QCon SF 2011
@dpp - Functional

@dpp

@dpp

- 20 Years ago, today, invented RT spreadsheet

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- 5 Years ago, Lift & Scala

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- 20 Years ago, today, invented RT spreadsheet

- 5 Years ago, Lift & Scala

- Pushing boundaries

Lift

Lift

- Functional Web Framework

Lift

- Functional Web Framework

- Abstractions: Task Oriented

Lift

- Functional Web Framework

- Abstractions: Task Oriented

- Secure & Interactive (and Maintainable)

Chat

Chat

- ```scala
  class Chat extends CometActor with
  CometListener {
    private var msgs: Vector[String] = Vector()

    def registerWith = ChatServer

    override def lowPriority = {
      case v: Vector[String] => msgs = v;
  reRender()
    }

    def render = ClearClearable andThen "li *"
  #> msgs
  }
  ```

Chat Server

Chat Server

- ```
object ChatServer extends
  LiftActor with ListenerManager {
  private var msgs = Vector("Welcome")

  override def createUpdate = msgs

  override def lowPriority = {
    case s: String => msgs :+= s
                      updateListeners()
  }
}
```

Chat Input

Chat Input

- ```
  object ChatIn {
    def render = SHtml.onSubmit{
      s => ChatServer ! s
      SetValById("chat_in", "")
    }
  }
  ```

What You Don't See

What You Don't See

- Loops

What You Don't See

- Loops

- Synchronized

What You Don't See

- Loops

- Synchronized

- HTML Encoding

But that's not what I came here to talk about...

Used to be...

Used to be...

Used to be...

- Green screens everywhere

Used to be...

- Green screens everywhere

- Enslaved by the mainframe

Used to be...

- Green screens everywhere

- Enslaved by the mainframe

- Changes went through IT

And then...

And then...
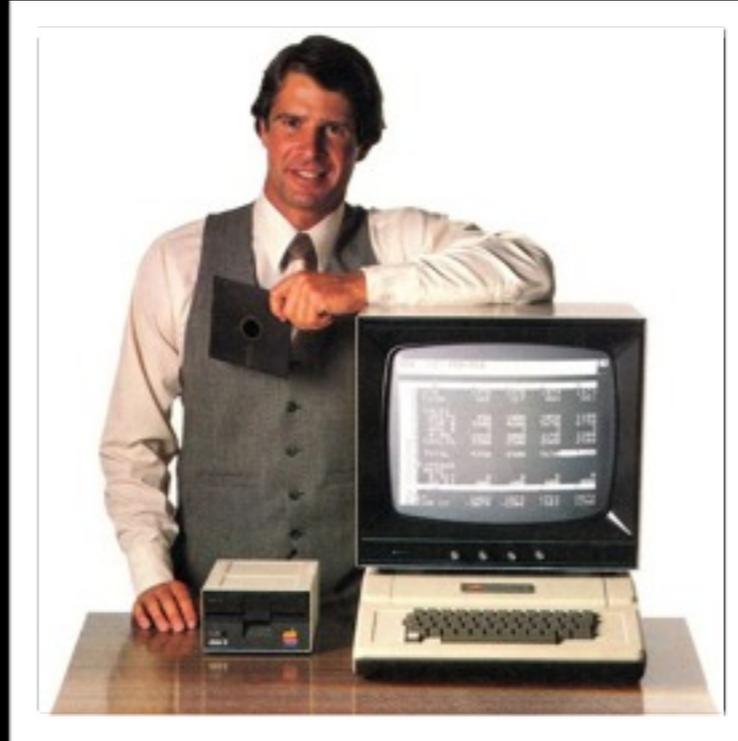
And then...

- VisiCalc
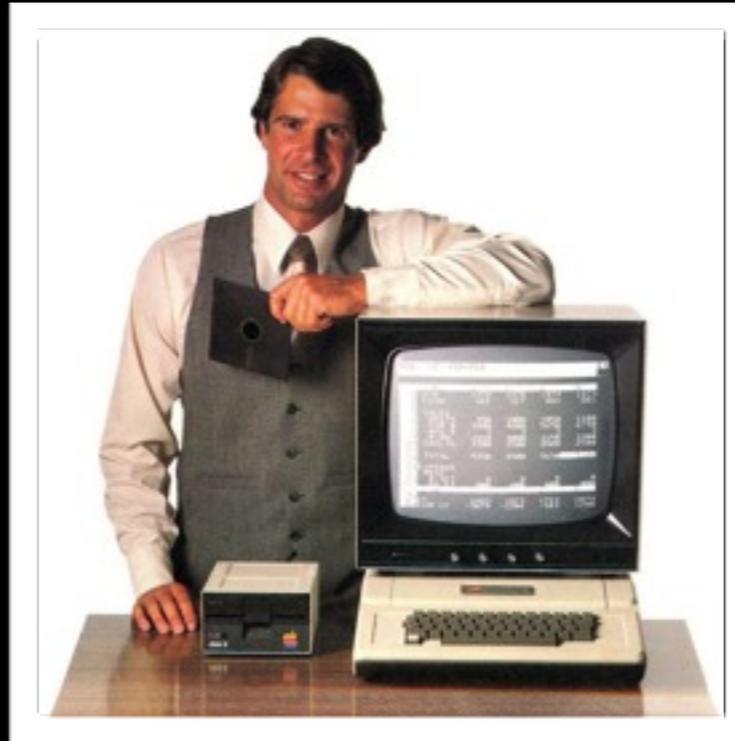
And then...

- VisiCalc
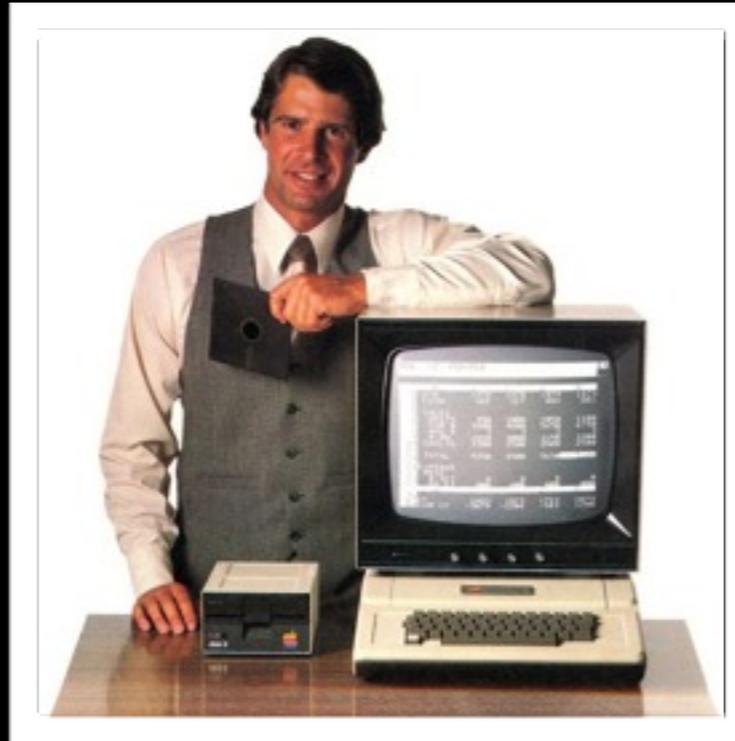
- HyperCard

And then...
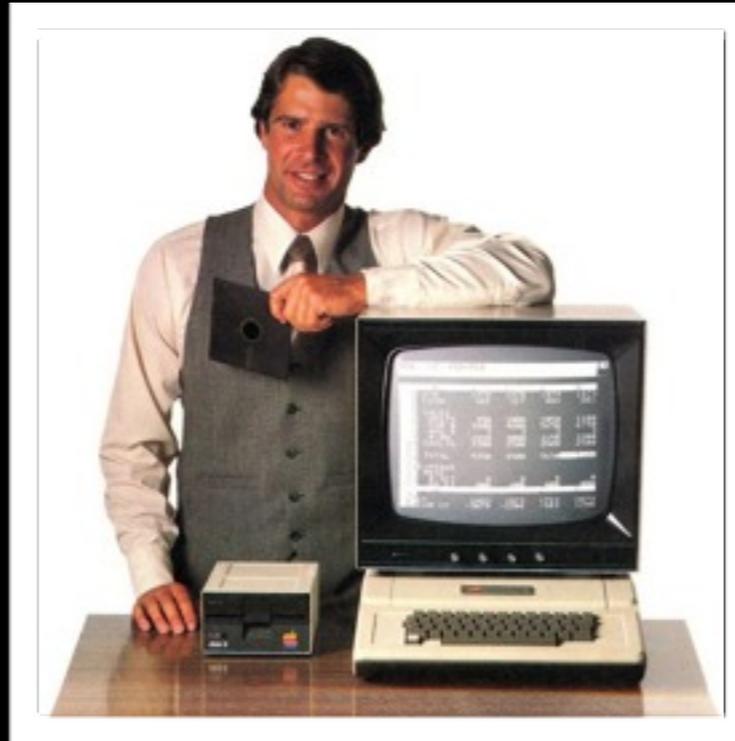
- VisiCalc

- HyperCard

- PowerBuilder

And then...

- VisiCalc
- HyperCard
- PowerBuilder
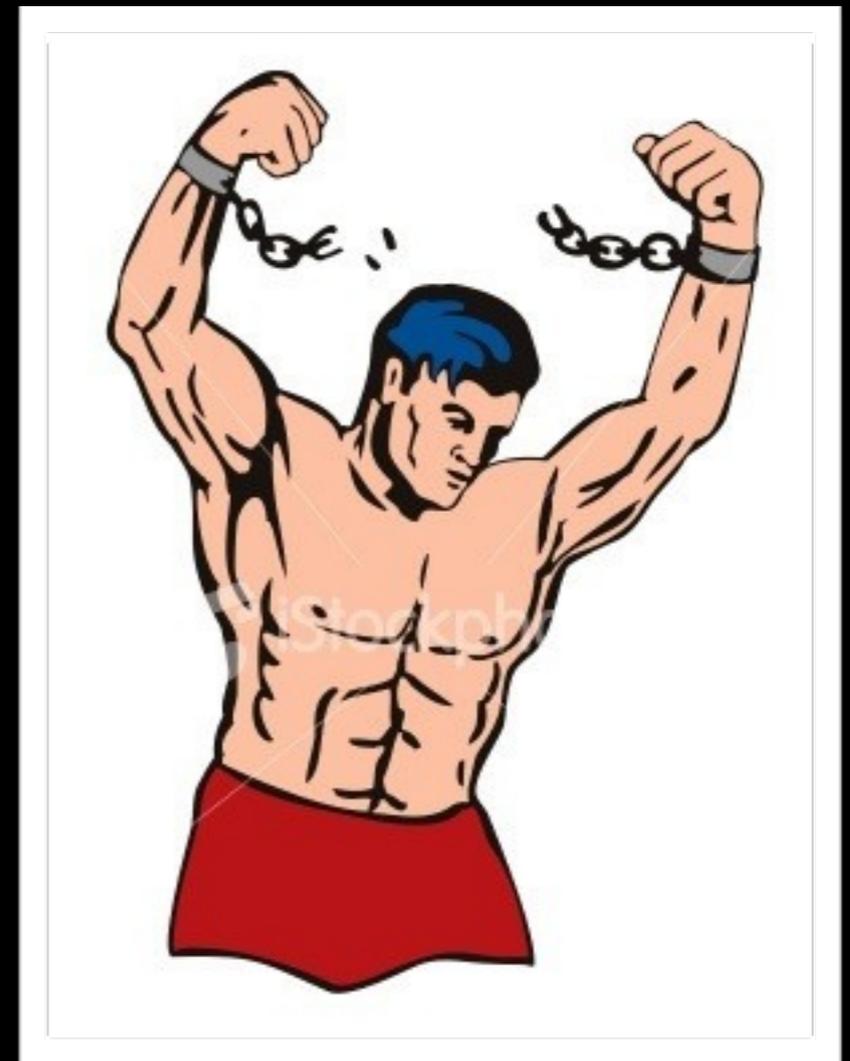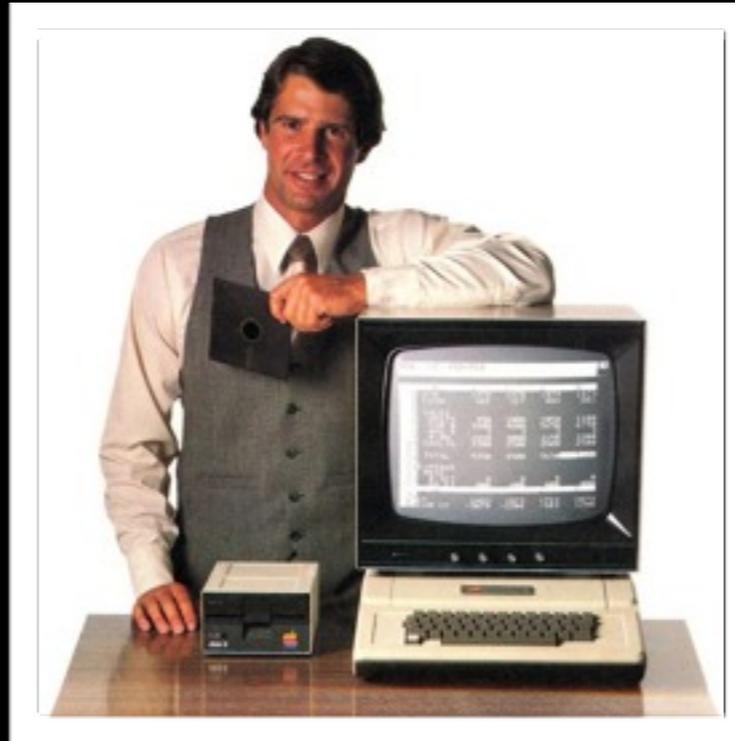
Along came the Web

Along came the Web

- IT reasserts itself

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- Browser = 3270

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- J/EE & Rails = COBOL

Along came the Web

- IT reasserts itself

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DEFEAT

FOR EVERY WINNER, THERE ARE DOZENS OF LOSERS.
ODDS ARE YOU'RE ONE OF THEM.
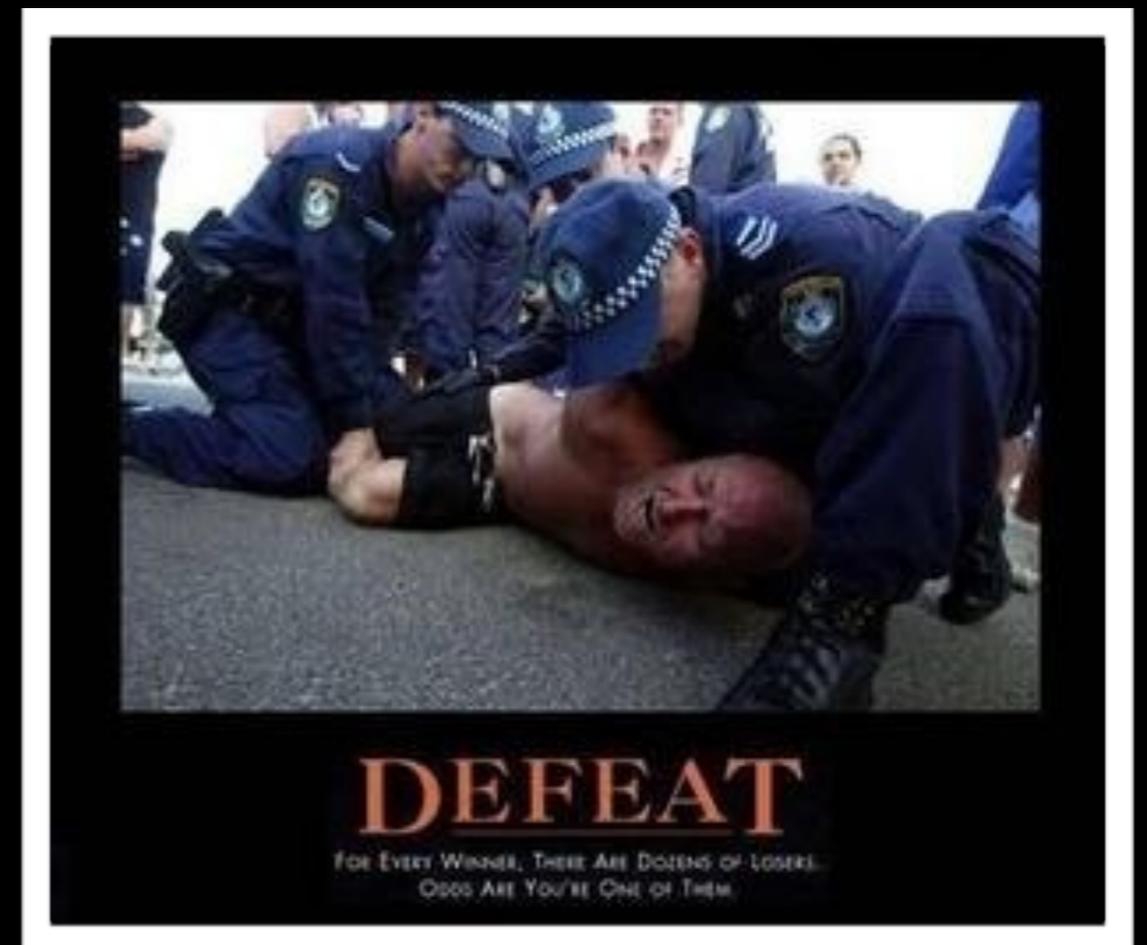
Cloud & iPad Vision

Cloud & iPad Vision

Cloud & iPad Vision

- Empower individuals

Cloud & iPad Vision

- Empower individuals
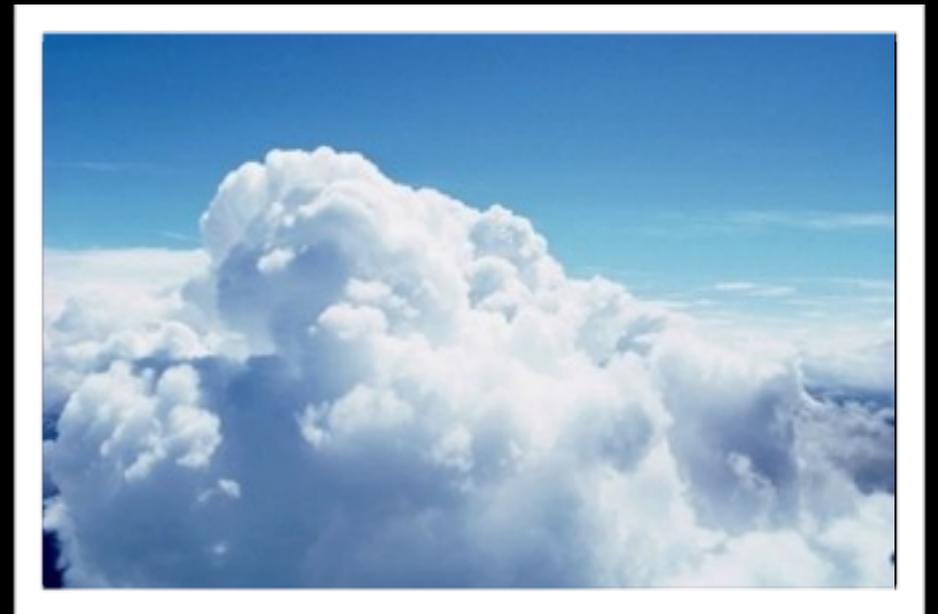
- Anywhere, Anytime

Cloud & iPad Vision

- Empower individuals

- Anywhere, Anytime

- Rich Interaction

Cloud & iPad Vision

- Empower individuals

- Anywhere, Anytime

- Rich Interaction
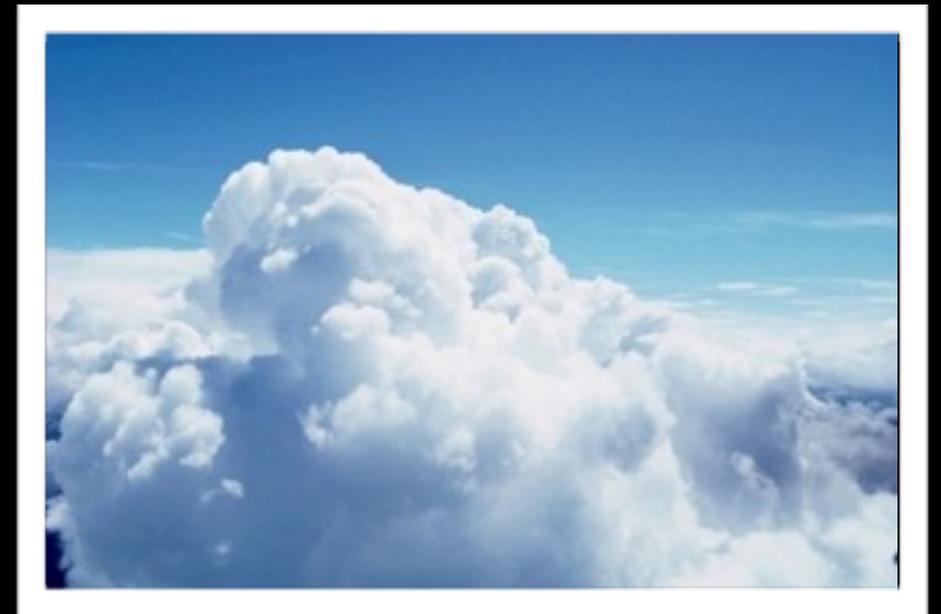
But...

But...

But...

- Old tools

But...

- Old tools

- IT centric

But...

- Old tools
- IT centric
- Code Constrained

Let's Fix That

Let's Fix That

- Cloud Computing for The Rest of Us

Let's Fix That

- Cloud Computing for The Rest of Us

- Rapid • Interactive • Simple

Let's Fix That

- Cloud Computing for The Rest of Us

- Rapid • Interactive • Simple

- Design on iPad or Mac & Deploy in the Cloud

Empower Business User

Empower Business User

- Easy & Intuitive like HyperCard and Excel

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- Easy & Intuitive like HyperCard and Excel

- Emporium: Data • App • Component

Empower Business User

- Easy & Intuitive like HyperCard and Excel

- Emporium: Data • App • Component

- Instant Success

Environment

Environment

- Design on iPad or Mac

Environment

- Design on iPad or Mac

- Runs on iPads, iPhone & Cloud

Environment

- Design on iPad or Mac

- Runs on iPads, iPhone & Cloud

- Real-time events & Disconnected

Emporium

Emporium

- Data sources & sinks including SalesForce

Emporium

- Data sources & sinks including SalesForce

- Running Apps including Proj Mgt & Chat

Emporium

- Data sources & sinks including SalesForce

- Running Apps including Proj Mgt & Chat

- Components

Age Old Problems

Age Old Problems

- State management

Age Old Problems

- State management

- Marshaling

Age Old Problems

- State management

- Marshaling

- Event flows

State Management

State Management

- Functional Language, like Excel

State Management

- Functional Language, like Excel

- `total = subtotal + tax`

State Management

- Functional Language, like Excel

- `total = subtotal + tax`

- Clear I/O and transactional bounds

Marshaling

Marshaling

- All user-data can be BSON serialized

Marshaling

- All user-data can be BSON serialized

- Database as Collections:
  ```
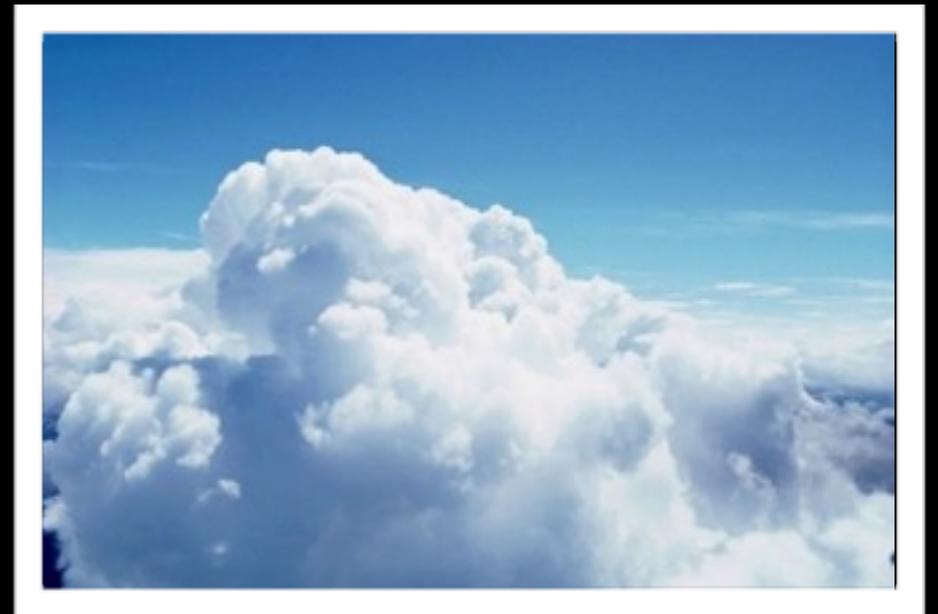  kids = filter (#age <= 18) users
  ```

Marshaling

- All user-data can be BSON serialized

- Database as Collections:
  ```
  kids = filter (#age <= 18) users
  ```

- UI Auto-generated or IB Style

Event Flows

Event Flows

- Source & Sink Computation Independent

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- iPad actions logged as events to server

Event Flows

- Source & Sink Computation Independent

- iPad actions logged as events to server

- Migratory Locus of Computation

Status

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- Open Source Pieces: http://visi.io

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- Private Alpha Program

Status

- Open Source Pieces: http://visi.io

- Private Alpha Program

- Beta in 2012