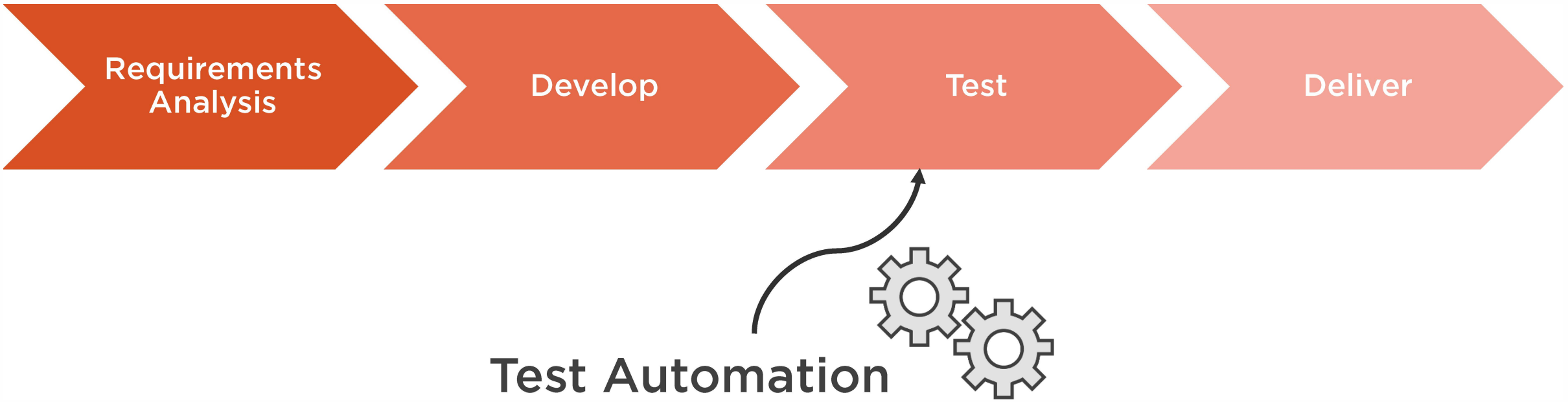
Building a Java Test Automation Framework from Scratch

SETTING UP AND CREATING A FRESH PROJECT

a.k.a.
Test Automation Engineer

SDET

Software Development
Engineer in Test


Requirements Analysis
Develop
Test
Deliver
Test Automation

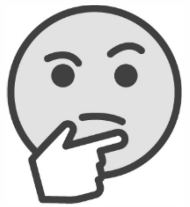
Software Project

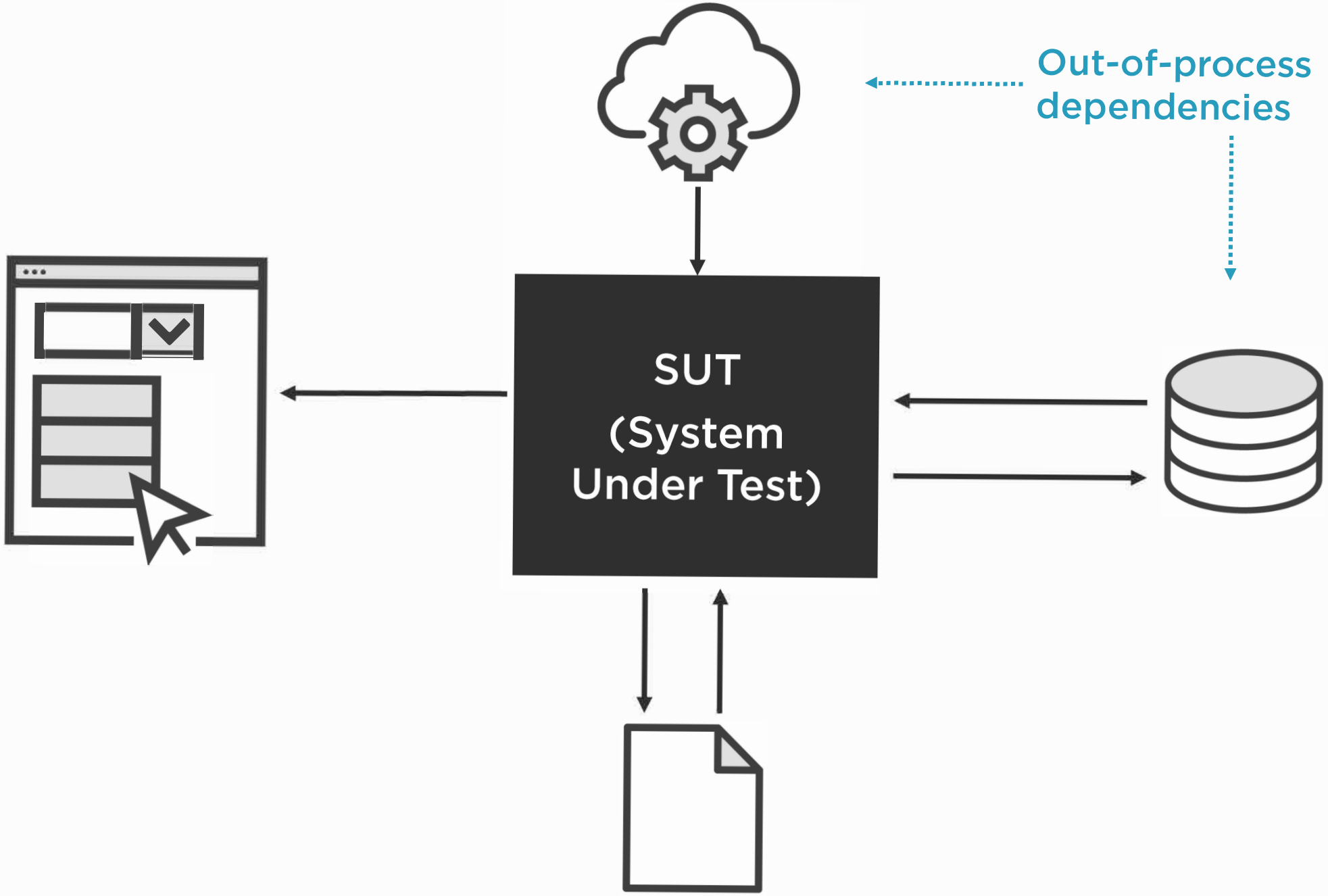
main/
java

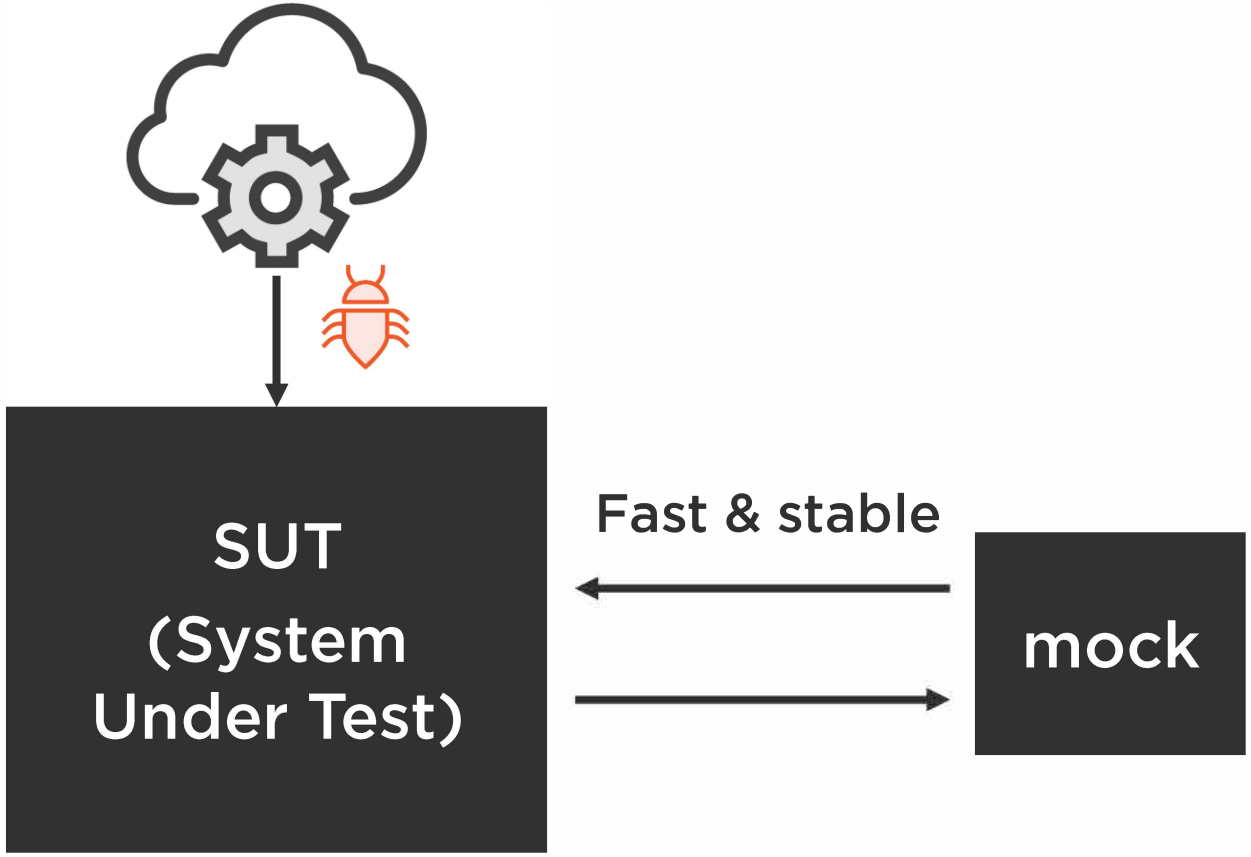
test/
java

Unit Tests

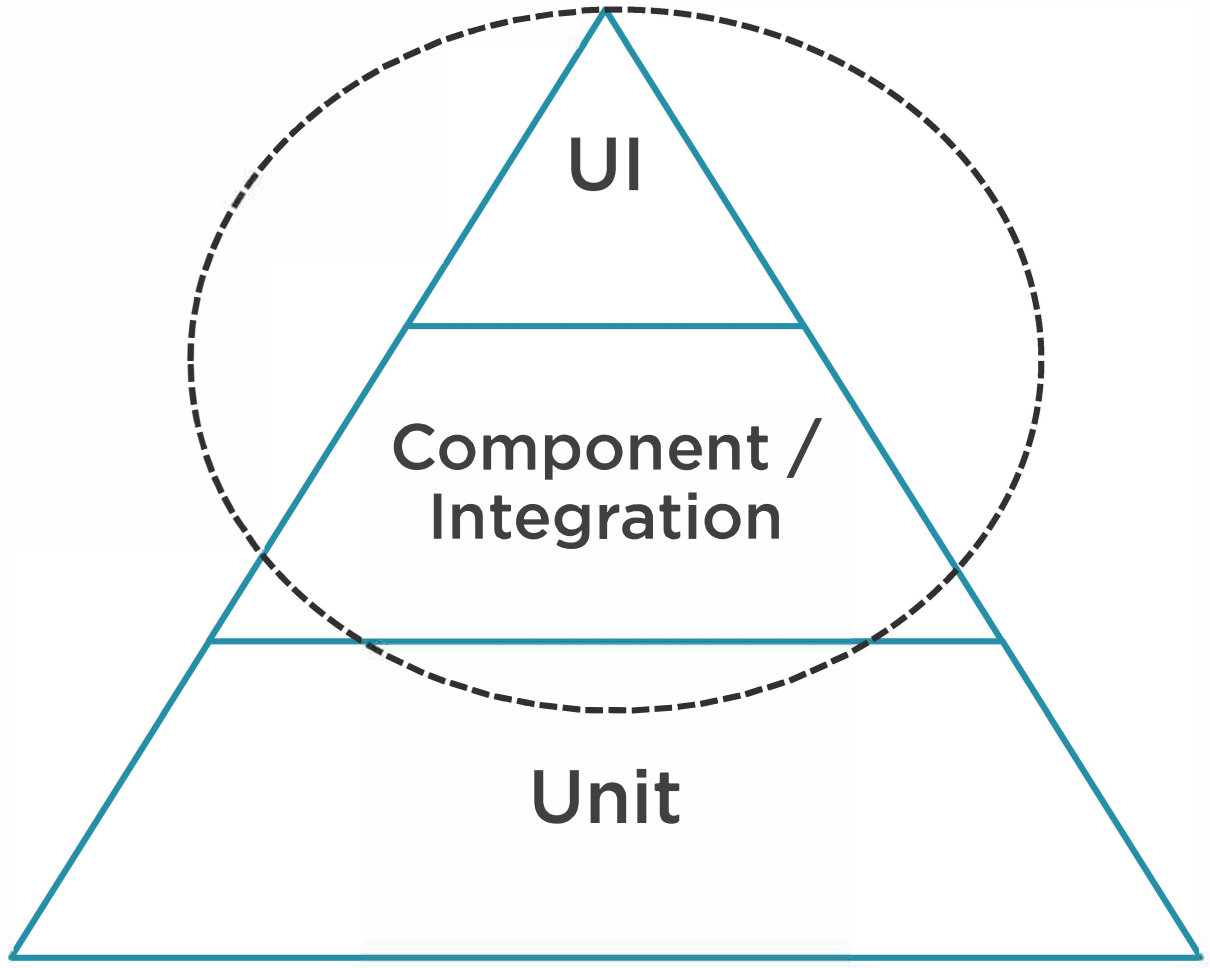
Good,
but not enough!

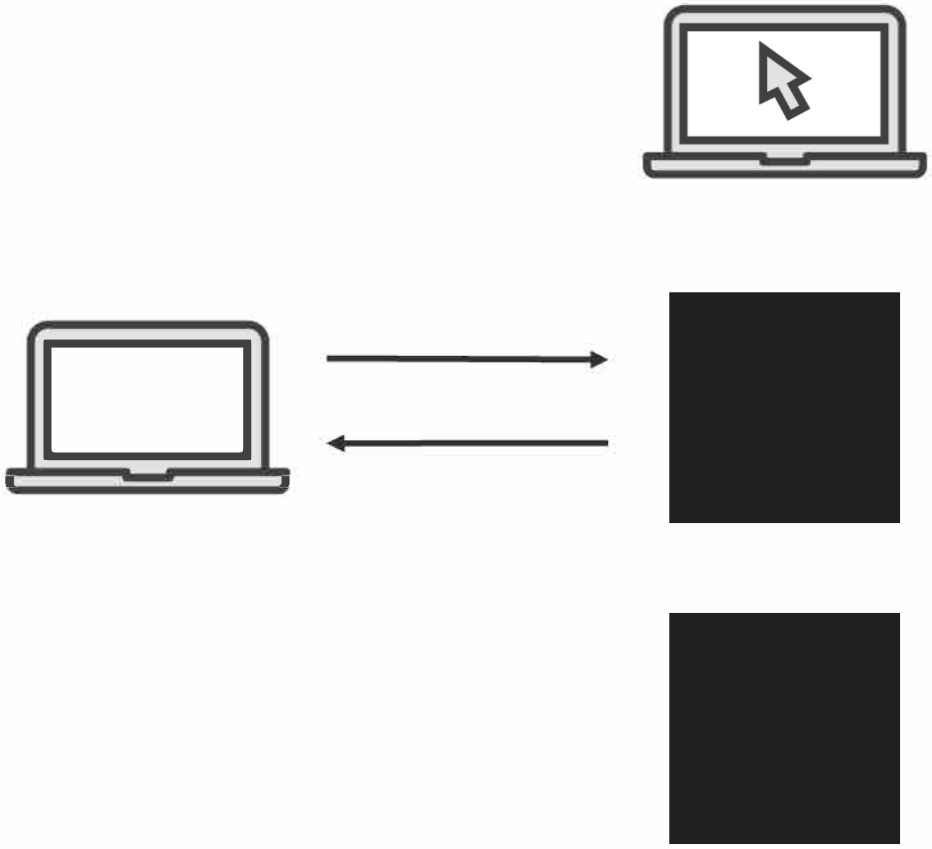



Out-of-process
dependencies
SUT
(System
Under Test)

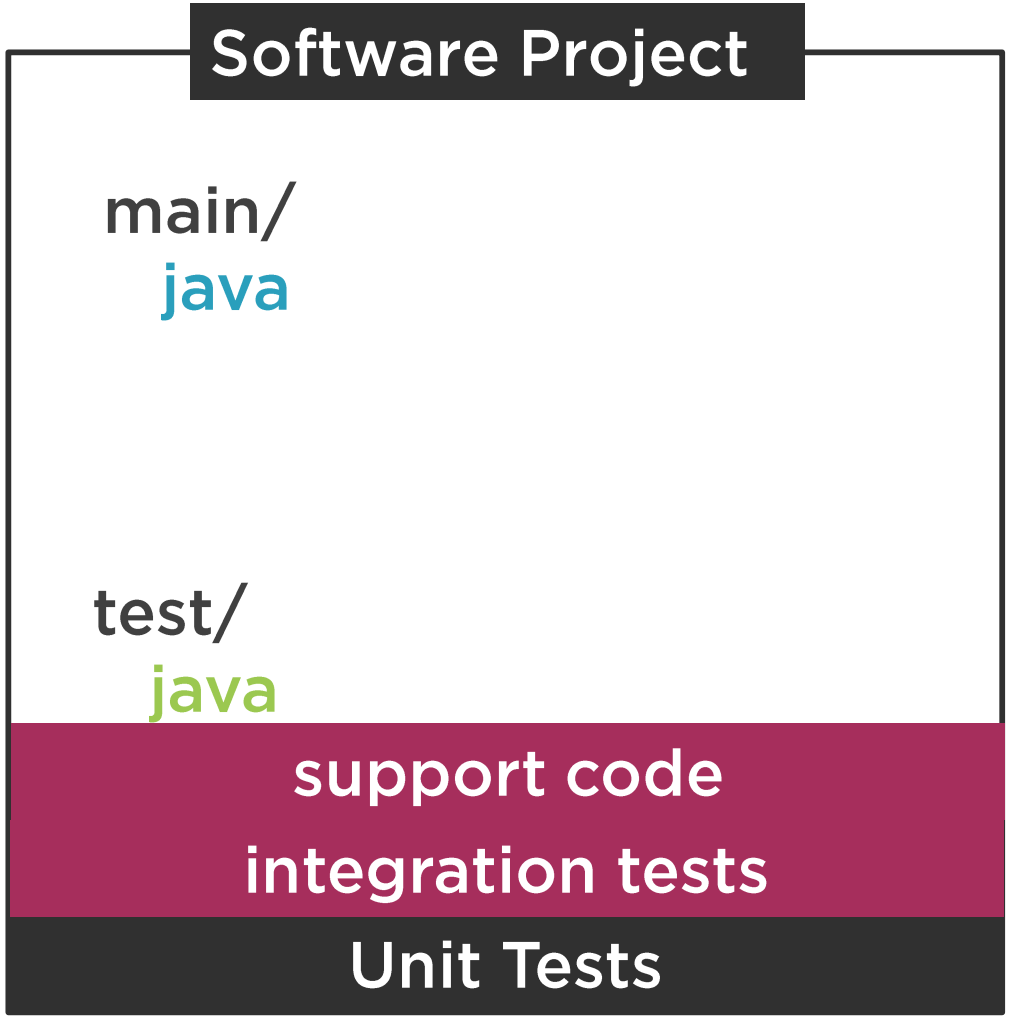

SUT
(System
Under Test)
Fast & stable
mock

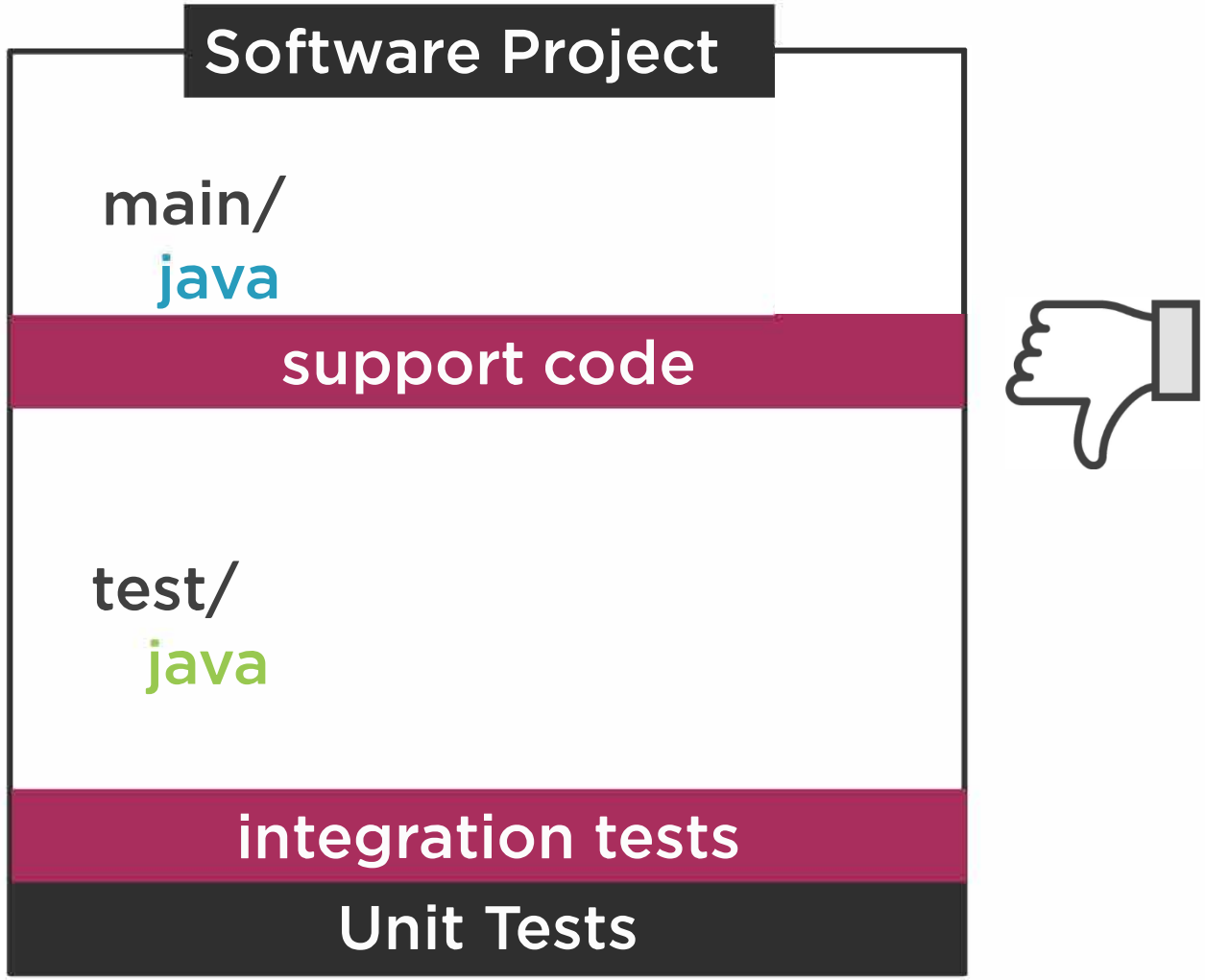
Testing Pyramid

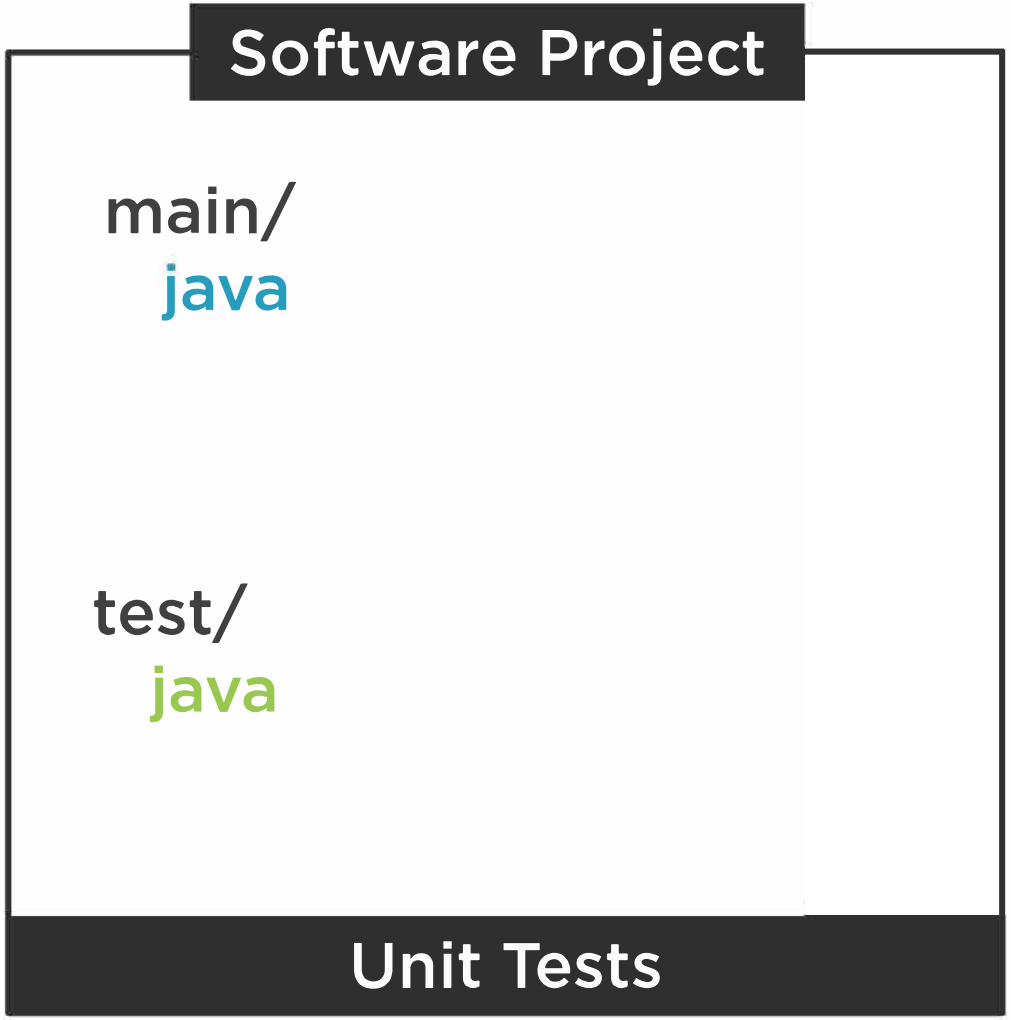


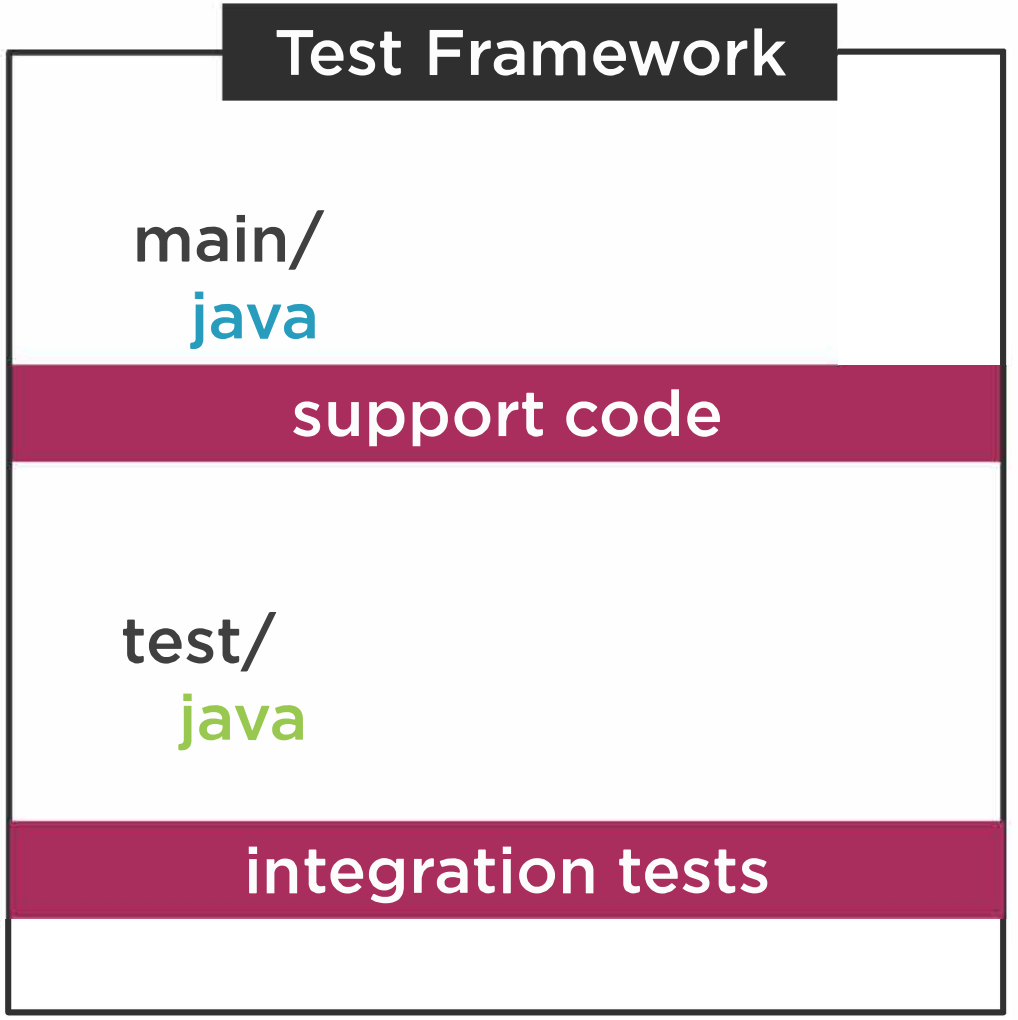


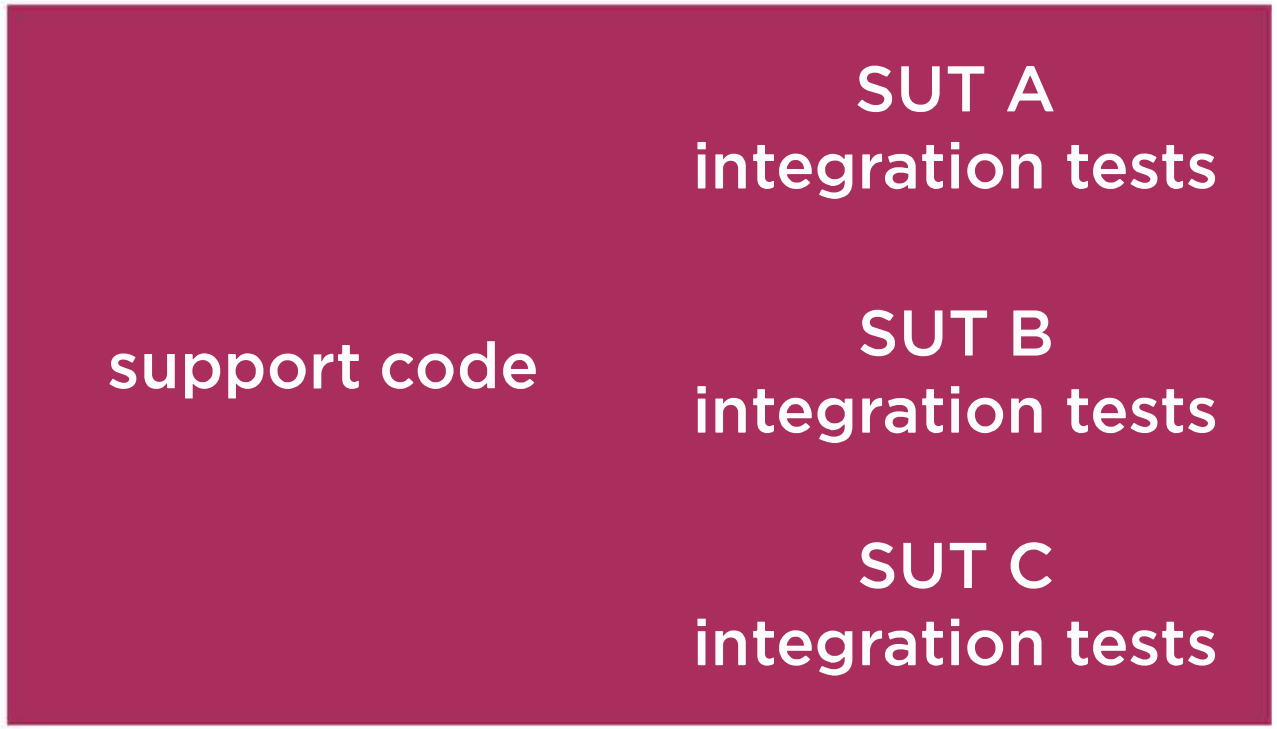
Integration tests are complex and require their own supporting code

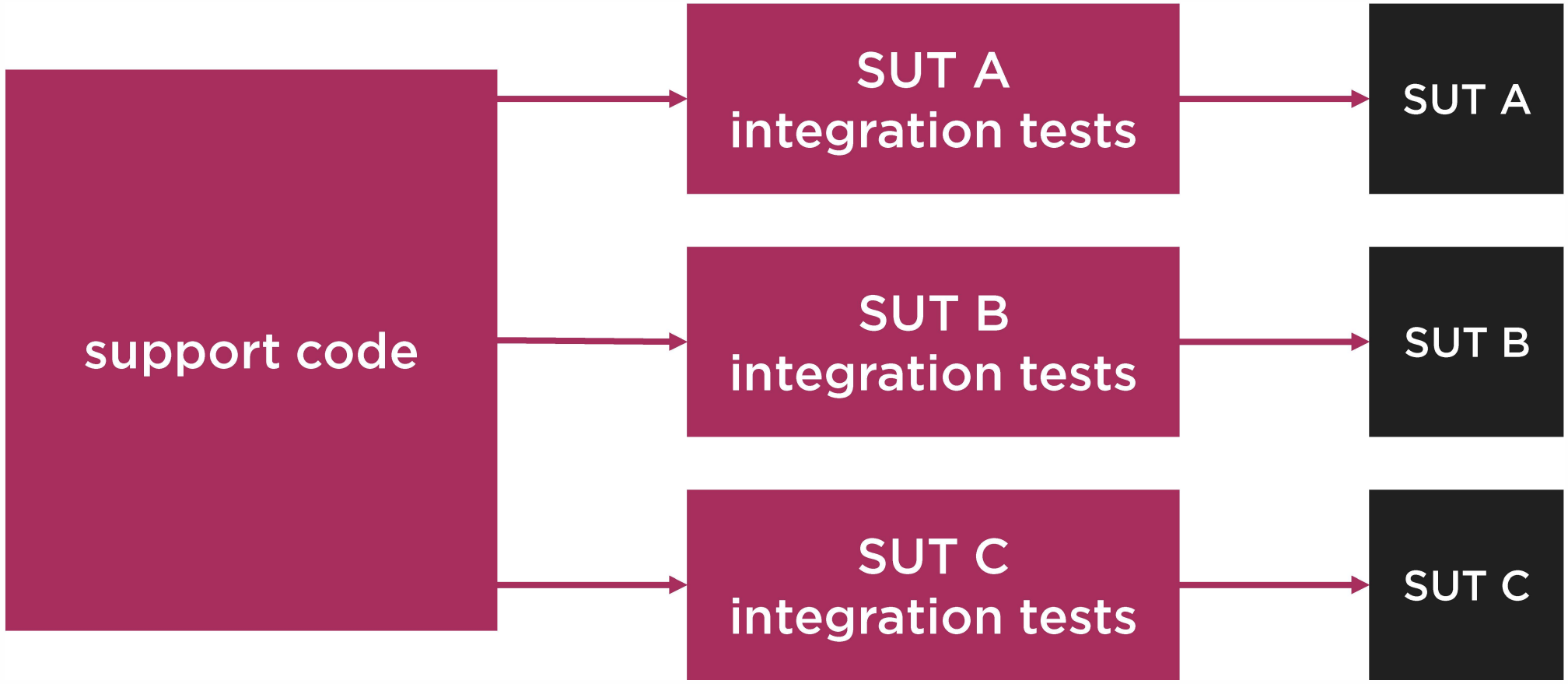

Software Project
main/
java
test/
java
support code
integration tests
Unit Tests


Software Project
main/
java
support code
test/
java
integration tests
Unit Tests


Software Project
main/
java
test/
java
Unit Tests


Test Framework
main/
java
support code
test/
java
integration tests


support code
SUT A
integration tests
SUT B
integration tests
SUT C
integration tests


support code
SUT A integration tests
SUT B integration tests
SUT C integration tests
SUT A
SUT B
SUT C

Who This Course Is For

Manual Technical Tester

Junior or mid-level Developer

SDET

You can code, right?

I have some experience, yes

Great! Start a new Test Framework for our new App then!

Uh, as in... from scratch?

Well, yes.

I'm not sure I can, I've never done it from the ground up...

I can build a Java
Test Automation Framework
from scratch!

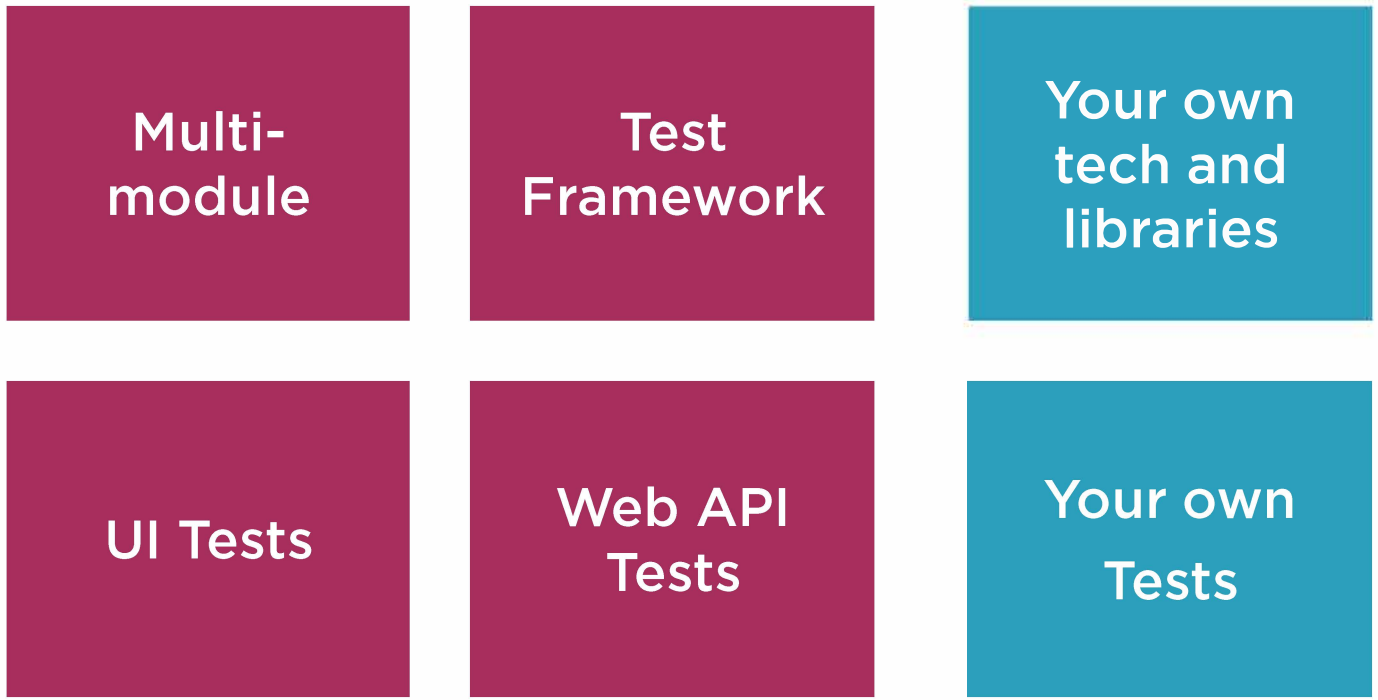
What This Course Doesn't Do

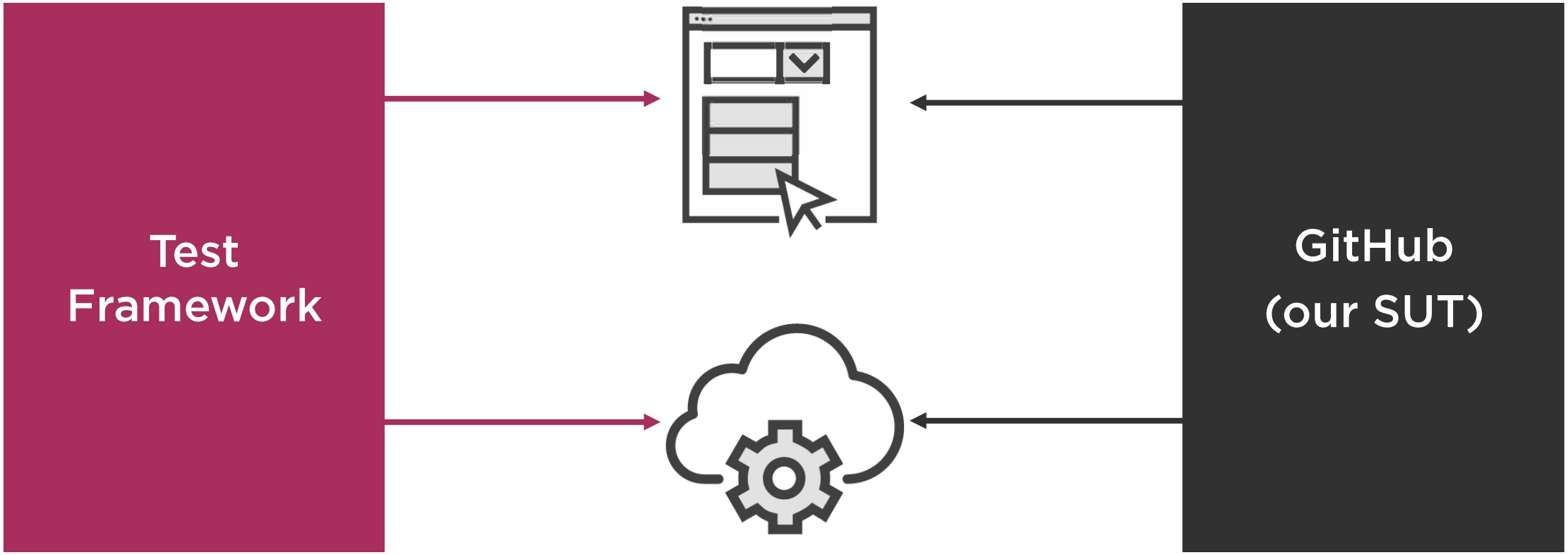
Teach in-depth Selenium for UI tests

Teach in-depth Web API testing

Test Framework

Test Framework


Multi-module
Test Framework
Your own tech and libraries
UI Tests
Web API Tests
Your own Tests


Test
Framework
GitHub
(our SUT)

Prerequisites

You should already know:

- Syntax, looping, branching
- OOP basics: classes, constructors, methods

You have Java installed

Desirable: HTML basics (for UI tests)

Desirable: any IDE (we'll use IntelliJ)

JUnit5
Selenium
RestAssured
Java 11+
IntelliJ IDEA
Maven
OS: Windows

SETUP

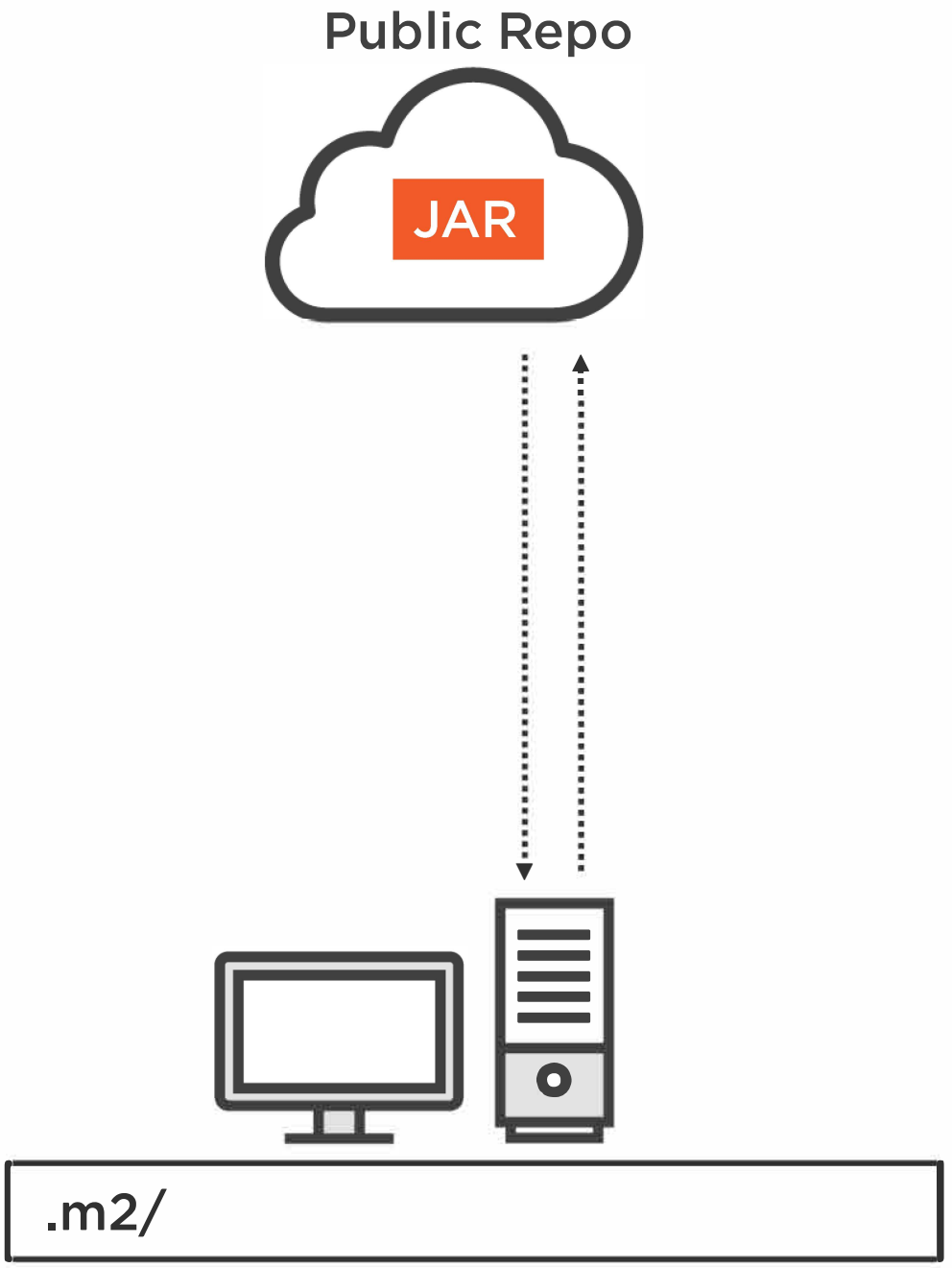
Choosing Your First Dependency

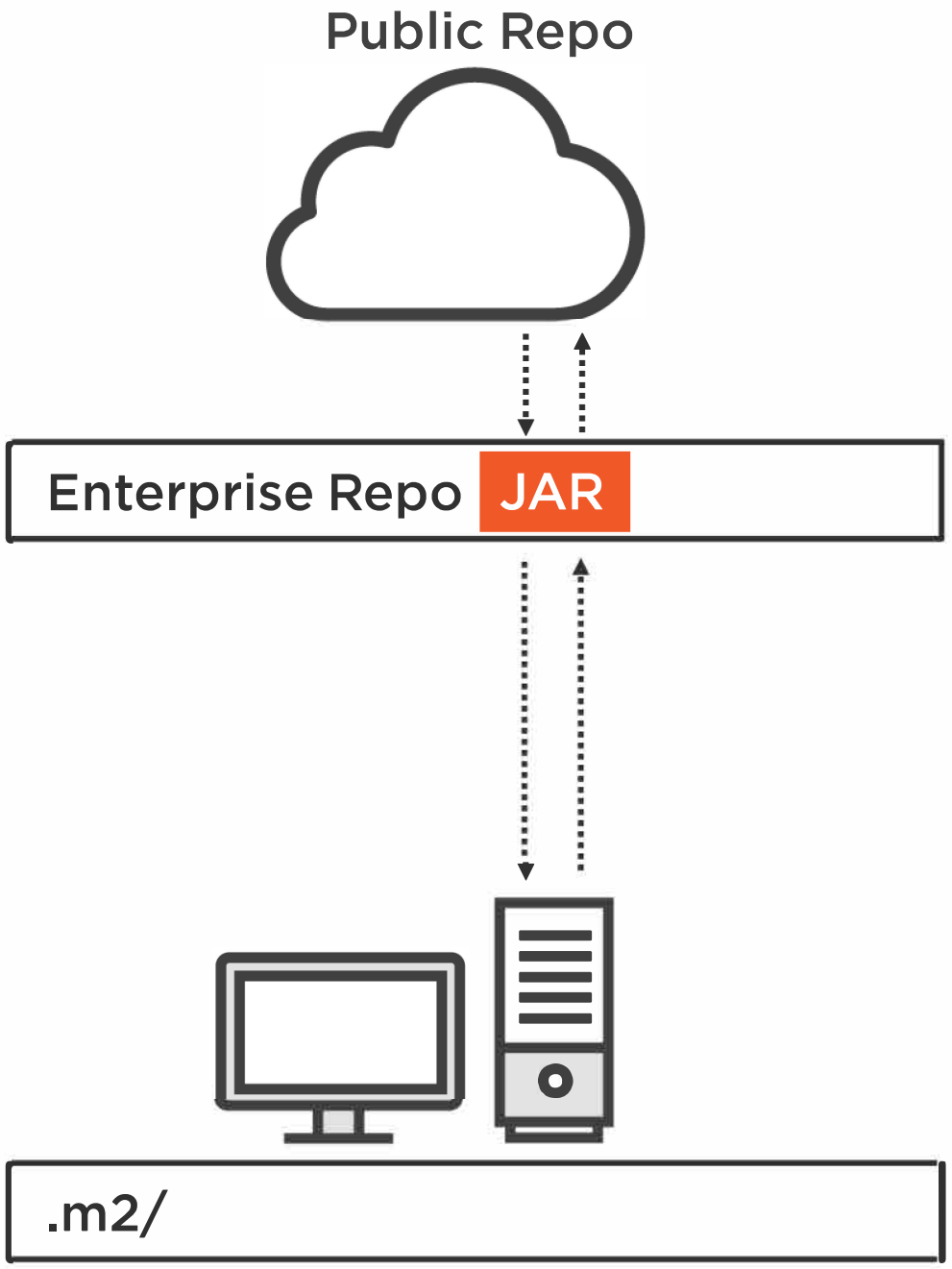
JUnit Vs. TestNG

Both offer similar basic functionality

Both are widely used

JUnit is more popular, so let's go with it


Public Repo
JAR
.m2/


Public Repo
Enterprise Repo
JAR
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Summary

Test Automation includes unit tests and higher-level functional tests

- UI tests
- Web API tests
- Other

Functional tests are usually developed in a separate project – the Test Automation Framework

Setup