Agile Software Development

Produced by

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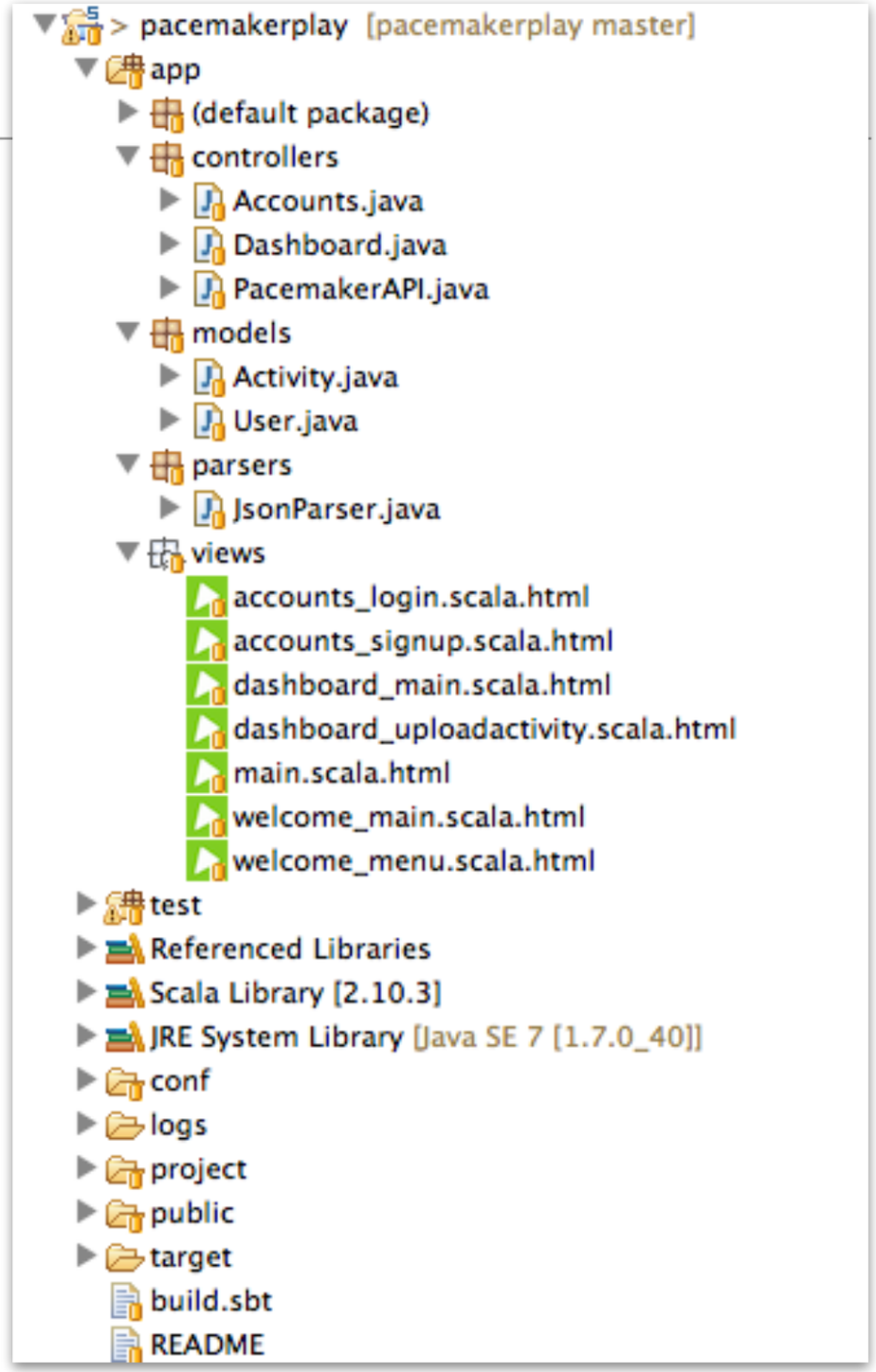
eLearning support unit

Mocking Opportunities in Pacemaker

Pacemaker 2.0

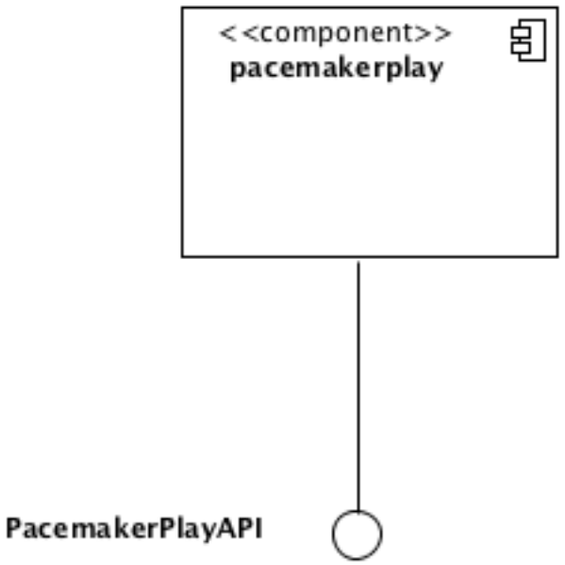
- REST Web Service
- Standard Web UI



Assignment Rubric for Assignment 2 (top marks deployment + any 2 others)

Standard	Deployment	Features	UX	DX
Baseline	REST (Local)	activities *(see runkeeper)*	Console	Rest Tests
Good	REST (Deployed)	reports *(see runkeeper)*	Console - asciiart	Models
Excellent	REST (Secured)	friends *(see runkeeper)*	Simple Web	Test Doubles (Factor out pacemaker into 2 services)
Outstanding	REST (2 x cloud)	dashboard *(see runkeeper)*	Web Ajax or App	API Documentation

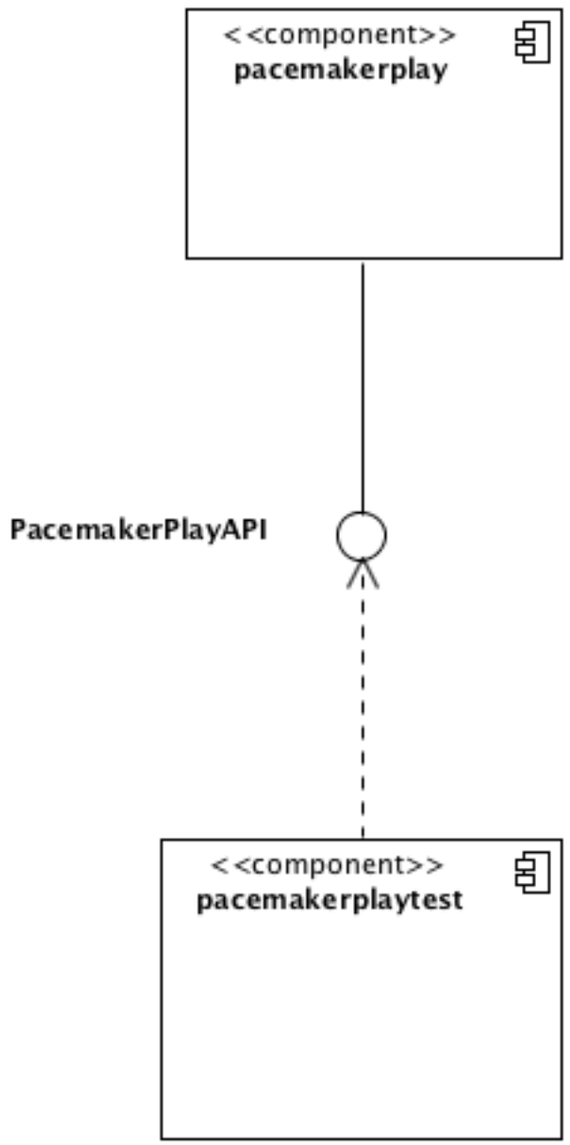
pacemakerplay service



- Provides an API for managing:
  - users
  - activities
  - routes (within activities)

```
# API

GET     /api/users                                  controllers.PacemakerAPI.users()
DELETE  /api/users                                  controllers.PacemakerAPI.deleteAllUsers()
POST    /api/users                                  controllers.PacemakerAPI.createUser()

GET    /api/users/:id                               controllers.PacemakerAPI.user(id: Long)
DELETE /api/users/:id                               controllers.PacemakerAPI.deleteUser(id: Long)
PUT    /api/users/:id                               controllers.PacemakerAPI.updateUser(id: Long)

GET     /api/users/:userId/activities               controllers.PacemakerAPI.activities(userId: Long)
POST    /api/users/:userId/activities               controllers.PacemakerAPI.createActivity(userId: Long)

GET     /api/users/:userId/activities/:activityId   controllers.PacemakerAPI.activity(userId: Long, activityId:Long)
DELETE  /api/users/:userId/activities/:activityId   controllers.PacemakerAPI.deleteActivity(userId: Long, activityId:Long)
PUT     /api/users/:userId/activities/:activityId   controllers.PacemakerAPI.updateActivity(userId: Long, activityId:Long)
```

pacemakerplaytest



- Exercise the API over HTTP
- Full set of tests to verify key features

New Feature - ‘Social’

Excellent	REST (Secured)	friends *(see runkeeper)*	Simple Web	Test Doubles (Factor out pacemaker into 2 services)

- Follow friends
- View Friends activities
- ‘Feeds’, etc…

- Consider modelling this as a separate service
- With its own API for managing
  - social graph
  - updates
  - follow/unfollow etc…

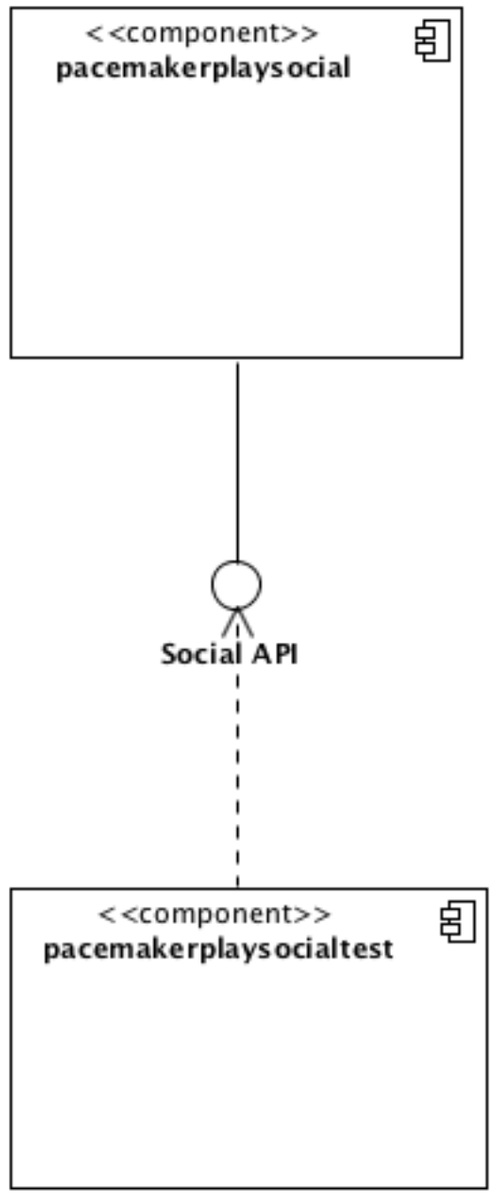
pacemakerplaysocial

- Uncouple the social aspects from the core activity service

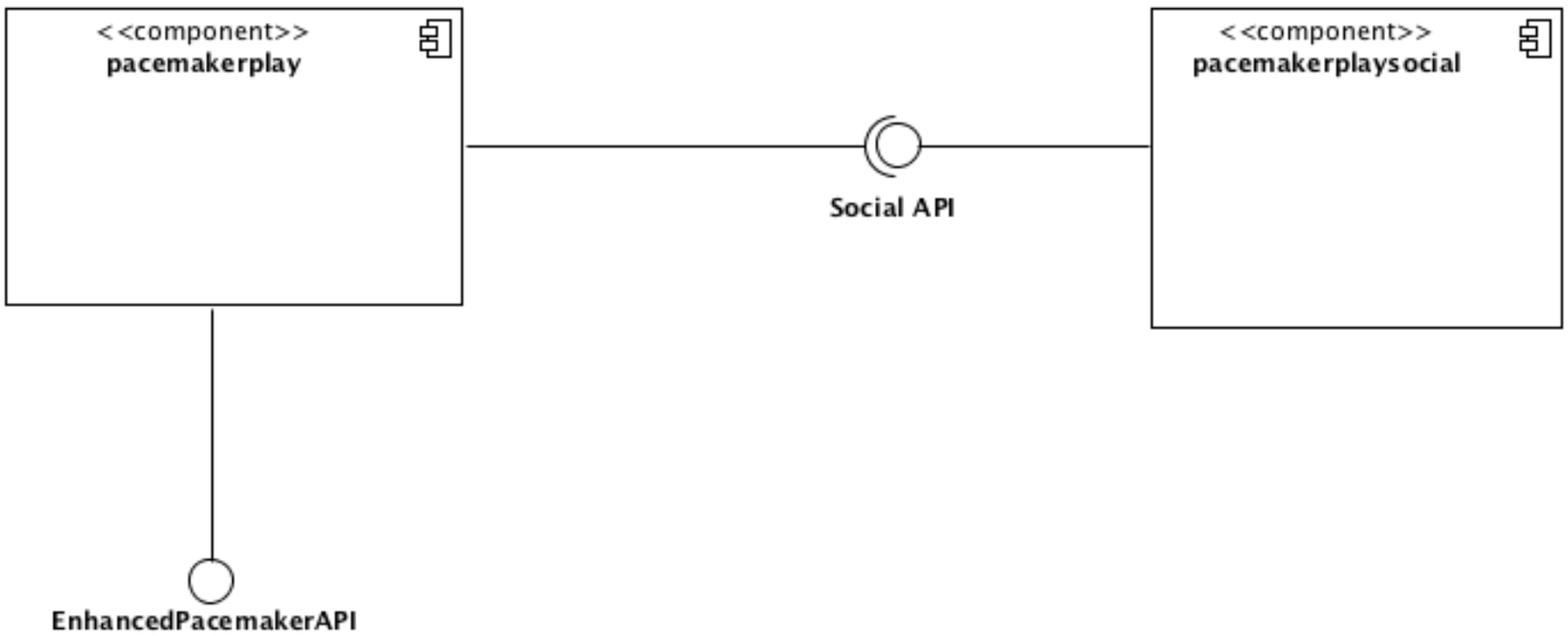
- Allows the social service to be constructed and optimised independently

  - NoSQL database more appropriate

  - Interfaces to twitter/ facebook etc..



pacemakerplay ->pacemakerplaysocial

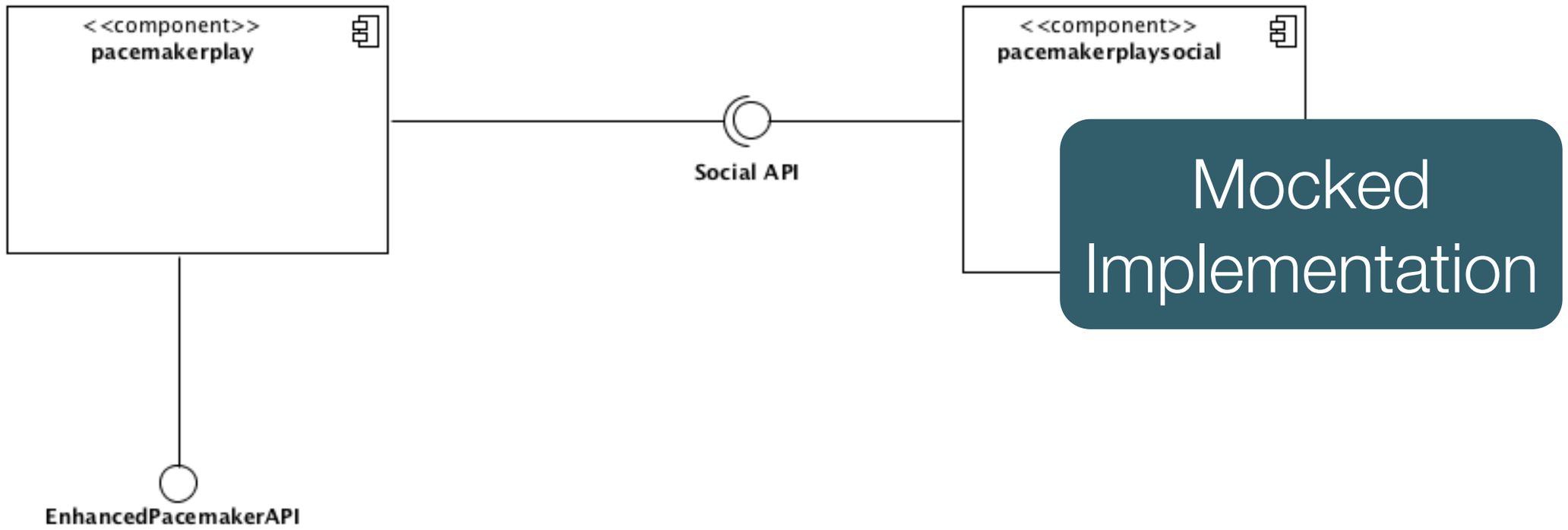


- ‘Enhanced’ API uses Social features, provided by pacemakerplaysocial service

The Role of Mock Objects

- Postpone the Construction of the pacemakerplaysocial component
- Model the API first as a REST API
- Mock out its implementation
- Then:
  - Write Tests against the Mocked out API
  - Enhance pacemaker play API to incorporate social features

pacemakerplay ->pacemakerplaysocial



- Use REST Mocking Services to deliver realistic test data to pacemakerplay

WireMock

WireMock is a flexible library for stubbing and mocking web services. Unlike general purpose mocking tools it works by creating an actual HTTP server that your code under test can connect to as it would a real web service.

It supports HTTP response stubbing, request verification, proxy/intercept, record/playback of stubs and fault injection, and can be used from within a unit test or deployed into a test environment.

Although it's written in Java, there's also a JSON API so you can use it with pretty much any language out there.

What's it for?

Some scenarios you might want to consider WireMock for:

- Testing mobile apps that depend on third-party REST APIs
- Creating quick prototypes of your APIs
- Injecting otherwise hard-to-create errors in 3rd party services
- Any unit testing of code that depends on a web service

Mocky

Mock your HTTP responses to test your REST API

Tweet 231

```
> PUT http://www.mocky.io/v2/5185415ba171ea3a00704eed
```

```
< HTTP/1.1 200 OK
< Content-Type: application/json; charset=UTF-8
{ "hello": "world" }
```

Now with **JSONP** support, just add **?callback=myfunction** to your links.

Generate your custom response

Status Code: 200 OK

Content Type: application/json | UTF-8

Custom headers: : +

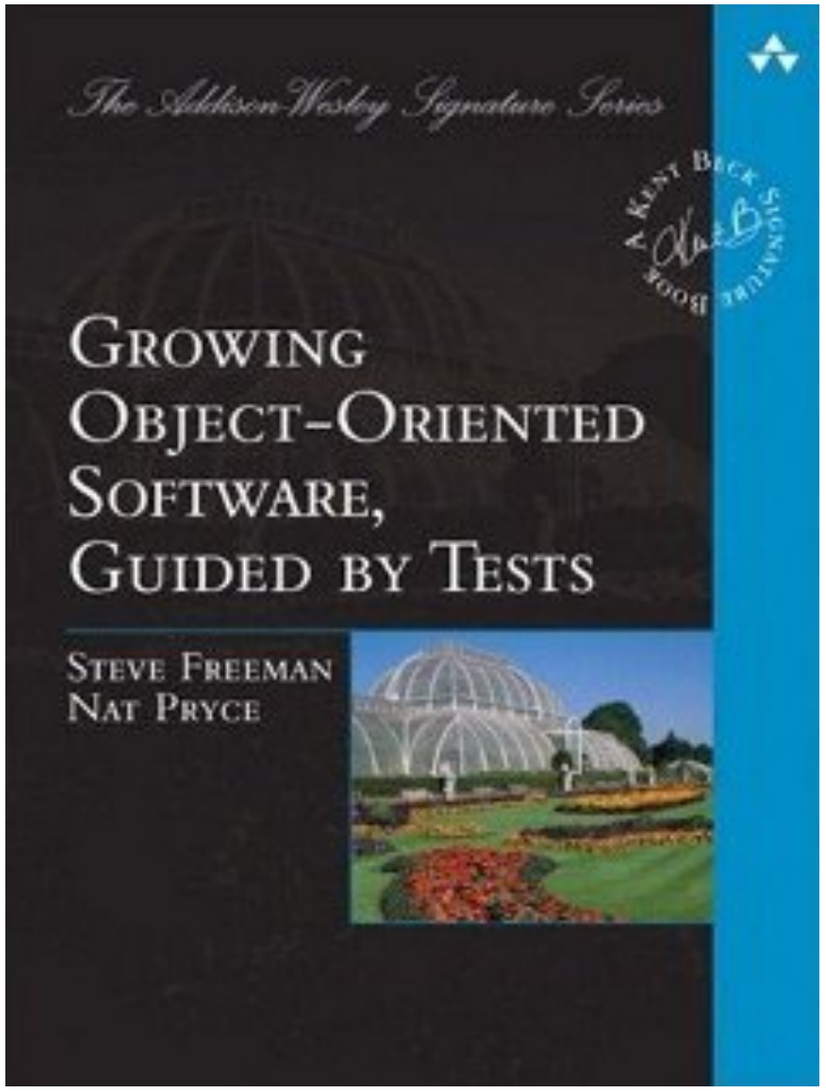
Eg: ETag, If-None-Match, Expires, Last-Modified, Server, X-Cache, Cache-Control, X-Frame-Options, Server, Set-Cookie, X-UA-Compatible...

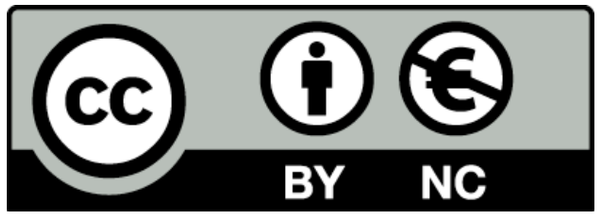
Body

Generate my HTTP Response | Switch to basic mode

Key Text on Employing Test Doubles Effectively

- Implementing TDD effectively: getting started, and maintaining your momentum throughout the project
- Creating cleaner, more expressive, more sustainable code
- Using tests to stay relentlessly focused on sustaining quality
- Understanding how TDD, Mock Objects, and Object-Oriented Design come together in the context of a real software development project
- Using Mock Objects to guide object-oriented designs
- Succeeding where TDD is difficult: managing complex test data, and testing persistence and concurrency





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