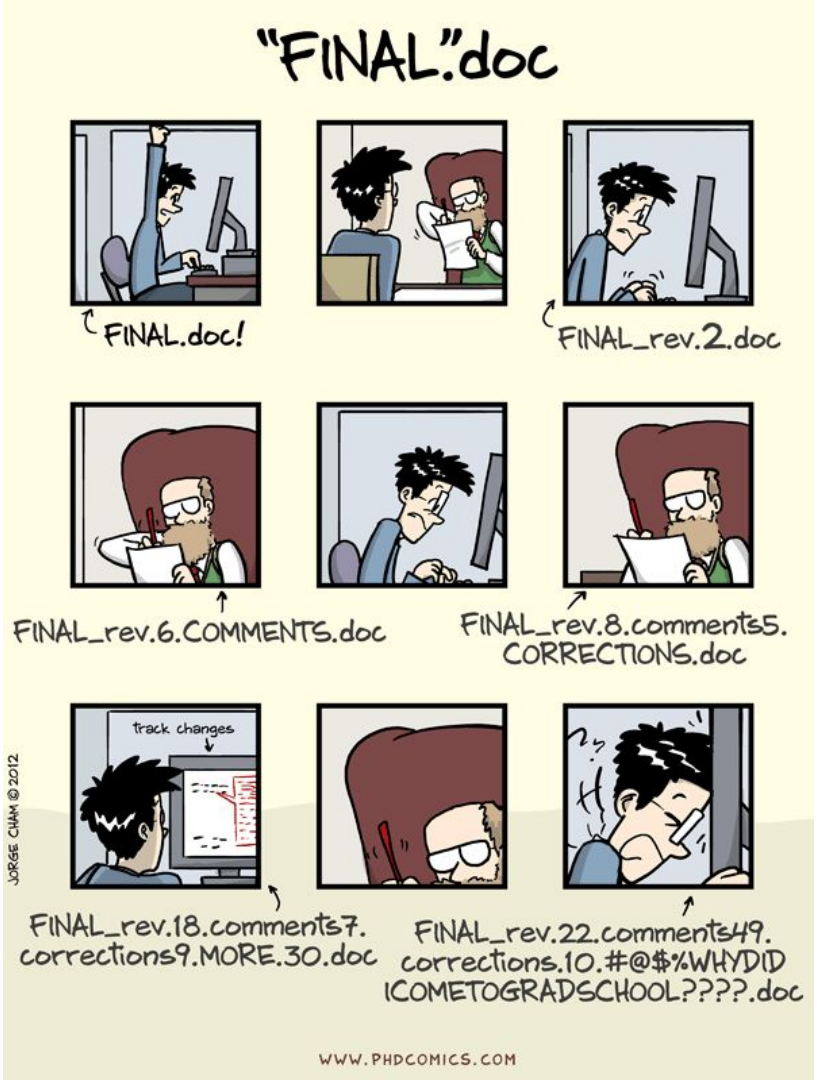
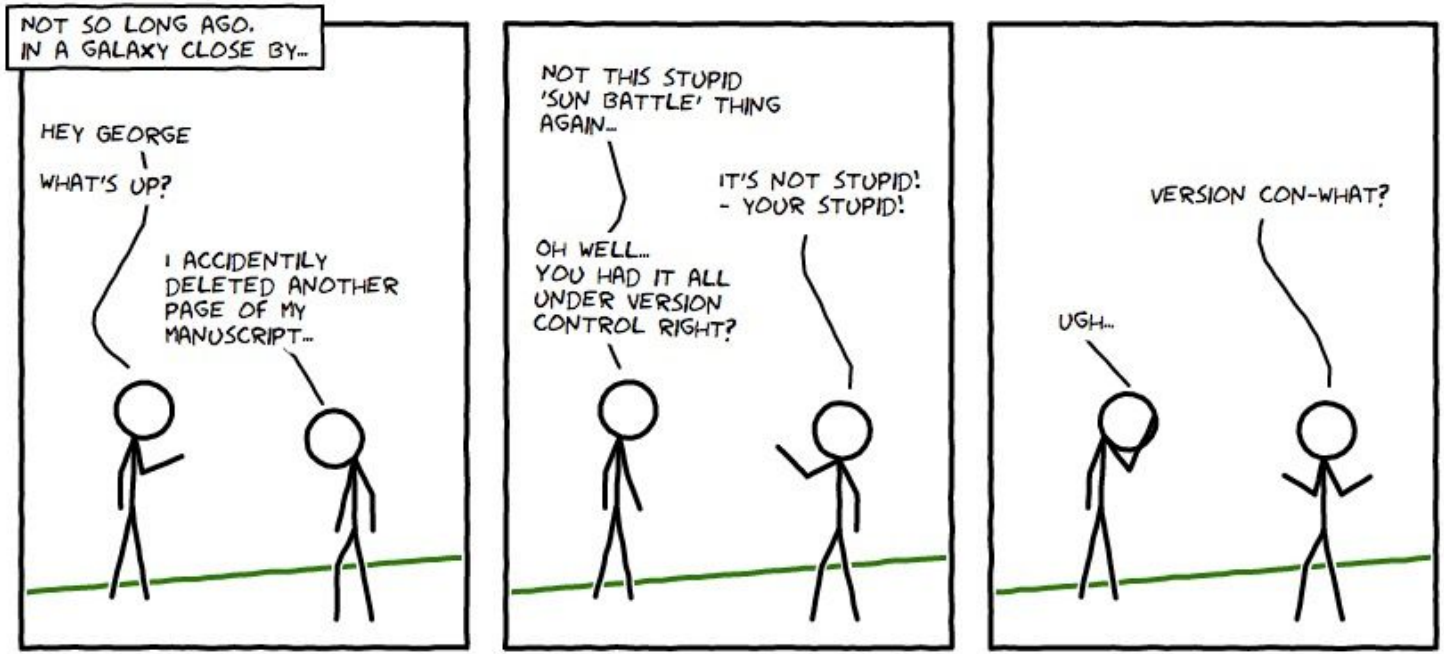
Version Control

InfPals 2018-2019

Does this situation seem familiar?



Or this?



http://smutch.github.io/VersionControlTutorial/_images/vc-xkcd.jpg

Or this?

https://www.vectorstock.com/royalty-free-vector/teamwork-people-avatars-with-laptops-vector-16938742

Version Control is here to save the day!

https://brightarethestars.files.wordpress.com/2009/07/1happy_computer_man_sm.gif?w=292&h=338

Version Control Systems (VCS)

- Store project files in **repositories**
- Keep track of file changes, and save multiple versions
- Allow to roll back to previous versions if needed
- Help to merge changes from multiple people
- Some common VCS are Subversion (aka SVN), Mercurial (hg) and GIT

Our favourite VCS - **Git**

- The most widely used modern version control system in the world
  - Tons of helpful documentation, tutorials and Q&A pages online!
- Open-source - started by Linus Torvalds
- Many IDEs are integrated with Git (e.g. CLion, IntelliJ, Visual Code...)
- There are many tools to help with using Git (e.g. GitKraken or SourceTree)

What is GitHub?

- **Github** is an online platform, that hosts code repositories. To a developer such a platform is like what **Twitter** is to a social media marketer or **Instagram** to a photographer.
- It comprises one of the largest coding communities around the world, so it’s wide exposure for your project.
- It integrates well with Git, so you can work on your projects whether on your own or with others from anywhere.

Advantages of using GitHub

- **GitHub Education pack**

  Students are eligible to get unlimited private repositories for free. Other useful development software and free AWS cloud credit are included too!

- **GitHub has some of the best documentation around**

  Well written guides explain most topics step-by-step.

- **Socialise with people and Build reputation**

  Yes, it’s a social platform too! You can follow some of the best developers, explore millions of repositories and contribute to them.

- Remote Repository
  - Stores all project files
  - Stores all versions and history
  - Has a unique URL
  - E.g. https://github.com/HypED/repo
- Local Repositories
  - Each developer gets their own copy
  - Complete with a full history of every file
  - Use command: `git clone`
- Working Directory
  - A snapshot of the project
  - Placed on disk for you to use or modify

What You Will Be Doing In This Tutorial

Activity One

Focuses mainly on git features like

- *creating your own repository*
- *git clone*
- *git status*
- *git commit*
- *git add*
- *git push*

Activity Two

Takes you to the next level and covers

- *branching*
- *merging*
- *rebasing*

After This Tutorial

- Learning version control doesn't end here, it's an ongoing process and you would most likely (the probability is very close to 1) keep coming across different cool features of Git.

- The fun only starts here, you are still to realise how magical Git is!

More Resources

There are many useful tutorials on Git online, some of the most popular are

- https://goo.gl/2EwtYv (Git TOWER)
- https://goo.gl/2W2CkB (ATLASSIAN)
- https://goo.gl/GtPYJK (codeacademy)

HAPPY CODING ! :)

Credits to HypED and Braňo Pilňan for their guidance

Activity time!

https://www.itsalwaysautumn.com/diy-hallway-laser-maze-indoor-fun-for-kids.html

For this workshop, you will need a GitHub account.

Note: If you already have one, you may skip this step.

Find the material for this workshop at:
https://github.com/gwenty/INFPALS-version-control