Introduction to Version Control with `Git`

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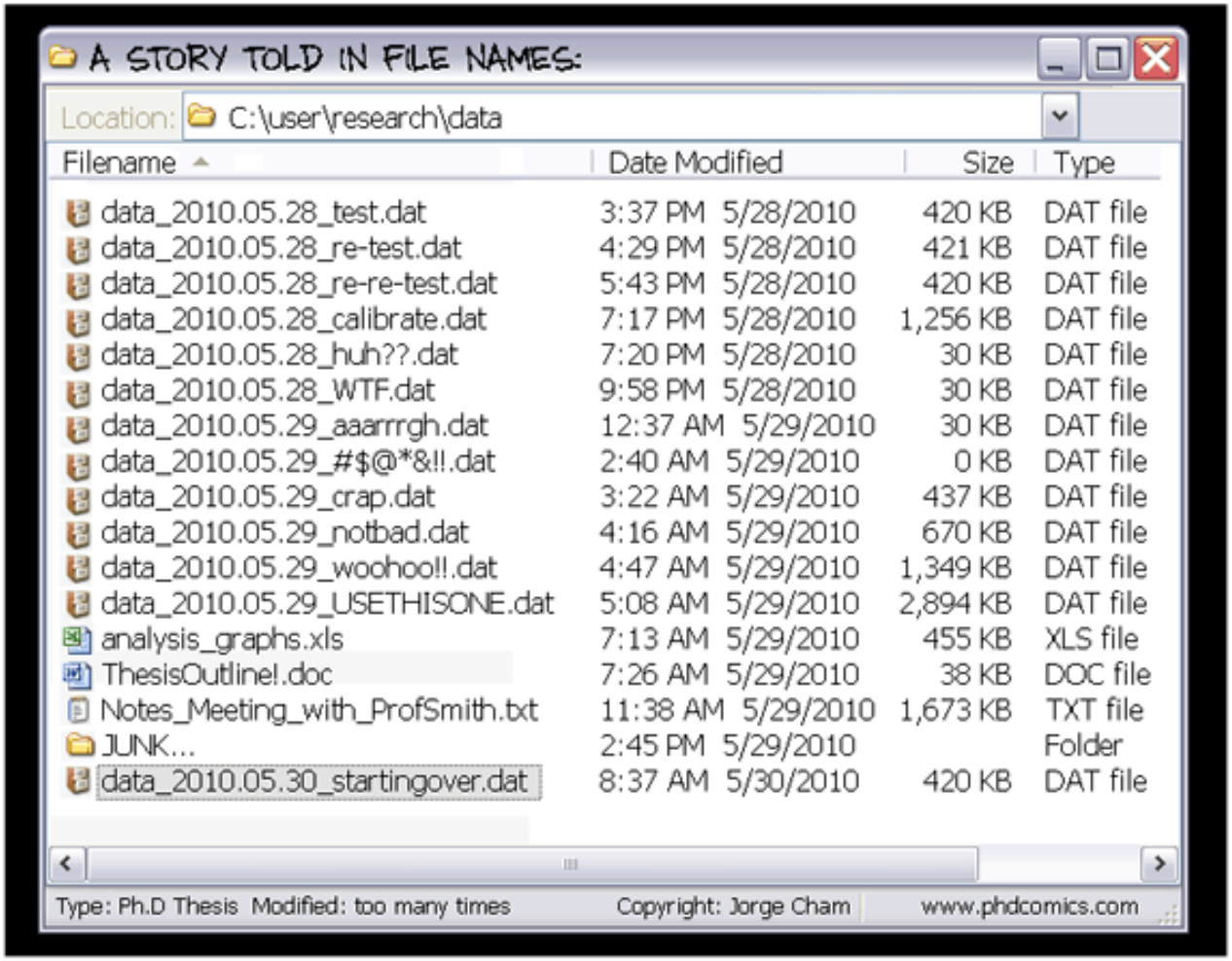

https://www.phdcomics.com

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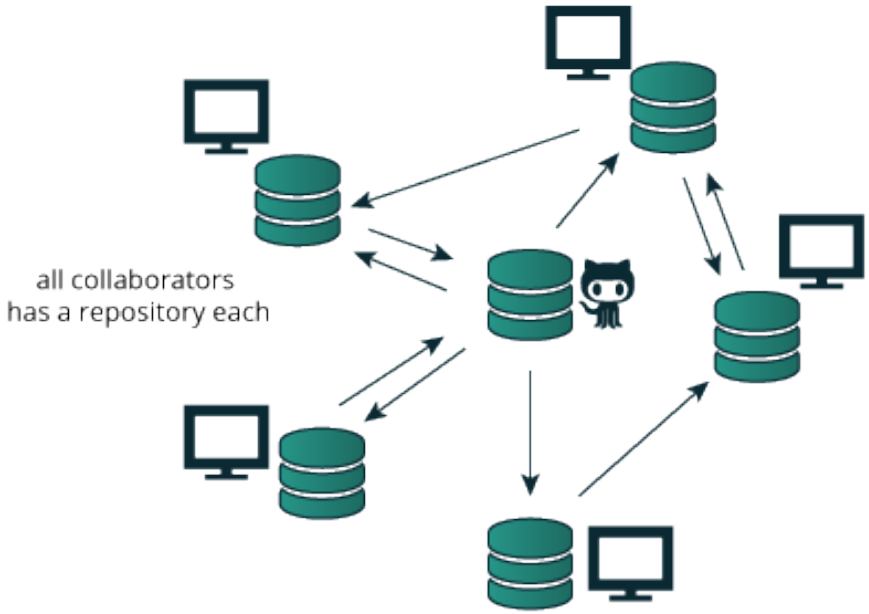
- The list goes on...

Git

In the scientific world, Git (and Github) is the most widely used version control system.



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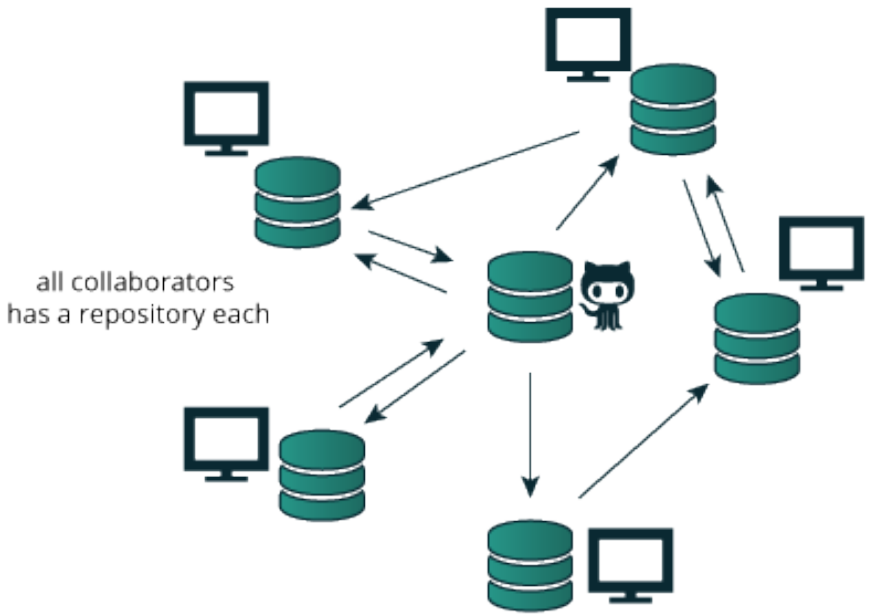

repository: A central storage area where a version control system stores old revisions of files and information about who changed what, when.

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http://invistruct.com/

How do you get your own repository?

Let's configure `Git` first:

```
$ git config --global user.name "Your name goes here"
$ git config --global user.email you@yourdomain.com
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You Try (10 minutes):

Exercises (1) - 2

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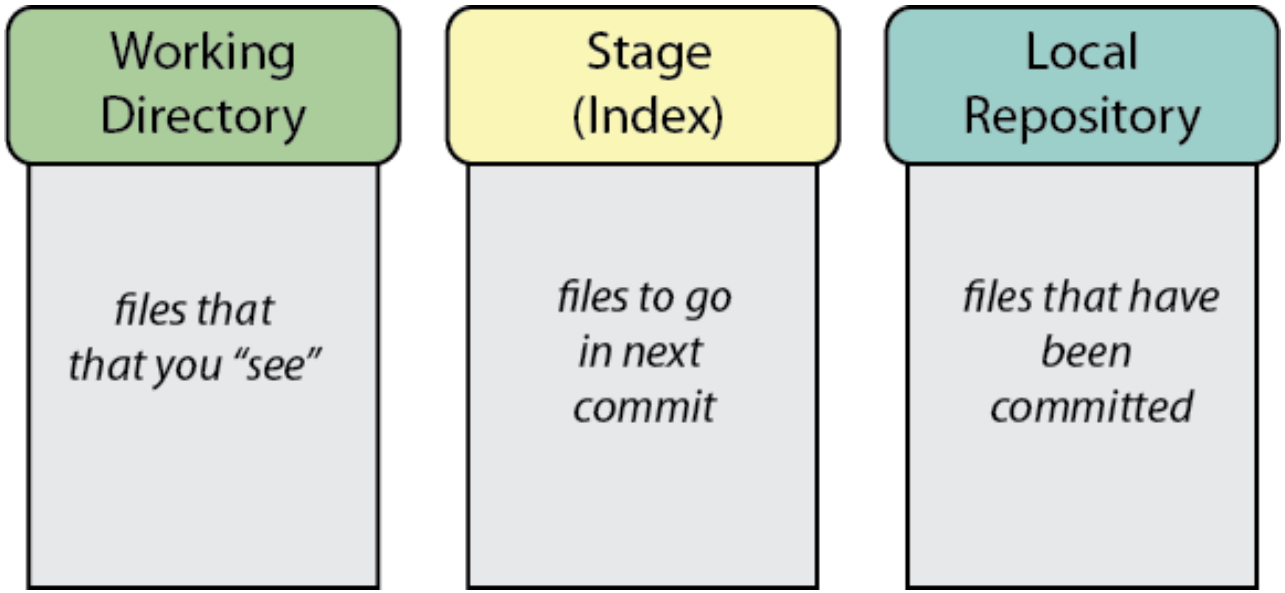
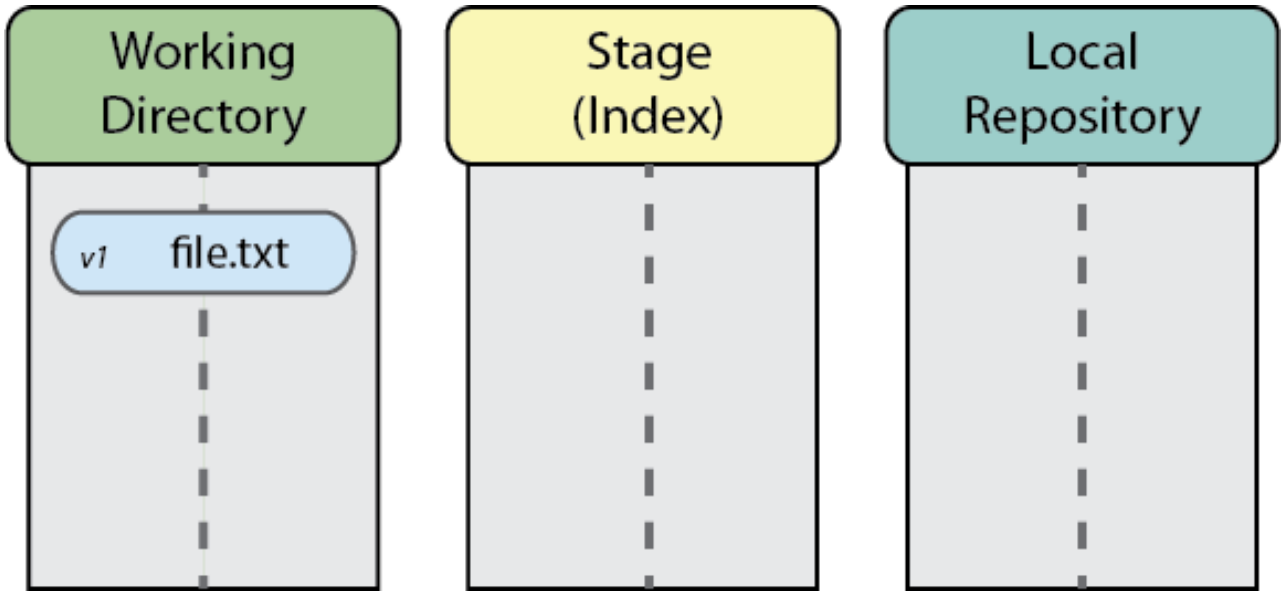
  - etc.
- `Git` will enable you to:
  - track the changes made to files in your directory
  - revert the entire project to a previous snapshot
  - review changes made over time
  - view who modified a file
  - etc.

A little more vocabulary:

There are three main *trees* or *collections of files (and metadata)* in `Git`:



How to save snapshots with `Git`



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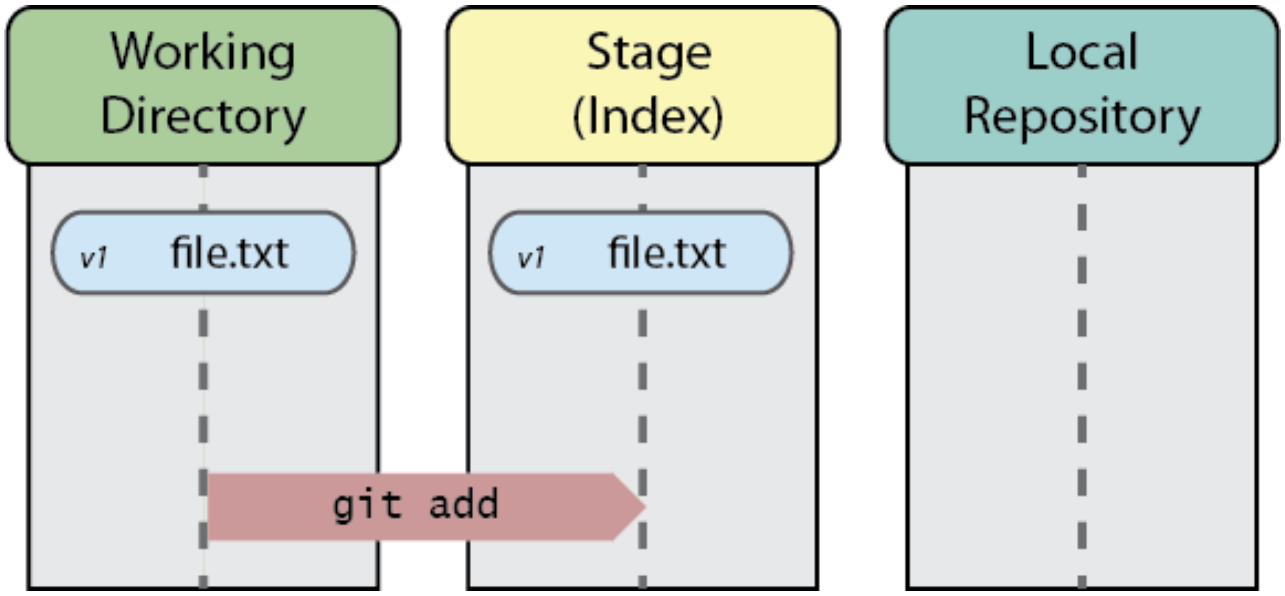

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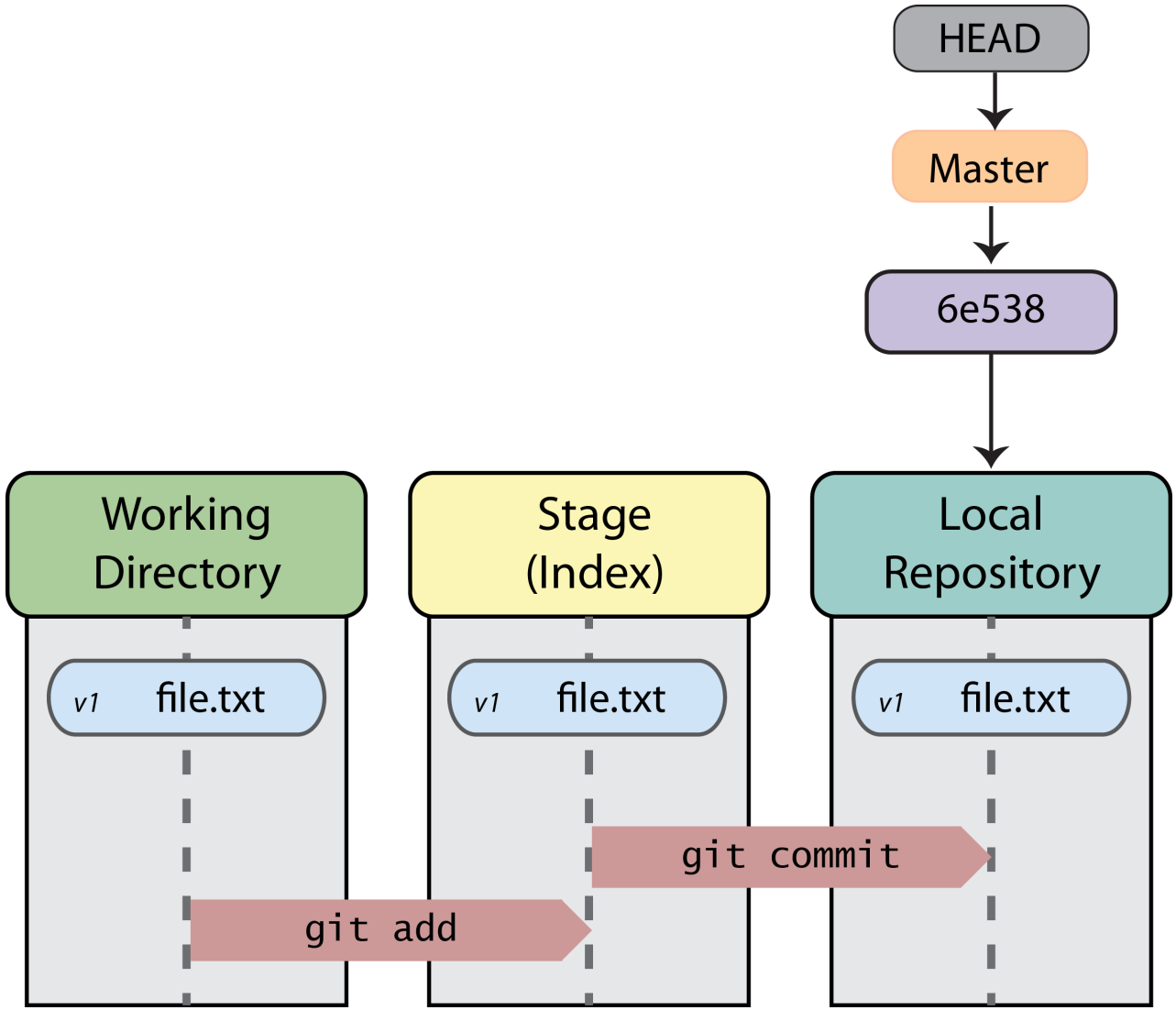

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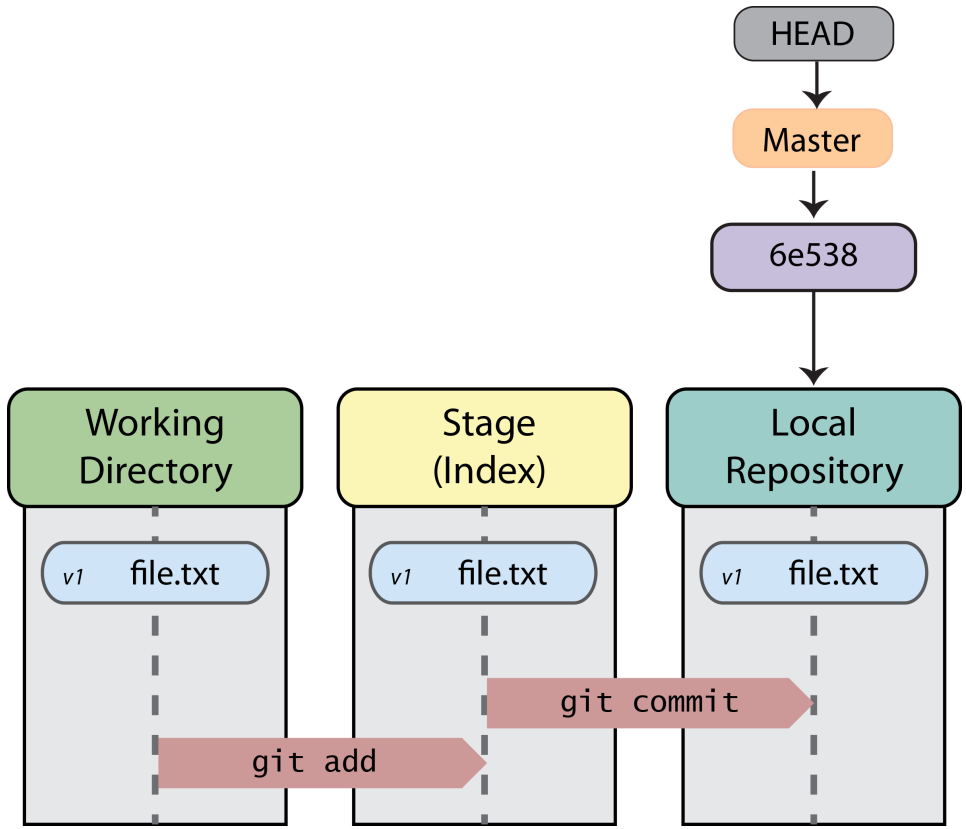
SHA-1 hash: *unique* 40-digit computer-generated identifier for each revision (or commit)



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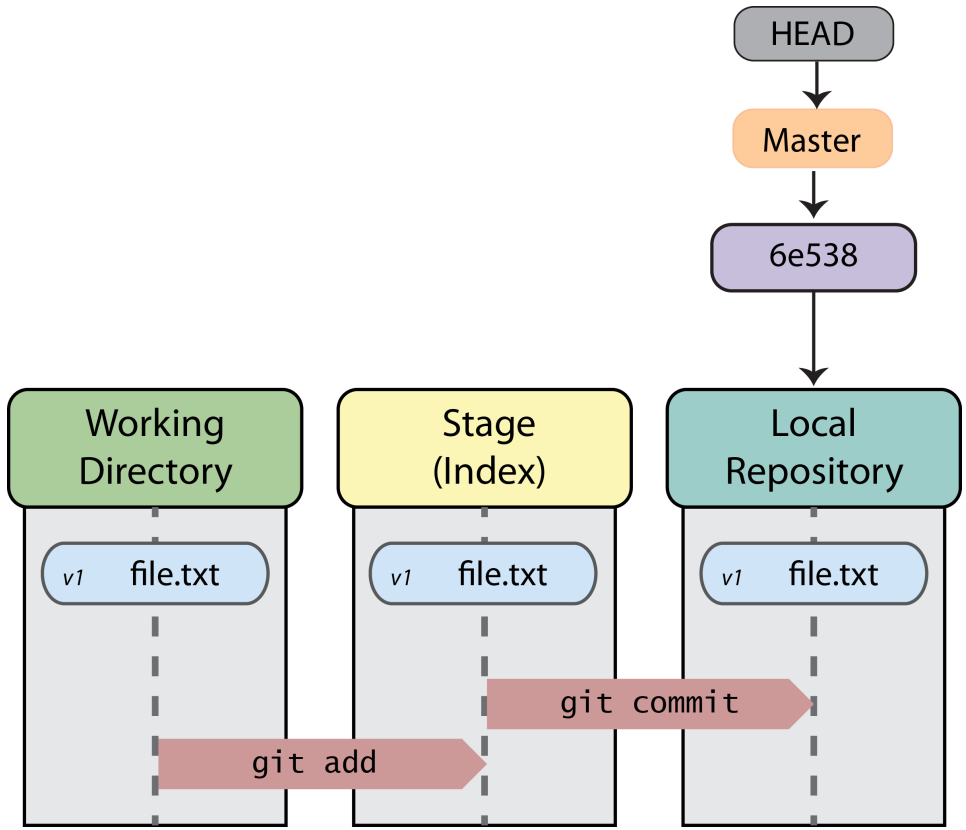
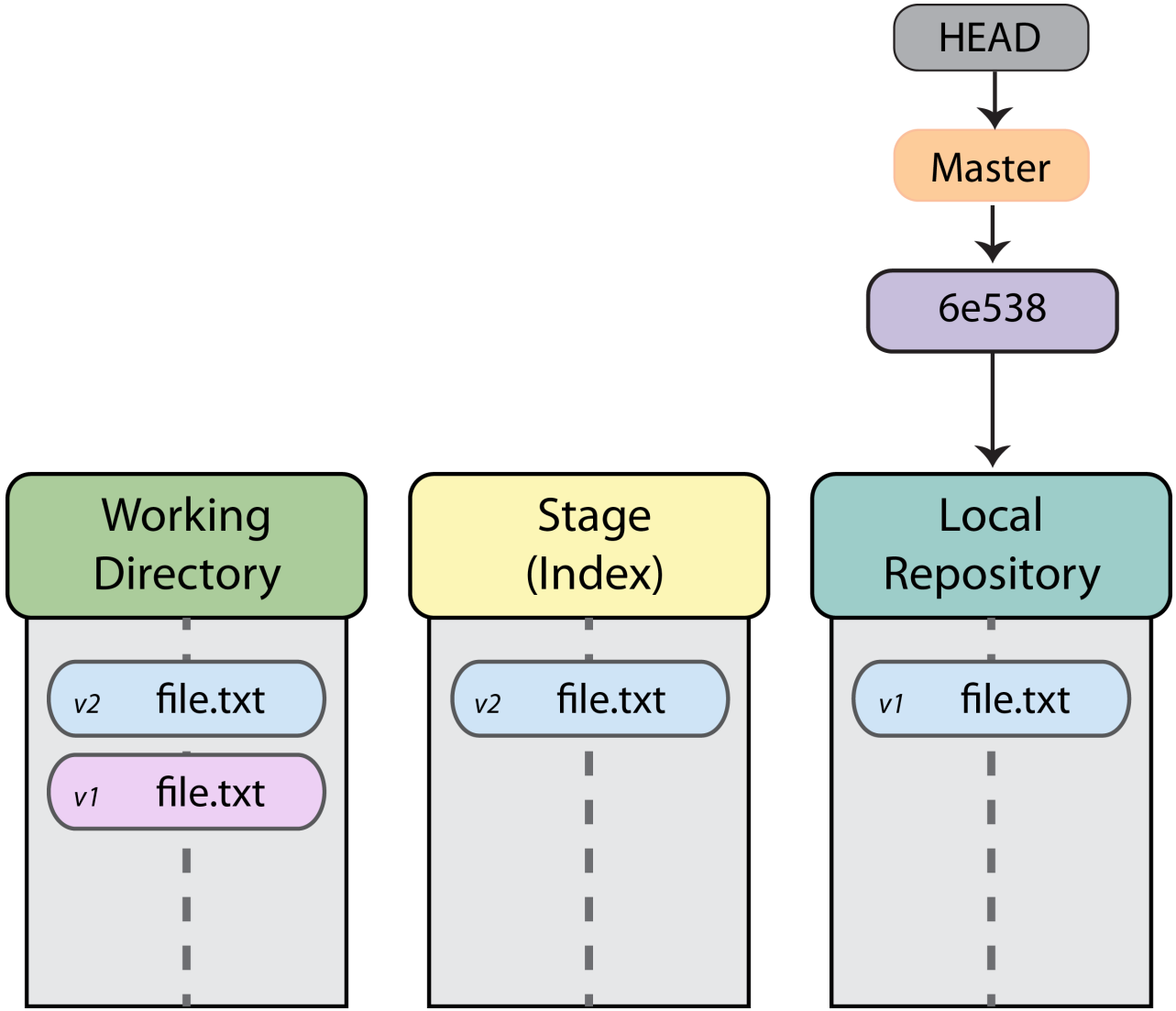
HEAD: reference to the current branch or commit



How to save snapshots with `Git`: Keep working!



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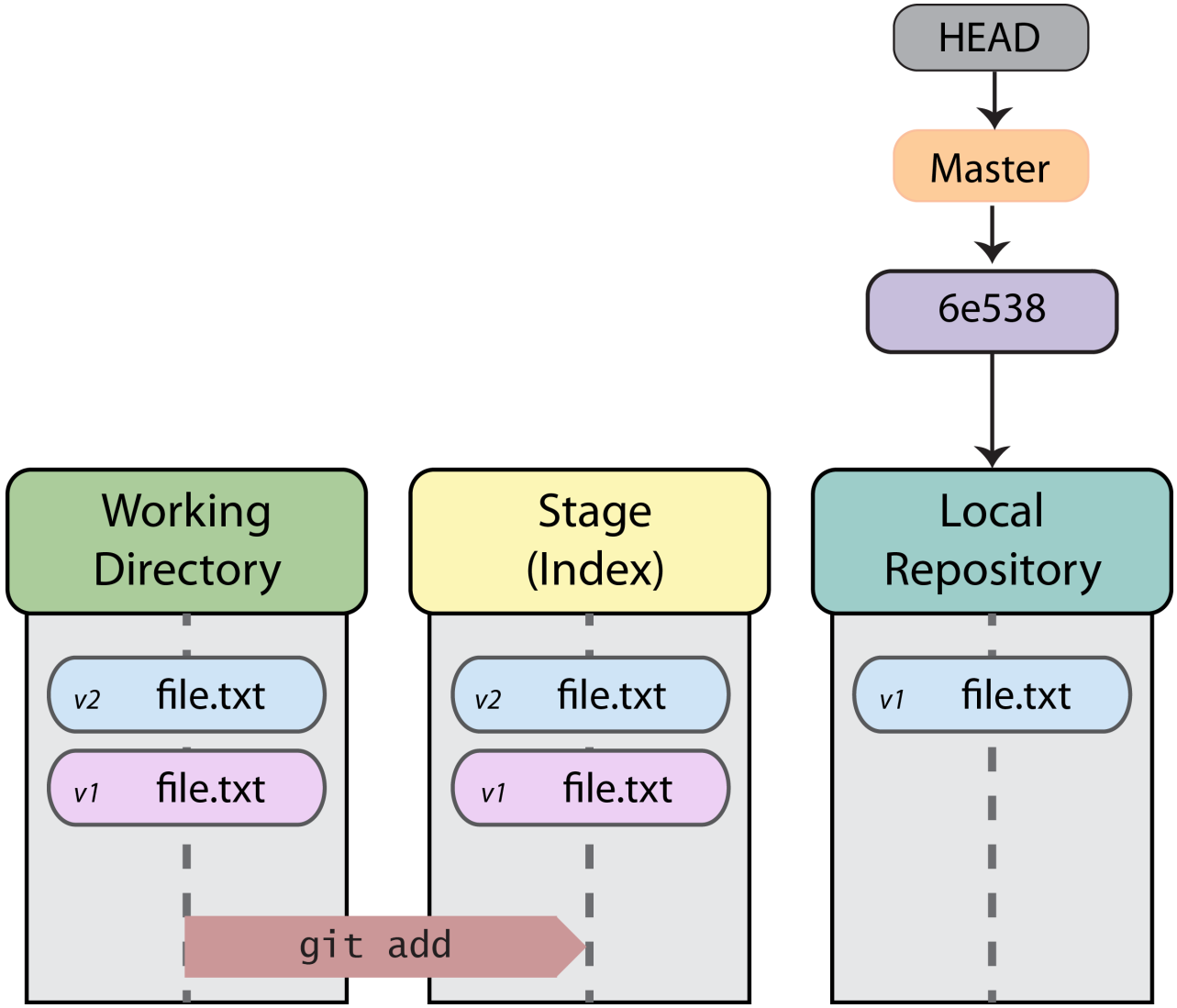

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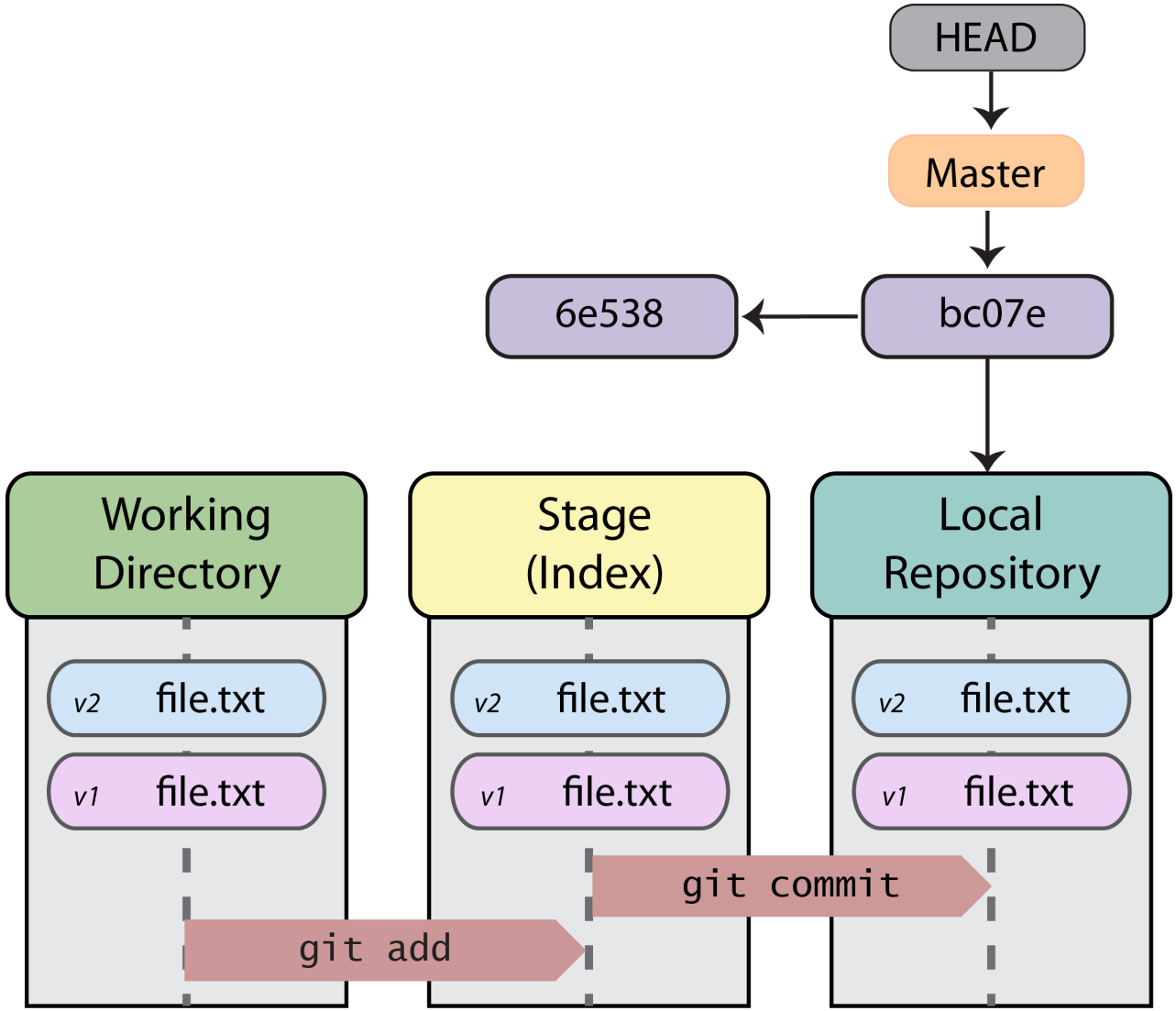

A simple story so far: what else can we do?!

`git log`: view the change history (commits) of the current repository.

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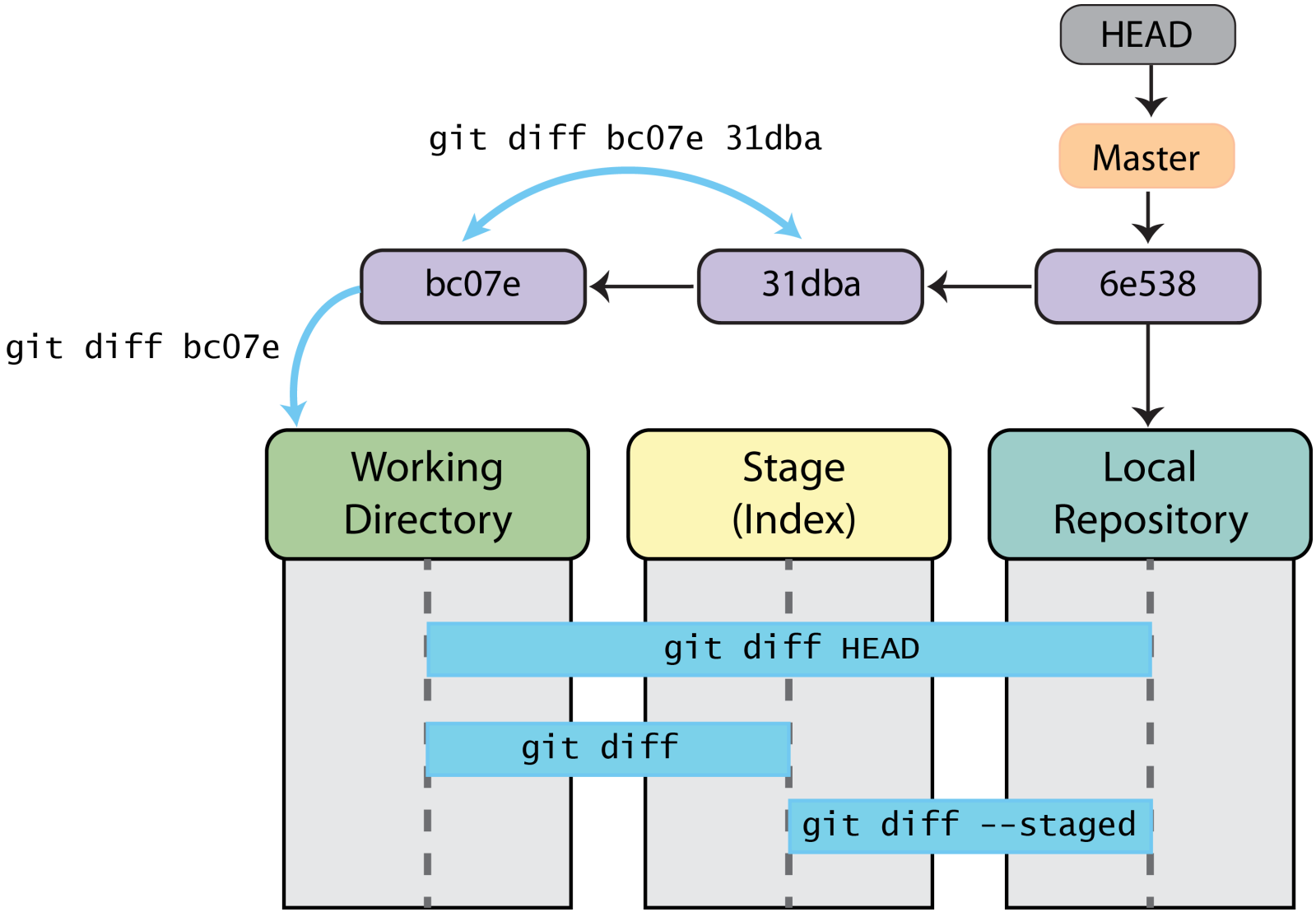
`git diff`: view changes between files and commits



How do we do this for real?

An Example

Now it's your turn.

Questions?

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You Try (15 minutes):
Exercises 3