

ASP.NET Core MVC Testing Fundamentals

INTRODUCTION



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Overview



The benefits of software quality

Why automated testing?

Creating a balanced test portfolio

The right tests at the right levels

- Unit
- Integration
- Subcutaneous
- Functional UI

The Testing Pyramid

The demo application



The Benefits of Software Quality

Happier end users

- Accomplish tasks with fewer problems

Happier development team

- Less time spent fixing production errors
- More time to develop new features
- Increased confidence to make changes
- Increased system understanding
- Less unnecessary stress

Happier business owners

- Reduced cost / increased revenue
- Increased business reputation
- Reduced team member turnover



Why Automated Testing?

Automated Tests

Less error prone

Cost to write and maintain test code

Free to run as often as required

Find problems sooner (quick)

Test code in source control

Manual Human Tests

More error prone

Cost to write and maintain test scripts

Cost money every test run

Find problems later (slow)

Test scripts not be in source control



Automated testing usually
doesn't replace all manual
human testing.



Automated Testing in Context

Code reviews

Pair programming

Good
management

Motivated
development
team

Well-understood
requirements

Good environment
management /
DevOps



Creating a Balanced Test Portfolio

Functional UI

Subcutaneous

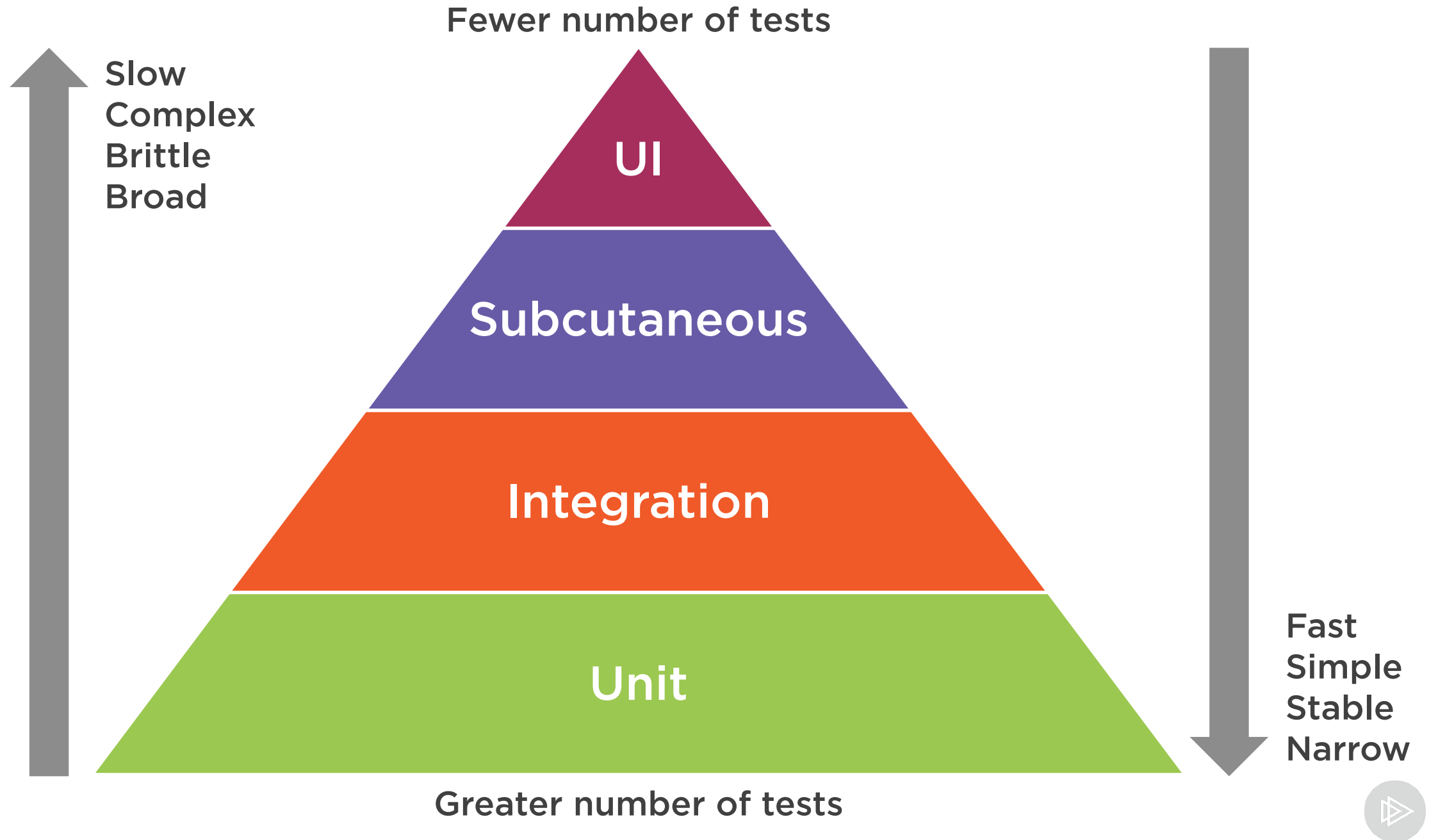
Integration

Unit



A well-balanced test portfolio verifies as much of the system as is required, with as little cost as possible (both test creation and maintenance costs) whilst providing feedback as quickly as possible.





View Rendering

UU

Controller

UUUU||

Model

UUUUUUU|

UI

Subcutaneous

Integration

Unit

Infrastructure

U|||

HTML UI

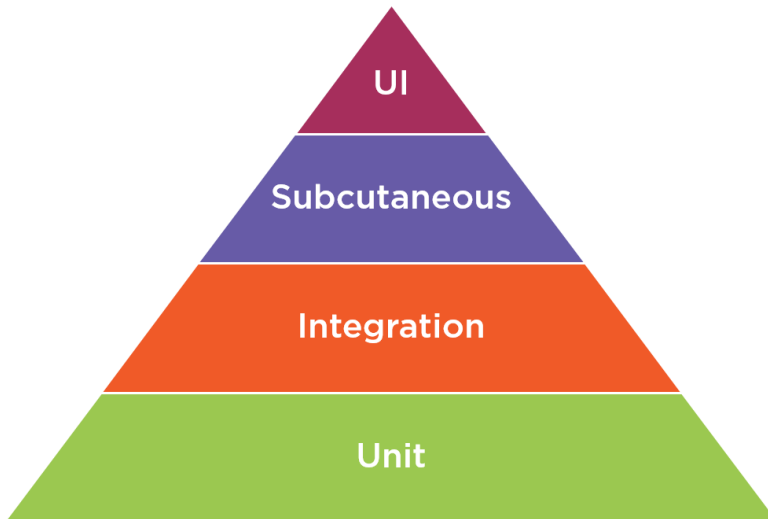
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HTTP API

SSSS



Beyond the Testing Pyramid



The Testing Pyramid is a guide

May not be applicable to every project

Assess and mitigate risk

Tests should add value to the project

Course Overview

Introduction

**Testing Model
Classes with
xUnit.NET**

**Creating and
Using Mock
Dependencies**

**Writing MVC
Controller
Tests**

**Writing
ASP.NET Core
MVC
Integration
Tests**

**Implementing
Automated
Functional UI
Testing with
Selenium**



Summary



The Benefits of Software Quality

- Happier end users
- Happier development team

Why Automated Testing?

- Quick to execute
- Free to run

Creating a Balanced Test Portfolio

- Unit
- Integration
- Subcutaneous
- Functional UI

The Testing Pyramid

May not be applicable to every project



Next:

Testing Model Classes with xUnit.NET

