Software Development Principles for Statistical Modelling
Version Control with git

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January 31, 2017

https://www.github.com/kaybenleroll/training_courses.

Code is available in the `sdpsm_intro` directory.

Content in this workshop is based on the 'Software Carpentry' course: http://software-carpentry.org/

1. Git Basics

In this part of the workshop we introduce the concept of version control and how to set up and use `git`

Exercise 1.1 Create a new directory called `test_repo` in your working directory and create a git repo.

Exercise 1.2 Using `git config`, configure your name and email address.

Exercise 1.3 Create a text file called `personal_details.txt`. In this file add your name and phone number.

Exercise 1.4 Check the repo status using `git status` and commit your changes to the repo.

Exercise 1.5 Investigate the log and ensure your changes committed properly.

Exercise 1.6 Add a new file called `home_address.txt` and write your home address into it. Commit your changes and check the commit was performed properly.

2. Explore History

Exercise 2.1 Add the contents of the address file into the details file and delete the address file from the repo. Ensure all changes are committed properly.

Exercise 2.2 Look through the logs to get the commit hashes for the first commit and revert the file to that version.

Exercise 2.3 Reset the files on the file system to the most recent version using `git reset`.

Exercise 2.4 Look at the differences in the files between the current version.

Exercise 2.5 Add your nationality to the personal details file. Check the status of the repo and stash the changes with `git stash`

3. Branching and Merging

Exercise 3.1 List the branches in the repo, there should just be a single branch.

Exercise 3.2 Create a new branch, adding your education history to a new file and commit your changes.

Exercise 3.3 Switch back to the previous branch and look at what files are present.

Exercise 3.4 Checkout the new branch and ensure the files are correct.

Exercise 3.5 Merge the new branch into the original one using `git merge`

4. Miscellanous

Exercise 4.1 Add a new directory called data, and create a `data.csv` file in it.

Exercise 4.2 Look at the status of the files in the git repo

Exercise 4.3 Create a `.gitignore` file to ensure the CSV file is ignored by git

Exercise 4.4 Look at the one-line version of the log using `git log`

Exercise 4.5 Create an alias for the following command

```
git log --graph --decorate --pretty=oneline --abbrev-commit
```