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Risk based testing – or not?

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A bit about me…

- Background
- Corporal in the Royal Danish Airforce
- Certifications
- SCRUM master, ISEB foundation/practitioner, CAT trainer, TMap Test Engineer, TMap Test Manager, TMAP Organizing built-in Quality at Scale, TPI Next foundation, ISTQB Expert Level Test Management – full, SAFe SPC
- Focus

  •Test management, test engineering, SCRUM, process improvement, agile, context driven test, change management
- Experience
- 26 years in the Testing

KEY 2 QUALITY


IT IS NOT POSSIBLE TO TEST EVERYTHING!
Not even if we automate everyting ;-)
KEY 2 QUALITY

Let's start with a definition… or two

Project risk:
A risk relating to management and control of the (test) project, e.g. lack of resources, deadlines, changed requirements etc.

Product risk:
A risk directly relating to the test object

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Do you ever hear things like…

”We have a risk-based approach to testing”

”we are doing risk-based testing”

”risk analysis form the basis of our test strategy”

KEY 2 QUALITY

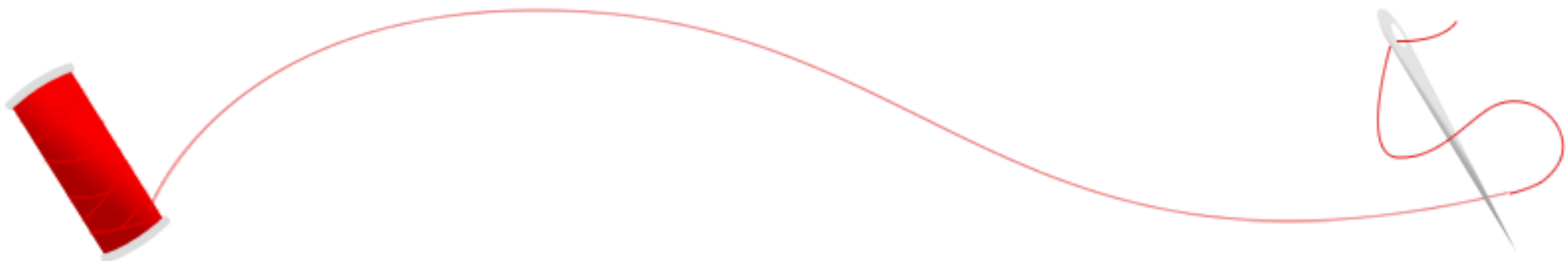
It is easy to

Talk the Talk

But can you also

Walk the walk?

KEY 2 QUALITY



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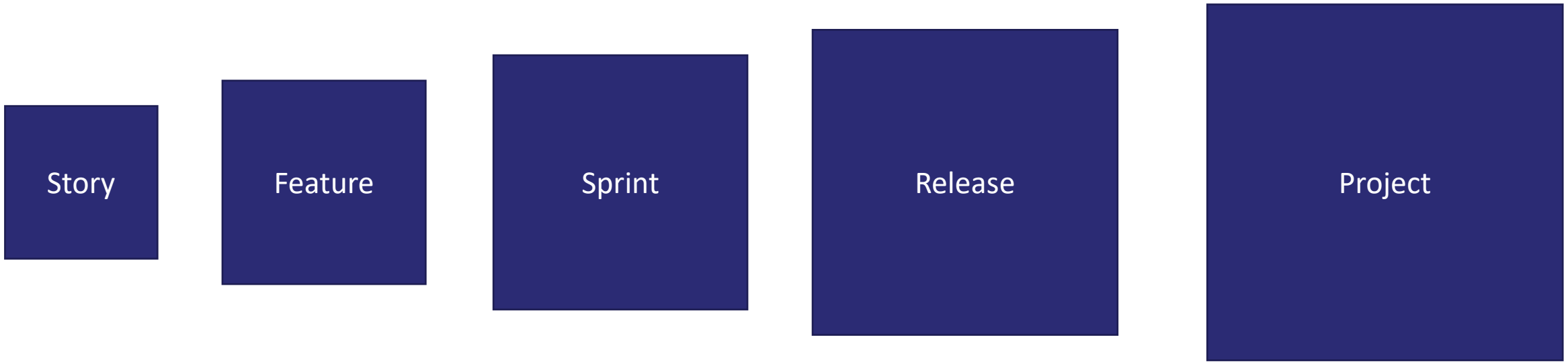
Why risk based?

- Out of an almost infinite range of test conditions and combinations of conditions that can be met:
  - Should team select a **limited** set of conditions
  - Determine and assign an **appropriate effort** to cover each condition with test cases
  - **Prioritize the order** of test cases in a manner that optimizes the suitability and effectiveness of the test work to be performed.

KEY 2 QUALITY

Use PRA on different levels



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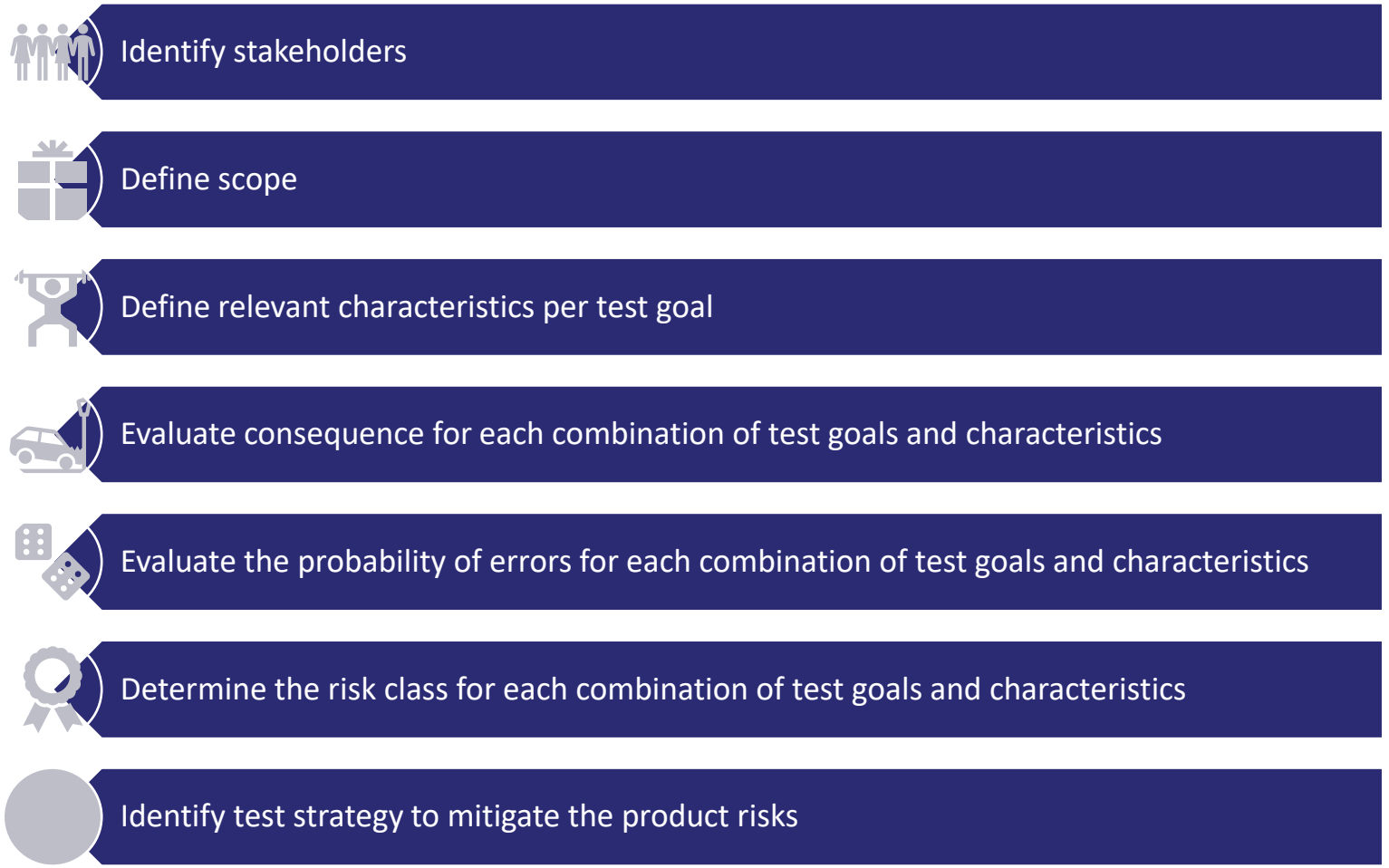
The classic approach



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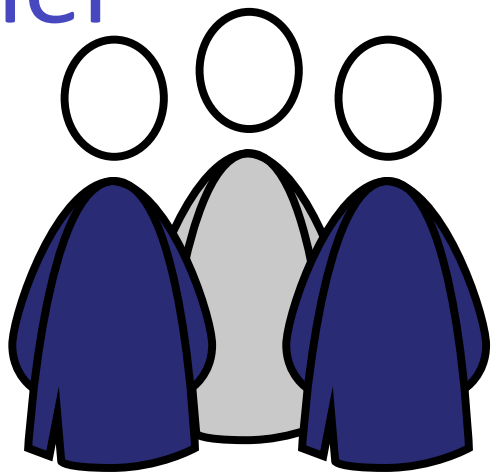
Who are your stakeholders?

Senior Management

Operations

Product Owner



End user

Customer

Marketing

Architect

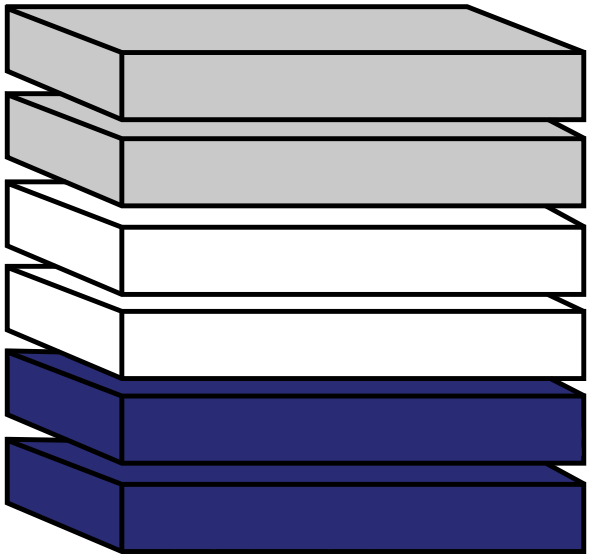
Project Sponsor

Team

Sales

Or whoever is important for your product

Identify risk items and related quality characteristics



Performance

Portability

Usability

Reliability

Maintainability

Security

Functionality

KEY 2 QUALITY

Identify Risk Level

#	Test Goal	Characteristic	Impact	Probability	Risk Class
1.1	The add new patient function works as expected	Functionality	H	M	B
1.1	The add new patient function works as expected	Usability	M	M	B
1.2	Personal data is handled correctly	Functionality	H	H	A
1.2	Personal data is handled correctly	Security	H	M	B
1.3	Workflow for dismissing a patient can be handled	Functionality	M	L	C
2.1	Search for patient information is fast	Performance	H	L	B
2.2	Register CAVE information is fast	Performance	H	H	A
2.3	Medicin administration can be documented as expected	Functionality	H	L	B
2.3	Medicin administration can be documented as expected	Usability	M	L	C
2.3	Medicin administration can be documented as expected	Performance	M	M	B
2.3	Medicin administration can be documented as expected	Suitability	L	M	C

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Risk table

Risk classification		Chance of failure		
		High	Mid	Low
Damages	High	A	B	B
	Mid	B	B	C
	Low	C	C	C

But we are agile….

Test goal	Characteristica	Impact	Probabilty	Risk class
User story 1	Functionality	3	2	6
	Usability	2	2	4
User story 2	Functionality	3	3	9
	Security	3	1	3
User story 3	Functionality	2	1	2
User story 4	Performance	3	3	9

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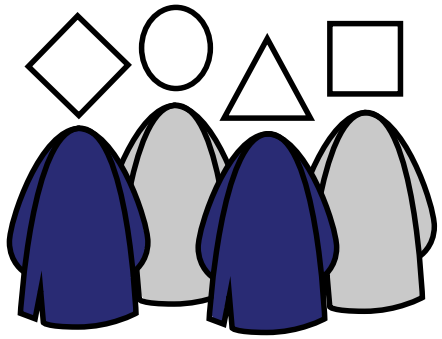
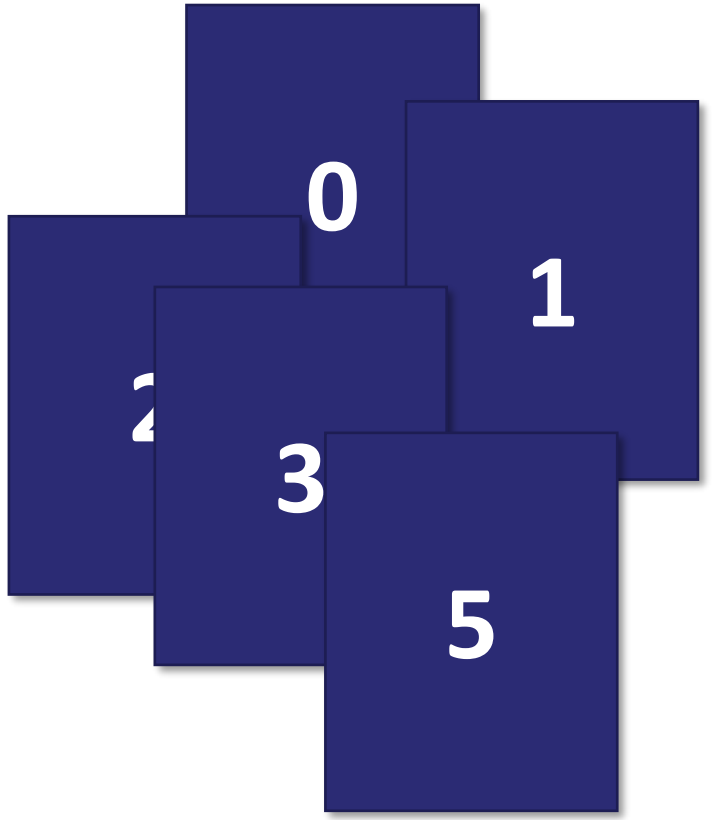
Risk poker

Planning poker





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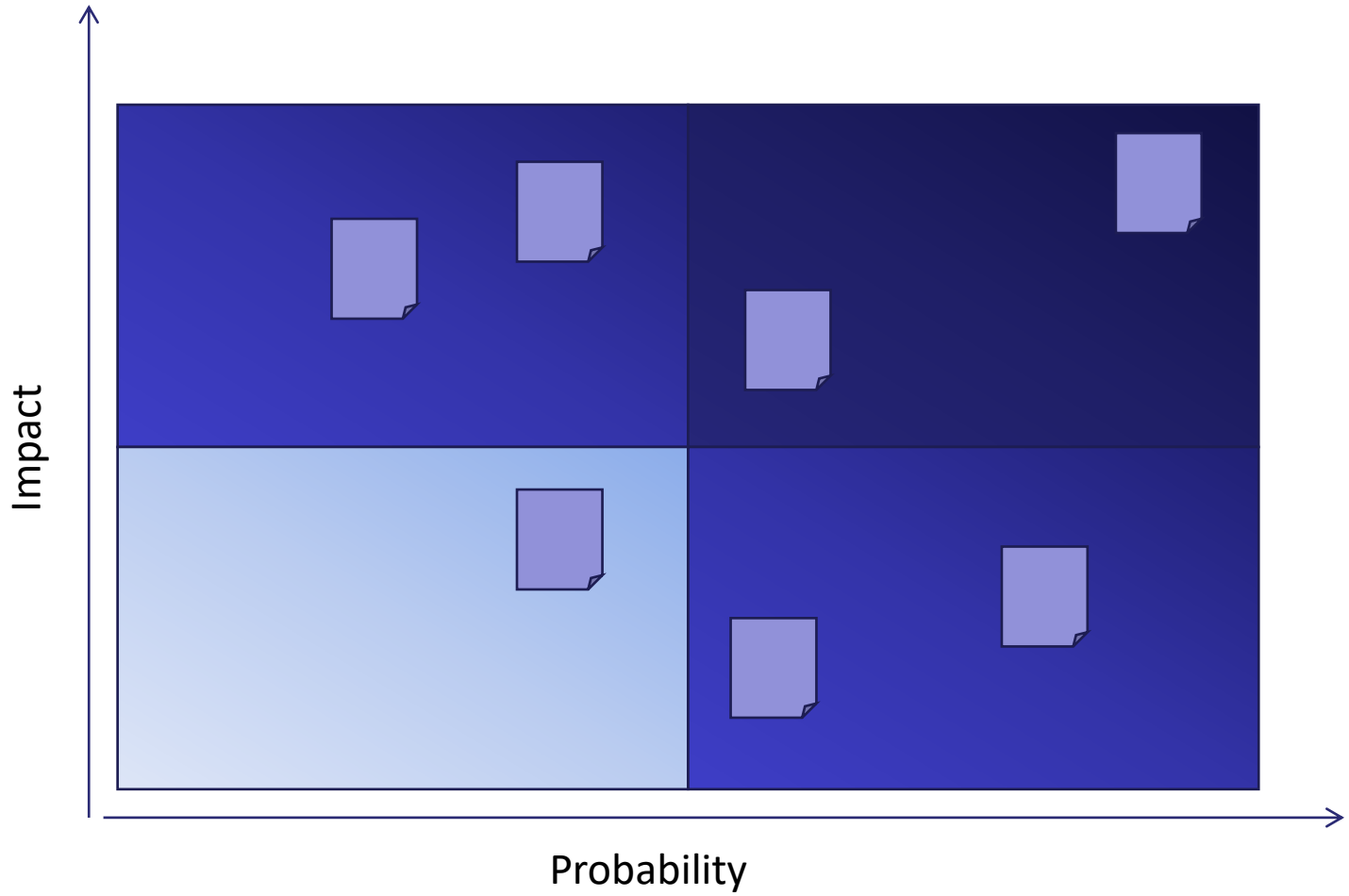
Or use a risk matrix



But then what….

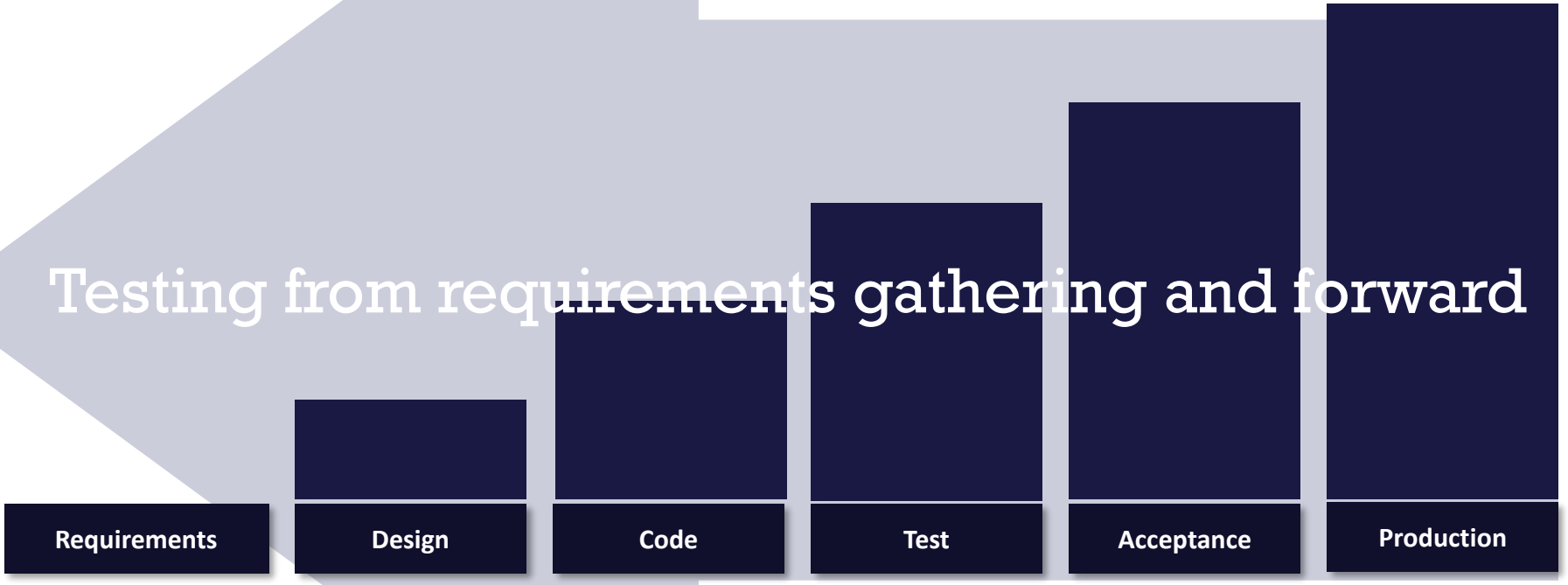
Your need to understand how to get from risk to test

KEY 2 QUALITY

From risk to test strategy – Project level

Test Goal	RC	Eval	UT	ST	UAT	PAT
Functionality						
The add new patient function works as expected	A	●	●●	●●●	●●	
Personal data is handled correctly	B	●	●	●●	I	
Workflow for dismissing a patient can be handled	C			●	●	●
Medicin administration can be documented as expected	B	●	●	●●	●	
Usability						
The add new patient function works as expected	C	●			●	
Performance						
Search for patient information is fast	C			●		●
Register CAVE information is fast	C					●
Security						
Personal data is handled correctly	B			S	●	●●
Suitability						
Medicin administration can be documented as expected	B	●			●●	

Testing from requirements gathering and forward



Build in quality
- Shift Left

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For a test level (or a feature)

Test Goal	RC	ST	TDT
Functionality			
The add new patient function works as expected	A	●●●	Data combination – Pairwise
Personal data is handled correctly	B	●●	-
Workflow for dismissing a patient can be handled	C	●	Data combination– EP
Medicin administration can be documented as expected	B	●●	Elementary comparison - MCDC
Usability			
The add new patient function works as expected	C	I	
Performance			
Search for patient information is fast	C	●	-
Register CAVE information is fast	C	●	-
Security			
Personal data is handled correctly	B	S	Checklist, Error guessing
Suitability			
Medicin administration can be documented as expected	B		Process cycle test

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But we don’t know test design techniques

Risk class A.

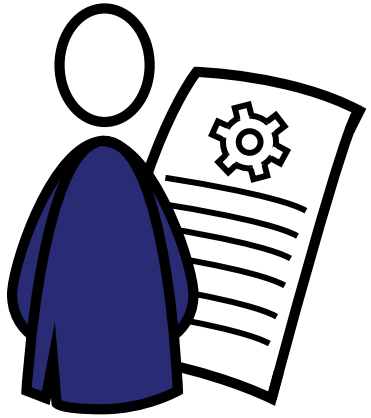
- Unit test coverage of at least 80% ZZZ coverage
- Test both primary and secondary new workflow
- Negative as well as positive test
- Full regression testing of affected functionality

Risk class B

- Unit test coverage of at least 60% XXX coverage
- Test both primary and secondary new worfklow
- Regression test of affected primary functionality

Risk class C

- Unit test coverage of at least 30% YYY coverage
- Test of primary workflow



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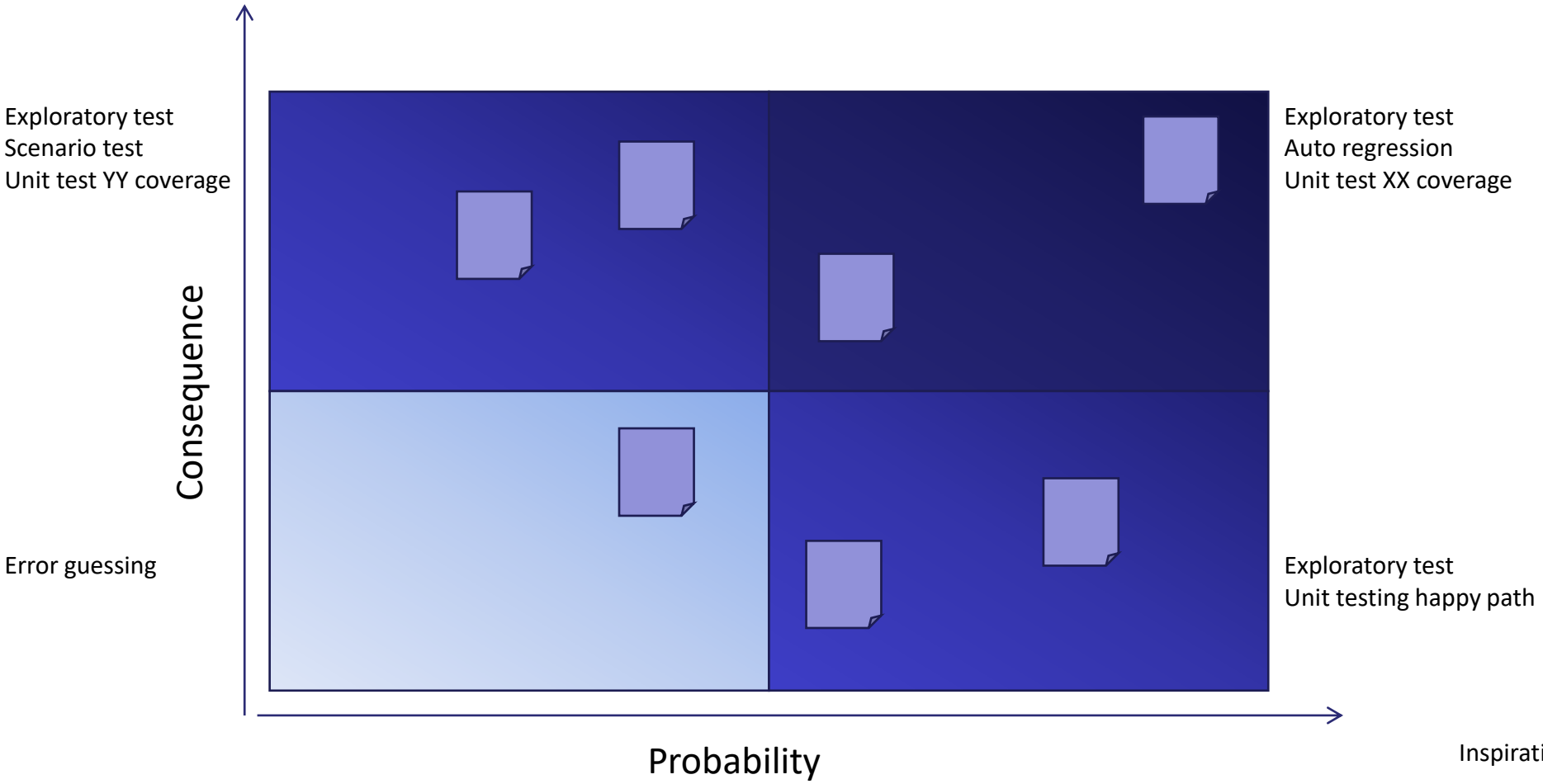
Visualize the test strategy in the brainstorm graph



Inspiration from PRISMA

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Communicate about risk mitigation

Product risk	Start	Week 1	Week 2	Week 3
Patient information	High	Medium	Medium	Low
Personal data	High	High	Medium	Medium
Medicin administration	High	High	High	Medium
Dismiss Patient	Medium	Medium	Low	Low

Product risk area	Defects	Planned test	Exe. test	% exe. test	% Succes
Patient information	34	230	112	49%	60%
Personal data	12	64	35	55%	71%
Medicin administration	9	143	49	34%	80%
Dismiss Patient	7	125	79	63%	84%
Totals:	82	562	255	45%	69%

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Or Maybe Just….

Area 1	Area 2	Area 3	Area 4	Area 6
				

So…


Find the approach to product risk analysis that fits your context


Involve your stakeholders inside and outside the team


Have a common understanding of how to go from risk to strategy


Support your team in implementing the strategy


Follow up on the implementation


Communicate based on product risk

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