5 minute introduction to Git

https://xkcd.com/1597/

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What is it?

- Version control
  - Keeps a history of changes to a file
  - Get back old verisons
  - Compare differences
- Collaborative Development
  - Share files with other people
  - Merge work together
- Synchronise work on different computers

Install git

- Run the “git” command from the command line.
- Should be installed on Linux and Mac
- On windows use “Git Bash” from https://gitforwindows.org/
- There’s lots of GUIs for Git too, we’ll just use the command line today.
  - If you understand how to use the command line the GUIs should be easy.

The Git workflow

- Initialise a repository
- Add files to the repository
- Commit changes to those files
- Push/pull changes to/from a remote repository

Git init

- Creates a new git repository in the current directory.
- Create an empty directory for your git repository:
- `mkdir git-workshop`
- Change to the new directory
- `cd git-workshop`
- Initialise a git repository
- `git init`

Git add

- Marks a file as being ready to be “comitted” to git’s history
- Create a file first by using your favourite text editor.
- Run the command:
- `git add <filename>`

Git commit

- Saves a change into git’s history
- Asks for a comment describing what you changed
- Usage:
- `git commit <filename>`
- Or
- `git commit -a`
- Or
- `git add <filename>`
- `git commit`
- **Commits are only saved locally**

Commit messages

- When you run git commit it will open your default text editor.
- You should type a comment about what you've changed on the first line of this.
- The default text editor might be vi.
  - Press 'i' to enter insert mode to type text
  - Type your message
  - Press escape to get to command mode
  - Type ':wq' to save the commit message and quit vi.

Remote Repositories

- Everything so far is only saved locally
- Remote repositories:
  - Copy of the repository on another computer
  - Access via SSH (key file) or HTTPS (password)
- “Clone” a repository to take an initial copy of it
  - `git clone https://<repository address>`
  - Or
  - `git clone username@hostname:<path>` (ssh)

Git push/pull

- Commits can be “pushed” to a remote git repository
- You can also “pull” other people’s changes from a remote repository
- If local and remote changes exist you have to pull first.
- Must have a remote configured through the git remote command.

Try it for yourselves!

- https://abersailbot.co.uk/intro/git
- Signup to github.com
- Tell us your username on Discord
  - We will add you to the Abersailbot git organisation