

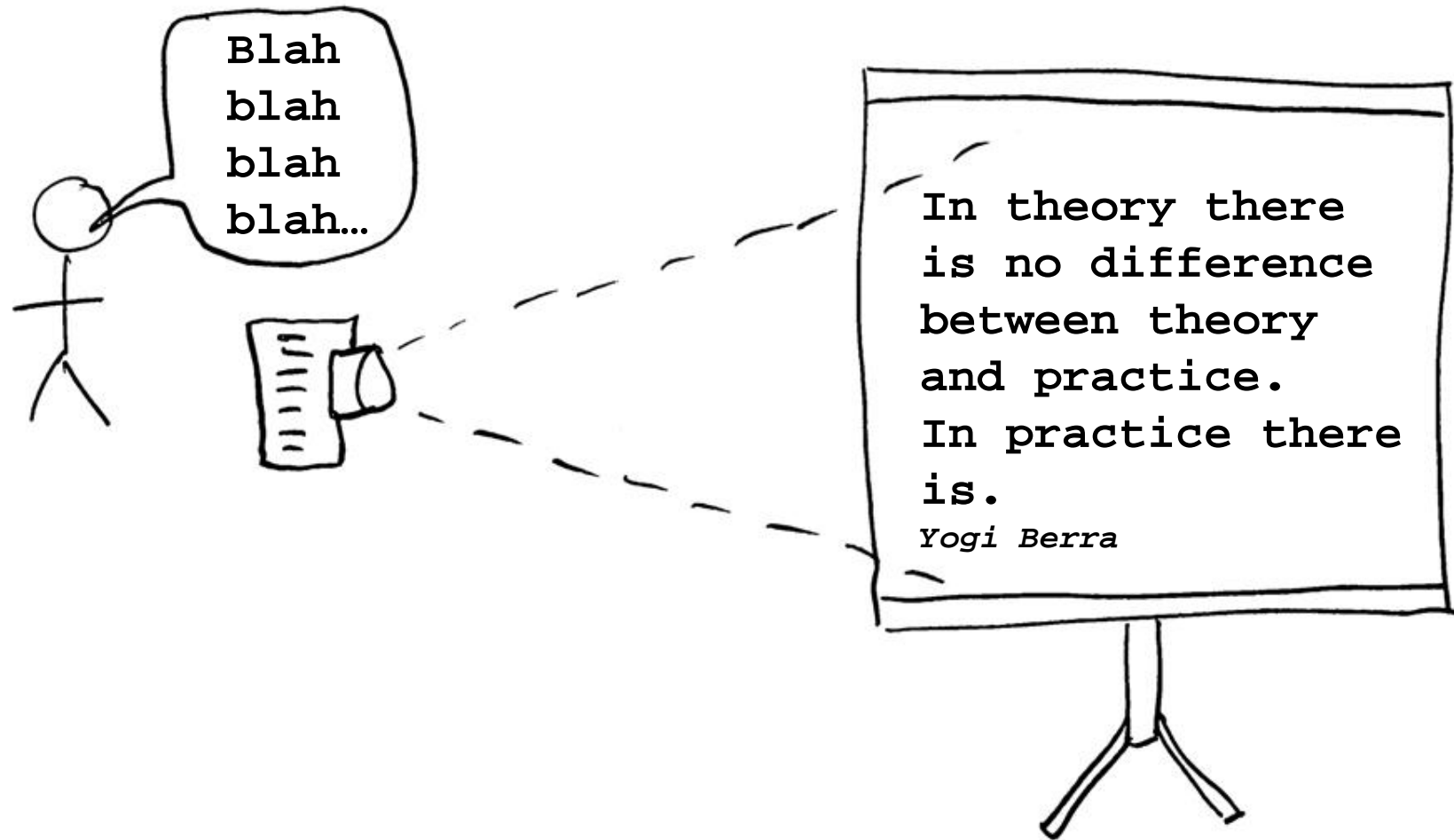
# Testing the limits of testing..

Phil Robinson



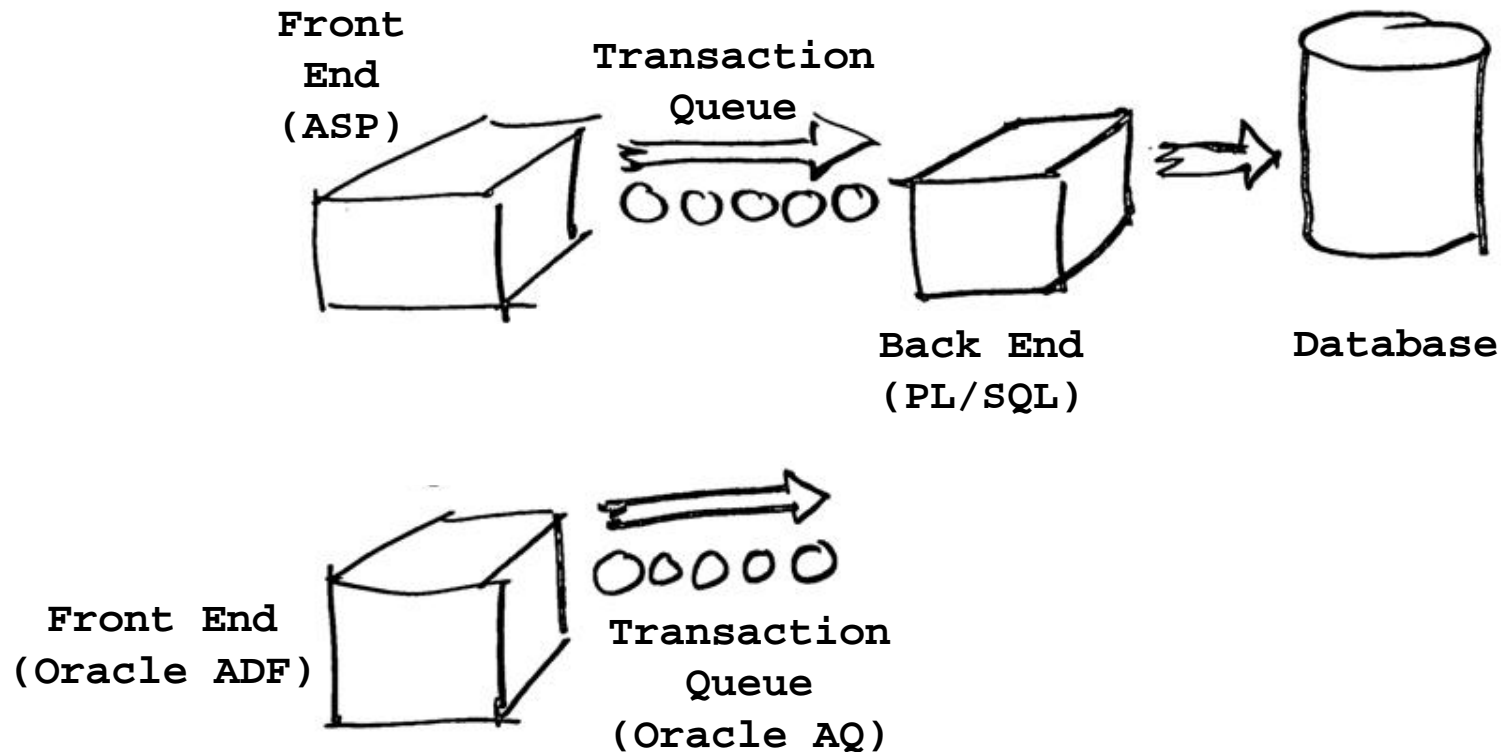
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# Teaching software testing..

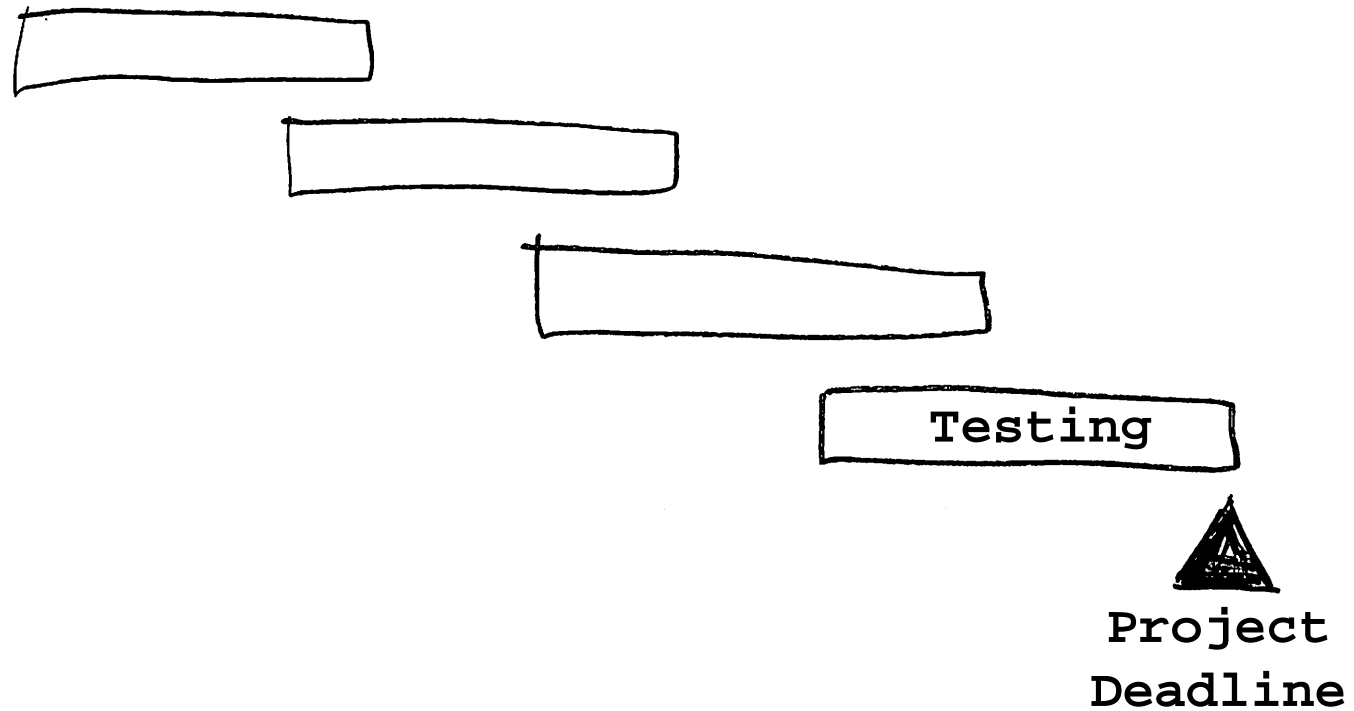


The project...

# The project objective..

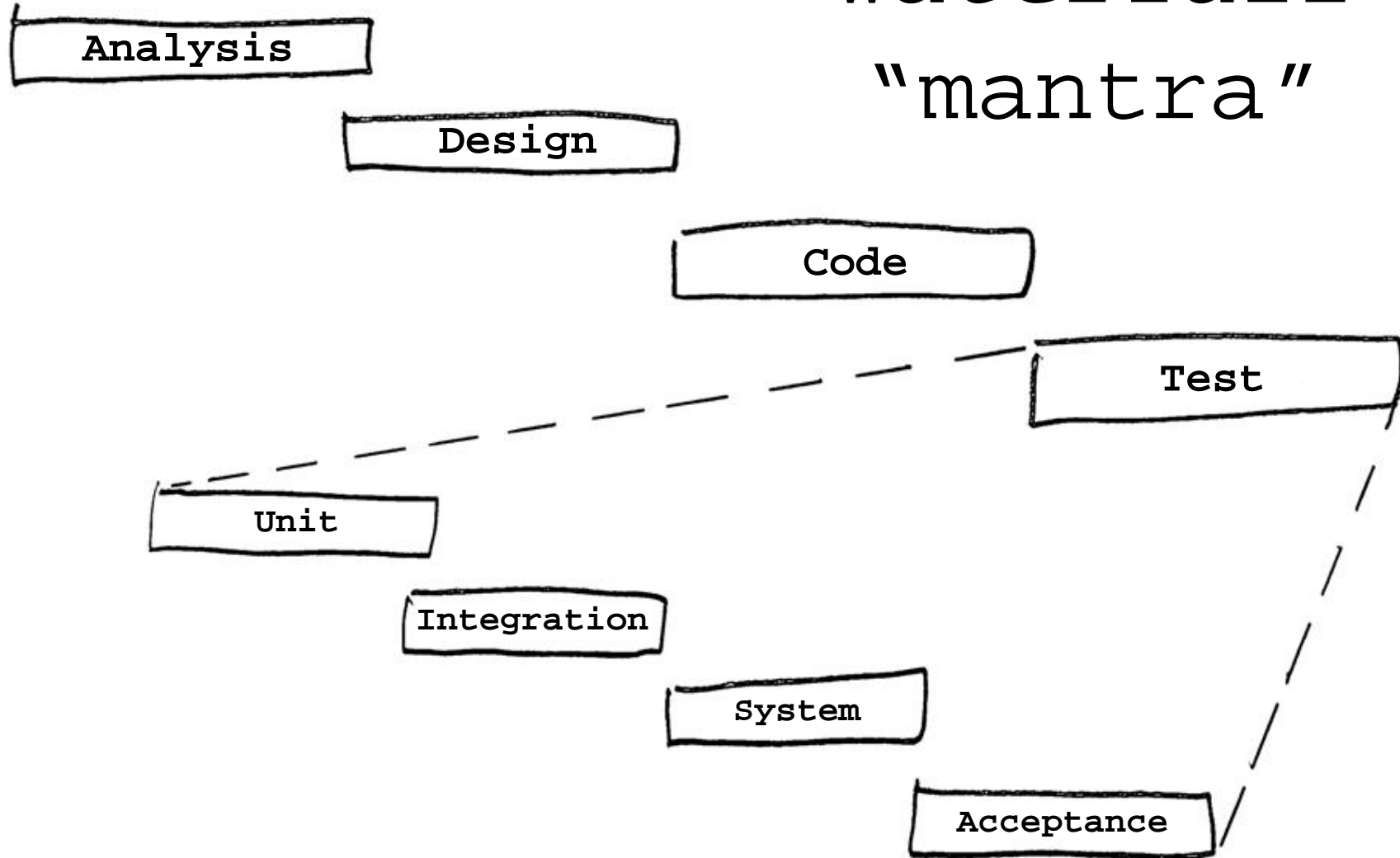


# The project plan..

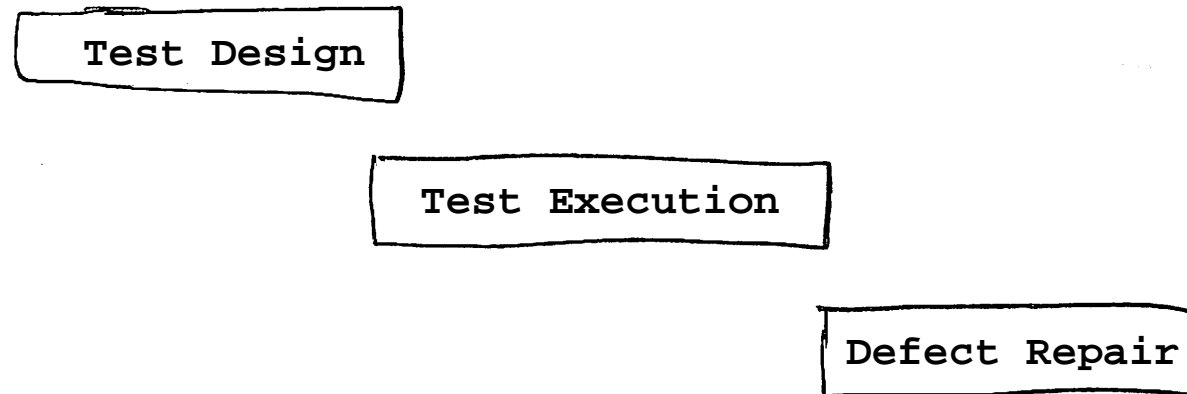


The test strategy..

# The waterfall "mantra"

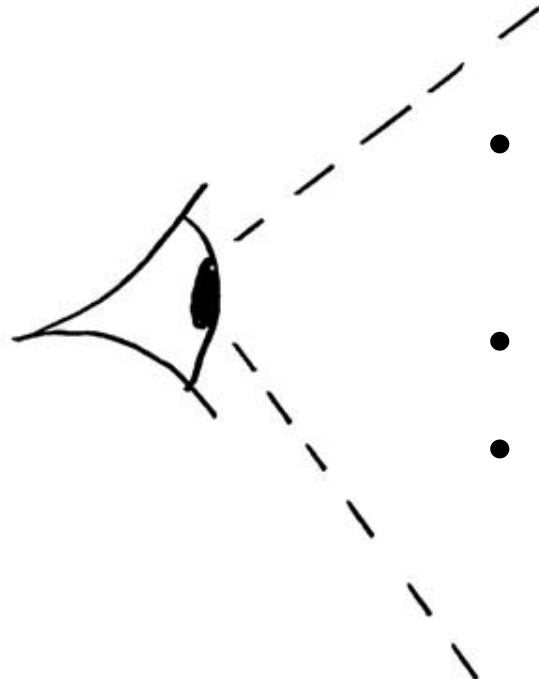


Testing is actually  
three different  
activities..





Testing is about quality  
not project phases...

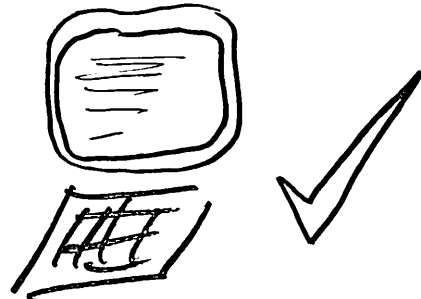


- Fit for intended purpose
- Conform to spec
- Absence of Defects and other quality goals

# Testing objectives..

- Validate that the software is fit for its intended purpose
- Verify that the software conforms to its specification
- Identify failures caused by defects
- Measure non-functional attributes of the software (security, performance, reliability...)
- Build confidence in the software

# Testing objectives..



## Test to pass...

- Validate
- Verify
- Measure
- Build confidence



## Test to fail...

- Identify failures
- Measure (stress)

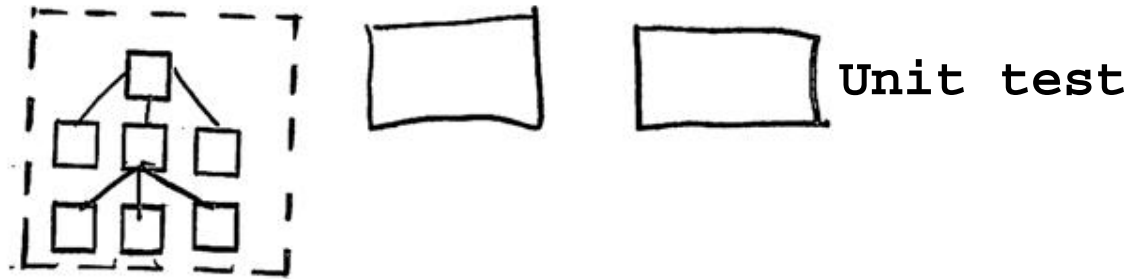
# Vertical integration..

□ □ □ Unit test

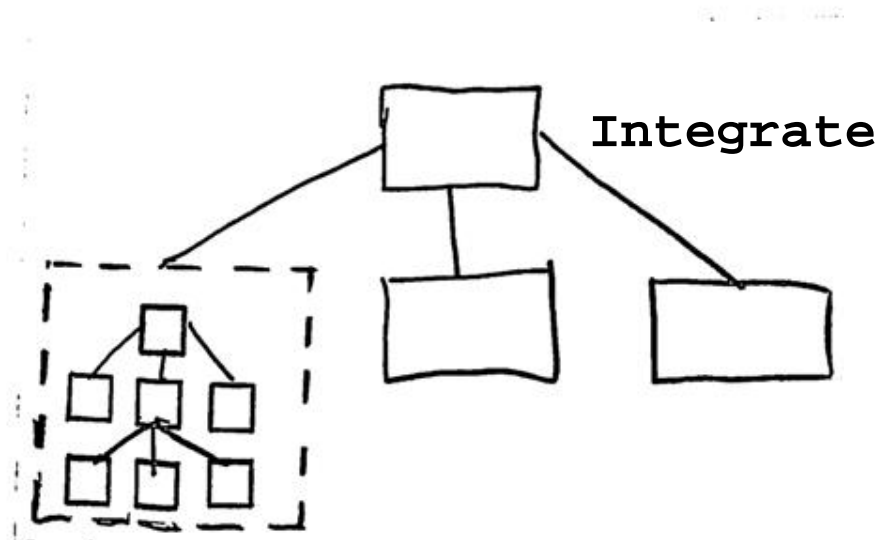
# Vertical integration..



# Vertical integration..

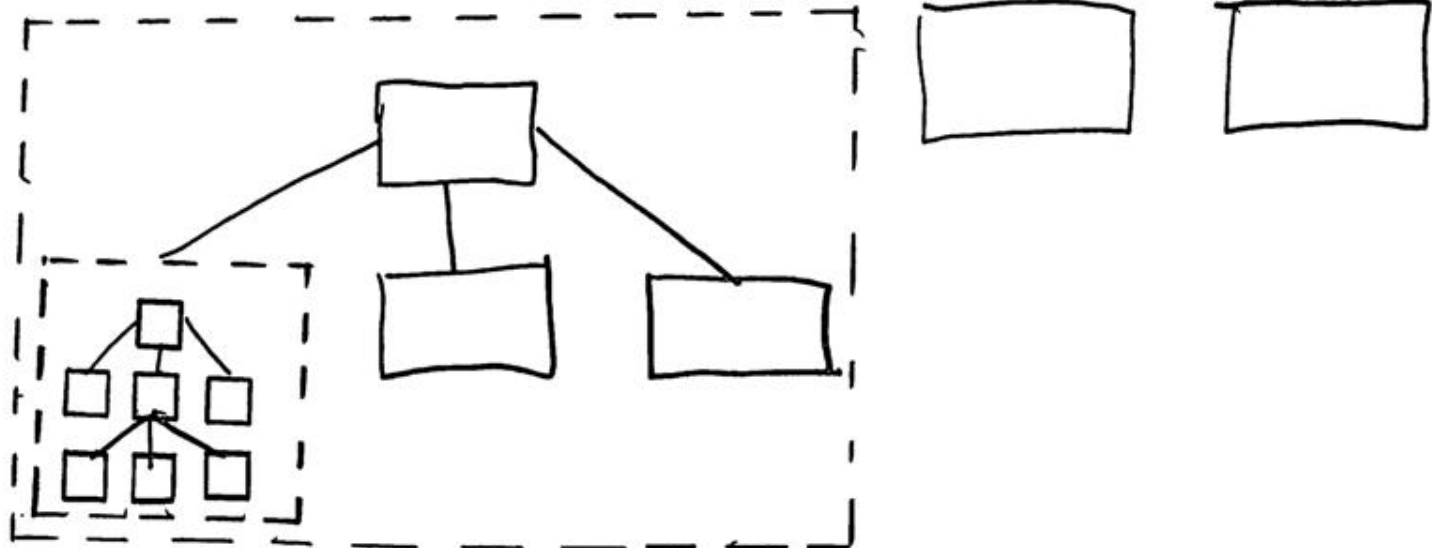


# Vertical integration..



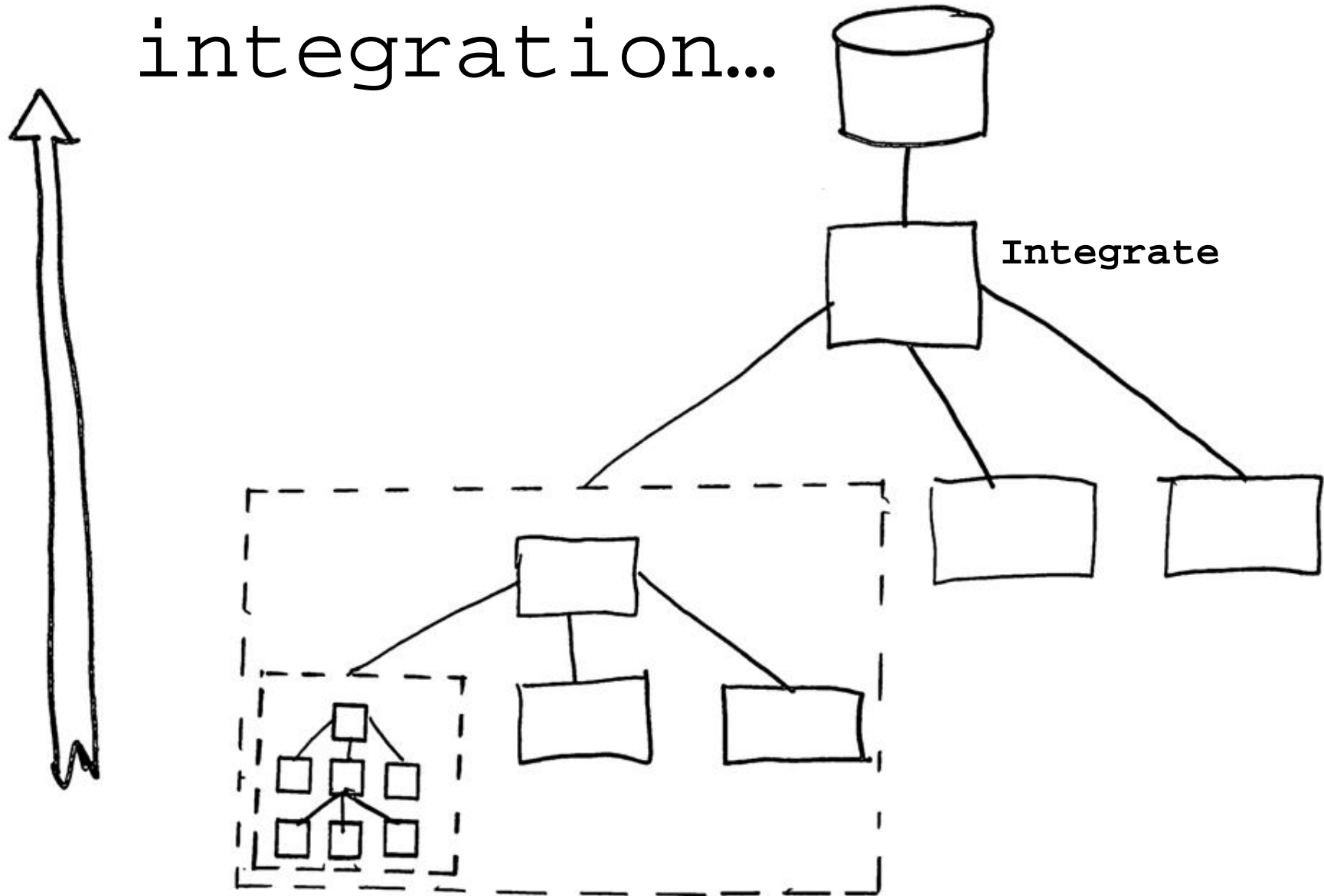
# Vertical integration..

Unit test

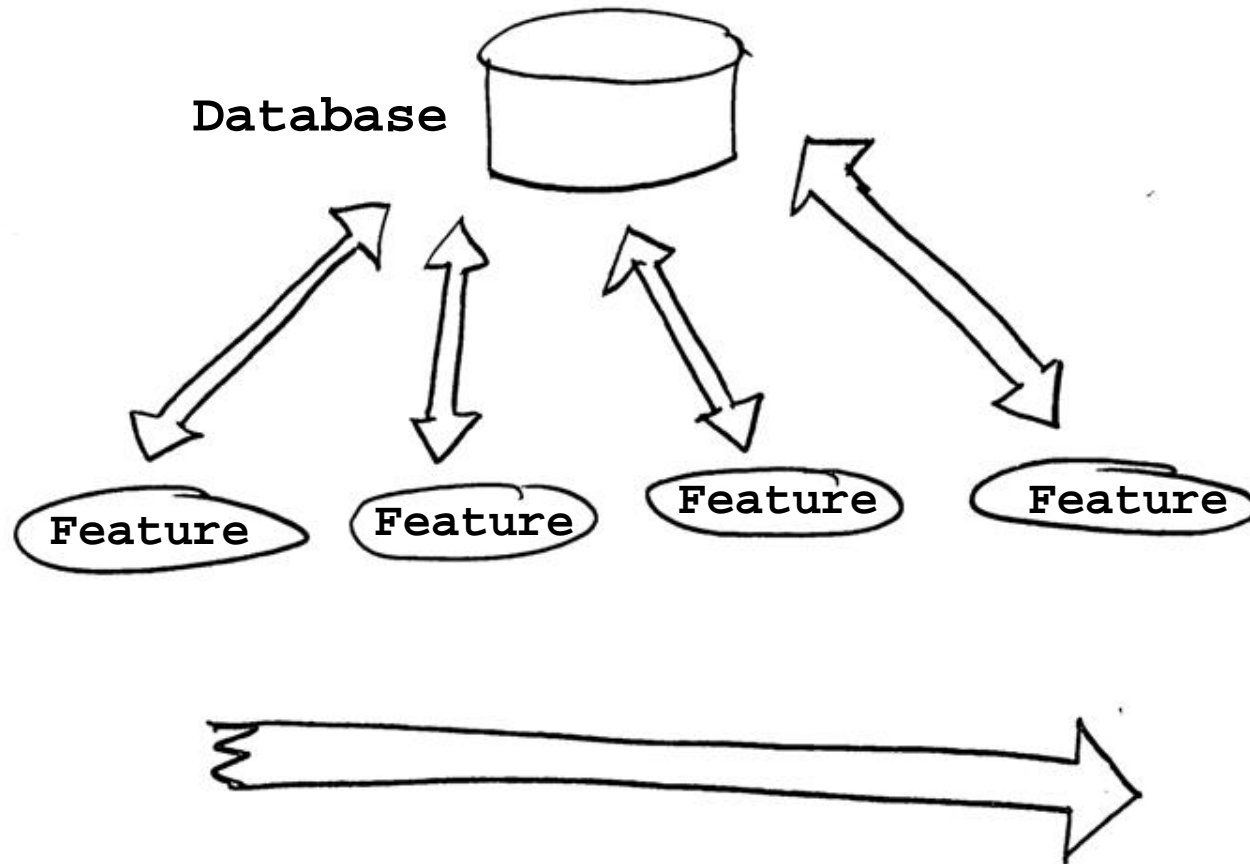




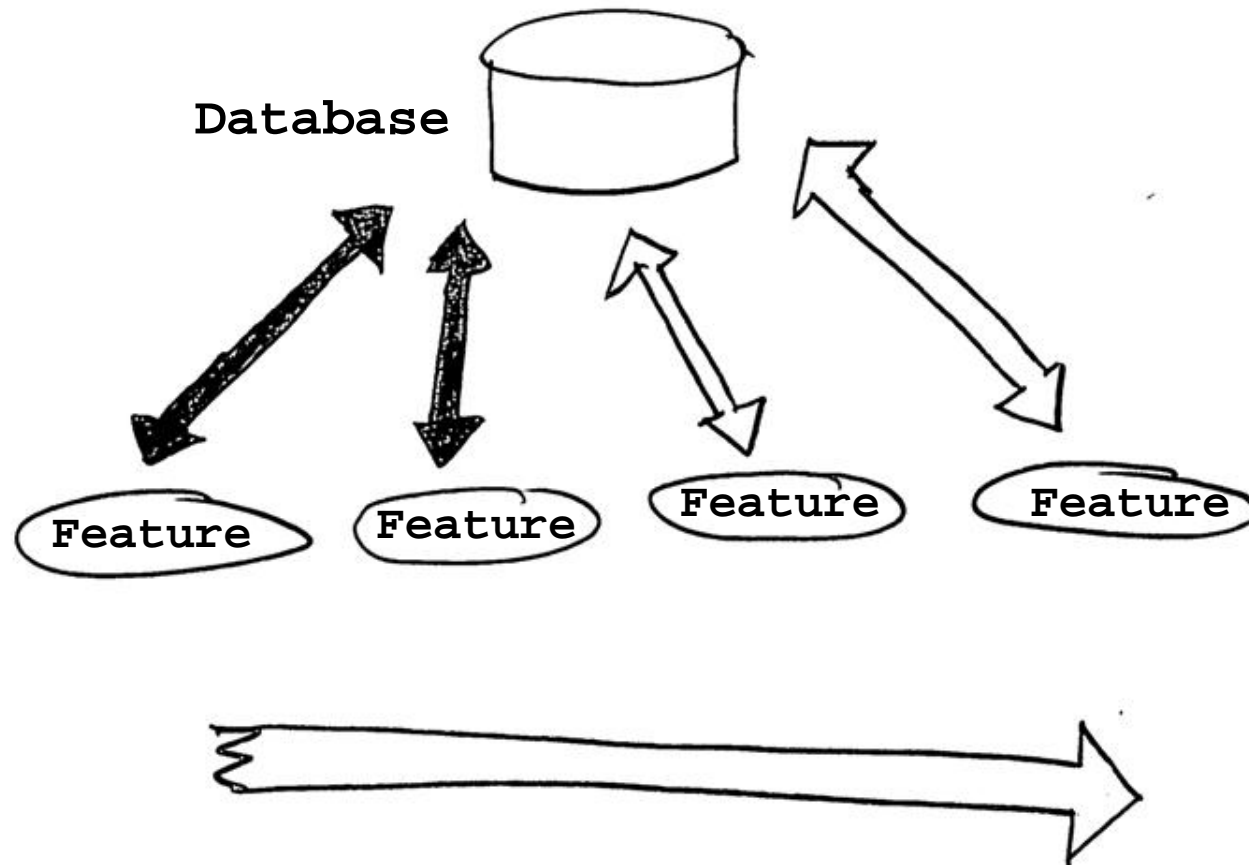
# Vertical integration..



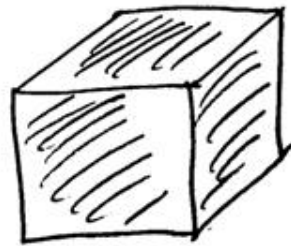
# Horizontal integration..



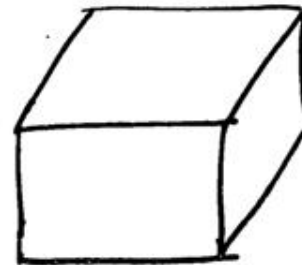
# Horizontal integration..



Testing should not be  
“black and white”..

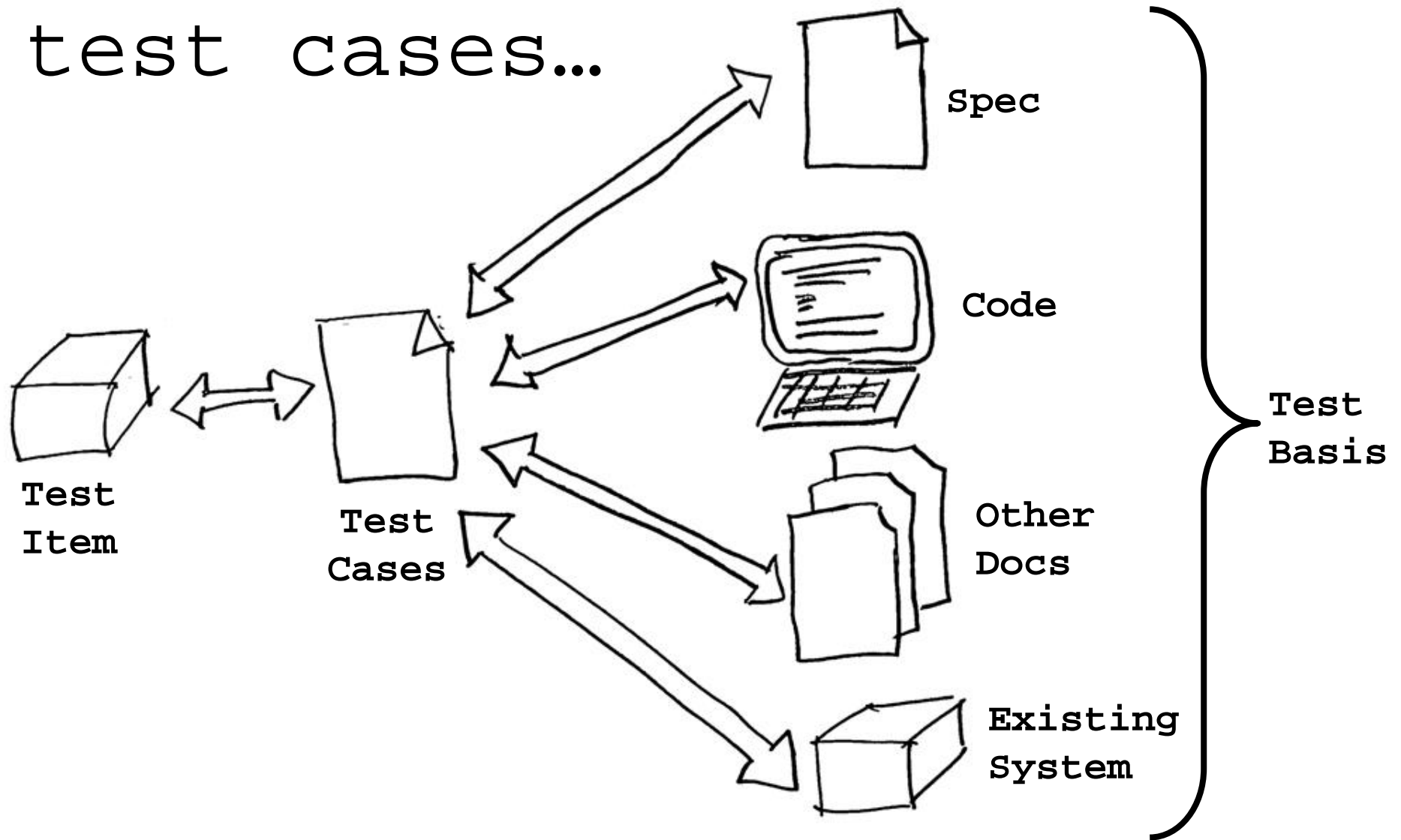


- “Black-box”
- Functional
- Specification based

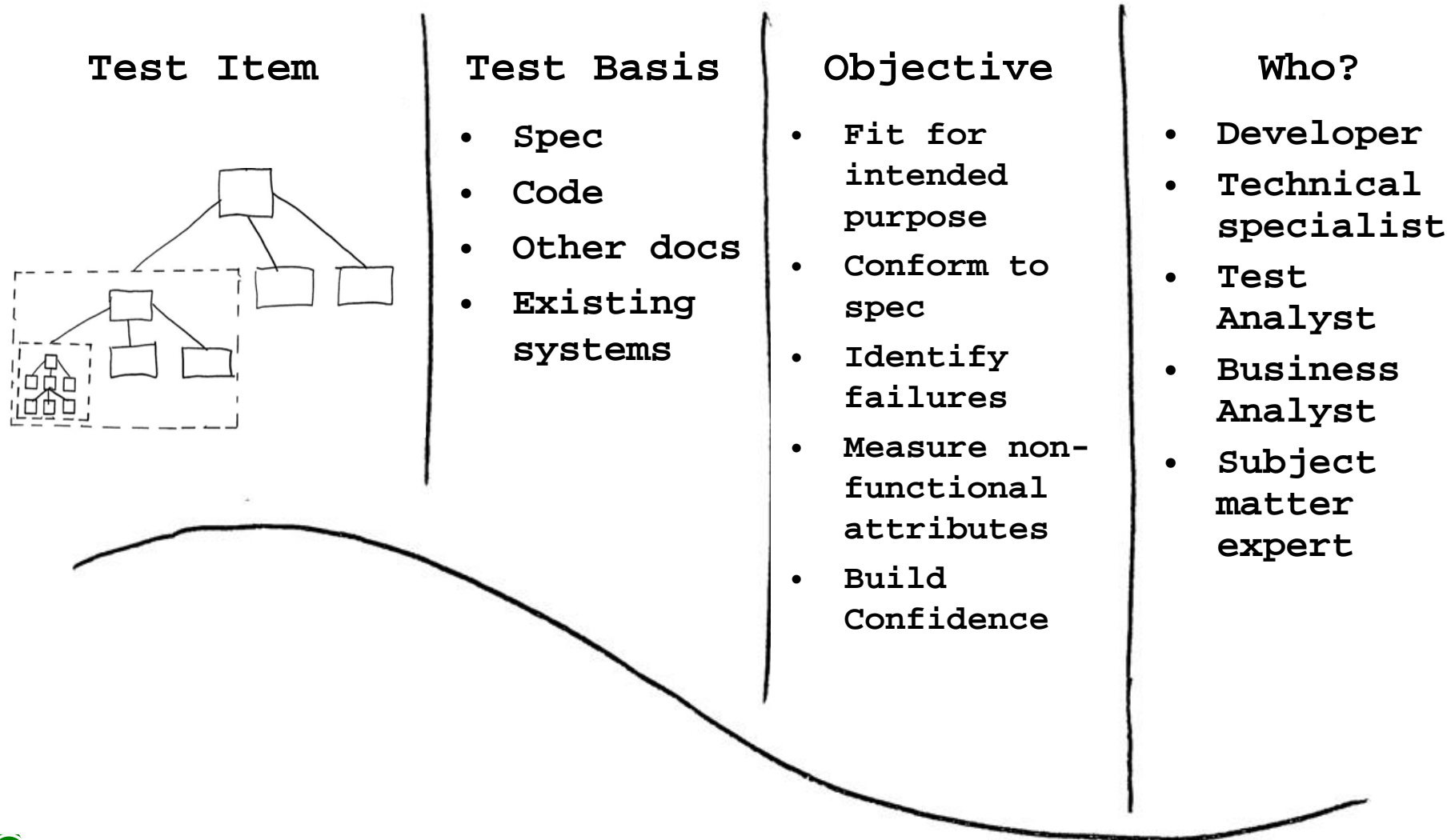


- “White-box”
- Structural
- Code based

# Designing test cases...

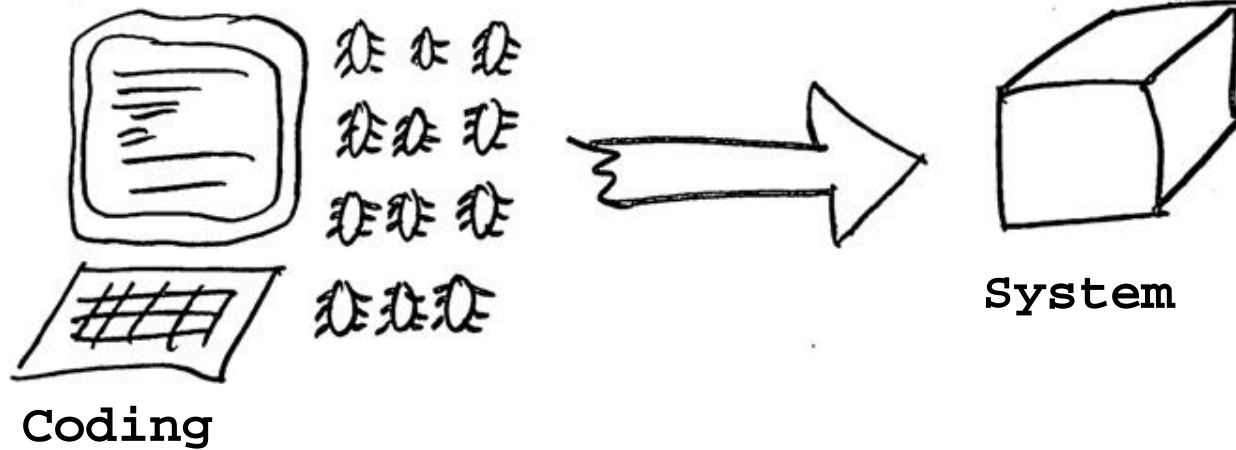


# A Better way to define test strategy...



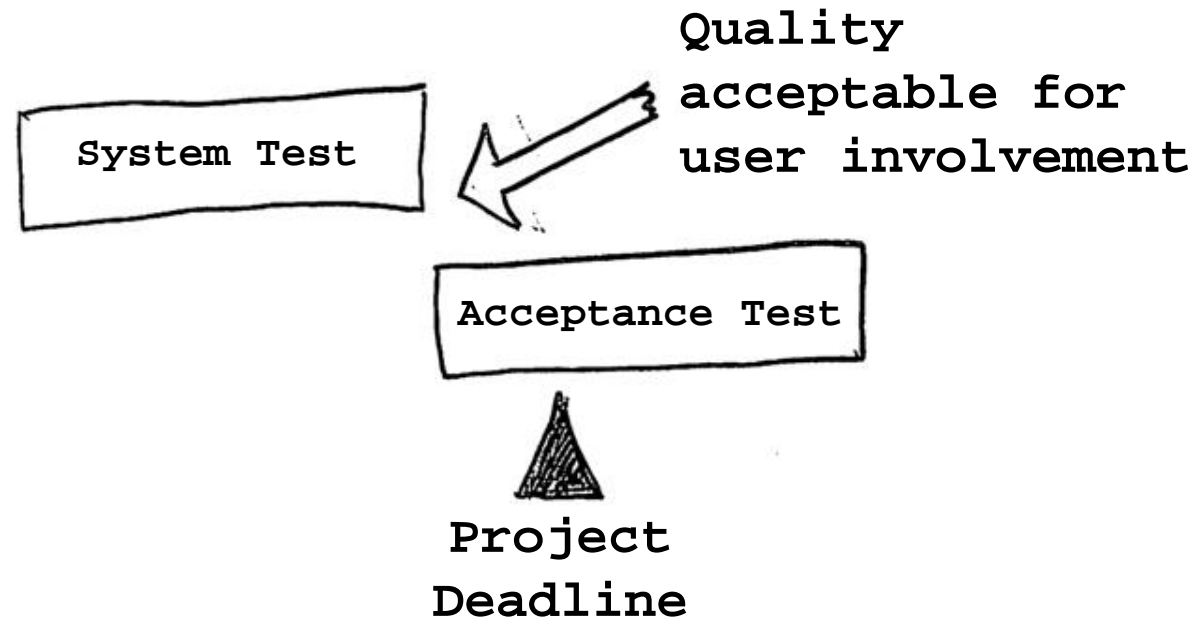
Early and extensive  
unit testing..

# Minimal unit testing..

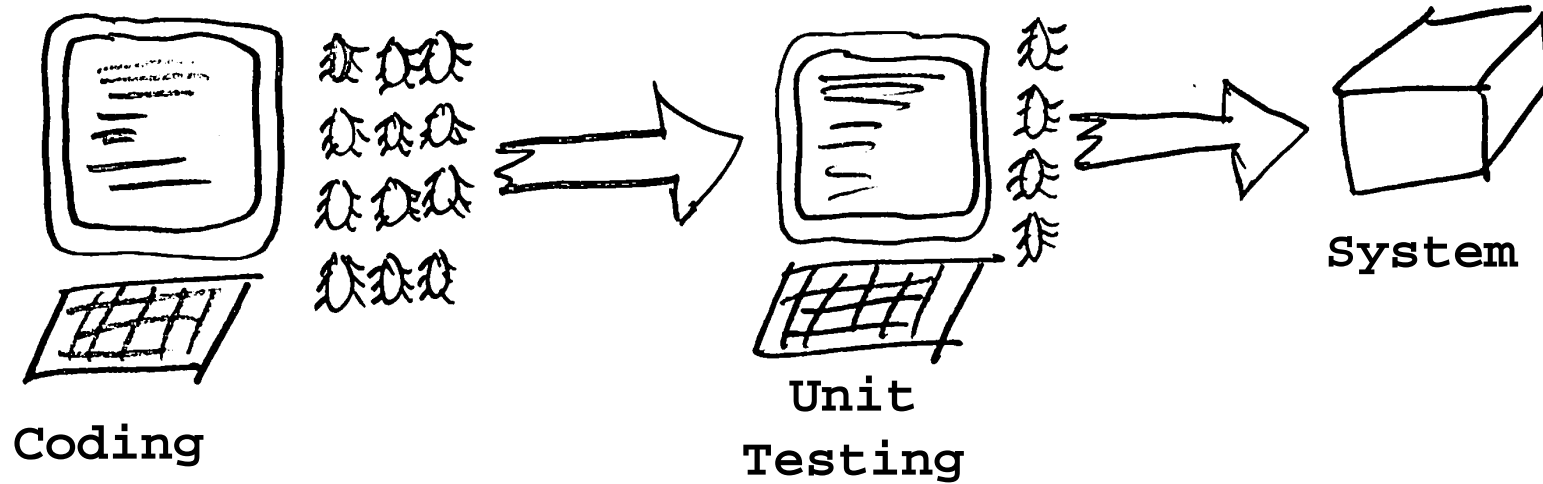




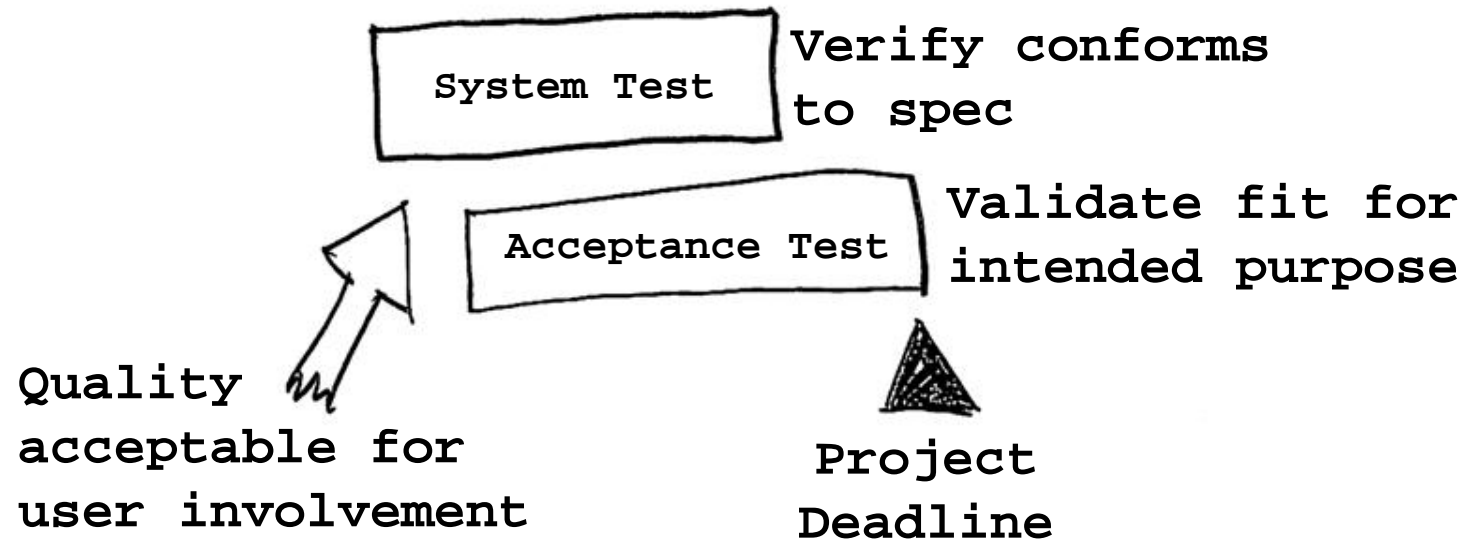
# Minimal unit testing..



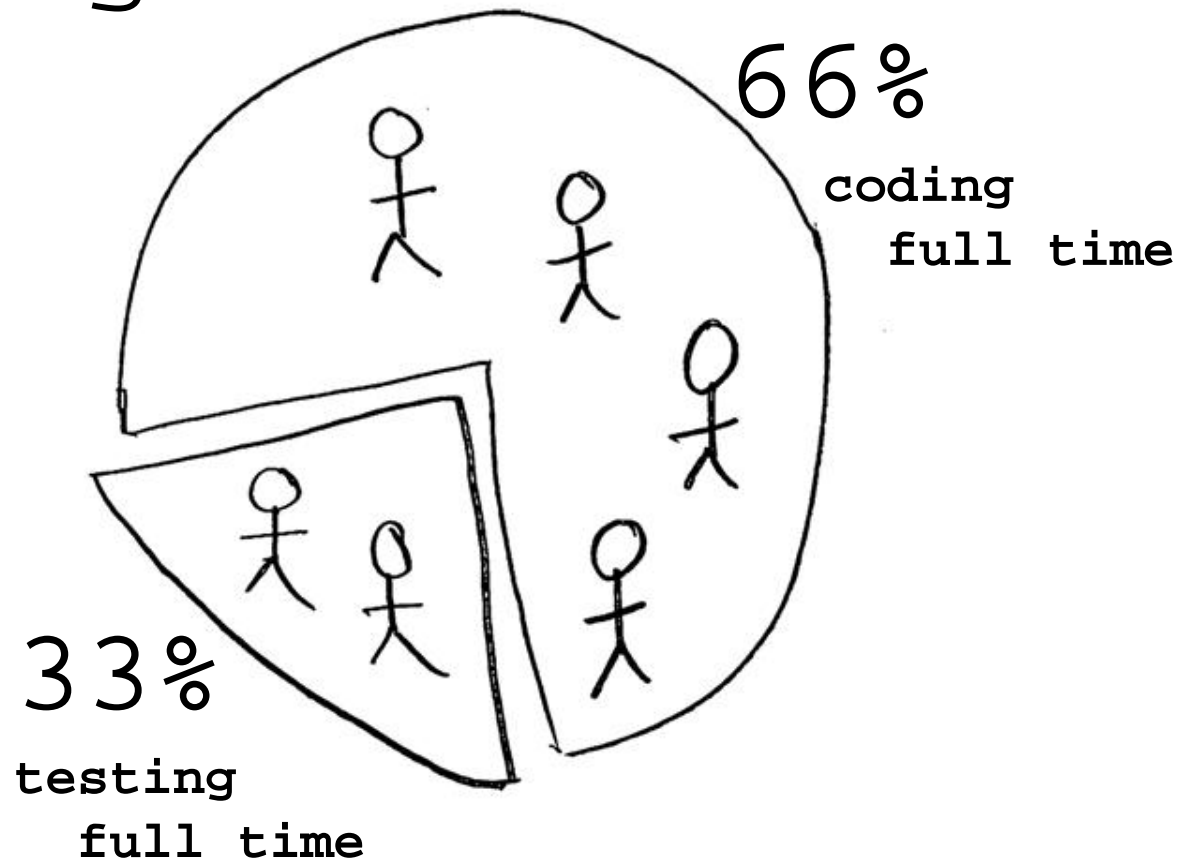
# Extensive unit testing..



# Extensive unit testing..

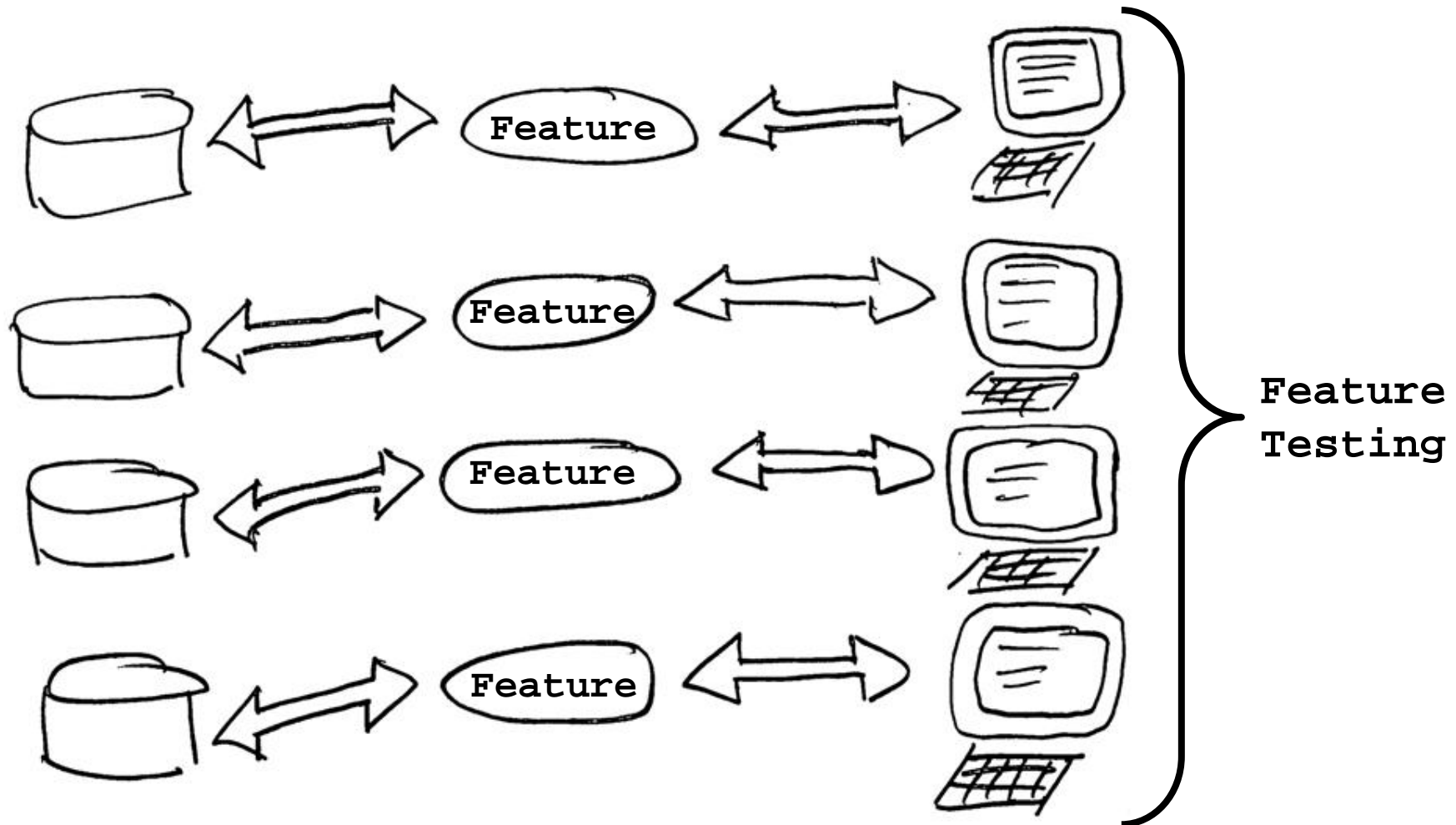


One in three developers  
dedicated to unit  
testing..

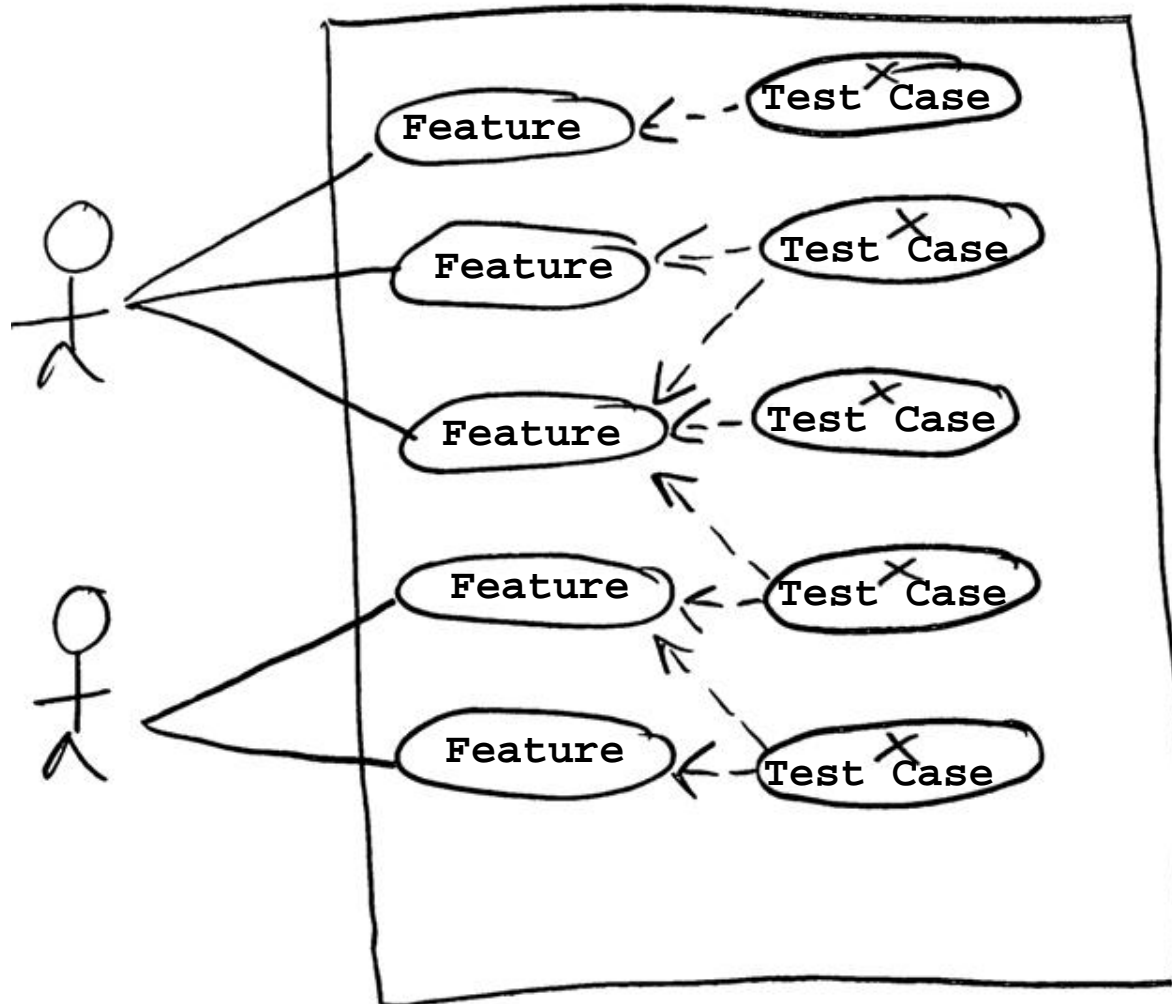


Feature testing..

# Feature testing to build confidence..



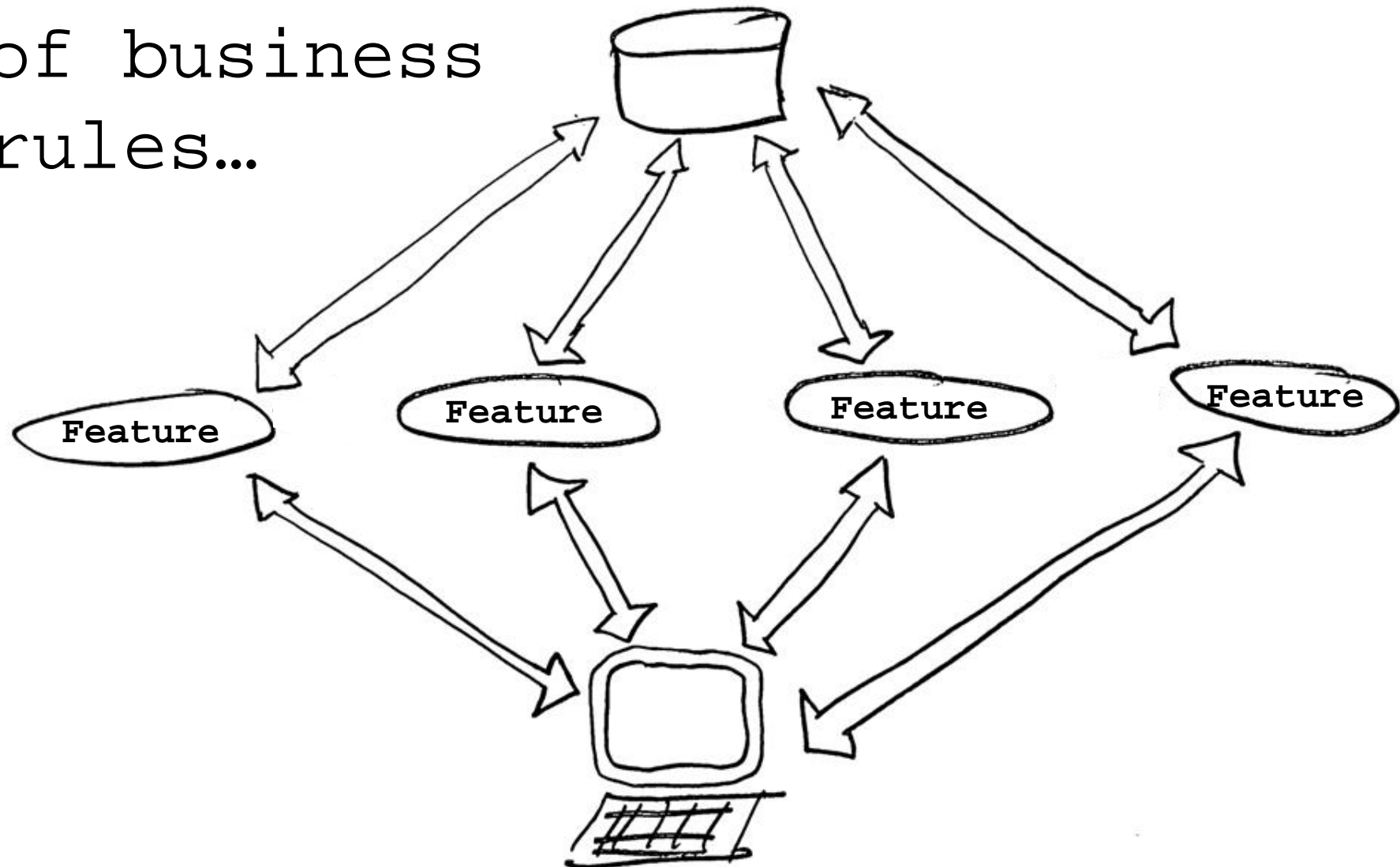
# Modelling features..



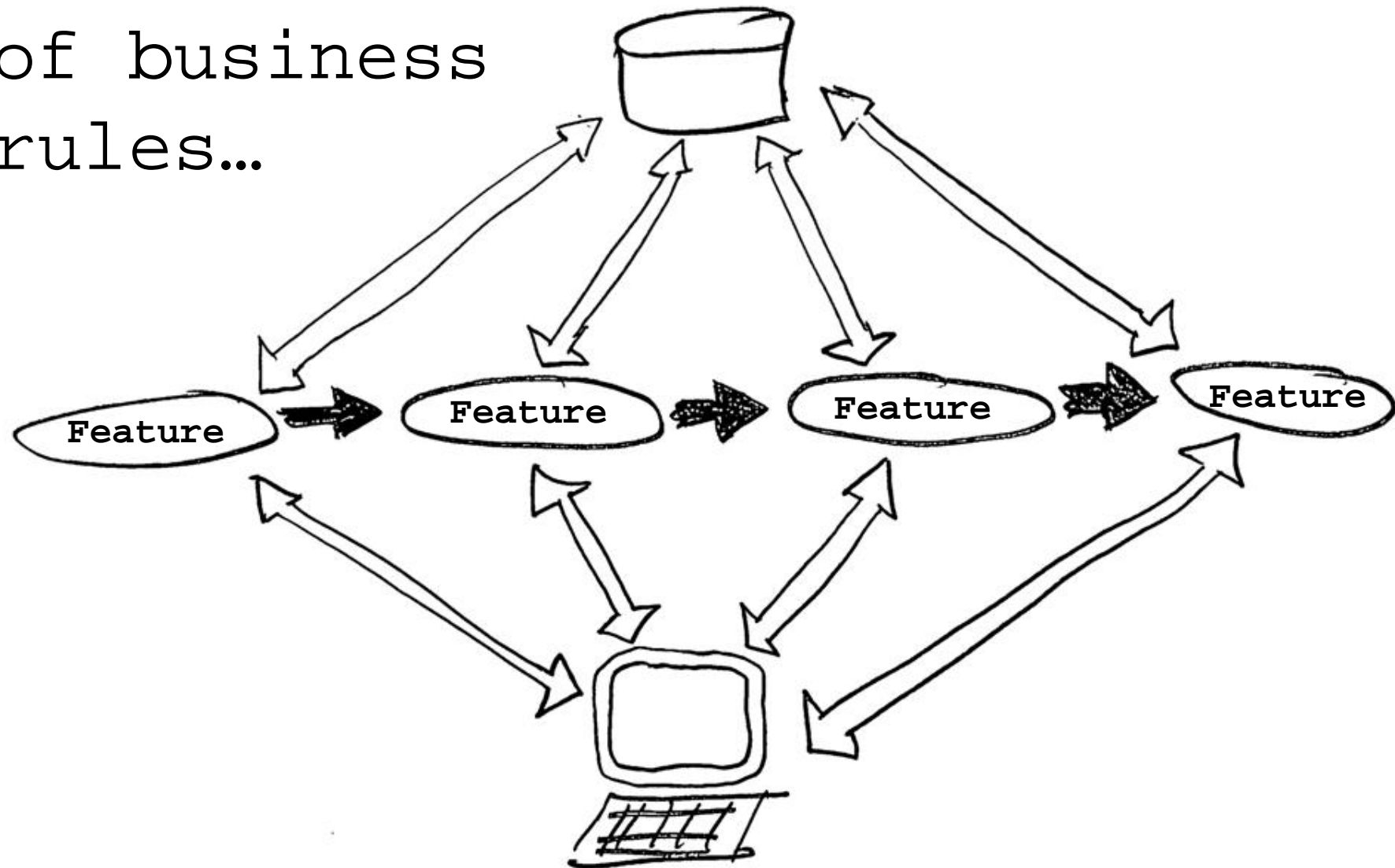
End-to-end testing..



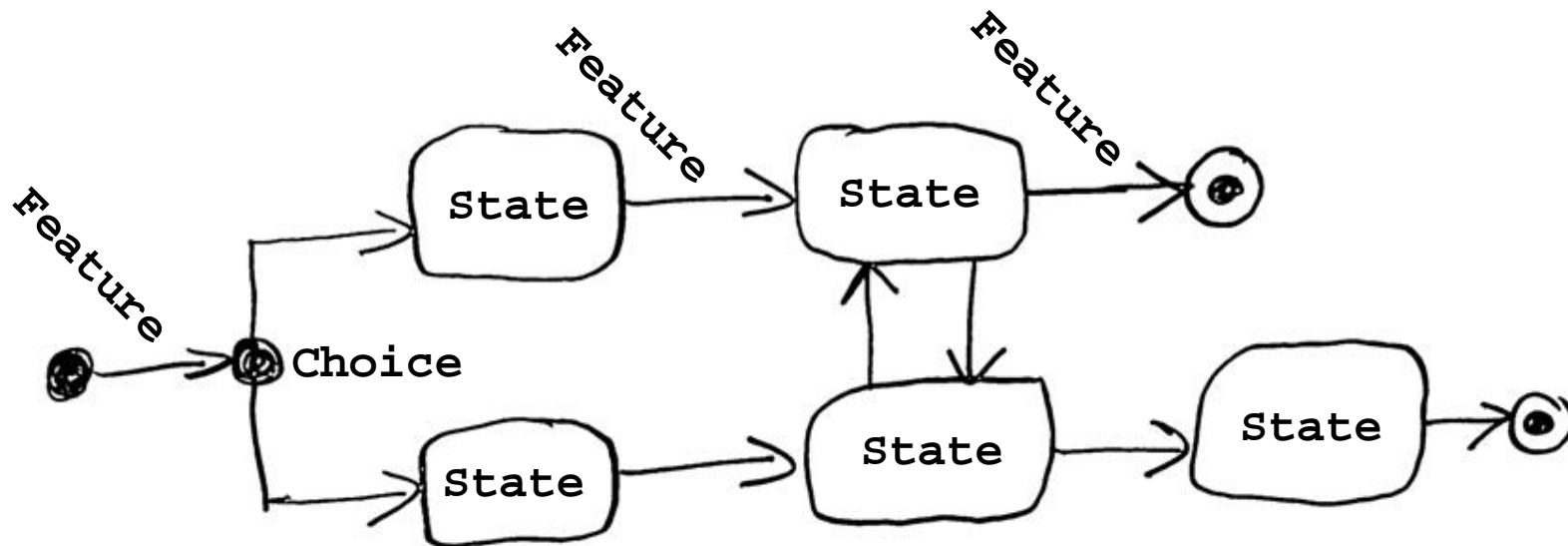
End-to-end  
verification  
of business  
rules...



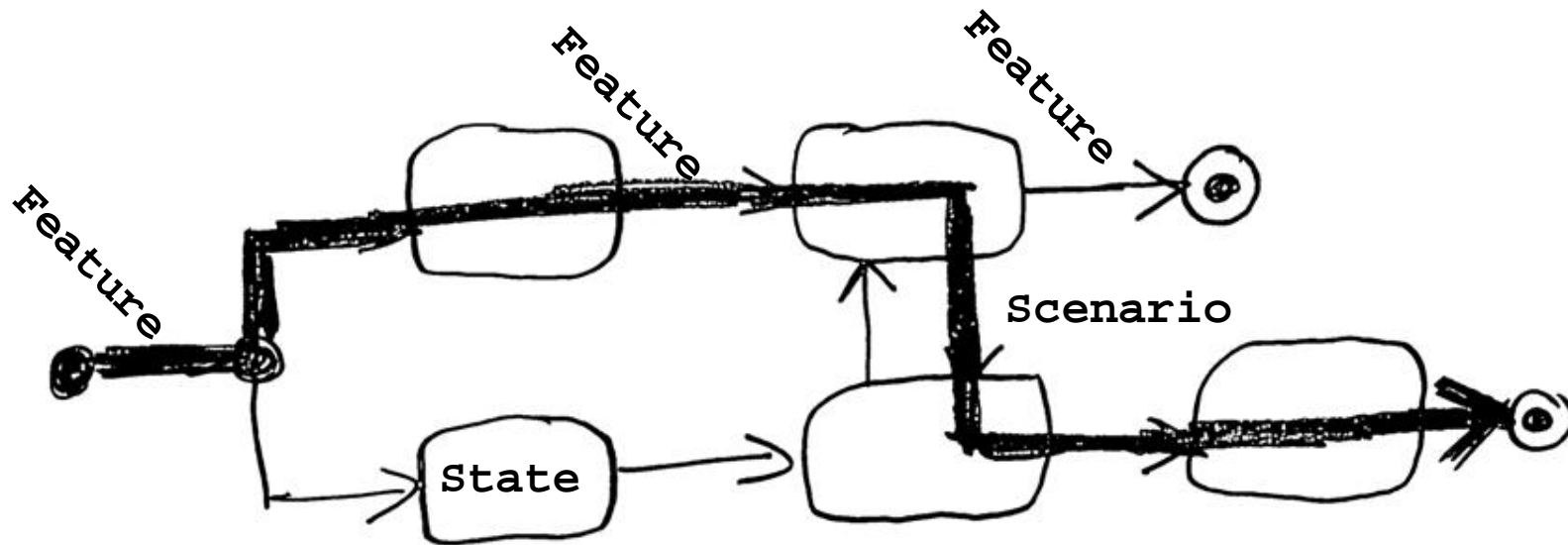
End-to-end  
verification  
of business  
rules...



# Modelling business rules..



# Generating scenarios..



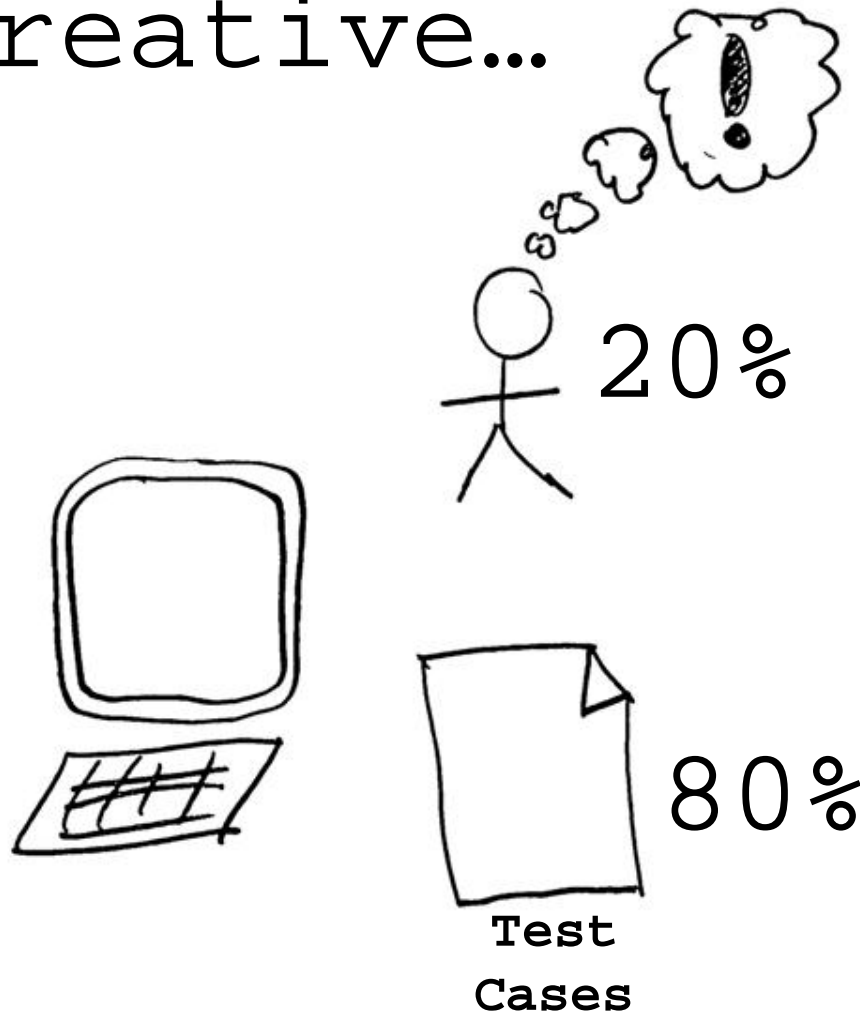
Date-based testing..

# Date-based testing..

	Scenario	Period 1	Period 2	Period 3
1	Scenario A	Feature Feature Feature	Feature	Feature Feature
2	Scenario B	Feature		Feature Feature Feature
3	Scenario C	Feature	Feature	

Exploratory testing..

# Encouraging testers to get creative...



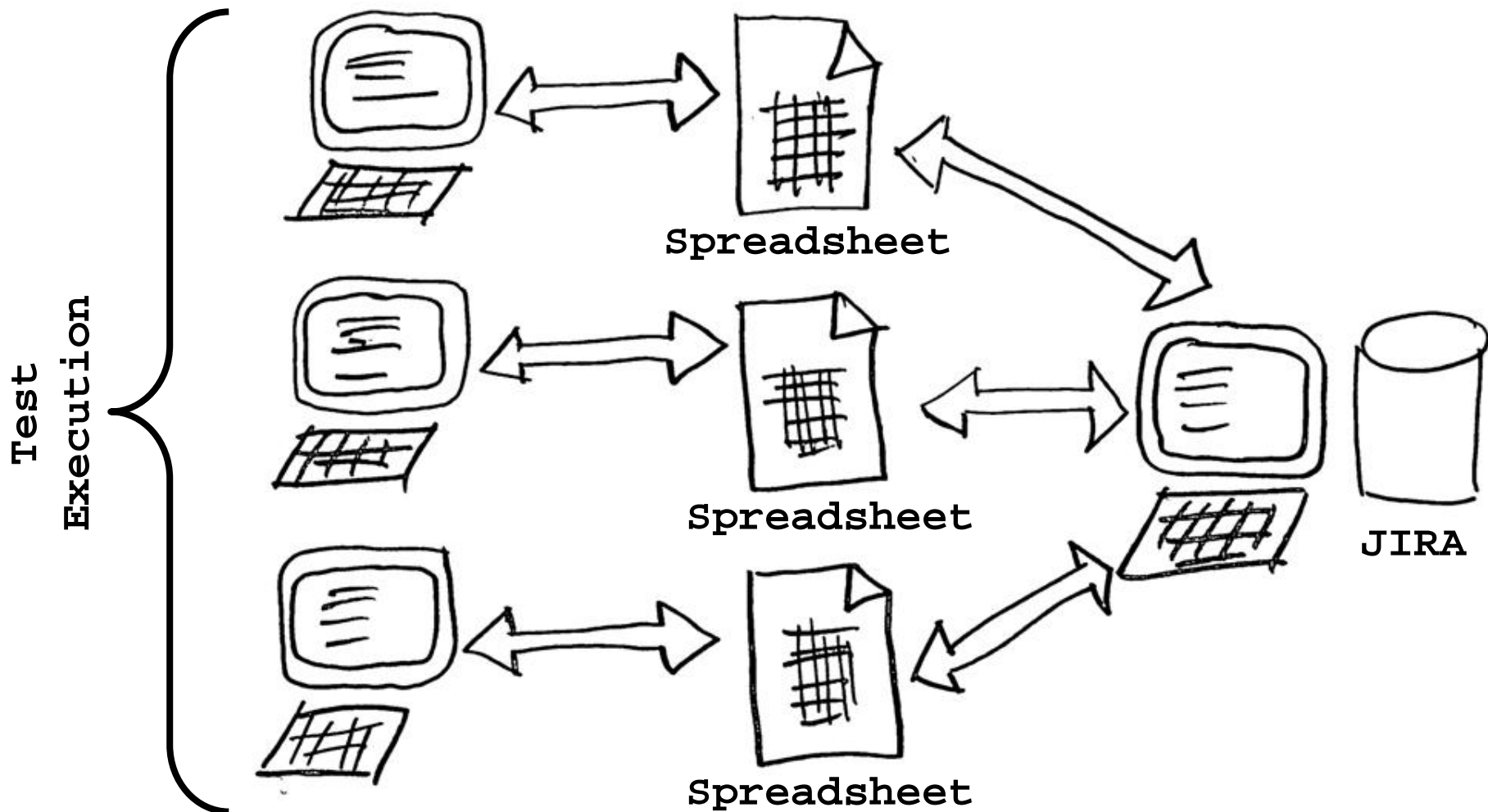
- Testing skills
- Subject matter expertise

- Build confidence
- Verify business rules

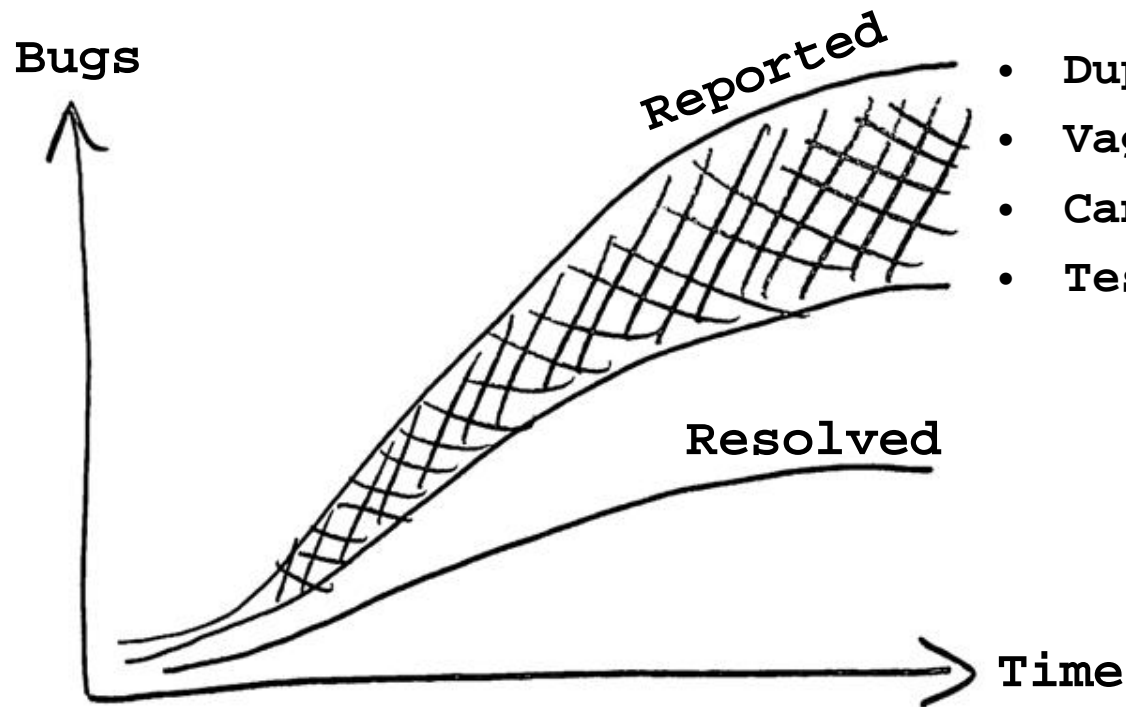


Triaging bugs...

# Triaging bugs..

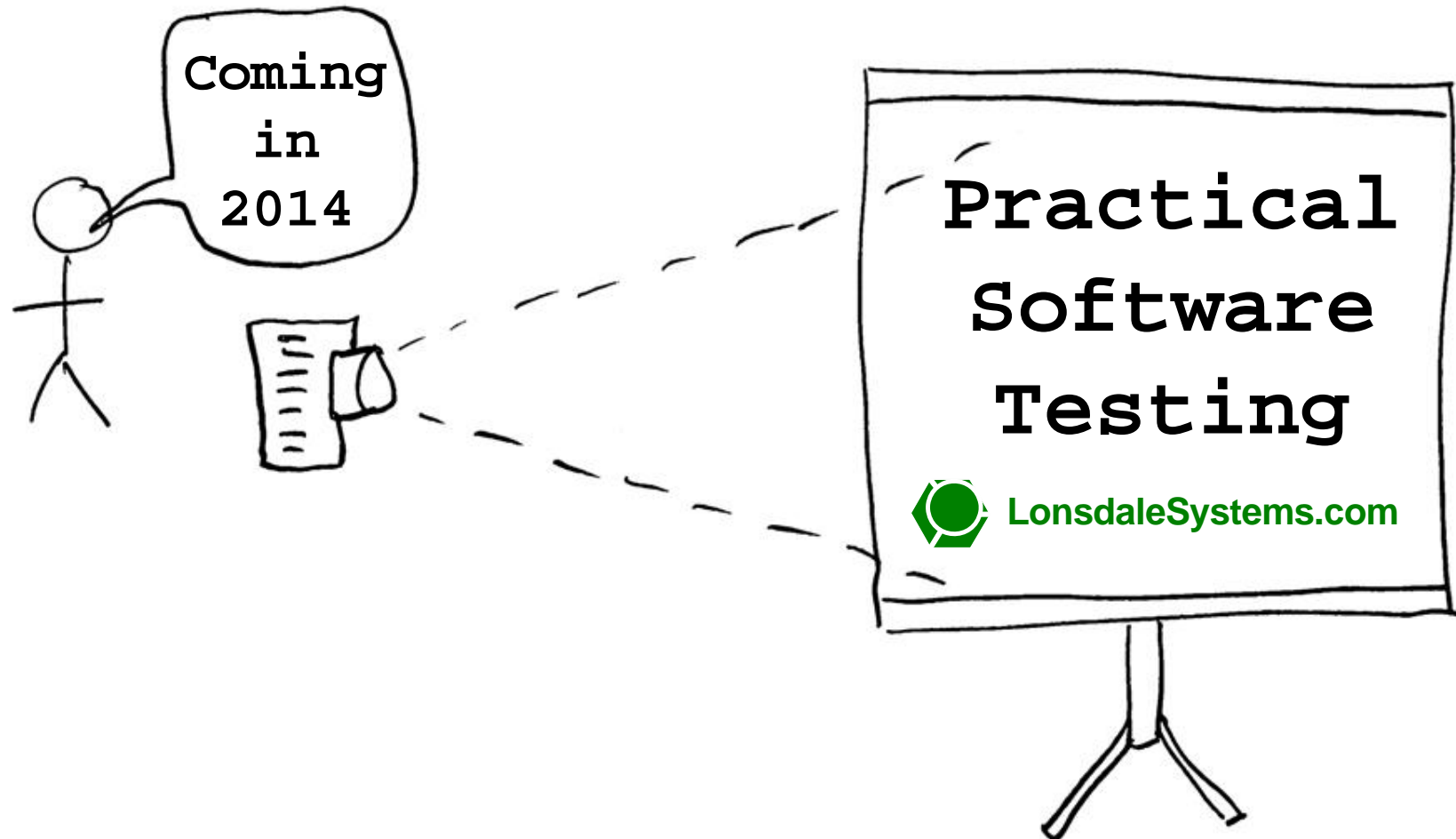


# Triaging bugs...



- Duplicates
- Vague descriptions
- Can't duplicate
- Tester misunderstanding

# Still teaching software testing..



# Questions



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