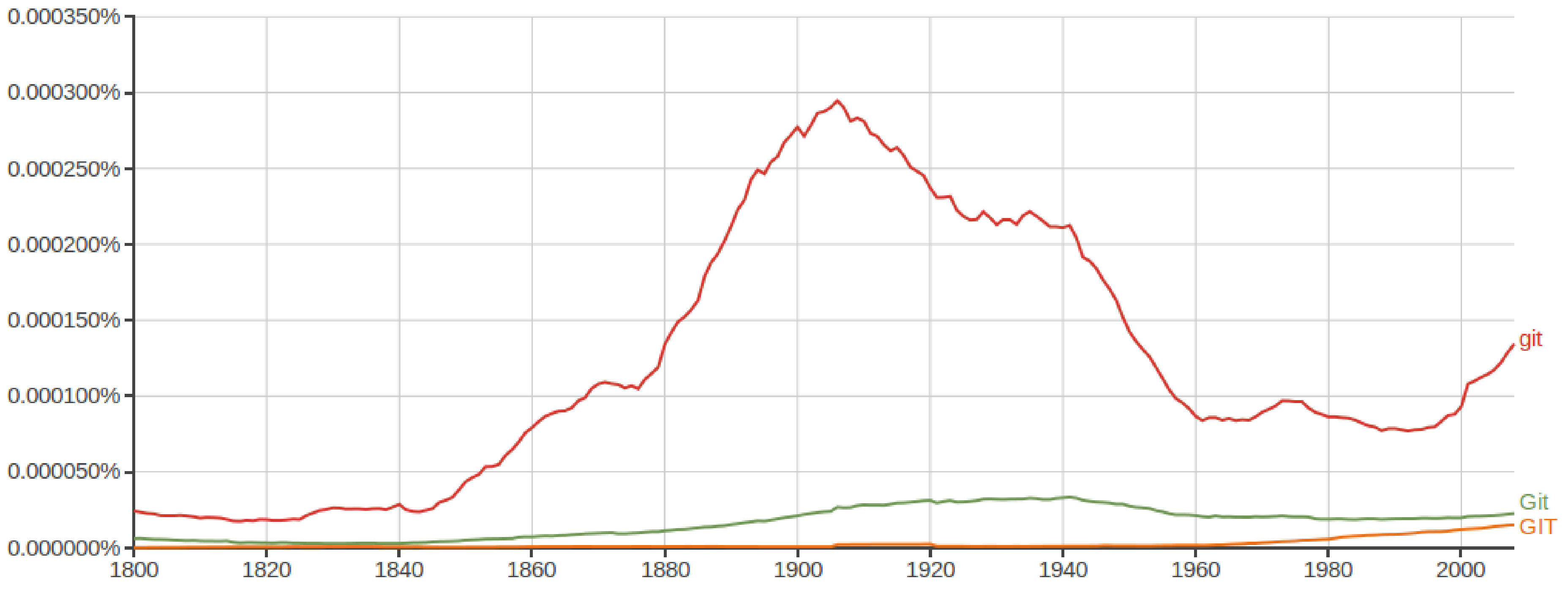
git

An overview

Git: Definition

noun British *informal*
noun: **git**; plural noun: **gits**

an unpleasant or contemptible person. *Google*



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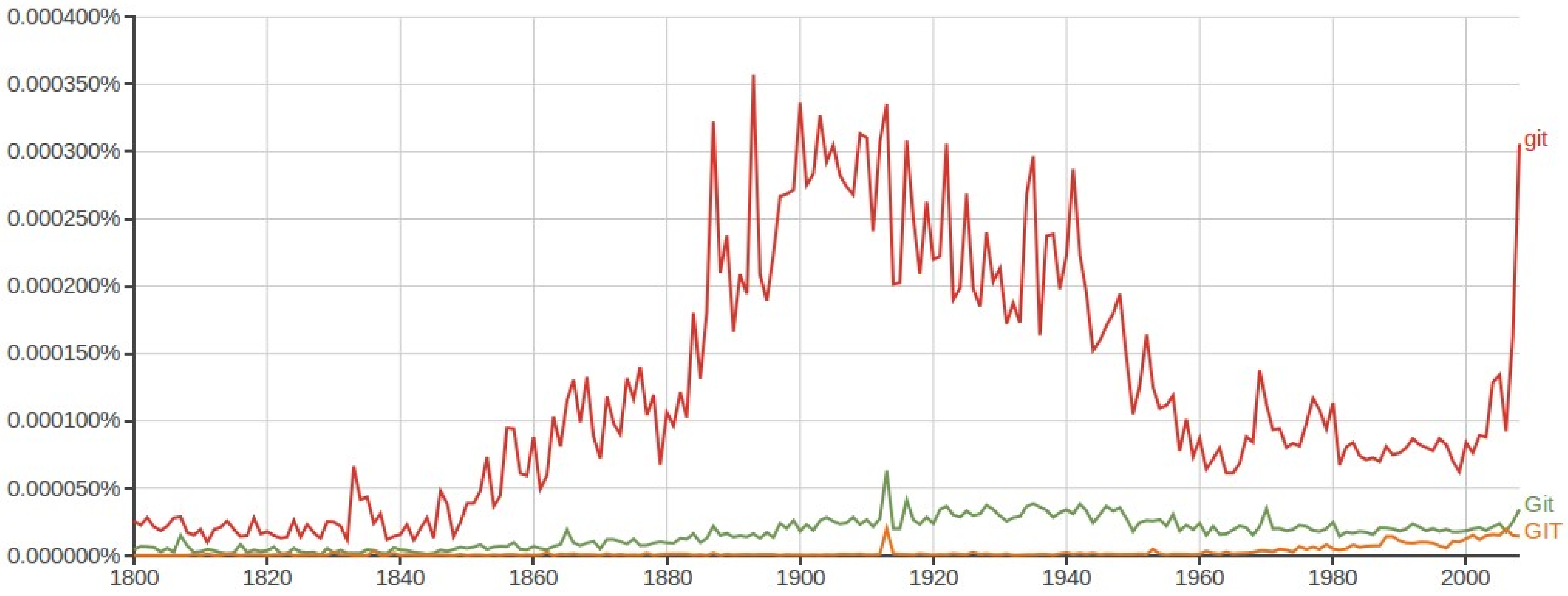

Git: Definition

Git is a free and open source distributed version control system designed to handle everything from small to very large projects with speed and efficiency.

Git is easy to learn and has a tiny footprint with lightning fast performance. It outclasses SCM tools like Subversion, CVS, Perforce, and ClearCase with features like cheap local branching, convenient staging areas, and multiple workflows.

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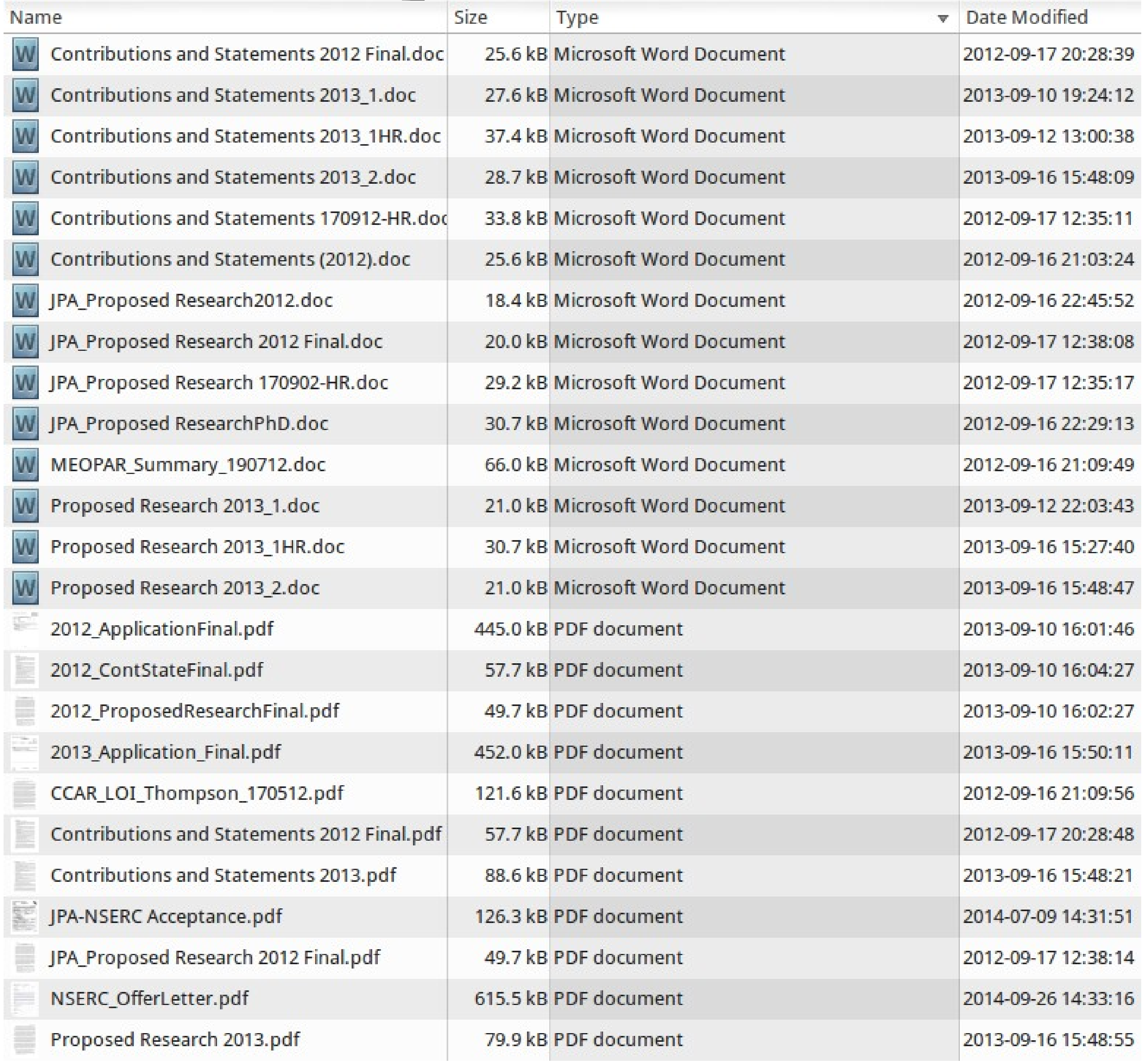
Show-off git!

Git: What's it good for?

- **Keeping track of evolving text based documents.**



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Contributions and Statements 2013_1HR.doc	37.4 kB	Microsoft Word Document	2013-09-12 13:00:38
Contributions and Statements 2013_2.doc	28.7 kB	Microsoft Word Document	2013-09-16 15:48:09
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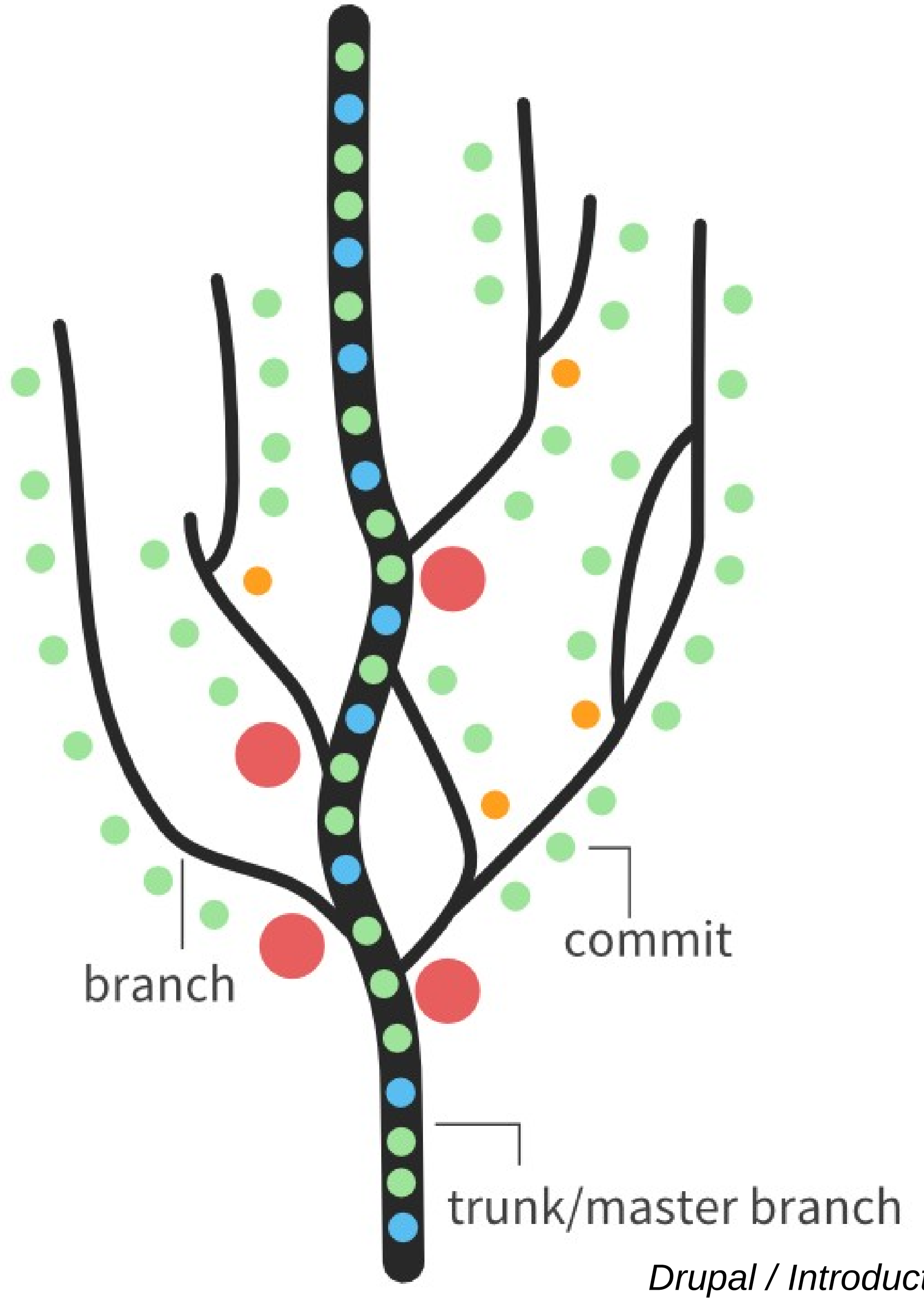
Git: What's it good for?

- Keeping track of evolving text based documents.

- **Working on many features of one project at the same time.**



Git: What's it good for?

- Keeping track of evolving text based documents.
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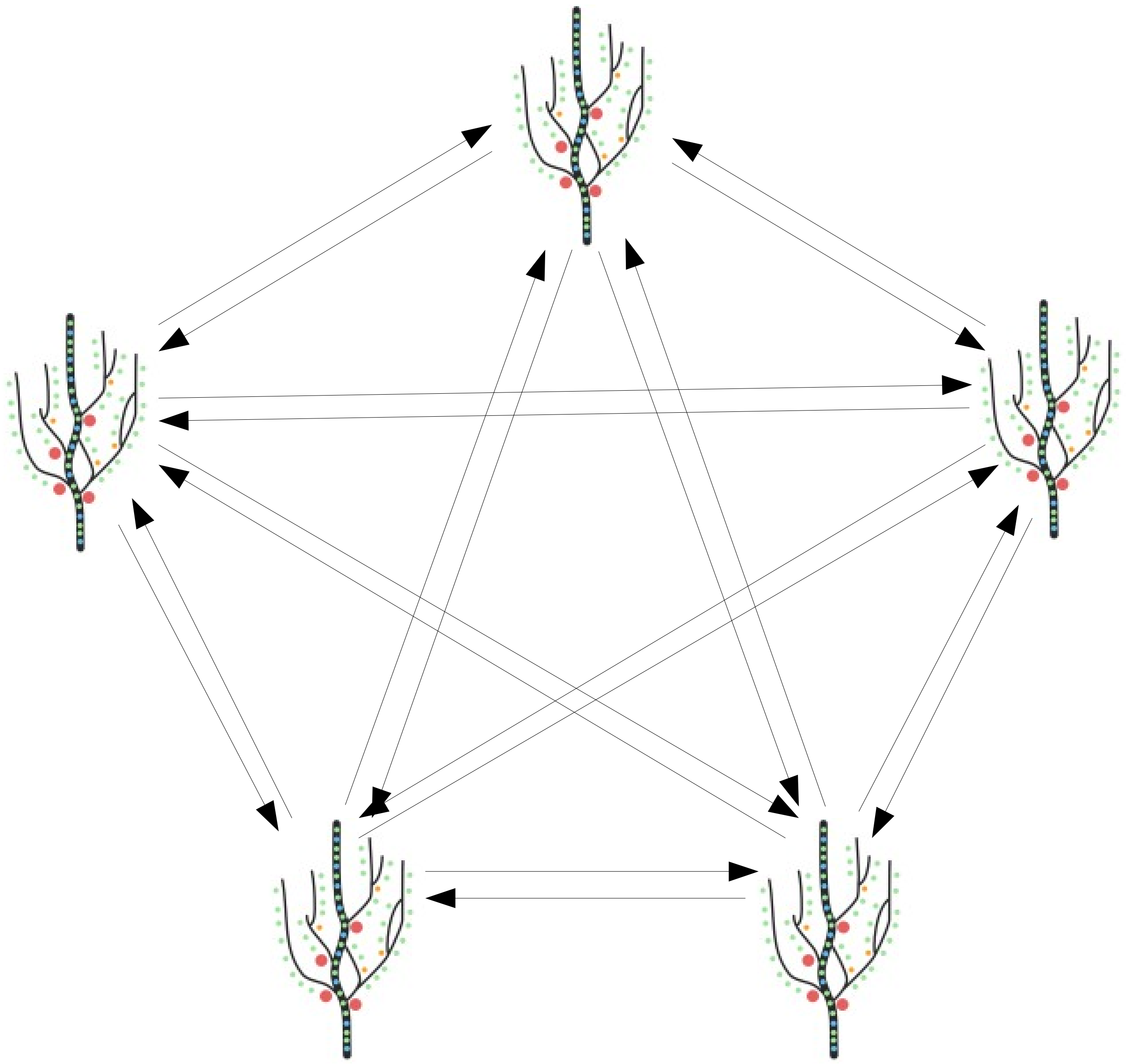
- **Working in multiple locations or with multiple people.**



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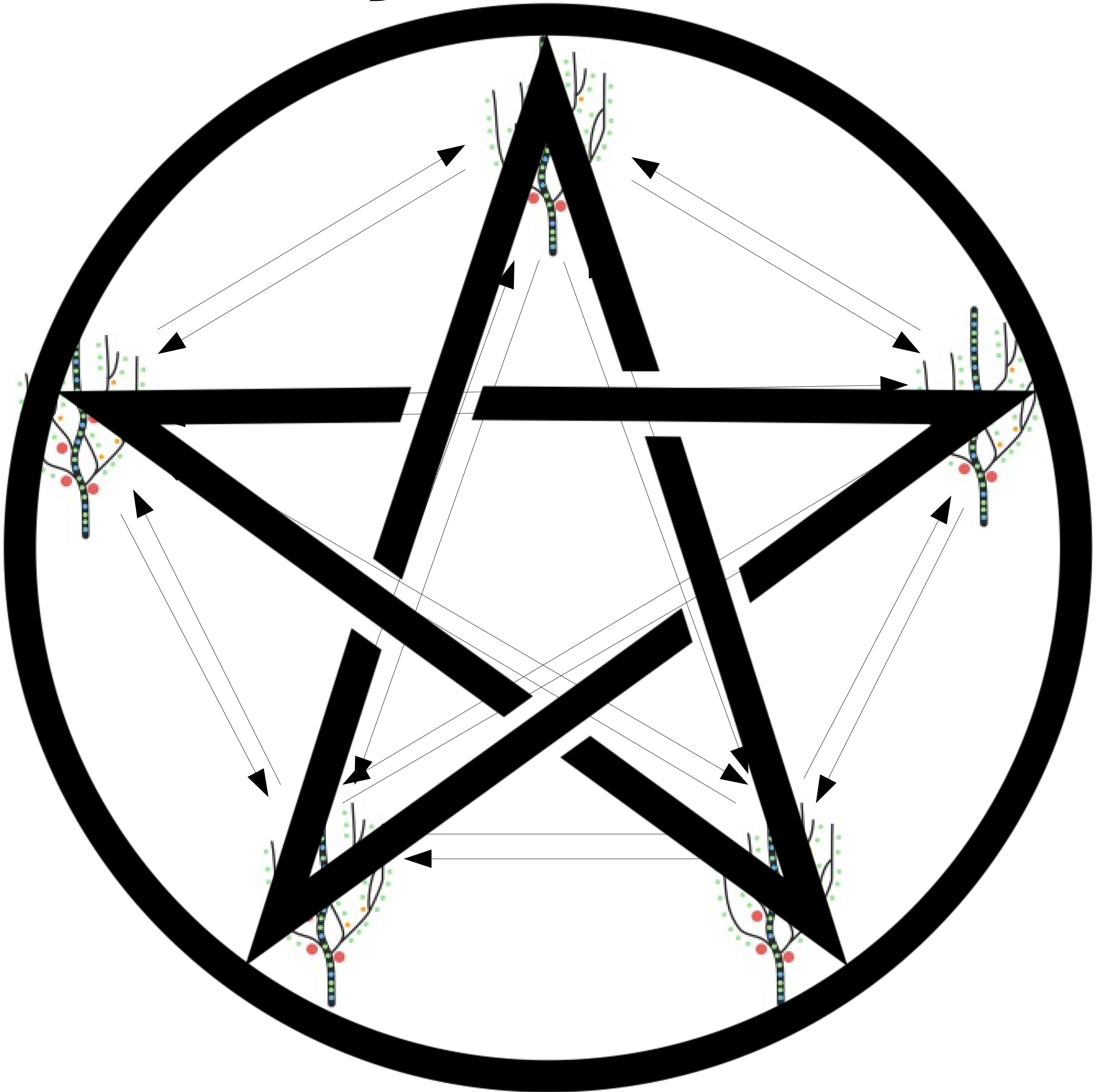

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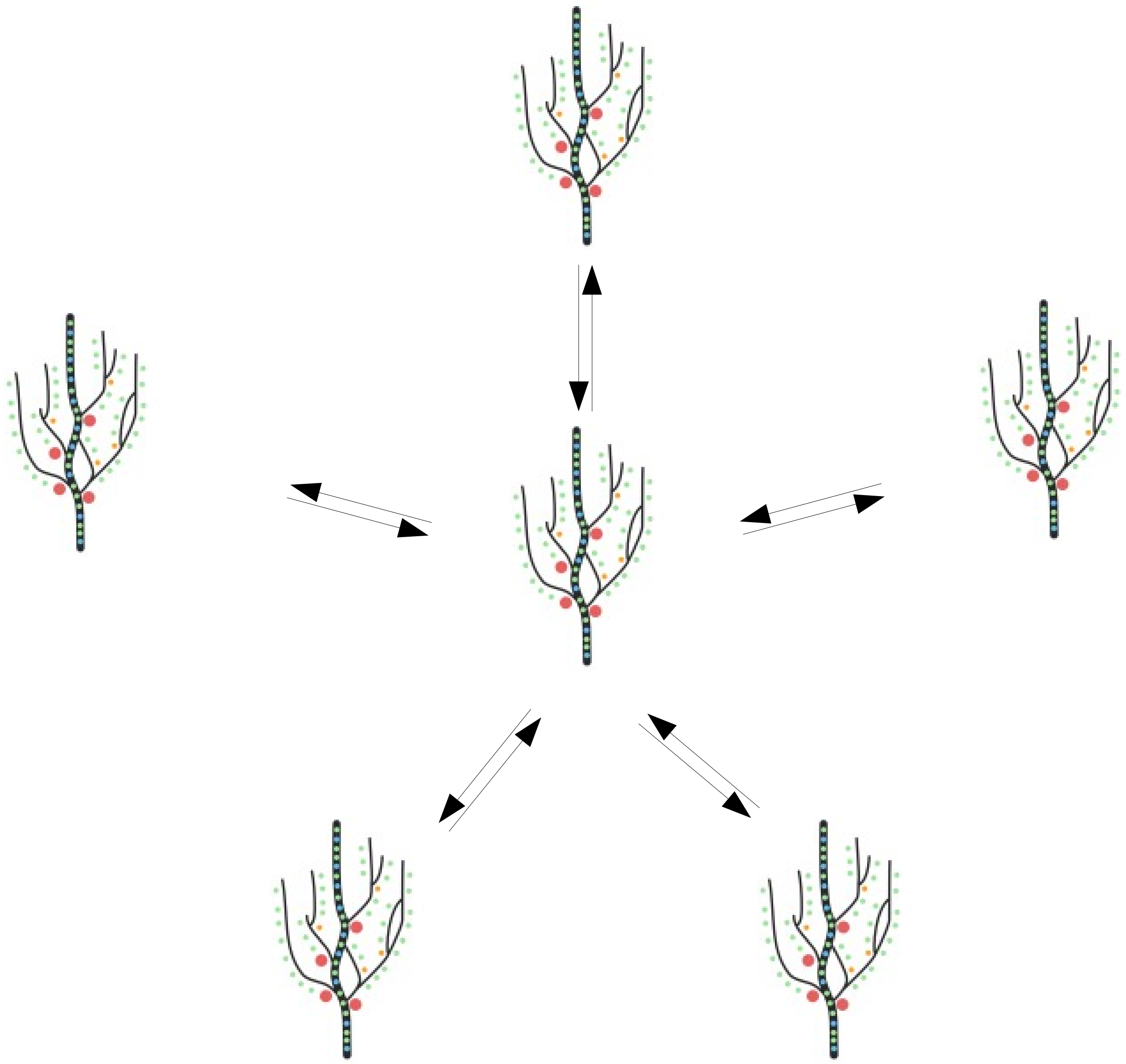

Git: How to get started?

1) Pick a project contained in one directory
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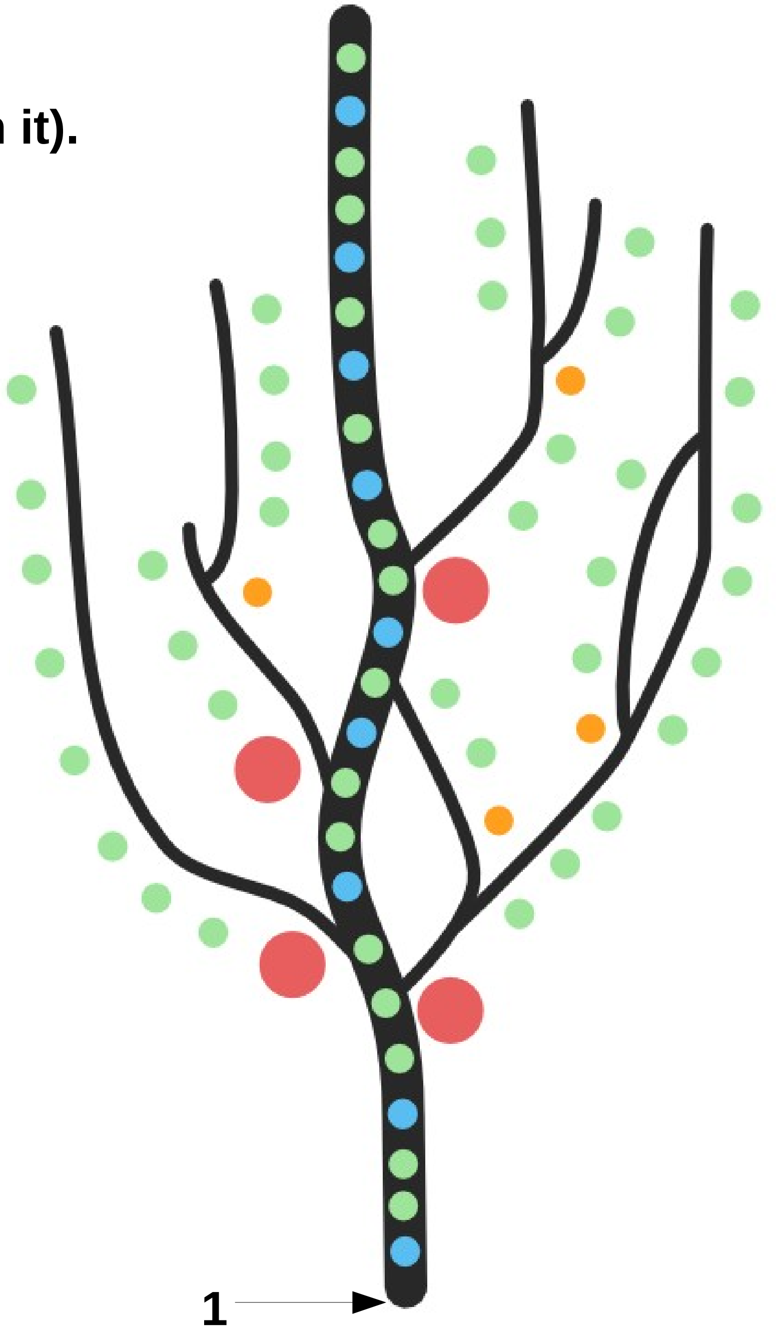

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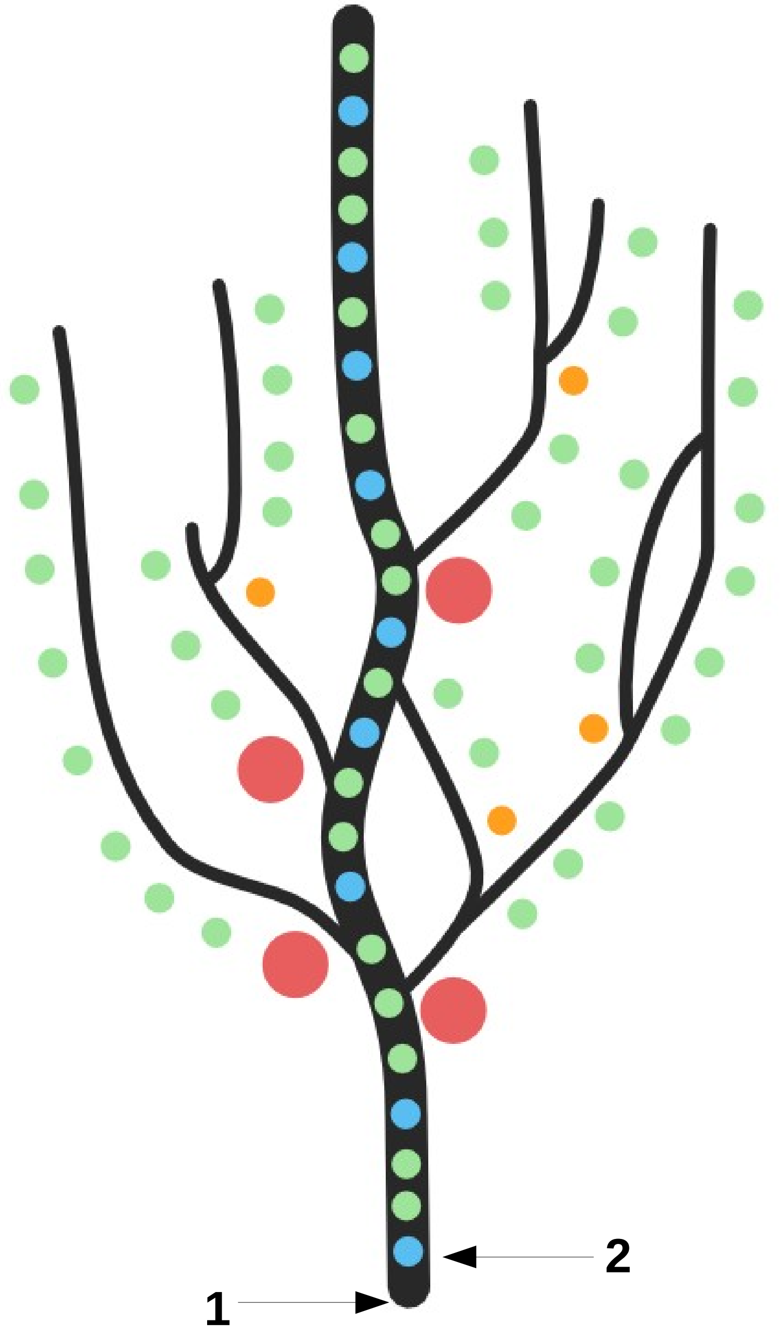
2) Commit the oldest files without any date/time/version indicators to initialize the history in git.



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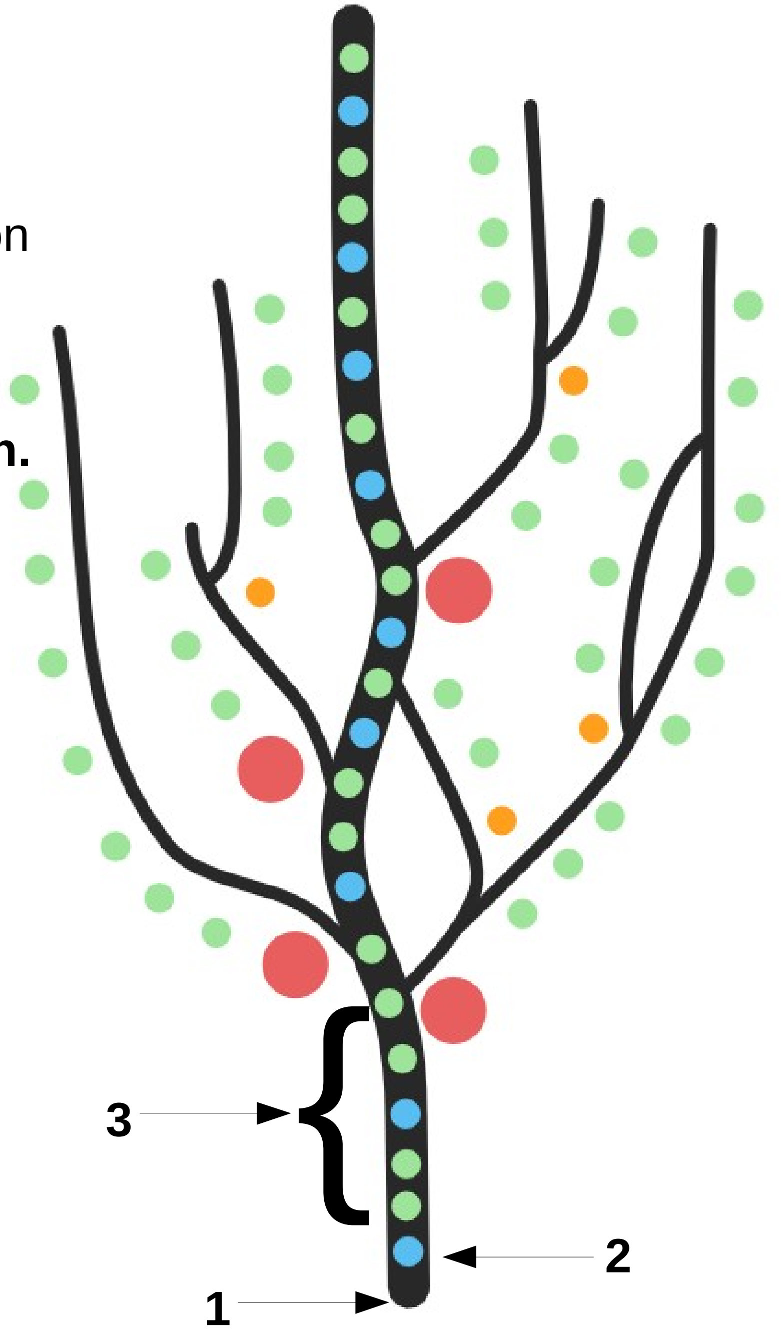
3) **Overwrite the files with the more recent ones, in chronological order, and commit each version.**



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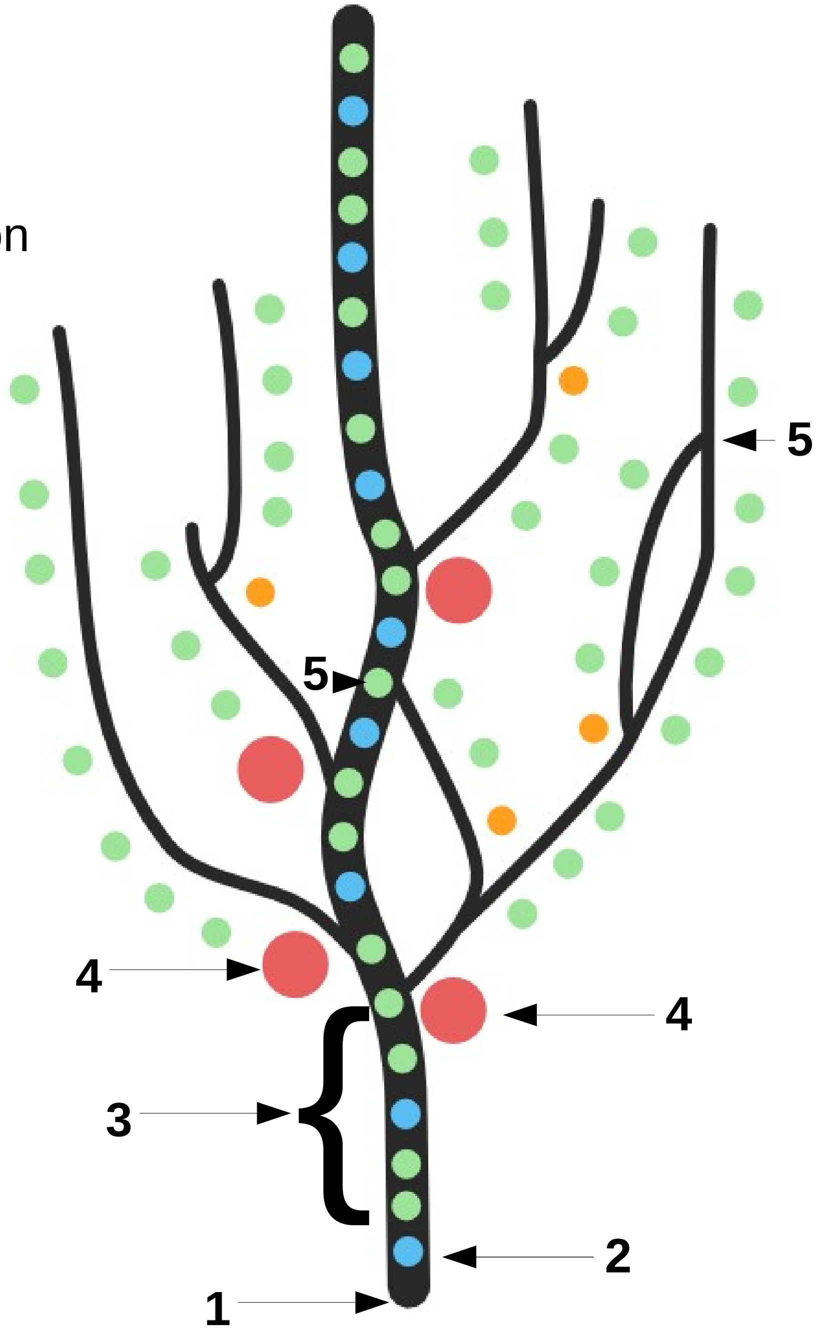
   in chronological order, and commit each version.

4) Start new branches to work on new features.

**5) Merge back branches when the features are
   completed, to update the main/master branch.**



Git: A specific example

1) Start working on a new paper/thesis/thesis proposal

2) Commit the files to be tracked:
   - tex file of the proper document
   - scripts specific to figures for the document

3) Commit new "milestones" as progress is made towards the first full draft.

4) Start new branches to work with co-authors revisions.

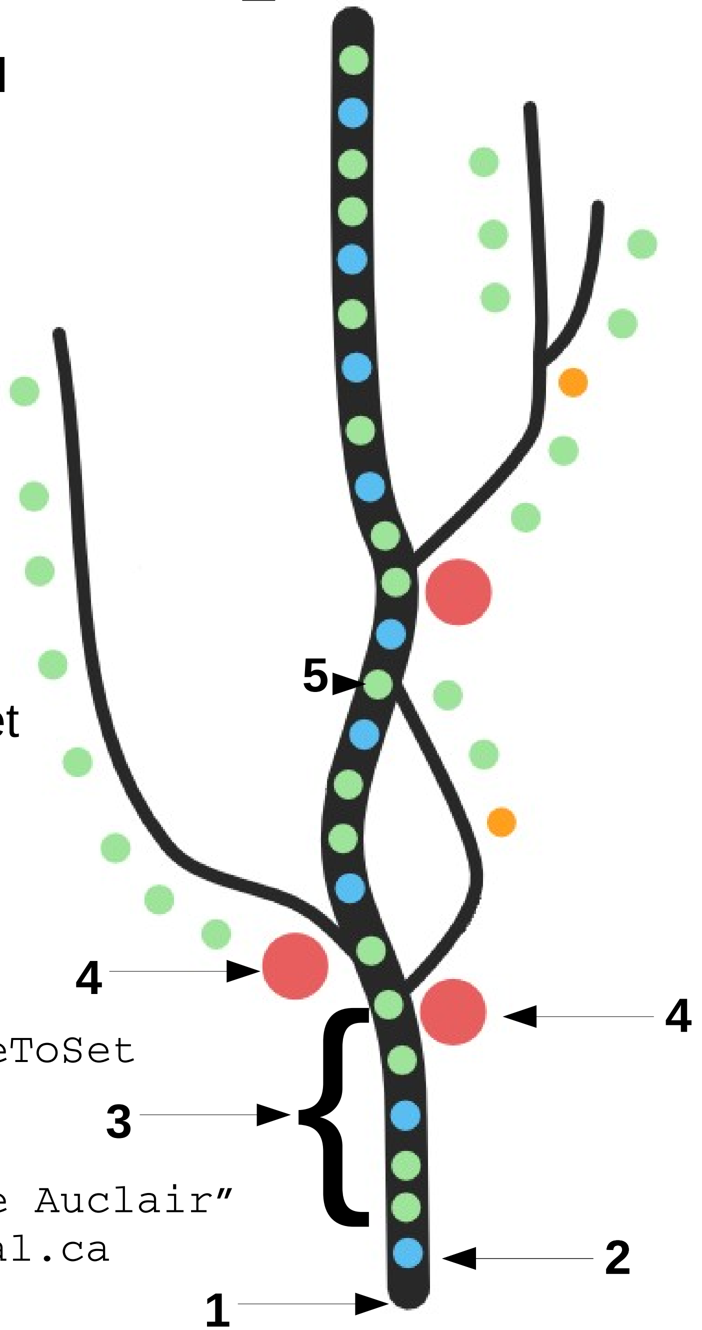
5) Merge comments back into the master branch to get the new version.

1*) If this is your first ever git repository, you should also configure git parameters:

```
git config --global PropertyToChange ValueToSet
```

ex.:

```
git config --global user.name "Jean-Pierre Auclair"
git config --global user.email jn402157@dal.ca
```



Git: The actual commands

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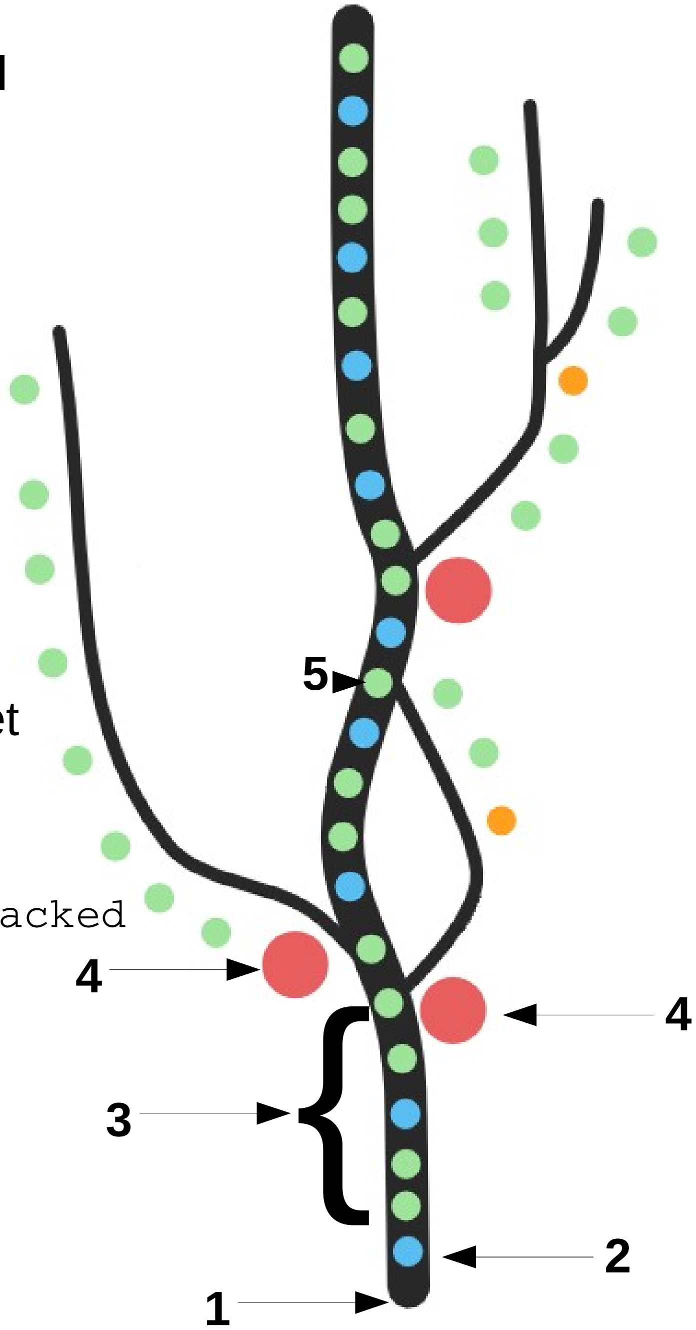
```
1) git init
2) git add FirstFileToBeTracked ScndFileToBeTracked
2) git commit -m “First commit of ThisProject”
3) git add FileThatHasChanged NewFileToTrack
3) git commit -m “Changed XYZ”
4) git branch NewBranch
4) git checkout NewBranch
5) git checkout master
5) git merge NewBranch
```



Git: The actual commands +

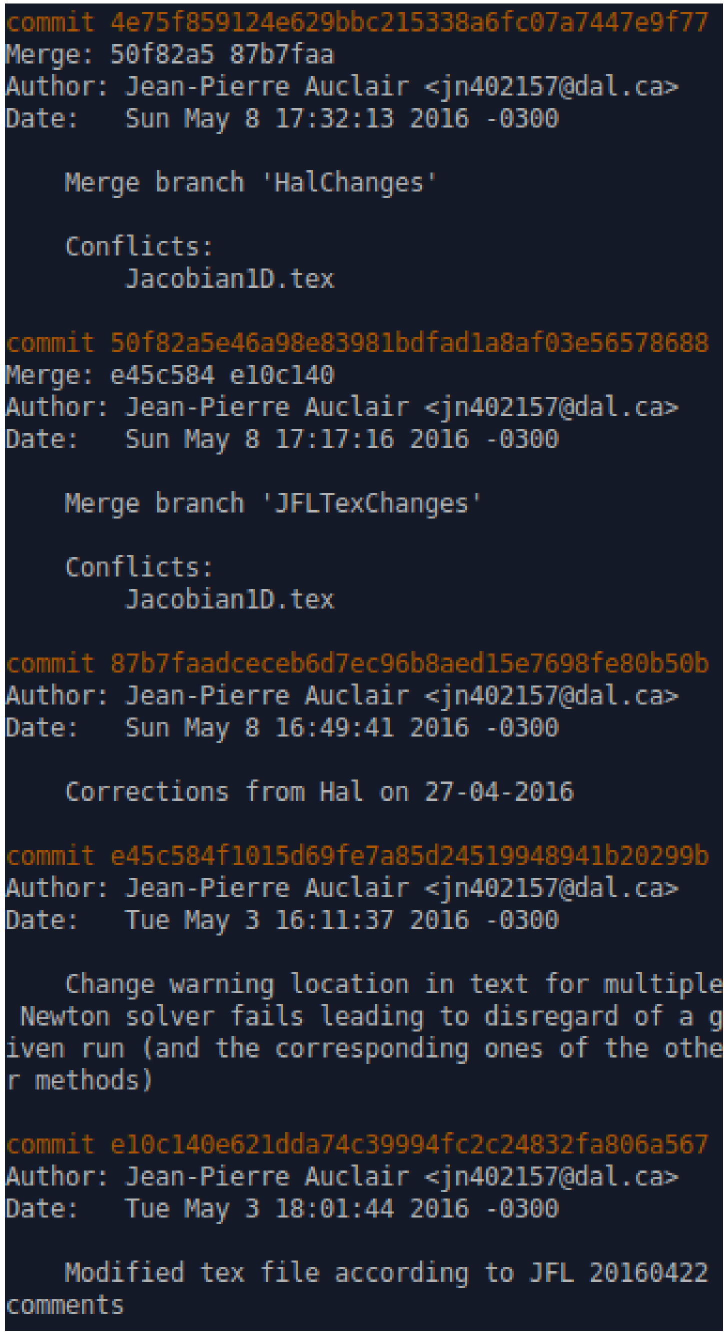
1) Looking where you are:
```
git status
```

2) Looking back in history:
```
git log
```

3) Comparing commits:
```
git diff BaseCommit NewCommit
```

4) Fixing a commit:
```
git commit --amend
```

5) Tagging a commit:
```
git tag TagToBeApplied
git tag -a TagToBeApplied -m TagMessage
```



```
commit 4e75f859124e629bbc215338a6fc07a7447e9f77
Merge: 50f82a5 87b7faa
Author: Jean-Pierre Auclair <jn402157@dal.ca>
Date:   Sun May 8 17:32:13 2016 -0300

    Merge branch 'HalChanges'

    Conflicts:
        Jacobian1D.tex

commit 50f82a5e46a98e83981bdfad1a8af03e56578688
Merge: e45c584 e10c140
Author: Jean-Pierre Auclair <jn402157@dal.ca>
Date:   Sun May 8 17:17:16 2016 -0300

    Merge branch 'JFLTexChanges'

    Conflicts:
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commit 87b7faadceceb6d7ec96b8aed15e7698fe80b50b
Author: Jean-Pierre Auclair <jn402157@dal.ca>
Date:   Sun May 8 16:49:41 2016 -0300

    Corrections from Hal on 27-04-2016

commit e45c584f1015d69fe7a85d24519948941b20299b
Author: Jean-Pierre Auclair <jn402157@dal.ca>
Date:   Tue May 3 16:11:37 2016 -0300

    Change warning location in text for multiple
 Newton solver fails leading to disregard of a g
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commit e10c140e621dda74c39994fc2c24832fa806a567
Author: Jean-Pierre Auclair <jn402157@dal.ca>
Date:   Tue May 3 18:01:44 2016 -0300

    Modified tex file according to JFL 20160422
comments
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Git: The actual commands ++

1) Looking where you are:
```
git status
```

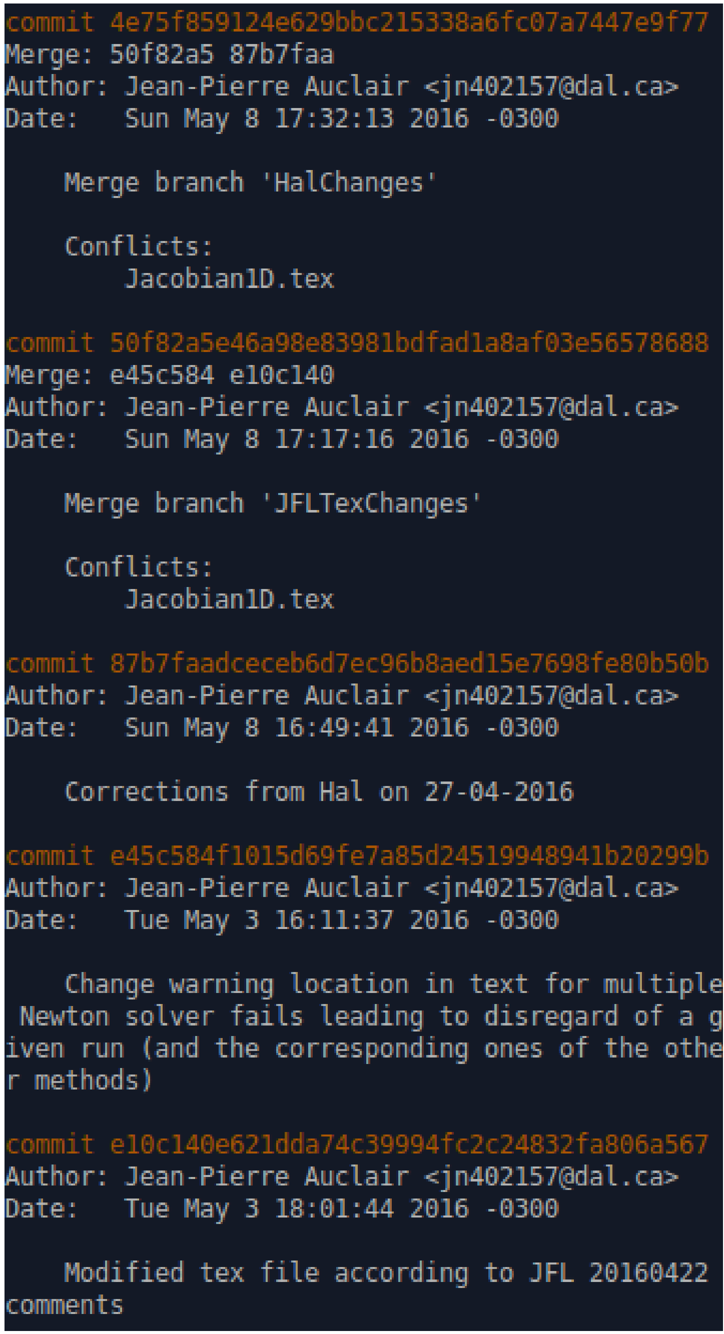
2) Looking back in history:
```
git log
```

3) Going back in time:
```
git checkout OldCommit
```

4) Starting an alternate history:
```
git checkout -b NewBranchName
```

5) Coming back to the present:
```
git checkout master
```

6) Deleting history:
```
git reset --hard CommitToRevertTo
```



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2) Online git cheatsheets
3) Asking Google
4) My (VERY WIP) wiki: http://www.phys.ocean.dal.ca/~jpaucl/index.php/Main/Git
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6) **Me right now!**

Questions?

git?!?