UNIVERSITY of WASHINGTON

Version Control (with Git)

Software Design for Data Science

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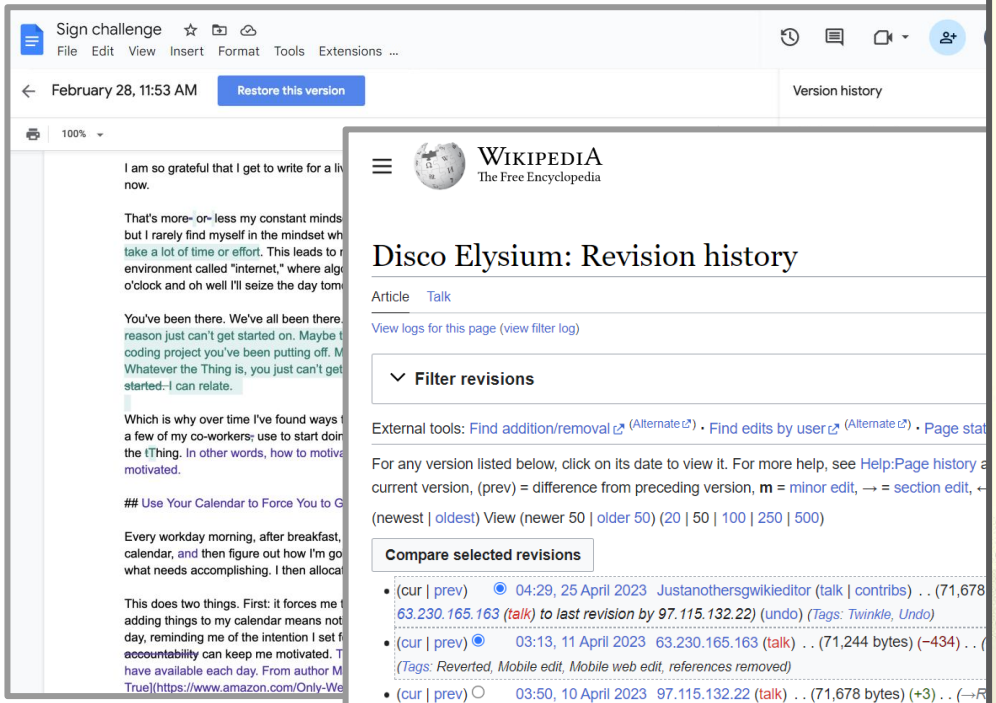
January 5, 2026

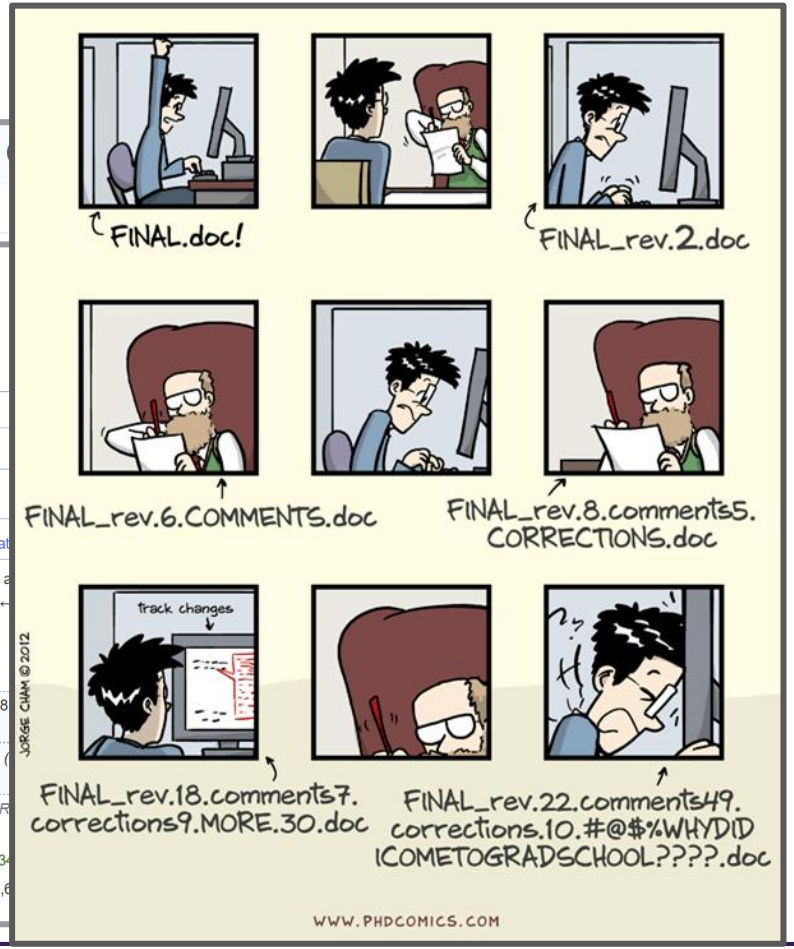
When to ask questions

- Trick question! Always ask questions.
- Especially for projects

- However, for questions related to homeworks:
  - Class discussion forum only (don't make a post on Stack Overflow)
  - Don't provide direct code from your homework in your questions
  - Don't provide direct code from your homework in your answers

Revisions


Sign challenge
File Edit View Insert Format Tools Extensions ...
February 28, 11:53 AM
Restore this version
Version history
100%
I am so grateful that I get to write for a liv
now.
That's more- or- less my constant minds
but I rarely find myself in the mindset wh
take a lot of time or effort. This leads to r
environment called "internet," where alg
o'clock and oh well I'll seize the day tom
You've been there. We've all been there.
reason just can't get started on. Maybe t
coding project you've been putting off. M
Whatever the Thing is, you just can't get
started. I can relate.
Which is why over time I've found ways t
a few of my co-workers use to start doin
the tThing. In other words, how to motiva
motivated.
Use Your Calendar to Force You to G
Every workday morning, after breakfast,
calendar, and then figure out how I'm go
what needs accomplishing. I then allocat
This does two things. First: it forces me t
adding things to my calendar means not
day, reminding me of the intention I set f
accountability can keep me motivated. T
have available each day. From author M
True](https://www.amazon.com/Only-We
WIKIPEDIA
The Free Encyclopedia
Disco Elysium: Revision history
Article Talk
View logs for this page (view filter log)
Filter revisions
External tools: Find addition/removal (Alternate) · Find edits by user (Alternate) · Page stat
For any version listed below, click on its date to view it. For more help, see Help:Page history a
current version, (prev) = difference from preceding version, m = minor edit, → = section edit, ←
(newest | oldest) View (newer 50 | older 50) (20 | 50 | 100 | 250 | 500)
Compare selected revisions
(cur | prev) 04:29, 25 April 2023 Justanothersgwikieditor (talk | contribs) . . (71,678
63.230.165.163 (talk) to last revision by 97.115.132.22) (undo) (Tags: Twinkle, Undo)
(cur | prev) 03:13, 11 April 2023 63.230.165.163 (talk) . . (71,244 bytes) (−434) . .
(Tags: Reverted, Mobile edit, Mobile web edit, references removed)
(cur | prev) 03:50, 10 April 2023 97.115.132.22 (talk) . . (71,678 bytes) (+3) . .
Mobile edit, Mobile web edit)
(cur | prev) 19:35, 31 March 2023 RafaelTLS (talk | contribs) . . (71,675 bytes) (+3
(cur | prev) 11:37, 29 March 2023 Профессор кислых щей (talk | contribs) . . (71,6
edit at work like i do...) (undo)


FINAL.doc!
FINAL_rev.2.doc
FINAL_rev.6.COMMENTS.doc
FINAL_rev.8.comments5.
CORRECTIONS.doc
track changes
FINAL_rev.18.comments7.
corrections9.MORE.30.doc
FINAL_rev.22.comments49.
corrections.10.#@$%WHYDID
ICOMETOGRADSCHOOL????.doc
JORGE CHAM © 2012
WWW.PHDCOMICS.COM

“Version control systems”

- Tools to keep track of changes over a collection of documents, called **repositories** (or “**repos**”)

- Distinguish between “**plaintext**” and “**binary files**”
  - Plaintext – Text and numbers, no formatting. “.txt” files, “.csv” files
  - Binary – Word docs, Excel sheets, JPEG images

- Designed for **asynchronous collaboration** on plain text
  - *Spectacular* at tracking and reconciling differences between subtly different versions of plaintext
  - *Competent* at taking “snapshots” of binary files across time, but bad at understanding how they’ve changed

Git

- One particular **standard** for how to do that change tracking

- There are a lot of different websites and applications (“**clients**”) that can work with git repos!

Naomi's favorite git clients

Git (Free, but no graphical interface)
https://git-scm.com/

Sublime Merge ($$$, but you can run the trial indefinitely??)
https://www.sublimemerge.com/

GitFiend (Free…..for now…also kind of junky)
https://gitfiend.com/

Git Kraken (Free version, no private repos)
https://www.gitkraken.com/

Glint (Free version, max 2 tabs open at once, no light theme)
https://glint.info/en/

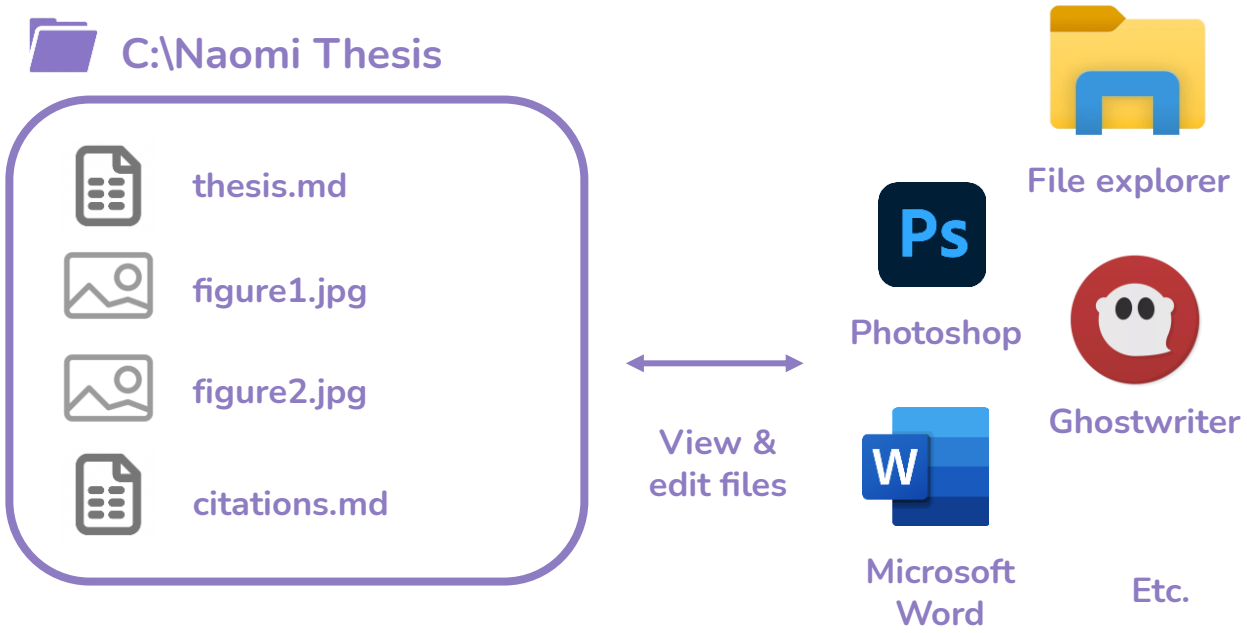
🦾⚙️ Engineering Mindset ⚙️🦾

I'll make a list of a couple of competing tools.

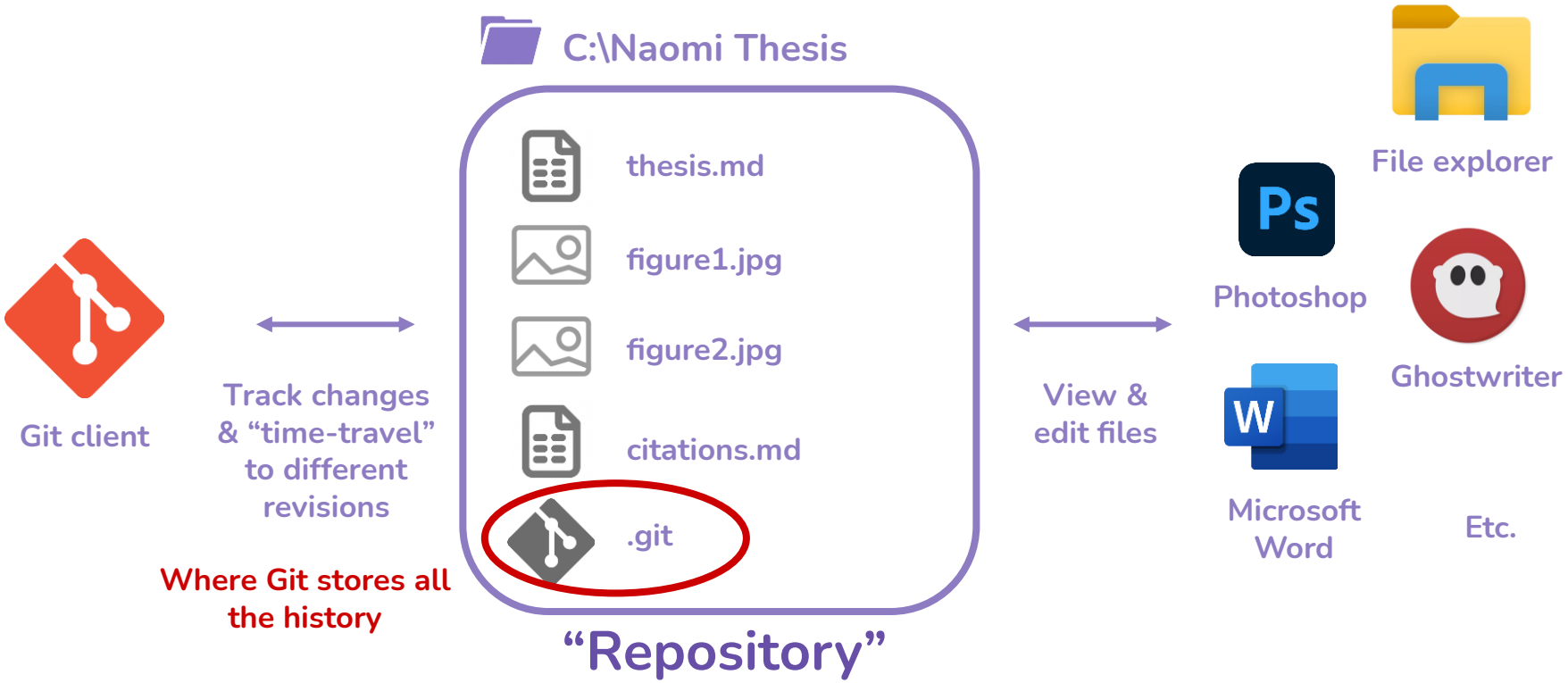
I'll invest **serious effort**, but **limited time** into trying out each of them.

I'll stick with the ones that **make the most sense to me** and not sweat the ones that don't.

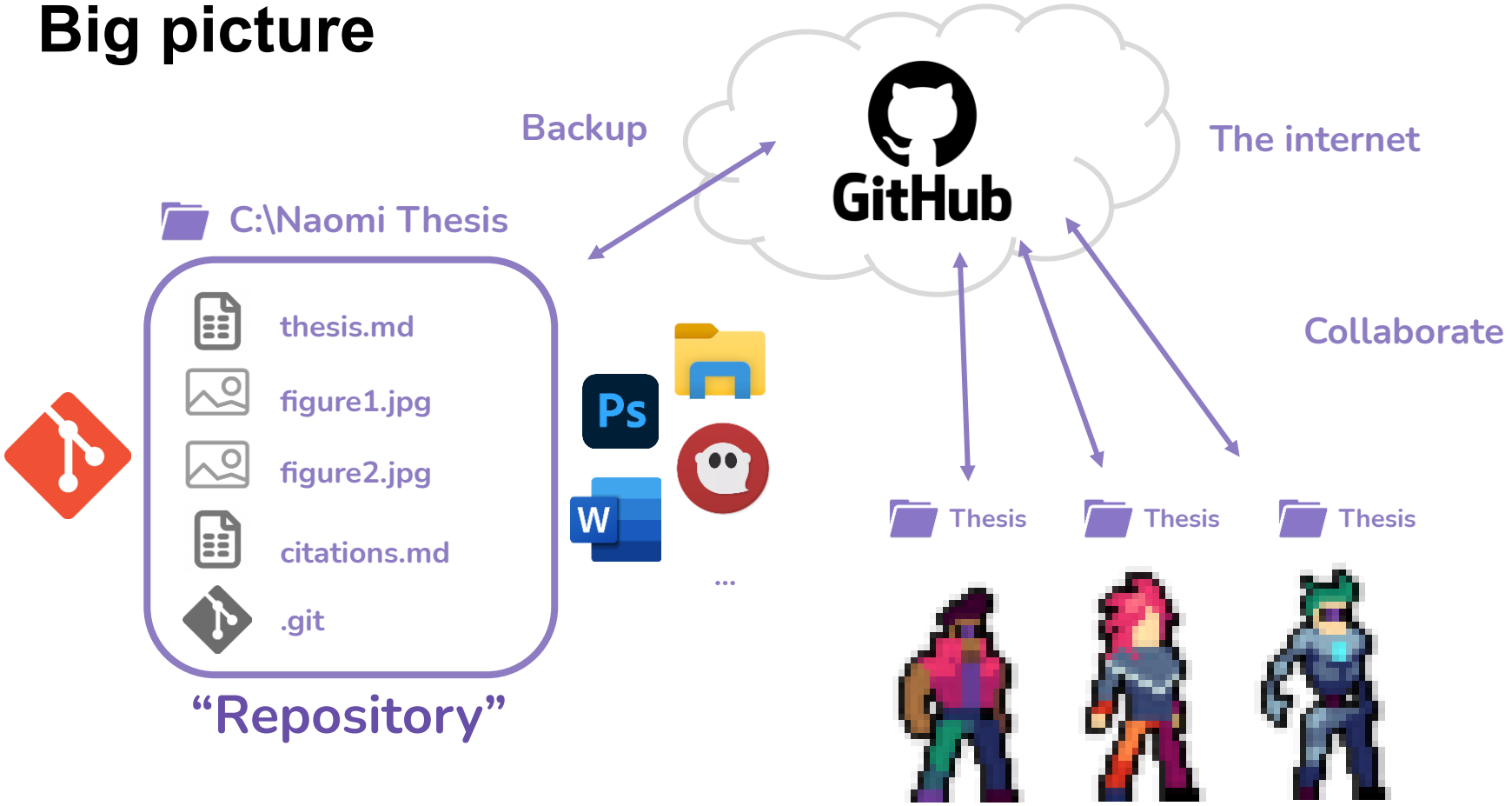
Big picture


C:\Naomi Thesis
thesis.md
figure1.jpg
figure2.jpg
citations.md
View & edit files
File explorer
Photoshop
Ghostwriter
Microsoft Word
Etc.

Big picture


C:\Naomi Thesis
thesis.md
figure1.jpg
figure2.jpg
citations.md
.git
Git client
Track changes & "time-travel" to different revisions
Where Git stores all the history
View & edit files
File explorer
Photoshop
Ghostwriter
Microsoft Word
Etc.
"Repository"

Big picture


Backup
GitHub
The internet
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thesis.md
figure1.jpg
figure2.jpg
citations.md
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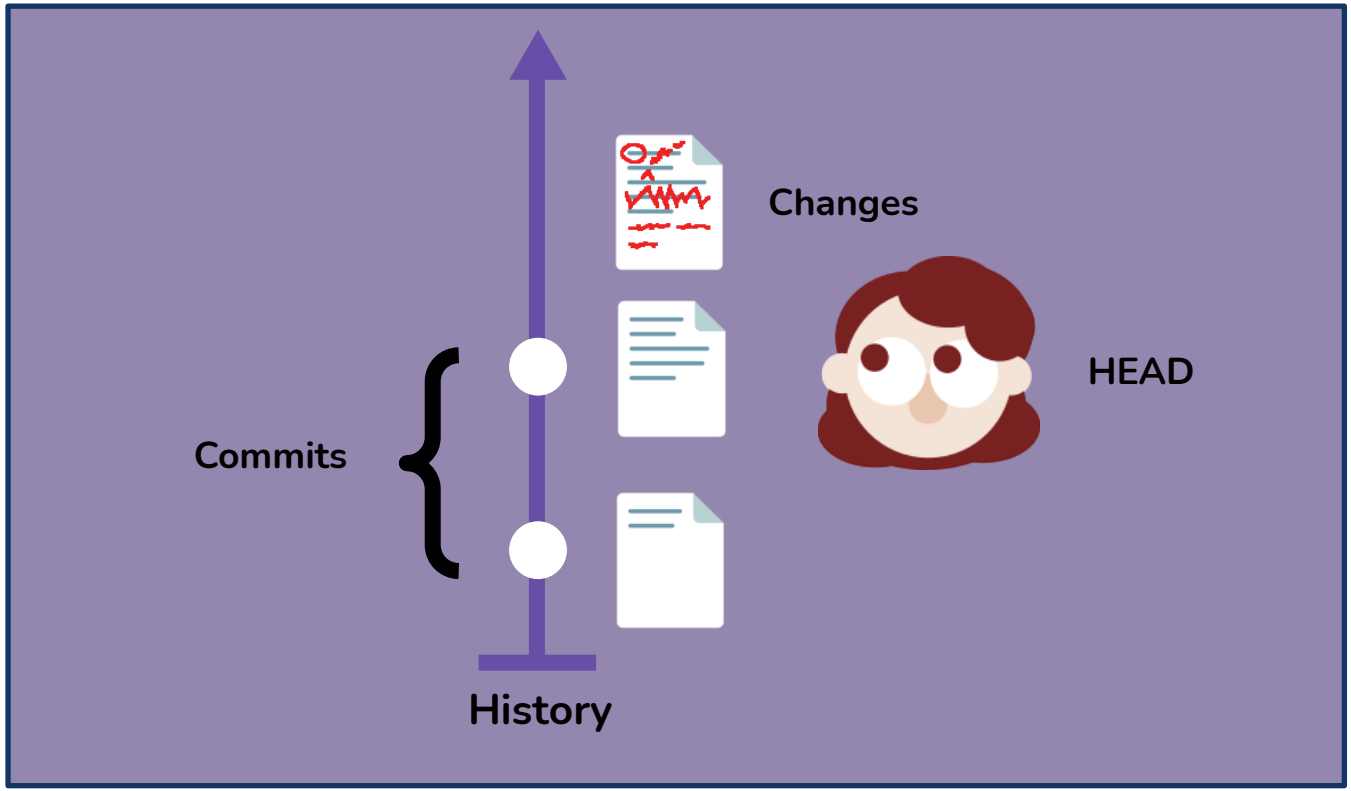
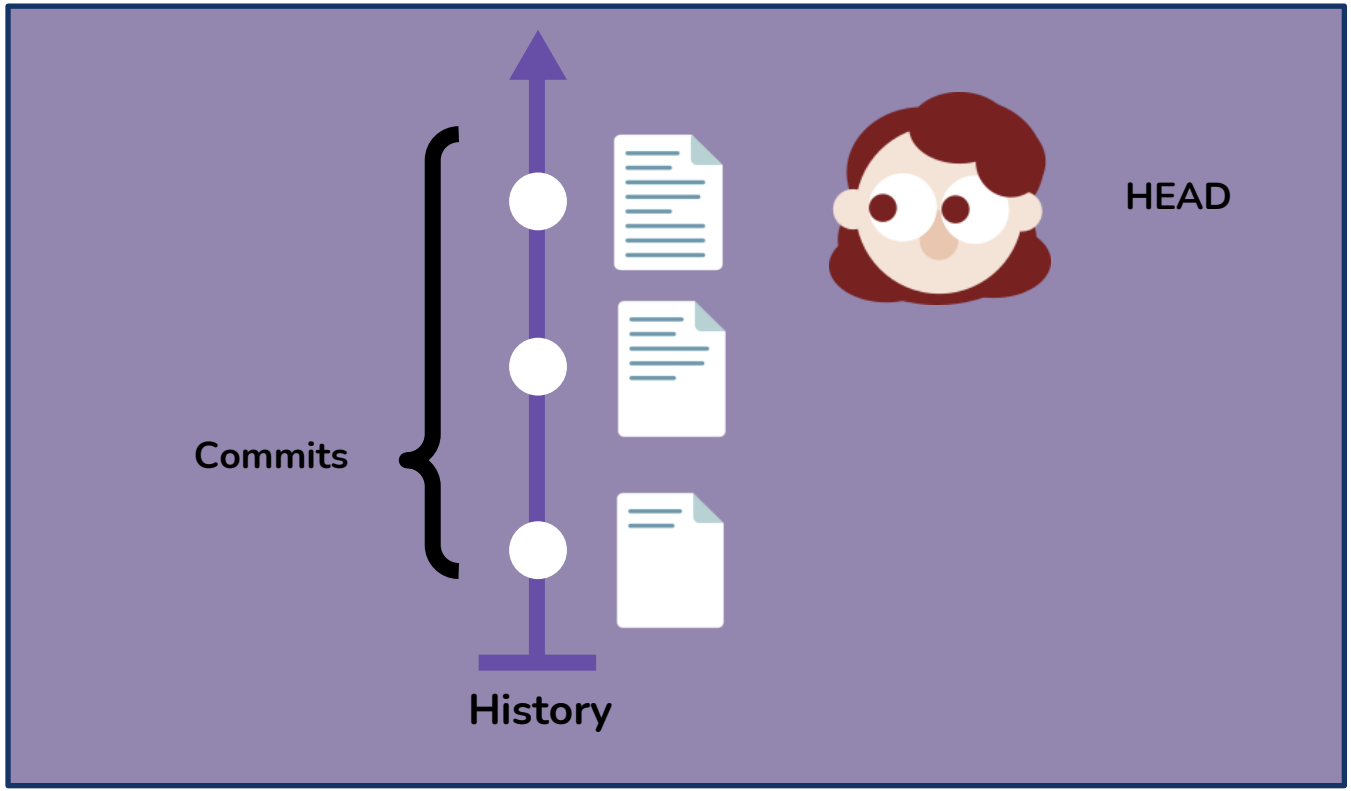
"Repository"
Ps
W
...
Collaborate
Thesis
Thesis
Thesis

Mental model



Mental model



Important point

is not

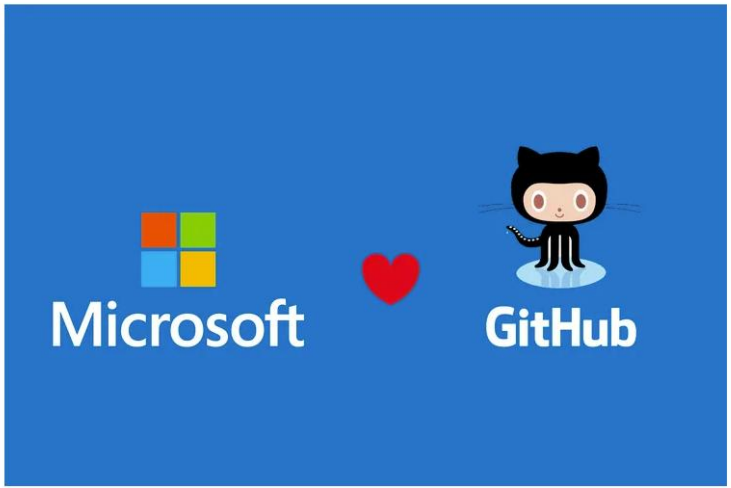
- A set of standards and reference tools for managing document revisions
- Free and open source
- Developed by a non-profit group of volunteers

- A website that hosts git repositories
- Provides extra “value add” collaboration tools
- Free and paid tiers of service
- Developed by a for-profit company

Btw

TECH / MICROSOFT / BREAKING

Microsoft confirms it's acquiring GitHub for $7.5 billion



By TOM WARREN / @tomwarren
Jun 4, 2018, 6:02 AM PDT | 0 Comments / 0 New

Microsoft is acquiring GitHub. After reports emerged that the software giant was in talks to acquire GitHub, Microsoft is making it official today. This is Microsoft CEO Satya Nadella's second big acquisition,

https://www.theverge.com/2018/6/4/17422788/microsoft-github-acquisition-official-deal

Food for thought

Git is an open source tool developed by volunteers.

Why is *Git* free?

GitHub (and GitLab and Sourceforge) are for-profit companies that host our Git repositories for free.

Why is *GitHub* free?

Some meta-talk

- Tech tools are like tax forms
- Doing things the “normal way” is almost always good enough
- Every once in a while it’s not, and you ask an accountant for help

Let’s get our hands dirty

Some resources

- Guide to getting started using Git and GitHub with GUI tools:
  - https://uwescience.github.io/graphical-intro-to-git/
- Guide to getting started using Git through the command line:
  - https://swcarpentry.github.io/git-novice/
- Git game:
  - https://ohmygit.org/
- A cheat sheet from our old friend Wizard Zines:
  - https://wizardzines.com/zines/oh-shit-git/