



Git

Versioning Control and Branch
Management

What is Versioning?

Control the source code version

The Problem



*Revision is a **must**, don't expect every code is **perfect***

What is Git?



One of the popular **version control system** used by **developers** to develop software **together**.

Everyone Should Sync to The Remote Server



Git **Track** Every File Change



Your changes, John's changes and everyone changes can be tracked by
git

Install Git **On Mac**

1. Download latest [Git for Mac Installer](#)
2. Follow the prompts to install git
3. Open a terminal and verify the installation was successful by typing

```
git --version
```

```
$ git --version  
git version 2.35.1
```

Install Git **On Windows**

1. Download latest [Git for Mac Installer](#)
2. When you've successfully started the installer, you should see the Git Setup wizard screen. Follow the Next and Finish prompts to complete the installation. The default options are pretty sensible for most users
3. Open a Command Prompt (or Git Bash if during installation you elected not to use Git from the Windows Command Prompt)

Install Git **On Linux**

1. From your shell, install git using `apt-get`

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

2. Verify the installation was successful by typing `git --version`

```
$ git --version  
git version 2.35.1
```

Git Configuration

GIT INIT, CLONE, CONFIG

Git Global Configuration

```
$ git config --global user.name "John Doe"
```

```
$ git config --global user.email "johndoe@example.com"
```

Git Initialization

```
$ git init
```

```
$ git remote add <REMOTE_NAME> <REMOTE_REPOSITORY_URL>
```

```
$ git push -u <REMOTE_NAME> <LOCAL_BRANCH_NAME>
```

Start with existing project, start working on the project

```
$ git clone <REMOTE_REPOSITORY_URL> myproject
```

```
$ cd myproject
```

Staging Area



Commit **Message**

If applied, this commit will be **your subject line here**

Better writing commit message with writing convention based on this [reference](#).

Type of commit :

| | |
|-----------|---|
| feat: | The new feature being added to a particular application |
| fix: | A bug fix (this correlates with PATCH in SemVer) |
| style: | Feature and updates related to styling |
| refactor: | Refactoring a specific section of the codebase |
| test: | Everything related to testing |
| docs: | Everything related to documentation |
| chore: | Regular code maintenance |

Synchronizing Git **Push, Fetch, & Pull**

```
## Git remote
```

```
$ git remote -v
```

```
$ git remote add origin https://github.com/example.git
```

```
## Fetch and pull
```

```
$ git fetch --all
```

```
$ git pull origin master
```

```
## Push
```

```
$ git push origin master
```

```
$ git push origin feature/login-user
```

Git Branching

Show all branch list

```
$ git branch
```

Create new branch

```
$ git branch feature/registration
```

```
$ git checkout feature/registration
```

Force delete specified branch

```
$ git branch -D <BRANCH_NAME>
```

List remote branch

```
$ git branch -a
```

Pull Request

The screenshot shows the GitHub interface for the repository 'iswanulumam / learn-git'. At the top, there are buttons for 'Unwatch' (1), 'Star' (0), and 'Fork' (0). Below this is a navigation bar with tabs for 'Code', 'Issues' (0), 'Pull requests' (0), 'Projects' (0), 'Wiki', 'Security', 'Insights', and 'Settings'. The 'Pull requests' tab is selected and highlighted with an orange border. A notification banner in the center reads: 'Label issues and pull requests for new contributors' with a 'Dismiss' link. Below the banner, it says: 'Now, GitHub will help potential first-time contributors discover issues labeled with **good first issue**'. At the bottom, there is a search bar with the filter 'is:pr is:open', buttons for 'Labels' (9) and 'Milestones' (0), and a green 'New pull request' button highlighted with a dashed orange border.

iswanulumam / learn-git

Unwatch 1 Star 0 Fork 0

Code Issues 0 Pull requests 0 Projects 0 Wiki Security Insights Settings

Label issues and pull requests for new contributors [Dismiss](#)

Now, GitHub will help potential first-time contributors [discover issues](#) labeled with **good first issue**

Filters is:pr is:open Labels 9 Milestones 0

New pull request

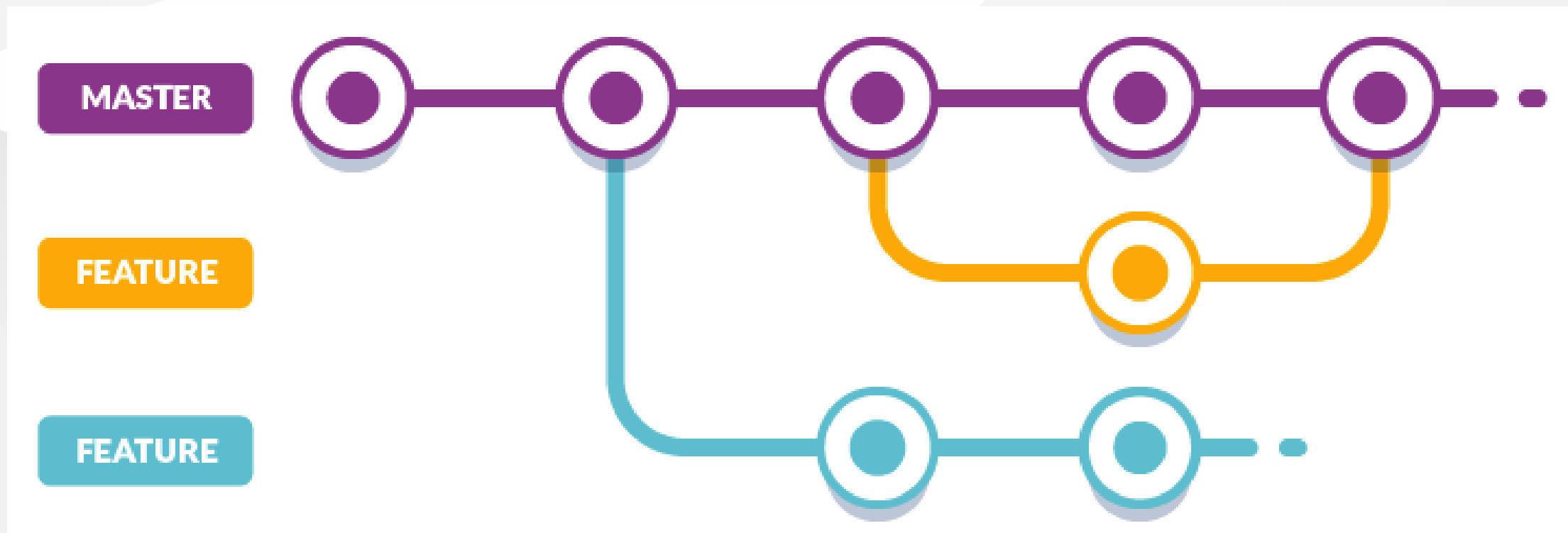
Workflow Collaboration



Do you work like this?



Or like this?



The **best way** like this



Let the **Master Branch** Undisturbed



```
$ (master) git branch development  
$ (master) git checkout development
```

Avoid **Direct Edit** on Development



```
$ (development) git branch feature/new-feature  
$ (development) git checkout feature/new-feature
```

Apply **Feature** into Development Only



```
$ (feature/new-feature) git checkout development  
$ (development) git merge feature/new-feature
```

Apply **Development** into Master

When it's already done



```
$ (master) git merge development
```

Any Question

