Fontys Git Manual



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# What is Git and why should you use it?

Large projects may require a lot of different people to work on a lot of files. Project structure may get cluttered up and files get lost. Git allows a team to keep a clear overview of the project files and the changes made to these files. Git is a so-called distributed version control system. Using a version control system allows a team to keep a log of changes made to the files in the past. Therefore, allowing every member of the team to see how the document progresses.

**Did you know?**Git was created in 2005 by Linus Torvalds. Torvalds is also famous for his creation of the Linux Kernel.

Git is not only useful for teams but also for individuals. A project may span a long amount of time. It can get difficult to keep track of project files and file history. Git provides a set of tools to see previous project versions, or test extra functionality parallel to the original project ensuring the safety of the original project.

This document features as a guideline to Git and how you as a Fontys student can incorporate Git in your standard workflow to prevent issues such as data loss and miscommunication and in general help with maintaining an organized project structure.

# Manual structure

This guide will be split into 4 different tutorials namely:

|  |  |
| --- | --- |
| Tutorial | Aimed at |
| Git basics | Everyone |
| Git technical | Project members |
| Git management | Project management |
| Git advanced | Those who want to use Git to its maximum potential |

To improve the way of working within EXPO groups all disciplines are required to take knowledge of Git. Tips only aimed at a specific discipline will from now on be color coded in the following representative colors:

**ME**

Git provides excellent tools to work and collaborate on CAD files such as Solidworks and Siemens NX.

Mechanical Engineering

Mechatronics engineering

**MT**

Combining electrical, mechanical and software projects? Git is a must know for Mechatronics engineers.

Electrical engineering

**EE**

Working on PLC software or circuit diagrams? Git provides version control to save file history.

# Git Basic

## Getting started with

Before using Git it is important to understand a few terms and concepts.

* **Repository**

A repository is just a folder or “database” but with added Git functionality. A repository records versions of the files that it contains and may support multiple timelines of a project (see Branches).

* **Push/Pull requests**

To exchange file updates a user must upload and download the files on a regular basis. Uploading changed files is done with a Push request, while receiving file updates is done by a Pull request.

* **Branch**

A branch is an alternative timeline of a Repository (or project folder). This means that you may work on the same project but can also view the old unchanged files as they were before “branching”.

* **Stashed changes**

If two people edit the same file at the same moment a file conflict may occur. Unfortunately, this may still always occur. In this case those conflicts will be listed under the Stashed changes tab.

Now you are ready to install Github Desktop and start your first Git project.

Git also support a CLI  
For more information:   
https://git-scm.com/downloads

**MT**

**EE**

### Installation

Git supports a great variety of Desktop clients. One of the most popular interfaces is Github Desktop.

Github desktop can be downloaded using this link: <https://desktop.github.com/>

For full details on how to install Github Desktop please refer to Appendix A. Installation.

### Setting up a test project



### Cloning an existing repository

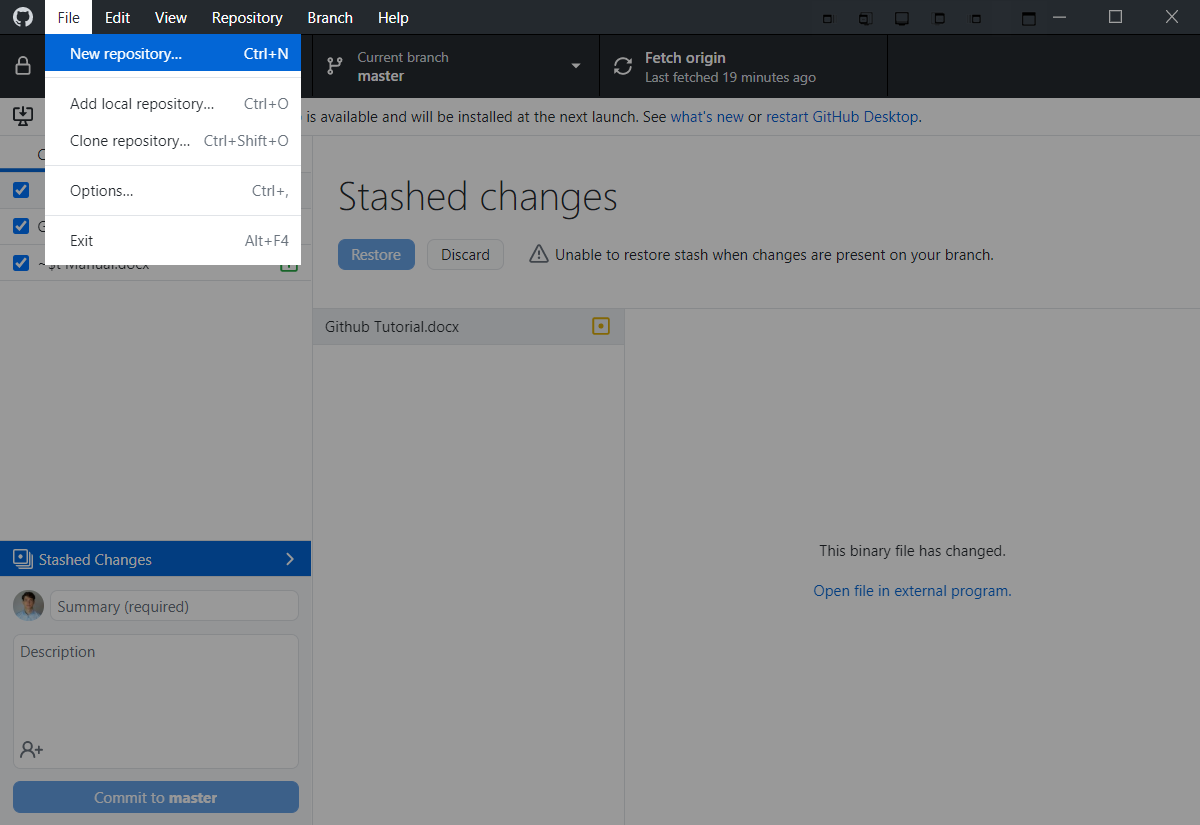


### Setting up a new repository

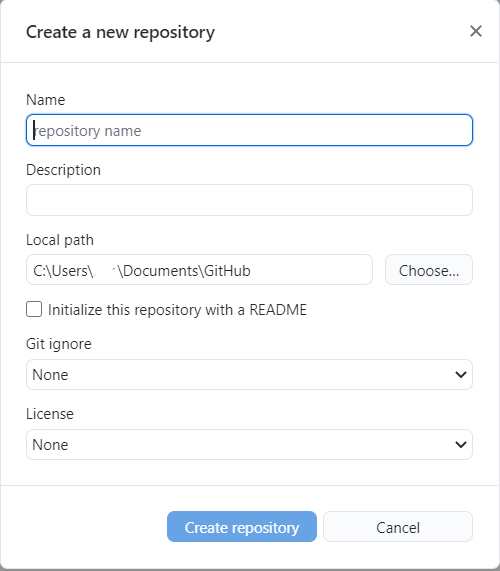
To create a new Repository right after installing Github Desktop click the button shown in the picture below.



If you have already opened a project, create a new repository under File 🡪 New repository



A new repository needs a Name and a description. By default, the new Repository will be saved locally in the Users\#YourPC#\Documents\GitHub folder.



## Git workflow

### Push pull requests

# Git Technical

# Git Management

# Git Advanced

# Extra info

## Git commands

git init

git clone git pull

git config --global user.name git config --global user.email

git touch documentname

git add wildcard \*.html all .

git status

git commit -m 'description what changed' (Waar is die -m ook al weer voor?)

git push

Branching

git branch branchname

git checkin git checkout

gitmerge branchname 'describe merge'

# Appendix

## A. Installation



Run the downloaded GitHubDesktopSetup.exe

Sign in to or create a free account.





Log in to your account.

