

构建微服务云原生应用

架构师杨波



扫码试看/订阅

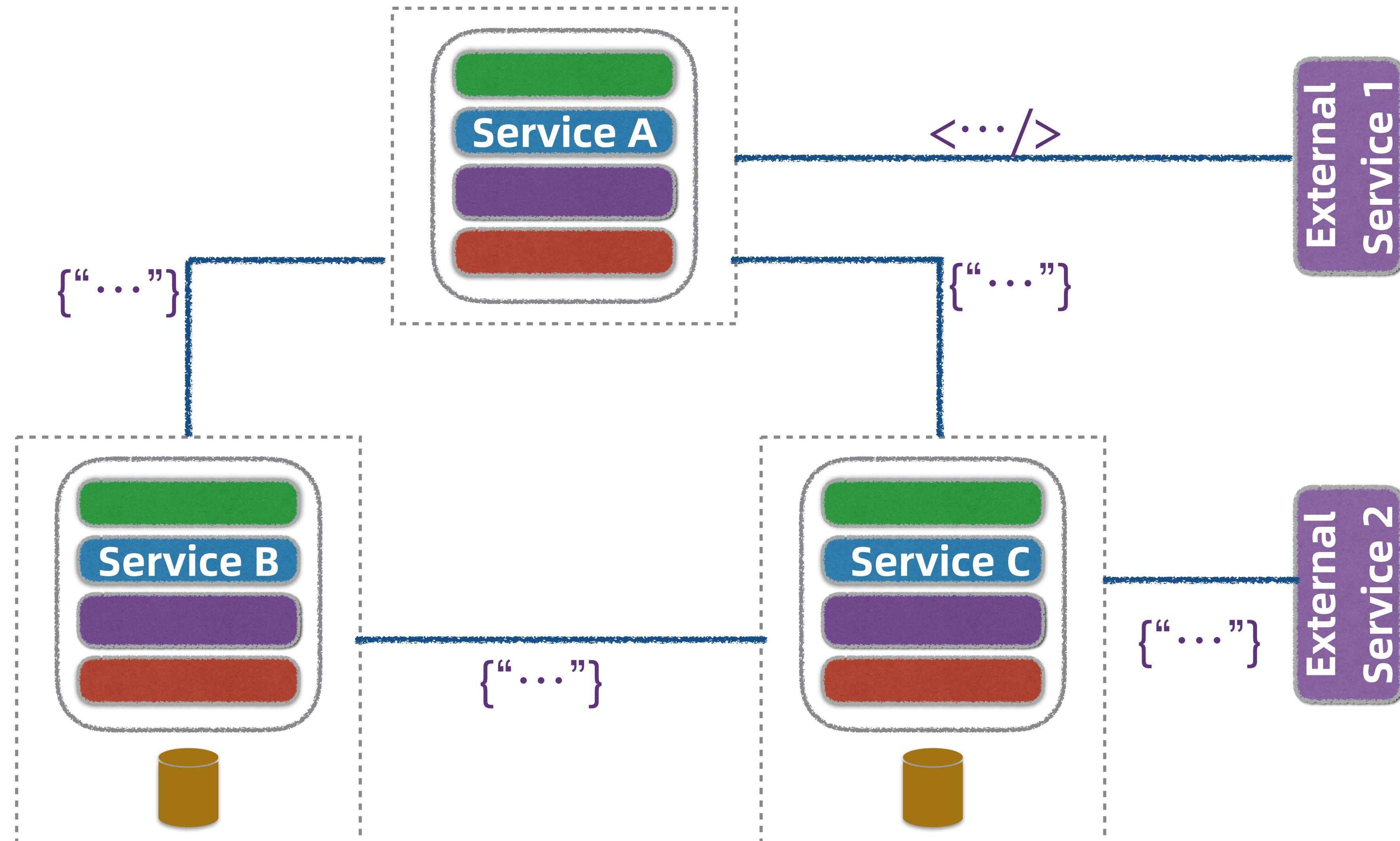
《Spring Boot & Kubernetes 云原生微服务实践》

CHAPTER

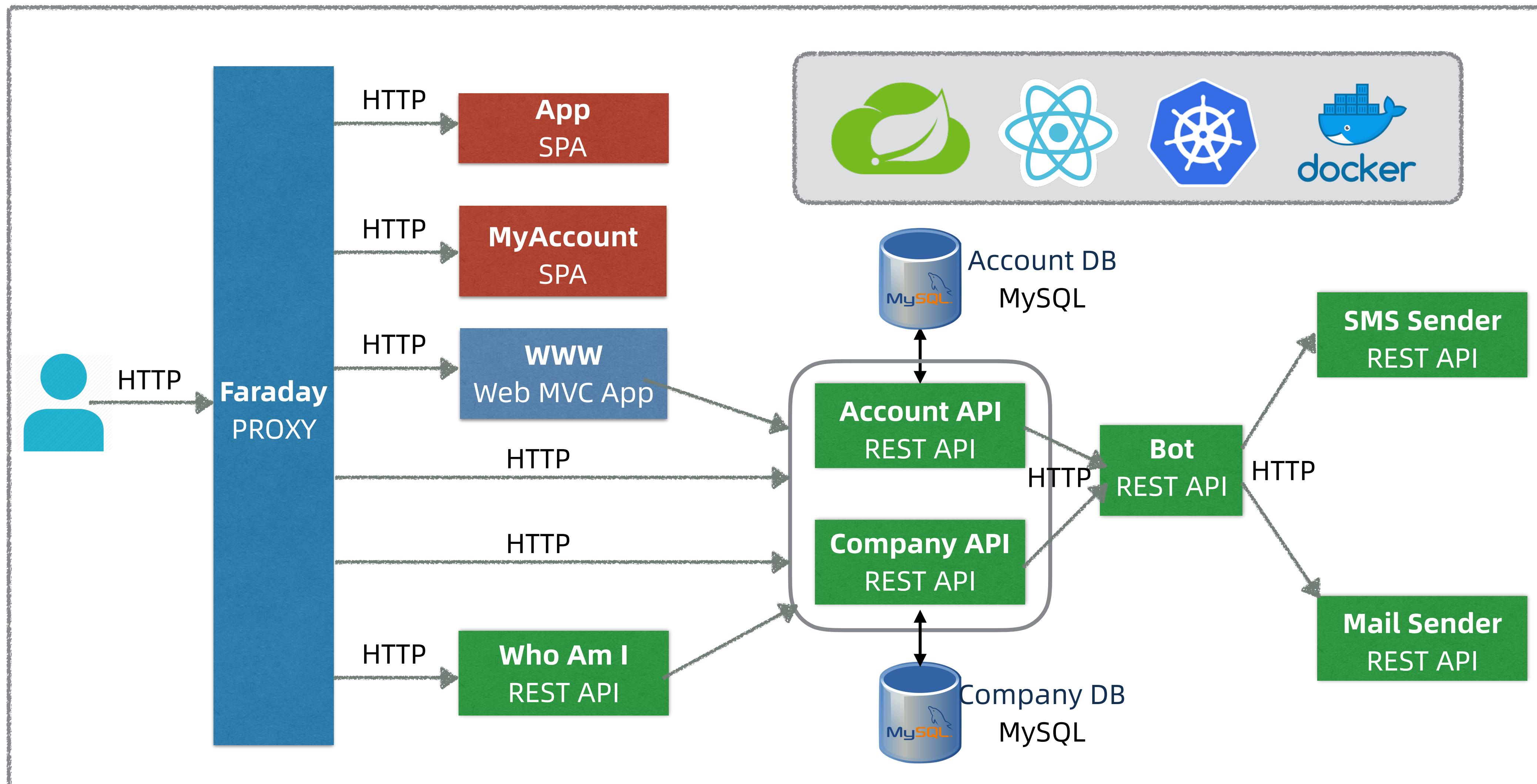
6

微服务测试设计和实践

微服务测试挑战



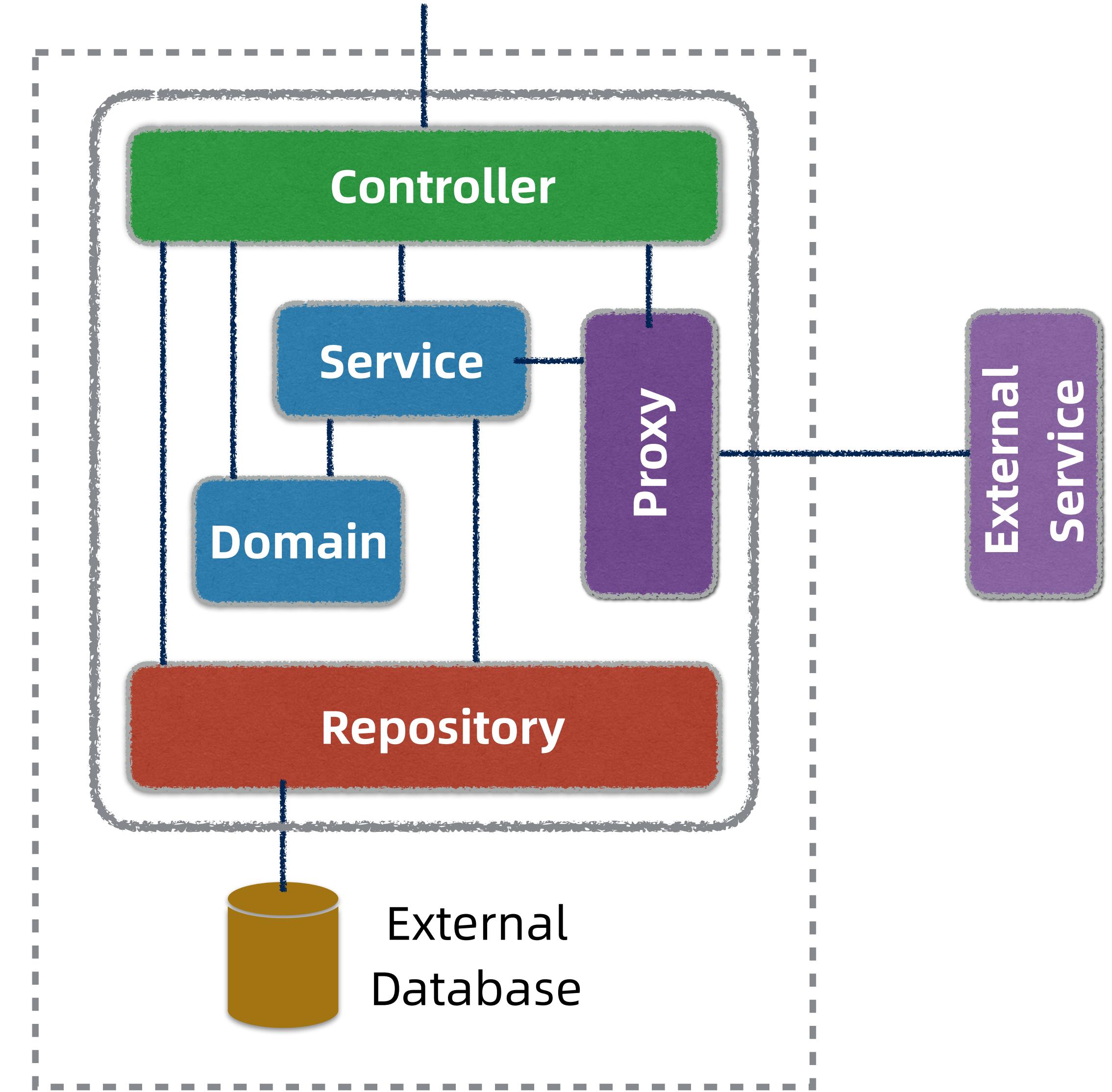
Staffjoy架构图



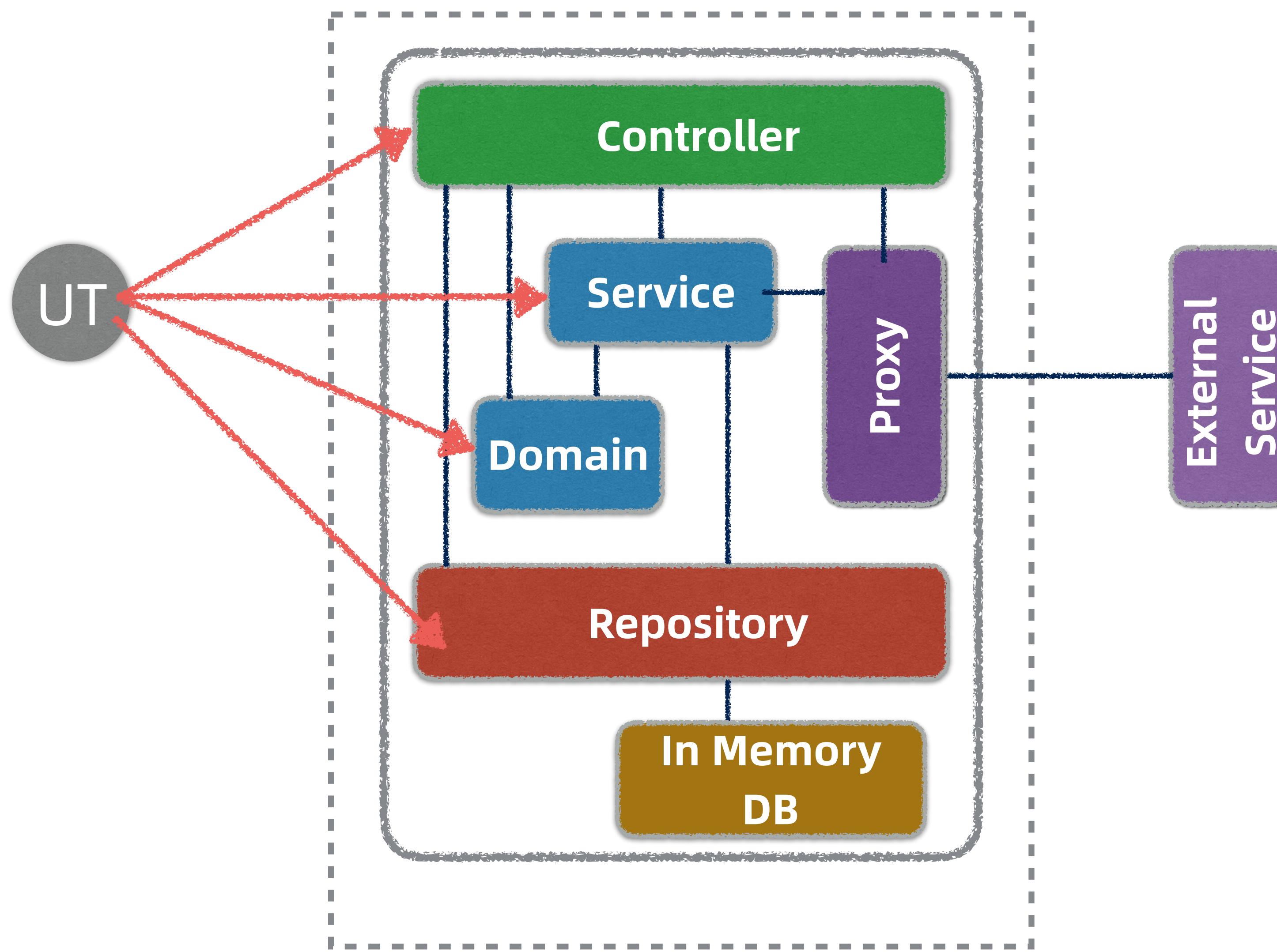
第 1 部分

微服务测试分类和技术(上)

Spring(Boot)应用分层



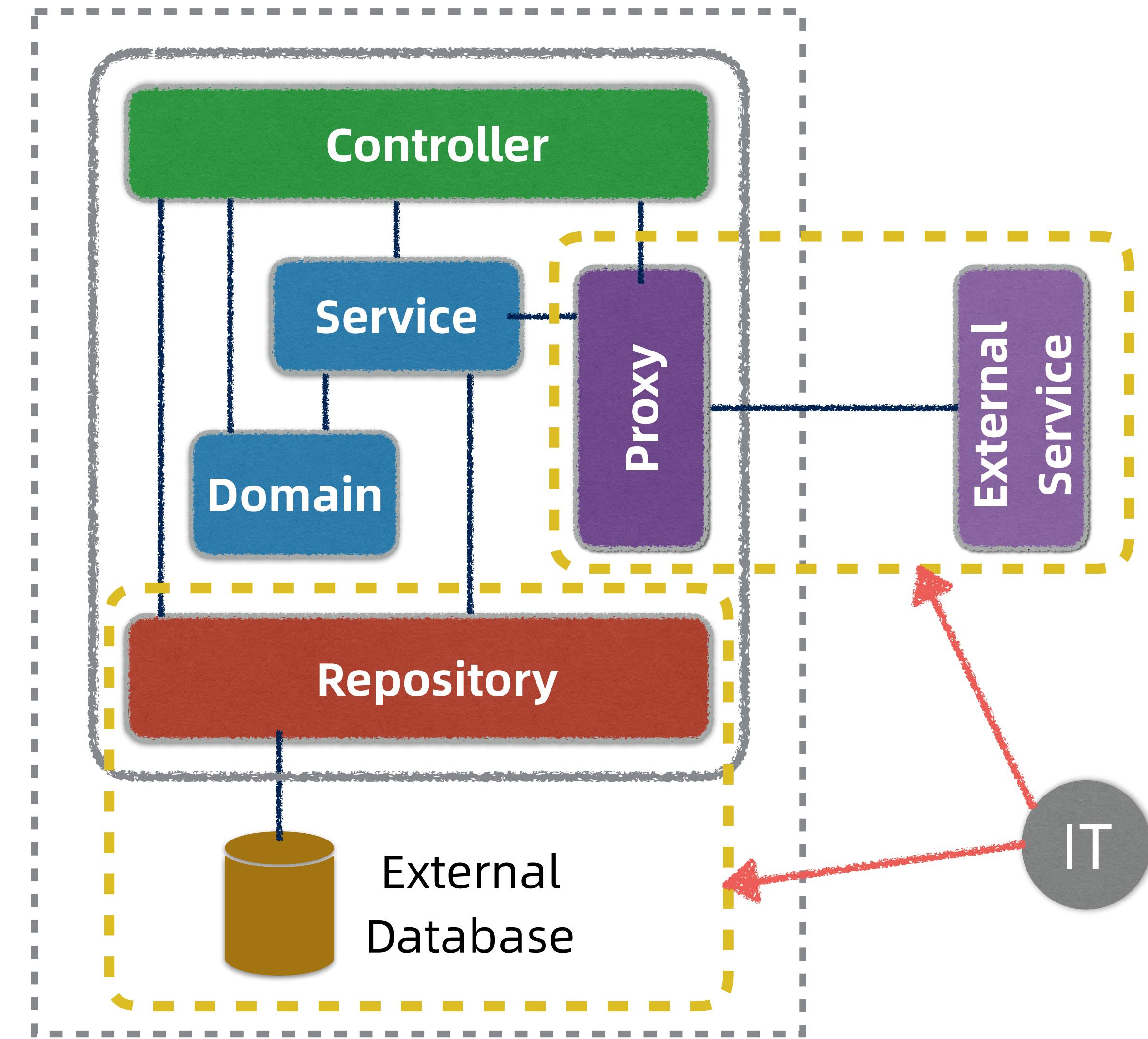
单元测试(Unit Test)



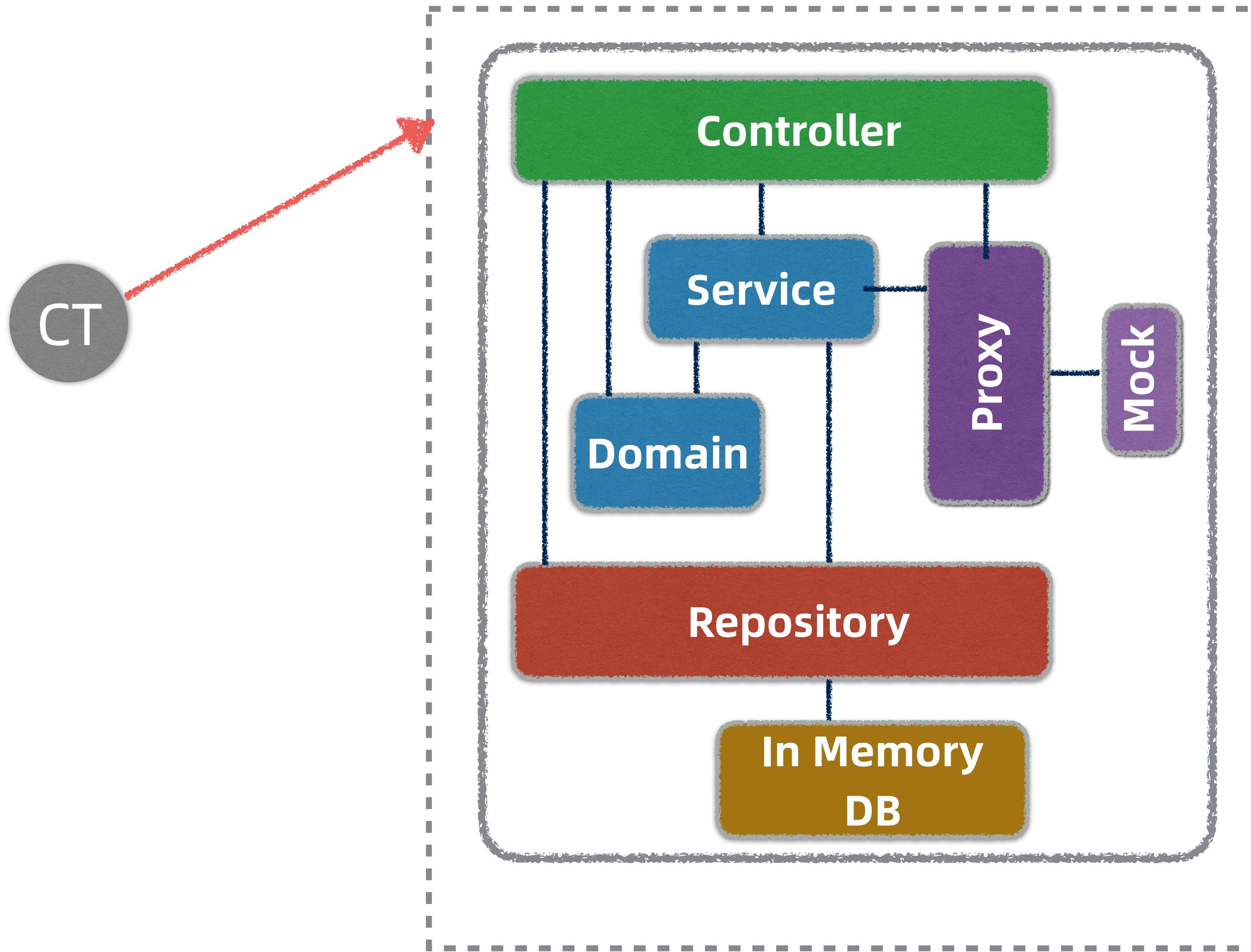
<https://junit.org/junit5/>

<https://site.mockito.org/>

集成测试(Integration Test)



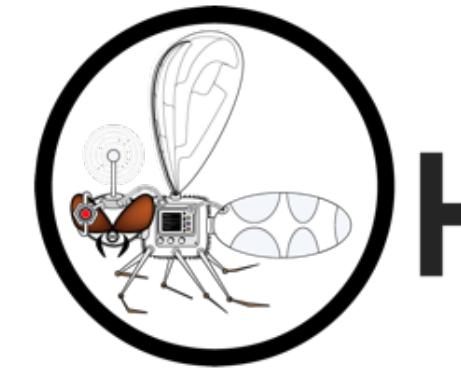
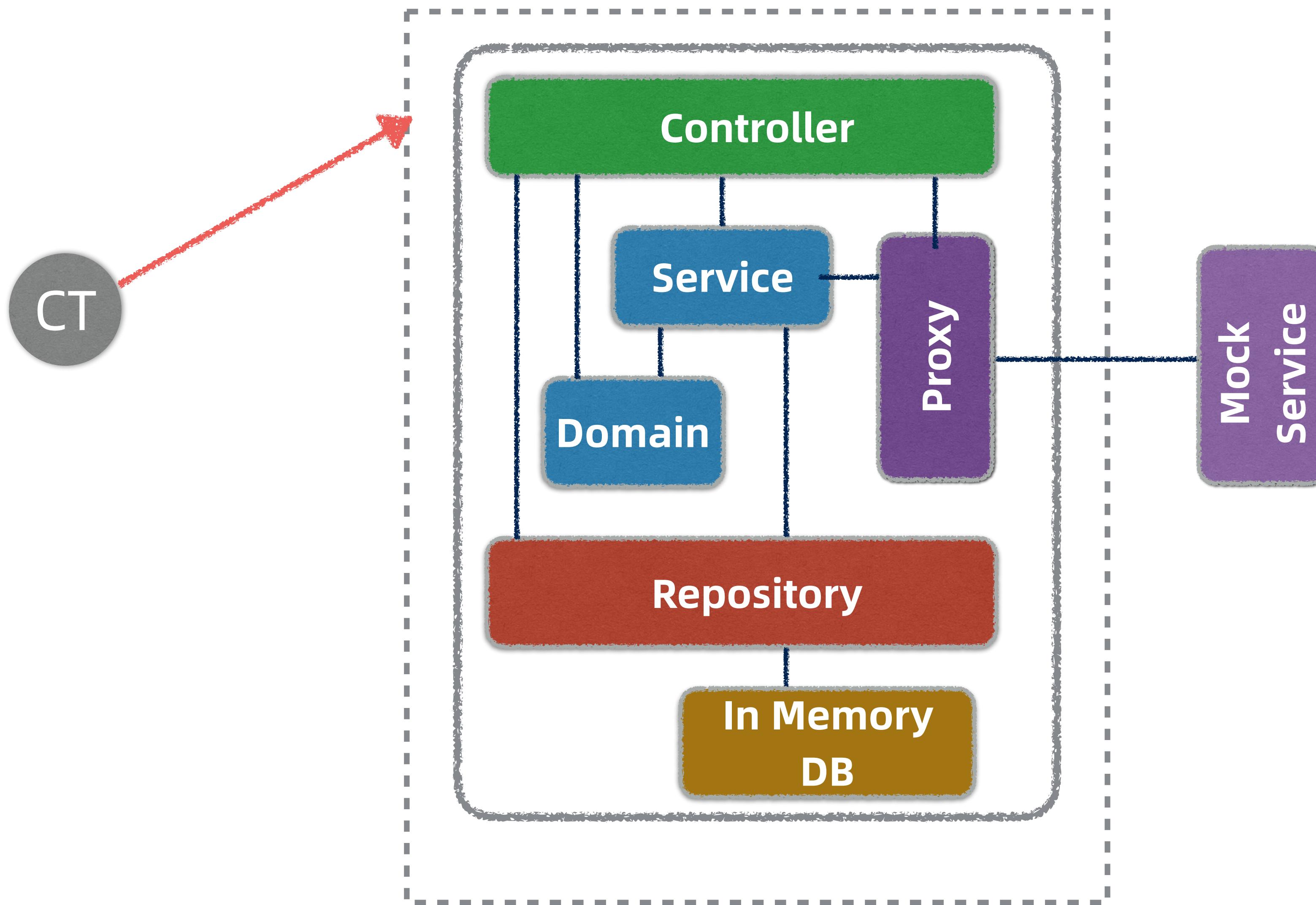
组件测试(Component Test) ~ 内部Mock



<http://wiremock.org/>

<https://www.baeldung.com/java-spring-mockito-mock-mockbean>

组件测试(Component Test) ~ 外部Mock



Hoverfly

<https://hoverfly.io/>

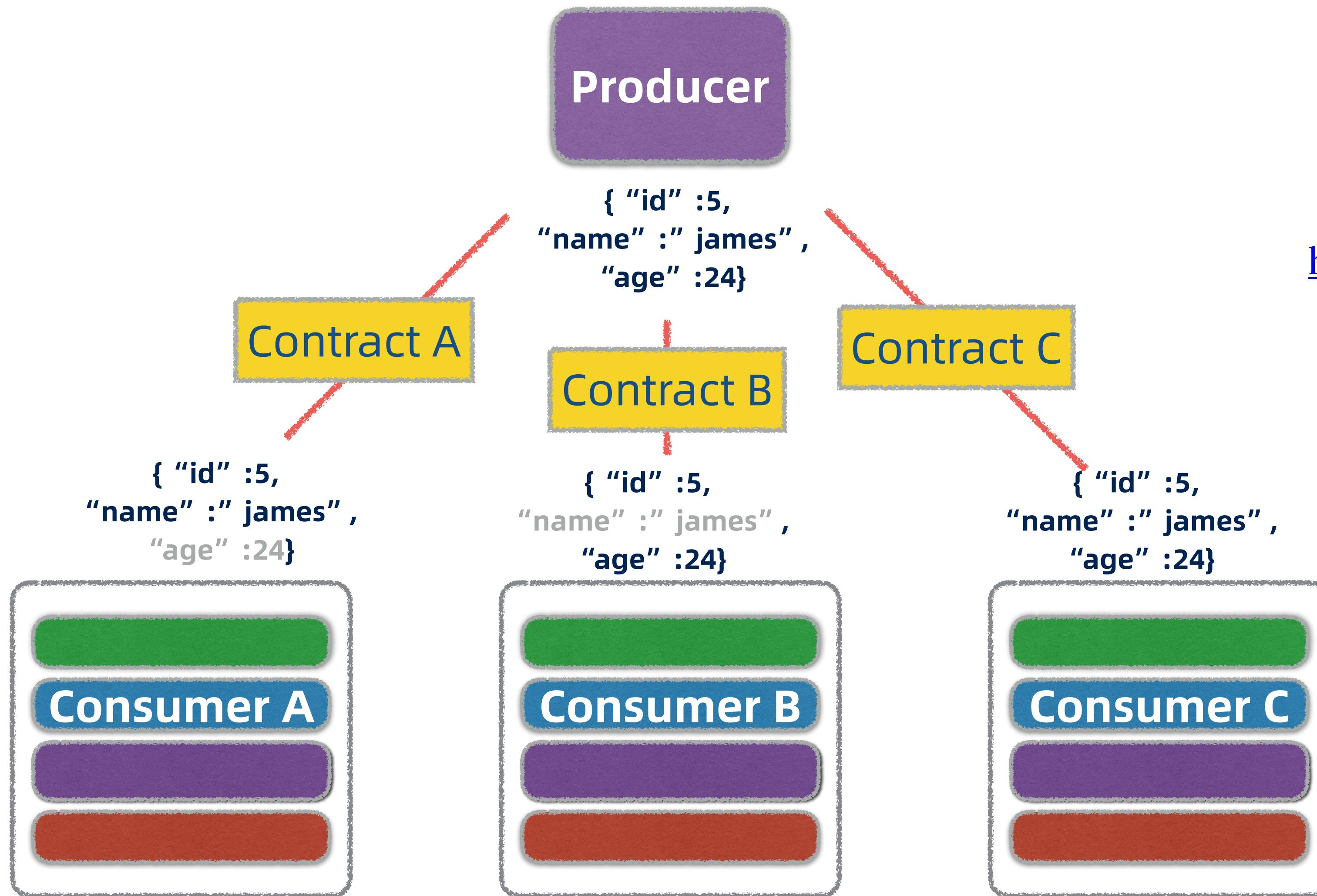


<http://www.mbttest.org/>

第 2 部分

微服务测试分类和技术(下)

契约测试(Contract Test)



PACTS

<https://docs.pact.io/>

<https://spring.io/projects/spring-cloud-contract>

契约驱动测试

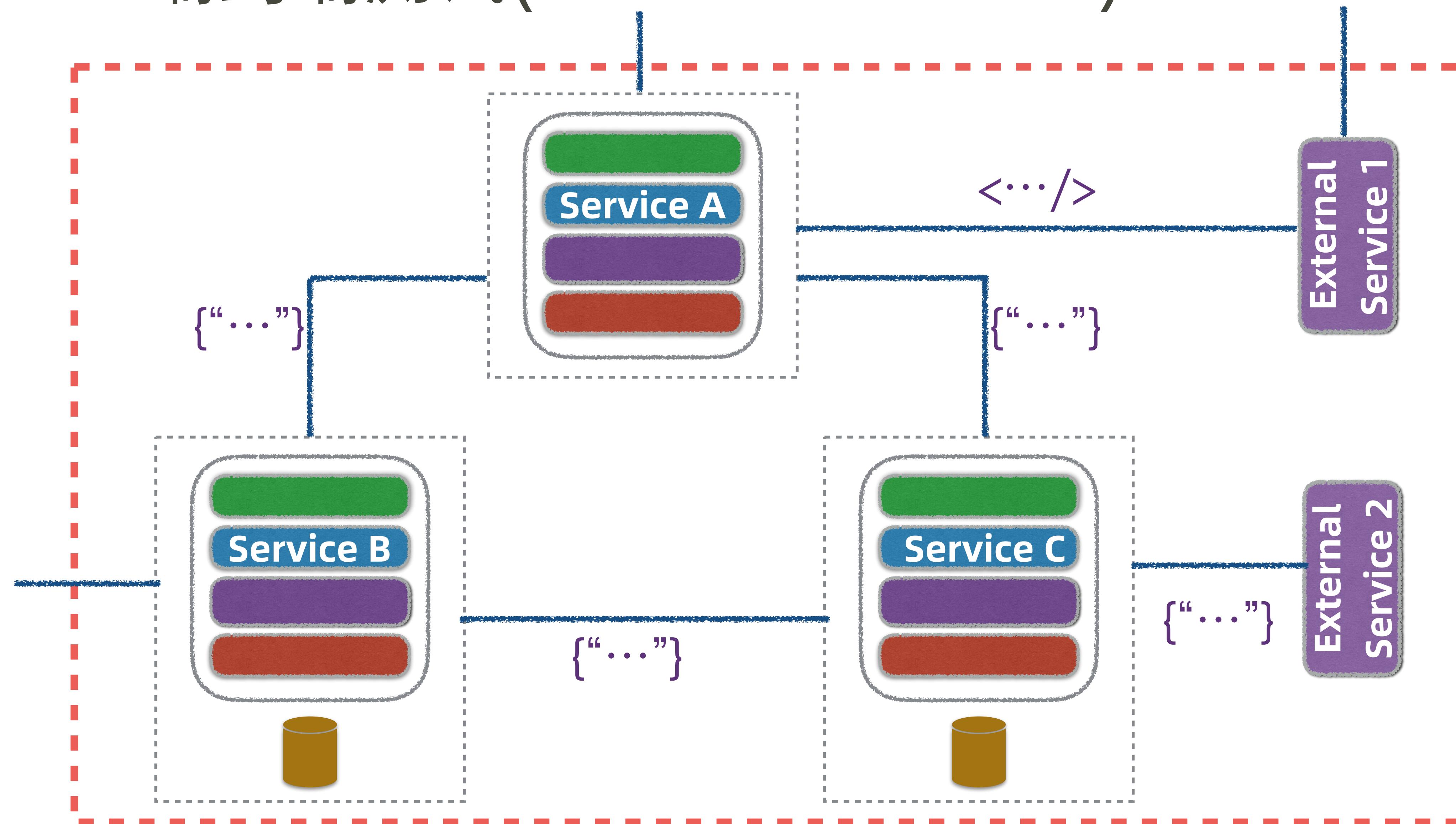


端到端测试(End-to-End Test)



Selenium WebDriver

REST-assured

<http://rest-assured.io/>

总结

SUMMARY

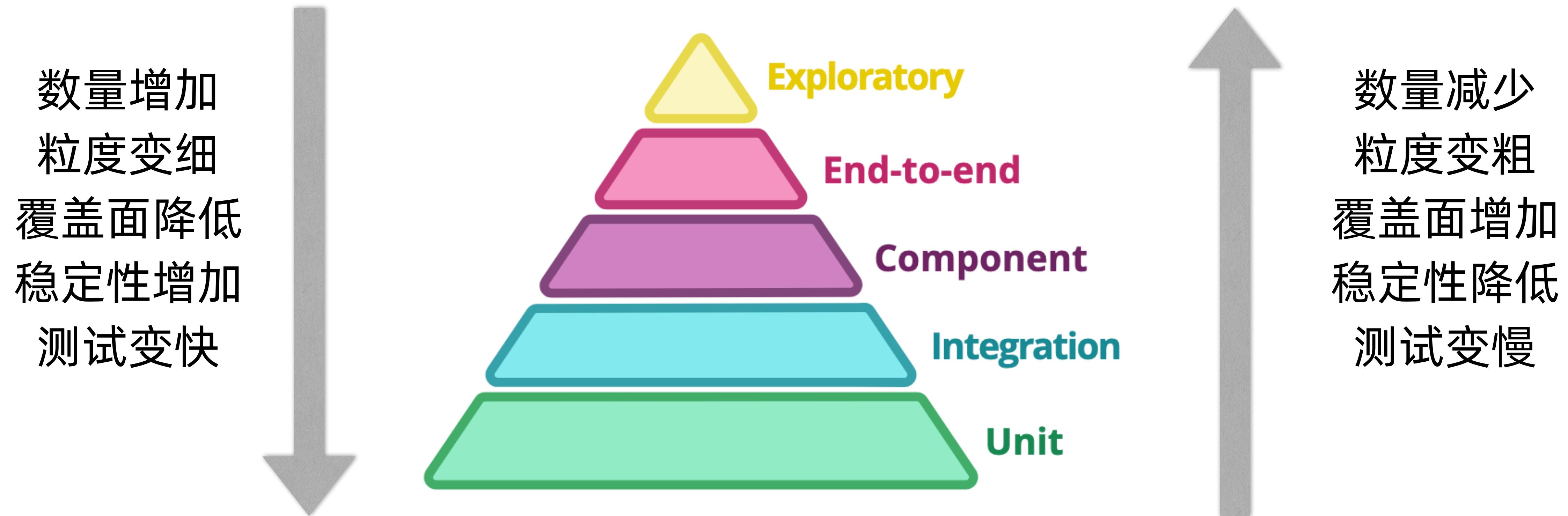
分类	功能
单元测试	确保类、模块功能正确
集成测试	确保组件间接口、交互和链路正确
组件测试	确保微服务作为独立整体，接口功能正确
契约测试	确保服务提供方和消费方都遵循契约规范
端到端测试	确保整个应用满足用户需求
探索测试	手工探索学习系统功能，改进自动化测试

一致性 > 具体定义

第 3 部分

测试金字塔和实践

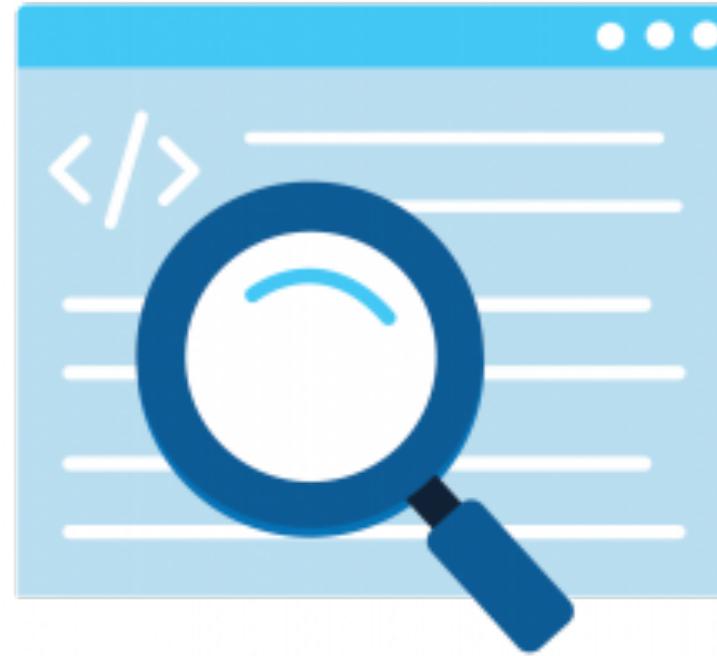
测试金字塔



端到端测试实践

1. 80/20，聚焦核心业务服务
2. 用户使用场景驱动
3. 适当Mock不稳定测试点
4. 规范测试环境和环境自动化
5. 测试数据管理
6. 灰度测试+生产监控

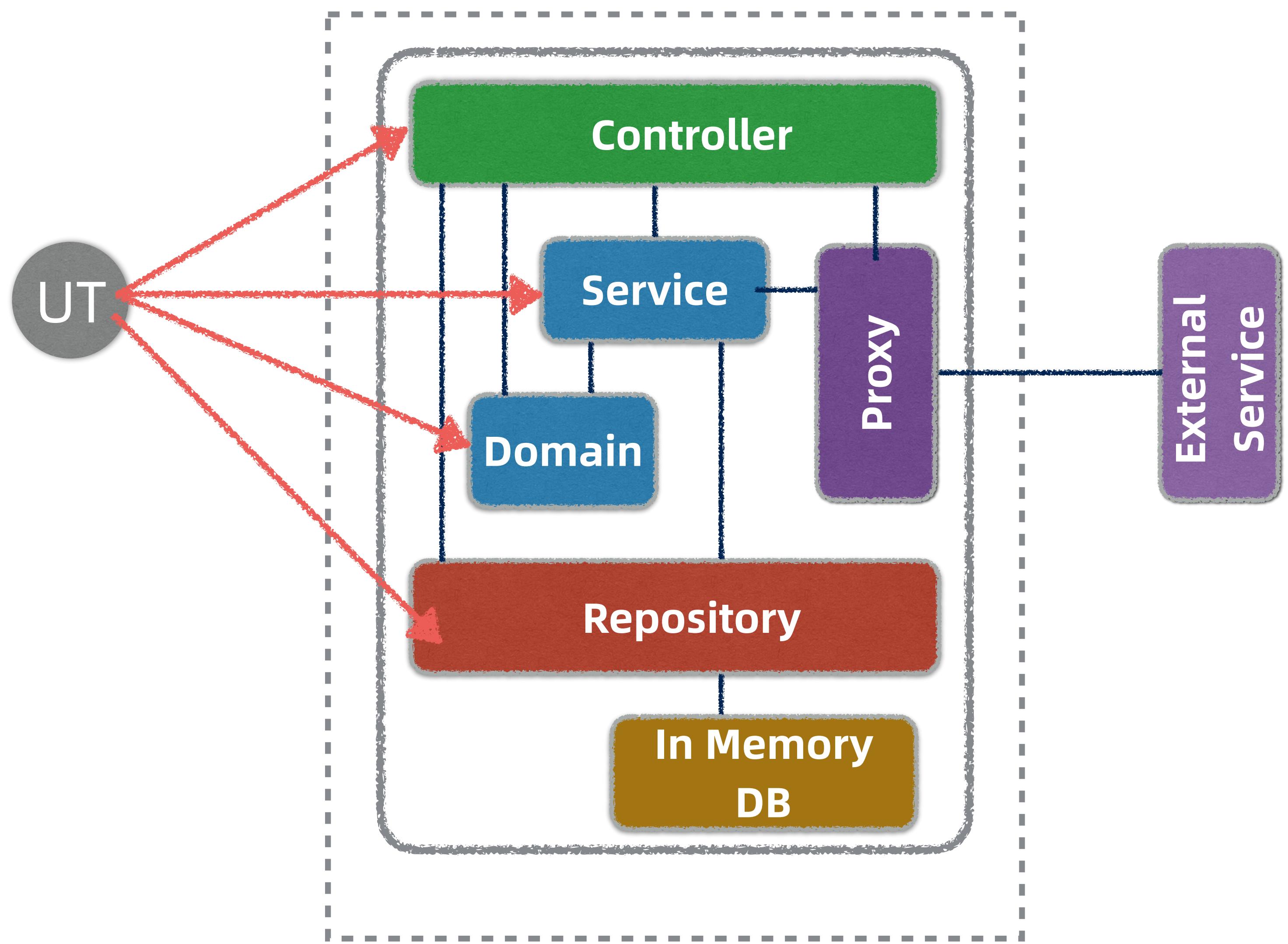


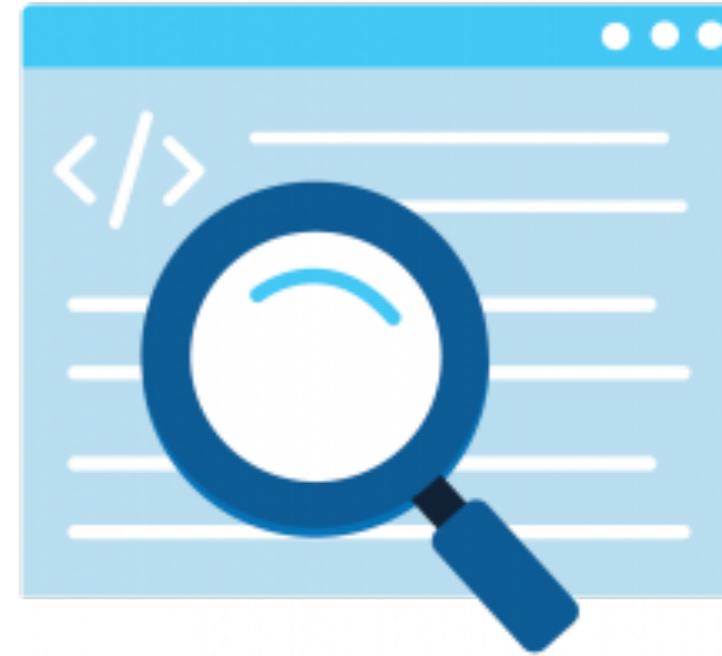


第 4 部分

Test Case Review ~ 单元测试

单元测试(Unit Test)

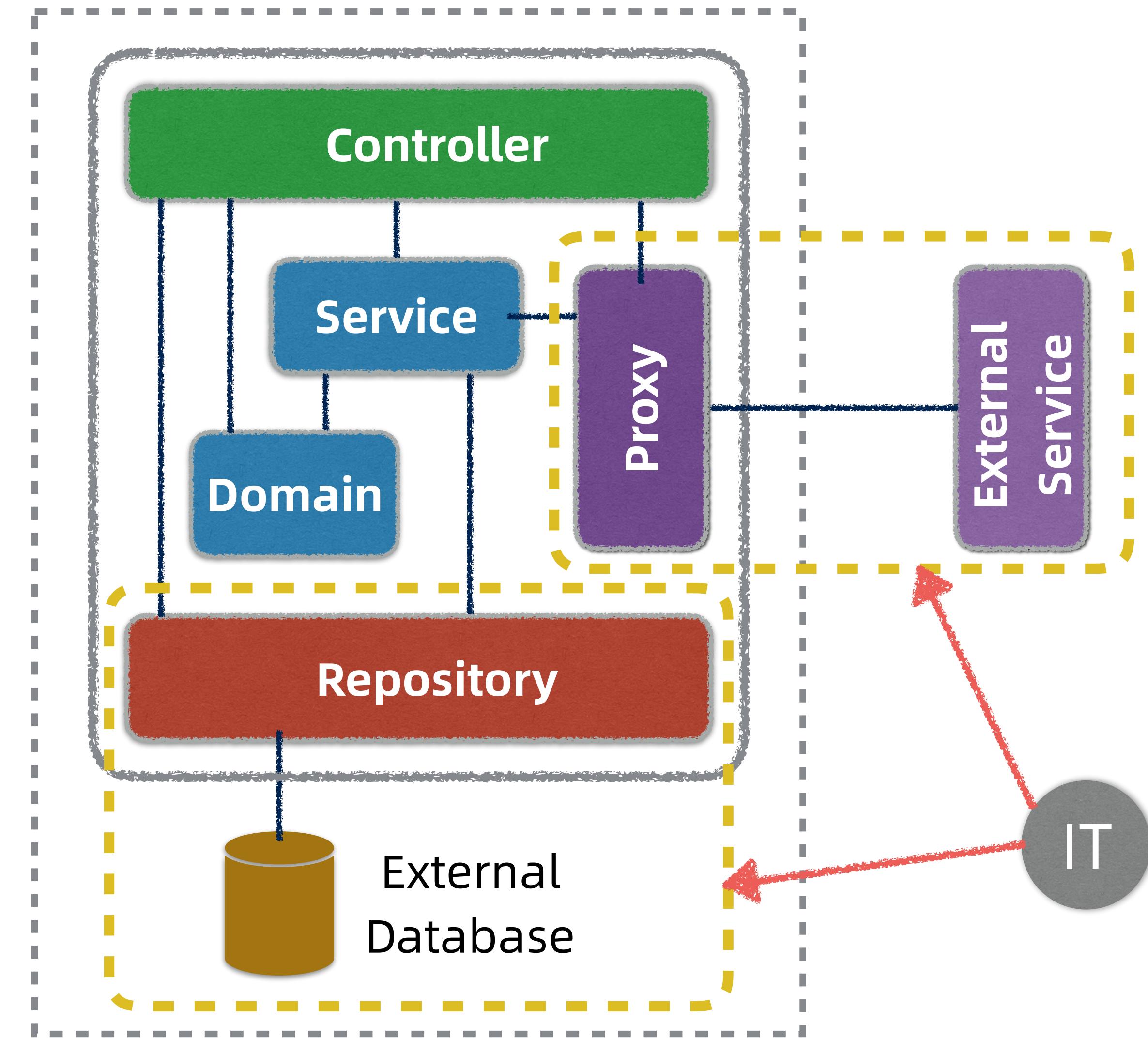




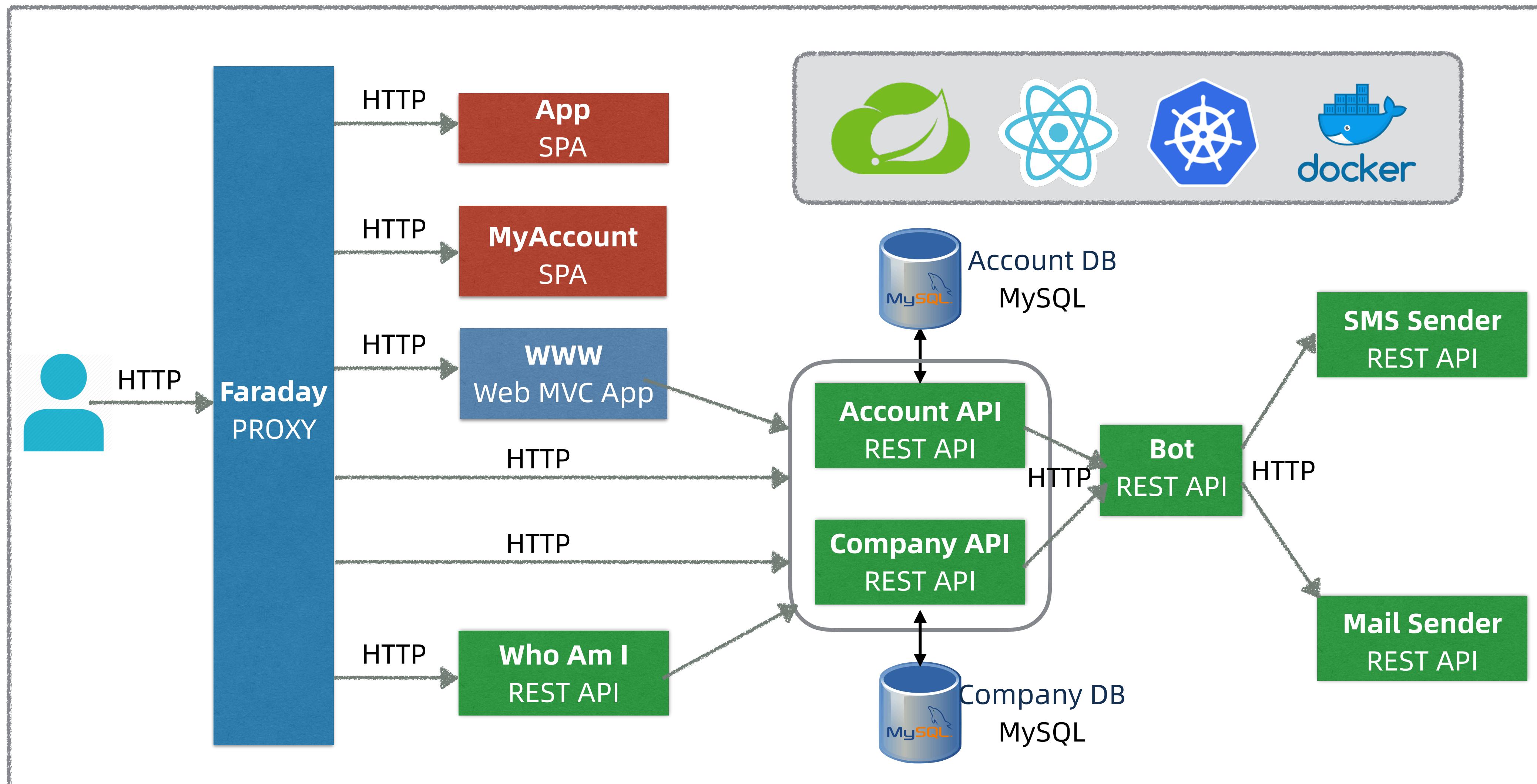
第 5 部分

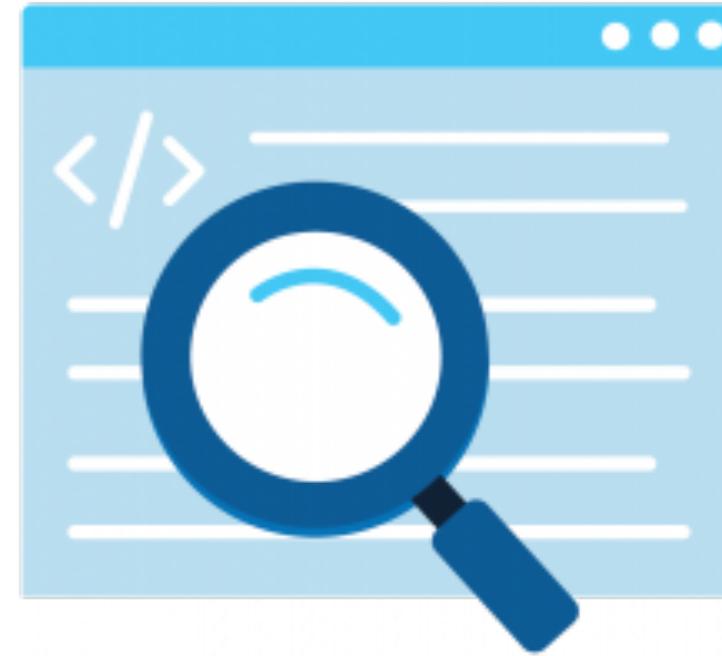
Test Case Review ~ 集成测试

集成测试(Integration Test)



Staffjoy架构图

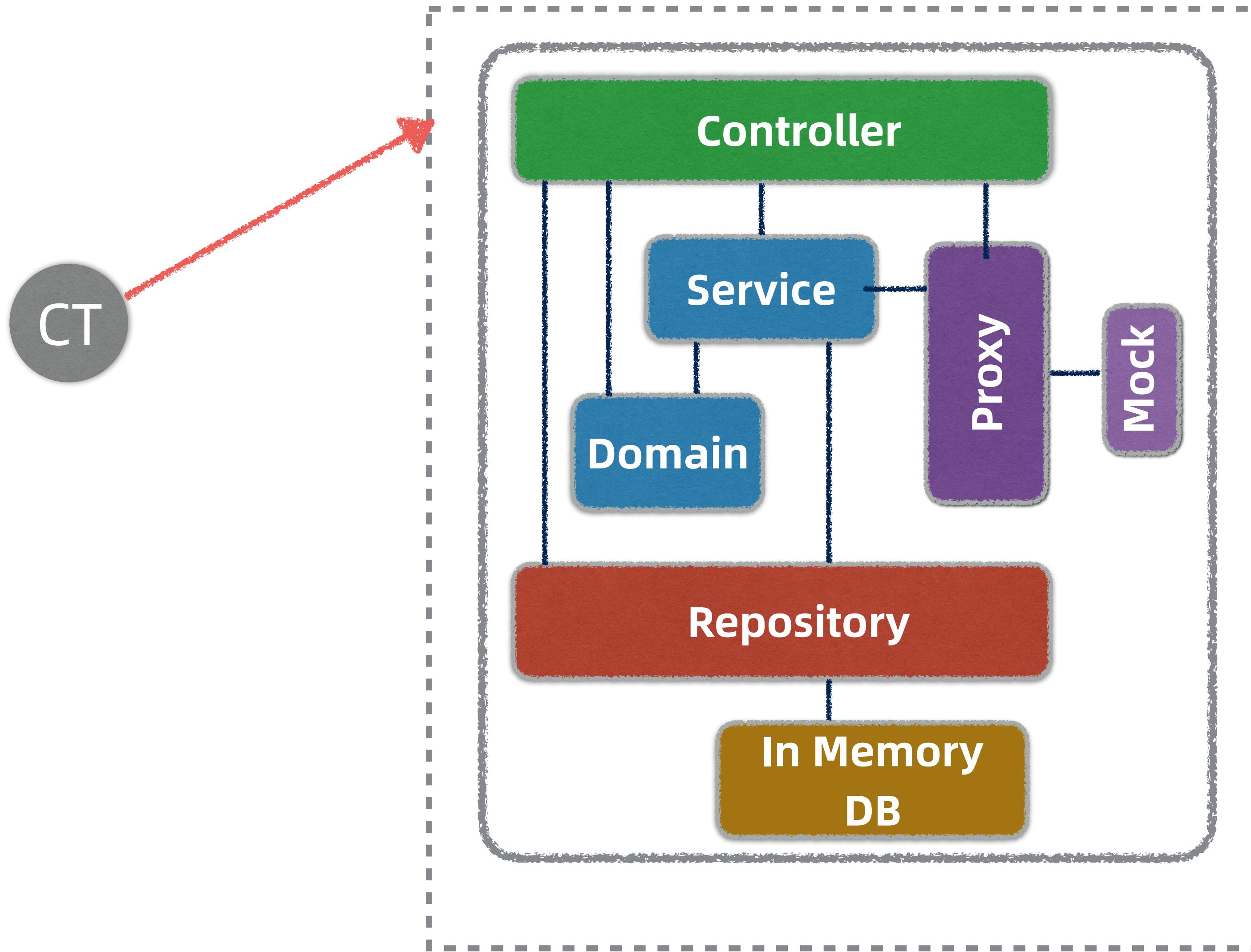




第 6 部分

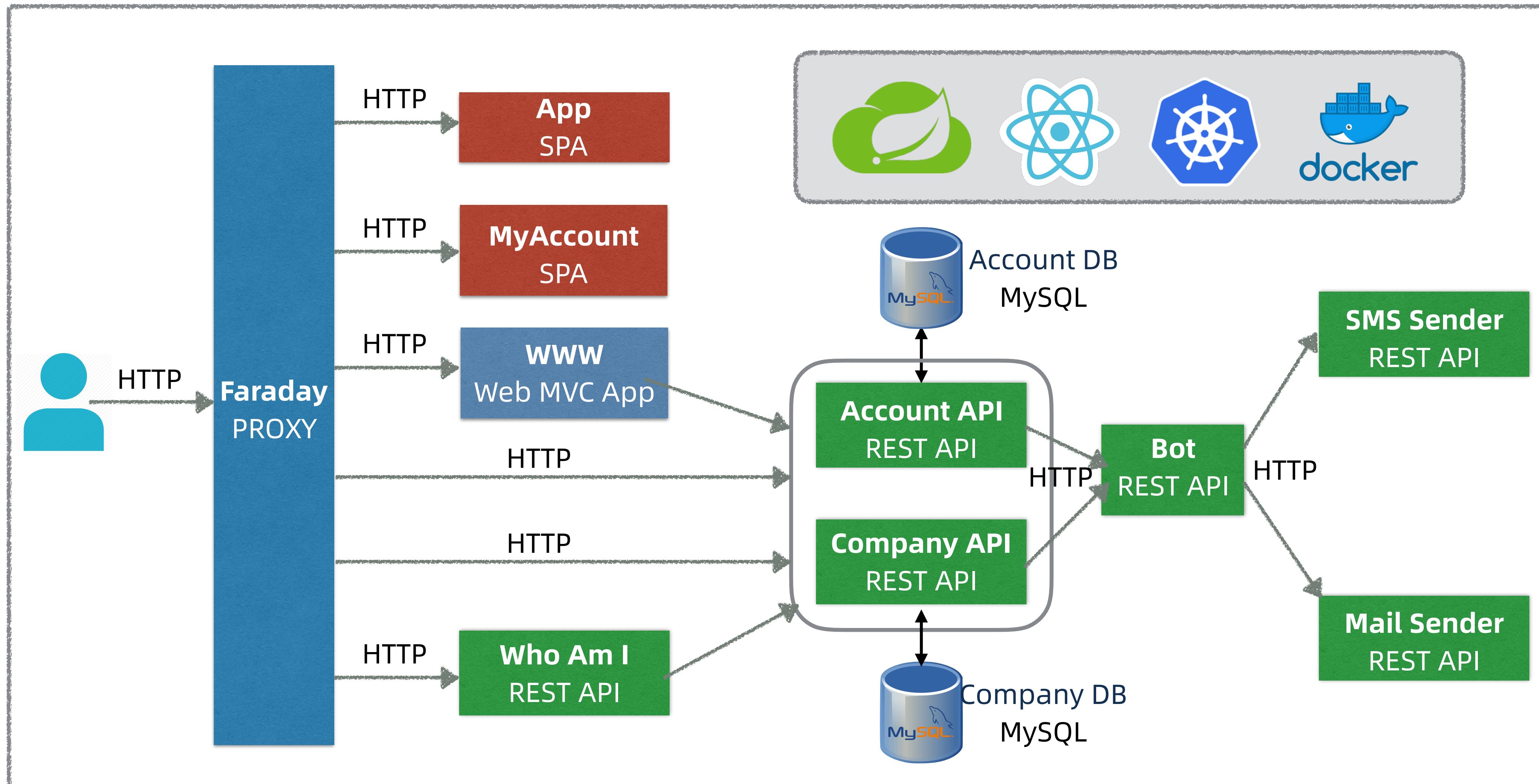
Test Case Review ~ 组件测试

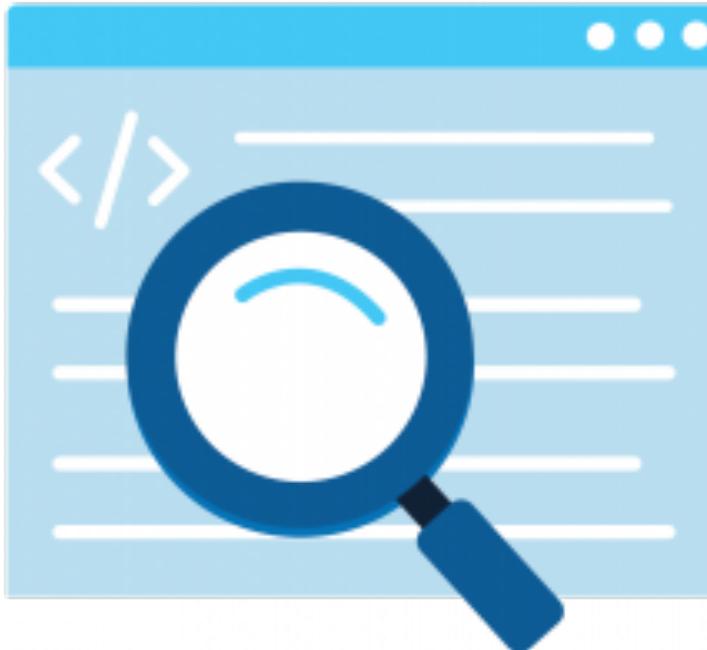
组件测试(Component Test) ~ 内部Mock



<https://www.baeldung.com/java-spring-mockito-mock-mockbean>

Staffjoy架构图





第 7 部分

Mock vs Spy

测试补充



1. Mock vs. Spy
2. BDD行为驱动测试(了解)
3. 性能测试



<https://jmeter.apache.org/>



<https://gatling.io/open-source/>



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