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The Unix Shell

Managing your code: quietly introducing *Git* - a friend for life

Thanks to all contributors:

Alison Pamment, Sam Pepler, Ag Stephens, Stephen Pascoe, Kevin Marsh, Anabelle Guillory, Graham Parton, Esther Conway, Eduardo Damasio Da Costa, Wendy Garland, Alan Iwi, Matt Pritchard and Tommy Godfrey.

Managing code in the olden days

- Create "*working_dir*"...add some code
- Write some outputs...change the code
- Publish a paper...change the code
- Copy "*working_dir*" to "*working_dir2*"
- Change the code
- Copy a version to a CD

...now which version is current? Is it "working_dir" or "working_dir2"? And which one relates to that paper?

But those days are gone!

- Scientists are typically **required to publish data and code** (by their funders/institutions).
- Collaboration between scientists requires data-sharing; this implicitly relies on **code-sharing**.
- There are **tools that make it easy** to record our changes, document our workflow and "fix" releases of our code at important steps along the way.

So, working on the premise that we accept that we need to know about, and use, version control…

We will use Git and GitHub

Introducing GitHub

https://github.com

Let's get started with GitHub

- Anyone can get a free GitHub account - you'll only need to pay if you want *private* repos
- We are going to learn Git and GitHub by using them throughout this course.
- Let's get started… ☺

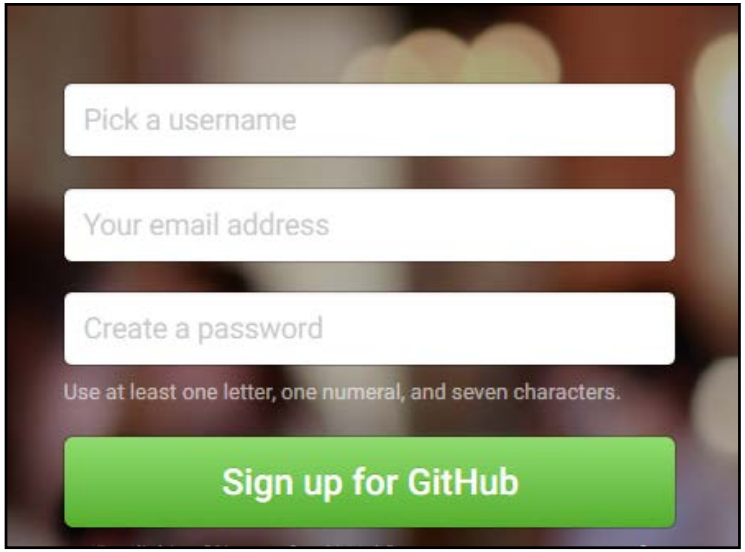
Create a GitHub account

Go to: https://github.com and sign up:

Authentication

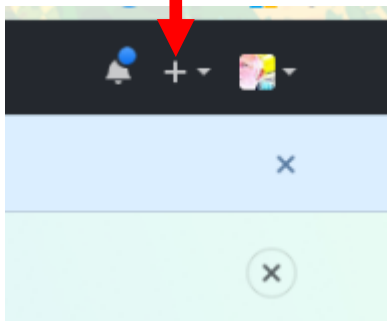
You can use either a username/password **or** SSH key authentication. The latter is more secure but many folks use username/password.

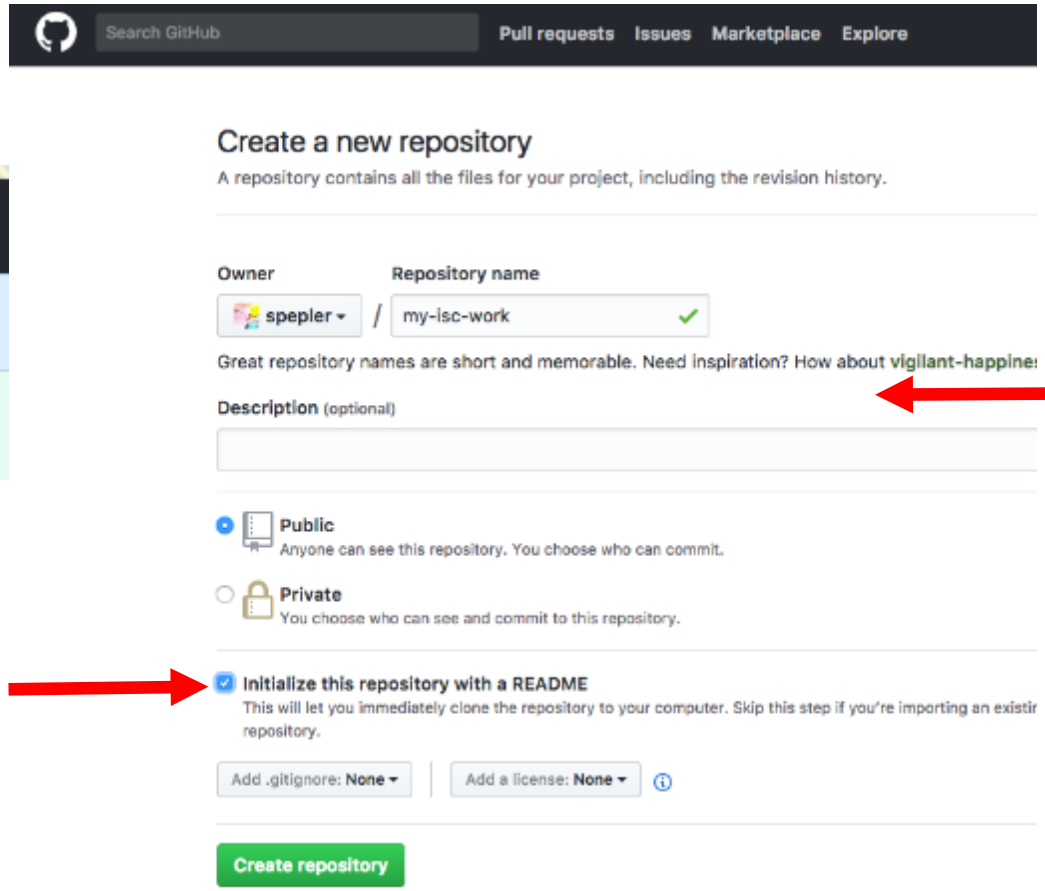
For this course **we will use username/password** for simplicity.



Make a repo

1) Click to add a new repo



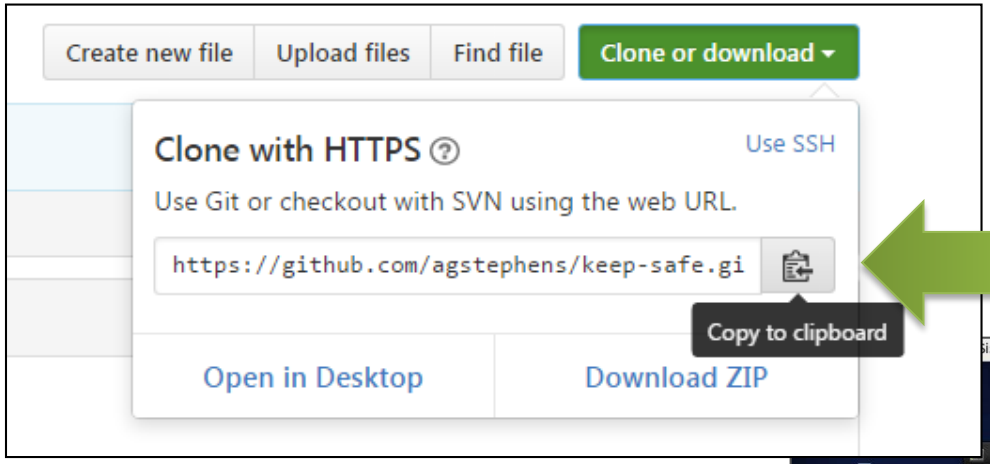


2) Call new repo my-isc-work

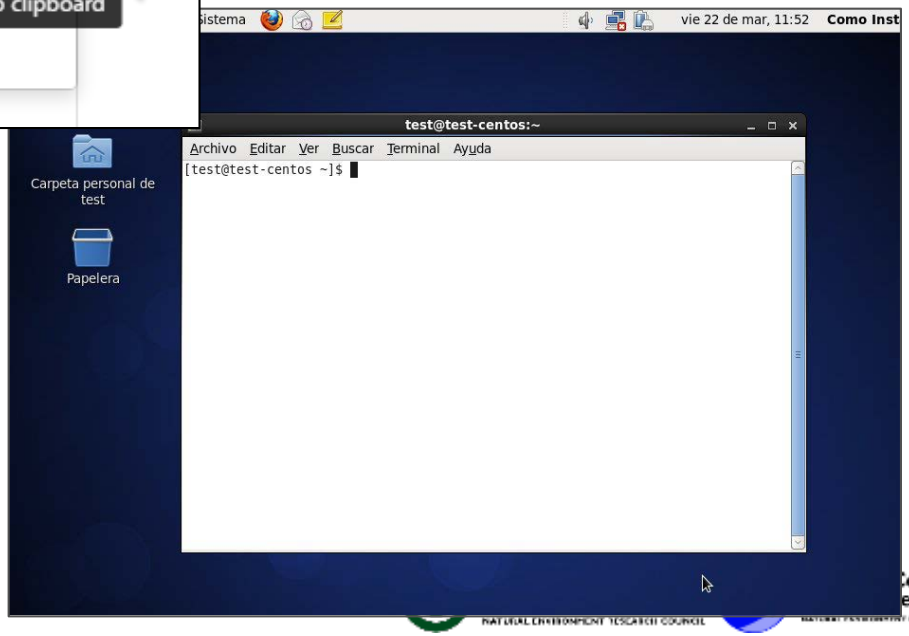
3) Click the add README box

Copy the *clone* link

1. Click "Clone or download " and copy the link.



2. Go to your Linux Terminal.



Copy the *clone* link

3. Make sure you are in your home directory:
4. Write the git clone command and add the URL to the repository (which is different for each user):

```
$ cd
$ git clone
  https://<username>@github.com/<username>/my-isc-work
```

The my-isc-work repo is now on the laptop and I can list the README.md file

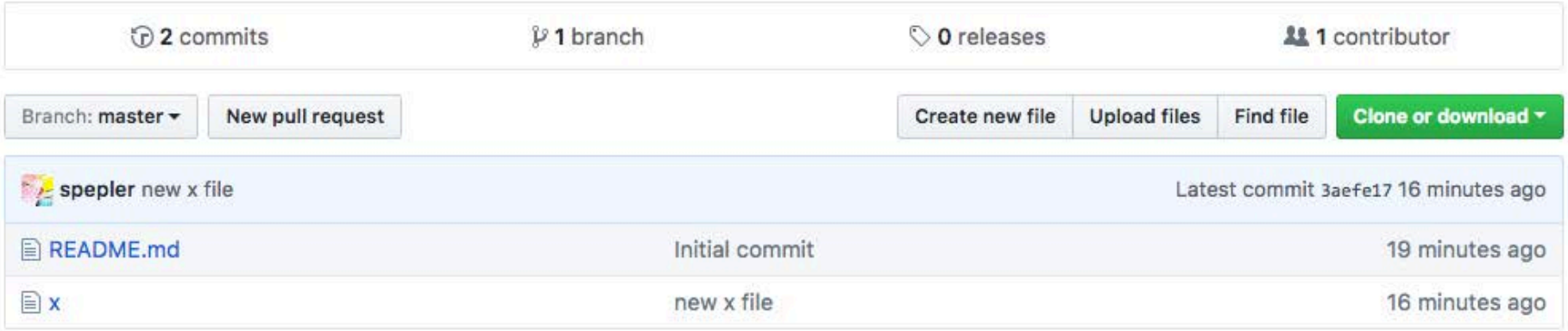
```
$ cd my-isc-work/
$ ls
README.md
$ touch x
$ ls
README.md x
$ git add x
$ git commit x -m 'new x file'
[master 3aefe17] new x file
 1 file changed, 0 insertions(+), 0 deletions(-)
 create mode 100644 x
$ git push
Counting objects: 3, done.
Delta compression using up to 4 threads.
Compressing objects: 100% (2/2), done.
Writing objects: 100% (3/3), 272 bytes | 272.00 KiB/s, done.
Total 3 (delta 0), reused 0 (delta 0)
To https://github.com/spepler/my-isc-work.git
   183fa53..3aefe17  master -> master
```

Make a blank file "x"

Use git add and git commit to put the file under version control

Use git push to update github copy of the repo with the changes (in this case adding the "x" file)

Now it's visible on GitHub



I'll be back…

- There is already a copy of the course materials on your laptop from a public GitHub repository.
- You are setup on GitHub for use latter in the course.
- We'll add more git stuff as we go.