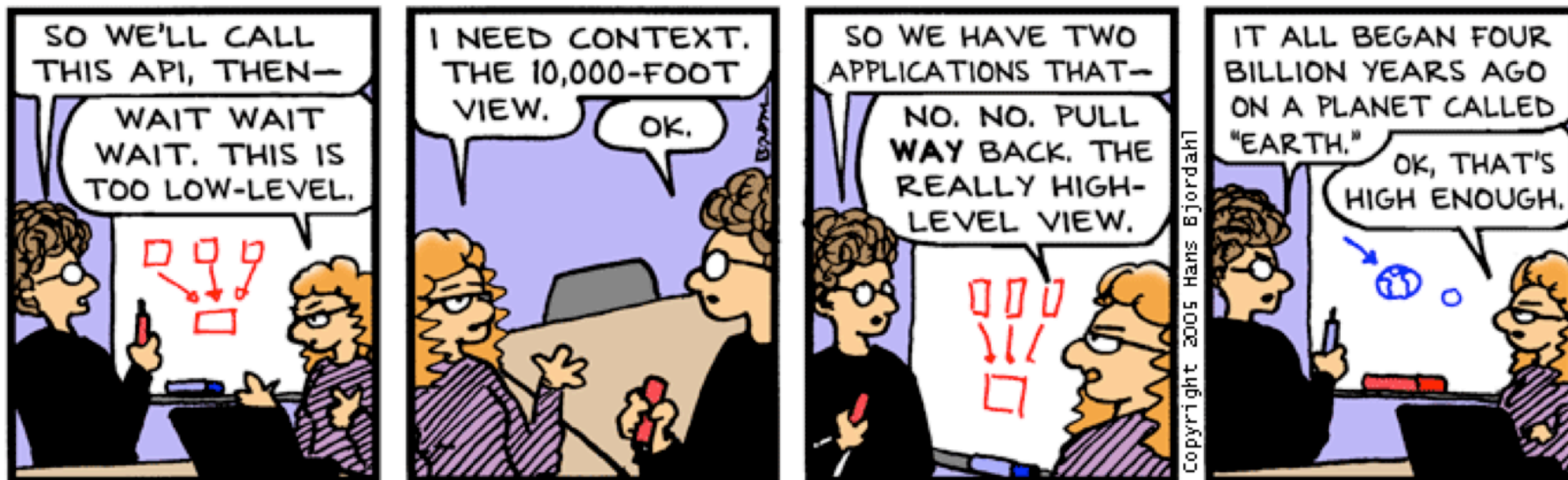


Meeting 15 - Higher- Order Fun

Bor-Yuh Evan Chang

Thursday, October 10, 2024

Meeting 15 - Higher-Order Fun






Bug Bash by Hans Bjordahl

<http://www.bugbash.net/>

What questions does your neighbor have?

Links

-  In-Class Slides
-  In-Class Jupyter
-  Book Chapter

Announcements

- Lab 3 due Tuesday 6pm
- No Peer Review this week
- Exam cadence

Today

- Triage Your Questions
 - Lab 3?
- **Higher-Order Functions** (mini-lecture)

Questions?

- Review:
 - How do you specify evaluation order with a small-step semantics?
 - How does substitution and shadowing work?

Questions?

Higher-Order Functions

Currying

```
res0: Int = 0
```

Collections and Callbacks

Map

```
res7: Int = 0
```

FlatMap

defined `function map`

FoldRight

FoldLeft

Abstract Data Types

```
m: Map[Int, List[String]] = Map(  
  2 -> List("two", "dos", "\u4e8c"),  
  10 -> List("ten", "diez", "\u5341")  
)
```


Parallel and Distributed

Scala Parallel Collections Library

Run the following cell to load the [Scala Parallel Collections](#) library.

```
import $ivy.$                , scala.collection.parallel.CollectionCo
```

```
par0to9999: collection.parallel.immutable.ParSeq[Int] = ParVector(0, 1, 2, 3, 4, ...  
sum: Int = 50005000
```