



Software Carpentry in Four Minutes

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5-15%



GPU clusters to
analyze petabytes
in the cloud

85-95%



Sending each other
spreadsheets
by email

It Is Therefore Obvious That...

- Put more computing courses in the curriculum!



- But it's already full

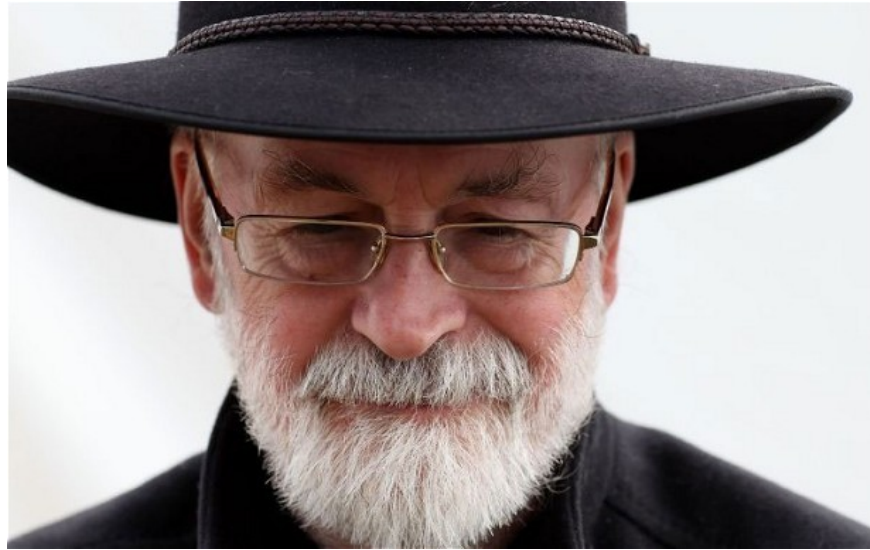
It Is Therefore Obvious That...

- And no matter what we do...



- The blind leading the blind





*If you build a man a fire,
you'll keep him warm for a night.
If you set a man on fire,
you'll keep him warm for the rest of his life.*

— Terry Pratchett

What We Teach

Unix shell

Version control

Python/R/MATLAB

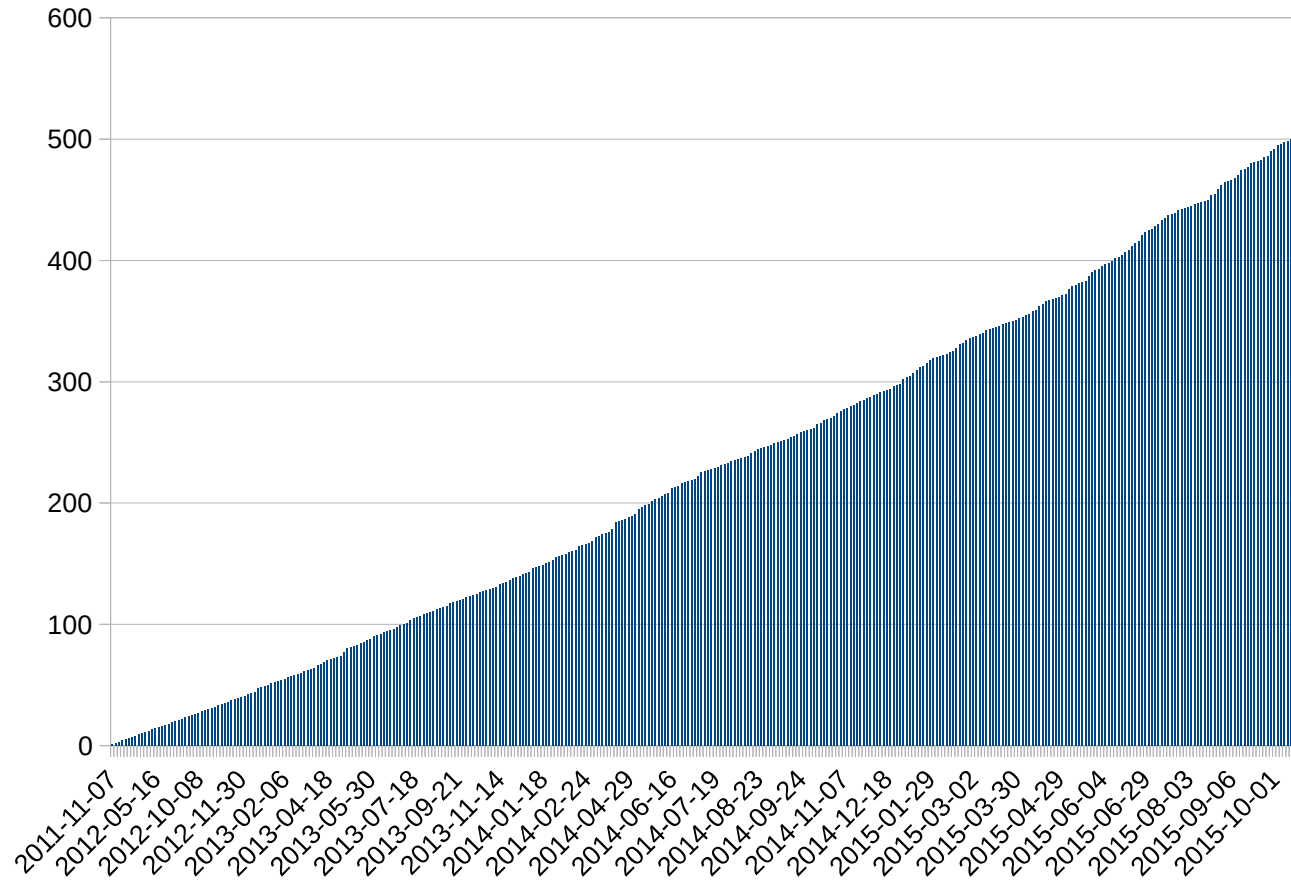
SQL

Make

What We *Actually* Teach

Unix shell	=> Task automation
Version control	=> Track and share work
Python/R/MATLAB	=> Modular programming
SQL	=> Data management
Make	=> Reproducibility

How It's Going



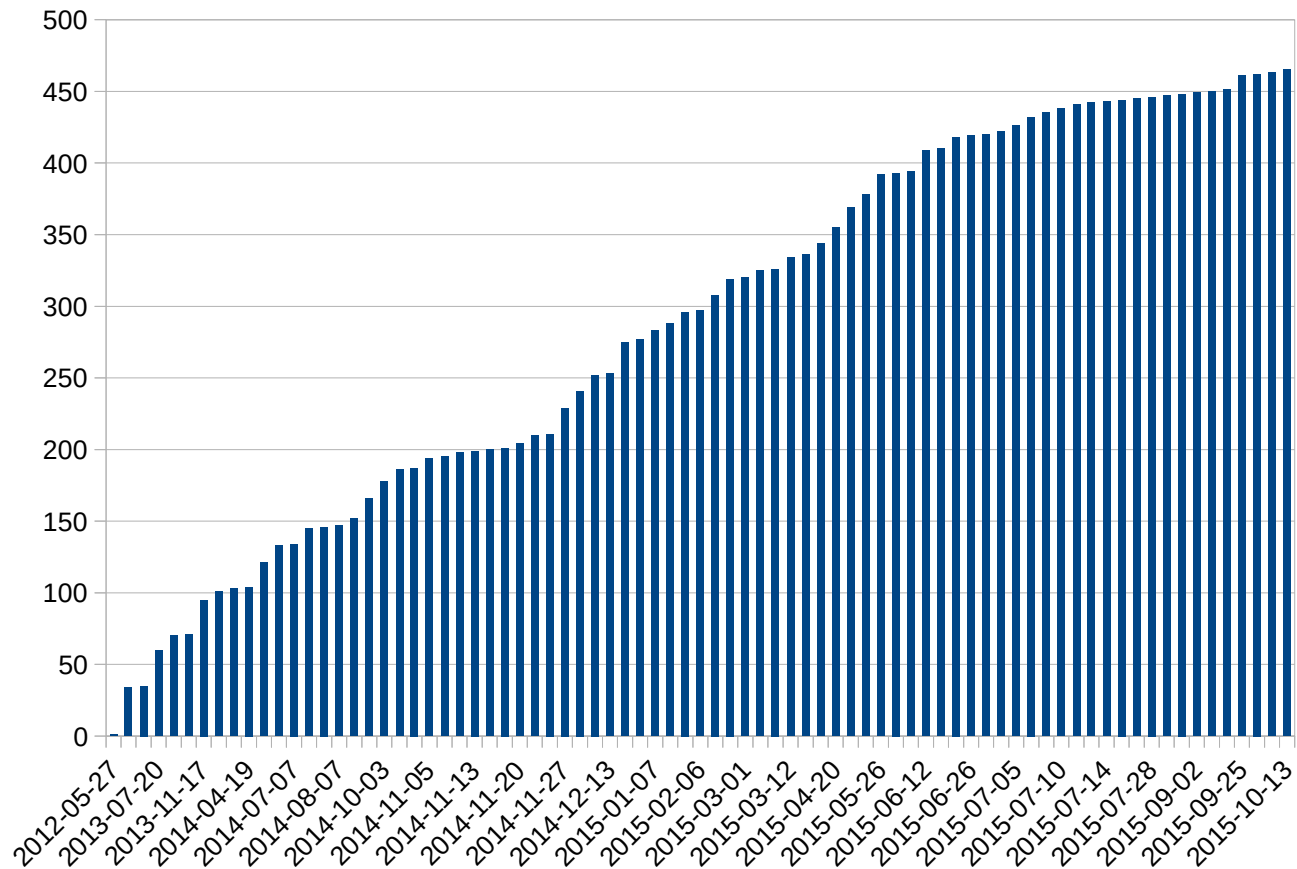
Workshops

How It's Going



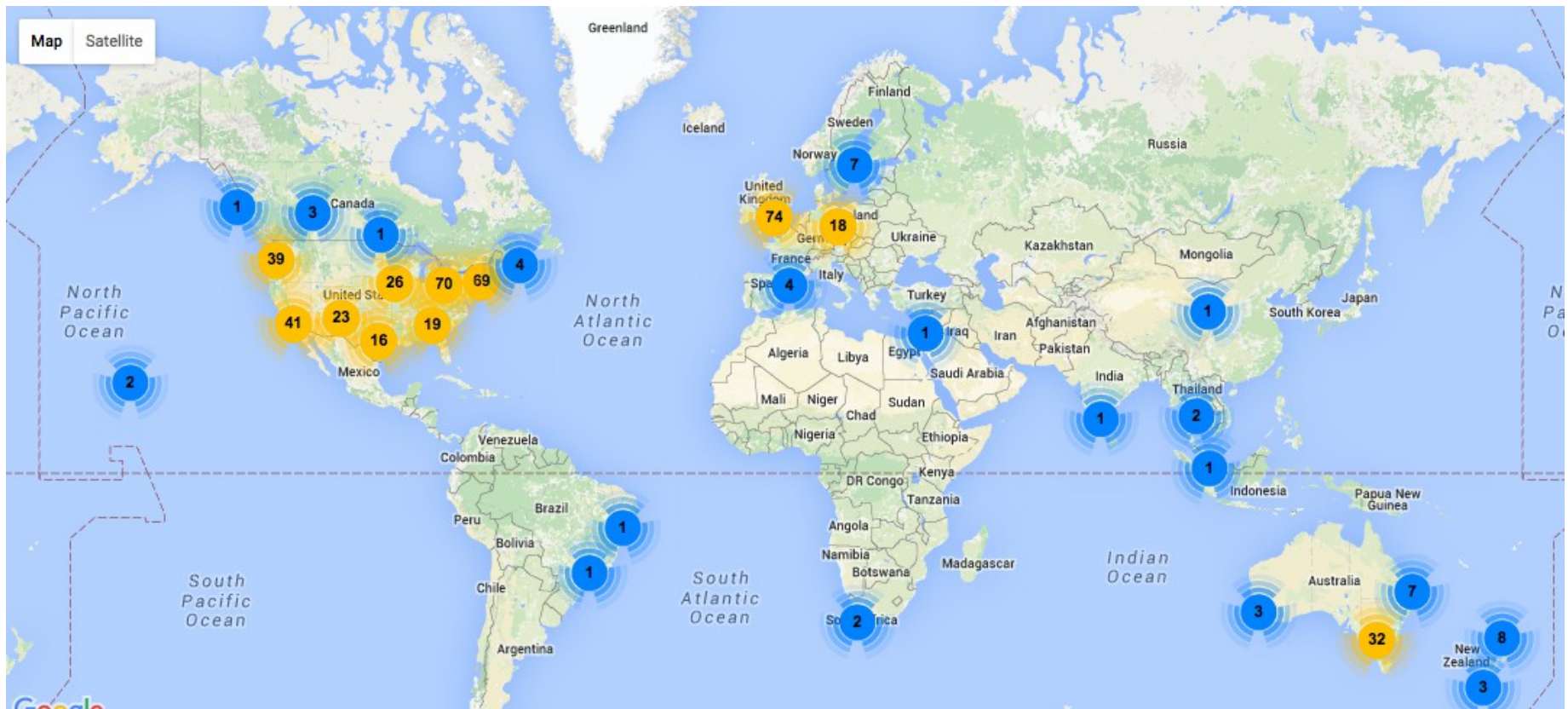
Workshops

How It's Going



Instructors

How It's Going



Instructors

What We Learned (Version 1)

- Software engineering isn't appropriate for most scientists
- Week-long workshops are easy to schedule, but bad for learning



What We Learned (Versions 2-3)

- Hard to fit this into existing curricula
- Hard to convince Computer Science departments to care



What We Learned (Version 4)

- Video lessons aren't cost-effective



And Now... Version 5

- Instructor training creates community
- Collaborative lesson development



And Now... Version 5

- Never teach alone
- Live coding



And Now... Version 5

- Sticky notes
- Collaborative note taking



And Now... Version 5

- Iterate
- Iterate
- Iterate



Why People Volunteer

- Make the world a better place
- Self-defense
- Learn this stuff themselves
- Make new friends
- Boost their careers



The Model Transfers



- Domain-specific lessons
- Shared instructor pool
- Next: librarians, humanities, ...

How You Can Help

- Come learn
- Host a workshop
- Become an instructor
- Contribute to our lessons
- Build tools



Thank You



<http://software-carpentry.org>