

What coderetreats have taught us about design

Jim Hurne – IBM
Joseph Kramer - IBM





What is a coderetreat?

Origin

2009 Codemash Conference

Corey Haines

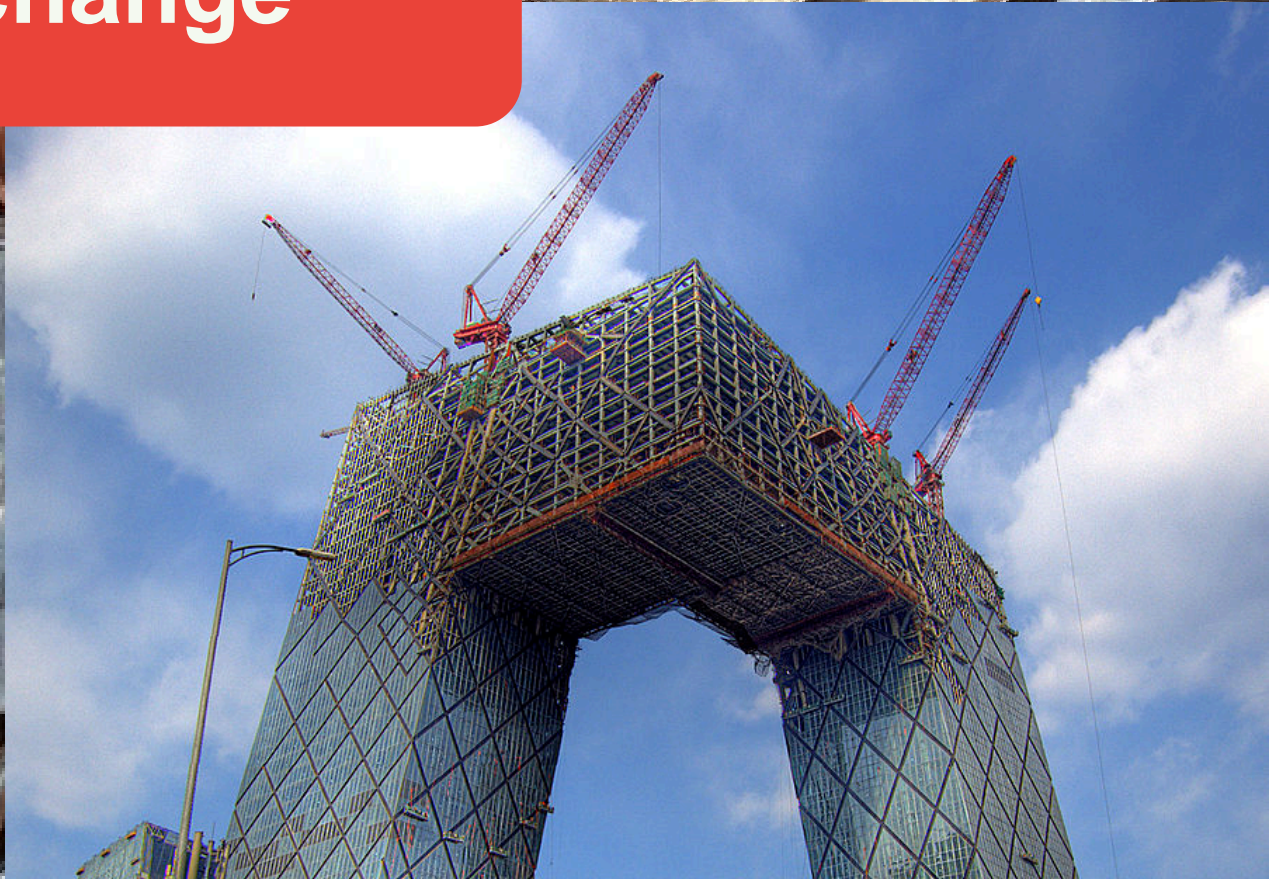
Gary Bernhardt

Patrick Welsh

Nayan Hajratwala



The cost of change



A good code architecture has a low cost of change



4 Rules of Simple Design

1. Passes all tests
2. Clear, expressive, and consistent
3. Duplicates no behavior or configuration
4. Minimal methods, classes, and modules

Pair programming



45 minute iterations



Retrospectives



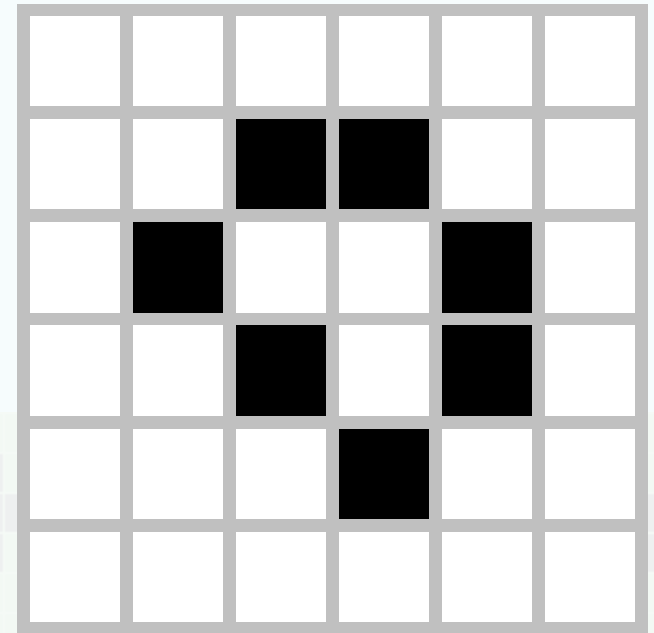
DELETE



ALL THE CODE

Conway's Game of Life

1. Any live cell with fewer than two live neighbors dies, as if caused by under-population.
2. Any live cell with two or three live neighbors lives on to the next generation.
3. Any live cell with more than three live neighbors dies, as if by overcrowding.
4. Any dead cell with exactly three live neighbors becomes a live cell, as if by reproduction.



Exercises

- Ping pong
- Mute ping pong
- Navigator-driver
- No Mouse
- No conditional statements
- Tell don't ask
- Baby steps
- Only four lines per method
- Immutables only, please
- Code swap
- Verbs instead of nouns
- Red card, yellow card
- Rules swap
- Speed pairing
- TDD as if you meant it



**What do people learn at a
coderetreat?**

Better micro-architectures



Avoiding Primitive Obsession

```
boolean cell = true;
```

```
Cell cell = new Cell(ALIVE);
```


Assumptions influence design HEAVILY

```
Boolean[][] board = new Boolean()[10][10];

public int numNeighbors(int x, int y) {
    for (int i; i<x; i++) {
        for (int j; j<y; j++) {
            //HaHa! You'll never do three dimensions!
        }
    }
}
```

Assumpt design H

```
Boolean[][]  
  
public int n  
    for (int  
        for  
    }  
}
```



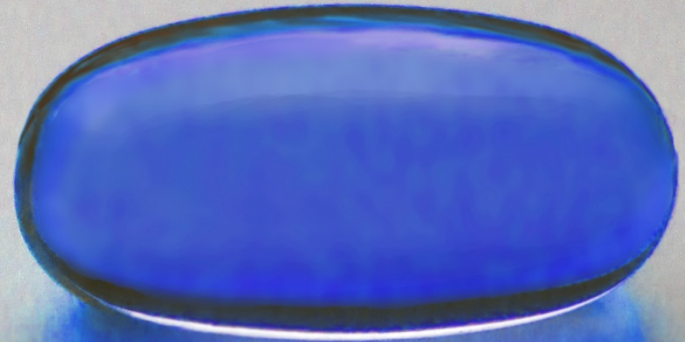
mensions!

Polymorphism vs Conditionals

```
public conditionals(Object shape) {  
    if (shape instanceof Rectangle) {  
        shape.drawRec();  
    }  
    if (shape instanceof Circle) {  
        shape.drawCircle();  
    }  
}
```

```
public polymorphism(Shape shape) {  
    shape.draw();  
}
```


Exploring design alternatives



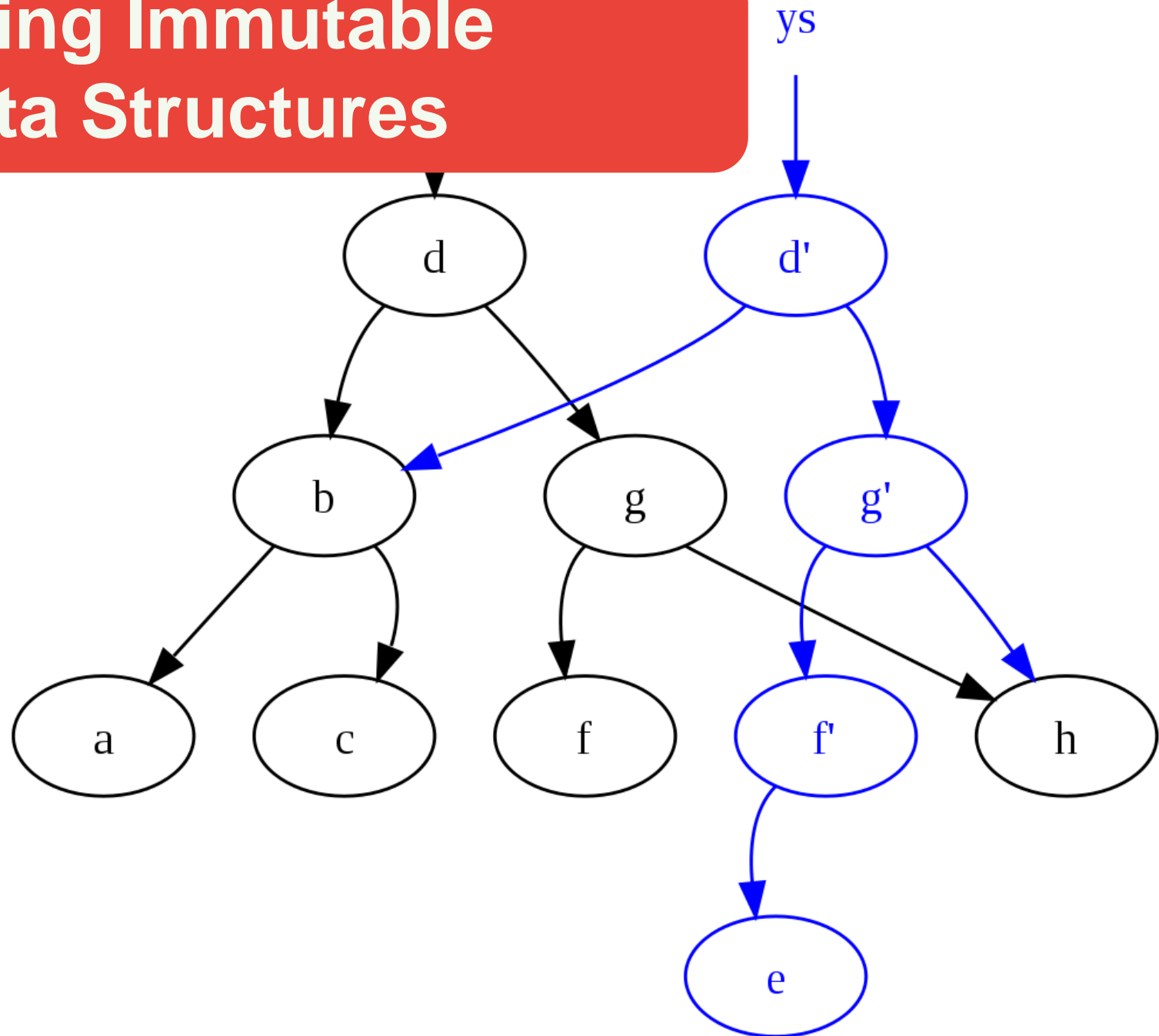
Picking good names



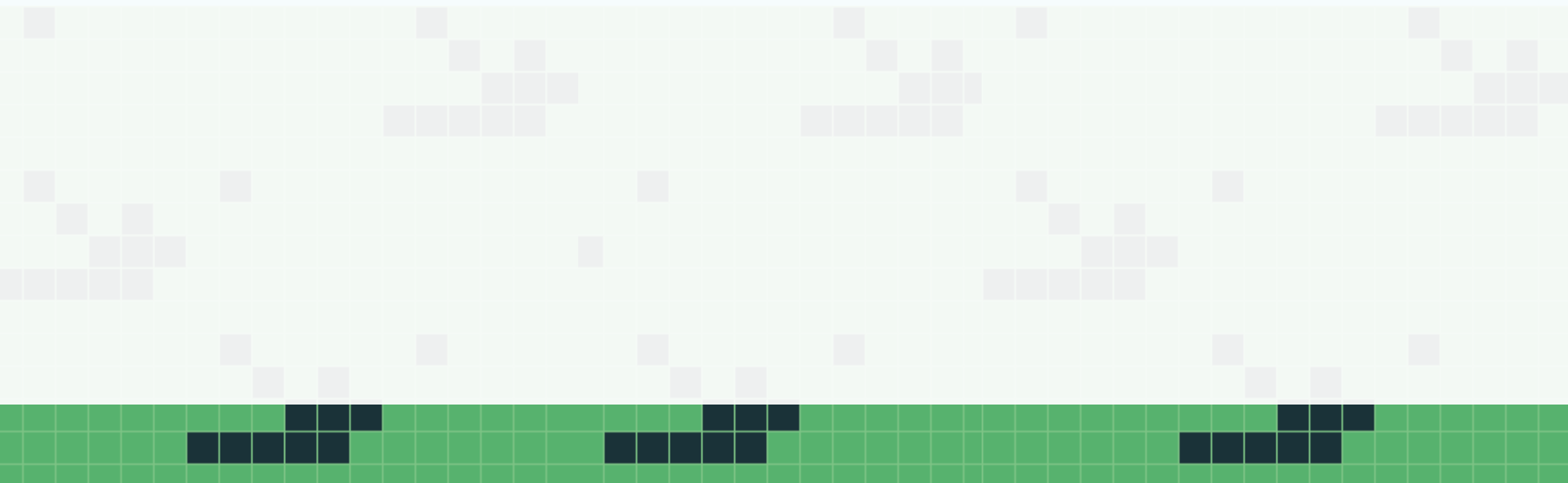
Functional programming inspired designs



Using Immutable Data Structures



Developer Practices

- Pair programming
 - Test driven development (TDD)
 - Emergent code design
 - Problem solving
 - Writing expressive code
- 



**What is coderetreat NOT
good for?**

Exploring Large System Architectures



Learning a new programming language



Groups > 30





Advantages of internal coderetreats

You have space



Lunch is easy



Everyone knows similar
languages



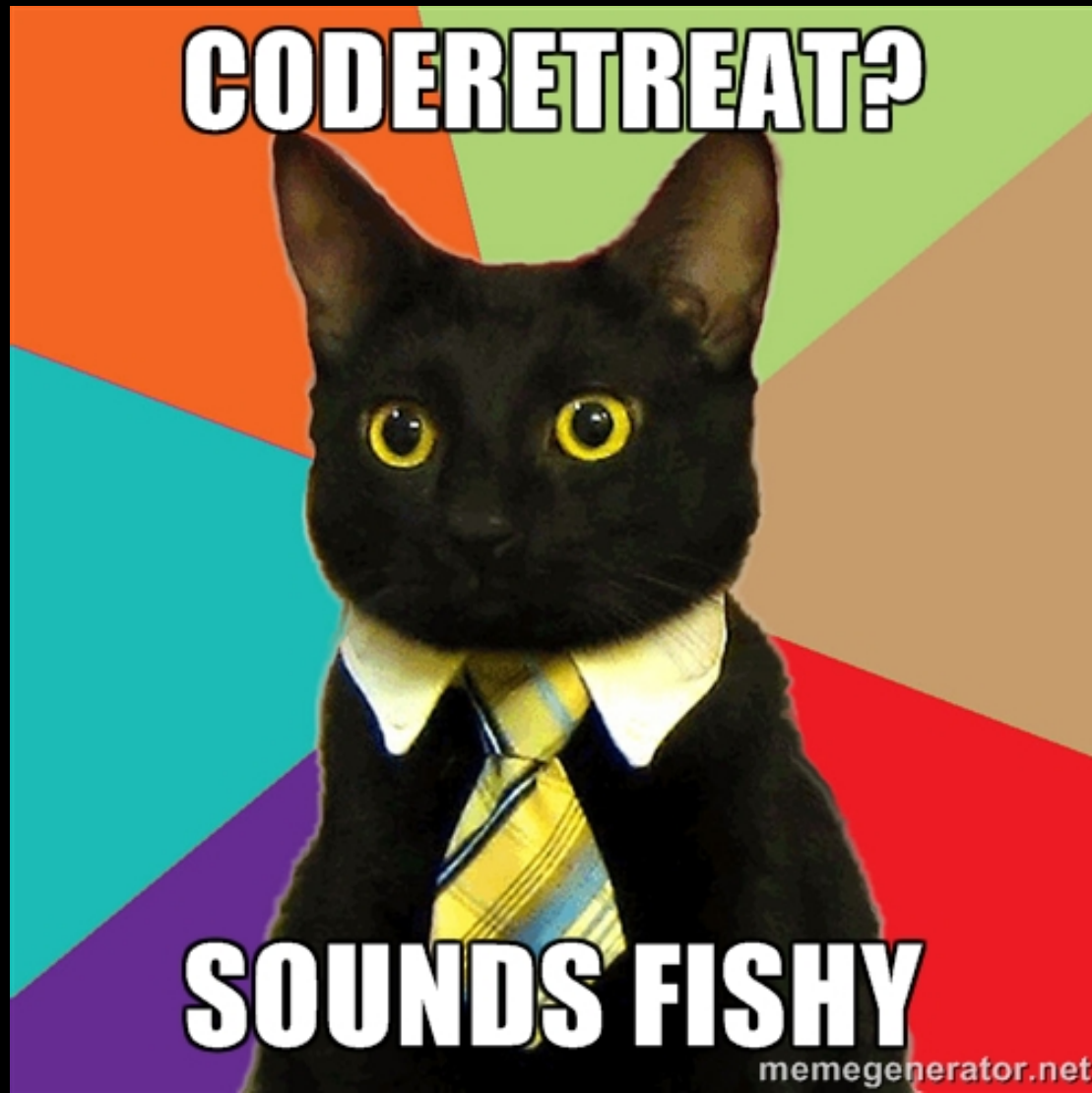
Easy to relate
theory to work



Challenges of internal coderetreats



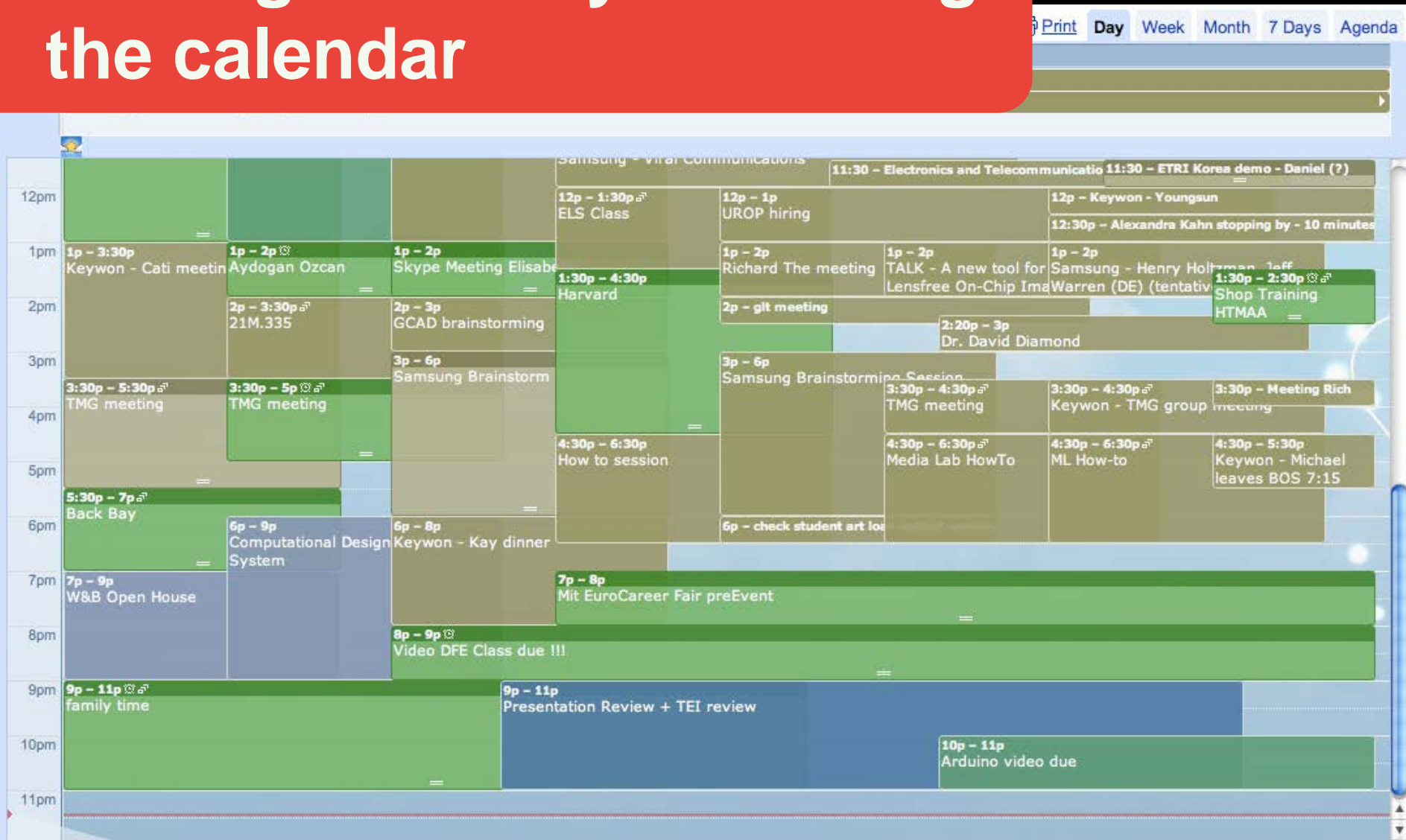
Convincing management



Convincing management

- Better overall architecture sensibilities
- Better micro-architectures and code designs
- Improved code quality
- Easier to change systems
- Better developer practices

Getting a full day – clearing the calendar



Convincing employees to attend



Step 1

Find a few willing people and run a small coderetreat with just them

Step 2

**CODERETREAT WAS THE FIRST REQUIRED CORPORATE
TRAINING**



THAT DIDN'T SUCK

memegenerator.net

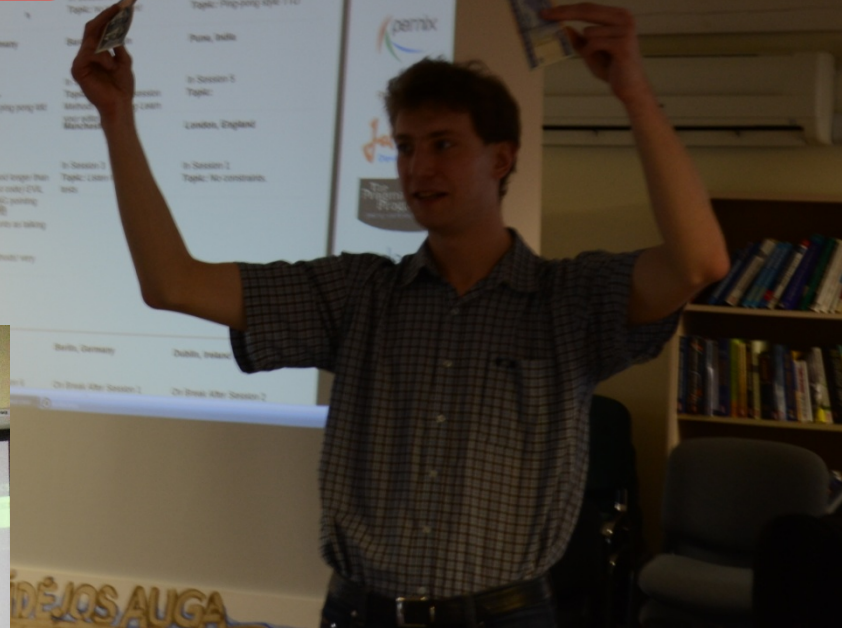
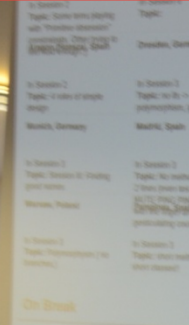
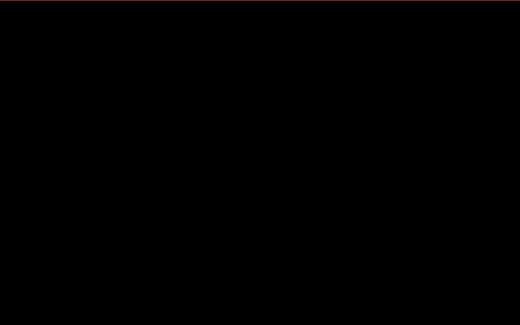


Now what...?

Attend a coderetreat!

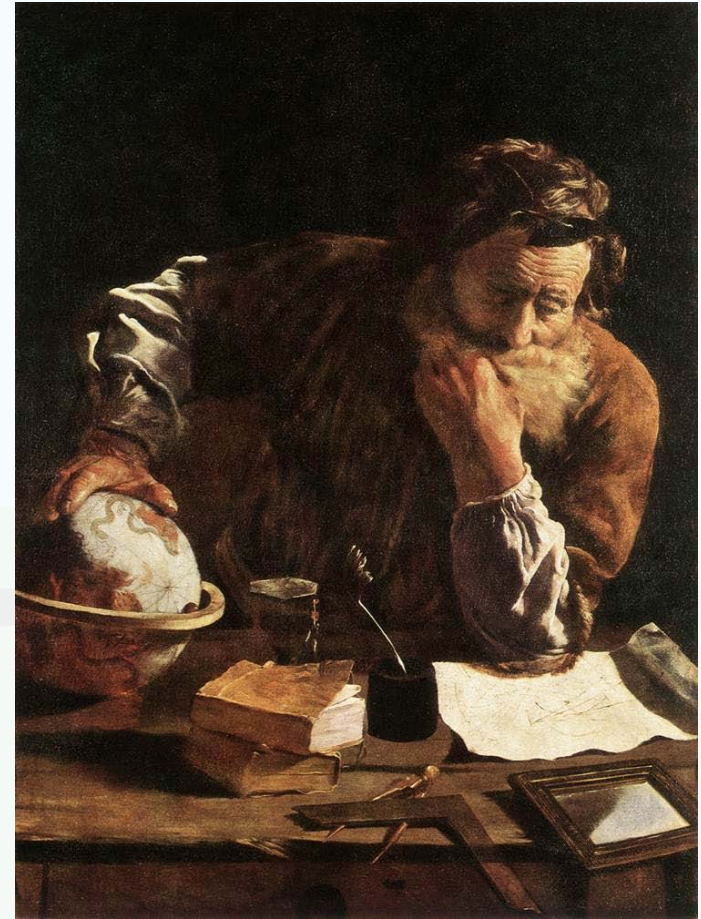


Run a coderetreat!



Learning how to facilitate

- Visit coderetreat.org
- Read blog posts about coderetreat
- Watch recorded training sessions
- Attend a facilitator training session (available in the fall)



Join the community



Resources

- The Coderetreat Website
coderetreat.org
- The Global Day of Coderetreat website
gdcr.coderetreat.org
- *Understanding the Four Rules of Simple Design* by Corey Haines
leanpub.com/4rulesofsimpledesign

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