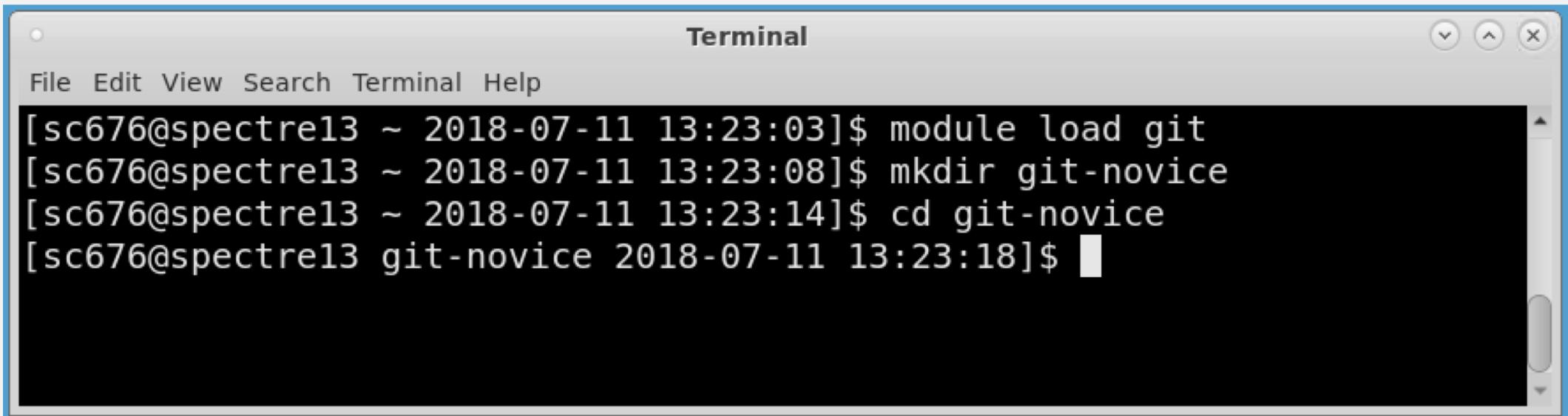


AN INTRODUCTION TO GIT

University of Leicester

RESOURCES AND SETUP

- <https://spco.github.io/git-novice/>
- <https://swcarpentry.github.io/workshop-template/#git>
- <https://leicester.onlinesurveys.ac.uk/sdcct101ivc2018v01>
- Log in to Spectre



The screenshot shows a macOS Terminal window titled "Terminal". The window has a standard OS X title bar with icons for minimizing, maximizing, and closing. The menu bar includes "File", "Edit", "View", "Search", "Terminal", and "Help". The main pane displays a command-line session:

```
[sc676@spectre13 ~ 2018-07-11 13:23:03]$ module load git
[sc676@spectre13 ~ 2018-07-11 13:23:08]$ mkdir git-novice
[sc676@spectre13 ~ 2018-07-11 13:23:14]$ cd git-novice
[sc676@spectre13 git-novice 2018-07-11 13:23:18]$ █
```

The terminal uses a dark theme. The scroll bars on the right side of the window are visible.

"FINAL".doc



FINAL.doc!



FINAL_rev.2.doc



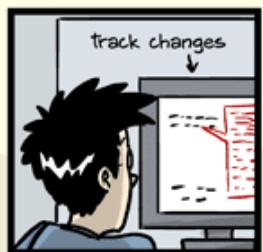
FINAL_rev.6.COMMENTS.doc



FINAL_rev.8.comments5.
CORRECTIONS.doc



FINAL_rev.18.comments7.
corrections9.MORE.30.doc



FINAL_rev.22.comments49.
corrections.10.#@\$%WHYDID
ICOMETOGRAD SCHOOL?????.doc

JORGE CHAM © 2012

WHY VERSION CONTROL?

My script used to work; I changed it,
and now it's broken.

I wrote a good paragraph, decided to reword it,
and now I want to go back.

I want to re-run an analysis from 6 months
ago – which script version did I use?

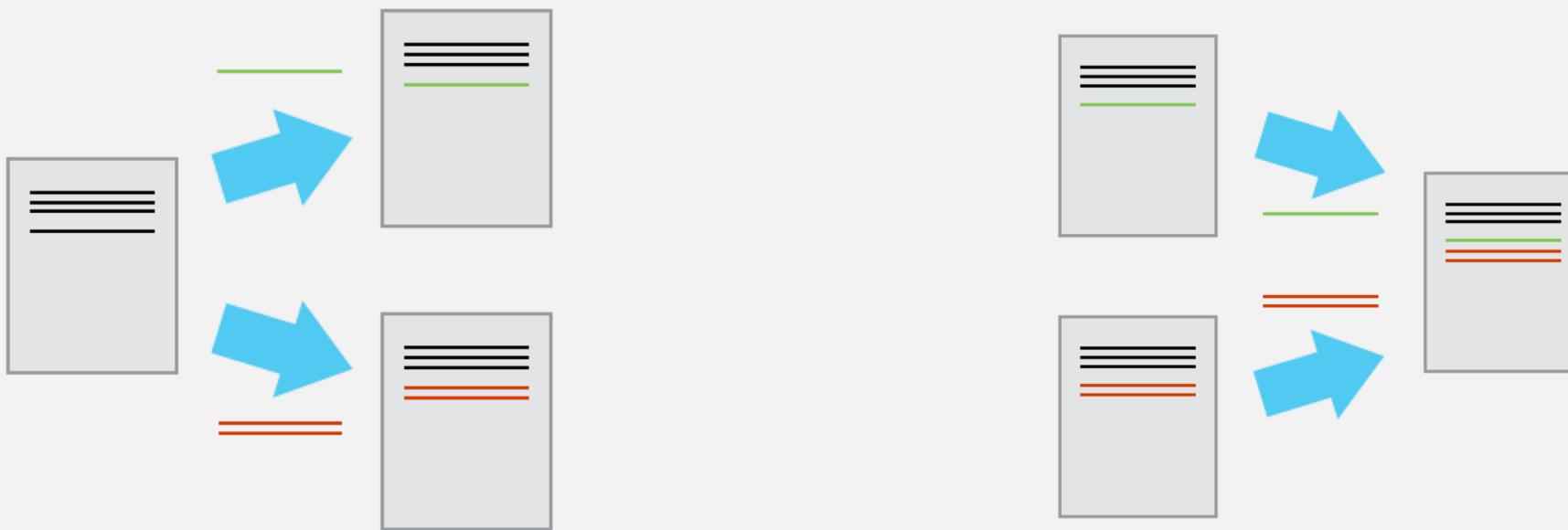
I want to share code with my colleagues.

I don't want to lose all my work if my
laptop dies...

HOW DOES IT WORK?



MAKE DIFFERENT CHANGES



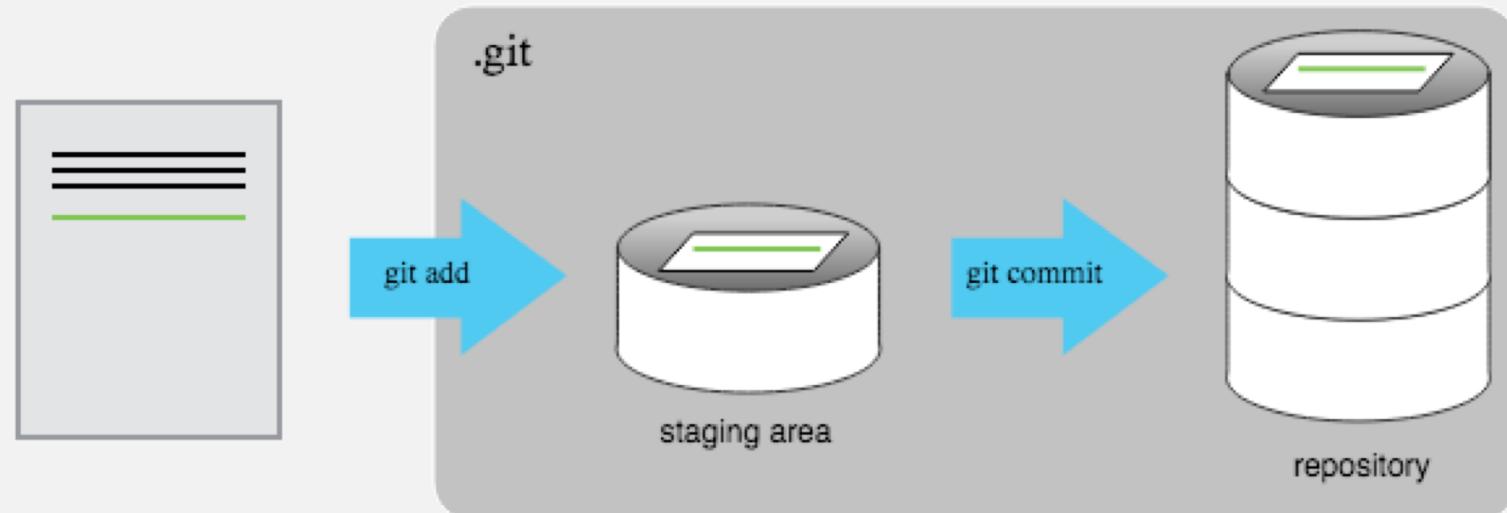
WHY GIT?

- There are many version control systems – Git, Mercurial, Subversion, etc.
 - Git is just the most popular.
- Almost everything we discuss today is relevant to all the other systems
 - It's just a different syntax.

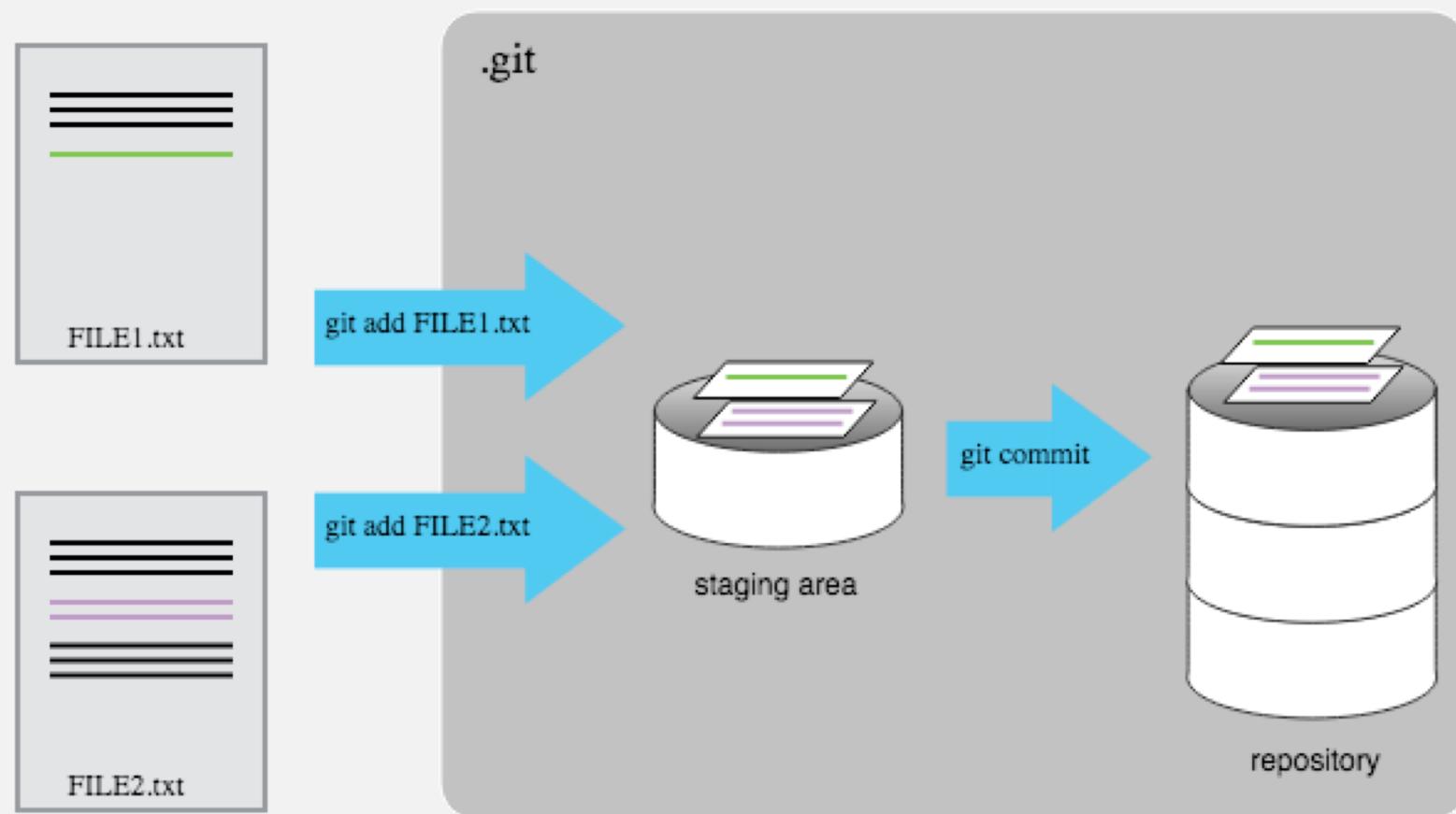
SETTING UP GIT

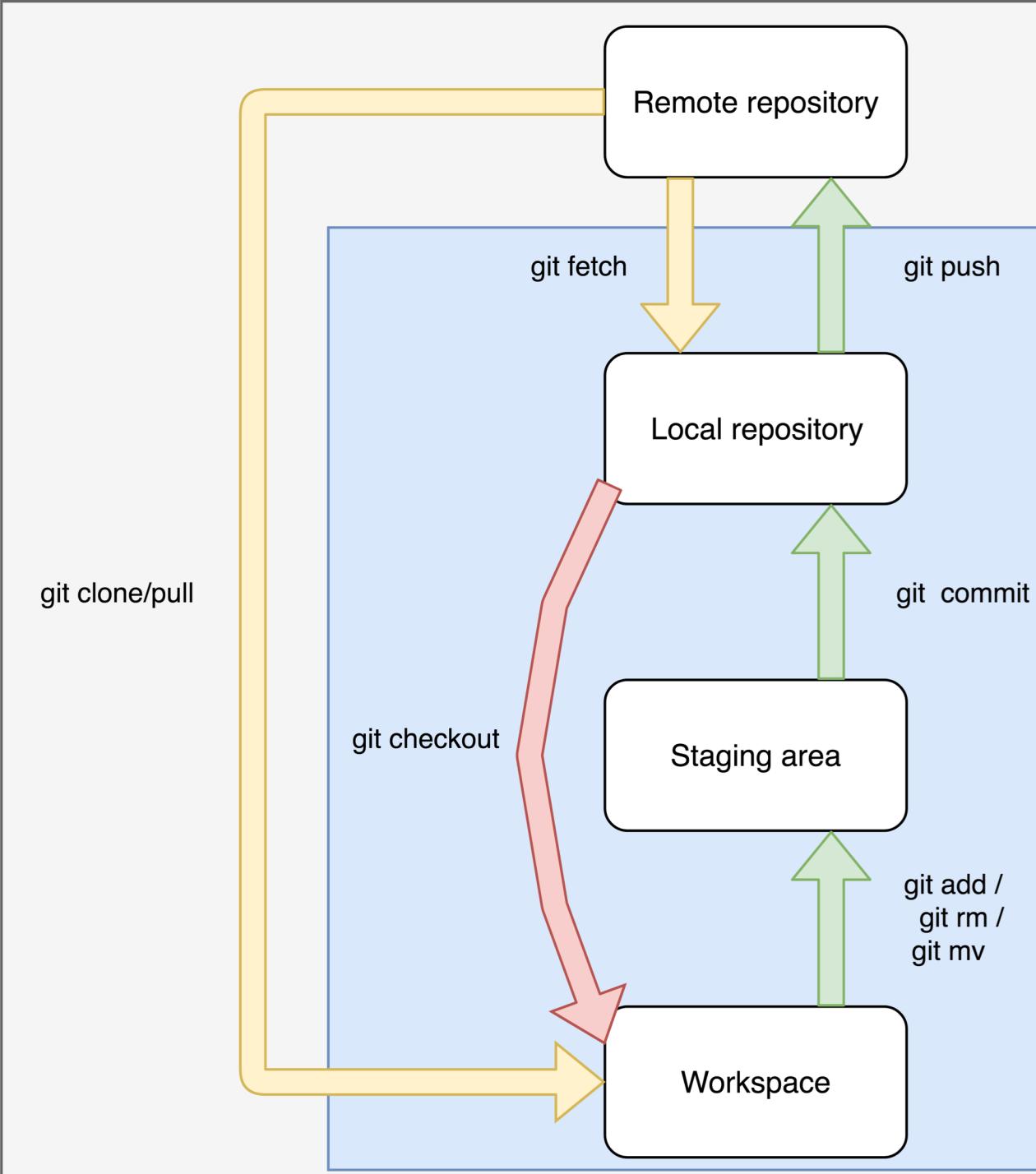
- <https://spco.github.io/git-novice/>

TRACKING CHANGES



TRACKING CHANGES

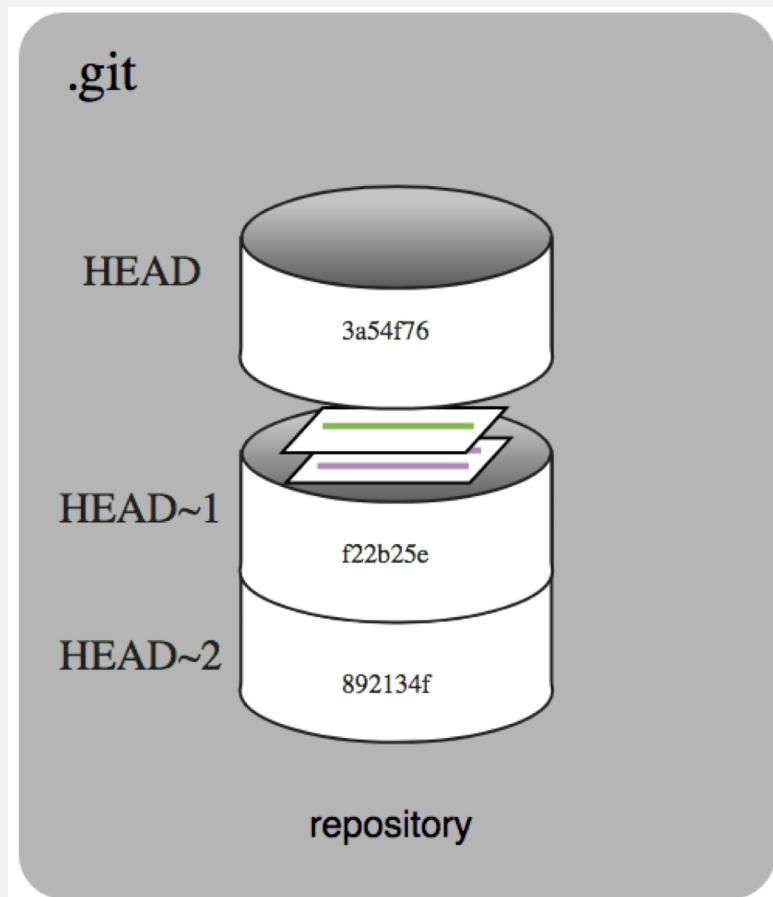




YOUR TURN!

- <https://spco.github.io/git-novice/04-changes/>

EXPLORING HISTORY



COMPARING ACROSS HISTORY

```
subroutine temperature( temp, h2o, ttime )
use types_mod
implicit none
real(kind=DP) :: temp, ttime, rh, h2o, sin, h2o_factor, exponent

temp =289.86_DP+8.3_DP*sin( ( 7.2722d-5* ttime ) -1.9635_DP )
temp =298.00_DP
rh =23.0_DP*sin( ( 7.2722d-5* ttime ) +1.1781_DP ) +66.5_DP
h2o_factor =10.0_DP/ ( 1.38d-16* temp ) * rh
    exponent =-1.0_DP* ( 597.3_DP-0.57_DP* ( temp -273.16_DP ) )
    *18.0_DP/1.986_DP* ( 1.0_DP/ temp -1.0_DP/273.16_DP )
h2o =6.1078_DP*exp( exponent ) * h2o_factor

return
end subroutine temperature
```

```
subroutine temperature( temp, h2o, ttime )
use types_mod
implicit none
real(kind=DP) :: temp, ttime, rh, h2o, sin, h2o_factor, exponent

temp =289.86_DP+8.3_DP*sin( ( 7.2722d-5* ttime ) -1.9635_DP )
temp =298.00_DP
rh =23.0_DP*sin( ( 7.2722d-5* ttime ) +1.1781_DP ) +66.5_DP
h2o_factor =10.0_DP/ ( 1.38d-16* temp ) * rh
    exponent =-1.0_DP* ( 597.3_DP-0.57_DP* ( temp -273.16_DP ) )
    *18.0_DP/1.985_DP* ( 1.0_DP/ temp -1.0_DP/273.16_DP )
h2o =6.1078_DP*exp( exponent ) * h2o_factor

return
end subroutine temperature
```

git diff

```
exponent =-1.0_DP* ( 597.3_DP-0.57_DP* ( temp -273.16_DP ) )
*18.0_DP/1.985_DP* ( 1.0_DP/ temp -1.0_DP/273.16_DP )
```

COMPARING ACROSS HISTORY

```
[IT-4670:planets sc676$ git status
On branch master
Changes not staged for commit:
  (use "git add <file>..." to update what will be committed)
  (use "git checkout -- <file>..." to discard changes in working directory)

    modified:   mars.txt

no changes added to commit (use "git add" and/or "git commit -a")
[IT-4670:planets sc676$ git diff mars.txt
diff --git a/mars.txt b/mars.txt
index fd46e6d..e8bc1a5 100644
--- a/mars.txt
+++ b/mars.txt
@@ -1,3 +1 @@
 Cold and dry, but everything is my favourite colour.
-The two moons may be a problem for Wolfman.
-But the Mummy will appreciate the lack of humidity.
IT-4670:planets sc676$ ]
```

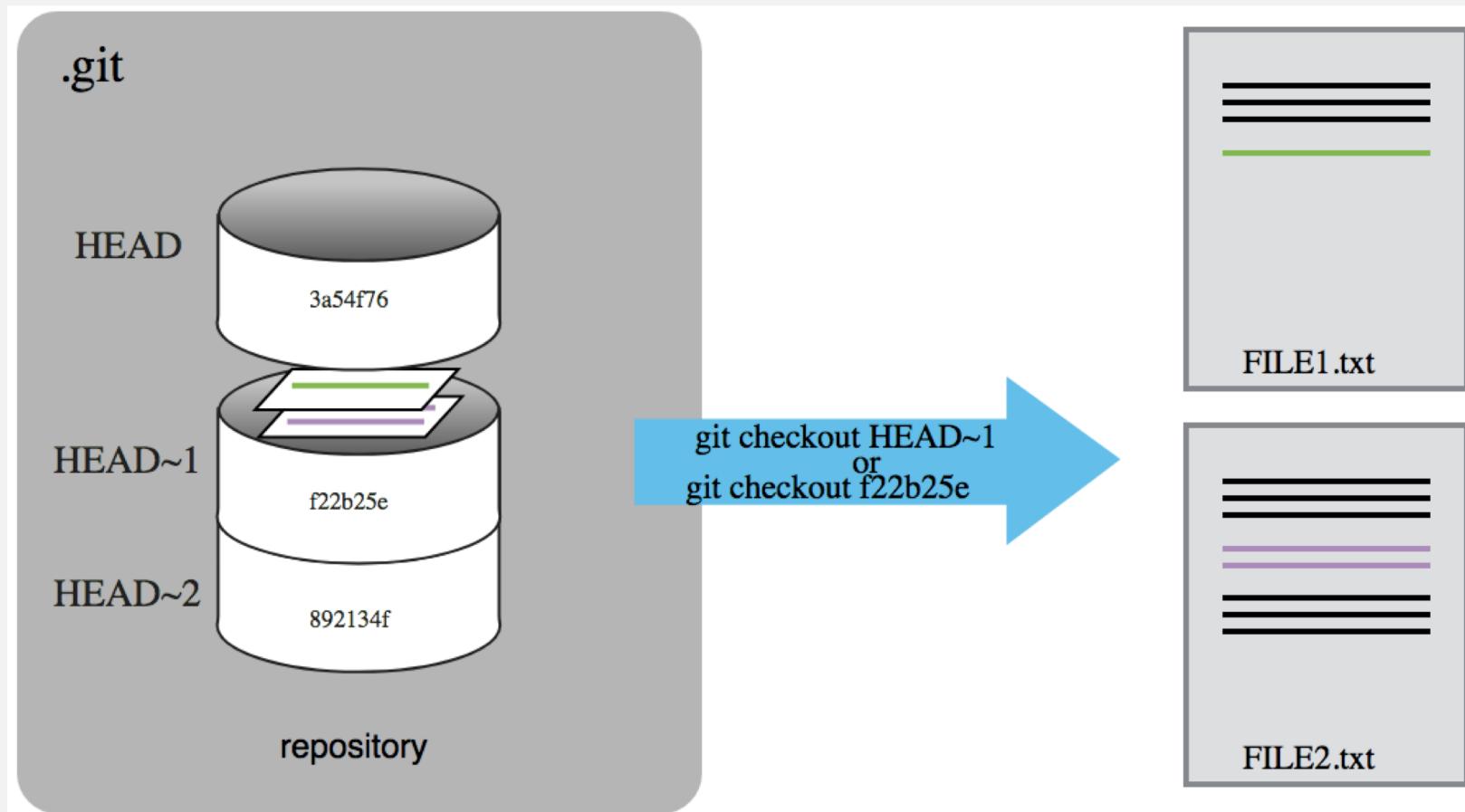
COMPARING ACROSS HISTORY

```
planets — bash — 83x9
[IT-4670:planets sc676$ git diff 0f787d0 2e764a3 mars.txt ]  
diff --git a/mars.txt b/mars.txt  
index e8bc1a5..e7555e7 100644  
--- a/mars.txt  
+++ b/mars.txt  
@@ -1 +1,2 @@  
 Cold and dry, but everything is my favourite colour.  
+The two moons may be a problem for Wolfman.  
IT-4670:planets sc676$
```

YOUR TURN!

- <https://spco.github.io/git-novice/05-history/>

NAVIGATING THROUGH HISTORY

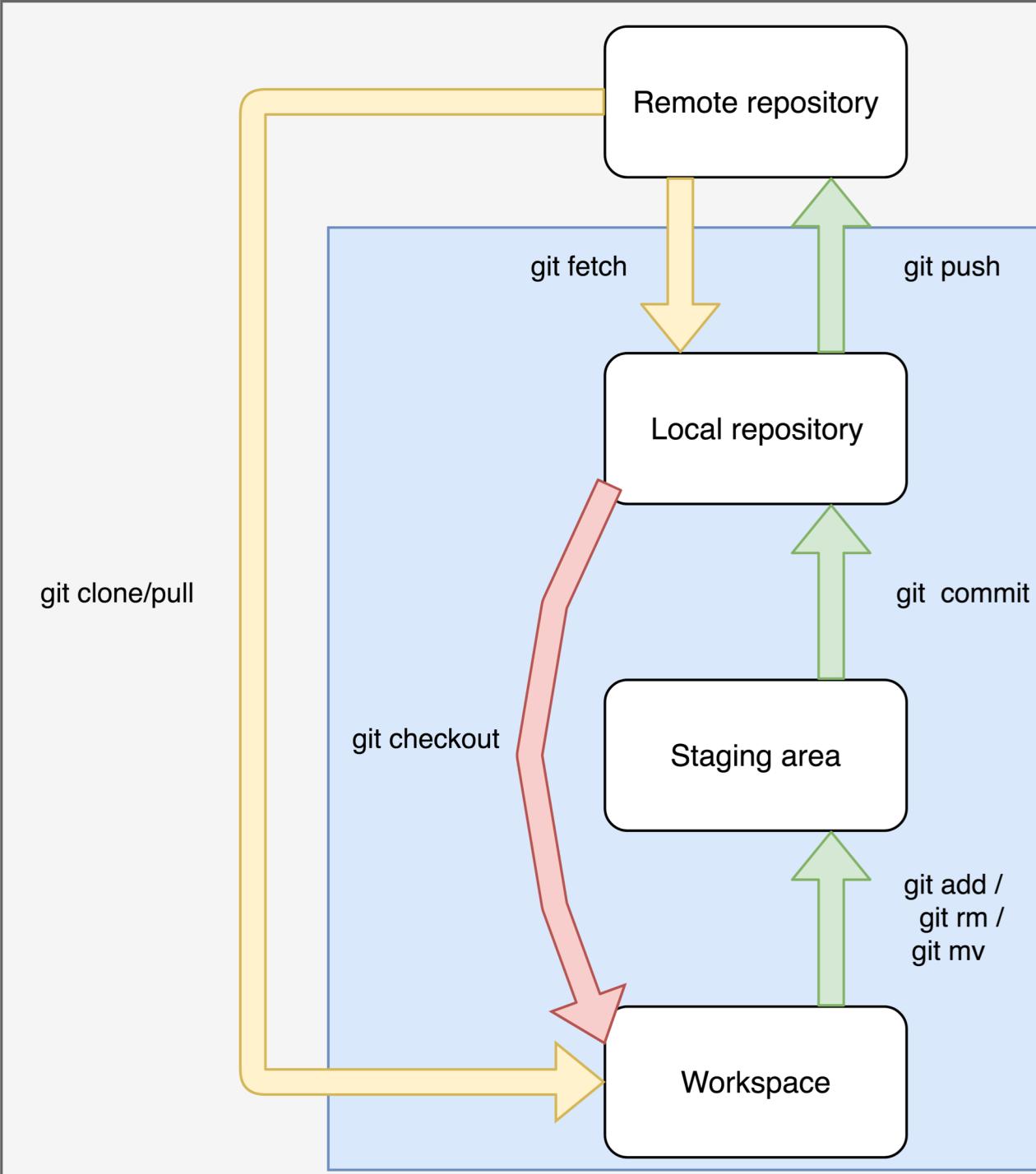


YOUR TURN!

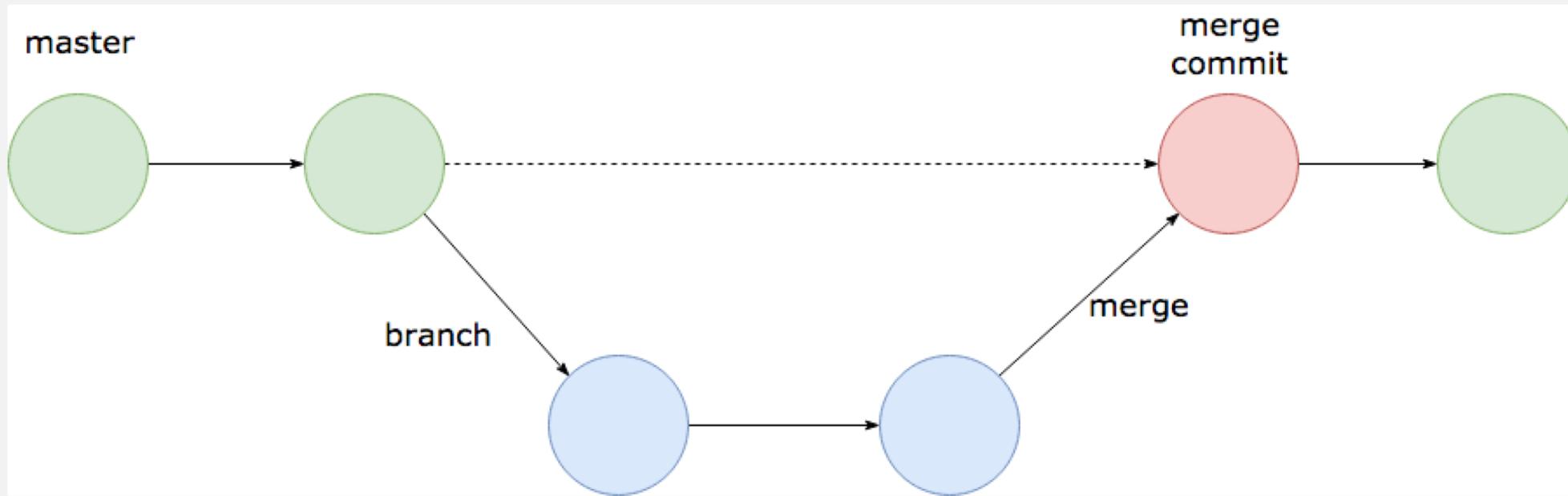
- <https://spco.github.io/git-novice/06-ignore/>

REGISTER FOR GITHUB

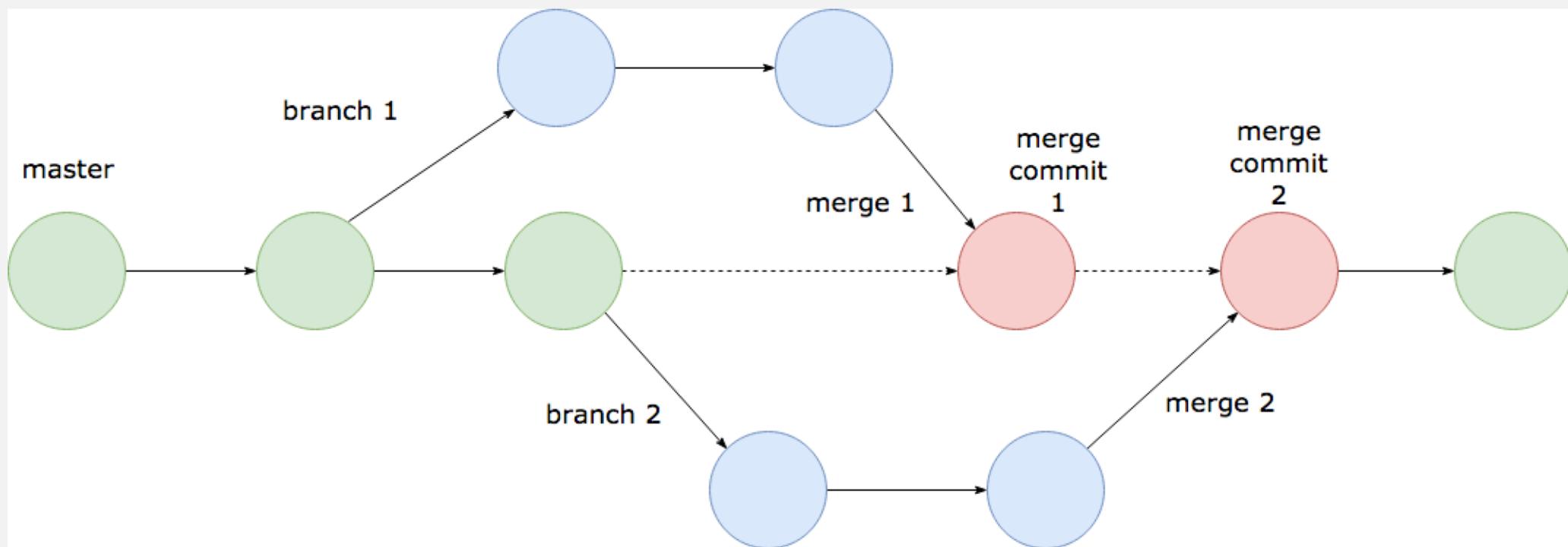
- <https://github.com/>
 - Sign up for GitHub
 - Verify account via email



BRANCHING



BRANCHING



FEEDBACK

- <https://leicester.onlinesurveys.ac.uk/sdcct101ivc2018v01>
- <https://tinyurl.com/ycrtjzes>