Before we start today...

- Create a Github account
- Share your account name with me at tomoyas@mit.edu
- If possible (or necessary), install Git in your computer (check `https://happygitwithr.com/install-git.html`)

Git for Social Scientists: Introduction to Version Control with Git

Tomoya Sasaki[1]

Massachusetts Institute of Technology

October 20th, 2022

[1]This slide deck is heavily inspired by the workshop materials by Suyeol Yun and Shiro Kuriwaki.

Introduction

Companies using Git

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Airbnb
Allegro
Amazon Web Services - Labs
Amazon Web Services
Amazon
Ambientia Group Oy
Apple Inc.
arkency
AT&T Open Source

Companies using Github

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  - Brief introduction to these tools (how Git/Github works and how to use them)

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- I focus on Git/Github because they are extremely popular than their alternatives

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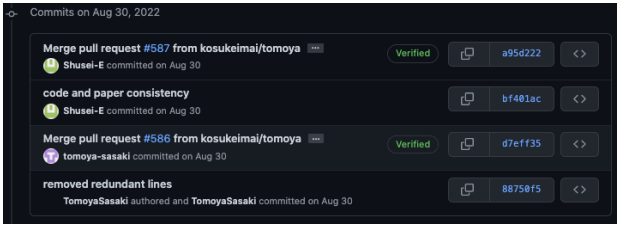

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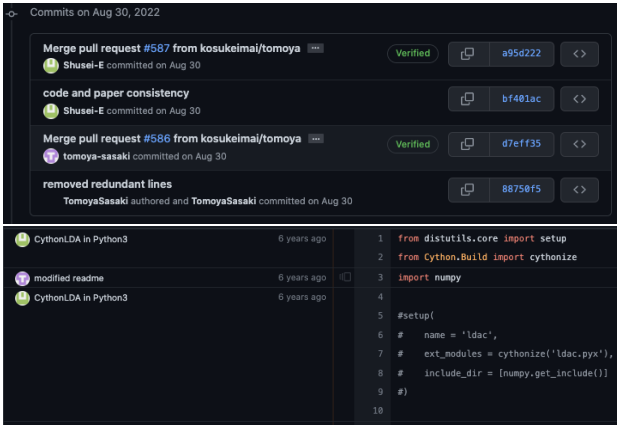

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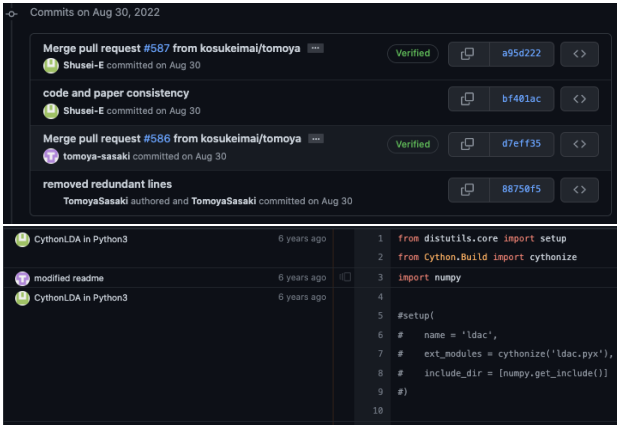

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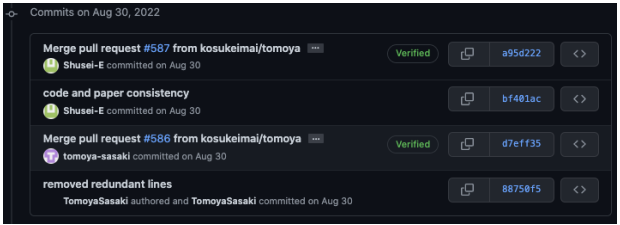

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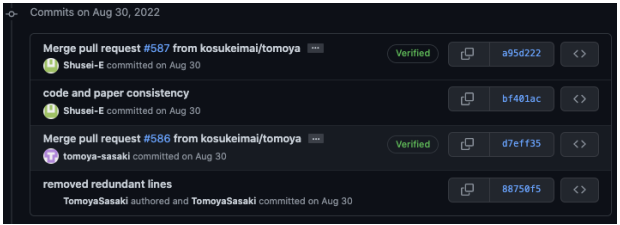

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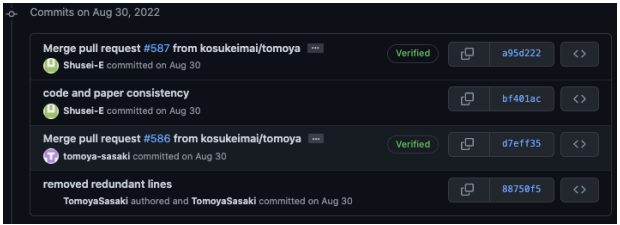
  - the same file edited by different people: `clean_data_tomoya.R`, `clean_data_adam.R`



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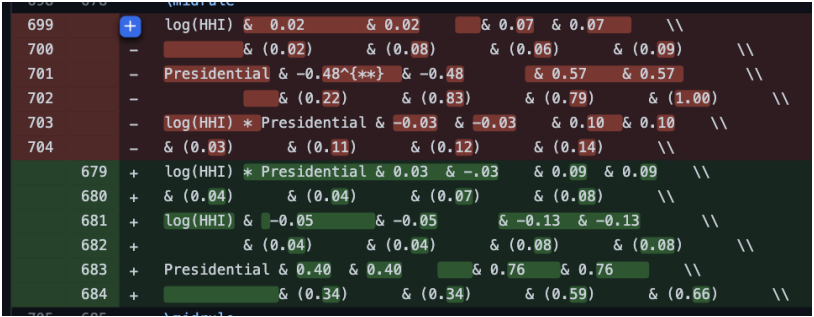
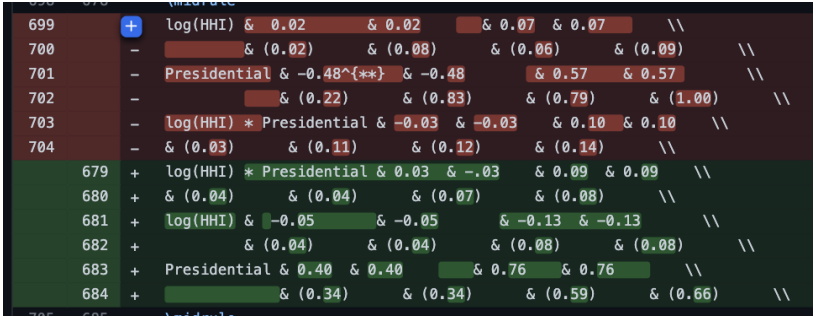


Benefit of Git/Github: Tracking who/how/when

- You can check how the results change when we try different specification
- Easy to track which part of the results changed



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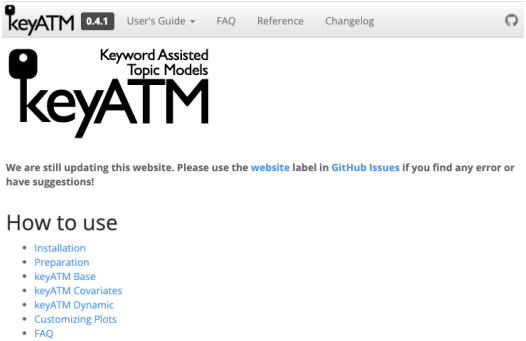

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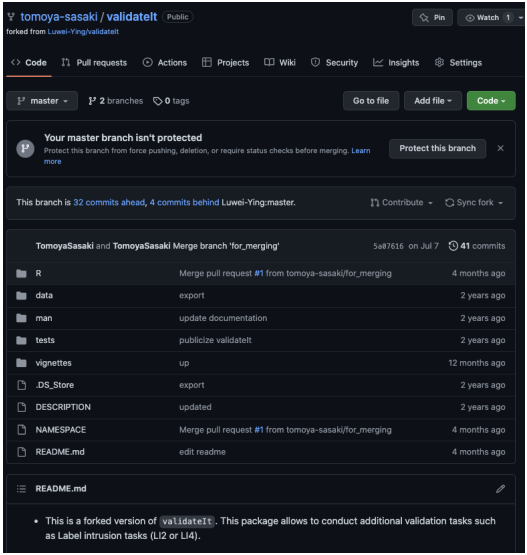

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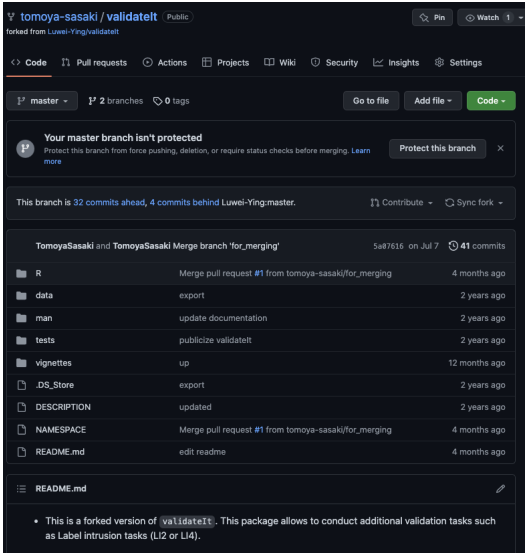

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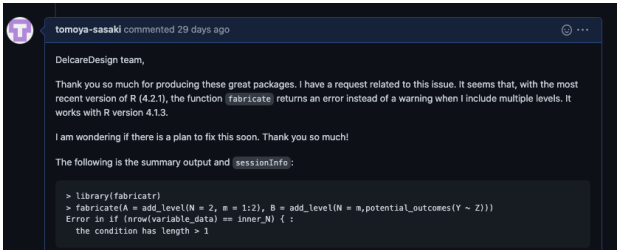

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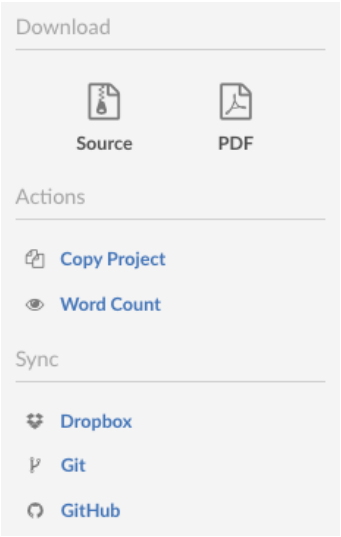
- Nice integration with popular apps/websites such as RStudio and Overleaf



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- Include huge files as well as sensitive files that contain password, API key etc in `.gitignore`

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- The value of Git/Github is limited
- In the right example, Git/Github recognizes the changes as the changes in file sizes
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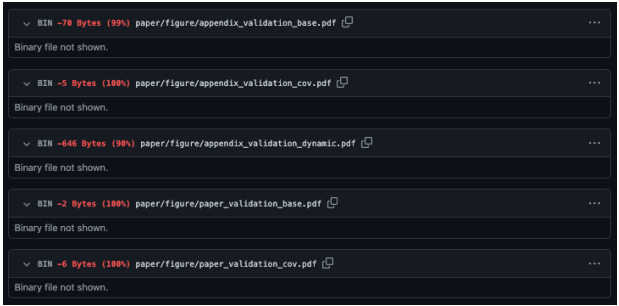

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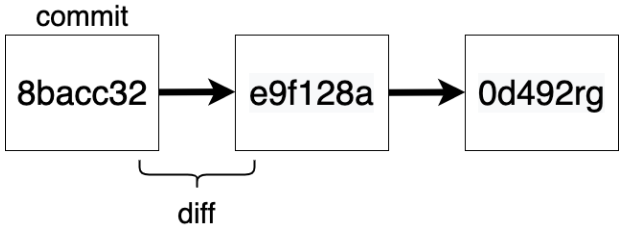

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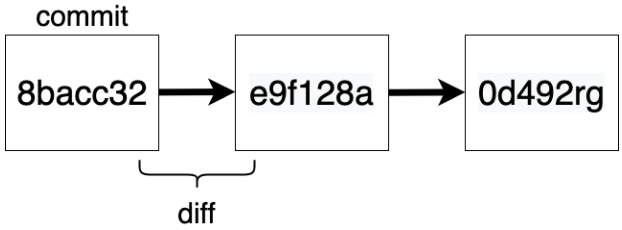

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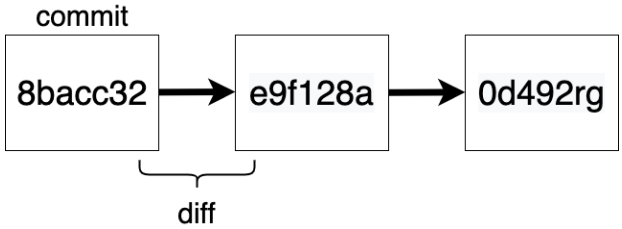

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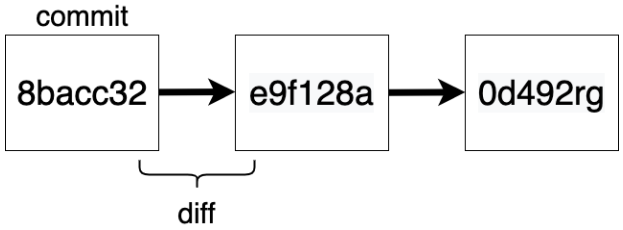

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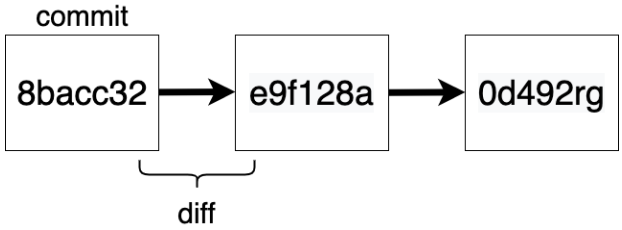

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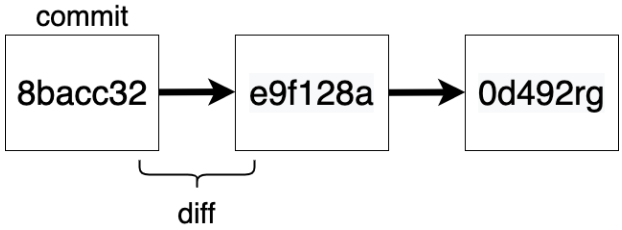

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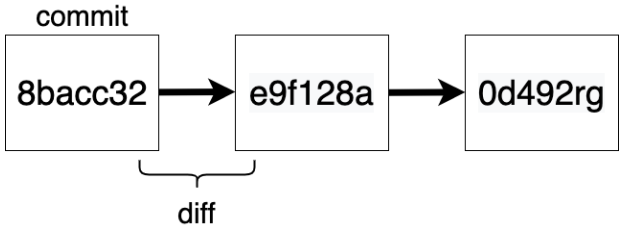

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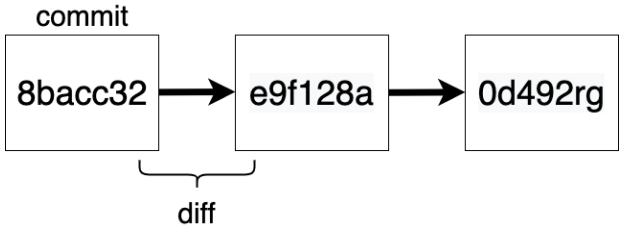

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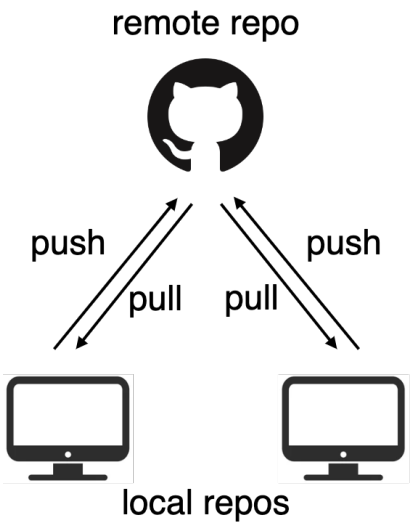

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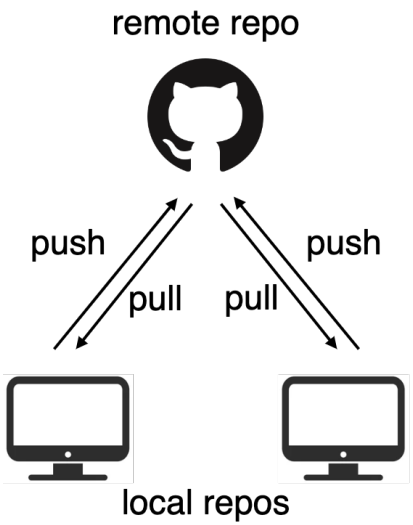

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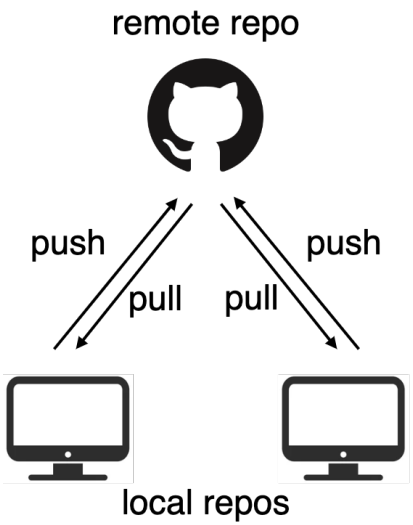

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- If you have any existing project that you want to track with Git, create a remote repo on Github, clone it to your computer (i.e., local repo), and move codes and folders into the local repo

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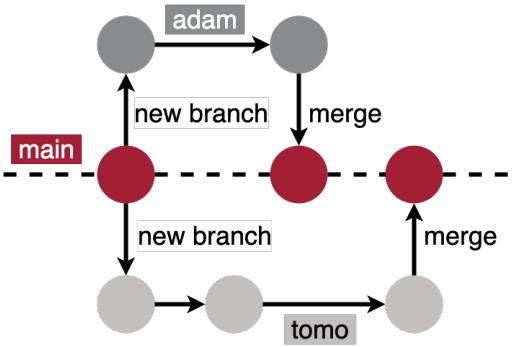

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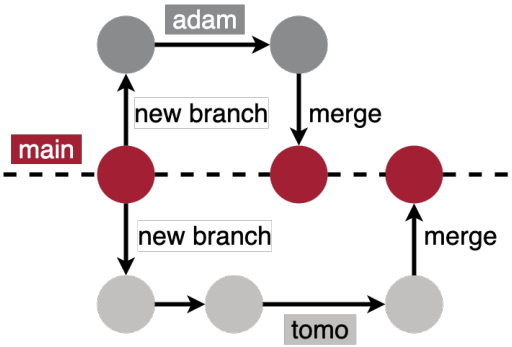

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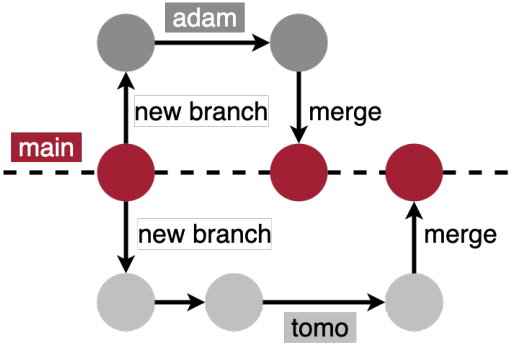

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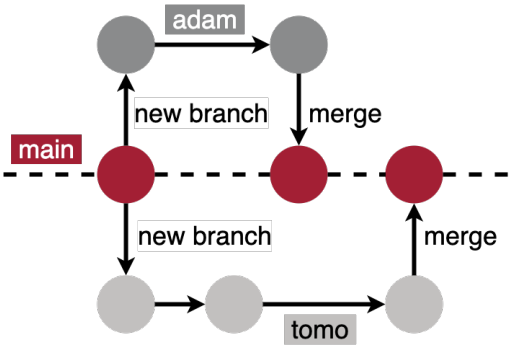

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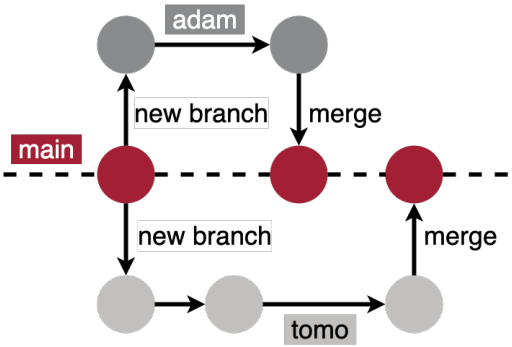

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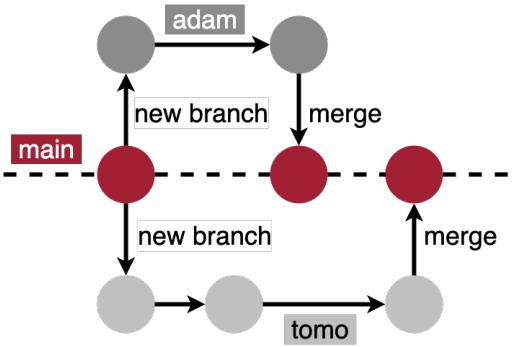

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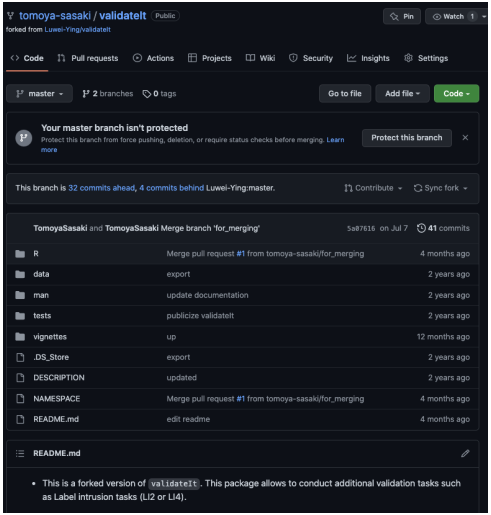

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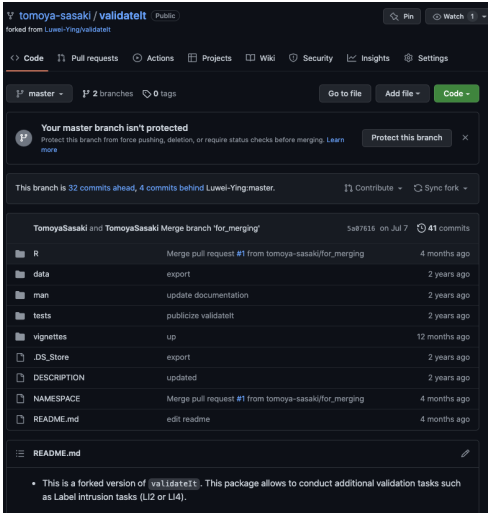

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Comparison and relationship to alternatives (Dropbox, Google Drive)

- Unlike Dropbox or Google Drive, Git/Github does not automatically track changes

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- In my setup, I put Git repos in Dropbox but sync them only with my main computer and the same Git repos in my other computers are located in non-Dropbox folders

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- Working with private repos

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- (Gradually) Learning how to use git in command lines

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- You can fix them easily by reverting

Useful resources

- Happy Git and GitHub for the useR: https://happygitwithr.com/index.html
- Git Guide: https://github.com/git-guides
- git-vs-dropbox: https://michaelstepner.com/blog/git-vs-dropbox/