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Angular Testing

8 - Testing Strategies

Two Competing Schools of Unit Testing



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Differences

London ~ Unit Test

- Unit is a **class**
- Mock everything except the class
 - Very tightly coupled to implementation
- Disadvantages
 - No refactoring
 - Lots of code for mocking
 - No interplay testing
- Advantages
 - Edge cases, finding bugs, exploratory
 - Great code quality (FP)
 - Fast

Detroit (Chicago) ~ Integration Test

- Unit is a **behaviour**
- Mock out-of-system dependencies
 - Runs against an API (UI)
- Advantages
 - Great for refactoring
 - Efficient (coverage)
- Disadvantages
 - Large setup required
 - Slow
 - Hard (Async, Change Detection, DOM,...)
 - Code Quality is of no concern

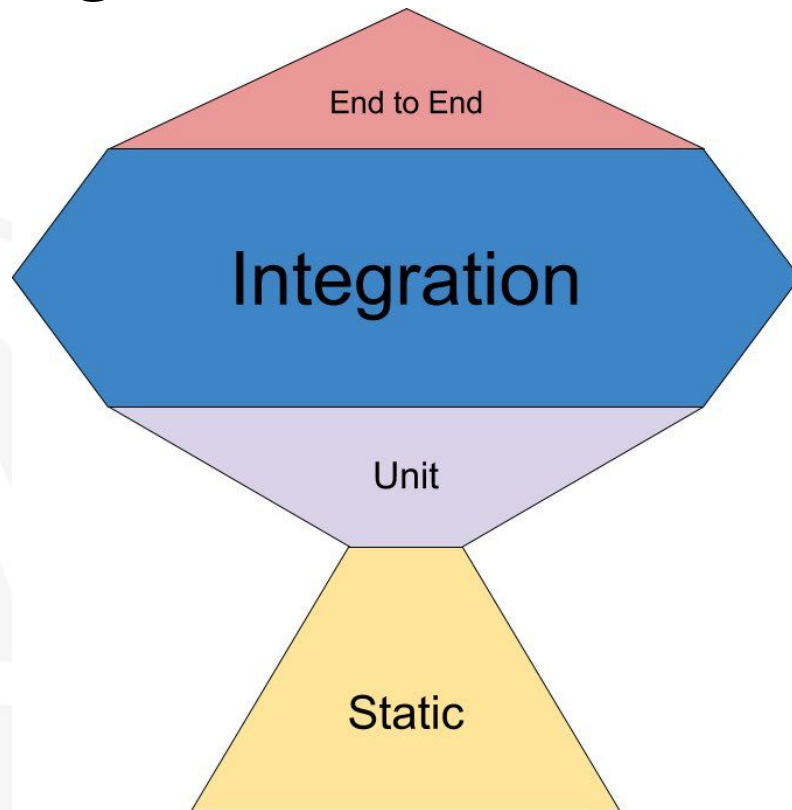
It is not Unit vs. Integration

It is about the right balance



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Testing According to ROI



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Is TDD possible?



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Criteria

- Speed
 - Execution
 - Writing & Maintaining
 - CI & Local Setup
- Timing
- Industry
- Effectiveness
- Application Type



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Application Types



1: Anemic

- Most parts of data processing (unit test) done in backend
- Frontend as "proxy" → less logic
- Integration is King



2: Autonomous

- Backend acts as Store
- Lots of Logic in Frontend
- Unit Tests & Integration Tests are critical



3: Complex UI

- ViewState in different variations
- Go for Component Tests



4: UI Library

- Library Vendor
- Storybook
 - Visual Regression
 - Cypress



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5: Too big to Test

- "I can only run unit tests because of build time"
- Architectural Engine
- Split Logic and UI from each other
- Functional Style
- Example: RulesEngine for Workflow
 - Unit Tests for RulesEngine
 - Integration Tests for Execution into UI



Trust your instincts!

- *"It doesn't feel right"*
- *"What are we actually testing here? If a function is called? Really?!"*
- *"I don't see any value in testing."*
- *"I never discovered a bug with my tests."*
- *"I am wasting my time with writing tests instead of producing "real" code."*



Testable Architecture



App Shell



Domain

Domain

Domain

Domain



Shared

Error
Handling

Widgets

Backend
Middleware

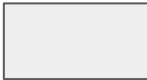
Forms

Grid

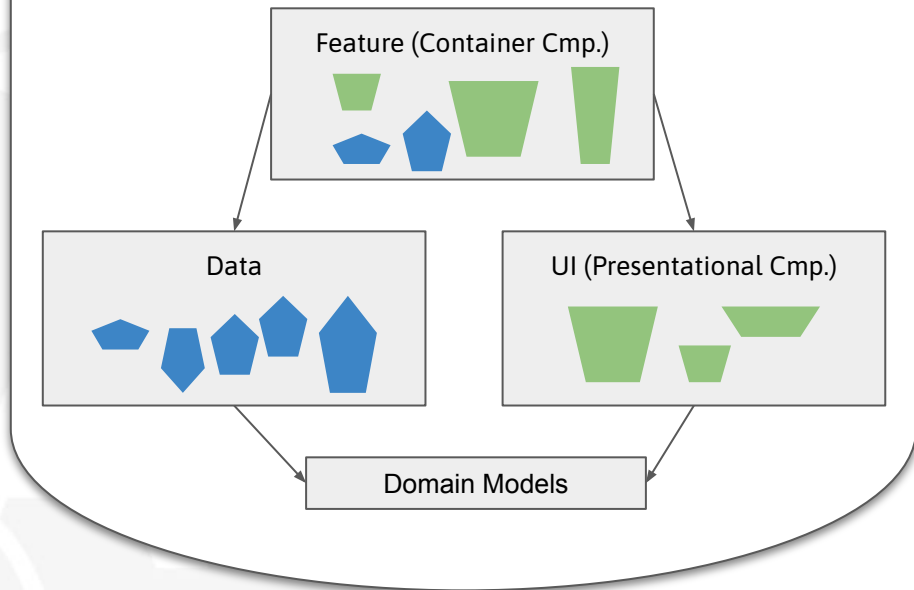
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 Component

 Service

 Module

Domain



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