Git Tutorial

SSD TA

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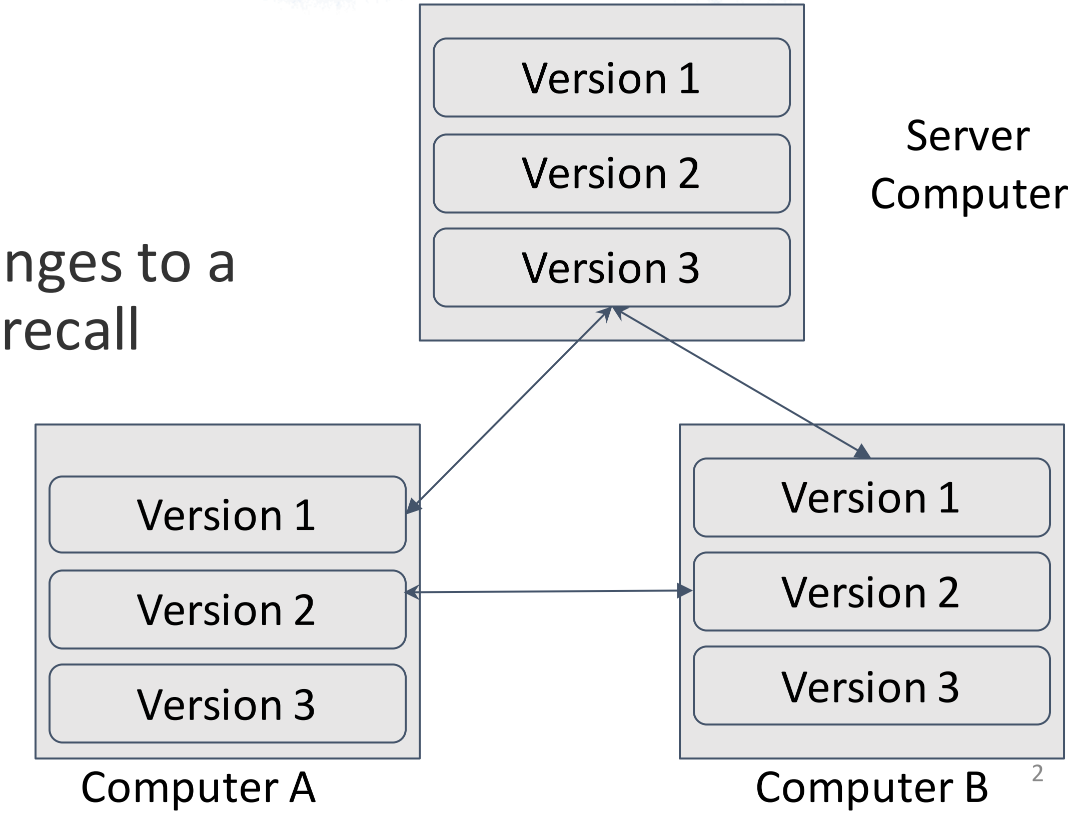
What is "version control" ?

Version control is a system that records changes to a file or set of files over time so that you can recall specific versions



Git Installation

- Windows - http://www.git-scm.com.
- Linux -
  - apt-get install git
  - yum install git
- Already installed in cygwin

Git Basics

- Using Git Bash (command line):
  - git config --global user.name "Name Surname"
  - git config --global user.email a@b.com

- Clone existing repository from server:
  - git clone repository-link

Git Basics and status

- To start version controlling edited existing (new) files (tracking and committing to local repository):
  - git add filename
  - git add (git add -A)
  - git commit -m 'Commit message: what changes were introduced'

- git status
  - Displays the state of the working directory and the staging area

Command	**Description**
git clone url [dir]	copy a Git repository so you can add to it
git add file	adds file contents to the staging area
git commit	records a snapshot of the staging area
git status	view the status of your files in the working directory and staging area
git diff	shows diff of what is staged and what is modified but unstaged
git help [command]	get help info about a particular command
git pull	fetch from a remote repo and try to merge into the current branch
git push	push your new branches and data to a remote repository

Git Commands

Creating a Git repo

- To create a new local Git repo in your current directory:
  - git init
  - git add filename
  - git commit -m “commit message
- To clone a remote repo to your directory:
  - git clone url localDirectoryName
  - This will create the given local directory,

Branching and Merging

- Git uses branching heavily to switch between multiple tasks.
    - To create a new local branch:
    - git branch name

- To list all local branches: (* = current branch)
    - git branch

- To switch to a given local branch.
    - git checkout branchname

- Merge changes from a branch into the local master:
    - git checkout master
    - git merge branchname

Interaction with remote repo

- Push your local changes to the remote repo.
- Pull from remote repo to get most recent changes.

  fix conflicts if necessary, add/commit them to your local repo)

- To fetch the most recent updates from the remote repo into your local repo, and put them into your working directory:
  - git pull origin master

- To put your changes from your local repo in the remote repo:
  - git push origin master

Viewing the commit history

- git log
  - Git logs allow you to review and read a history of everything that happens to a repository

- Types :
  - Directory Restricted Log
  - Log by branch

Working with remotes

- git fetch
- git merge
- git pull
- git push origin master

- Other Commands
  - git config --list
  - git revert HEAD~1
  - git reset HEAD~1
  - git stash

About wikis

- Host documentation for a repository in a wiki, so that others can use and contribute to the project.
- Use repository's wiki to share long-form content about your project, such as how to use it, how you designed it, or its core principles.
- Create links in wikis using the standard markup supported by your page, or using MediaWiki syntax.

Markdown

- Markdown is a way to style text on the web
- You control the display of the document;
  - formatting words as bold or italic, adding images, and creating lists are just a few of the things we can do with Markdown.
- Markdown is regular text with a non-alphabetic characters, like # or *.

Markdown

- It's very easy to make some words **bold** and other words *italic* with Markdown

- Headers
  - # This is an <h1> tag
  - ###### This is an <h6> tag

- Emphasis
  - *This text will be italic*
  - _This will also be italic_
  - _You **can** combine them_

Markdown

- Unordered
  - * Item 1
  - * Item 2
  -   * Item 2a
  -   * Item 2b

- Ordered
- Images
  - ![GitHub Logo](/images/logo.png)

- Format: ![Alt Text](url)

Markdown

- Links
  - http://github.com - automatic!
  - [GitHub](http://github.com)

- Blockquotes
  - As Kanye West said:
  - > We're living the future so
  - > the present is our past.

- Inline code
  - I think you should use an
  - `<addr>` element here instead.

Gists

- Public and Secret gists.
- You can share single files, parts of files, and full applications with other people. Directories can't be shared. You can access your gists at https://gist.github.com.
- Public gists show up in Discover, where people can browse new gists as they're created.
- Secret gists don't show up in Discover and are not searchable.

README and It’s Importance

- README file contains information about other files in a directory or archive of software
- README is the start of projects documentation on GitHub.
- Documenting any open source project should always begin with a good README so that potential users can understand what your work is about.
- Few templates out there but a typical README usually contains sections for a summary/introduction, installation, usage, dependencies, contributing information, and license information.

THANK YOU