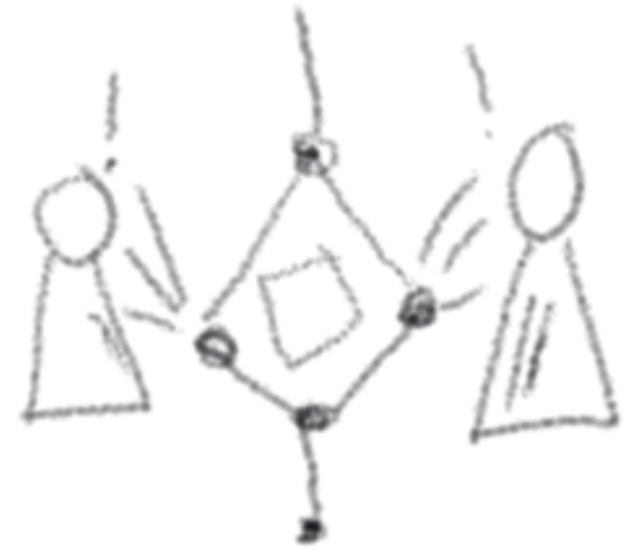
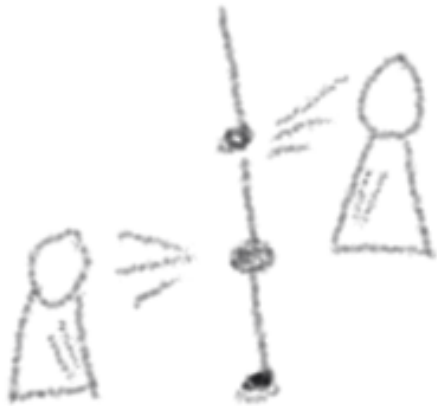
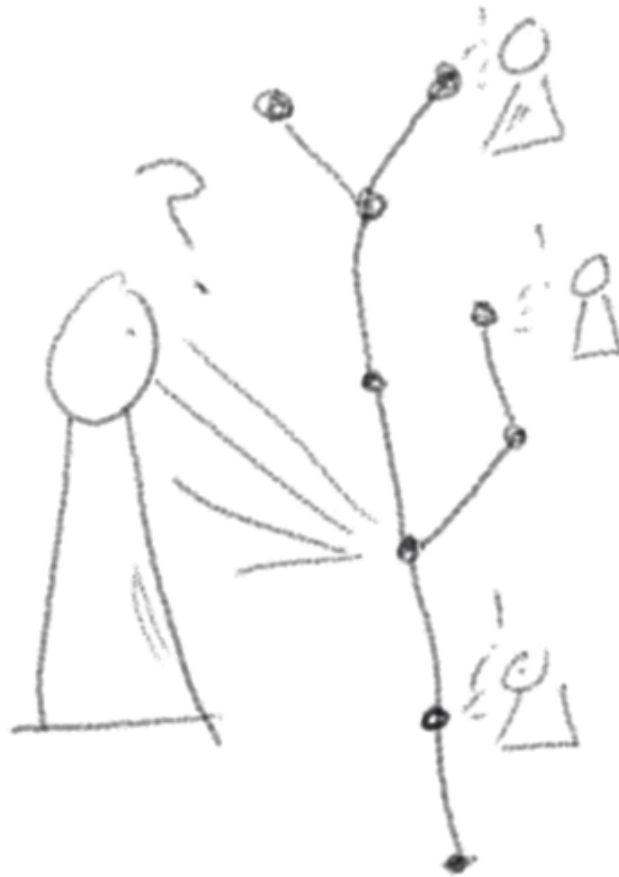


Introduction to Git For Groups

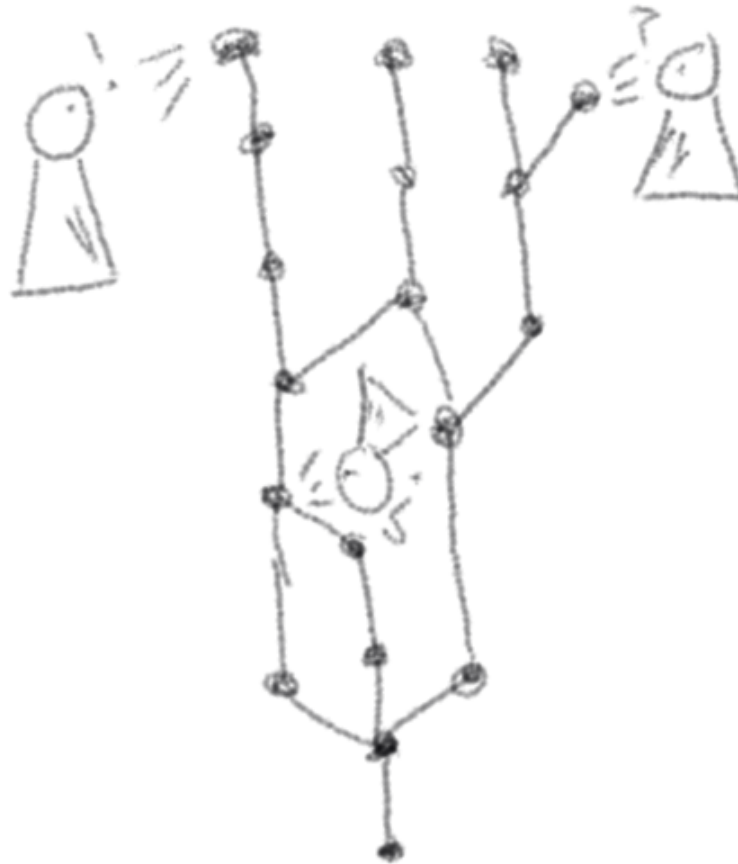
Getting the changes made by others



Viewing old versions of your work

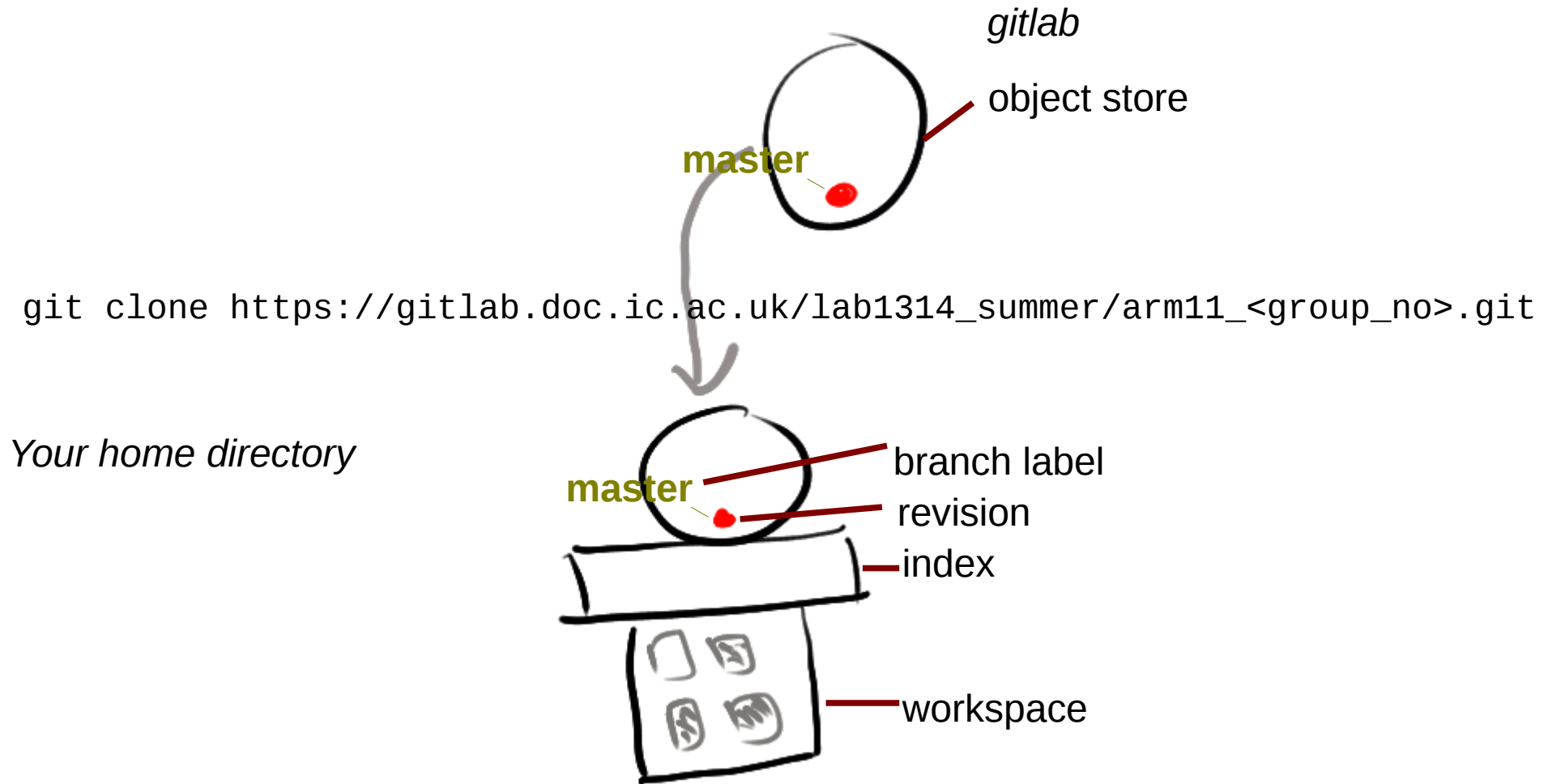


Working on multiple lines of development





A single person working



Adding changes to the index

git add

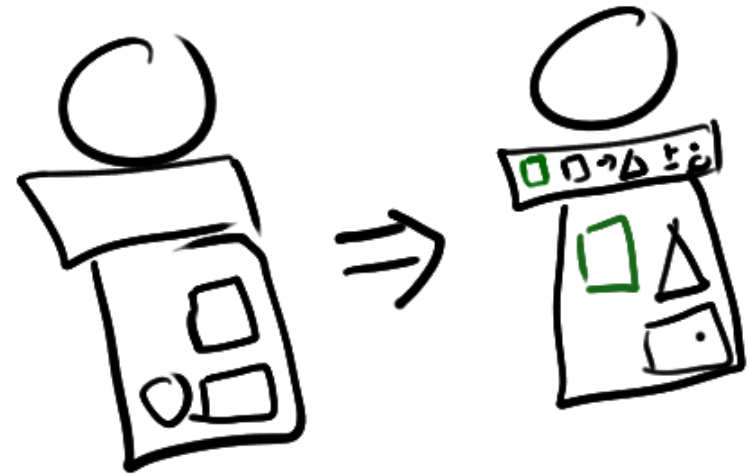
git rm


git mv

git status


git diff

git diff --cached



git add 

git mv  

<edit  to add . inside>

git add 

git rm 

Git status, diff and diff --cached

```
>git status
```

```
On branch master
```

```
Changes to be committed:
```

```
(use "git reset HEAD <file>..." to unstage)
```

```
    new file:   Added.txt
```

```
    modified:  Hello.txt
```

```
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:  Hello.txt
```

```
Untracked files:
```

```
(use "git add <file>..." to include in what will be committed)
```

```
    NotAdded.txt
```

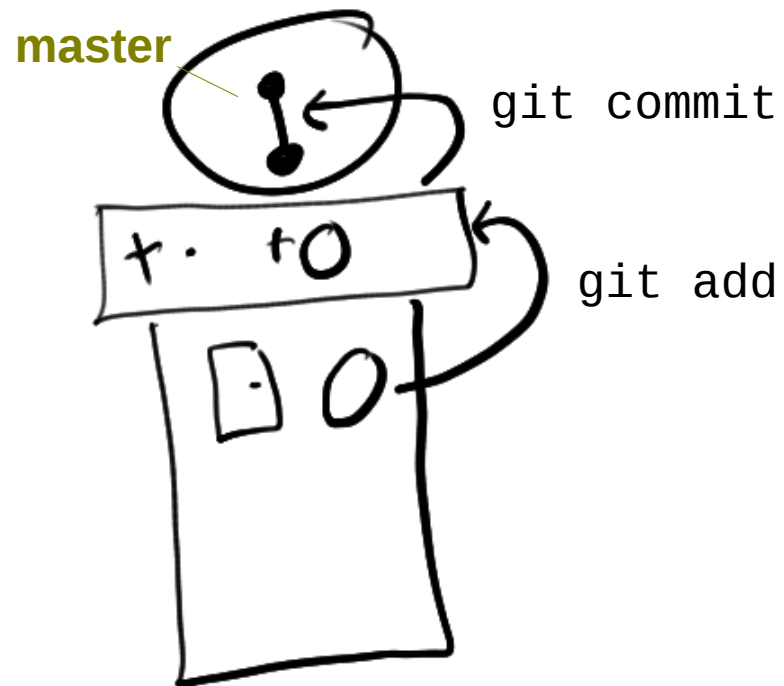

Git status, diff and diff --cached

```
>git diff --cached Hello.txt
diff --git a/Hello.txt b/Hello.txt
index cd08755..a92b91b 100644
--- a/Hello.txt
+++ b/Hello.txt
@@ -1,3 @@
  Hello world!
+
+This is my brand new story that I've added...
```

```
>git diff Hello.txt
diff --git a/Hello.txt b/Hello.txt
index a92b91b..0a7ef26 100644
--- a/Hello.txt
+++ b/Hello.txt
@@ -1,3 +1,5 @@
  Hello world!
```

```
  This is my brand new story that I've added...
+
+And this is something I've written in Hello.txt but not added.
```

Committing Changes



Committing and pushing

```
>git commit -m "Added Hello."  
[master 68c9ae4] Added Hello.  
 2 files changed, 3 insertions(+)  
 create mode 100644 Added.txt
```

```
>git push origin master  
Counting objects: 7, done.  
Delta compression using up to 4 threads.  
Compressing objects: 100% (4/4), done.  
Writing objects: 100% (7/7), 590 bytes | 0  
bytes/s, done.  
Total 7 (delta 0), reused 0 (delta 0)  
To ../tmp_remote.git/  
 * master -> master
```

Committing and pushing

The screenshot shows a Git GUI window with a menu bar (File, Edit, View, Help) and a commit summary area. The commit message is "Added Hello." and the author is "Dr. Tristan Allwood <tora@doc.ic.ac.uk>" with a date of "2014-05-22". The SHA1 ID is "68c9ae41b998188738bdae054c9e717fcd1a9e9b". The commit is shown as being added to the "remotes/origin/master" branch from the local "master" branch. A diff view is visible at the bottom, showing the addition of "Hello.txt" to the repository.

File Edit View Help

Local uncommitted changes, not checked in to index

● master — remotes/origin/master Added Hello.

● Hello world.

Dr. Tristan Allwood <tora@doc.ic.ac.uk> 2014-05-22

Dr. Tristan Allwood <tora@doc.ic.ac.uk> 2014-05-22

SHA1 ID: 68c9ae41b998188738bdae054c9e717fcd1a9e9b Row 2 / 3

Find commit containing: Exact All fields

Search Patch Tree

◆ Diff ◆ Old version ◆ New version Lines of context: 3

Author: Dr. Tristan Allwood <tora@doc.ic.ac.uk> 2014-05-22

Committer: Dr. Tristan Allwood <tora@doc.ic.ac.uk> 2014-05-

Parent: [366c96fc0fe2e4190db4eelf7697db327a2bc8ea](#) (Hello worl

child: [00](#) (Local unco

Branches: [master](#), [remotes/origin/master](#)

Follows:

Precedes:

Added Hello.

----- Added.txt -----

new file mode 100644

index 0000000..136f9ea

@@ -0,0 +1 @@

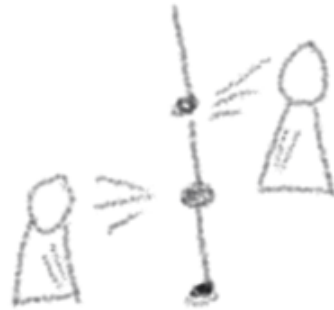
+A file I've added but not committed!

Comments

Added.txt

Hello.txt

Two people working at separate times



Two people working at separate times

```
git clone <url>
```

```
<edit>
```

```
git add <file>
```

```
git commit
```

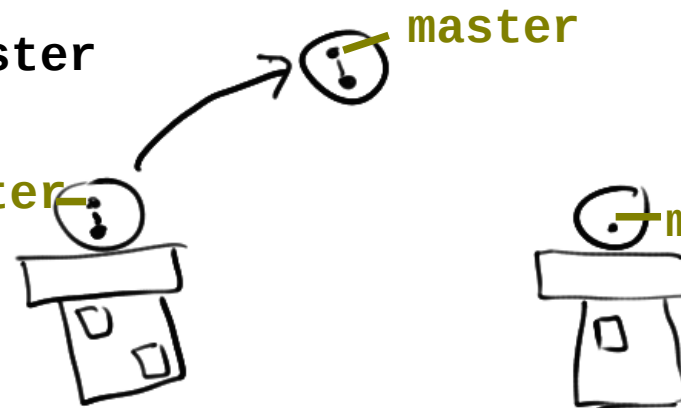
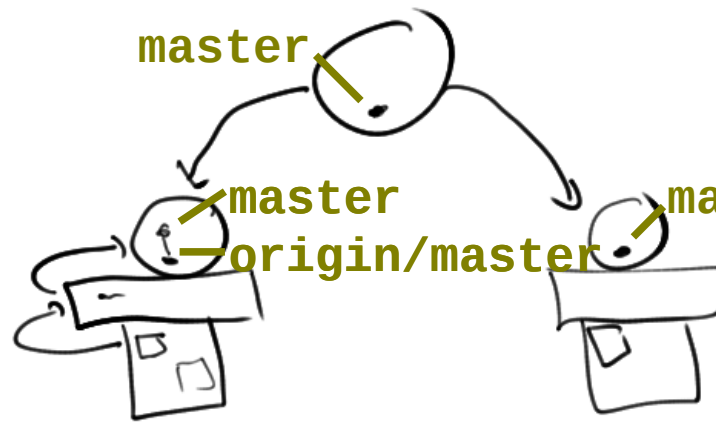
```
git push origin master
```

```
master origin/master
```

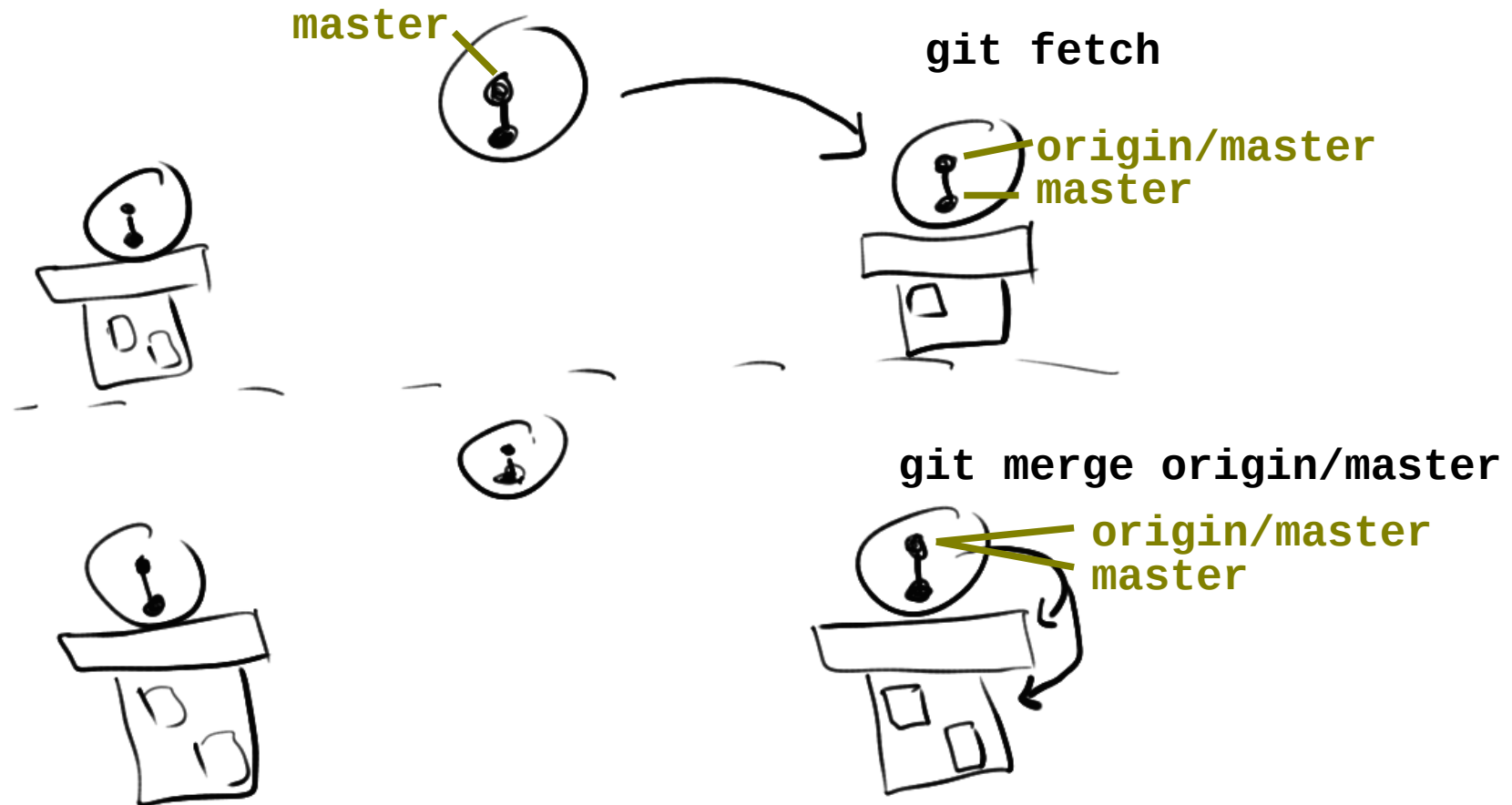
```
git clone <url>
```

```
master origin/master
```

```
master origin/master
```



Two people working at separate times

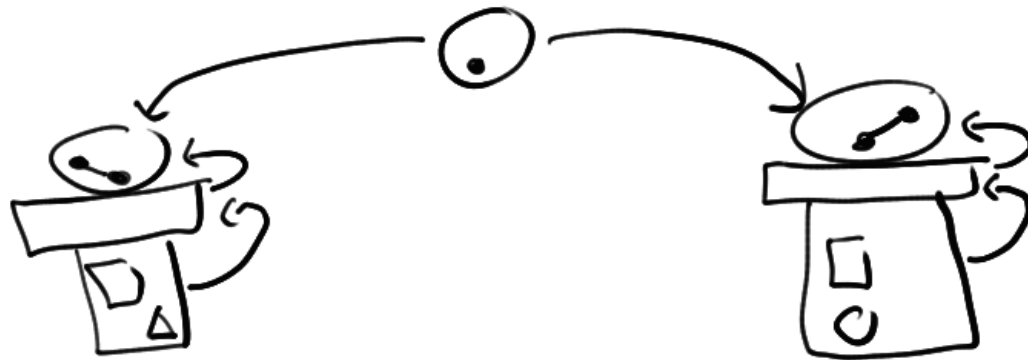


Two people working at the same time (different files)



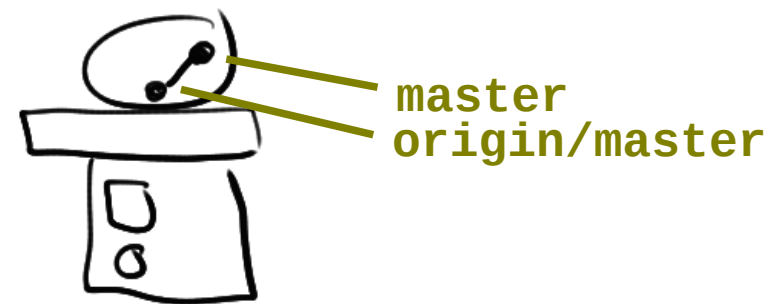
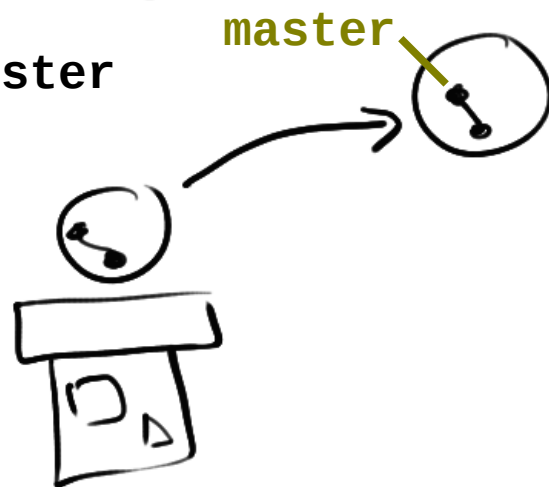
Two people working at the same time (different files)

```
git clone <url>  
<edit file one>  
git add  
git commit
```

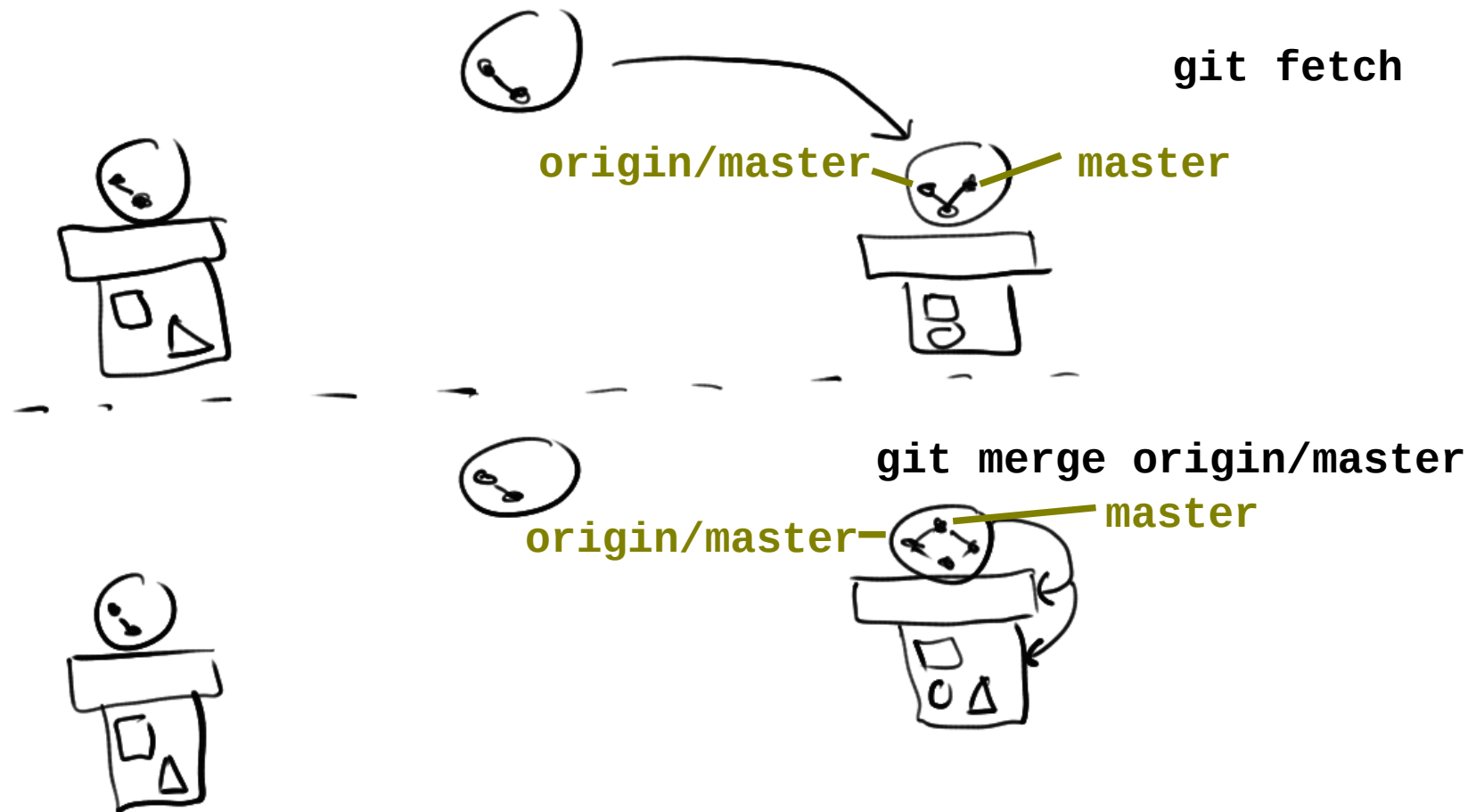


```
git clone <url>  
<edit file two>  
git add  
git commit
```

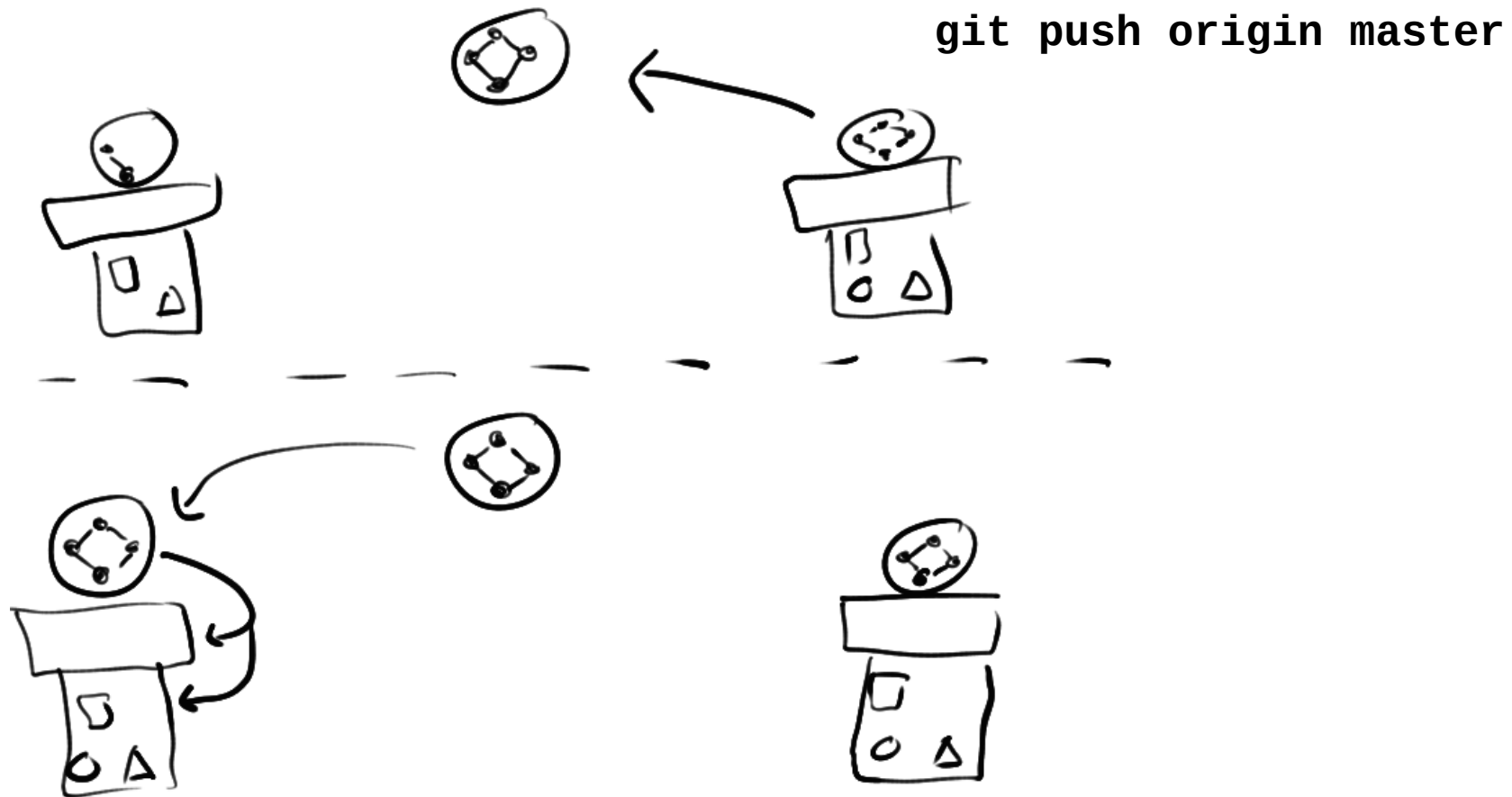
```
git push origin master
```



Two people working at the same time (different files)



Two people working at the same time (different files)

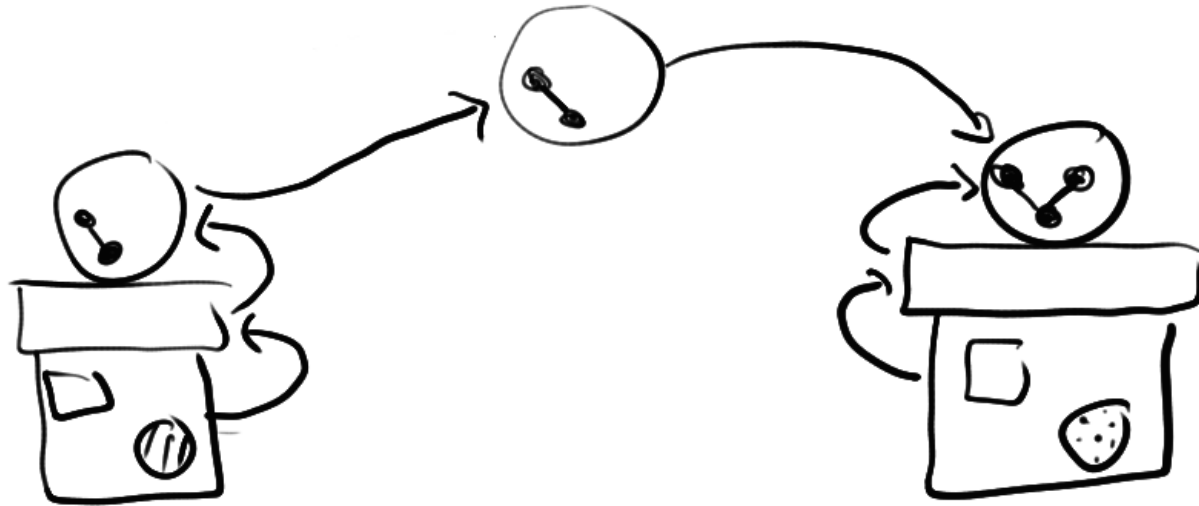


```
git fetch  
git merge origin/master
```

Two people working at the same time (same files)



Two people working at the same time (same files)



```
>git merge origin/master
Auto-merging Hello.txt
CONFLICT (content): Merge conflict in Hello.txt
Automatic merge failed; fix conflicts and then
commit the result.
```

Two people working at the same time (same files)

Hello world!
This is the start of a
great program!!!

Hello world!
This is the start of a
great program!!!

I like giraffes.

I like zebras.

Hello world!
I hope you're listening.
This is the start of a
great program!!!

I like elephants.

Hello world!
I hope you're listening.
This is the start of a great
program!!!

```
<<<<<<< HEAD  
I like elephants.  
=====  
I like giraffes.  
>>>>>>> origin/master
```

Two people working at the same time (same files)

Hello world!
I hope you're listening.
This is the start of a great
program!!!

```
<<<<<<< HEAD  
I like elephants.  
=====  
I like giraffes.  
>>>>>>> origin/master
```

```
<edit Hello.txt to resolve>  
git add Hello.txt  
git commit
```

Hello world!
I hope you're listening.
This is the start of a great
program!!!

I like elephants and giraffes.

Two people working at the same time (same files)

Merge remote-tracking branch 'origin/master'

Conflicts:

 Hello.txt

#

It looks like you may be committing a merge.

If this is not correct, please remove the file

.git/MERGE_HEAD

and try again.

Please enter the commit message for your changes. Lines starting

with '#' will be ignored, and an empty message aborts the commit.

On branch master

Your branch and 'origin/master' have diverged,

and have 1 and 1 different commit each, respectively.

(use "git pull" to merge the remote branch into yours)

#

All conflicts fixed but you are still merging.

#

Changes to be committed:

modified: Hello.txt

Viewing / browsing old versions of your work

`gitk --all &`

The screenshot shows the gitk GUI with the following components:

- Graph:** A commit history graph on the left showing branches `remotes/origin/wip-2013` and `master`. The `master` branch is highlighted in green. Commits are represented by blue circles connected by lines.
- Commit List:** A table on the right showing commit details:

Commit Hash	Author	Date
ffba57269dcca12cfc929e3a4f6322931cf0f1c	Dr. Tristan Allwood <tora@doc.ic.ac.uk>	2014-05-20 12:35:15
	Maria Valera <mvalerae@imperial.ac.uk>	2014-05-12 15:15:29
	Maria Valera <mvalerae@imperial.ac.uk>	2014-05-12 15:11:31
	Dr. Tristan Allwood <tora@doc.ic.ac.uk>	2014-05-20 12:31:59
	Dr. Tristan Allwood <tora@doc.ic.ac.uk>	2014-05-12 15:38:50
	Dr. Tristan Allwood <tora@doc.ic.ac.uk>	2014-05-12 11:10:40
	Dr. Tristan Allwood <tora@doc.ic.ac.uk>	2014-05-12 11:08:18
	Maria Valera <mvalerae@imperial.ac.uk>	2014-05-08 17:36:30
	Maria Valera <mvalerae@imperial.ac.uk>	2014-05-07 19:04:14
	Maria Valera <mvalerae@imperial.ac.uk>	2014-05-07 18:59:16
	Dr. Tristan Allwood <tora@doc.ic.ac.uk>	2014-05-12 11:07:14
- SHA1 ID:** `ffba57269dcca12cfc929e3a4f6322931cf0f1c`
- Find:** Search for "commit" containing "containing:"
- Diff View:** Shows a diff between the old and new versions of `spec/spec.tex`. The diff content is:

```
+begin{itemize}
+
+\item A statement on how you've split the work between group members
+are co-ordinating your work.
+
+\item A discussion on how well you think the group is working, and
+imagine it might need to change for the later tasks.
+
+\item How you've structured your emulator, and what bits you think
+able to reuse for the assembler.
+
+\item A discussion on implementation tasks that you think will be
+difficult / challenging later on, and how you are working on them.
+
+\end{itemize}
+
+You will also need to complete an interim peer-assessment of your work
+of May through the WebPA system. The feedback on this will be available
+on the 2nd of June.
```
- Comments:** Lists files `spec/images/timetable.svg` and `spec/spec.tex`.

Viewing / browsing old versions of your work

```
> git log spec/spec.tex
```

```
commit ffba57269dcc1a12cfc929e3a4f6322931cf0f1c  
Author: Dr. Tristan Allwood <tora@doc.ic.ac.uk>  
Date: Tue May 20 12:31:59 2014 +0100
```

More updates to the spec.

```
commit 93734d0101efaa6b0dfb347587284eea844b36bb  
Author: Dr. Tristan Allwood <tora@doc.ic.ac.uk>  
Date: Mon May 12 15:38:50 2014 +0100
```

Spec pass up to working and submission.

```
commit e4d606286b3791b01c3636040f541502f9af196a  
Merge: 1976787 1f0d7c6  
Author: Dr. Tristan Allwood <tora@doc.ic.ac.uk>  
Date: Mon May 12 11:08:18 2014 +0100
```

Merge remote-tracking branch 'origin/master' into wip-2013

Conflicts:

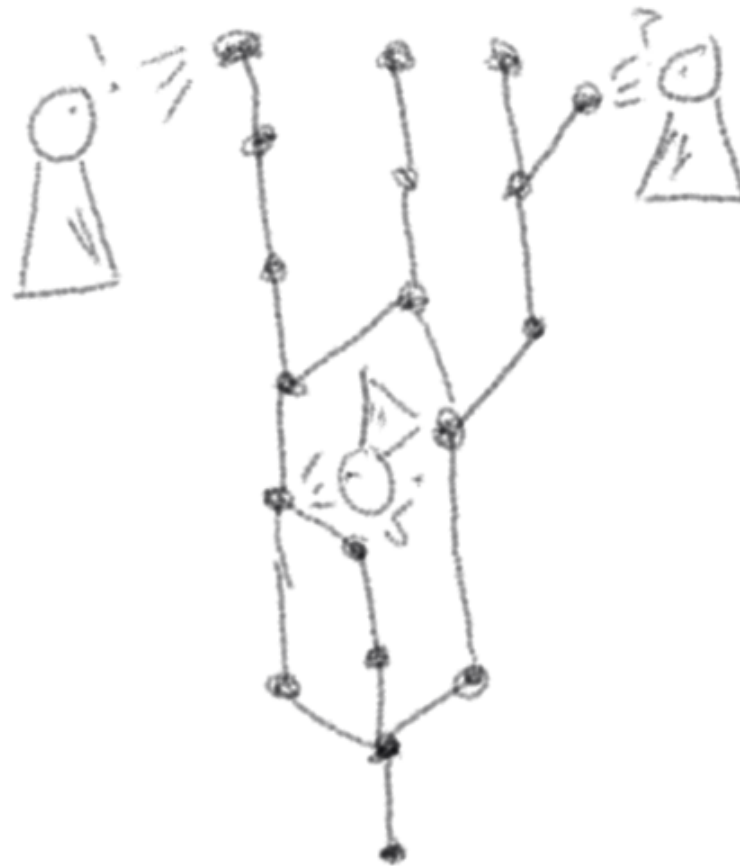
...

Viewing / browsing old versions of your work

```
> git blame spec/spec.tex
```

```
61313227 (Dr. Tristan Allwood 2013-05-19 12:52:55 +0100 1) \documentclass[a4paper, tw
cd6b4b2d (Will Jones 2012-05-14 12:09:02 +0100 2)
61313227 (Dr. Tristan Allwood 2013-05-19 12:52:55 +0100 3) \usepackage{fullpage}
c05c8bed (Will Jones 2012-04-18 17:36:15 +0100 4) \usepackage{bytefield}
dfe12a56 (Will Jones 2012-05-14 14:40:51 +0100 5) \usepackage{graphicx}
0155868c (Dr. Tristan Allwood 2012-05-17 19:04:45 +0100 6) \usepackage{hyperref}
5a27d821 (Will Jones 2012-05-18 12:18:02 +0100 7) \usepackage{alltt}
a3b7a457 (Dr. Tristan Allwood 2013-05-17 17:20:28 +0100 8) \usepackage{amsmath}
a3b7a457 (Dr. Tristan Allwood 2013-05-17 17:20:28 +0100 9) \usepackage{tabulary}
d87cdb9f (Maria 2013-05-13 17:42:20 +0100 10) \usepackage{float}
73bb5cc4 (Dr. Tristan Allwood 2013-05-19 19:34:44 +0100 11) \usepackage{comment}
d87cdb9f (Maria 2013-05-13 17:42:20 +0100 12) \restylefloat{table}
cd6b4b2d (Will Jones 2012-05-14 12:09:02 +0100 13)
07215a58 (Will Jones 2012-05-18 12:31:43 +0100 14) \hypersetup{
07215a58 (Will Jones 2012-05-18 12:31:43 +0100 15)   colorlinks=true,
07215a58 (Will Jones 2012-05-18 12:31:43 +0100 16)   linkcolor=blue,
07215a58 (Will Jones 2012-05-18 12:31:43 +0100 17)   citecolor=blue,
07215a58 (Will Jones 2012-05-18 12:31:43 +0100 18)   filecolor=blue,
07215a58 (Will Jones 2012-05-18 12:31:43 +0100 19)   urlcolor=blue
07215a58 (Will Jones 2012-05-18 12:31:43 +0100 20) }
07215a58 (Will Jones 2012-05-18 12:31:43 +0100 21)
cd6b4b2d (Will Jones 2012-05-14 12:09:02 +0100 22) % Macros for printing coc
cd6b4b2d (Will Jones 2012-05-14 12:09:02 +0100 23)
```

Multiple Branches of Development



Multiple Branches of Development

File Edit View Help

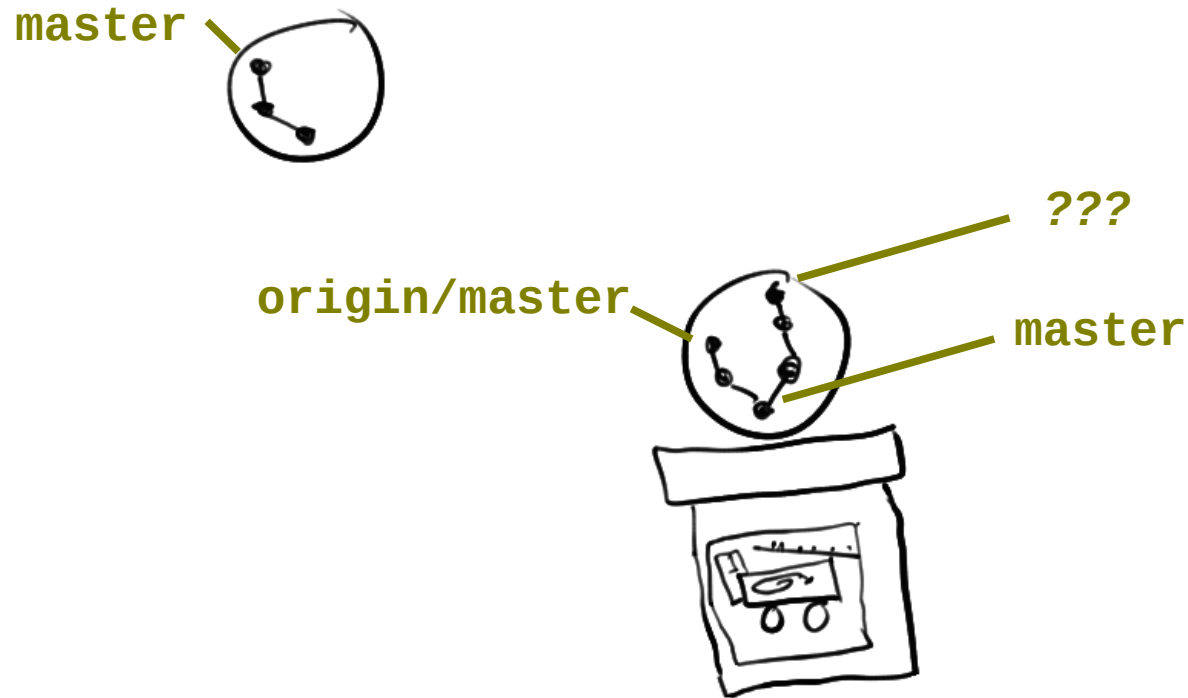
History Commit

Branch: master

Subject Author

- WIP on master: b611235 Some optimisations to r Tristan Allwood
- ALKDfALKfLKF Tristan Allwood
- Integrate Rob's RTest Tristan Allwood
- Merge remote branch 'rob/master' Robert Henderson
 - Wrote anger strategy Will Jones
 - Some optimisations to master. Will Jones
 - Optimisations default in Makefile and att darr Will Jones
 - Fused the normal/zombie steps. Will Jones
- Merge remote branch 'tris/strat_killone' Will Jones
- Zombies everywhere! Tristan Allwood
- Merge remote branch 'tris/strat_killone' Will Jones
- Did more of test strategy Robert Henderson
- Merge remote-tracking branch 'will/master' Robert Henderson
 - fixed broken line in RTest.hs Robert Henderson
 - Fixed minor conflict in Types.hs Robert Henderson
 - Wrote rtest strategy Tristan Allwood
 - RTS opts to visualiser Will Jones
 - Merge remote branch 'tris/strat_killone' Tristan Allwood
 - Submission 0 Tristan Allwood
 - Merge remote branch 'will/master' into strat_killon Tristan Allwood
 - Merge remote branch 'tris/strat_killone' Will Jones
 - Commit! Nearly all zombies Tristan Allwood
 - Broken strategy. Tristan Allwood
 - Merge remote branch 'tris/strat_killone' Will Jones
 - Broken strategy. Tristan Allwood
 - Renamed to be getOurSlotVitality/getTheirSlotVitalty Will Jones
 - Added askOurSlotVitality and askTheirSlotVitality. Will Jones
 - Merge remote branch 'will/modeline_extras' into stra Tristan Allwood
 - Killer strategy. Tristan Allwood
 - One row dead, 7 to go...hmmm brainzzzz Tristan Allwood
 - LOOP WORKS!!!! Tristan Allwood
 - LOOP WORKS!!!! Tristan Allwood
 - Made RunGame module for testing performance of the Robert Henderson Tristan Allwood

Multiple branches of development



Multiple branches of development

```
git checkout -b my_awesome_fire_truck  
<work and commit on the fire truck branch>
```



Multiple branches of development

`git checkout master`



Multiple branches of development

`git push origin my_awesome_fire_truck`

`git fetch`

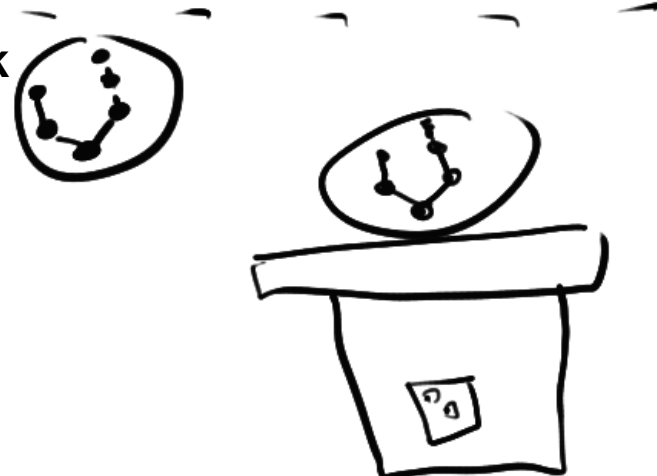


`git checkout my_awesome_fire_truck`

my_awesome_fire_truck

master

origin/master



Multiple branches of development

```
git checkout master
```

my_awesome_fire_truck

master



```
git merge my_awesome_firetruck
```

```
<merge conflict>
```

```
<put out fires>
```

```
git add
```

```
git commit
```

my_awesome_fire_truck

master



Do not forget to put out the fires!

Executive Summary	1
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3.11.1 Program not running

||||| HEAD This state indicates that Deeva has just been started from the command line and program is not yet running. In this state, user can inspect various files and set breakpoints accordingly.

3.11.2 Program is running

When user runs the program, Deeva is in the running state until it starts waiting for input or reaches a breakpoint or terminates. ===== This state indicates that Deeva is just executed from the command line and program has not been run yet. In this state, user can inspect various files and set breakpoints accordingly.

3.11.3 Program is running

When user runs the program, Deeva is in the running state until it reaches a breakpoint. it might also be waiting for input, or the program is terminated. Running state could be hardly seen sometimes as program reaches paused state very quickly. ||||| f2bd451f75773f8ec58b924ee71eabec8ddaa40a

3.11.4 Program paused

Once Deeva reaches a breakpoint, it is in a paused state. During this state, user may choose various actions e.g. continue the program, execute the next line or inspect the current state of the stack and heap.

Lots of things we've seen

git clone

git status

git add

git rm

git mv

git diff

git commit

git push

git fetch

git merge

git log

gitk -all

gitg

git blame

git checkout -b

git checkout

Lots of other things to investigate

git checkout

git help <command>

git cherry-pick

git rebase

git stash

git reset

git branch

git remote

