



# Using Git

*“I'm an egotistical bastard, and I name all my projects after myself. First Linux, now git.”*

Linus Torvalds

# We will...

- Configure Git
- Clone the CCP-WSI training repository
- Change branch and create branches
- Modify the contents of the repository and commit to our local repository
- Merge branches together
- Push to and pull from the CCP-WSI training repository as necessary



# Config settings

- Tell git your name and email address, these are added to commit messages:

```
git config --global user.name "Your Name"
```

```
git config --global user.email you@somewhere.ac.uk
```

- Make the CLI a bit prettier

```
git config --global color.ui auto
```



# Clone the training repository

- Clone the repository:

```
git clone \  
ssh://ccpforge.cse.rl.ac.uk/gitroot/ccpws_i_training
```

```
cd ccpws_i_training
```



# Pushing and pulling

- To download updates from CCPForge  
`git pull`
- To upload changes to CCPForge  
`git push`



# Useful commands

- View current status of working copy and index  
`git status`
- View changes  
`git diff`
- View commit history  
`git log`



# Listing and changing branches

- To list local branches:  
`git branch`
- To list remote branches (those on CCPForge):  
`git branch -r`
- To change branch:  
`git checkout <branch-name>`



# Branching

- Checkout the source branch  
`git checkout <src-branch>`
- Create the new branch locally  
`git branch <branch>` OR `git checkout -b <branch>`
- Then upload it to CCPForge  
`git push`





# Adding or editing a file

- Add the change to the index (staging area)  
`git add <file>`
- Commit the changes in the index to the local repository  
`git commit`
- Upload the changes in the local repository to CCPForge  
`git push`



# Deleting a file

- Delete the file and remove it from the index (staging area)

```
git rm <file>
```

- Commit the changes in the index to the local repository

```
git commit
```

- Upload the changes in the local repository to CCPForge

```
git push
```



# Renaming a file

- Move the file, add the new file to the index and remove the old file from the index

```
git mv <src> <dest>
```

- Commit the changes in the index to the local repository

```
git commit
```

- Upload the changes in the local repository to CCPForge

```
git push
```



# Oops, I made a mistake!

- Undo staged changes
  - `git reset <file>`
- Undo committed changes
  - `git revert <commit>`



# Merging

- Checkout the branch you want to merge into  
`git checkout <branch1>`
- Merge the change from the other branch into it  
`git merge <branch2>`
- You may have to resolve conflicts
- Then upload that change to CCPForge  
`git push`



# Deleting a branch

- If you're finished with a branch, you may want to delete the local copy
  - `git branch -d <branch>`
- Only the admins can delete branches from CCPForge!

