

lecture02

February 12, 2023



1 Gentle Introduction to GitHub

[Ahmed Moustafa](#)

2 Quick Review

<https://www.menti.com/alnpj76xuxwu>



<https://www.mentimeter.com/app/presentation/alx5mivoqmqxen4s2jh158wwjovgfhrh>

"FINAL".doc



FINAL.doc!



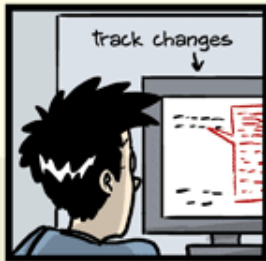
FINAL_rev.2.doc



FINAL_rev.6.COMMENTS.doc



FINAL_rev.8.comments5.
CORRECTIONS.doc



FINAL_rev.18.comments7.
corrections9.MORE.30.doc



FINAL_rev.22.comments49.
corrections.10.##\$%WHYDID
ICOMETOGRADSCHOOL?????.doc

JORGE CHAM © 2012

WWW.PHDCOMICS.COM

3 Before & After

```
<IPython.core.display.Image object>
```

```
<IPython.core.display.Image object>
```

Source: [Towards Data Science: Getting Started with Git and GitHub](#)

4 What is Version Control?

Version control is a system that records changes to a file or set of files over time so that you can recall specific versions later

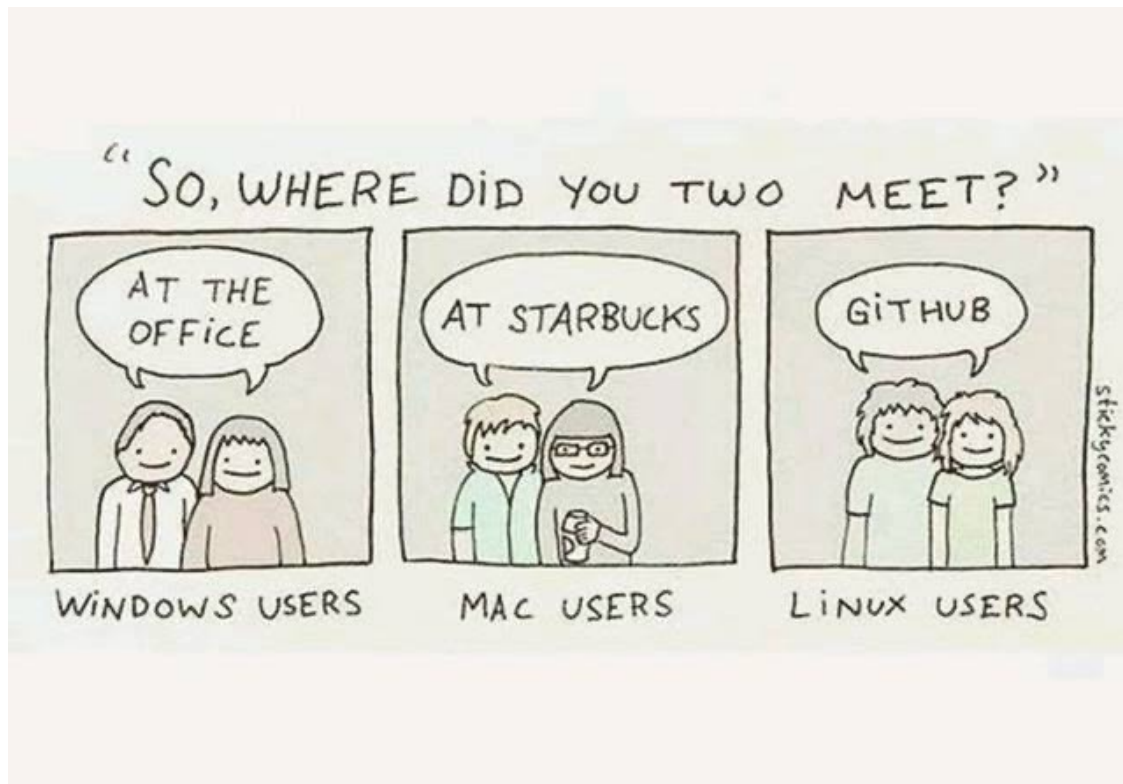
- **Tracks changes** made to files over time
- Enables **collaboration** and sharing of files
- Maintains a **history** of changes made to files
- Facilitates **revert** to a previous version of a file if necessary

5 Why is Version Control Important in Data Science?

- Manages the history and evolution of data science projects
- Facilitates collaboration and sharing among data scientists
- Helps maintain and organize different versions of code and data
- Enables tracking and **reproducibility** of data science projects

6 Git & GitHub

- **Git** is a **distributed** version control system that is used to manage and track changes made to files.
- **GitHub** is a web-based platform that provides hosting for Git repositories and facilitates collaboration among data scientists.



7 How to Obtain Git?

<https://git-scm.com/>



8 How Does Git Work?

<IPython.core.display.Image object>

Source: [NeSI's Git: Reference Sheet](#)

9 How Does Git Work? *local*

Command	Description
<code>clone</code>	Copies a remote repository into the current directory
<code>init</code>	Creates a new empty repo in the current directory
<code>add</code>	Adds files to the staging area
<code>status</code>	Lists changes in the working directory, and staged files
<code>commit</code>	Records everything in the staging area to the repository
<code>reset</code>	Removes all files from staging area (opposite of <code>add</code>)

10 How Does Git Work? *remote*

Command	Description
<code>fetch</code>	Gets status of origin

Command	Description
<code>pull</code>	Incorporates changes from origin into local repo
<code>push</code>	Incorporates changes from local repo into origin

11 Contributing to a Repository

- **Fork** a Repository: To contribute to a repository, you must first fork it to create a copy of the codebase on your own GitHub account
- **Make Changes**: Make the desired changes to the code and commit the changes to your local repository
- **Push** Changes: Push the changes to your forked repository on GitHub.
- Create a **Pull Request (PR)**: Create a pull request to request the changes be merged into the original repository.

12 Contributing to a Repository

<IPython.core.display.Image object>

Source: [edav.info: Chapter 6 GitHub/git Resources](https://edav.info/chapter-6-github/git-resources/)

13 GitHub Example

- Go to repository <https://github.com/ahmedmoustafa/hello-world>
- Fork the repo under your account
- Edit notebook [hello-world.ipynb](#), using for example, Colab or Codespace
- Add a cell, write a `print` statement to print your full name
- Commit and push your changes
- Submit a pull request (PR)



14 GitHub Exercise

- Go to repository <https://github.com/ahmedmoustafa/bug-in-the-code>
- Fork the repo under your account
- Edit notebook [bug-in-the-code.ipynb](#), using for example, Colab or Codespace
- There is a syntax error.
- Fix it.
- The **first** to submit a pull request with the **fix** will have a **bonus**



15 So,

In case of fire



1. `git commit`



2. `git push`



3. leave building