Git

Version Control System

Contents

Here's what you'll find in this.


Our Daily Tasks
Create text
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What is Version Control System

- About managing multiple versions of
  - Documents
  - Programs
  - Websites etc
- Tracks History of collection of files
- **Version control** software keeps track of every modification to the code in a special kind of database

Why VCS ?

- **For Individual Help:**
  - Gives you a “time machine” for going back to earlier versions
  - Gives you great support for different versions (standalone, web app, etc.) of the same basic project

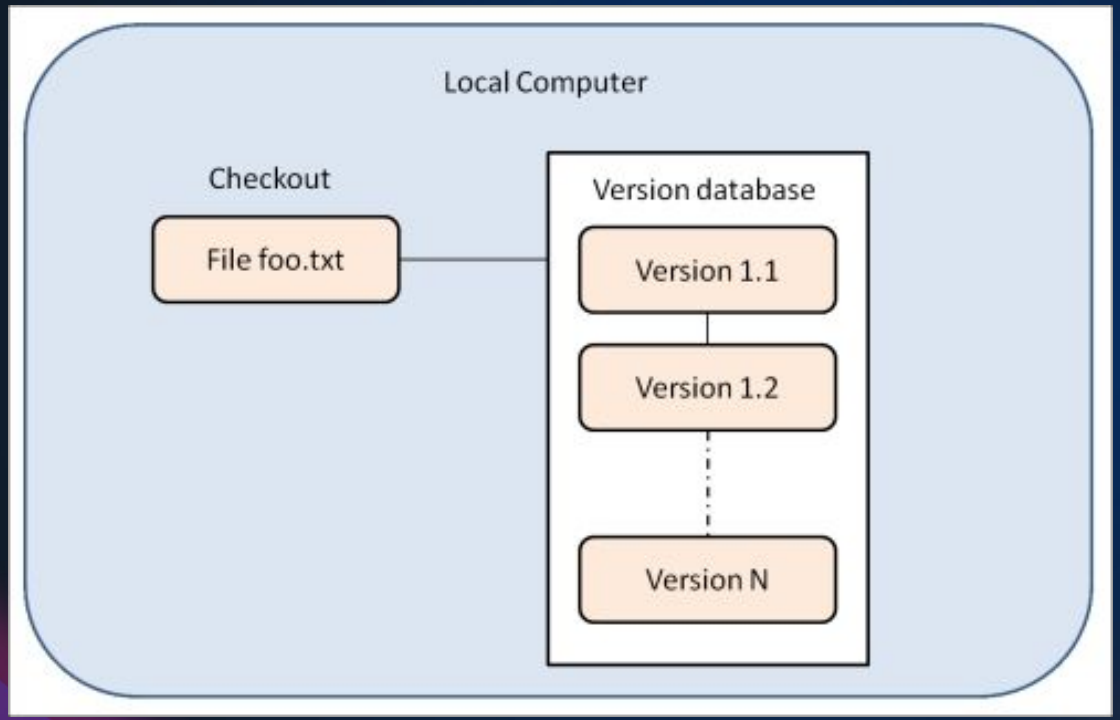
- **For Working with Team:**
  - Greatly simplifies concurrent work, merging changes

- **Management of changes to files.**
  - Keep track of what changes occurred.
  - Allows People to work Together.

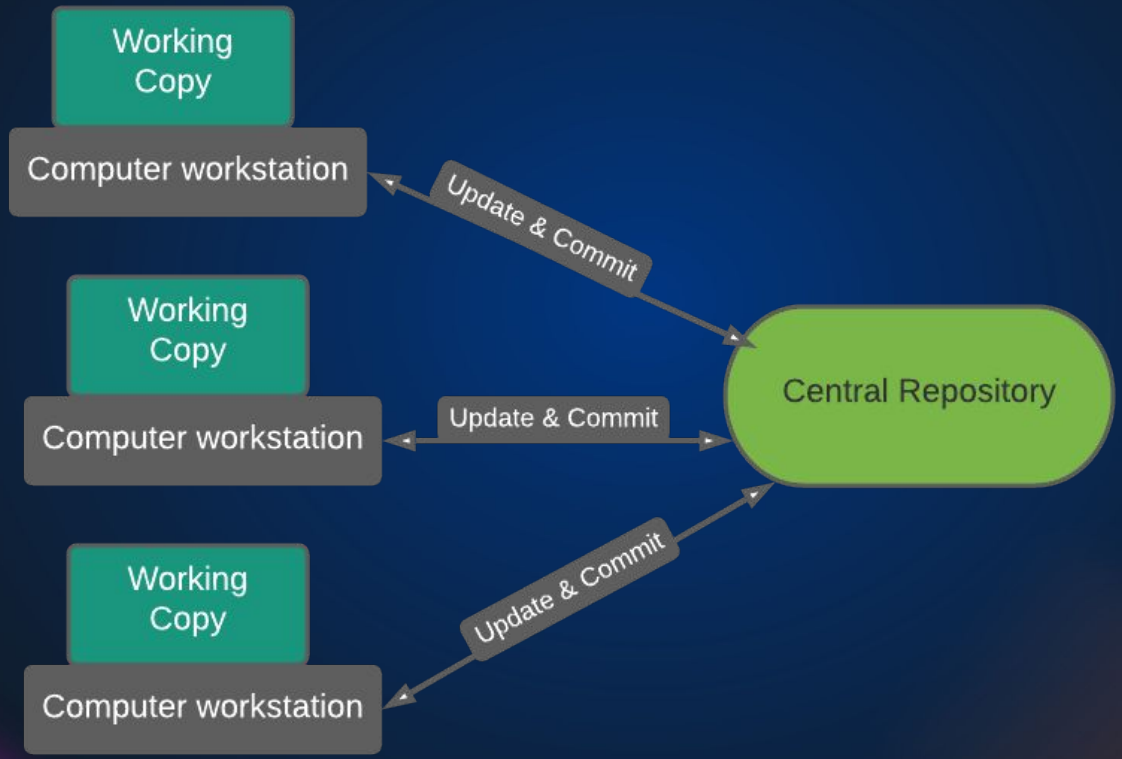
Localized and Centralized VCS

- A localized version control system keeps local copies of the files.
- In centralized source control, there is a server and a client. The server is the master repository which contains all of the versions of the code.

Localised VCS



Centralized VCS



Centralized VCS

- In Subversion, CVS, Perforce, etc. A central server repository (repo) holds the "official copy" of the code.
  - the server maintains the sole version history of the repo

- You make "checkouts" of it to your local copy
  - you make local modifications
  - your changes are not versioned

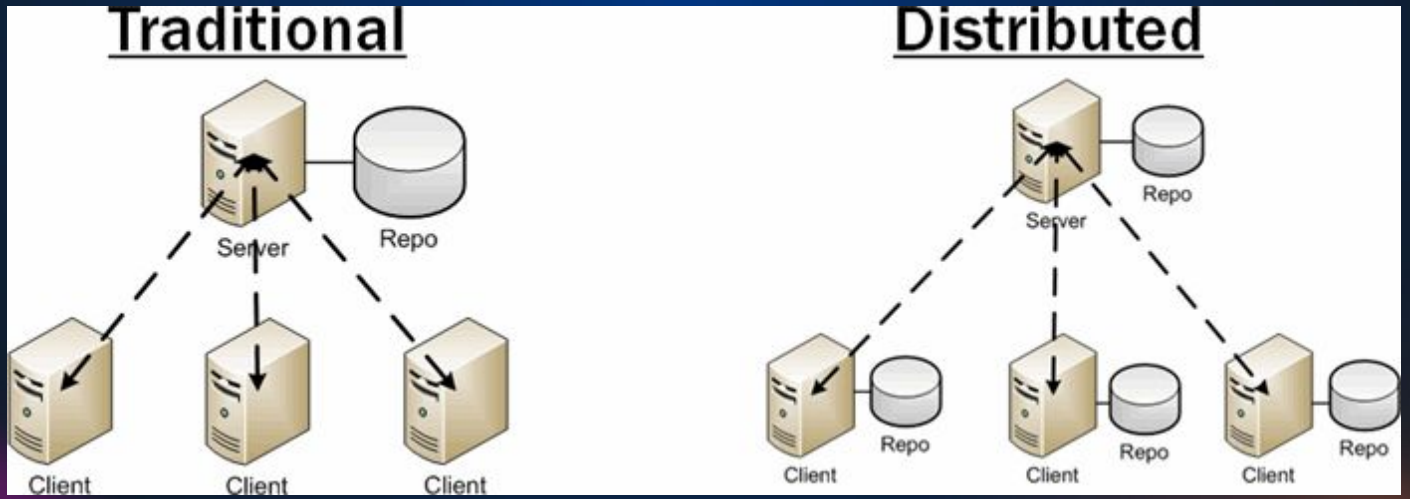
- When you're done, you "check in" back to the server
  - your checkin increments the repo's version

Drawbacks

- Both approaches have the drawback that they have one single point of failure.
- In a localized version control systems it is the individual computer and
- In a centralized version control systems it is the server machine. Both system makes it also harder to work in parallel on different features. Eg:Git,mercurial etc.

Distributed version control systems

- In a distributed version control system each user has a complete local copy of a repository on his individual computer.



Distributed version control systems

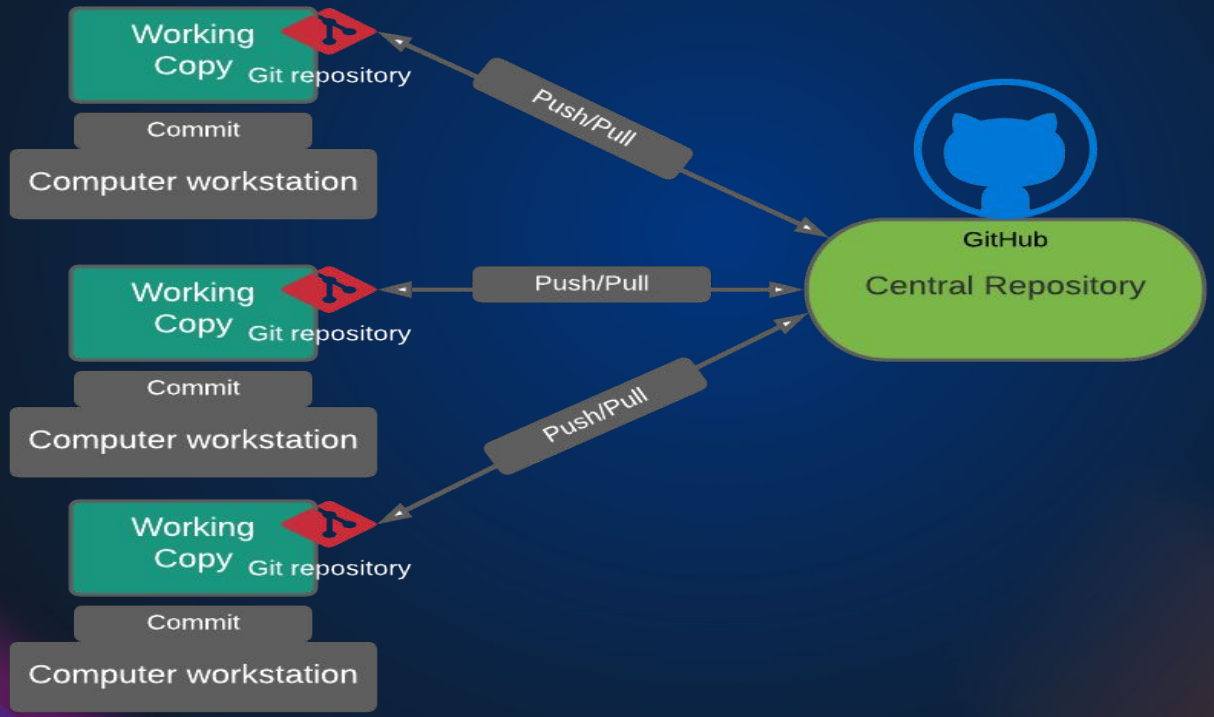
In git, mercurial, etc., you don't "checkout" from a central repo
  - you "clone" it and "pull" changes from it

- Your local repo is a complete copy of everything on the remote server
  - yours is "just as good" as theirs

- Many operations are local:
  - check in/out from local repo
  - commit changes to local repo
  - local repo keeps version history

- When you're ready, you can "push" changes back to server

Distributed version control systems



What is Git ?

- Git is a distributed version control system
- Git is a Tree History storage system
- Git is content tracking management system

Git Provides

Speed

- Support for non-linear development
- Fully distributed
- Able to handle large projects

Ease

Simple to use tools & commands.
Cloud based remote repository.

Git Creator

- Created by Linus Torvalds, creator of Linux, in 2005
  - Came out of Linux development community
  - Designed to do version control on Linux kernel

Installing Git

Git Bash

Install via HomeBrew

Install via Package manager
(yum, apt, snap etc)

Local Repository Setup

1. **Set the name and email for Git to use when you commit:**
   - ➢ git config --global user.name "Imran Teli"
   - ➢ git config --global user.email imran@visualpath.com

2. **Create a directory**

3. **Initialize dir with**
   - ➢ git init

4. **Create Readme.md file**
   - ➢ git add (Staging)
   - ➢ git commit (Local commit)

Remote Repository

- Create Remote repository on
  - Github, bitbucket, codecommit etc
- Clone Repo to local
  - git clone URL
- Local to Remote integration
  - cd to local repo
  - git remote add origin ssh://git@github.com/[username]/[repository-name].git
  - git push
  - git pull (to fetch latest changes)