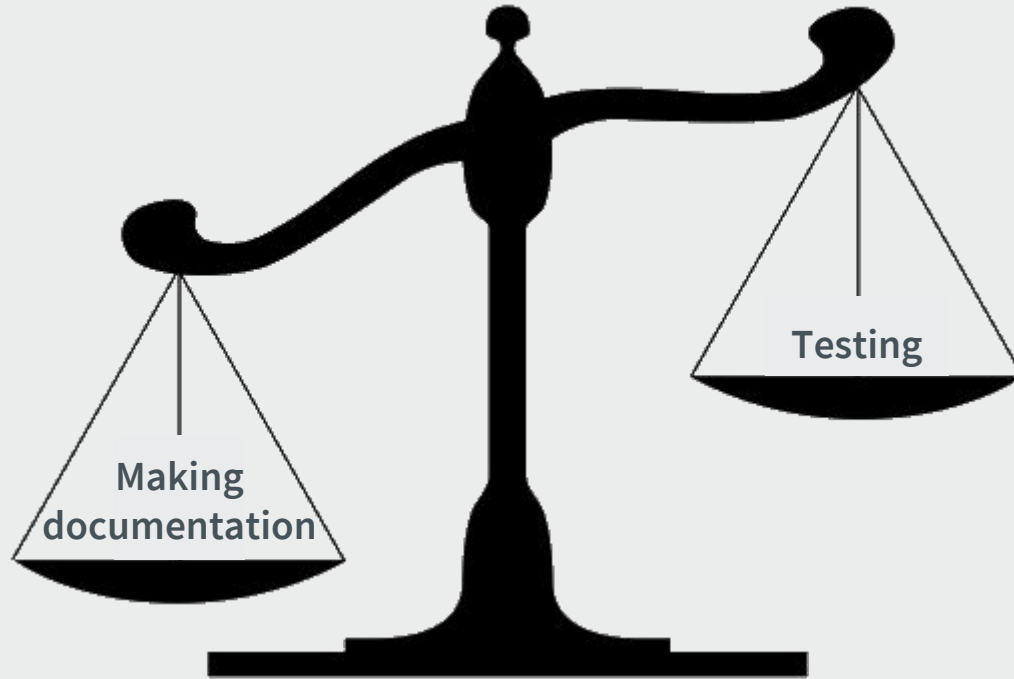
Based on the work by

- › James Bach - @jamesmarcusbach
- › Michael Bolton - @michaelbolton
- › James Whittaker - @docjamesw
- › Elisabeth Hendrickson - @testobsessed
- › Cem Kaner - @DrCemKaner
- › Michael Kelly - @michael_d_kelly
- › Lisa Crispin - @lisacrispin
- › Janet Gregory - @janetgregoryca
- › Lynn McKee - @lynn_mckee
- › Gitte Ottoson - @Godtesen
- › Huib Schoots - @huibschoots
- › Henrik Anderson - @henkeandersson




- › And Squerist B.V. - @squerist



At some organizations...



Agenda

- 10:00 Opening & Agenda
- 10:15 Experience Exploratory testing
- 11:00 Introduction to Exploratory Testing
- 11:30 
- 11:45 Case: Altoro Mutual – II
- 12:30 Situational testing
- 12:45 Session Based Testing
- 13:15 
- 14:15 Case: PHPTravels
- 15:45 
- 16:00 How to implement in your organization
- 16:45 Session Based testing in SCRUM
- 17:30 End of workshop

Case Altoro Mutual

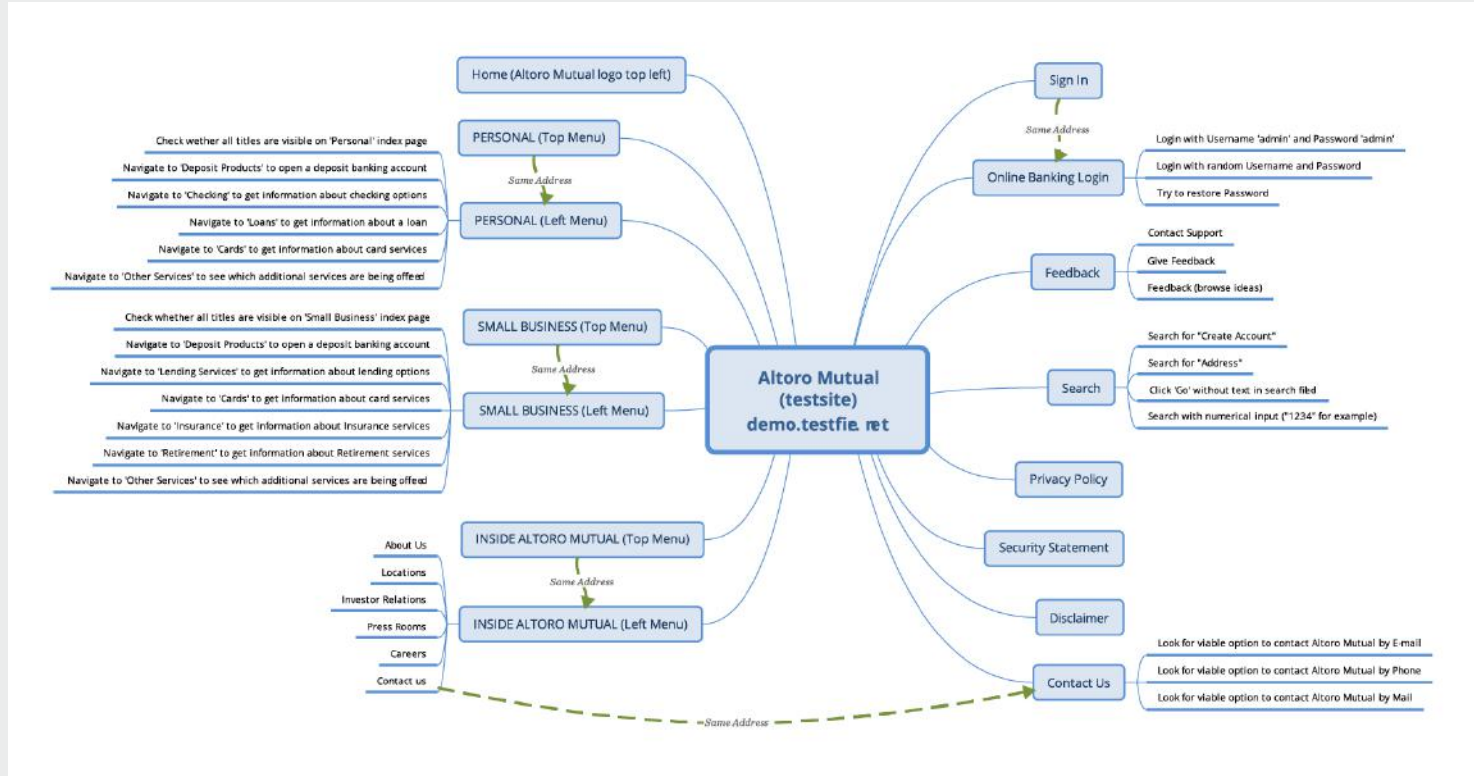
- > Individual case
- > Go to <http://demo.testfire.net/>
- > Please test Altoro Mutual in 10 minutes

Case Altoro Mutual retro

- › Did you find bugs?
- › Did you use test cases?
- › Can you recap what you tested and what not?
- › Did you consciously decide what to test next?
- › Did you have an overview what you had to test?
- › Can you, thinking back, remember more important test cases than you executed?
- › Did you develop some kind of strategy?

Exploratory testing \neq ad hoc testing

Example: mindmap structure Altoro Mutual



Example: mindmap test strategy Altoro Mutual

	A	B	C	D	E	F	G
1	Website			Subject		Object(s)	Priority (MoSCoW)
2				Content		Images	W
3							
4						Text	W
5							
6				Interaction with user		Contact Options	S
7							
8						Create/Edit Account	M
9							
10						Forgot Password	M
11							
12						Feedback	S
13							
14						Inquiry	W
15							
16				Security		'Security Statement'	C
17							
18						Check Security Certificate Status	M
19							
20						Privacy Policy	C
21							
22	Altoro Mutual			Mobile		Resolution Scaling iPhone (5/6/7/8)	M
23							
24						Resolution Scaling Samsung (Galaxy S5/6/7/8)	M
25							
26				Career Opportunities		Current Job Openings	S
27							
28						Internship	C
29							
30						Trainee Programm	C
31							
32				Login		Admin	M
33							
34						Existing User	M
35							
36						Randomize Login	M
37							
38				Links		Tooling	M

Heuristic coverage: SFDIPOT

- > Structure
- > Functions
- > Data
- > Integrations
- > Platform
- > Operations
- > Time

Heuristic originally from James Bach. For more heuristics:
http://www.qualityperspectives.ca/resources_mnemonics.html



Exploratory testing

Exploratory testing is...

...a style of software testing...

...that emphasizes the personal freedom and responsibility of the individual tester...

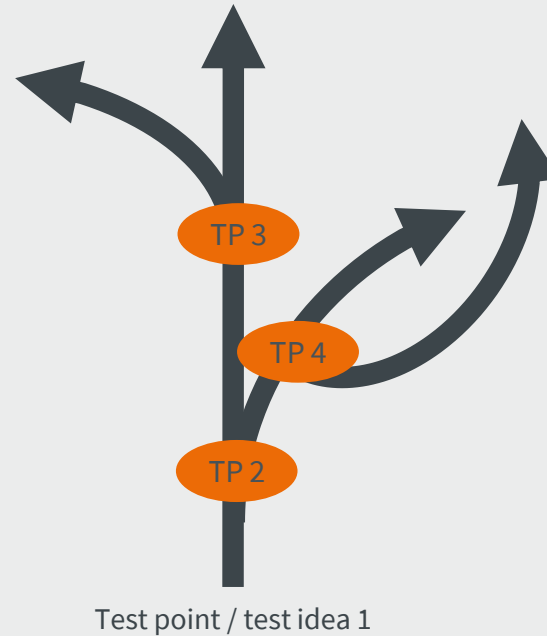
...to continually optimize the value of her work...

...by treating test-related learning, test design, test execution, and test result interpretation as mutually supportive activities that run in parallel throughout the project.



Source: <http://kaner.com/?p=46>
and 'Explore it!' by Elisabeth Hendrickson

Essence of exploratory testing



Based on RST 3.0 by James Bach
and Michael Bolton

Or popular said



Optional discussion (before 11:15 a.m.)

- What are the possible benefits of exploratory testing compared to scripted testing?
- What are the possible backdraws of exploratory testing compared to scripted testing?
- How can we structure exploratory testing to make sure we don't do ad hoc testing without losing the benefits?

Possible structuring elements

- Overall mission of testing
- List of product risks
- Insight in the structure of the product
- Determine test units
- Track coverage
- Test charters with testpoints
- Test design techniques
- Checklists
- ISO 25010 / 9126
- Defect administration

Heuristic: Test Oracles by James Bach

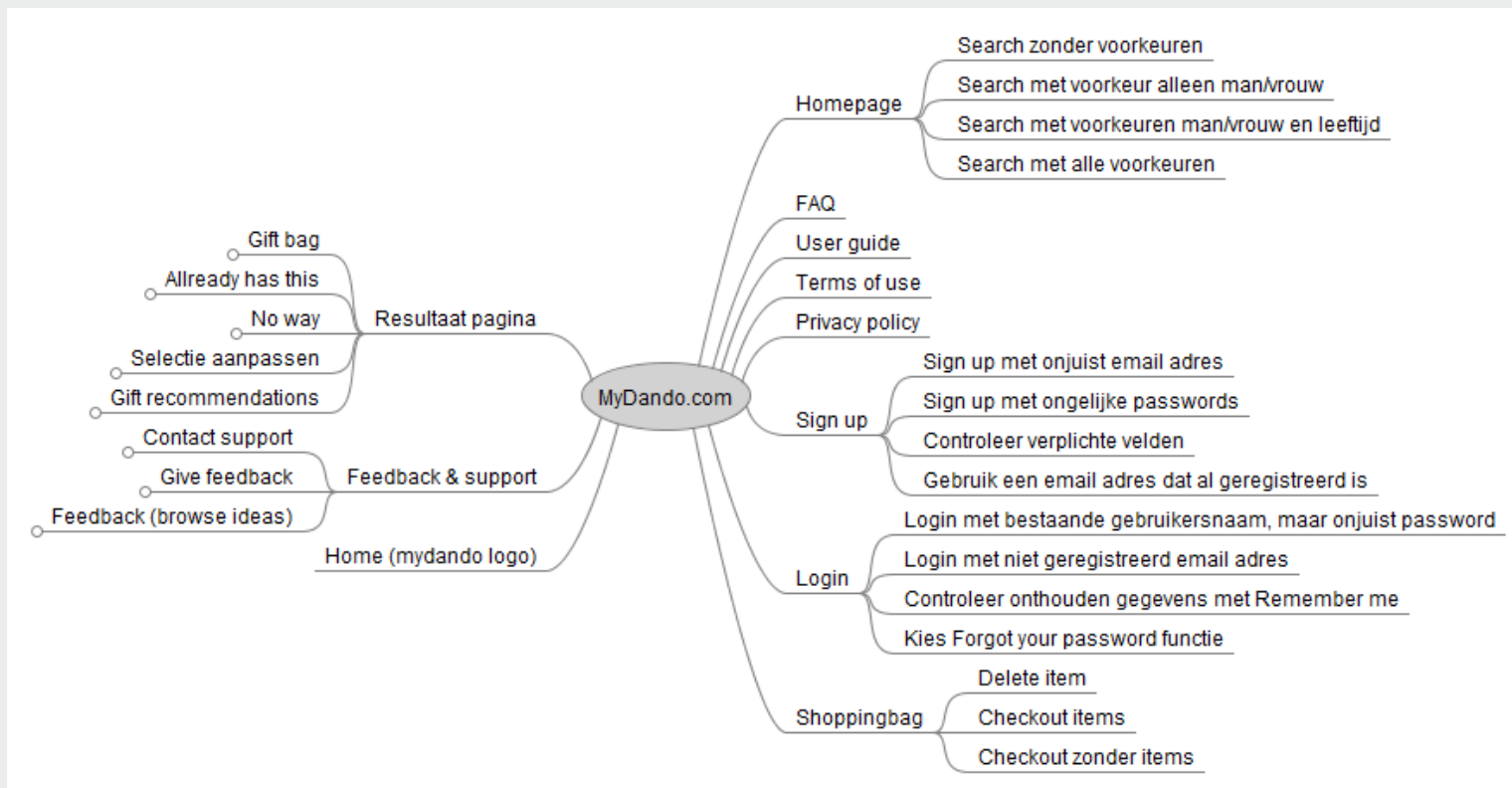
HICCUPPSF

- > **H**istory
- > **I**mage
- > **C**omparable product
- > **C**laims
- > **U**ser expectations
- > **P**roduct
- > **P**urpose
- > **S**tandards and statutes
- > **F**amiliar problems

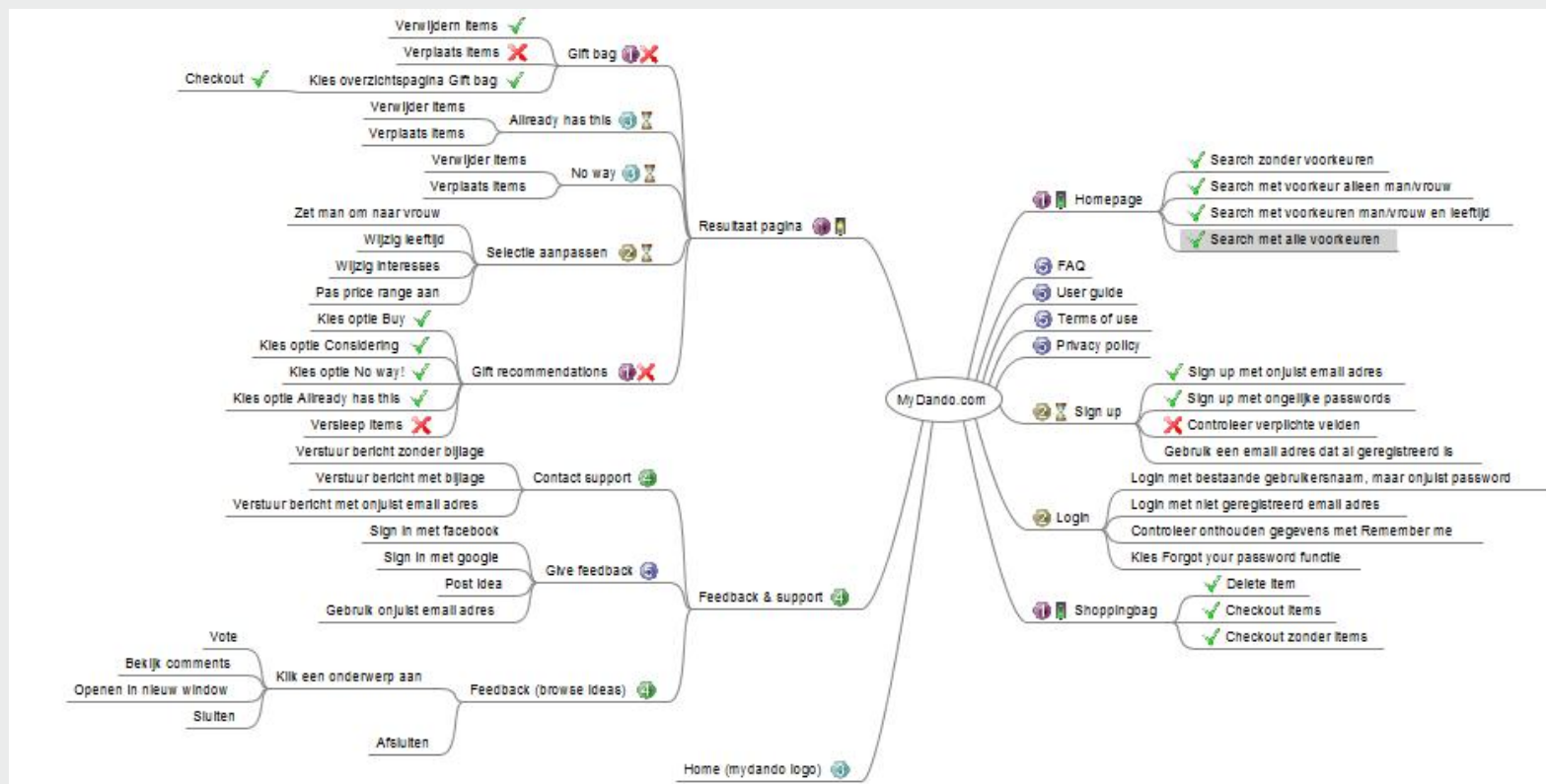


Alternative way of documenting: MindMapping

Mindmap, example 1: Mydando



Mindmap, example 2: test documentation





Case Altoro Mutual II

- Go to Altoro Mutual again (<http://demo.testfire.net/>)
- Go to www.mindmup.com, make a new mindmap. You can also use mindmap software of your choice (Xmind, Freemind) or a pen and paper
- Make a mindmap of Altoro Mutual based on your first test session (max 10 minutes)
- Decide which part or which non-functional you want to test first (based on risk!)
- Start testing
- When you think of a new test case, document them in the mindmap
- Capture the test and the defects in the mindmap
- 20 minutes

Optional discussion (before 11:55 a.m.)

- In which situations is exploratory testing the best way to test and in which situations is scripted testing the best way to test?

Preconditions exploratory testing

- Short lines in the organization
- Flexibility in about every aspect
- Decisive organisation
- Professional testers
- System with a lot of interaction with the user
- Not too complex calculations

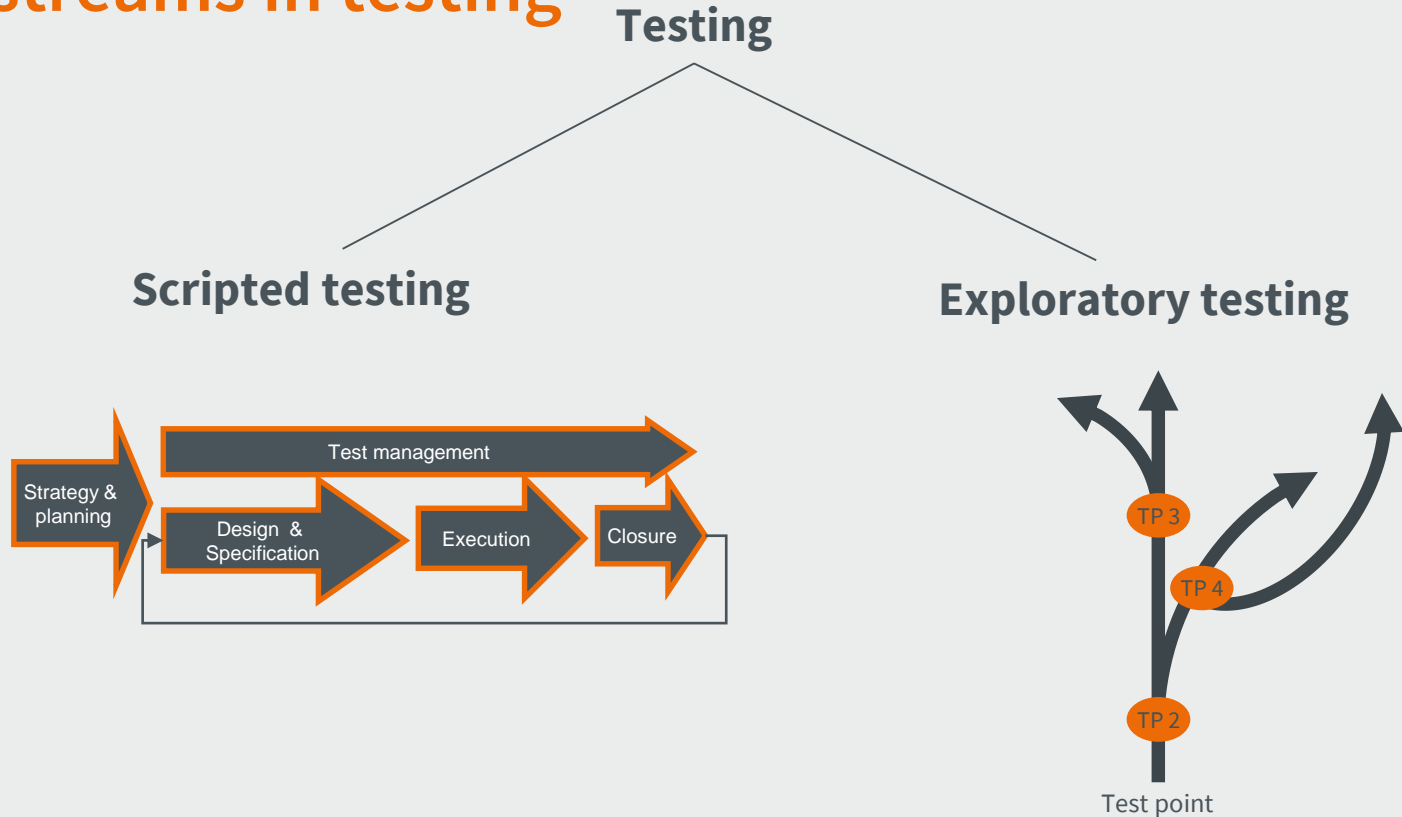


Situational testing

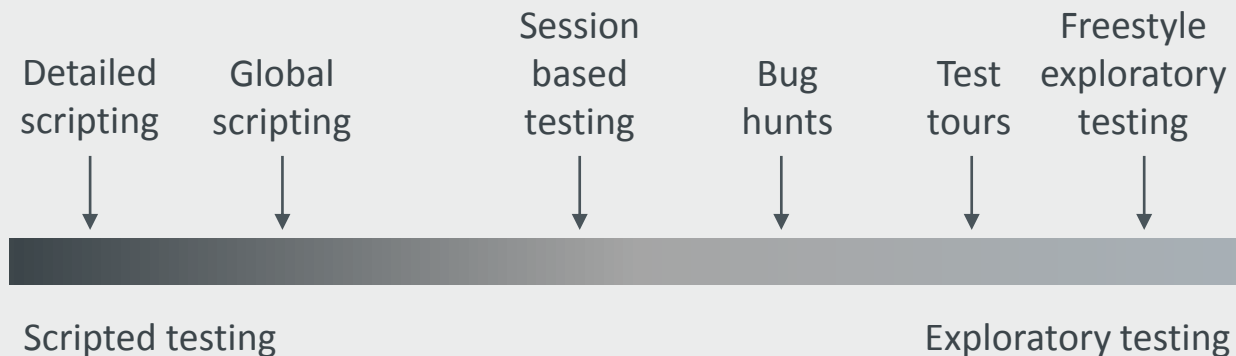
There is not one way to test your system



Main streams in testing

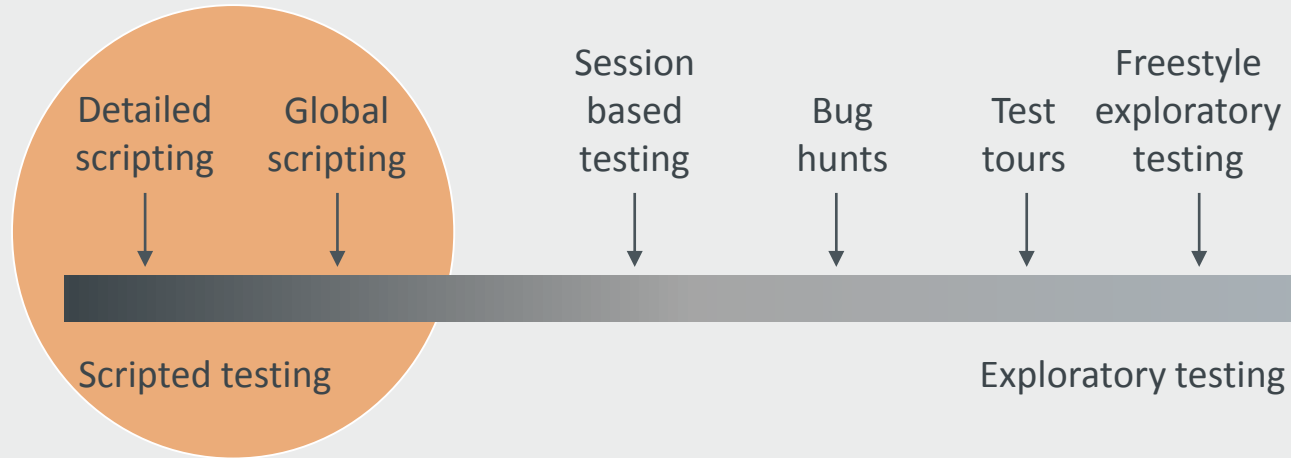


Different ways of testing

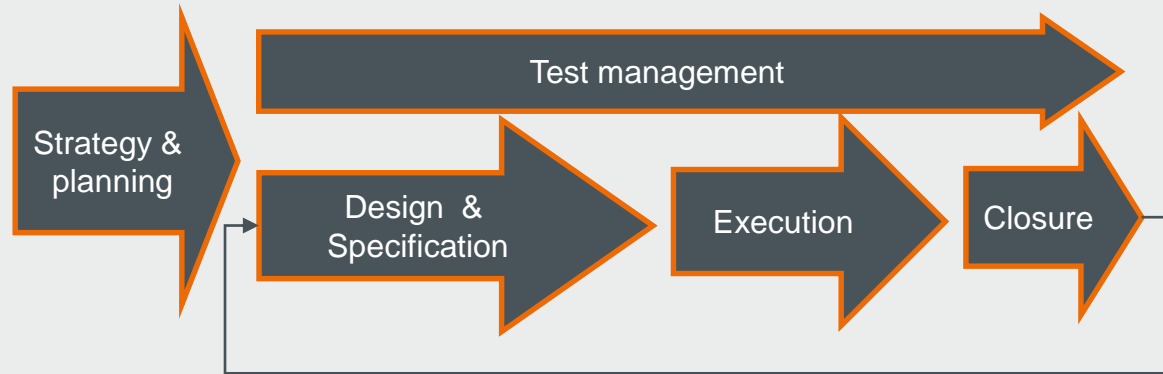


Based on 'Telling your exploratory story'
by Jon Bach, Agile 2010 conference

Detailed scripting / global scripting



Detailed scripting / global scripting



Detailed scripting vs global scripting

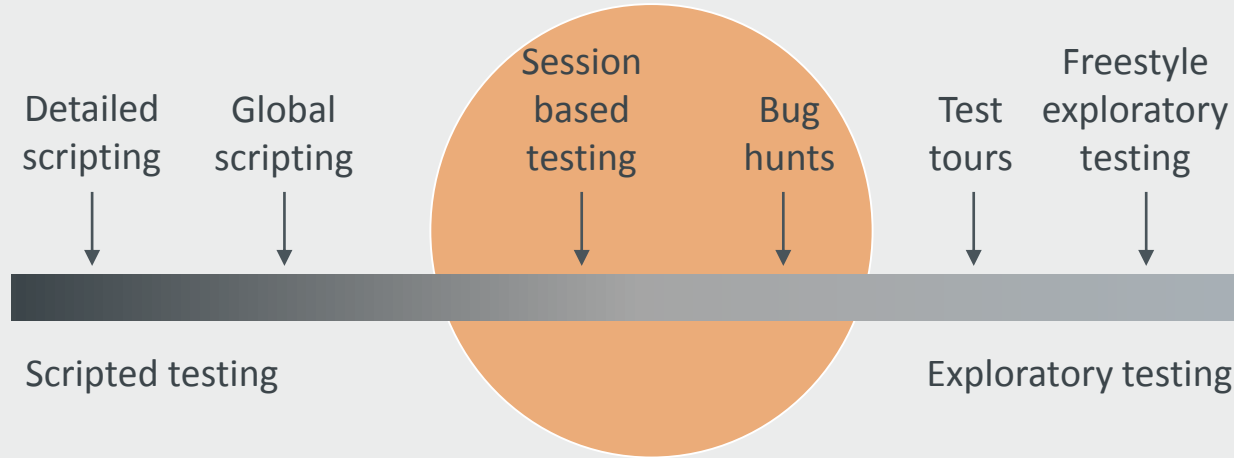
Detailed scripting

- > Go to the home screen
- > Push the button 'New'
- > Enter in the field 'To': j.cannegieter@squerist.nl
- > Push on 'File'
- > Select the document 'Test 1'
- > Enter in the field 'Subject':
Test attachment <date>
- > Go to the email box of jcannegieter
- > Check whether the email and the attachment is delivered

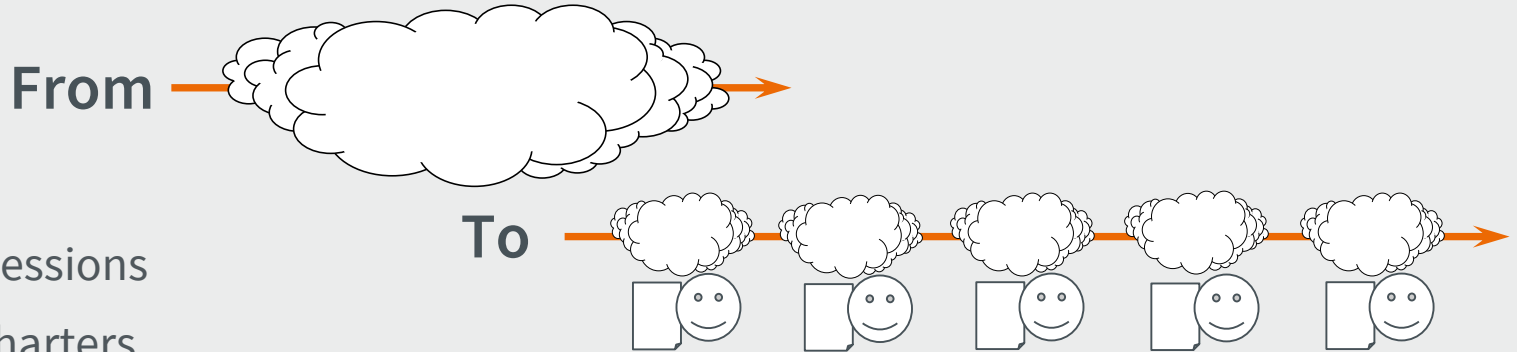
Global scripting

- > Make and send an email with an attachment to one recipient
- > Check whether the email and the attachment is delivered

Session based testing / bug hunts



Session based testing



- > Test sessions
- > Testcharters
 - > Mission
 - > Test points / test ideas
- > Session notes
- > Session debrief

Based on: How to Measure Ad Hoc Testing by Jon Bach, <http://www.satisfice.com/>

Bug hunts



Session based testing vs bughunts

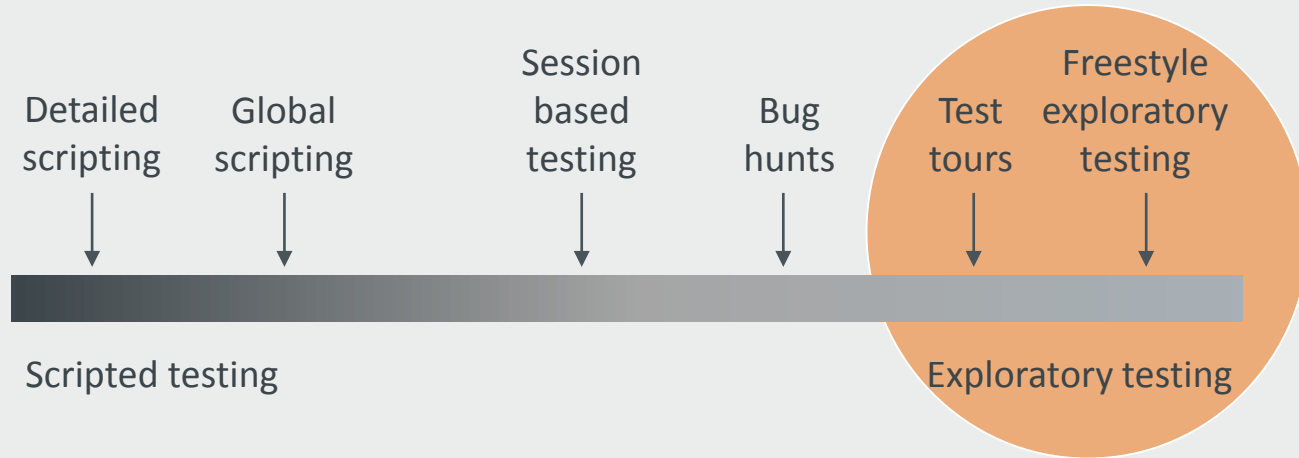
Same in bug hunts

- > Sessions
- > Testcharters
 - > Mission
 - > Test points
- > Testers
- > Test manager
- > Goal: get info

Different in bug hunts

- > Length of a session
 - > SBT: 60-120 min
 - > BH: 180-240 min
- > More freedom in charters
- > Pairing with others
- > Goals: get info and acceptance

Test tours and freestyle exploratory testing



Test tours

Exploratory testing without good guidance is like wandering around a city looking for cool tourist attractions. It helps to have a guide and to understand something about your code.

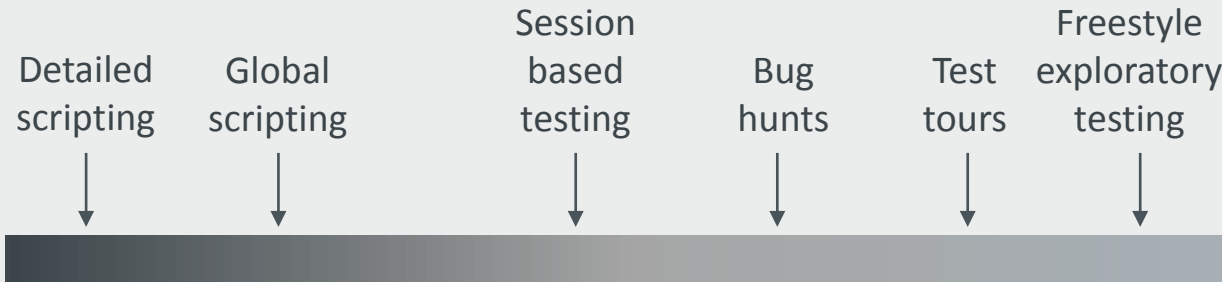


Examples of tours

- Feature tour – test all features in the application
- Claims tour – test whether the (commercial) claims are met
- Data tour – test the handling of data
- Calculations tour – test all calculations
- Process tour – test whether the application supports the work processes
- Screen tour – test all screens
- Super model tour – test the look and feel of the user interface (is it attractive)
- Bad parts tour – test those parts of the application where there were a lot of defects before
- Interfaces tour – test all interfaces
- A-social tour – test on improper use
- Burglar tour – test if an unauthorized person can get in
- ...

Based on 'Exploratory software testing' by James Whittaker

Different ways of testing



Scripted testing

- Focussed on preparation
- Focussed on planning
- Rely on the method
- Confidence in the process
- Focussed on documentation

Exploratory testing

- Focussed on action
- Flexible
- Pragmatic
- Rely on the tester
- Focussed on test execution

Based on 'Telling your exploratory story'
by Jon Bach, Agile 2010 conference

Effectiveness/efficiency of ET vs ST

Juha Itkonen, Mika Mäntylä and Casper Lassenius (2007): Defect Detection Efficiency of exploratory testing is higher compared with test case based testing

W. Afzal, A. N. Ghazi, K. Bhatti, J. Itkonen, R. Torkar, A. Andrews (2014): We conclude that ET was more efficient than TCT in our experiment. ET was also more effective than TCT when detection difficulty, type of defects and severity levels are considered.

Ed Allen and Brian Newman: Experiences of test automation, chapter 27, page 503:

Automated tests: 9,3%

Manual scripted: 24%

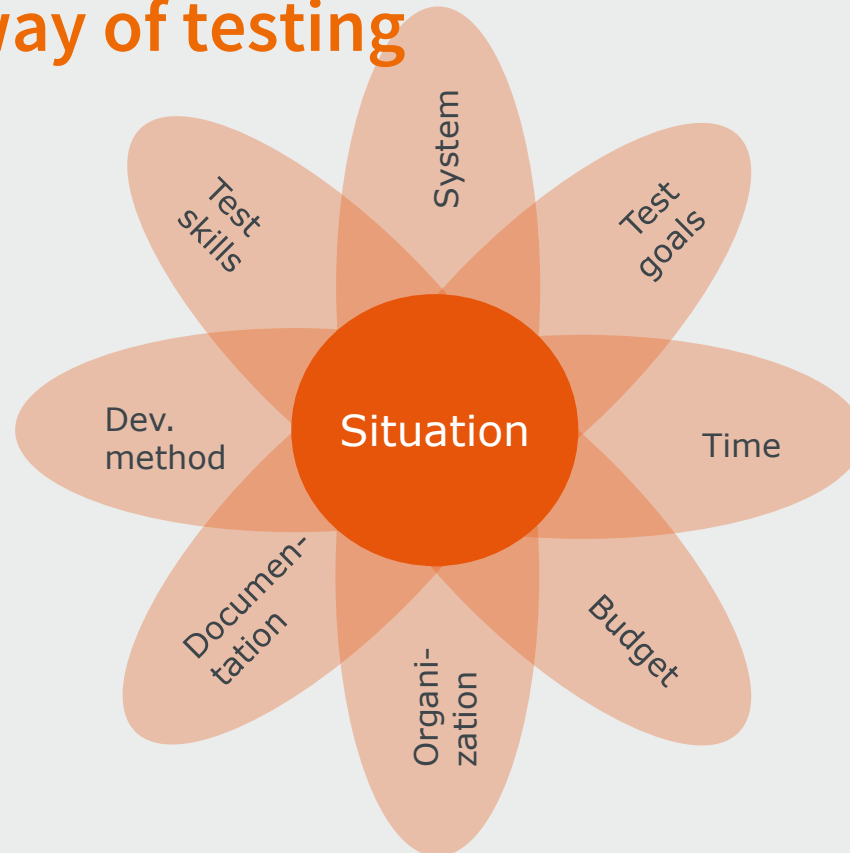
Exploratory tests: 58,2%

Fix verification: 8,4%

When to apply which way of testing



Choose your way of testing



Situational testing bingo

Category	Situation	Scripted testing	Exploratory testing	
System	Calculations		S	
	User interface oriented system		E	
	Backend oriented system		S	
	Mobile app		S	
Test goals	Checking a set of req. / regulation		SE	
	Value based testing		S	
	Usability		SE	
	Business rules testing		E	
	Performance		S	
	Automated checking		Se	
	Security		S	
	Organization		Planning and preparation oriented	SE
			Young, modern startup	S
Hierarchical, traditional organisation			E	
Self management, resp. low in org.			S	
				E

Category	Situation	Scripted testing	Exploratory testing
Documentation	A lot and detailed documentation		S
	Little documentation		E
	Constantly changing doc./req.		E
System	Waterfall		SE
	Agile		SE
Budget	A lot of budget		S
	Little budget		E
Time	Early involved		SE
	Late involved		E
	A lot of time available		SE
	Little time available		E
Test skills	Analytical, accurate testers		S
	Critical thinking (question everything)		E
	Flexible		E
	Professional testers		E
	Non-professional testers		S

It depends...

...on the system, test goals, budget, documentation, organization, development method and test skills

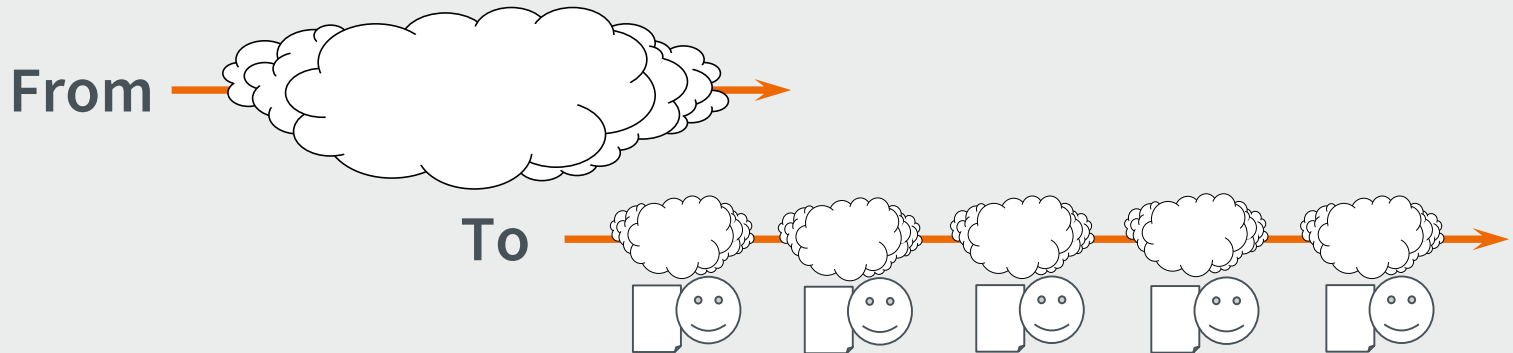


Session based testing

Session based testing

Session-based testing is a software test method that aims to combine accountability and exploratory testing to provide rapid defect discovery, creative on-the-fly test design, management control and metrics reporting

- Wikipedia -



Elements session based testing

- Sessions (timebox)
- Mission
- Test charters
- Test points
- Session notes
- Session debrief
- Metrics

Session

- > Timebox
- > 60 min. – 90 min. – 120 min.
 - > Short enough to report in detail
 - > Short enough to plan it easily
 - > Long enough to test in depth
 - > Long enough to debrief effectively
 - > Don't make a detail planning of the session
- > Eventually pair testing
 - > Tester – tester
 - > Tester – product owner
 - > Tester – user
 - > Tester – developer

Test mission

- Representation of the goal of the test session
- Risk based
- Defined scope

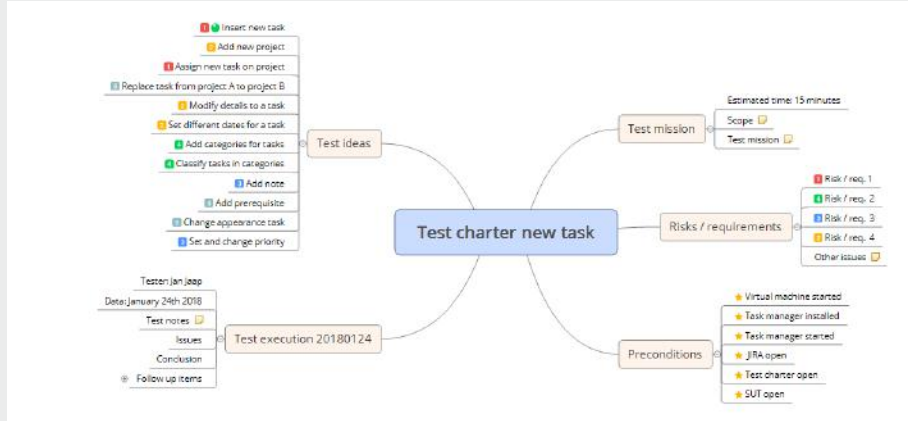
**My mission is to test <<the risk you want to cover>>
for <<the scope/depth/coverage>>**

Test charter

- Also named a session sheet
- Information of the test item
- Mission
- Test points
- Information about the test execution (optional)
- Defects (or references to the defects in the tool)
- New test charters or new test points

See example

Example testcharter



Template test charter

Test charter |

General

System under test / scope	
Test mission	
Related risks / requirements / focus	
Estimated time	
Tester	
Date	

Test points

- 1.
- 2.
- 3.

Defects

Nr	Screen	Global description

Session notes

Recap test session

New test points, actions of questions

Nr	P/A/Q	Description

Session notes / session ideas

- › Things you want to know
- › Things you don't want to miss
- › Things you want to test
- › \approx logical test cases

A good test point starts with a verb

Session notes

- › What did I test?
- › What didn't I test?
- › Why did I test it?
- › How did I test it?
- › With which coverage and depth did I test it?
- › Which test data did I use?
- › On which environment did I test?
- › What have I found out?
- › What defects did I find?
- › What more should I test?

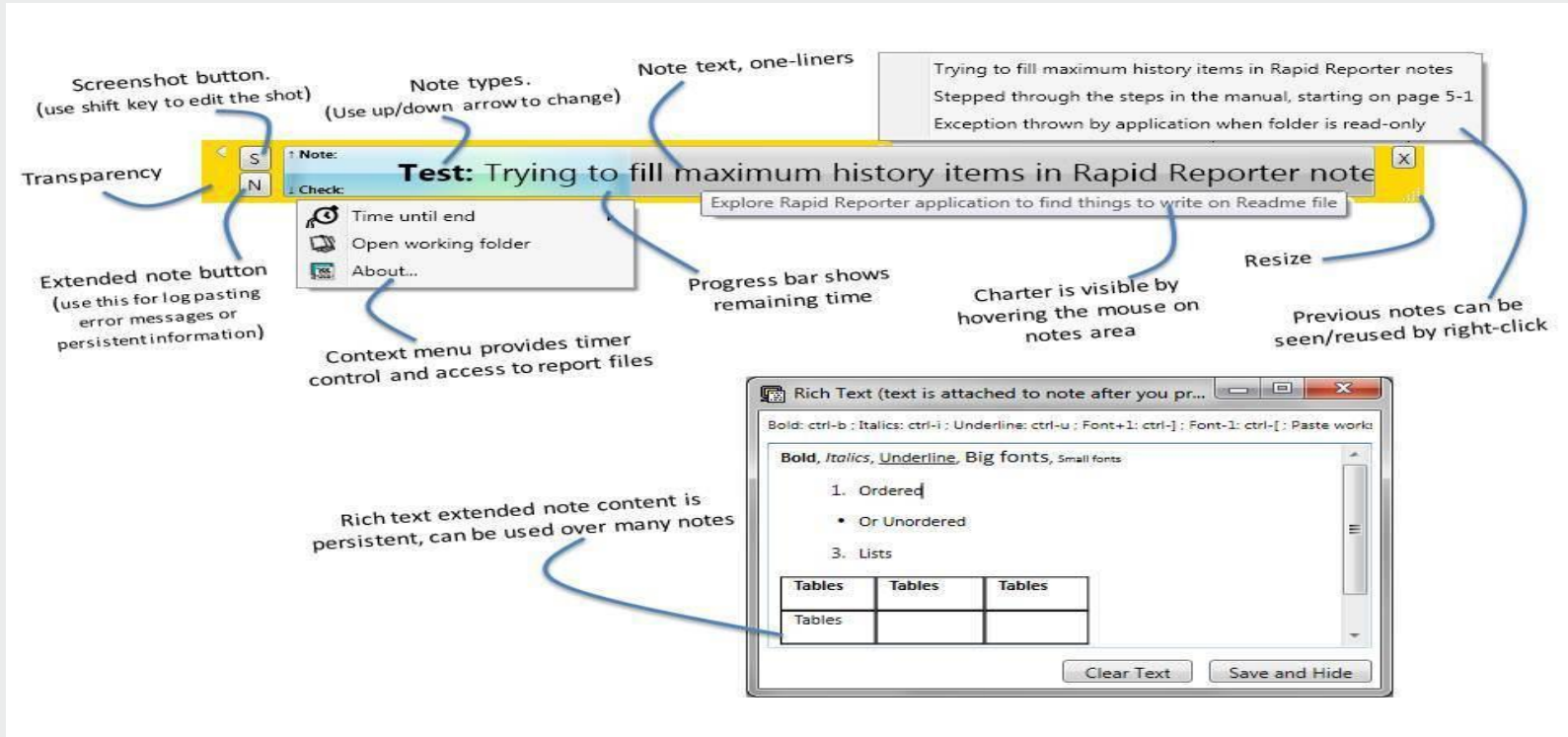
Possible follow up items

- Defects
- Questions
- Possible new charters
- Possible new points
- Tests that should be automated
- Tests that should be documented
- Instructions for the next time this charter will be executed

Session debrief

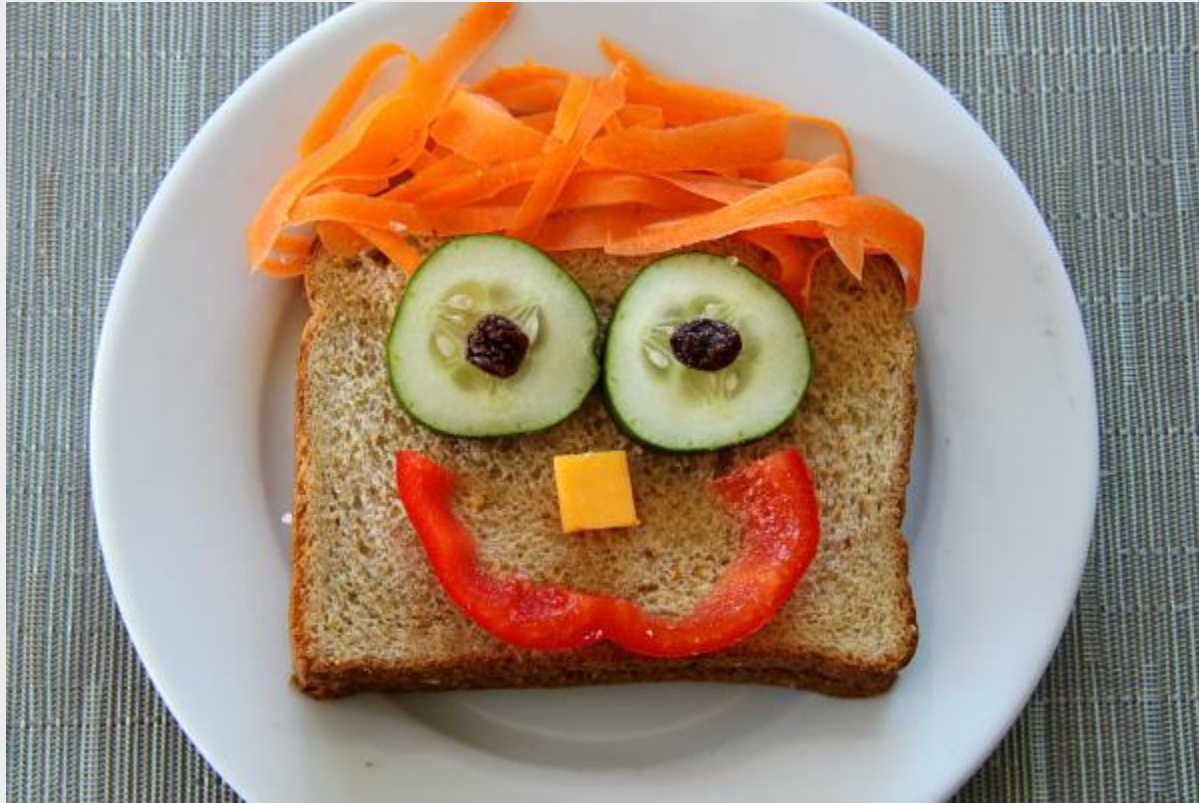


Rapid reporter



The image shows the Rapid Reporter interface with several annotations:

- Screenshot button:** (use shift key to edit the shot)
- Note types:** (Use up/down arrow to change)
- Note text, one-liners:** (Use up/down arrow to change)
- Transparency:** (use shift key to edit the shot)
- Extended note button:** (use this for log pasting error messages or persistent information)
- Context menu provides timer control and access to report files:** (Time until end, Open working folder, About...)
- Progress bar shows remaining time:** (Explore Rapid Reporter application to find things to write on Readme file)
- Charter is visible by hovering the mouse on notes area:** (Trying to fill maximum history items in Rapid Reporter notes, Stepped through the steps in the manual, starting on page 5-1, Exception thrown by application when folder is read-only)
- Resize:** (Previous notes can be seen/reused by right-click)
- Rich text extended note content is persistent, can be used over many notes:** (Rich text editor showing Bold, Italic, Underline, Big fonts, Small fonts, Lists, Tables, Clear Text, Save and Hide)



Case PHPTravels

- Individual of small teams (pairs)
- Go to <https://www.phptravels.net/>
- PHPTravels is a website for traveling. You can book hotels, flights, tours and cars, as well as get your visa. Like Altoro Mutual it is a demo website with defects!
- 5 min Get to know PHPTravels
- 5 min Define a test mission and test scope, good for a test session of 15 minutes, make a test charter
- 15 min Execute the test session
- 10 min Debrief

Case PHPTravels

- Did you like to make a test charter?
- Did you like to work with a test charter?
- Was your test mission guiding you?
- Did you have the discipline to restrict yourself to your test mission and scope?
- Did you experience enough freedom to call it ET?
- Did you make good notes?
- Did you report bugs good?

Important skill of an exploratory tester

Focus - defocus

Based on RST 3.0 by James Bach and Michael Bolton

It is finding the balance between

Discipline - freedom



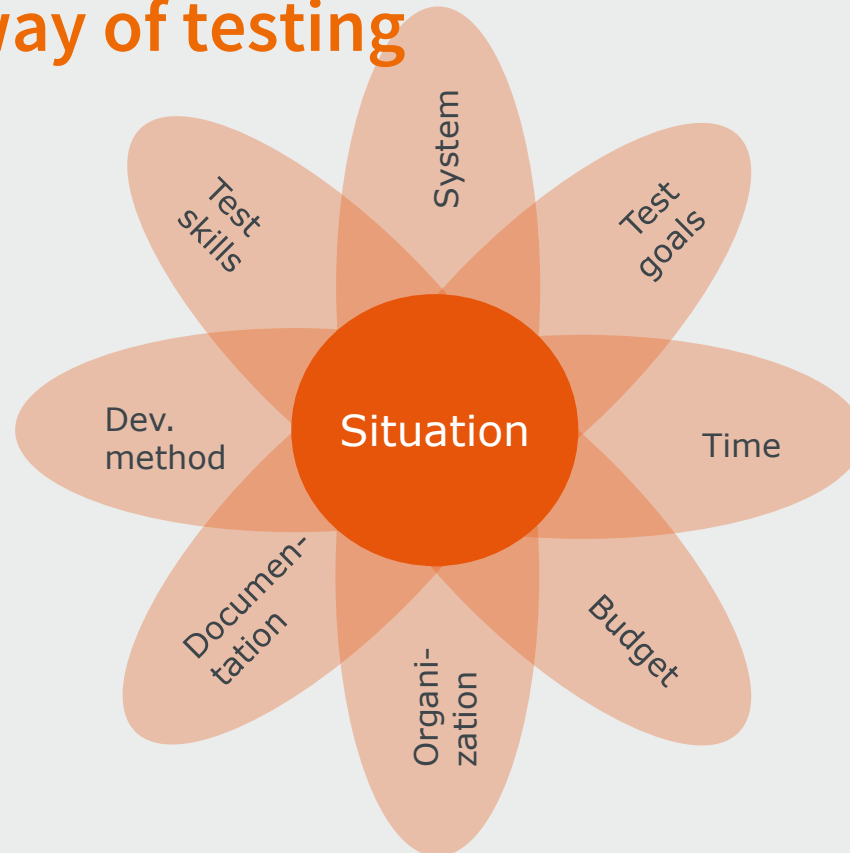


How to implement in your organization

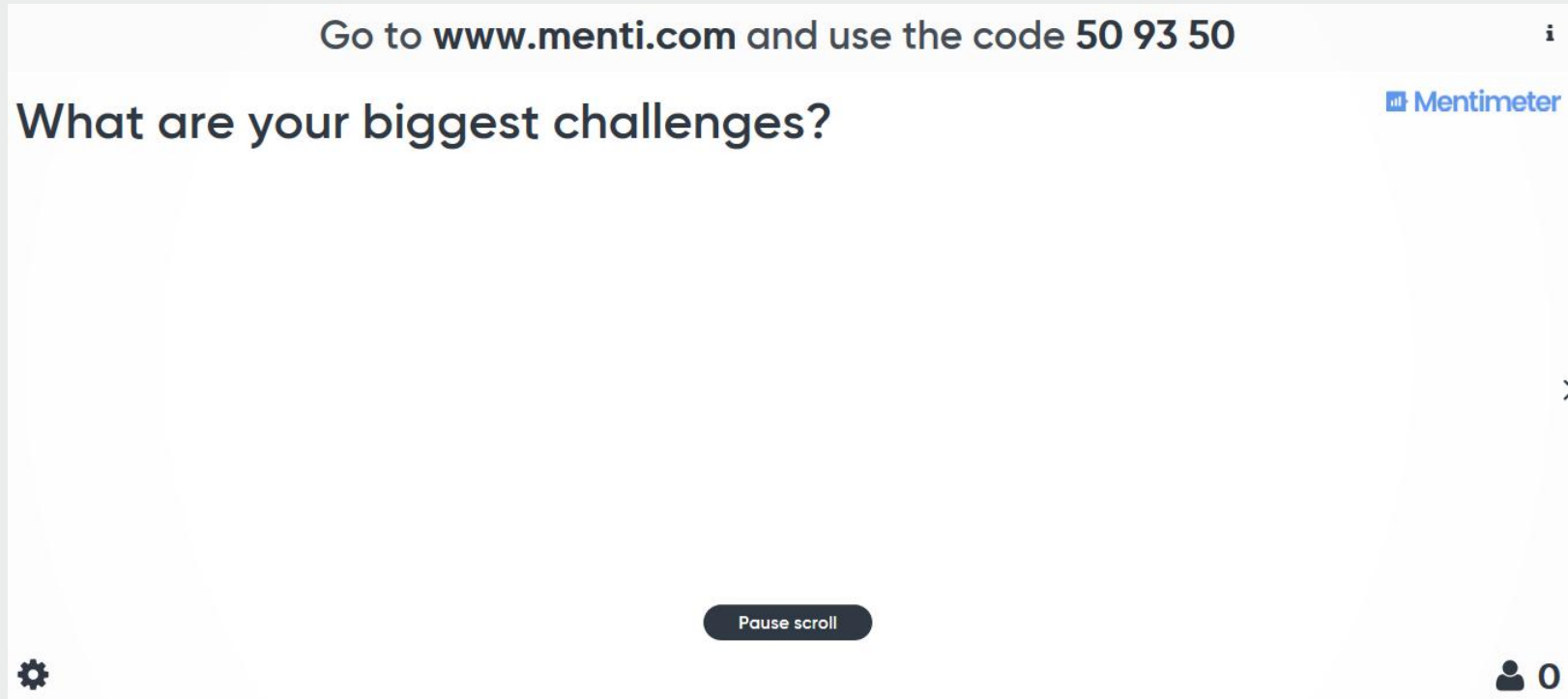
My challenges

- > Cultural
 - > Trust
 - > Commitment
 - > Accountability
- > Skills
 - > Test experience
 - > Test knowledge
- > Organizational
 - > Departments
 - > Management
 - > Project
 - > Time

Choose your way of testing



How to implement in your organization



Go to www.menti.com and use the code 50 93 50

What are your biggest challenges?

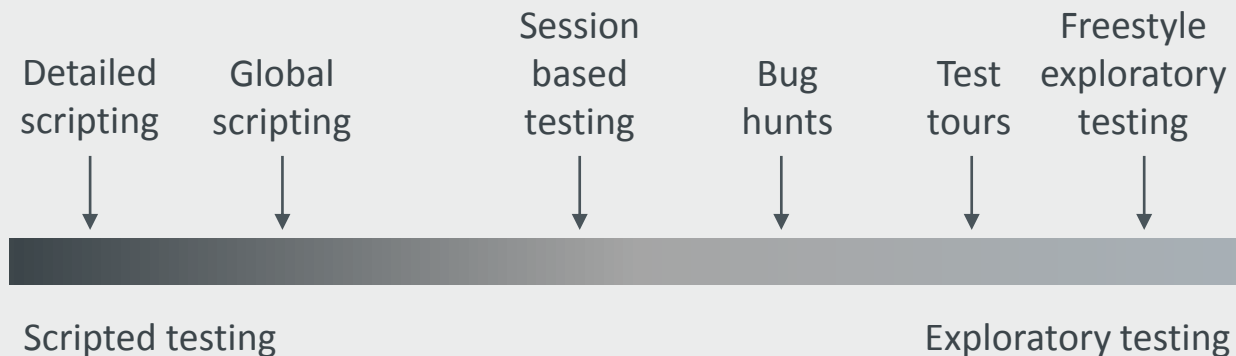
Mentimeter

Pause scroll

0

The screenshot shows a white background with a dark grey header bar at the top. The header bar contains the text 'Go to www.menti.com and use the code 50 93 50' in a dark grey font, followed by a small 'i' icon on the right. Below the header bar, the main question 'What are your biggest challenges?' is displayed in a large, dark grey font. To the right of the question, the Mentimeter logo is visible. At the bottom center, there is a dark grey button with the text 'Pause scroll'. In the bottom left corner, there is a gear icon, and in the bottom right corner, there is a person icon followed by the number '0'.

Different ways of testing



Based on 'Telling your exploratory story'
by Jon Bach, Agile 2010 conference



Identify the differences of organizations

Go to www.menti.com and use the code 50 93 50

Which test fits your organization best?

Mentimeter

0	0	0	0	0	0
Detailed Scripting	Global Scripting	Session Based Testing	Bug Hunts	Test tours	Freestyle ET

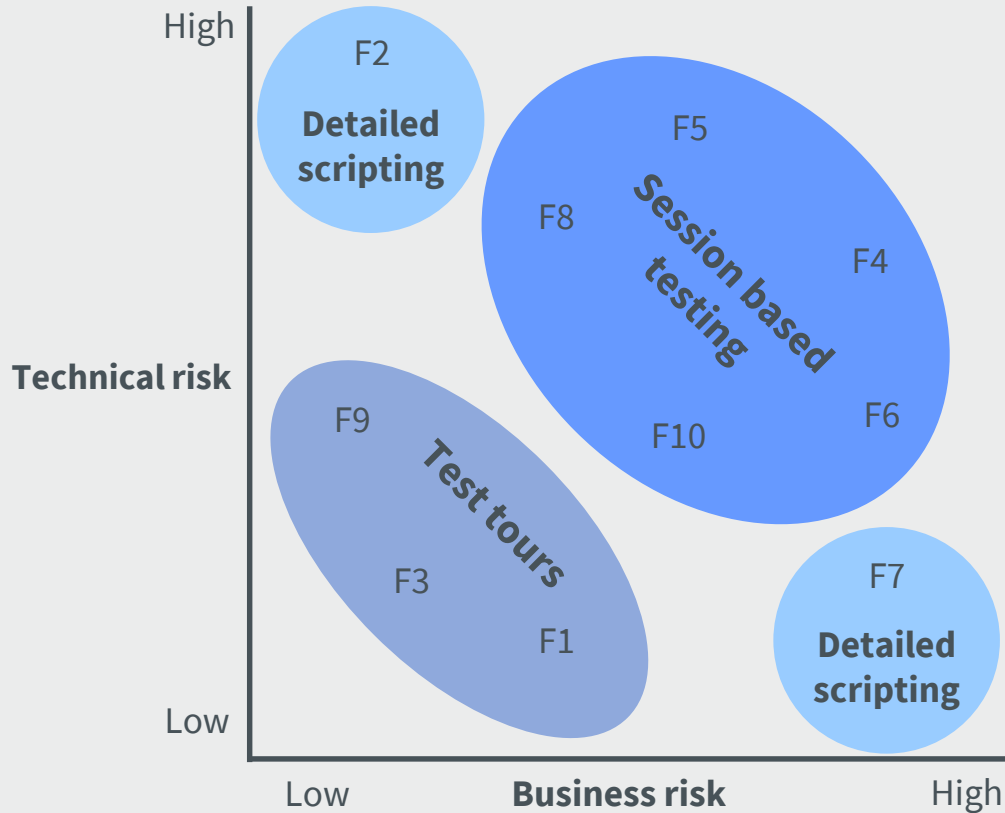
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Implementation in context

What can/will you do next?

List 3 actions and share it with you neighbour.

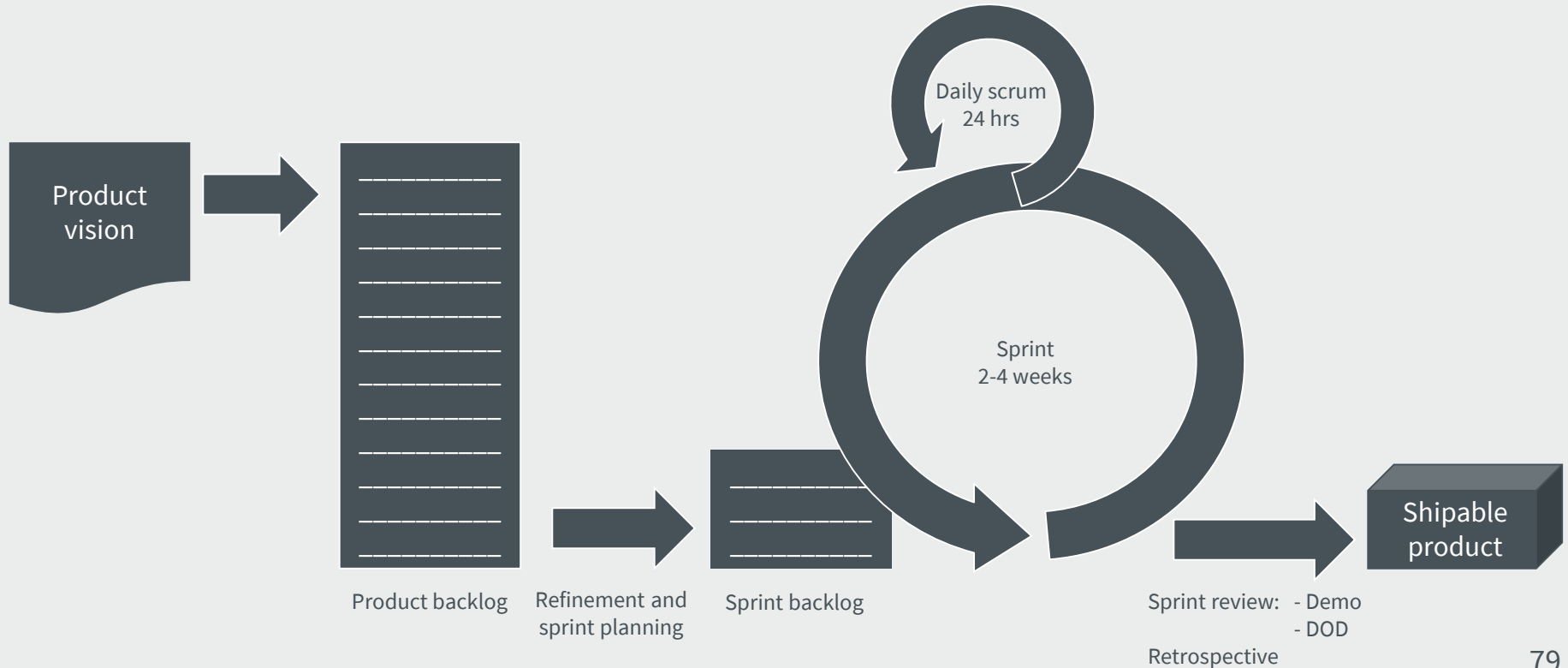
Test strategy



How can you apply session based testing in Scrum?



Scrum and situational testing



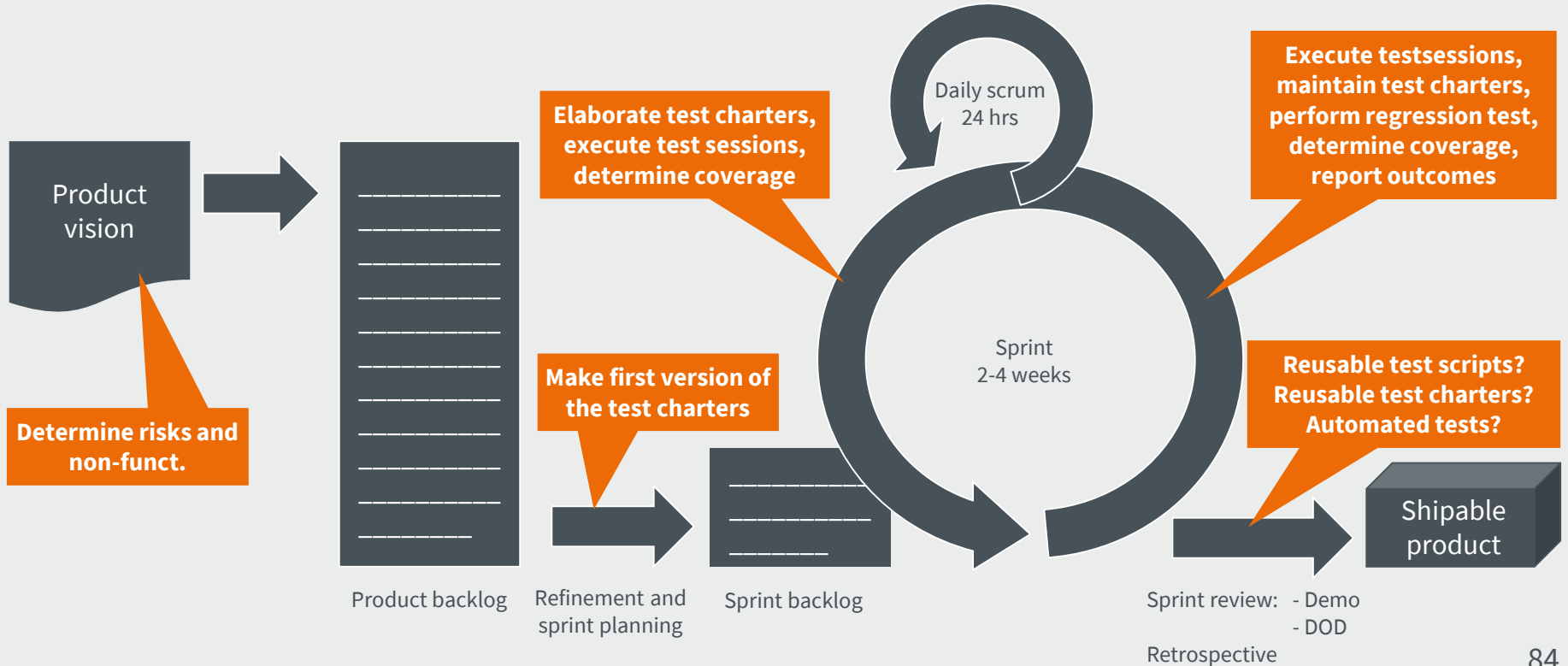
Characteristics Scrum

- › Short iterations: sprints
- › Build small, potential shippable parts
- › Requirements on the product backlog
- › Features developed based on business value
- › Multi functional teams
- › Self managing teams
- › Fast feedback to the customer
- › Engineering not described: craftsmanship
- › Daily scrum

Scrum meetings

- Refinement and sprint planning
 - Obtain understanding and refine sprint backlog
 - Estimation
- Daily standup
 - What have you done yesterday
 - What are you going to do today
 - Do you see any impediments that prevent you from making progress?
- Sprint review
 - Demo
 - DOD
 - Retrospective

Scrum and session based testing





Some final thoughts

Further reading

- Explore it! – Elisabeth Hendrickson
- Exploratory testing – James Whittaker
- Perfect Software and other illusions about testing – Gerald Weinberg
- Lessons learned in software testing – Cem Kaner, James Bach en Bret Pettichord
- ebook situational testing:
<https://huddle.eurostarsoftwaretesting.com/resource/test-management/situational-testing/>

Articles

- Exploratory testing explained
- Addressing the risk of exploratory testing 1, 2 en 3
- Of testing tours and dashboards
- Bug Bash – a collaboration episode
- The way to involve stakeholders in testing
- How to host a Bug Hunting
- Session based test management
- Using session-based test management for exploratory testing
- Session based testing in practice
- Premises of Rapid Software Testing
- What is Rapid Software Testing
- Testing vs. checking
- Testing and checking refined
- The seven basic principles of the context
- Stop starting, start finishing
- Session based testing

Websites

- <http://searchsoftwarequality.techtarget.com/>
- <http://www.satisfice.com/blog/>
- <http://www.developsense.com/>
- <http://huibschoots.nl/wordpress/>
- http://en.wikipedia.org/wiki/Exploratory_testing
- <http://context-driven-testing.com/>
- <https://www.youtube.com/watch?v=0EIMxyFw9T8>

A personal note





Evaluation

**Please share your top 3 take aways with us?
How satisfied are you on a 1 to 10 scale?**

**Thank you very much, have a good conference
and I hope to see you again**