Week 5 – Version Control System

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**Class:**

**Student numbers:**

**Student names:**

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Version 1.0

# Collaboration tool

In upcoming weeks, you’re going to work together on software projects and when you’re going to work together you will get to a point where you need to share your work. If you take a look at real companies, you will notice they use tools for this. The most basic tool for sharing code is called a version control system.

The GIT repository Fontys ICT uses is called GitLab, which is an open source web application. It supplies web-based GIT repository management, code reviews, issue tracking, activity feeds and wiki.

Figure : GitLab - https://gitlab.com

## Practice with Git

Before you start working with GitLab you should first get some practice with Git and its commands. Follow the Documentation <https://git-scm.com/doc> and make sure you understand what each step does.

A screenshot of a cell phone

Description automatically generated

Figure 2: <https://git-scm.com/doc>

This tutorial has shown you the basic commands. You can find a list of useful Git commands in Appendix A.

## Getting started with Git

Now you should know how to make use of Git, Every group member should download Git from (<https://git-scm.com/downloads>) and install it on their computer.

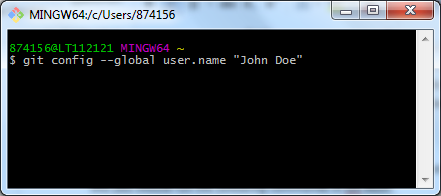


Figure 3: Git Bash - CLI

After installation you should start setting your identity. This identity will be visible every time you do a commit. To do this you should run the following commands in Git Bash:

1. git config --global user.name "Your name”
2. git config --global user.email youremail@example.com

Git Bash also offers you help via the following command:

* git help <verb>
  + For example: git help config

## Assignment - GitLab

Have one group member go to the website of Fontys ICT – GitLab (<https://git.fhict.nl/>):

* Create one repository on the Fontys ICT – GitLab and name it exactly in this format:

**<classCode>-<PairNumber>-<1stStudentName>-<2ndStudentName>**

* Add your project members and teacher as Member to the repository. (Maintainer permission for all members)

When these steps are finished everyone should connect to the repository via the command:

* git clone <url>.

Tip: make sure Git Bash is ‘pointing’ to the folder you want the working directory to be. From the last week assignment, you should know how to use the command-line tool to navigate between directories and more.

The two members now must push last week report to the project repository.

Add your pair information to the repository’s readme file.

You’re now done with this week’s practical. The Git repository should have all your submissions now.

# Appendix A: Git commands

For further reading and understanding about git branch, read through the official website:

* <https://git-scm.com/book/en/v1/Git-Branching-What-a-Branch-Is>
* <https://git-scm.com/docs/git-branch>

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| --- | --- |
| Command | Explanation |
| git init | **Import new project** |
| git clone [url] | **Clone a repository** |
| git status | Check file status |
| git add <filename> | **Tracking new files (ie. '\*.cs')** |
| git commit –m "Commit msg" | **Store changes locally** |
| git log | See what we changed |
| git remote add origin [url] | Add a remote repository |
| git push –u origin master | **Push local changes to origin repo (The -u tells Git to remember the parameters, so that next time we can simply run git push)** |
| git pull origin master | **Pull down remote changes** |
| git diff HEAD | What is different from our last commit |
| git diff --staged | Staged Differences |
| git reset <filename> | Reset the stage (unstage files) |
| git checkout --<target> | Get rid of all the changes since the last commit (Undo) |
| git branch <branchname> | **Create a new branch** |
| git branch -d <branchname> | **Delete a branch** |
| git checkout <branchname> | **Switch branches** |
| git checkout master | **Switch back to master (default)** |
| git rm <filename> | Remove a files |
| git merge HEAD | **Join two or more development histories together** |