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Software Carpentry

Heriot Watt University
28-29 March 2019

**BETTER
SOFTWARE
BETTER
RESEARCH**

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The Software Sustainability Institute



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A national facility for cultivating better, more sustainable, research software to enable world-class research

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SCIENCE OF THE
ENVIRONMENT

Schedule



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- **Day 1**
- 09:00 **Automating tasks with the Unix shell**
- 10:30 Coffee
- 12:00 Lunch break
- 13:30 **Building programs with Python**
- 16:00 Wrap-up
- 16:30 END
- **Day 2**
- 09:00 **Version control with Git**
- 10:30 Coffee
- 12:00 Lunch break
- 13:30 **Building programs with Python** (continued)
- 16:00 Wrap-up
- 16:30 END

<https://edcarp.github.io/2019-03-28-heriotwatt/>

Best practices for scientific computing



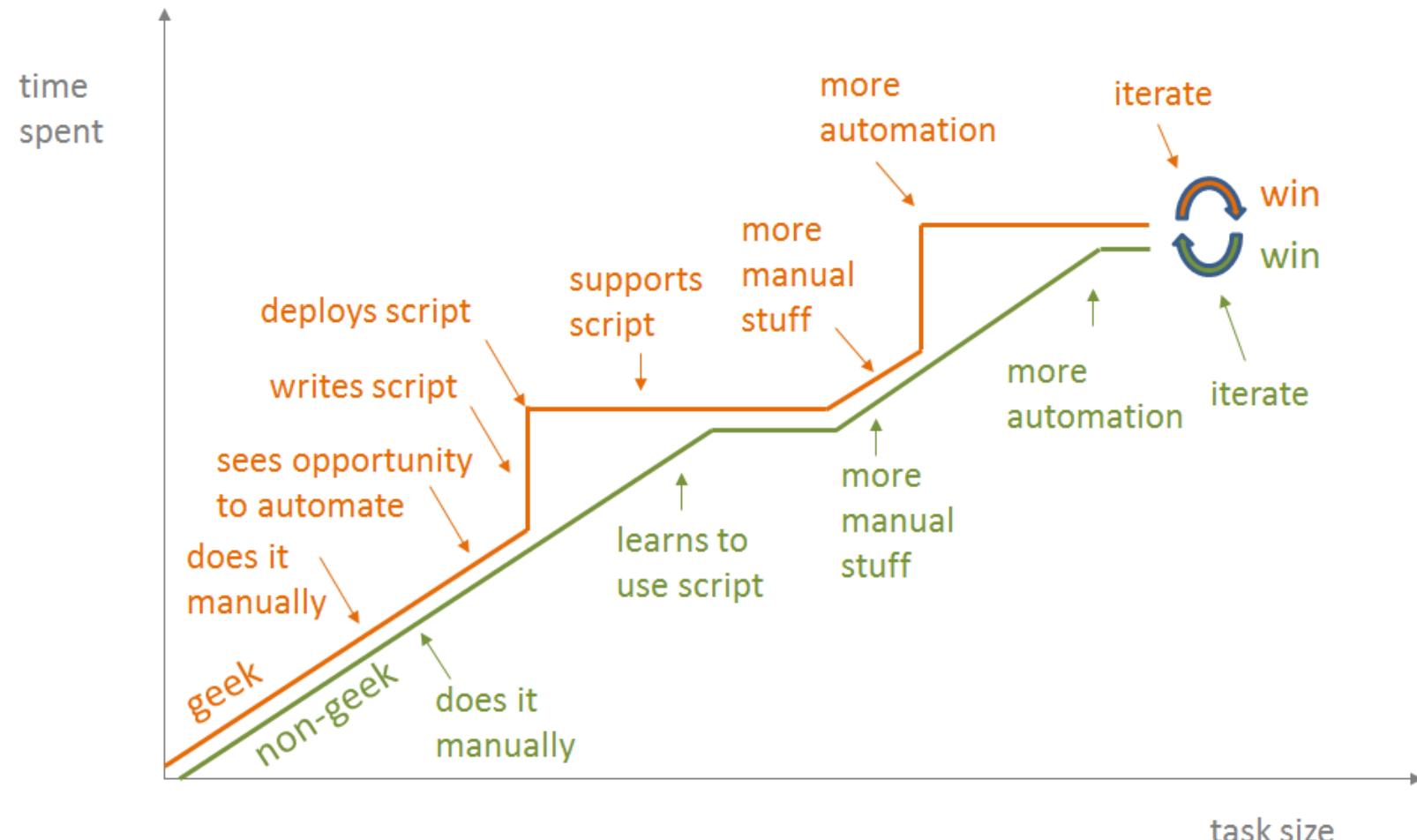
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- Wilson G, Aruliah DA, Brown CT, Chue Hong NP, Davis M, et al. (2014) Best Practices for Scientific Computing. PLoS Biol 12(1): e1001745.
<http://dx.doi.org/10.1371/journal.pbio.1001745>.
- Let the computer do the work
- Write programs for people, not computers
- Use version control
- Achieve more, in less time with less pain!

Let the computer do the work



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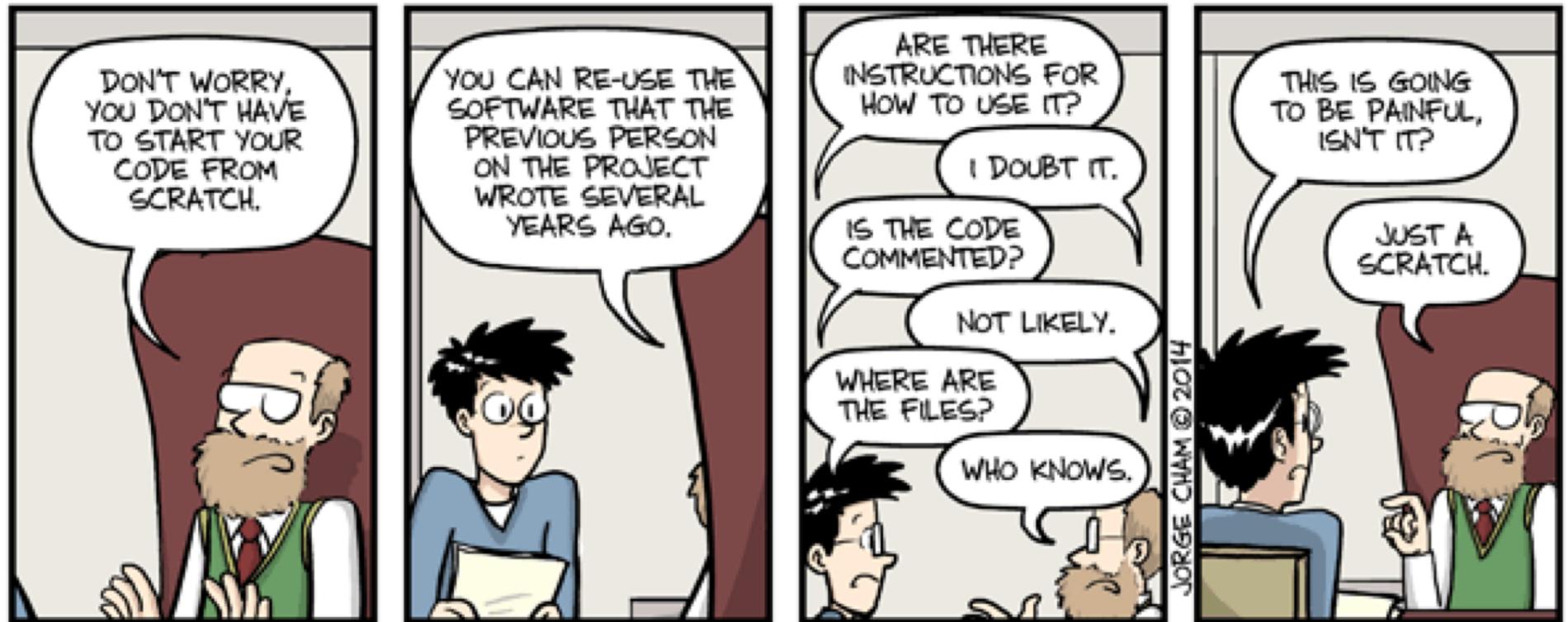


<https://blog.jonudell.net/2012/01/09/another-way-to-think-about-geeks-and-repetitive-tasks/>

Write programs for people, not computers



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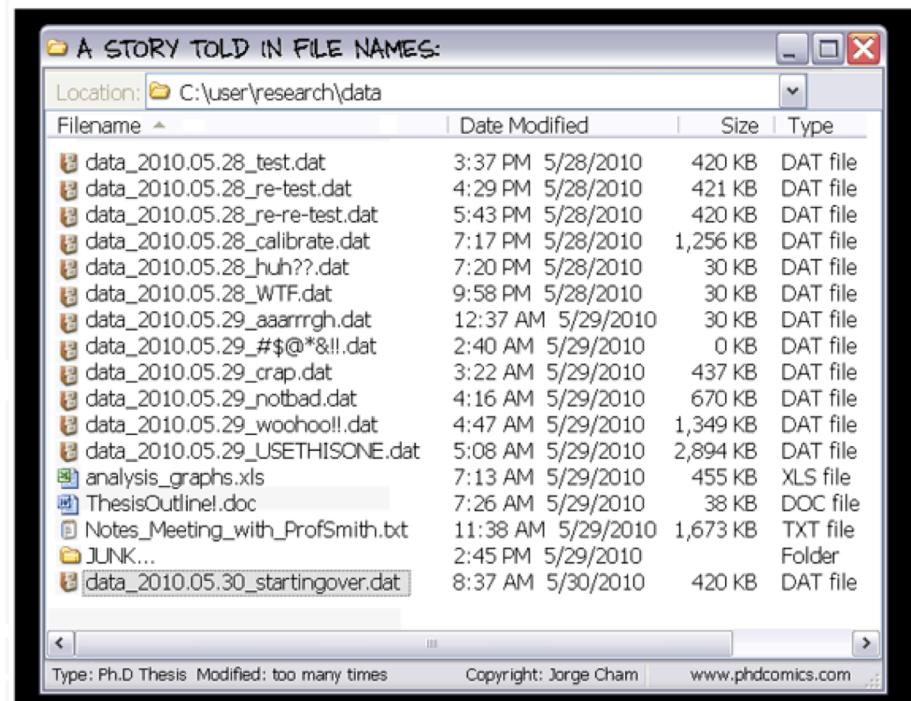
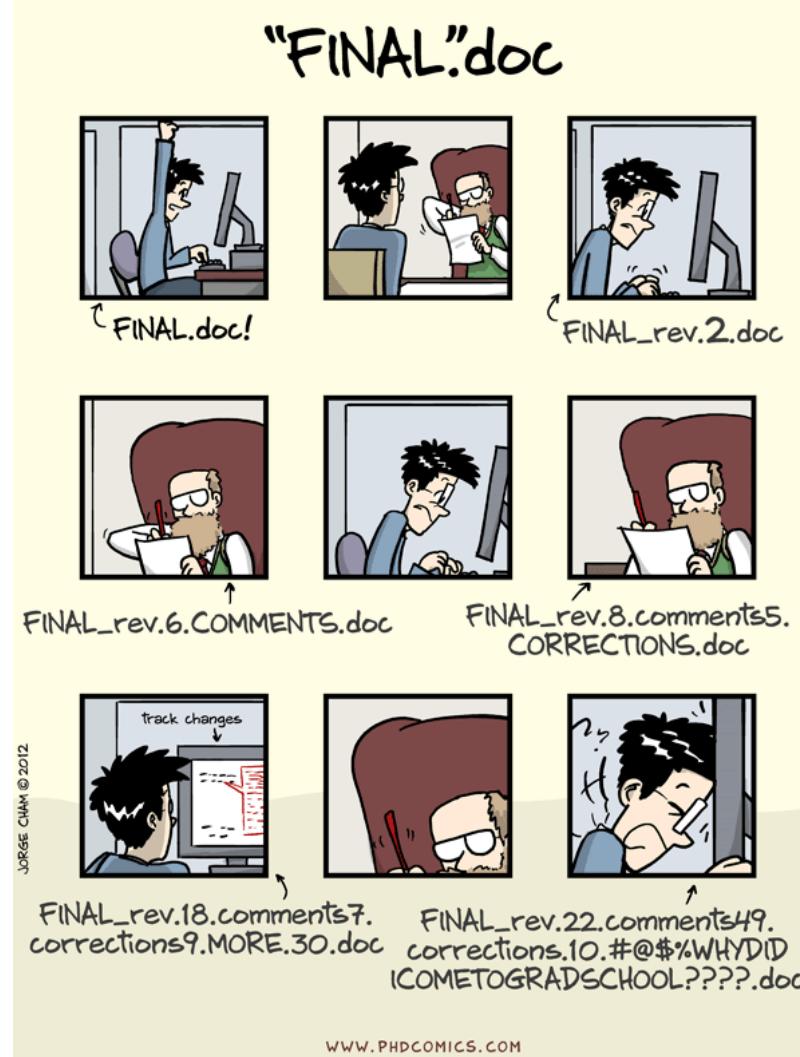


<http://phdcomics.com/comics/archive.php?comicid=1689>

Use version control



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<http://phdcomics.com/comics/archive.php?comicid=1323>

<http://phdcomics.com/comics/archive.php?comicid=1531>

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Important bits and pieces



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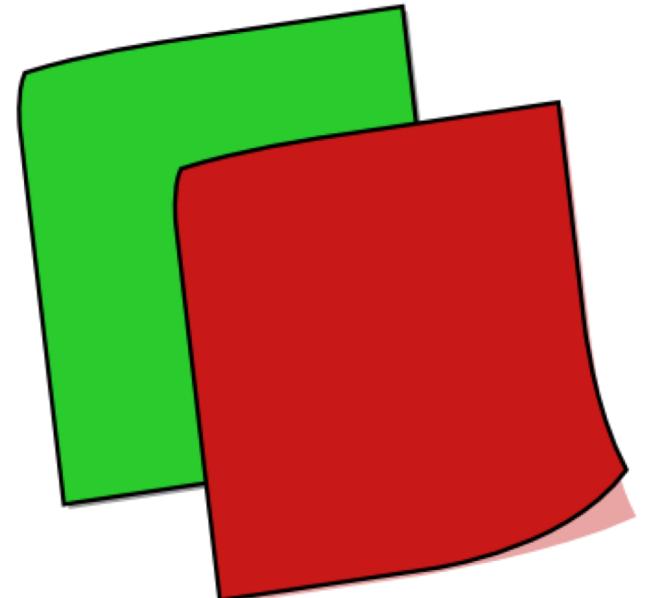
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How to ask for help



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- Flag down a helper
- Stick up your sticky note
 - Red – I'm stuck, help!
 - Green – I'm fine
- Use for feedback at the end of every session
 - Red – something that could be better
 - Green – something that I liked



Base note from:

<https://openclipart.org/detail/17620/blank-sticky-note>

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Collaborative document



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- Link available from Edinburgh carpentry site
 - <https://edcarp.github.io/2019-03-28-heriotwatt/>
- Allows us to communicate with you:
 - Post long URLs
 - Code snippets
 - Tips/Comments from helpers/instructors
- You can share your notes with others
 - <https://pad.carpentries.org/2019-03-28-heriotwatt>
 - Title Name, Department, Position (PhD student/Postdoc/Staff), Why you are here and what you hope to learn.

Code of Conduct



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- Details:
 - <https://software-carpentry.org/conduct/>
- Essentially:
 - *Be courteous and nice to each other.*