



Exercises Git Tutorial

Work locally on your laptop

The following instructions have been tested under Ubuntu. Mac and Windows users can use Ubuntu in the Virtual Machine (setup distributed by Stefan Wyder):

1. Install Git:
`sudo apt-get install git`

Exercise 1 remote repository:

1. Create new directory and make it a new Git repository (or use the one you already created in Stefan's exercises)
2. Create a new file "script.sh" with following content:

```
#!/bin/bash

cd /home/student/Documents/bashScripting

#1. Quality check: FastQC
#####
mkdir fastQCResults
/home/student/software/FastQC/fastqc -t 4 -o fastQCResults
/home/student/Documents/bashScripting/data/ERR000064_200_1.fastq
/home/student/software/FastQC/fastqc -t 4 -o fastQCResults
/home/student/Documents/bashScripting/data/ERR000064_200_2.fastq
/home/student/software/FastQC/fastqc -t 4 -o fastQCResults
/home/student/Documents/bashScripting/data/ERR000061_500_1.fastq
/home/student/software/FastQC/fastqc -t 4 -o fastQCResults
/home/student/Documents/bashScripting/data/ERR000061_500_2.fastq
```

3. Commit the file to the local repository
4. Go to <https://github.com/> and sign up for GitHub
5. Log into GitHub and create a new repository
6. Connect the local with the remote repository and send the changes to the remote repository



Exercise 2 collaborating:

Open a second terminal window to simulate two users collaborating on a project

Terminal 2:

1. Create a new directory (outside of the above one) and cd into that directory
2. Copy the remote repository on your computer
3. Change the script.sh file, as follows:

```
#!/bin/bash
pathFastqc=/home/student/software/FastQC/fastqc
cd /home/student/Documents/bashScripting

#1. Quality check: FastQC
#####
mkdir fastQCResults
${pathFastqc} -t 4 -o fastQCResults
/home/student/Documents/bashScripting/data/ERR000064_200_1.fastq
${pathFastqc} -t 4 -o fastQCResults
/home/student/Documents/bashScripting/data/ERR000064_200_2.fastq
${pathFastqc} -t 4 -o fastQCResults
/home/student/Documents/bashScripting/data/ERR000061_500_1.fastq
${pathFastqc} -t 4 -o fastQCResults
/home/student/Documents/bashScripting/data/ERR000061_500_2.fastq
```

4. Commit and push the changes to the remote repository

Terminal 1:

5. Change the script.sh file, as follows:

```
#!/bin/bash
workPath=/home/student/Documents/bashScripting
cd ${workPath}

#1. Quality check: FastQC
#####
mkdir fastQCResults
/home/student/software/FastQC/fastqc -t 4 -o fastQCResults
${workPath}/data/ERR000064_200_1.fastq
/home/student/software/FastQC/fastqc -t 4 -o fastQCResults
${workPath}/data/ERR000064_200_2.fastq
/home/student/software/FastQC/fastqc -t 4 -o fastQCResults
${workPath}/data/ERR000061_500_1.fastq
/home/student/software/FastQC/fastqc -t 4 -o fastQCResults
${workPath}/data/ERR000061_500_2.fastq
```



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6. Commit and try to push the changes to the remote repository
 7. Git doesn't allow the push. Thus, first resolve the conflicts and then try to push it again.

Terminal 2:

8. Update local repository and have a look at the file.



Solutions:

You can find the solutions under following link:

https://www.dropbox.com/s/ocj79azg14jr285/Git_solutions.txt?dl=0

Sources:

<http://swcarpentry.github.io/git-novice>