

# Java-Architekturen sichern mit ArchUnit

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## Overview

Motivation

Challenges

Continuous Architecture

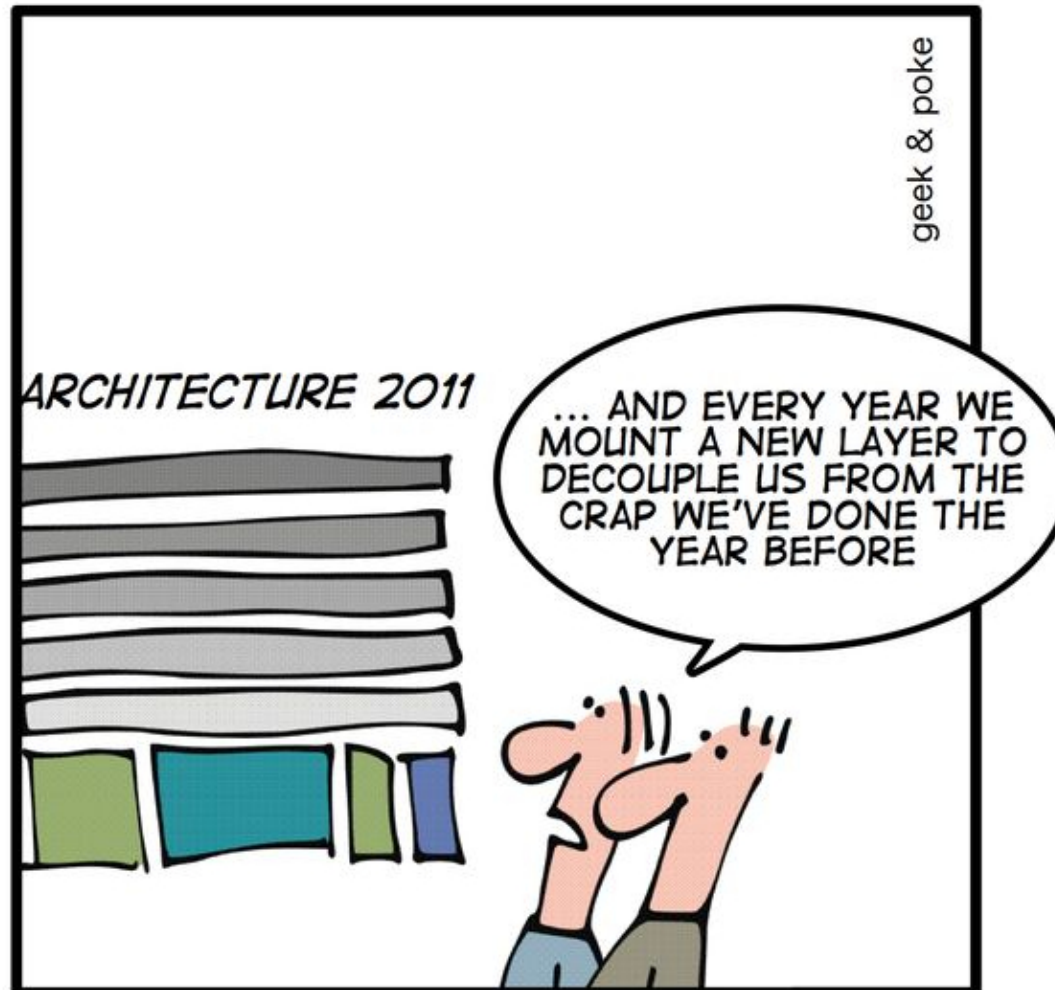
How ArchUnit can help

Demo

Try it yourself

# *BEST PRACTICES IN APPLICATION ARCHITECTURE*

*TODAY: USE LAYERS TO DECOUPLE*

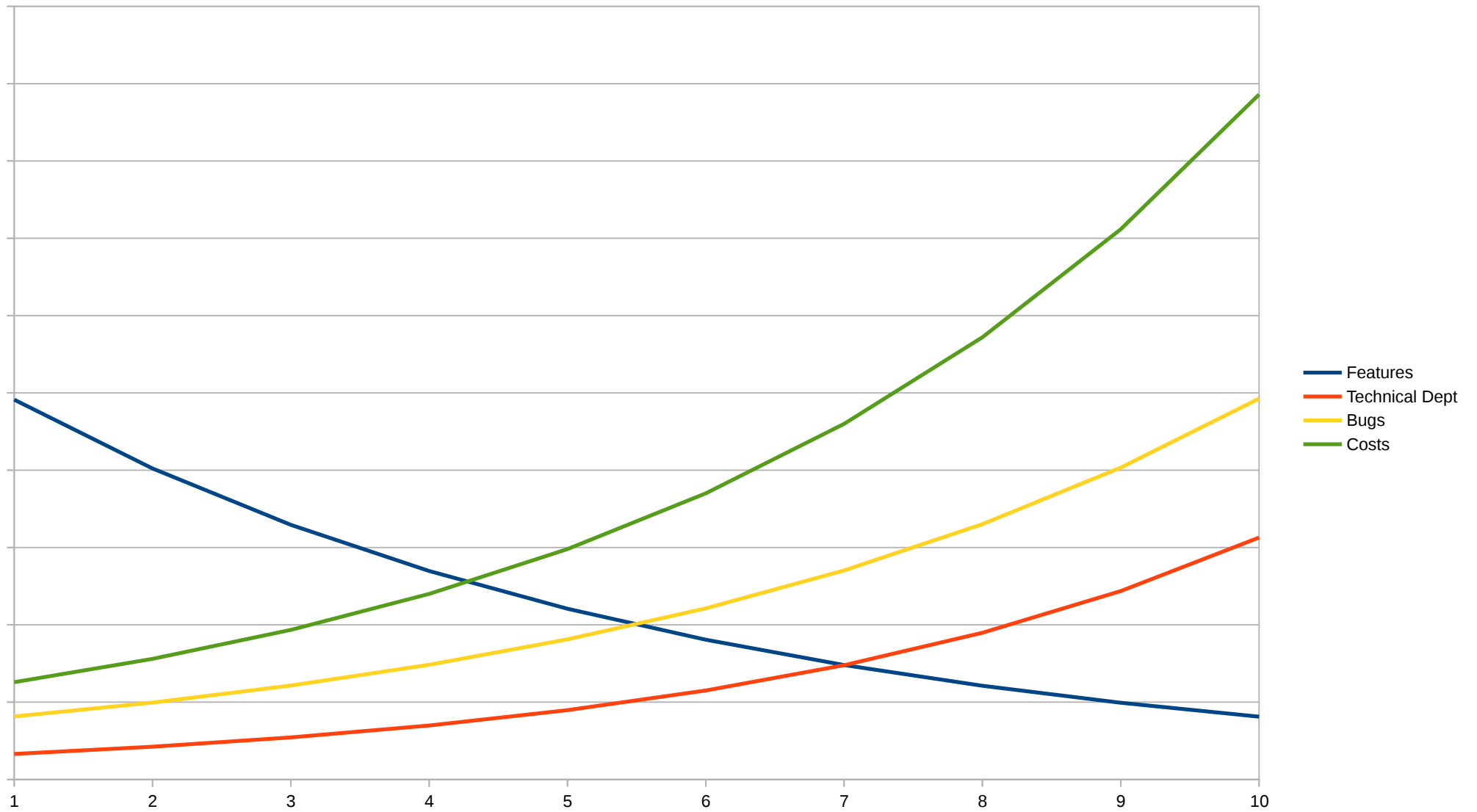


*ANNUAL RINGS*

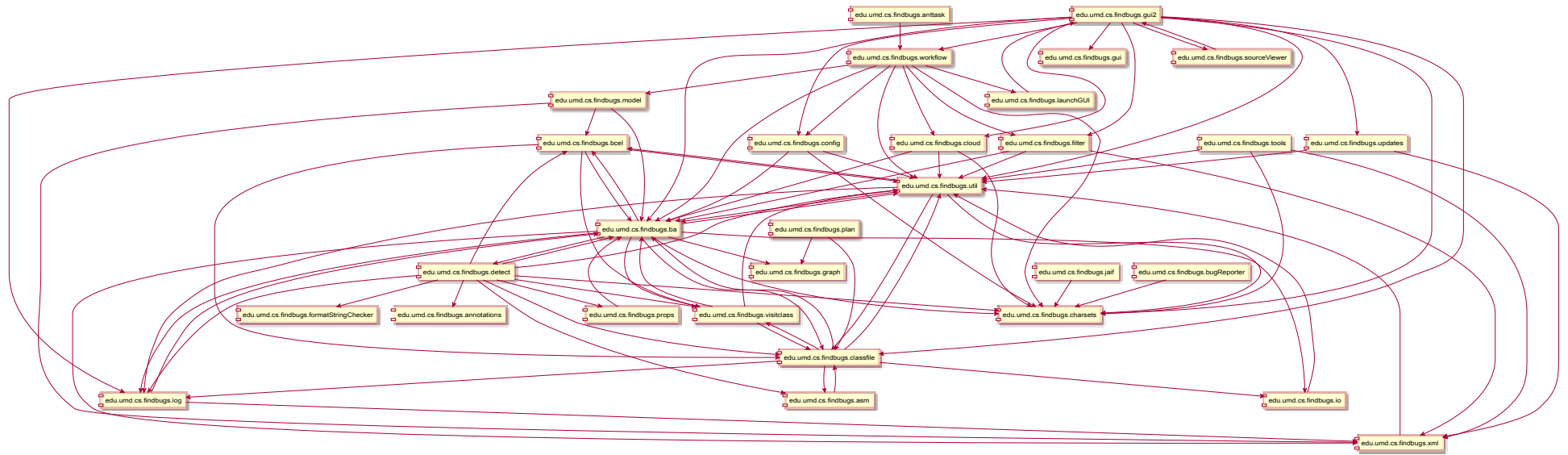
# Aspects affected by software architecture

- Maintainability/Extensibility
- Reusability
- Onboarding

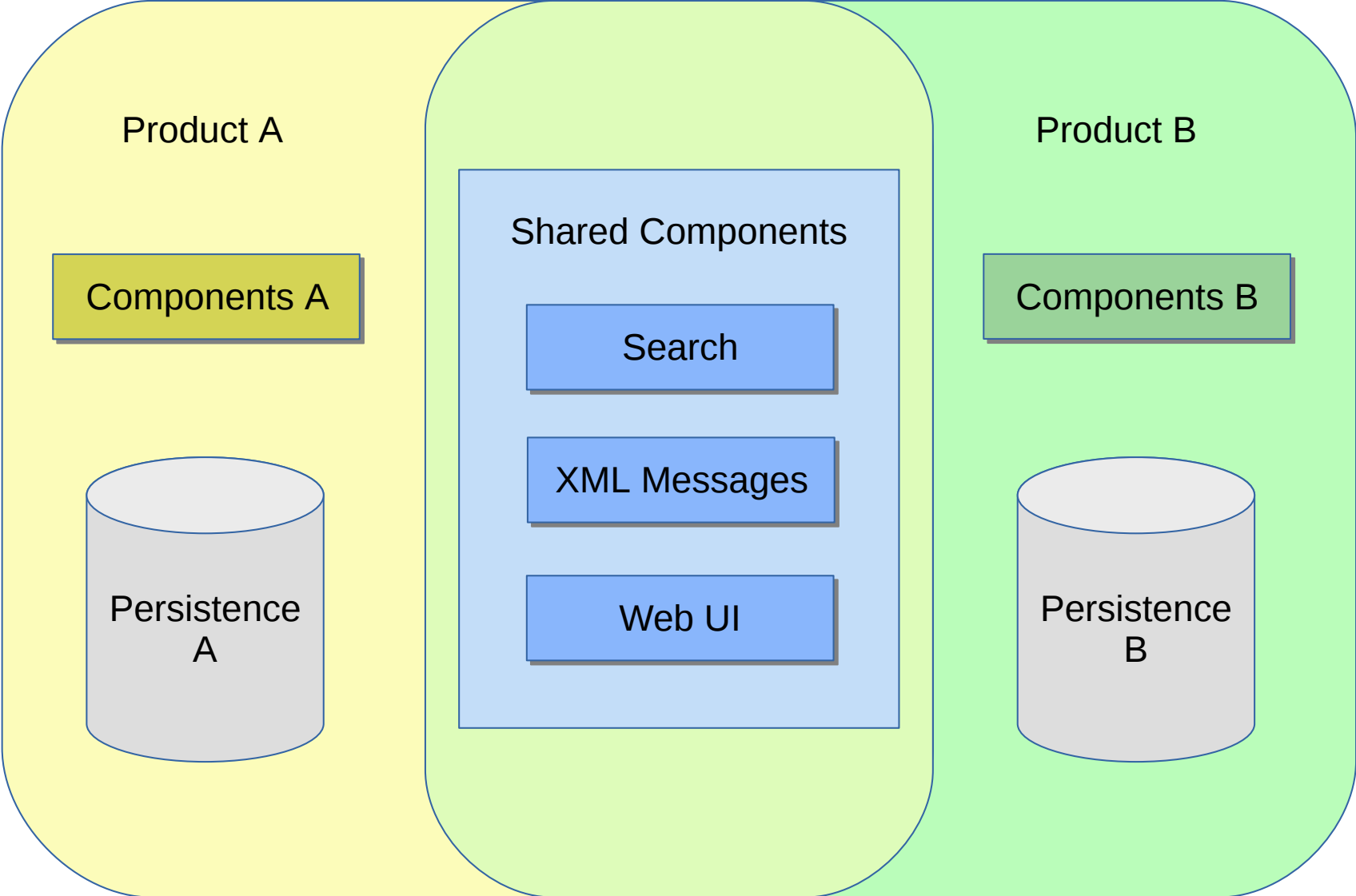
# Evolution of software



# Dependencies



# Reusability



Product A

Components A

Persistence  
A

Shared Components

Search

XML Messages

Web UI

Product B

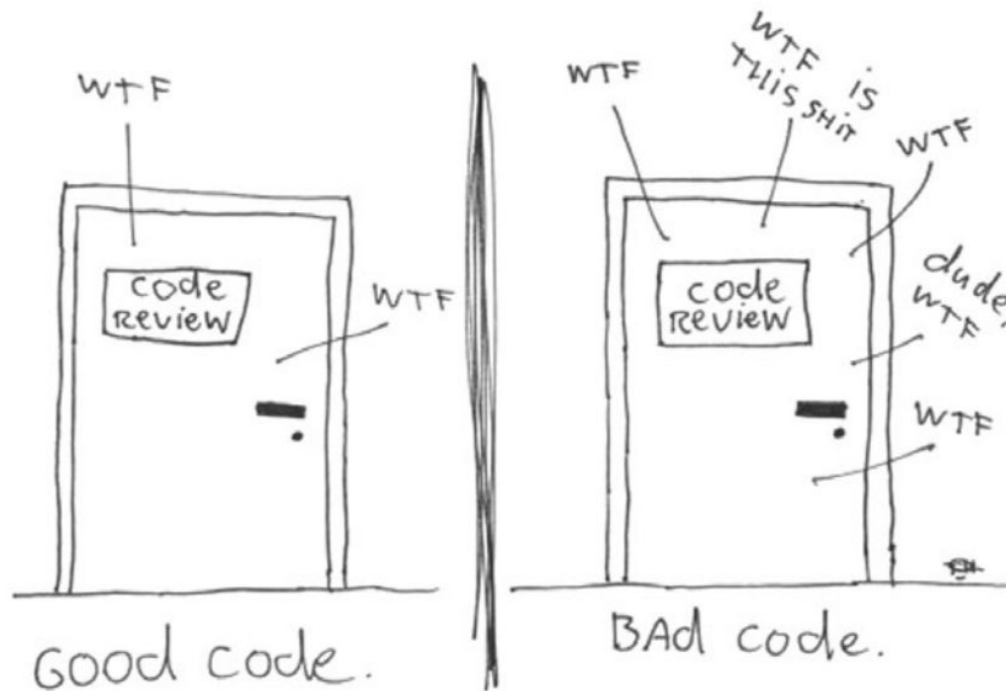
Components B

Persistence  
B



# Onboarding

The ONLY VALID MEASUREMENT  
OF CODE QUALITY: WTFs/MINUTE



(c) 2008 Focus Shift

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[http://www.osnews.com/story/19266/WTFs\\_m](http://www.osnews.com/story/19266/WTFs_m)

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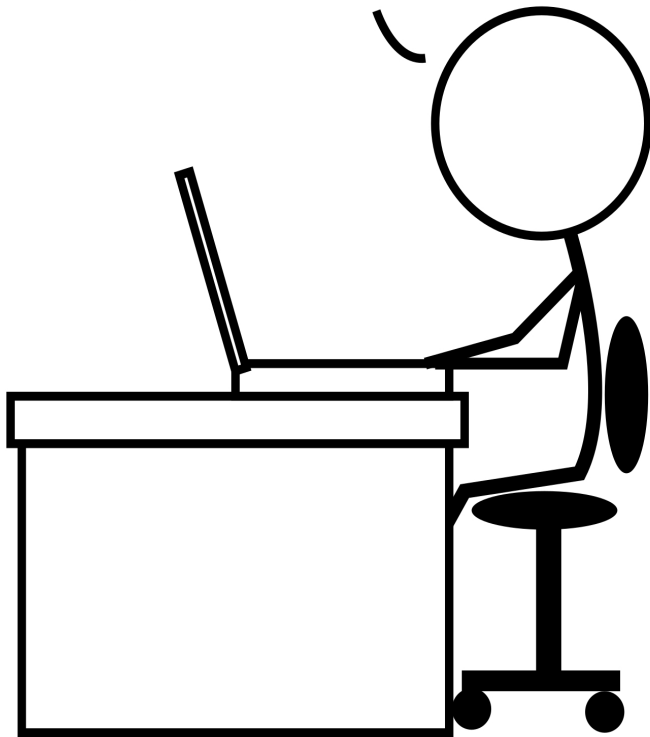
Demo

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# Documentation

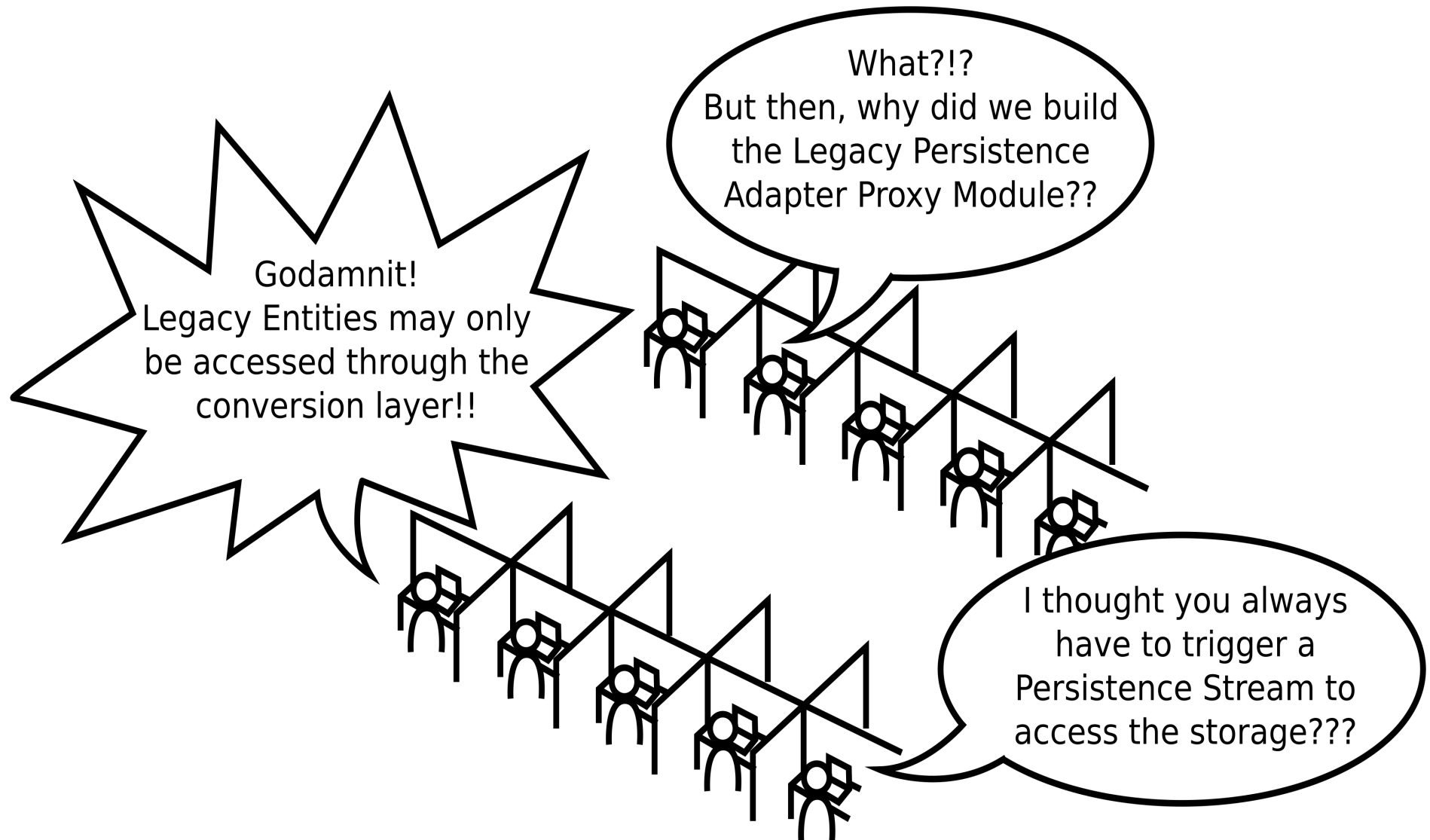
„All static HTML producers must be accessed through the QuirksProxy to ensure compatibility with Internet Explorer 4“ ???

Just checking your docs....

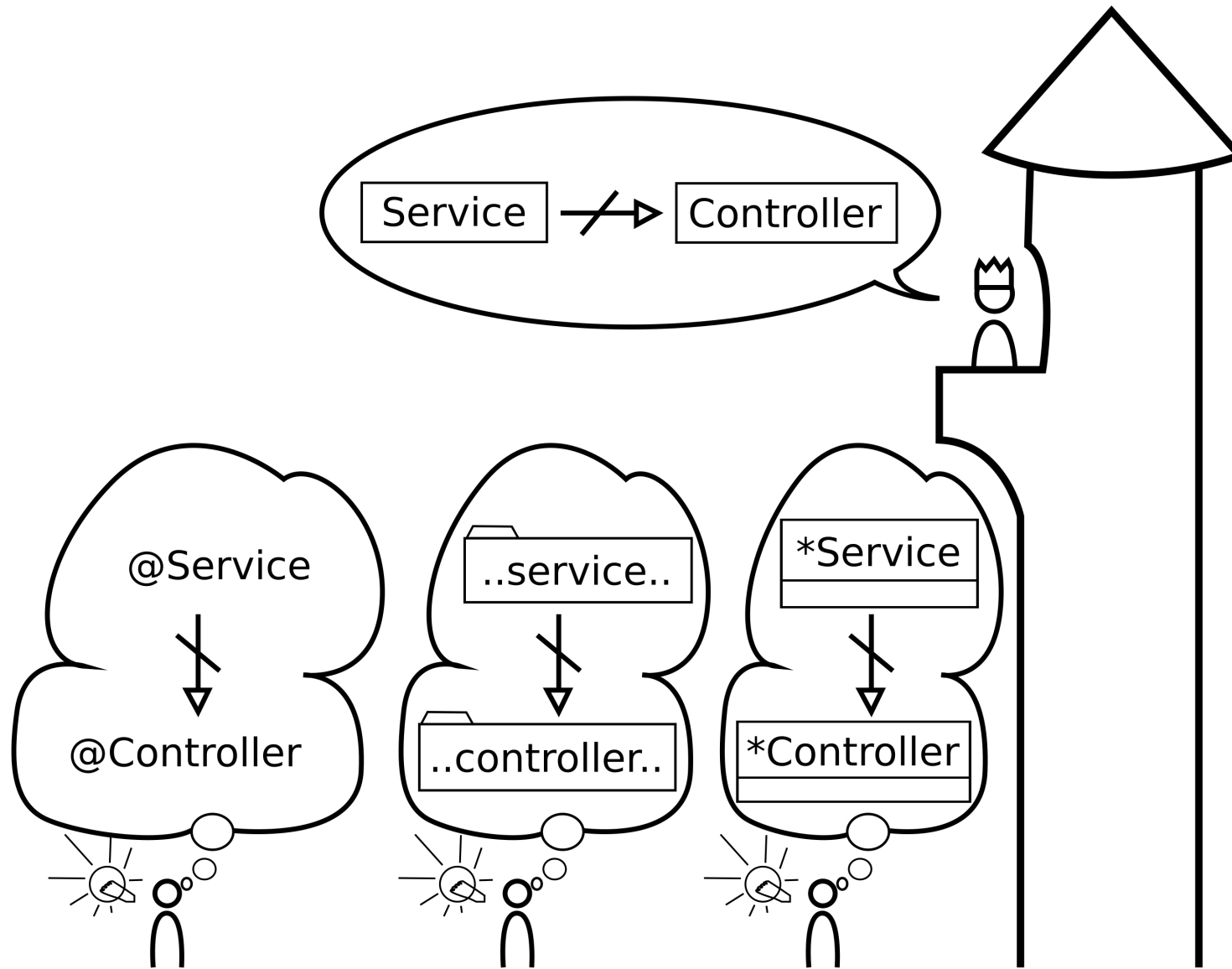


Better keep it!  
Somebody might still need it.

# Communication



# Mapping Spec to Code



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So how do we tackle these  
problems?

By treating them like any other  
part of software development



With automated tests

Violate the architecture...

... build server complains

Satisfying the architecture is  
torture...

... update the architecture

# Keep the architecture

- Present
- Open to change
- Closed to  
volatility

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# ArchUnit enables automatic architecture tests

- It imports Java bytecode
- It provides an easy but flexible Java API for rules
- It integrates well with existing test frameworks

# ArchUnit follows some simple design goals

- Simple Setup
- Easy and familiar to developers
- Powerful customization

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Demo

# Layered Architecture

```
@RunWith(ArchUnitRunner.class)
@AnalyzeClasses(packages = "com.tngtech.archunit.demo")
public class ExampleTest {

    @ArchTest
    public static final ArchRule rule =
        layeredArchitecture()
            .layer(name: "Controller")
            .definedBy(...packageIdentifiers: "..controller..")
            .layer(name: "Service")
            .definedBy(...packageIdentifiers: "..service..")

            .whereLayer(name: "Controller")
            .mayNotBeAccessedByAnyLayer()
            .whereLayer(name: "Service")
            .mayOnlyBeAccessedByLayers(...layerNames: "Controller");
}
```

# Checking for Cycles

```
@RunWith(ArchUnitRunner.class)
@AnalyzeClasses(packages = "com.tngtech.archunit.demo")
public class ExampleTest {

    @ArchTest
    public static final ArchRule rule =
        slices().matching(packagelIdentifier: "..demo.*..")
            .should().beFreeOfCycles();
}
```

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# Website

<http://archunit.org>

# Maven Central

```
com.tngtech.archunit:archunit:0.8.0  
com.tngtech.archunit:archunit-junit:0.8.0
```

Check out Munich's SWA  
community

# Software Architecture München

<http://swa-muc.de>

# SwaCamp

30.11.2018 - 01.12.2018

<http://swacamp.org>



Thank you for your time :-)

Questions?

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