



GIT is easy

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What is GIT?

Git is a distributed version control and source code management system.

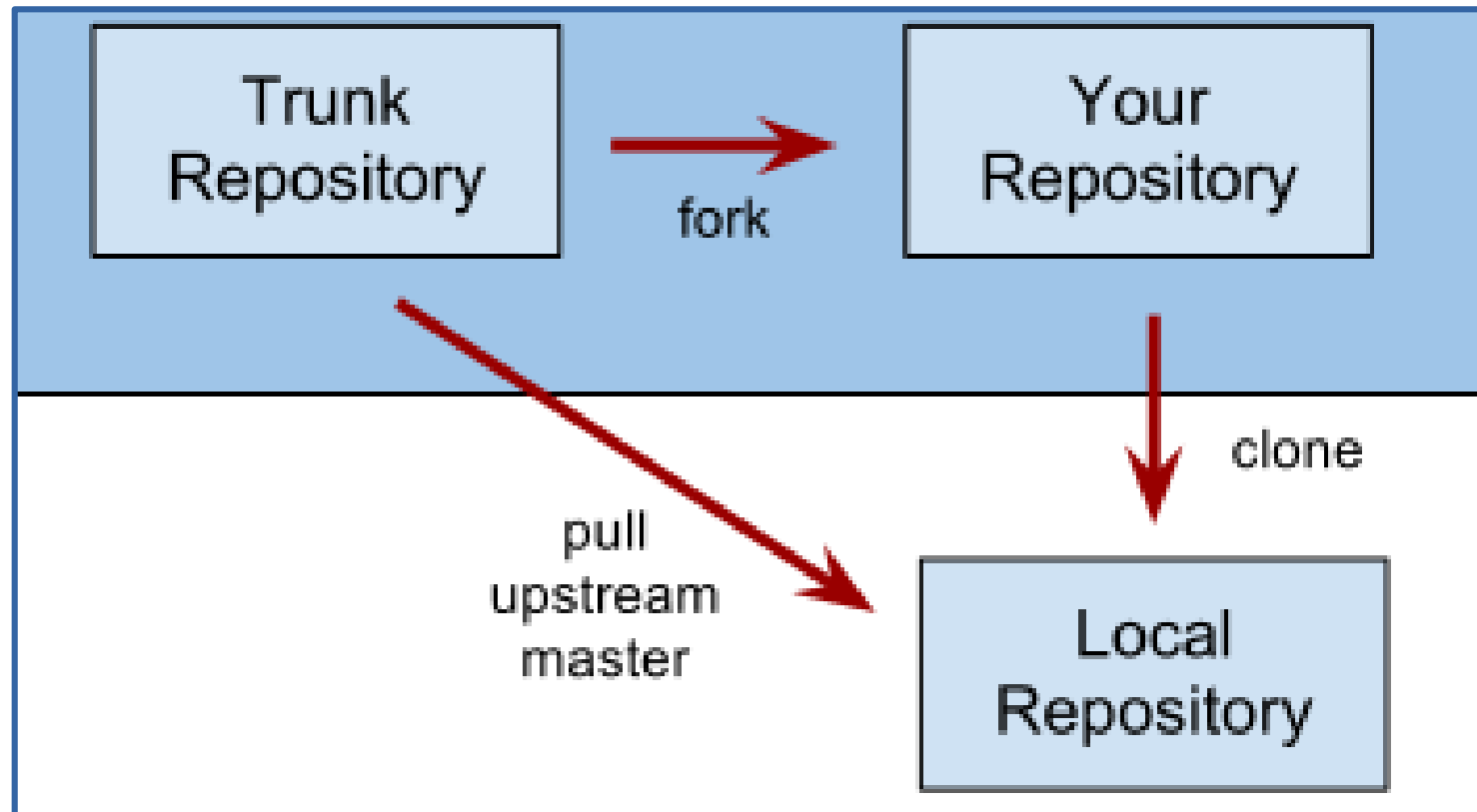


What do we mean by Version Control System?

A **Version Control System (VCS)** is a software that helps software developers to work together and maintain a complete history of their work. Listed below are the functions of a VCS:

- Allows developers to work simultaneously.
- Does not allow overwriting each other's changes.
- Maintains a history of every version.

The GIT architecture:

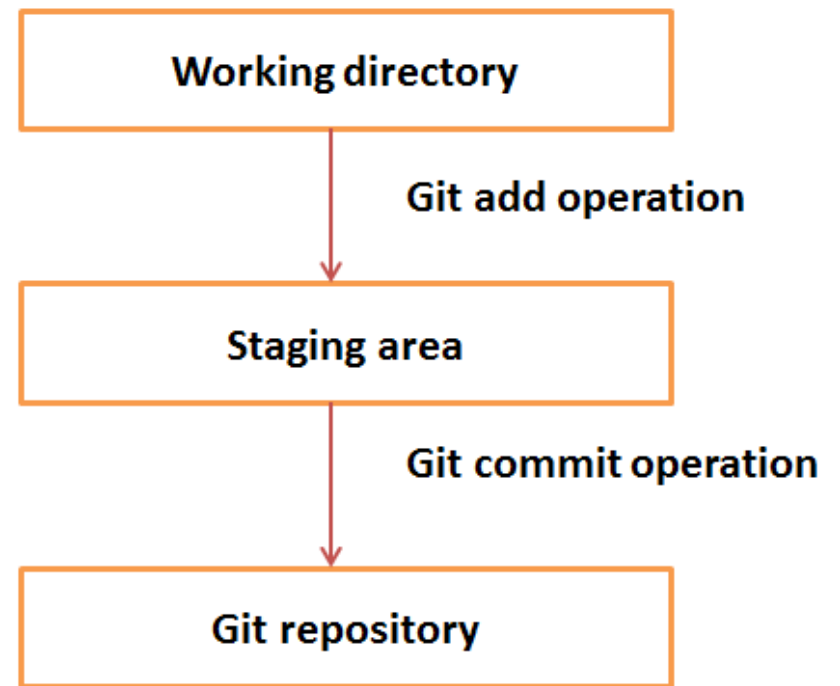


The basic workflow of Git

Step 1: You modify a file from the working directory.

Step 2: You add these files to the staging area.

Step 3: You perform commit operation that moves the files from the staging area. After push operation, it stores the changes permanently to the Git repository.

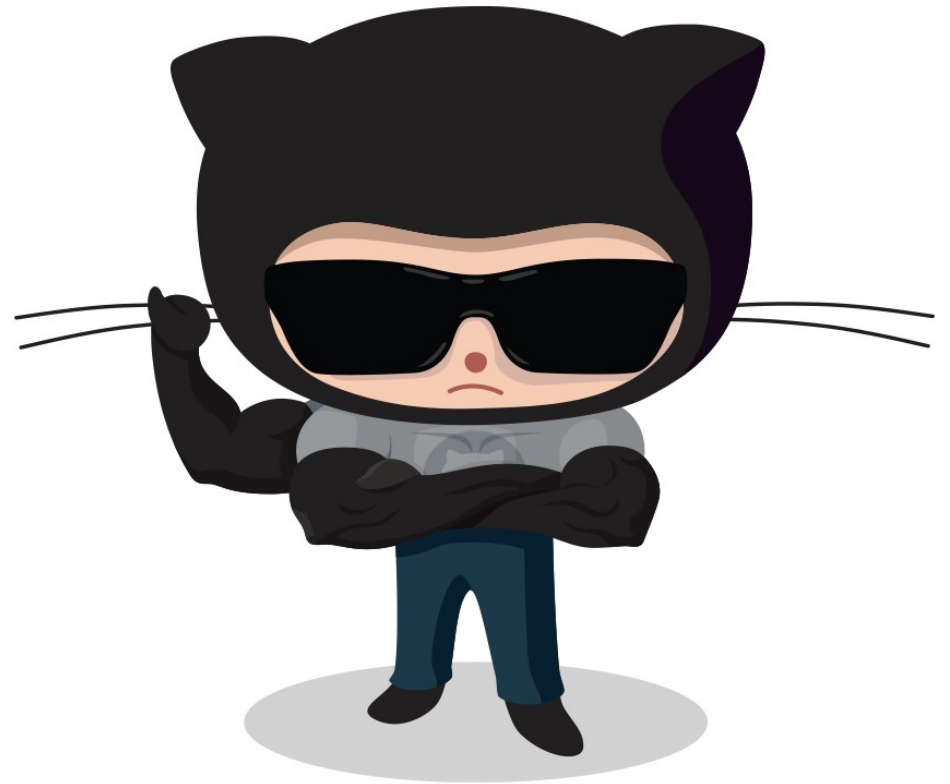


Basic git commands:

- `git init` - to create a new git repository
- Syntax:

```
cd <directory name>
```

```
git init
```



Basic git commands:

- `git clone` - create a working copy of a local repository
- Syntax:

`git clone <path>`

eg. `git clone https://github.com/priyankanag/GNUnify-16-demo`



Lets do some edits!!!!



Basic git commands:

- `git add` - propose changes by adding it to the Index

Syntax:

```
git add <filename>
```

```
git add .
```

- `git commit` - to actually commit the made changes

Syntax:

```
git commit -m "Commit message"
```



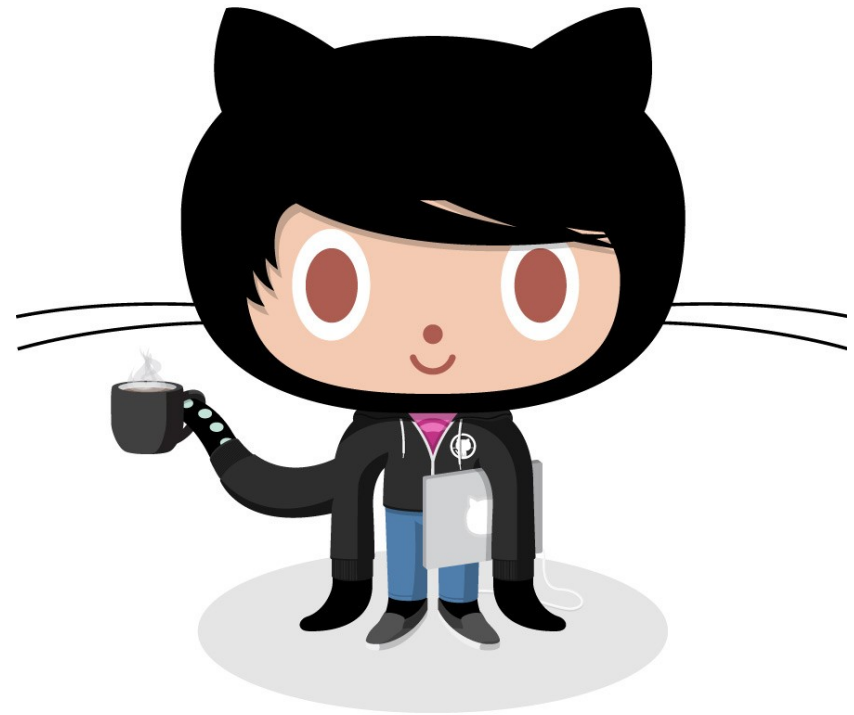
Basic git commands:

git push - send your changes to your remote repository

Syntax:

```
git push
```

```
git push origin master
```



Git branching

Branches are used to develop features isolated from each other. The *master* branch is the "default" branch when you create a repository. We often use other branches for editing our documents and then merge them back to the master branch upon completion.

- Creating a new branch : `git checkout -b <branch_name>`
- Switching branch : `git checkout <branch_name>`

eg. `git checkout working-branch`
- Deleting a branch : `git branch -d <branch_name>`

Note: You might need to do a `git fetch`, before being able to switch your working branch.

Git update & merge

- To update your local repository to the newest commit, execute :

```
git pull
```

```
git pull --rebase
```

- To merge another branch into your active branch (e.g. master), use :

```
git merge <branch>
```

Note: Git always tries to auto-merge changes but unfortunately, this is not always possible and sometimes might result in conflicts. We are responsible to merge those conflicts manually by editing the files prompted by git.

Other tools that can make GIT even easier

- `gitk` – `yum install gitk`
- `git-gui` – `yum install git-gui`



Doubts???



Thank you!

