# Git Cheat Sheet

## 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. If **[project name]** is provided, Git will create a new directory name **[project name]** and will initialize a repository inside it. If **[project name]** is not provided, then a new repository is initialized in the current directory.

```
$ 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 [file]
```

Revert your **repository** to a previous known working state.

```
$ 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**.

```
$ 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**.

## 04 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 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 [from name]
```

Join specified **[from name]** branch into your current branch (the one you are on currently).

```
$ git branch -d [name]
```

Remove selected branch, if it is already merged into any other.
**-D** instead of **-d** forces deletion.

## 05 Review your work

```
$ 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.

## 06 Tagging known 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.

## 07 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.

```
$ git revert [commit sha]
```

Create a new commit, reverting changes from the specified commit. It generates an **inversion** of changes.

## 08 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.

| | |
|---|---|
| **Commit** | an object |
| **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 |

## A Git installation

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

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

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

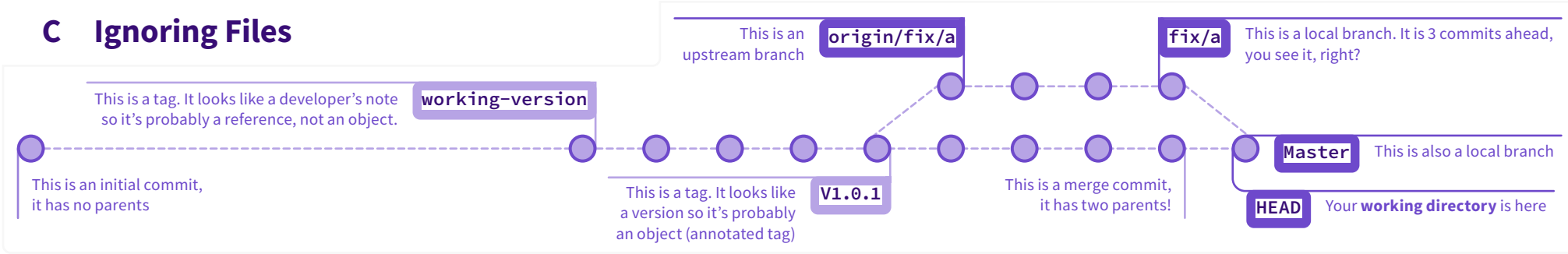
An excellent Git course can be found in the great **Pro Git** book by Scott Chacon and Ben Straub. The book is available online for free at git-scm.com/book.

## B Ignoring Files

```
$ cat .gitignore
/logs/*
!logs/.gitkeep
/tmp
*.swp
```

Verify the .gitignore file exists in your project and ignore certain type of files, such as all files in **logs** directory (excluding the **.gitkeep** file), whole **tmp** directory and all files ***.swp**. File ignoring will work for the directory (and children directories) where **.gitignore** file is placed.

## C Ignoring Files




## D The zoo of working areas