Achilles

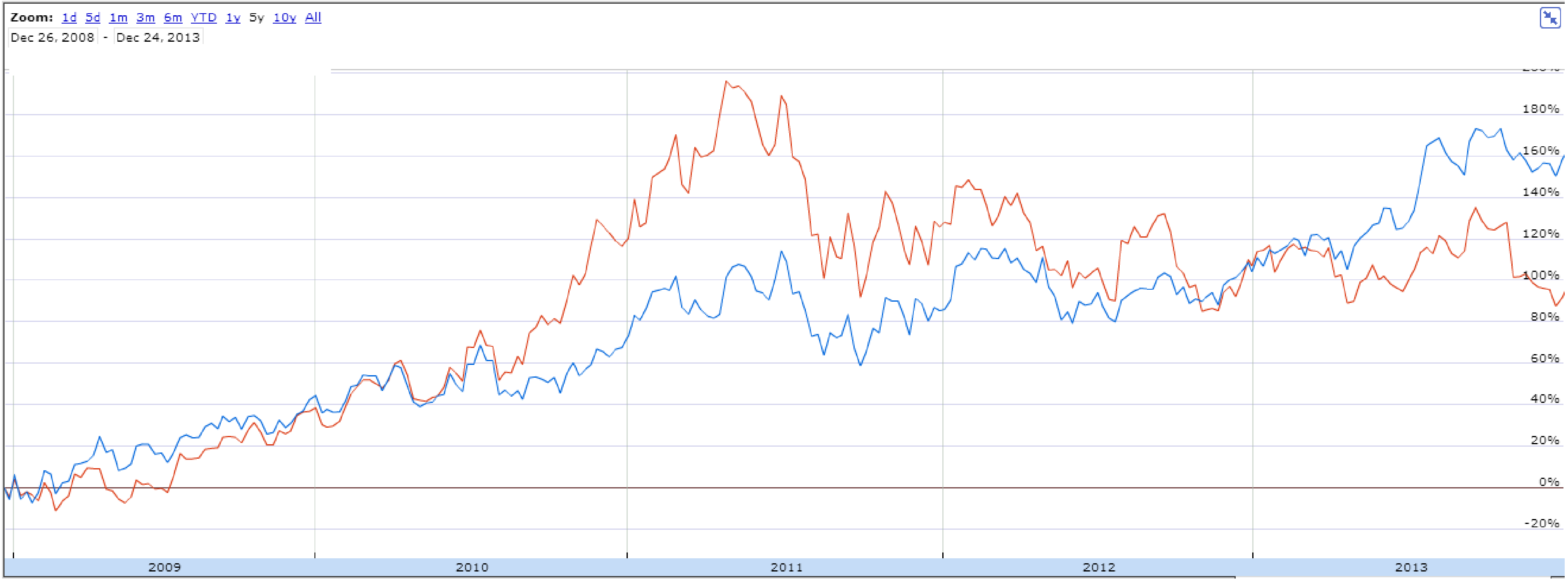
How to crush <*competitor*>

Jan 15, 2014

Who else wants to crush *<competitor>?*

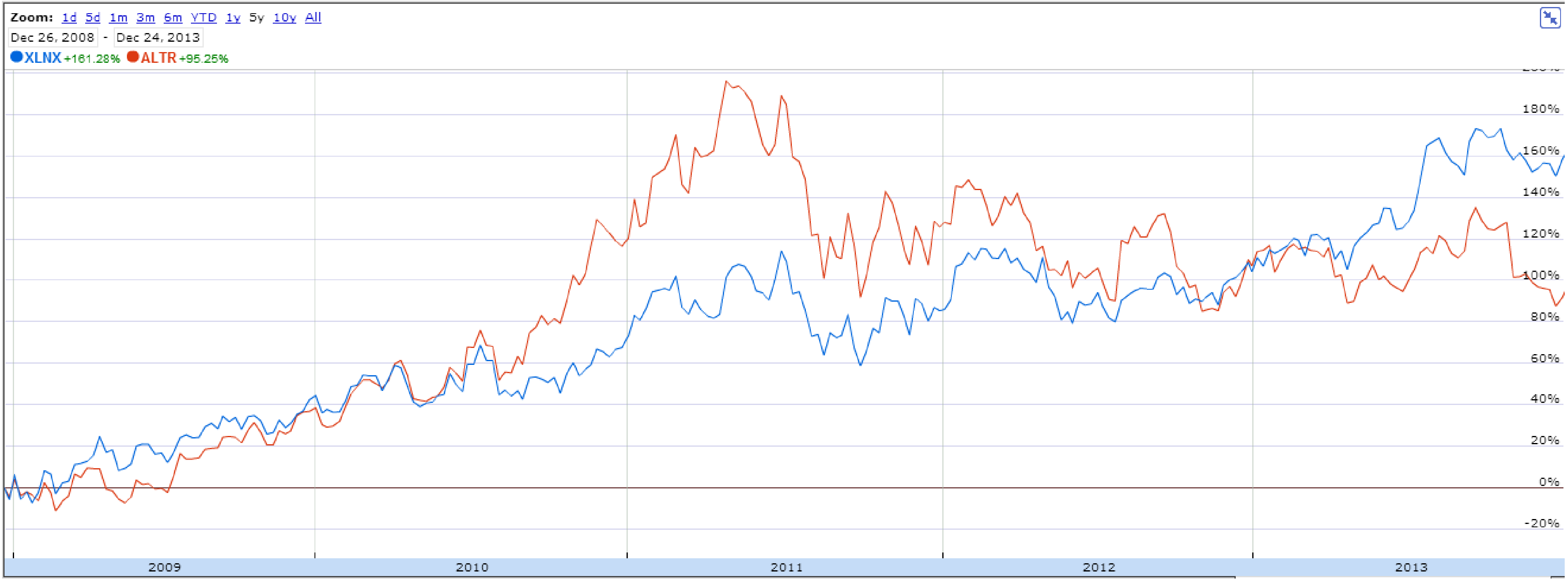
- Top Secret
  - idea
- Something to apply to everything we do
  - Achilles is just a demonstration of this idea applied to R&D
  - if it’s valuable here, we must do it everywhere

Which is the better investment?



- **Duopoly**
  - Buyers comparison-shop
  - Value gap not big enough to break trend
    - *despite* different devices, different technologies, different strategies, different leadership, different talent, different marketing, …

How to break this trend?



- ❑ **How can we break this trend?**
- ❑ **Is it by running faster or harder?**

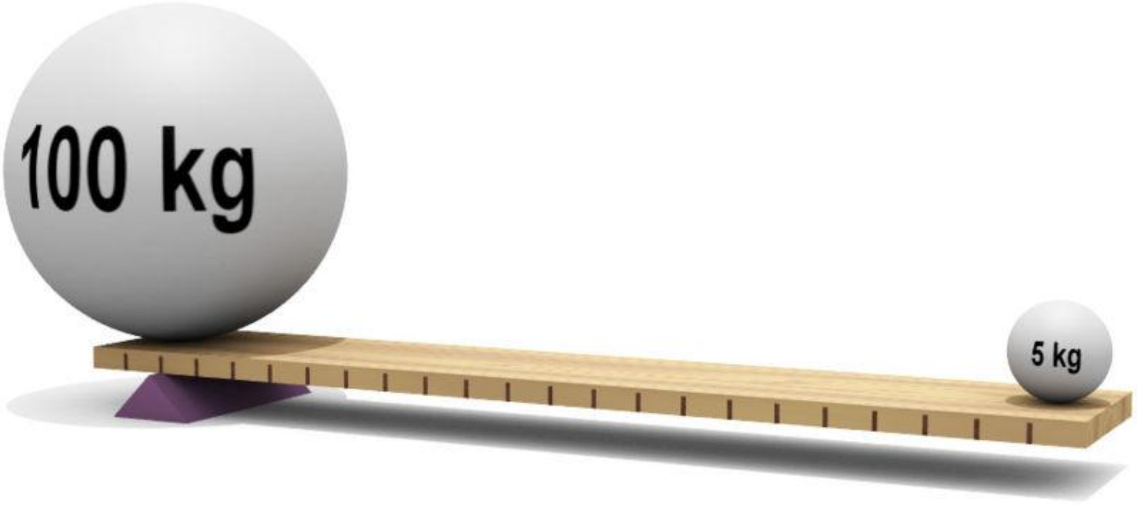
Invisible weapon

- We each have our own resources
- In the last 10 years, we each used resources our own way
  - *but yet… both achieved similar growth*
- How to get different results next 10 years:
  - use resources differently
  - do things competitors *won’t* or *can’t* do

Puzzle

- ❑ If two people have the same resources, how can one person get multiple results of the other?

Invisible weapon = Leverage



- ❑ Leverage
- ❑ Examples of leverage we already use:
    - ❑ Money buys speed
        - ❑ acquisitions
    - ❑ Invest in automation
- ❑*What other leverage have we not exploited?*

An untapped weapon

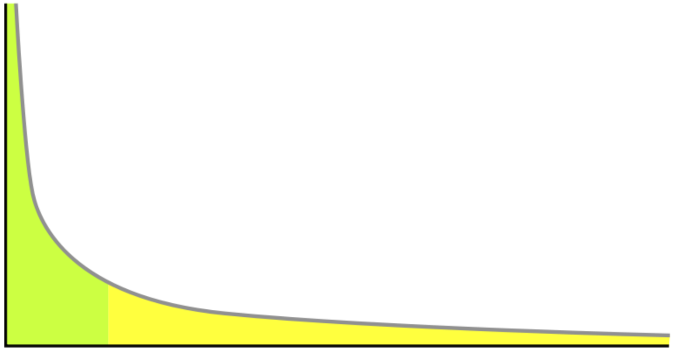
- ❑ Vilfredo Pareto, economist observed:
  - ❑ “20% of pea pods gave 80% of all his garden’s peas

An untapped weapon

- ❑ Vilfredo Pareto, economist observed:
  - ❑ “20% richest people owned 80% land in Italy

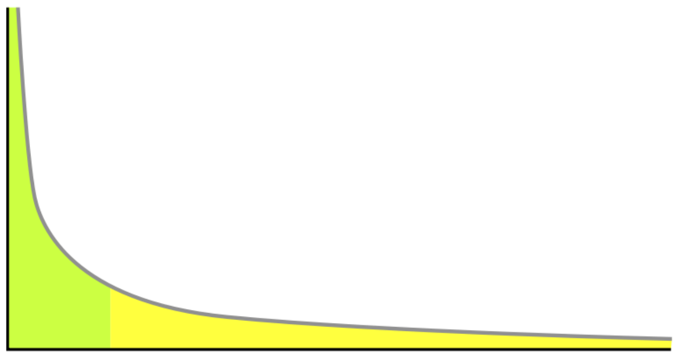
An untapped weapon

- Pareto principle
  - natural phenomenon (power law distribution)
  - **“80-20 rule”**



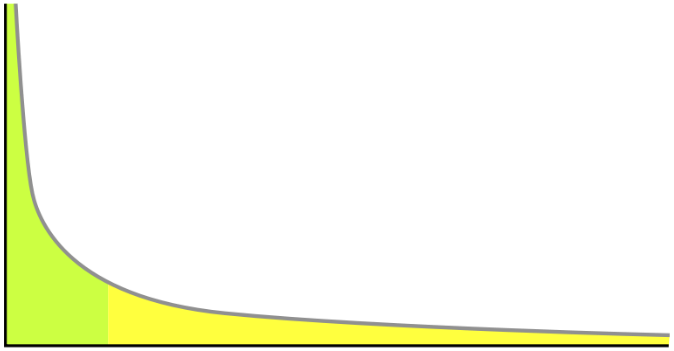
An untapped weapon

- Pareto principle
  - **“80-20 rule”**
  - “20% richest people control 80% world’s income”



An untapped weapon

- ❑ Pareto principle
  - ❑ **“80-20 rule”**
  - ❑ “20% customers produce 80% company’s revenue”



An untapped weapon

- ❑ Pareto principle
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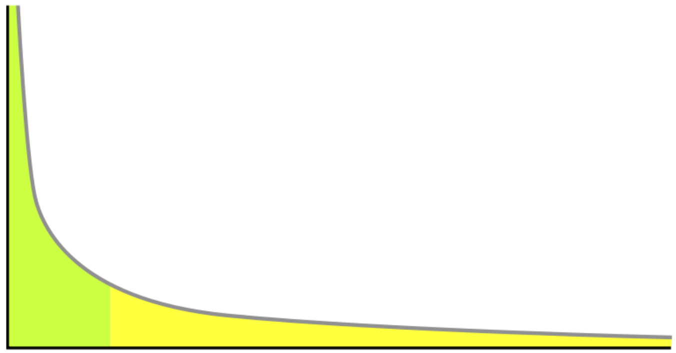
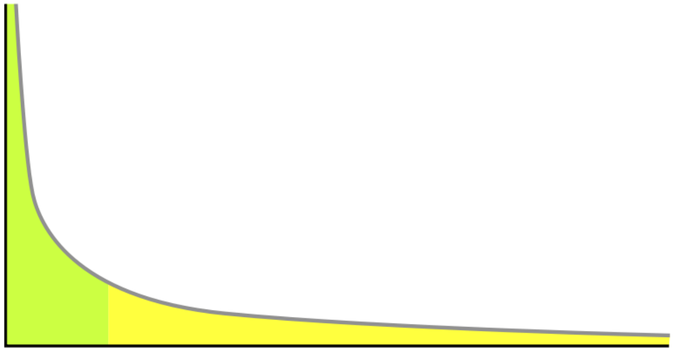
  - ❑ “20% employees produce 80% company’s results”



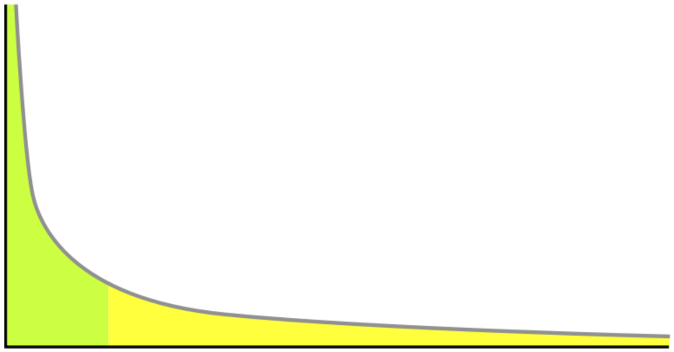
An untapped weapon

- ❑ Pareto principle
  - ❑ **“80-20 rule”**
  - ❑ “20% of the code has 80% of the errors”



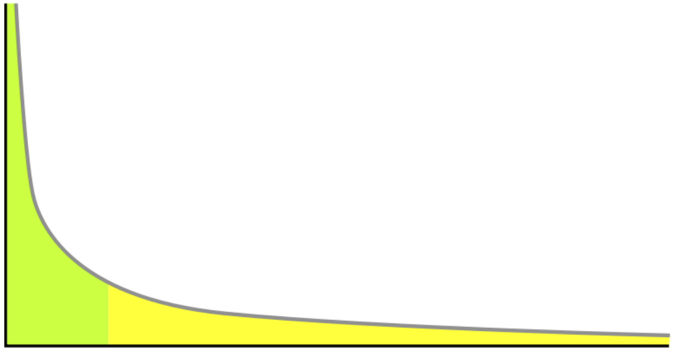
An untapped weapon

- ❑ Pareto principle
  - ❑ **“20% SIPD projects produce 80% of the results”**



An untapped weapon

❑ Pareto principle



- ❑ **“20% SIPD projects produce 80% of the results”**

But, which 20%?

Problem: How to find the 20%?

“Float like a butterfly,
Sting like a bee…

Problem: How to find the 20%?

“Float like a butterfly,
Sting like a bee…

**Your hands can’t hit
What your eyes can’t see”**

Problem: How to find the 20%?

Goal: “Improve QOR by 5%”

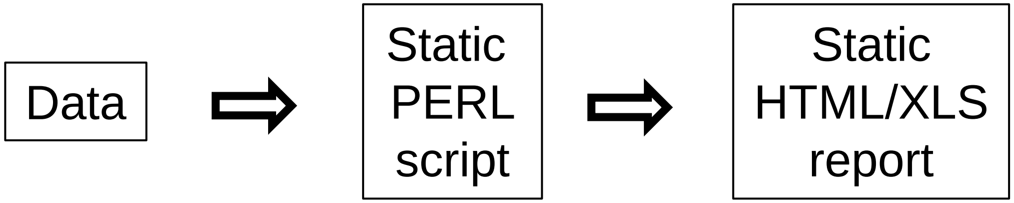
“OK, what’s the best way to get 5%?”

Solution: Achilles

- A framework to systematically find:
  - *opportunities*
  - *and weaknesses*
- To uncover the **20% opportunities**
  - ***that produce 80% of the returns***
  - ***so we can be surgeons, not blind butchers***

The natural evolution

- Old way:

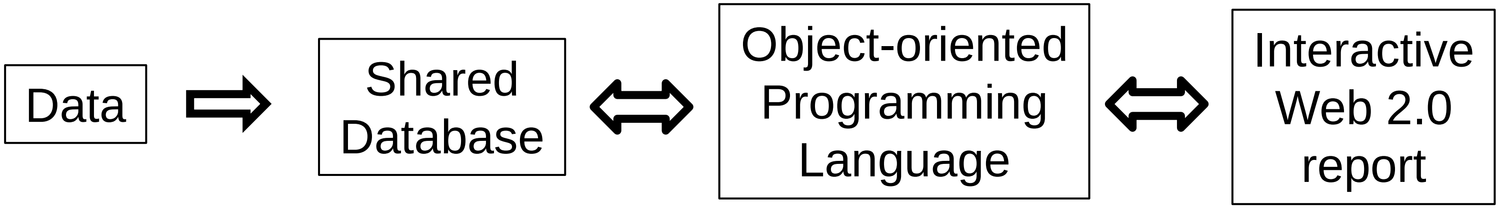


Data

Static PERL script

Static HTML/XLS report

- **New way:**



Data

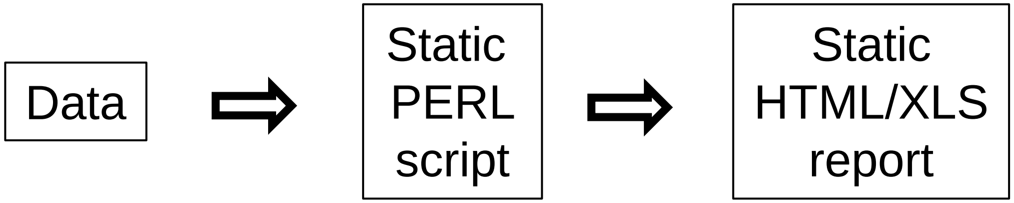
Shared Database

Object-oriented Programming Language

Interactive Web 2.0 report

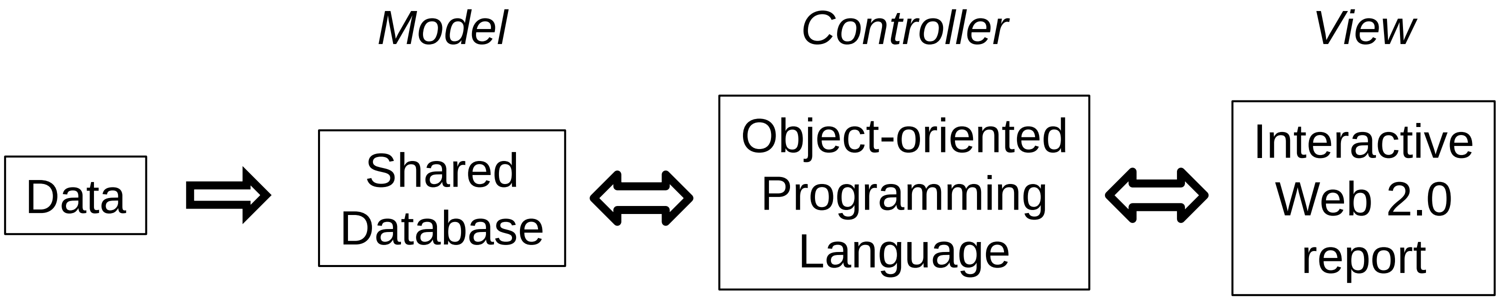
The natural evolution

- ❑ Old way:



Data ⇨ Static PERL script ⇨ Static HTML/XLS report

- ❑ **New way:**

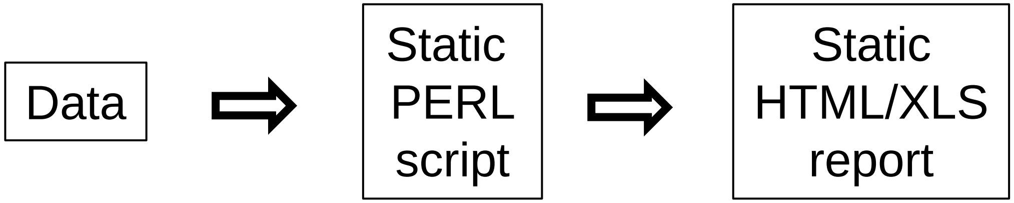


Model *Controller* *View*

Data ⇨ Shared Database ⇔ Object-oriented Programming Language ⇔ Interactive Web 2.0 report

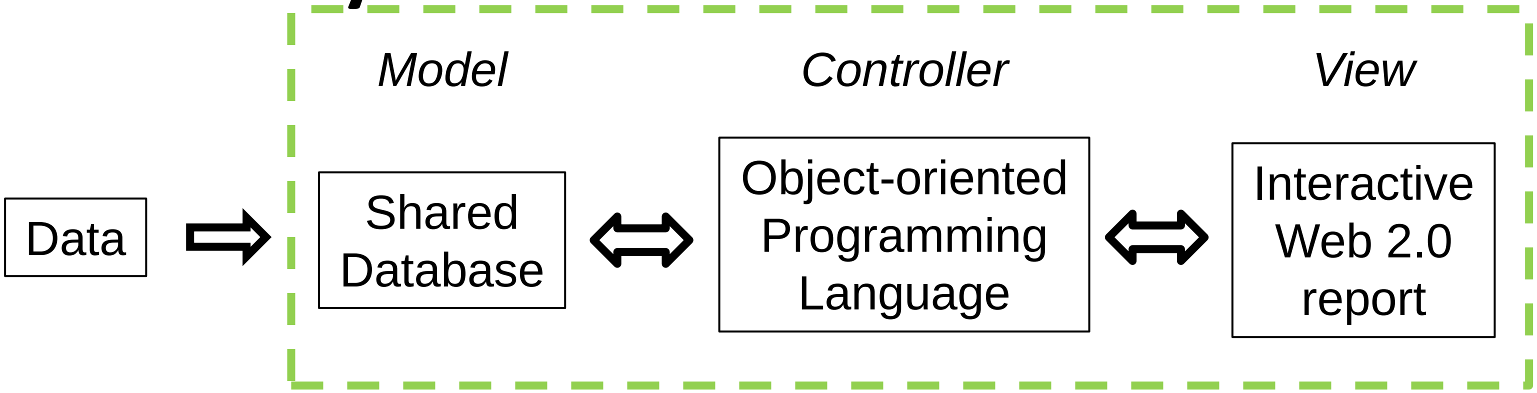
The natural evolution

- Old way:



- **New way:**

Achilles “Web App”


Model
Controller
View
Data
Shared Database
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Side benefits

❑ Build assets – web applications with user-friendly UI

❑ New development cycle:

1. Write/use “app” to find candidates
2. Enhance “app” to test idea + potential gain
3. Enhance “app” to productize solution
4. Enhance “app” to track quality
5. (optional: promote to fisusr report)
6. Repeat

More benefits

- ❑ Motivation booster, brain tickler
  - ❑ don’t burn good engineers out
    - ❑ it’s demoralizing to fight enemy you can’t see (abstract 5% vs **this path**)
  - ❑ everyone can build something useful for the team
    - ❑ enjoy the feeling of quick wins
    - ❑ keeps brain fresh, solve mini-puzzles
    - ❑ ongoing training in the state of the art of Software Engineering

Even more benefits

- ❑ Survey says “training”
  - ❑ there is no better software training than this today
    - ❑ this is what the software world looks like outside
      - ❑ the world has changed, company skills outdated
    - ❑ chance to learn skills that apply to modern software problems
    - ❑ attract **(and keep)** engineers with modern software skills
  - ❑ leverage mature open source tools
    - ❑ started >4 years ago by companies with more severe data applications
  - ❑ upgrade to state-of-the-art tech
    - ❑ web applications, cloud computing, Big Data
    - ❑ the software world has given us a gift
      - ❑ what if <*competitor*> got their hands on this?

Magic show

- ❑ New development cycle:
  1. Write/use “app” to find candidates
  2. Enhance “app” to test idea + potential gain
  3. Enhance “app” to productize solution
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  6. Repeat

- ❑ Two strategies to mine for QOR/runtime:
  - ❑ Compare across designs in a suite
    - ❑ good for finding opportunities
  - ❑ Compare designs across time
    - ❑ good for detecting change (Blamefinder)

Closing thoughts

- ❑ What if <competitor> uses it?
  - ❑ “anything you can do I can do better” – let’s break this trend
  - ❑ like CRT/Sprite, this form of leverage is invisible outside
  - ❑ secret competitive advantage

- ❑ Where else can we apply the 80-20 rule?

Next step

- Workshop – upgrade our teams to the 21st century
  - “Intro to web apps for EDA development”
  - 17 signups

    <names redacted>

- Hackathon
  - continuing education as a group
  - create assets for company (group apps, fisusr apps)

The Legend of Achilles *(uh-kil-eez)*

The Legend of Achilles

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