onnet

2021
VIE

Onnet Consulting Vietnam JSC.

www.on.net.vn
www.arrowhitech.com

onnet
BY AHT TECH JSC

Outline

1. What is Git?
2. Setup
3. Git workflow
4. Practice
5. Q&A

onnet
BY AHT TECH JSC

Definition

1. What is Git?

Before getting to know Git, we need to know what is **Version Control System (VCS).** Version control is a system that keeps track of changes to a file or set of files over time so that you are able to recall specific versions later.

Why VCS?

odoo Gold Partner

VCS gives you the ability to revert files or an entire project back to a previous state, review changes made over time, see who last modified something that might be causing a potential problem, who introduced an issue and when, and more. Using a **VCS** also means that if you mess things up or suffer from files loss, you can generally recover easily. And sometimes when working as a team, you just want to know “who wrote this sh*t”, hence, better traced the errors caused.

onnet BY AHT TECH JSC

3 types of VCS

odoo Gold Partner

There are 3 types of **VCS**, as follows:

- Local Version Control System
- Centralized Version Control System
- Distributed Version Control System

=> Git falls into the third type, which is a **distributed VCS**

onnet BY AHT TECH JSC

About Git

Git is a Distributed Version Control System, which means that it does not necessarily rely on a central server to store all the versions of a project's files. Instead, every user "clones" a copy of a **repository** (a collection of files) and has the full history of the project on their own hard drive. This clone has all of the metadata of the original while the original itself is stored on a self-hosted server or a third party hosting service like GitHub, GitLab.

About Git

Git also helps you **synchronise** code between multiple people. Imagine you and your teammates are collaborating on a project and you both are working on the same project files. Now Git takes those changes you and your friend made independently and merges them to a single “Master” repository. So by using Git you can ensure you both are working on the most recent version of the repository.

Repository

A **repository** aka a **repo** contains all of your project's files and each file's revision history. You can discuss and manage your project's work within the repository.

Setup

onnet
BY AHT TECH JSC

AHT TECH JSC
Widen your reach

2. Setup

- Create a GitLab account here, duh
- Setup Git command: if you have already had Git command, check using this command: `git --version`
- Tell Git who you are:

```
git config --global user.name "YOUR_USERNAME"

git config --global user.email "im_satoshi@musk.com"

git config --global --list
```

2. Setup


mac — -zsh — 127×32
(base) mac@Kwaans-MacBook-Pro ~ % git config --global --list
user.name=quaanjoi
user.email=leminhquan59@gmail.com
remote.origin.proxy=
http.sslbackend=openssl
core.excludesfile=/Users/mac/.gitignore_global
difftool.sourcetree.cmd=opendiff "$LOCAL" "$REMOTE"
difftool.sourcetree.path=
mergetool.sourcetree.cmd=/Applications/Sourcetree.app/Contents/Resources/opendiff-w.sh "$LOCAL" "$REMOTE" -ancestor "$BASE" -me
rge "$MERGED"
mergetool.sourcetree.trustexitcode=true
commit.template=/Users/mac/.stCommitMsg
filter.lfs.clean=git-lfs clean -- %f
filter.lfs.smudge=git-lfs smudge -- %f
filter.lfs.process=git-lfs filter-process
filter.lfs.required=true
(base) mac@Kwaans-MacBook-Pro ~ %

Generate SSH key

- To generate a new key: `ssh-keygen -t rsa -b 4096 -C "your_email@example.com"`
- Add the key to your Git account
- Test the connection: `ssh -T git@github.com`

Git Workflow

onnet
BY AHT TECH JSC

AHT TECH JSC
Widen your reach

3. Git workflow

odoo Gold Partner

There are four fundamental elements in the Git workflow:

- **Working Directory:** the current branch you are on
- **Staging Area:** where changes that are ready to be committed saved
- **Local Repository:** repo in your local machine
- **Remote Repository**: repo in remote server

onnet BY AHT TECH JSC

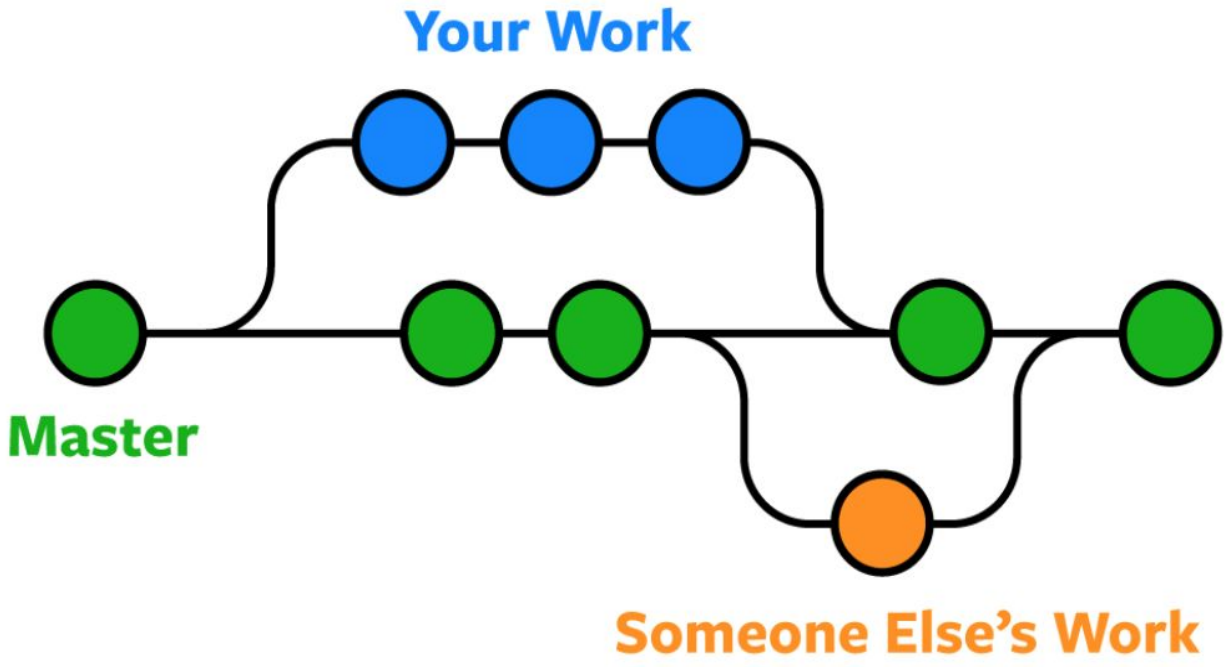
Basic Git commands

- git add: add a file that is in the working directory to the staging area.
- git commit: add all files that are staged to the local repository.
- git push: add all committed files in the local repository to the remote repository. So in the remote repository, all files and changes will be visible to anyone with access to the remote repository.

Basic Git commands

- git fetch: get files from the remote repository to the local repository but not into the working directory
- git merge: get the files from the local repository into the working directory
- git pull: get files from the remote repository directly into the working directory. It is equivalent to a git fetch and a git merge

Branches



Branches

- git checkout -b <new_branch_name>: create a new branch on your working repo and checkout to that branch
- git checkout <branch_name>: checkout to an existing branch
- git status: check the branch you are on and view the current push/pull status
- git clone: clone a repo to your local machine

Practice

Create new repo in your Git account

- Create a new repo in your Git account
- Add a local directory to that repo: `cd local_dir`, `git init`, `git remote add origin your_git_url`
- Add new files, commit and push to that repo
- View status
- Create new branch

.gitignore

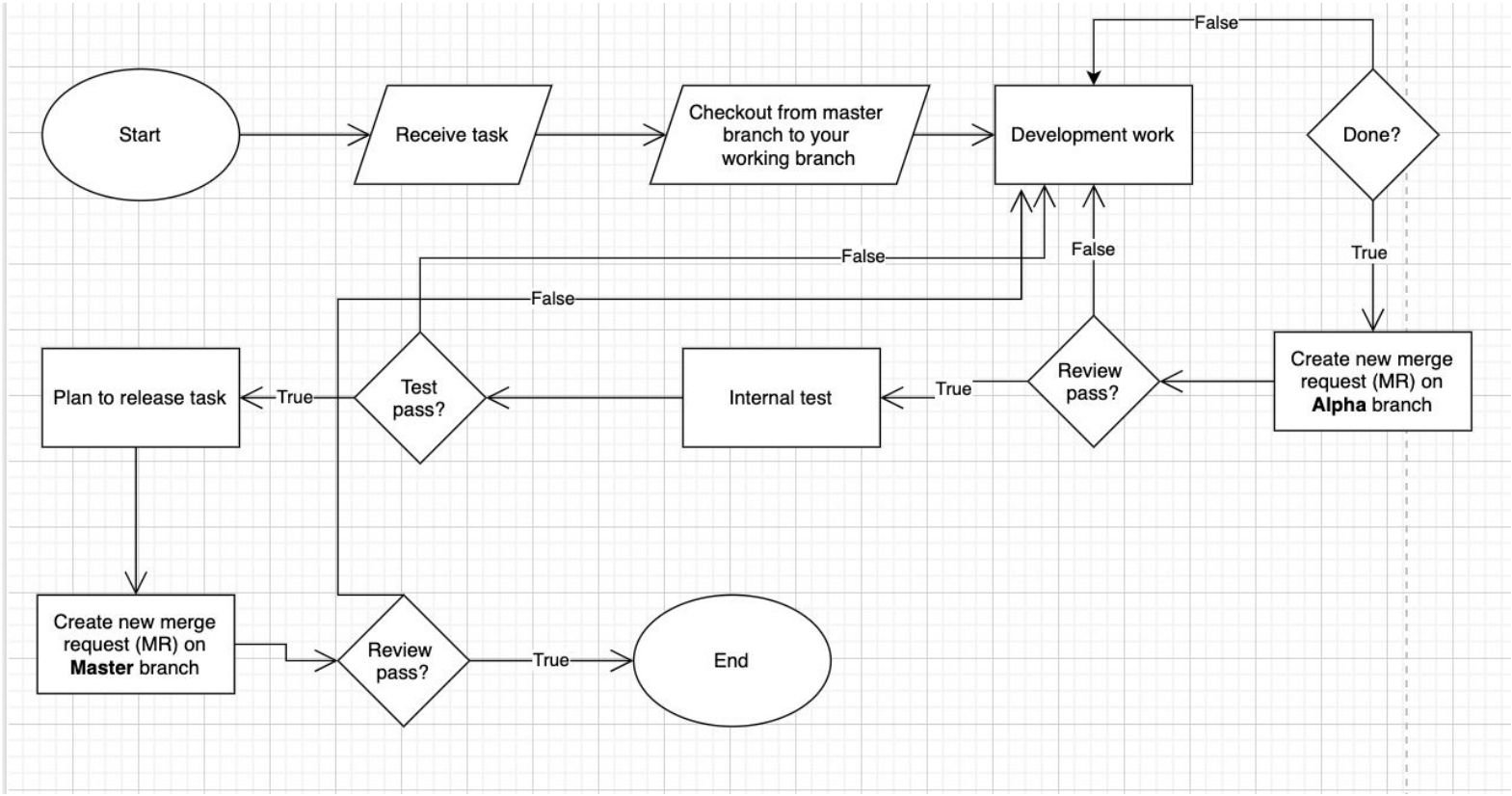
odoo Gold Partner

There will be cases that you only want to keeps files in your local machine and not to push some files to the remote repo -> .gitignore comes in.

Sample .gitignore: `/*.cmake/*.DS_Store/.user/buildetc`

onnet BY AHT TECH JSC

Sample Git workflow



Q&A