git and GitHub - Collaboration and workflow

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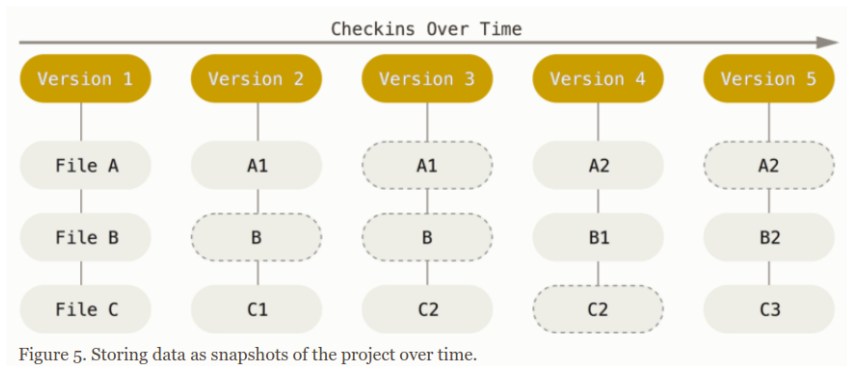
Goal

Understanding how to collaborate with git and GitHub

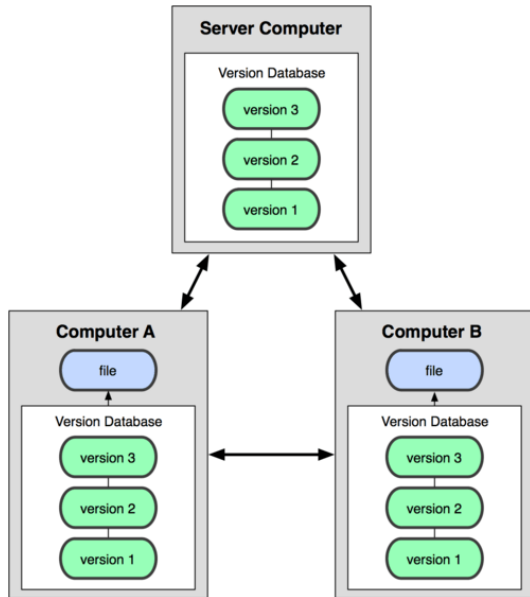# (Re)sources

- https://git-scm.com/book/en/v2/
- https://www.atlassian.com/git/tutorials/atlassian-git-cheatsheet
- https://desktop.github.com

Version control the git way

Figure 5. Storing data as snapshots of the project over time.

Version control the git way

It is distributed!

Branch, commit, merge and rebase

- To create a branch and checking it out immediately: `git checkout -b newFeature` Next commit will be on the newFeature branch

- To merge commits done on newFeature into the master branch: `git checkout master; git merge newFeature` This creates a new commit containing the merge

- To move the commits done on newFeature onto the master branch `git rebase master` This is done while on newFeature

A useful model for collaboration

https://nvie.com/files/Git-branching-model.pdf

From https://nvie.com/posts/a-successful-git-branching-model/

Principles

- Keep the `master` branch production-ready at all times

- Do all development in branches

- Use pull requests to handle suggested changes to the `master` branch

- Two models: Fork and Pull and Shared Repository

  Fork and pull   Contributors fork the repository, make changes and make pull requests

  Shared repository   Contributors have push rights to original repository

Fork clone and add upstream

After forking and cloning:

```
git remote add upstream https://github.com/kjartan-at-tec/git-seminar.git
```

Branch and add changes

In your cloned fork, create a new branch

git checkout -b my-contributions

Modify README.md, add to staging area, commit.

Submit a pull request

1. Make your local master branch up-to-date with origin and upstream
   1.1 Checkout master `git checkout master`
   1.2 Fetch changes from upstream repository `git pull`
   1.3 Checkout development branch `git checkout my-contributions`
   1.4 Merge master branch `git merge master`
2. Push branch to origin `git push origin my-contributions`
3. On GitHub, create a pull request.