Git Cheat Sheet

GitLab

01 Git configuration

`git config --global user.name "Your Name"`	Set the name that will be attached to your commits and tags.
`git config --global user.email "you@example.com"`	Set the e-mail address that will be attached to your commits and tags.
`git config --global color.ui auto`	Enable some colorization of Git output.

02 Starting a project

`git init [project name]`	Create a new local repository in the current directory. If **[project name]** is provided, Git will create a new directory named **[project name]** and will initialize a repository inside it.
`git clone <project url>`	Downloads a project with the entire history from the remote repository.

03 Day-to-day work

`git status`	Displays the status of your working directory. Options include new, staged, and modified files. It will retrieve branch name, current commit identifier, and changes pending commit.
`git add [file]`	Add a file to the **staging** area. Use. in place of the full file path to add all changed files from the **current directory** down into the **directory tree.**
`git diff [file]`	Show changes between **working directory** and **staging area.**
`git diff --staged [file]`	Shows any changes between the **staging area** and the **repository.**
`git checkout -- [file]`	Discard changes in **working directory.** This operation is **unrecoverable**.
`git reset [<path>...]`	Revert some paths in the index (or the whole index) to their state in **HEAD.**
`git commit`	Create a new commit from changes added to the **staging area.** The **commit** must have a message!
`git rm [file]`	Remove file from **working directory** and **staging area.**

04 Storing your work

`git stash`	Put current changes in your **working directory** into **stash** for later use.
`git stash pop`	Apply stored **stash** content into **working directory,** and clear **stash.**
`git stash drop`	Delete a specific **stash** from all your previous **stashes.**

05 Git branching model

`git branch [-a]`	List all local branches in repository. With **-a**: show all branches (with remote).
`git branch [branch_name]`	Create new branch, referencing the current **HEAD**.
`git rebase [branch_name]`	Apply commits of the current working branch and apply them to the HEAD of [branch] to make the history of your branch more linear.
`git checkout [-b] [branch_name]`	Switch working directory to the specified branch. With **-b**: Git will create the specified branch if it does not exist.
`git merge [branch_name]`	Join specified **[branch_name]** branch into your current branch (the one you are on currently).
`git branch -d [branch_name]`	Remove selected branch, if it is already merged into any other. **-D** instead of **-d** forces deletion.

Commit	a state of the code base
Branch	a reference to a commit; can have a **tracked upstream**
Tag	a reference (standard) or an object (annotated)
HEAD	a place where your **working directory** is now

06 Inspect history

`git log [-n count]`	List commit history of current branch. **-n count** limits list to last **n** commits.
`git log --oneline --graph --decorate`	An overview with reference labels and history graph. One commit per line.
`git log ref..`	List commits that are present on the current branch and not merged into **ref**. A **ref** can be a branch name or a tag name.
`git log ..ref`	List commit that are present on **ref** and not merged into current branch.
`git reflog`	List operations (e.g. checkouts or commits) made on local repository.

07 Tagging commits

`git tag`	List all tags.
`git tag [name] [commit sha]`	Create a tag reference named **name** for current commit. Add **commit sha** to tag a specific commit instead of current one.
`git tag -a [name] [commit sha]`	Create a tag object named **name** for current commit.
`git tag -d [name]`	Remove a tag from local repository.

08 Reverting changes

`git reset [--hard] [target reference]`	Switches the current branch to the **target reference**, leaving a difference as an uncommitted change. When **--hard** is used, all changes are discarded. It's easy to lose uncommitted changes with **--hard.**
`git revert [commit sha]`	Create a new commit, reverting changes from the specified commit. It generates an **inversion** of changes.

09 Synchronizing repositories

`git fetch [remote]`	Fetch changes from the **remote**, but not update tracking branches.
`git fetch --prune [remote]`	Delete remote Refs that were removed from the **remote** repository.
`git pull [remote]`	Fetch changes from the **remote** and merge current branch with its upstream.
`git push [--tags] [remote]`	Push local changes to the **remote**. Use **--tags** to push tags.
`git push -u [remote] [branch]`	Push local branch to **remote** repository. Set its copy as an upstream.

10 Git installation

For GNU/Linux distributions, Git should be available in the standard system repository. For example, in Debian/Ubuntu please type inthe terminal:

```
sudo apt-get install git
```

If you need to install Git from source, you can get it from **git-scm.com/downloads**.

An excellent Git course can be found in the great Pro Git book by Scott Chacon and Ben Straub. The book is available online for free at **git-scm.com/book.**

11 Ignoring files

```
cat  <<EOF >  .gitignore
/logs/*
!logs/.gitkeep
/tmp
*.swp
EOF
```

To ignore files, create a .gitignore file in your repository with a line for each pattern. File ignoring will work for the current and sub directories where .gitignore file is placed. In this example, all files are ignored in the logs directory (excluding the .gitkeep file), whole tmp directory and all files *.swp.