Git

October 2019

Git vs. Github

- Git
  - version control software on your computer;
  - stuff you do on your command line.

- Github
  - website that hosts git repositories and adds a few more features;
  - stuff you do on github.com.

git pull origin <branch>

git push origin <branch>

How to create a Git repository

- There are two ways:
  - by using `git init` inside a folder on your computer;
  - by cloning (copying) a repository from github using `git clone`.

- Golden rule:
  - ALWAYS make sure you are not inside a git repository when you create a new one.
    - you can check by typing `git status` on your command line, if you get an error it means you are not inside a git repository and you can create a new one.

The commit

- To commit our changes is to save our changes in the git repository history.
- A commit represents a unit of work, like writing a paragraph in our Google Doc.

How to commit/save your changes

- Two steps:
  - `git add`
    - where you say which changes you want to save;
  - `git commit`
    - where you actually save your changes and give them a label.

But, what is really a commit?

- A commit contains:
  - a snapshot of the entire repository;
  - who made the changes;
  - when the changes were made;
  - a (meaningful!) label describing the commit;
  - a pointer to the previous commit.
- All this is converted into a unique hash key, e.g. ee2371b.
- It’s like when you are playing a computer game and you save your current status.

Your computer

Github

Workspace

Your filesystem, your folders, files, etc.

Where changes are made.

Staging/index

Snapshot of the changes you want to commit (in the current branch).

Local

Your local repository.

Lives in a .git folder.

Contains the entire history of the repository.

Remote

Central server where git repositories are stored.

Your computer

Github

Workspace | Staging/index | Local | Remote

Folder
my_first_repo,
contains:

potatoes_file.txt
carrots_file.txt
cabbage_file.txt

Your computer

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Workspace

Staging/index

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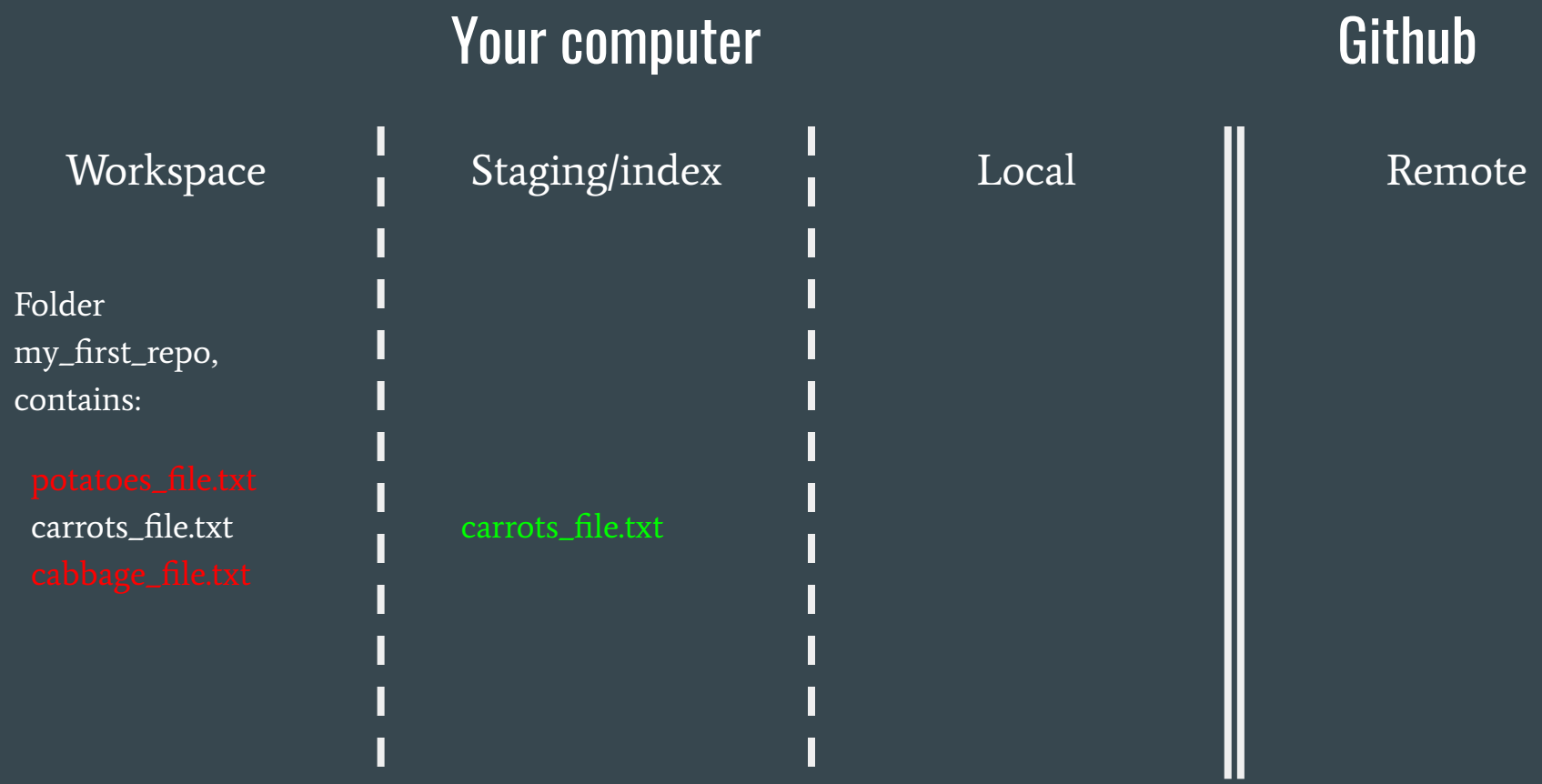
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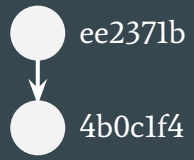

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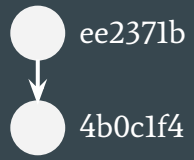

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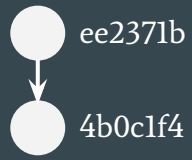
Folder my_first_repo, contains: potatoes_file.txt carrots_file.txt cabbage_file.txt	cabbage_file.txt		

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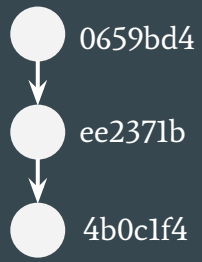

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