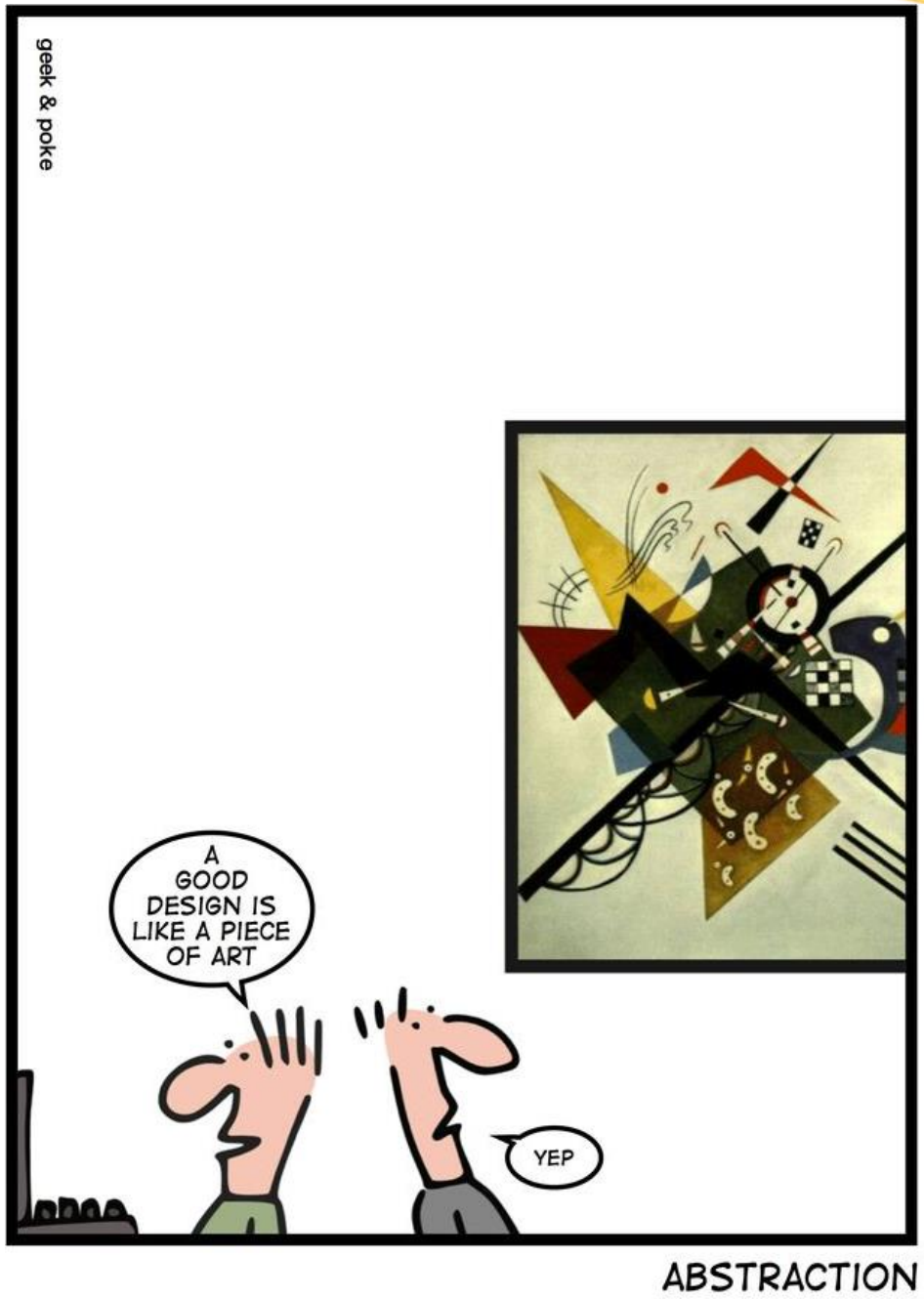
ABSTRACT ART

GETTING ABSTRACTION "JUST RIGHT"

Presented by Jeremy Clark
www.jeremybytes.com

A Good Design is like A Piece of Art



Geek & Poke – http://goo.gl/ifd53l

ABSTRACTION IS AWESOME!

Maintain

Extend

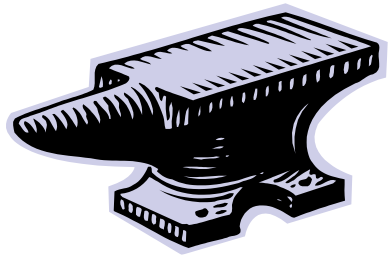
Test

ABSTRACTION IS AWFUL!

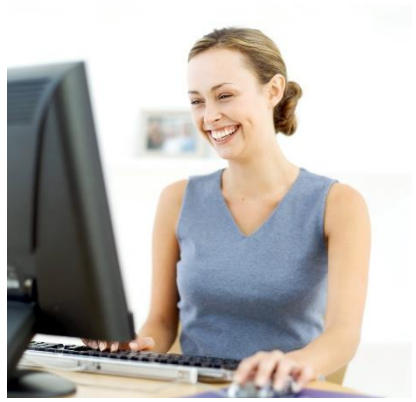
Frustration

GOLDILOCKS THE DEVELOPER

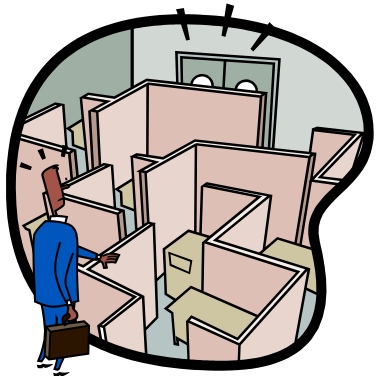
Too Little
Abstraction



Just Right



Too Much
Abstraction



TWO TYPES OF DEVELOPERS

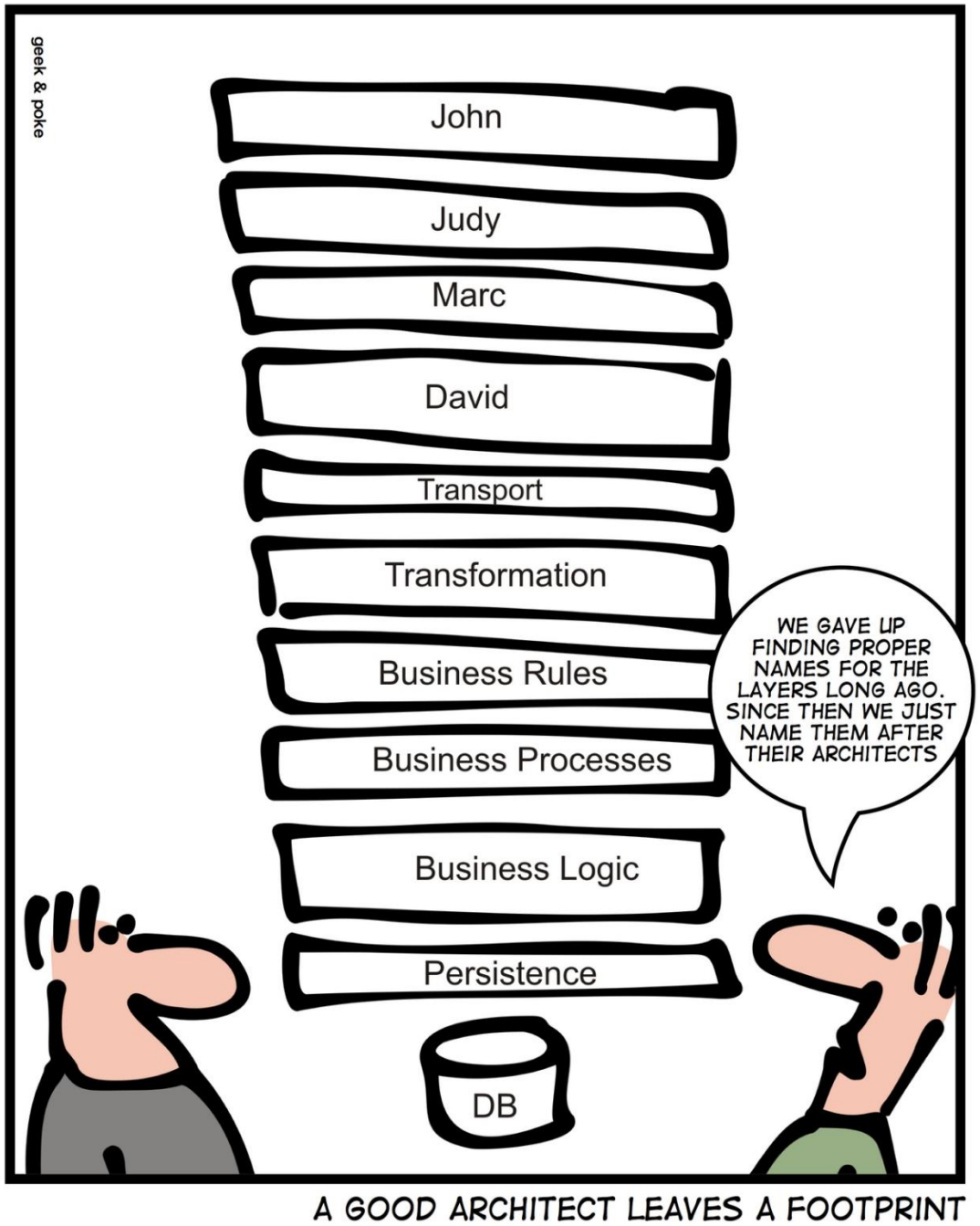
- Over-Abstractor
- Under-Abstractor

Over-Abstractor

- "We'll have a good use for this in the future."
- Overly Complex
- Difficult to Maintain

A Good Architect Leaves A Footprint

Geek & Poke: http://goo.gl/B4uXa3



Under-Abstractor

- “Let’s keep things simple.”
- Rigid
- Difficult to Maintain

COMMON PROBLEM

Over-Abstractor

- "We'll have a good use for this in the future."
- Overly Complex
- Difficult to Maintain

Under-Abstractor

- "Let's keep things simple."
- Rigid
- Difficult to Maintain

The Default State Quiz
Who Are You?

Let's build a plug-in architecture…

Awesome!
Let's do it.

Maybe we should look at compile-time options.

We need to share a value between modules…

I'll create an object state manager.

Let's use a global variable.

How should we do the UI?

Here's a new JavaScript framework.

Let's use the same framework we did last time.

Pull data from a database…

ORMs are awesome!

```
SELECT *
FROM Customers
WHERE ID = [@id]
```

We need an object instance…

```
var logger =
DIContainer
.Resolve<ILogger>()
```

```
var logger =
new FileLogger()
```

“Neither answer is right or wrong. The correct response is “It depends.”

—Jeremy’s Standard Response

Let's build a plug-in architecture…

Over-Abstractor

Awesome!
Let's do it.

Under-Abstractor

Maybe we should look at compile-time options.

We need to share a value between modules…

Over-Abstractor

I'll create an object state manager.

Under-Abstractor

Let's use a global variable.

How should we do the UI?

Over-Abstractor

Here's a new JavaScript framework.

Under-Abstractor

Let's use the same framework we did last time.

Pull data from a database…

Over-Abstractor

ORMs are awesome!

Under-Abstractor

```
SELECT *
FROM Customers
WHERE ID = [@id]
```

We need an object instance…

Over-Abstractor

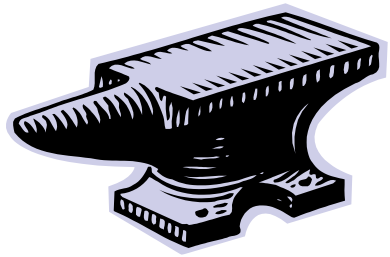
```
var logger =
DIContainer
.Resolve<ILogger>()
```

Under-Abstractor

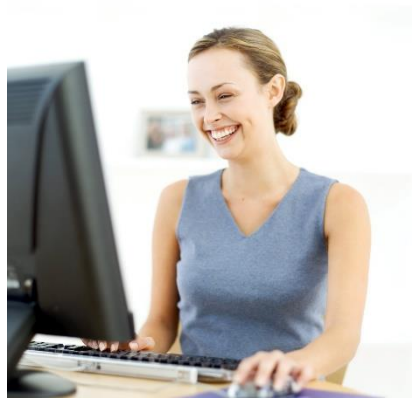
```
var logger =
new FileLogger()
```

BE HONEST WITH YOURSELF

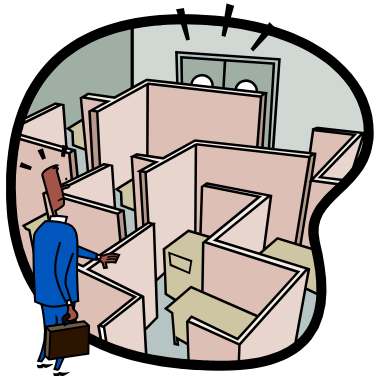
Too Little Abstraction



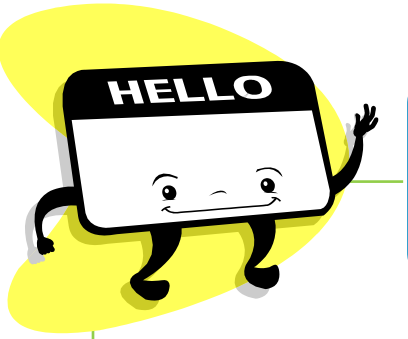
Just Right



Too Much Abstraction



WHO AM I?



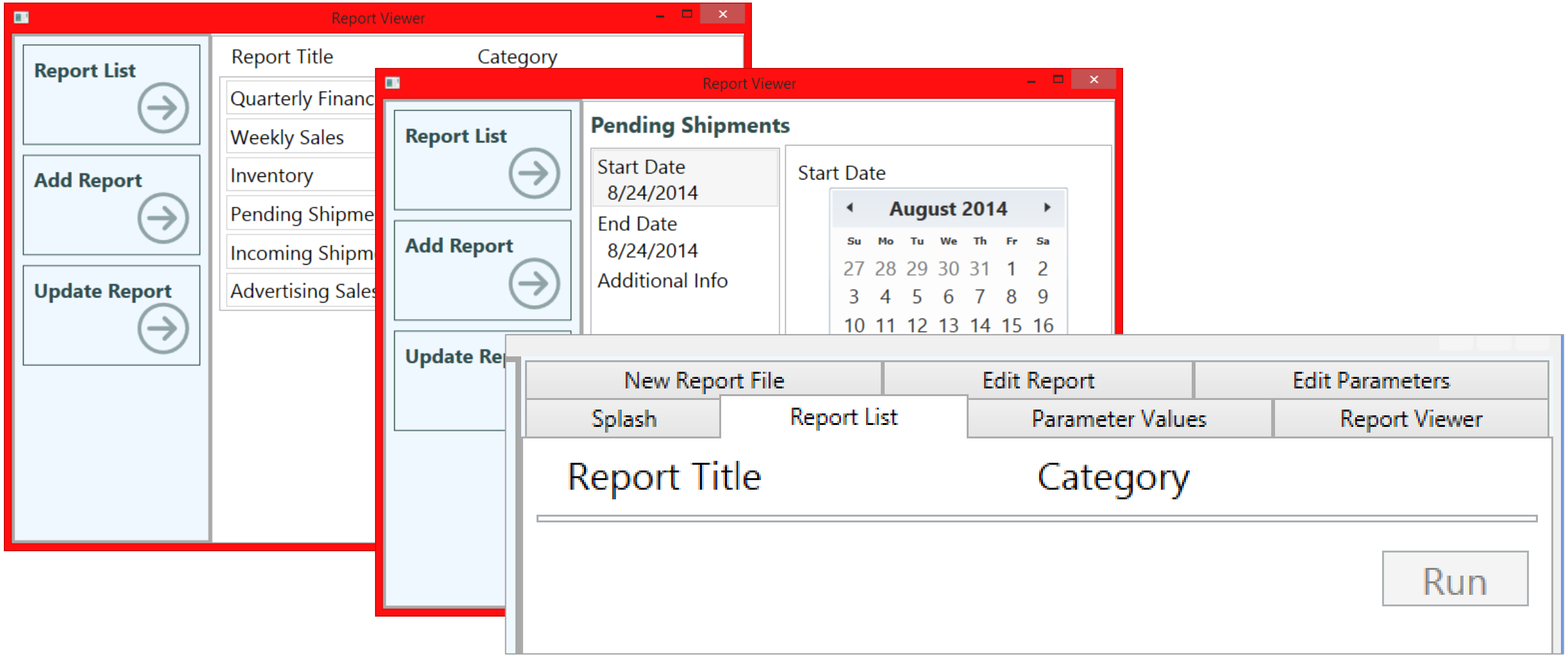
Under-Abstractor

- Hello. My name is Jeremy, and I'm an Under-Abstractor.

"Keep Things Obvious"

"Don't Be Tricky"

REPORTING APPLICATION

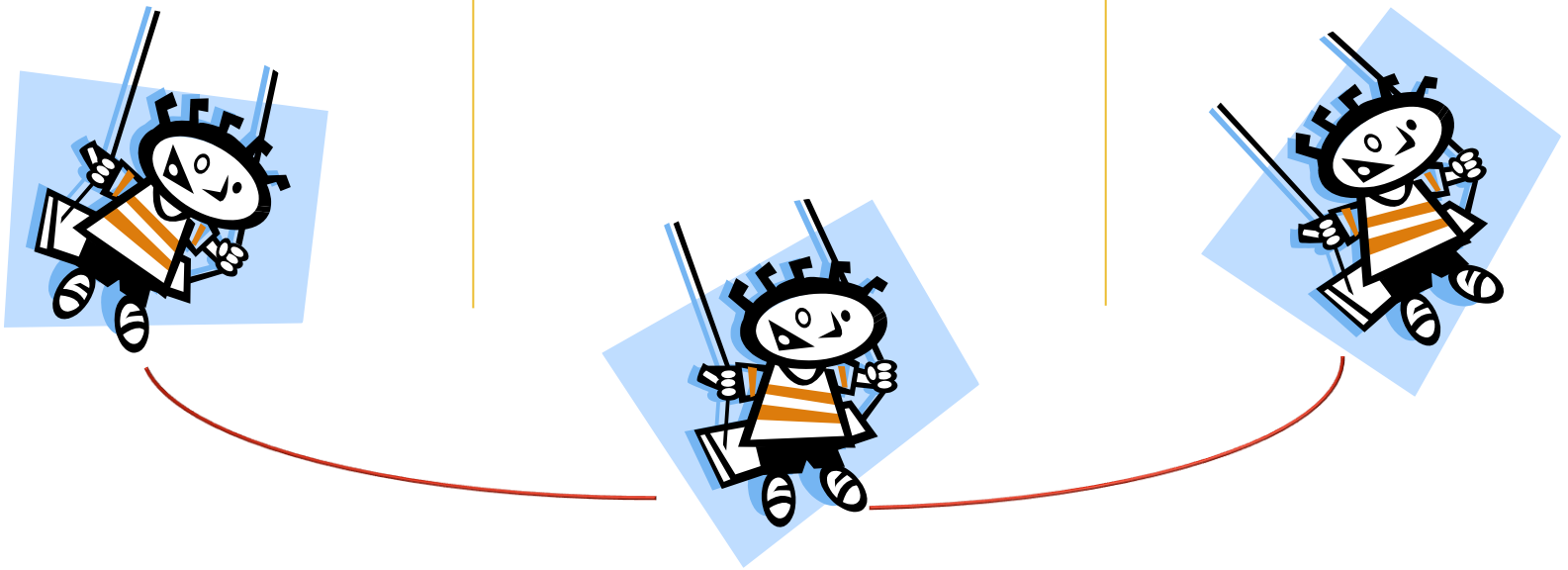


THE PENDULUM EFFECT

Under-Abstraction

Just Right

Over-Abstraction



THOSE AROUND YOU

Over-Abstractor

- Jeff loved to build components.
- He liked to create code for re-use.
- He thought of all possible scenarios.

A SYMBIOTIC RELATIONSHIP

The Over-Abstractor helps the Under-Abstractor get things Just Right

The Under-Abstractor helps the Over-Abstractor get things Just Right

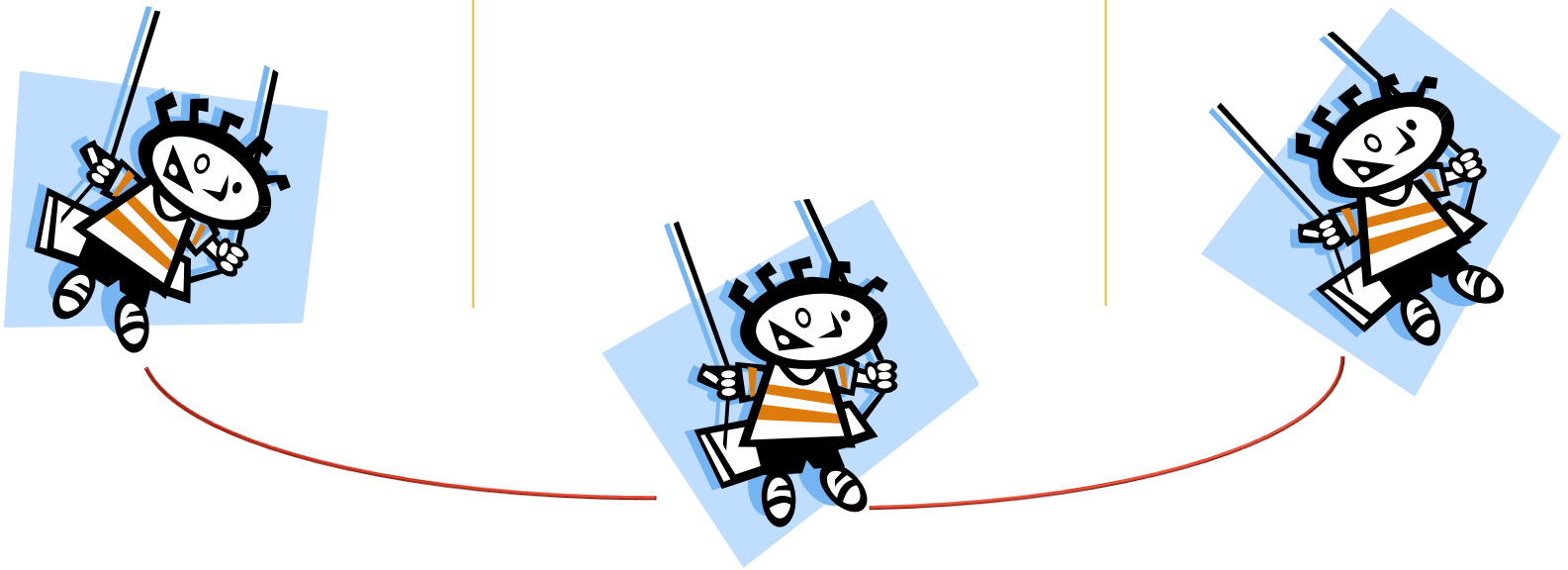

Environment
Team
Self
Know Your…
Business
Tools
Infrastructure

THE PENDULUM EFFECT

Under-Abstraction

Just Right

Over-Abstraction



VARIOUS DATA SOURCES

Microsoft SQL Server

MongoDB

CSV

SOAP Service

WebAPI

Oracle

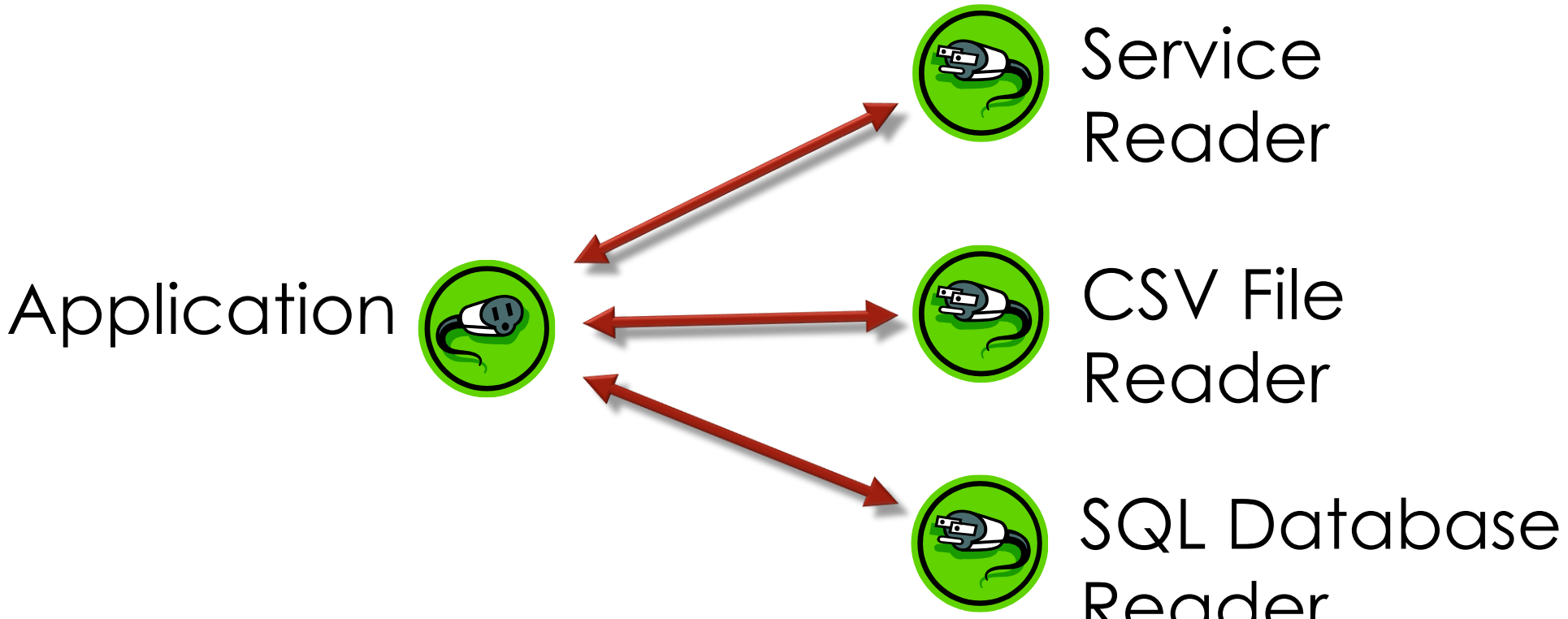
Amazon AWS

JSON

Hadoop

Microsoft Azure

PLUGGABLE DATA READERS




HIKERS and BIKERS
Move to the side of
the road when a
vehicle approaches

DRY

- Don’t Repeat Yourself

Under-Abstractor

DON'T REPEAT YOURSELF

Consolidate Similar Code

Avoid Copy/Paste

Copy/Pasta

Spaghetti Code

SoC

- Separation of Concerns

Under-Abstractor

SINGLE RESPONSIBILITY PRINCIPLE

Complements Separation of Concerns

The "S" in S.O.L.I.D.

A class should have only one reason to change

A class should do one thing (and do it well)

YAGNI

- You Ain't Gonna Need It
- (You Aren't Going to Need It)

Over-Abstractor

MORAL OF YAGNI

- Code for the features you have now
- Add abstraction as you need it
- Don't add abstraction based on speculation

We still think about the future,
but we don't implement it yet.

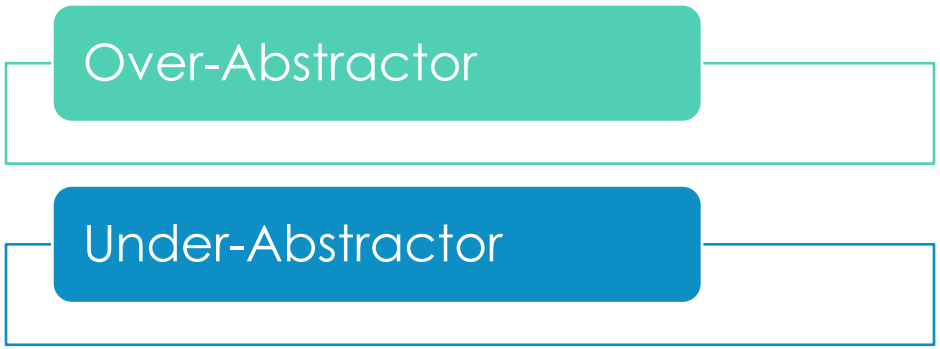
KISS

- Keep It Simple, Stupid
- (Keep It Short & Simple)
- (Keep It Simple & Straightfoward)

Over-Abstractor

DDIY

- Don’t Do It Yourself



DDIY

Over-Abstractor

- Over-Abstractors like to build things to solve specific problems

Under-Abstractor

- Under-Abstractors shy away from external frameworks and libraries

EXAMPLES

Dependency Injection

- Ninject, Autofac, Spring.NET, Microsoft.Extensions.DependencyInjection

Unit Testing Framework

- NUnit, xUnit.net, MSTest, Approval Tests

Mocking

- Moq, NSubstitute, FakeItEasy, JustMock

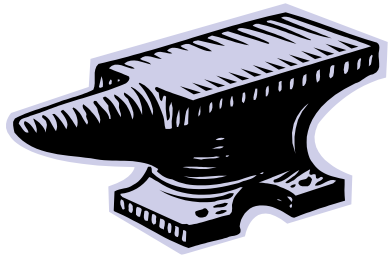
UI Framework

- Angular, React, Vue, Prism

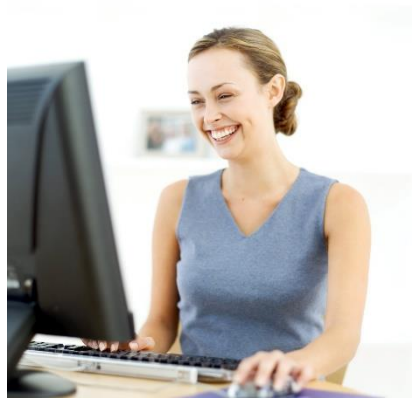
ABSTRACTION IS AWESOME & AWFUL

THE GOLDILOCKS PRINCIPLE

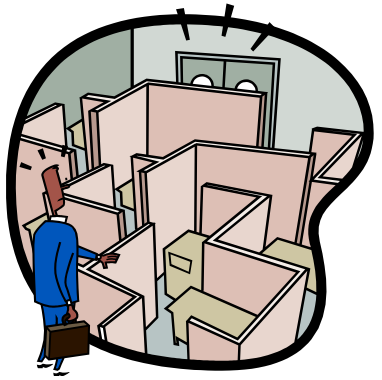
Too Little
Abstraction



Just Right



Too Much
Abstraction



GETTING THINGS RIGHT

DRY

- Don't Repeat Yourself

SoC

- Separation of Concerns

YAGNI

- You Ain't Gonna Need It

KISS

- Keep It Short & Simple

DDIY

- Don't Do It Yourself

THANK YOU!

Jeremy Clark

- http://www.jeremybytes.com
- jeremy@jeremybytes.com
- @jeremybytes