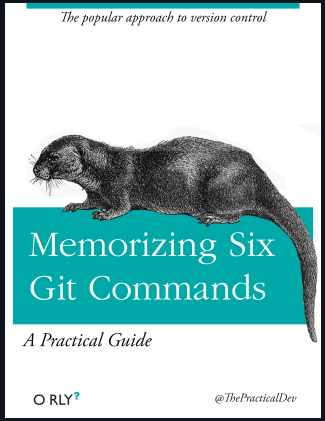
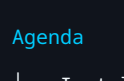
Git crash course

Mitsiu Alejandro
Carreño Sarabia



Agenda



Installation

Installation

Install git from the following link, follow the steps depending on your OS.

https://git-scm.com/install/

Verify the installation with:

```
git --version
```

Get help

Get help

This crash course will cover the most basic commands for submitting your exercises/homework. If you only take a single concept out of this slides is to learn how to get help on any git command.

The general formula for any git command is: `git <command> <args>`
any question you can do
`git <command> --help` o go to https://git-scm.com/docs

Get help

How did i learn the general formula?

```
$ git --help
usage: git [-v | --version] [-h | --help] [-C <path>] [-c
<name>=<value>]
           [--exec-path[=<path>]] [--man-path] [--info-path]
           [--no-replace-objects] [--bare]
           [--git-dir=<path>] [--work-tree=<path>] [--namespace=<name>]
           <command> [<args>]
```

Where:

- [] = opcional argument or command
- | = other name for a given argument or commando
- <> = placeholder

Understanding commands

```
$ git --help
usage: git [-v | --version]
```

This two commands are equal

```
git -v
git --version
```

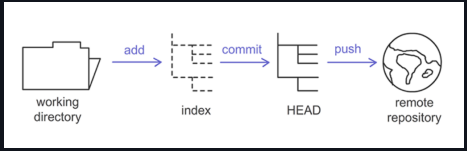
```
———————————————— [finished] ————————————————

git version 2.52.0
git version 2.52.0
```

Initial Setup

You must define your user and email with the following commands:

```
git config --global user.name "<Your username>"
git config --global user.email "<Your email@alumnos.upa.edu.mx>"
```

Git workflow



Get your first repo

You can create a local copy of a remote repo with:

```
$ git clone <url>
```

This command will create a new folder in the current directory. Enter the new folder with cd

Git status

You can know the state of your repo with:

```
$ git status
On branch main
Your branch is up to date with 'origin/main'.

nothing to commit, working tree clean
```

This output singals that no changes has been performed.

Let's modify src/Helper.elm and add "double x = 2 * x" at the bottom.

Check changes

```
$ git diff
diff --git a/src/Helper.elm b/src/Helper.elm
index 55edd56..5a1070a 100644
--- a/src/Helper.elm
+++ b/src/Helper.elm
@@ -1 +1,2 @@
 module Helper exposing (..)
+double x = 2 * x
```

- Green lines starting with + are new lines
- Red lines starting with - are deleted lines

Git state (Read your outputs)

- **Working directory** => The stage to create, modify or delete files. Git won't tracked this changes.

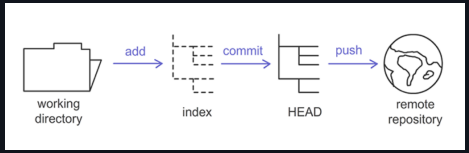
```
$ git status
On branch main
Changes not staged for commit:
  (use "git add <file>..." to update what will be committed)
  (use "git restore <file>..." to discard changes in working
directory)
    modified:   src/Helper.elm

no changes added to commit (use "git add" and/or "git commit -a")
```

From working dir to index/stage (Read your outputs)

- **Index/Staging** => At this stage git start to track files and modifications locally

```
$ git add src/Helper.elm

$ git status
On branch main
Changes to be committed:
  (use "git restore --staged <file>..." to unstage)
    modified:   src/Helper.elm
```

From index/stage to HEAD (Read your outputs)



- **Commit** => Command to capture the current state in (index/stage)

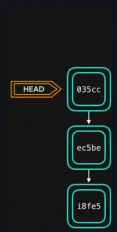
We must provide a simple description of the work to commit.

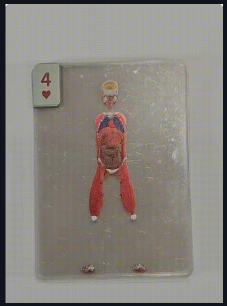
```
$ git commit -m'Complete double function'
```

This command create a snapshot of the changes indexed/staged.
All work in the working directory remains unchanged.

Adding commits

- **Commit** => Command to capture the current state in (index/stage)
- **HEAD** => Pointer to the latest commit



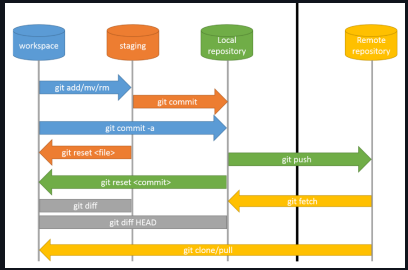


From HEAD to remote

- **Remote repo** When we are done with our local changes we can push them into out remote repo

```
$ git push origin main
Enumerating objects: 7, done.
Counting objects: 100% (7/7), done.
Delta compression using up to 12 threads
Compressing objects: 100% (4/4), done.
Writing objects: 100% (5/5), 520 bytes | 520.00 KiB/s, done.
Total 5 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
To github.com:MACS-KINCAID/E1-elm-functions.git
   ecf4186..dd574be  main -> main
```

Cheatsheet


workspace
staging
Local repository
Remote repository
git add/mv/rm
git commit
git commit -a
git reset <file>
git push
git reset <commit>
git fetch
git diff
git diff HEAD
git clone/pull

101 Git commands

```
# Clone remote repo
git clone <URL>

# Get current branch status
git status

# See changes in working directory
git diff
```

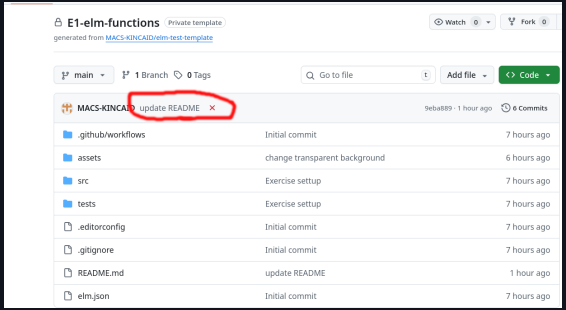
```
# Start tracking changes into files
git add <file1> <file2>

# Create a snapshot with the content of stage
git commit -m'<Descrip de cambios>'

# Download remote changes
git pull origin <branch>

# Update remote changes with local changes
git push origin <branch>
```

*origin => remote name


Remote

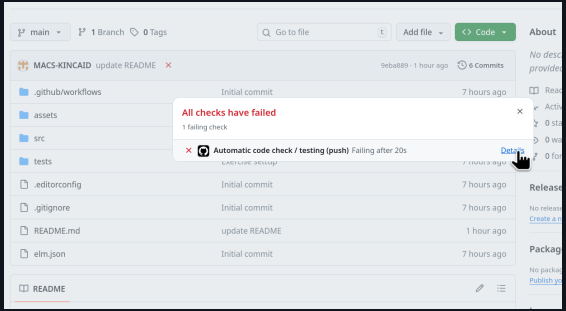
CI tests

On each push a set of test start to evaluate the quality of your code.
For more details click on the



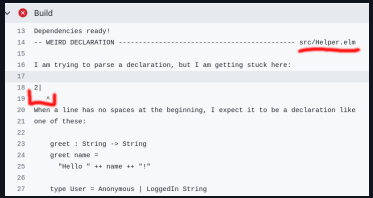
CI tests

Click on "details"



Fail detail

My example is pretty basic, my file is mostly empty, that's the error:



CI commands

These are the four commands that are evaluated, you can run them locally. To solve the errors faster.

- Validate format

```
elm-format src/ --validate
```

- Run checks

```
elm-review \
--template jfmengels/elm-review-common/example \
--rules NoMissingTypeAnnotation,NoMissingTypeAnnotationInLetIn
```

CI commands

These are the four commands that are evaluated, you can run them locally. To solve the errors faster.

- Build

```
elm make src/*
```

- Run tests

```
elm-test
```

This is your first class exercise/homework.