Coding Fun:
Only Functions

Peter Kofler, ‘Code Cop’
@codecopkofler
www.code-cop.org

Peter Kofler

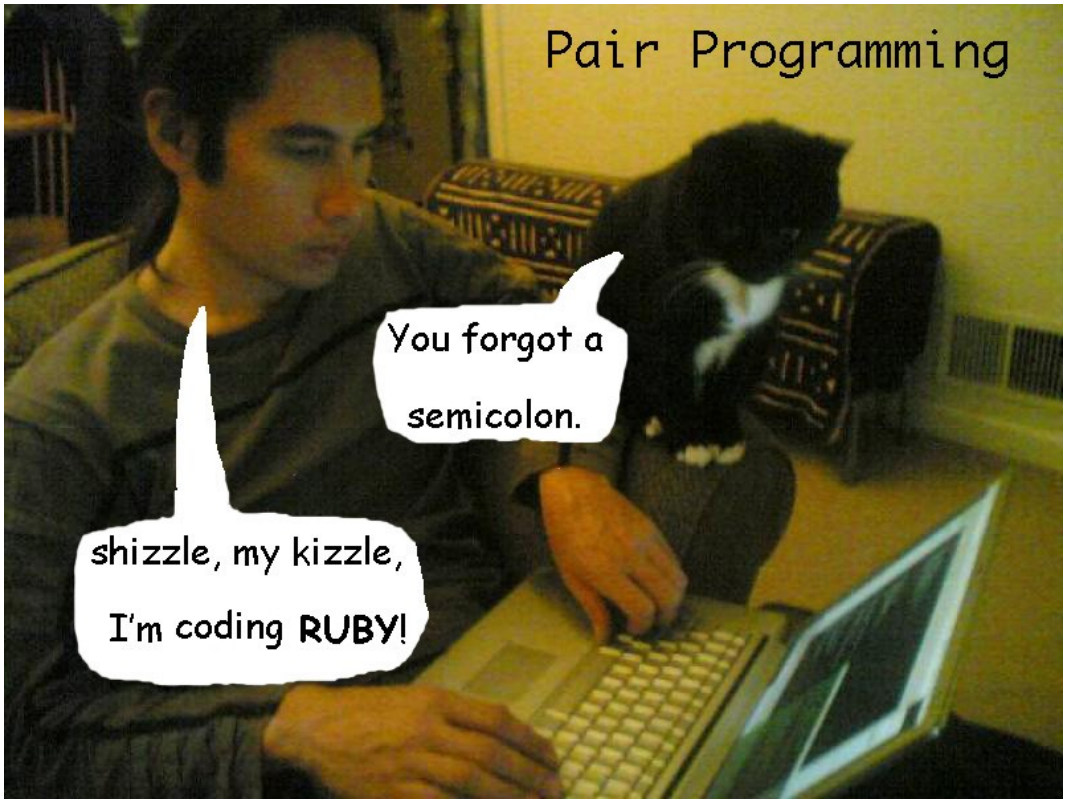
- Ph.D. (Appl. Math.)
- Professional Software Developer (25+ years)
- “fanatic about code quality” (20+ years)
- Technical Agile Coach/Mentor (15+ years)

I help development teams with

- Professionalism
- Quality and Productivity
- Continuous Improvement

Mentoring

- Pair Programming
- Programming Workshops
- Deliberate Practice, e.g. Coding Dojos



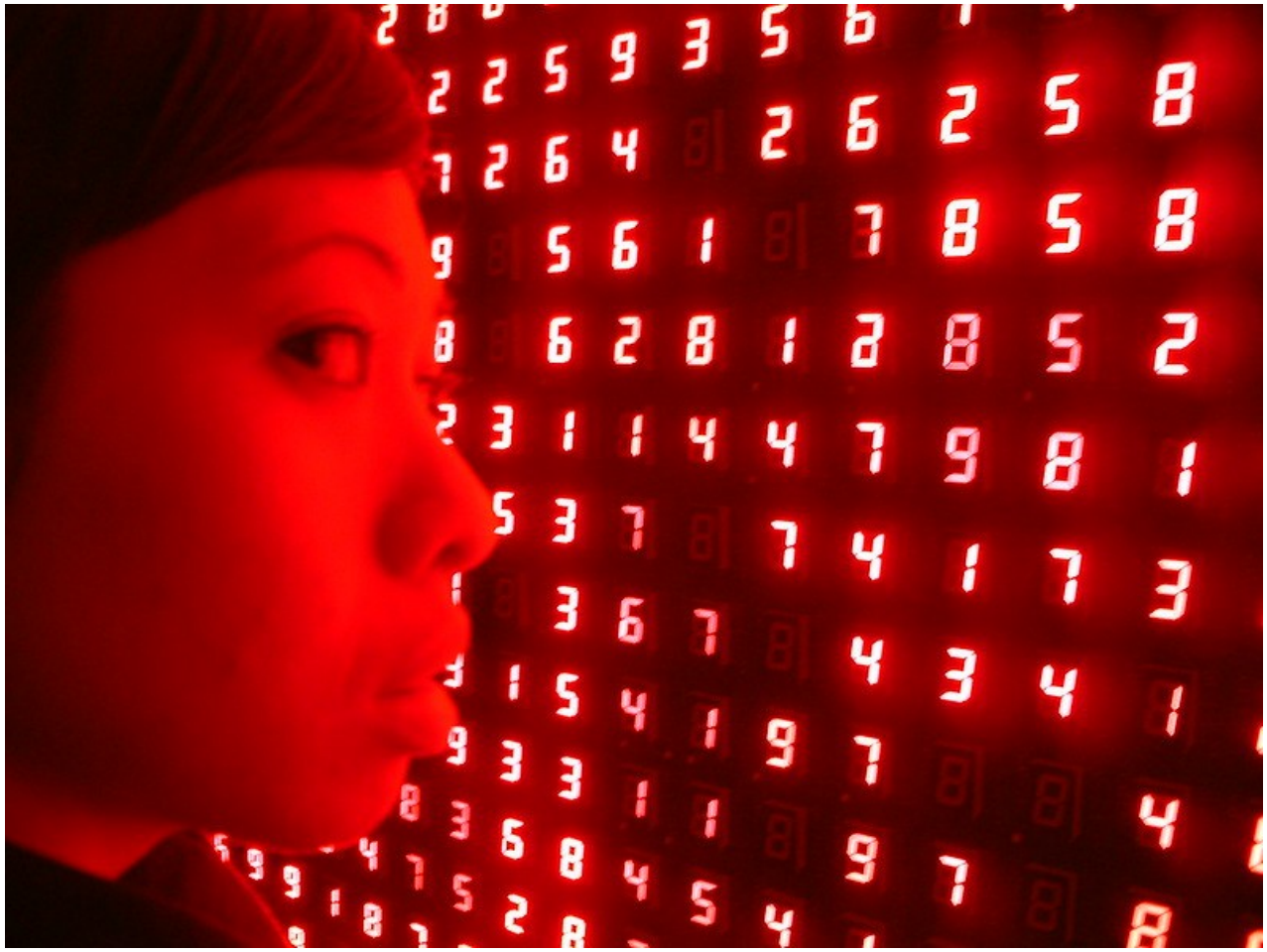
Developing Quality Software Developers

Nothing but Functions

Constraint: Only Functions

- We are allowed to
  - Create functions with **one** argument
  - Call functions, return the result
  - Assign functions to names (abbreviate)
- We are **not** allowed to
  - Use numbers, booleans, strings, arrays
  - Use Standard Library
- Use TDD (so we create test classes)

Assignment: Numbers



Numbers?

- How do we represent numbers using no data, only code?
- All we can do is make or call a function.

Numbers - Church Encoding

- How do we represent numbers using no data, only code?
- All we can do is make or call a function.
- Represent a number **n** with code that calls a function **n** times:

```
ZERO = (f,x)=>x    … (f)=>(x)=>x
ONE  = (f,x)=>f(x) … (f)=>(x)=>f(x)
TWO  = (f,x)=>f(x) … (f)=>(x)=>f(f(x))
```

Hands On!

→ Coding

Closing Circle

- How did it work out?
- How do you feel?
- What did you learn and want to share with the group?

Peter Kofler

@codecopkofler

www.code-cop.org

CC Images

- lambda https://www.flickr.com/photos/itsgreg/419031515/
- Bruce http://www.flickr.com/photos/sherpas428/4350620602/
- pairing http://www.flickr.com/photos/dav/94735395/
- shelves https://www.flickr.com/photos/walmart3/15224927468/
- numbers https://www.flickr.com/photos/missyho/140387211/
- hands https://www.flickr.com/photos/ninahiironniemi/497993647/
- wants you http://www.flickr.com/photos/shutter/105497713/