

ECE 20875

Python for Data Science

Chris Brinton and David Inouye

**(Adapted from material developed by
Prof. Milind Kulkarni and Prof. Chris Brinton)**

MWF, 12:30pm-1:20pm

Section I: WALC 1055

Section II: FRNY G124

version control

command line and bash

- Command Line Interface (CLI) for interacting with your operating system (OS)
- Unix shell: Available by default on Linux and macOS
- Windows users: <https://www.howtogeek.com/249966/how-to-install-and-use-the-linux-bash-shell-on-windows-10/>
- Bash script: Sequence of commands, typically saved as .sh file

```
#!/bin/bash
#07/06/18 A BASH script to collect EXIF metadata
#07/06/18 create metadata directory, create text file output for each file, append basename, place output in metadata directory
#07/06/18 create script.log to verify processing of files and place in metadata directory
#07/06/18 Author: Sandy Lynn Ortiz - Stanford University Libraries - Born Digital Forensics Lab
#####

##### testing codeblock, clean up last run #####
rm -rf ./metadata
echo -ne "\n metadata directory cleaned! \n\n"
##### testing codeblock, clean up last run #####

#create variable current working directory
CWD=$(pwd)

#create directory and create variable META to store path, create LOGFILE in META directory
mkdir metadata
cd metadata
META=$(pwd)
LOGFILE="$META/script.log"
cd "$CWD"
echo -ne "\n Current working directory is: \n" $CWD "\n"

#create variable EXCL to exclude script file from processing
EXCL=$(basename "$0")
echo -ne "\n Exclude Script file from processing: " $EXCL "\n\n"

#####

#search for jpg files in curr dir/subdir, ignore case, pipe(send output from cmd1 to cmd2) to chain of commands
#create EXIF text files in META dir (redirect output)
echo -ne "\n Processing EXIF metadata now... \n\n"
find $(cd "$CWD") -depth -iname "*.jpg" | while read filename; do exiftool "$filename" > "$META"/"${(basename "$filename")}_exif.txt"; done

#TEST - create EXIF text files in META dir(redirect), print file STDOUT redirect/append to LOGFILE - TEST
#echo -ne "\n Processing EXIF metadata now... \n\n"
#find $(cd "$CWD") -depth -iname "*.jpg" | while read filename; do exiftool "$filename" > "$META"/"${(basename "$filename")}_exif.txt"
#printf "\n $filename" >> "$LOGFILE"; done

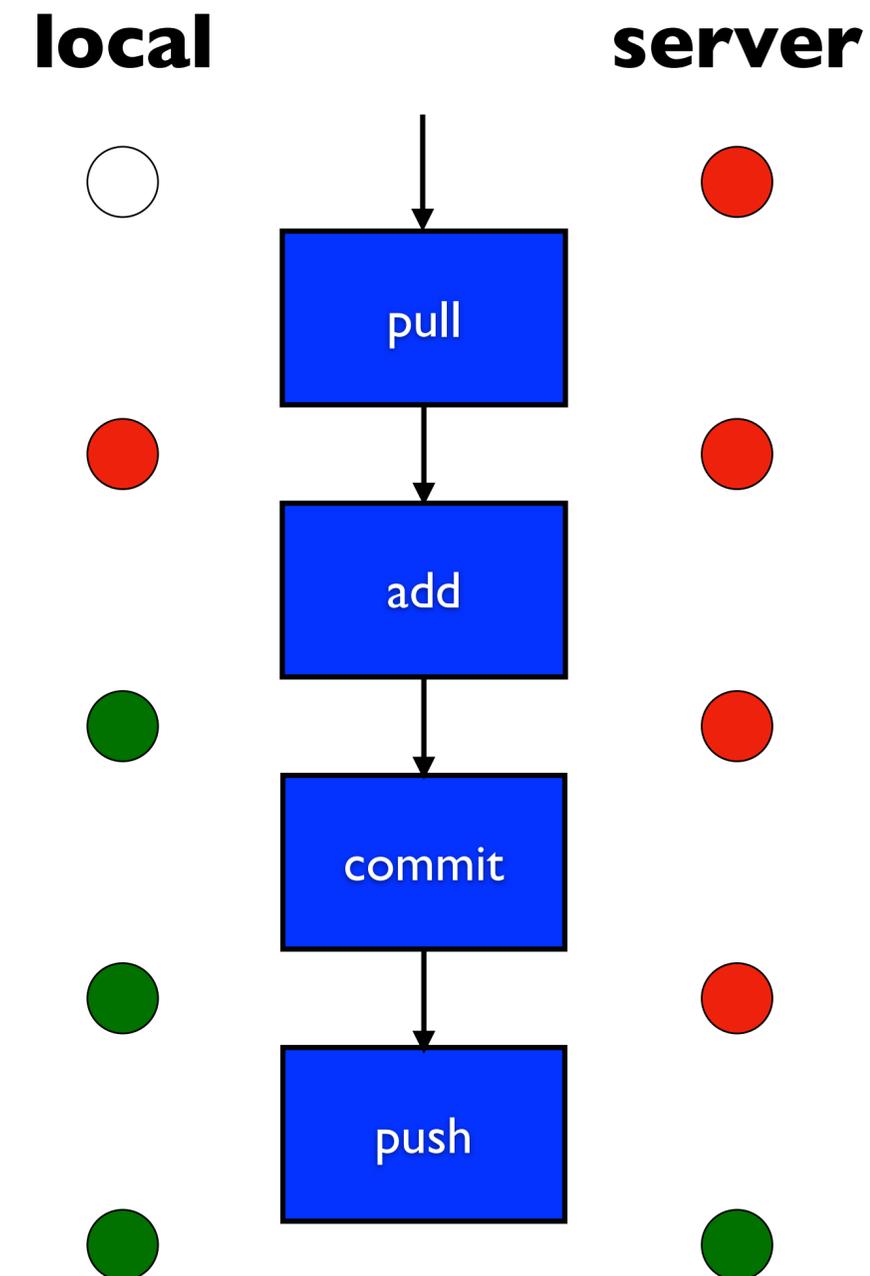
#####

echo -ne "\n\n Processing is finished! \n\n\n"

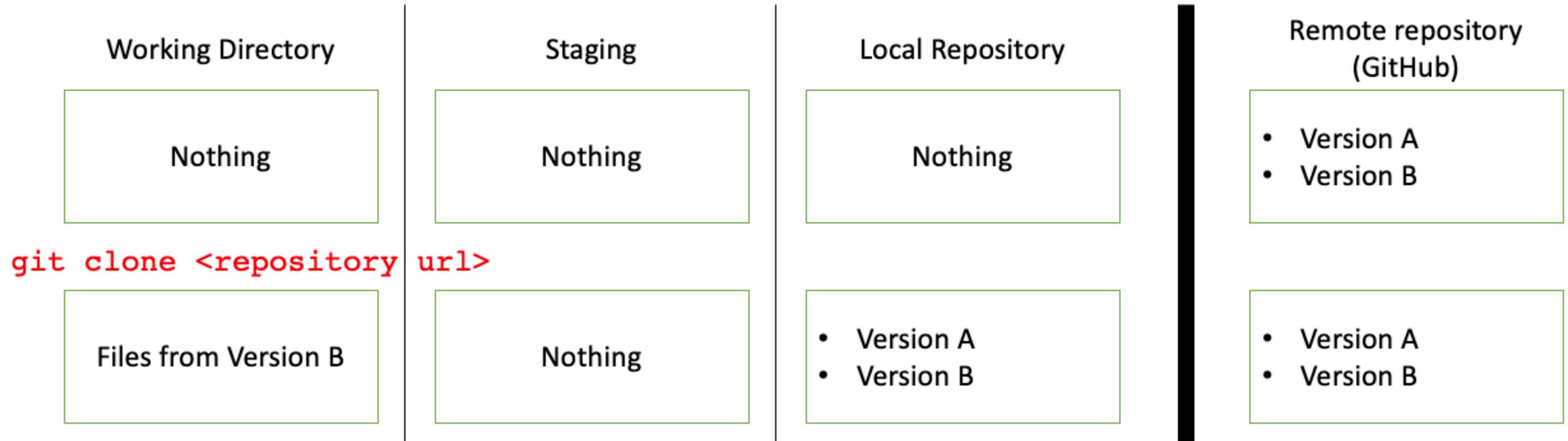
#####
```

overview of version control

- Automatically keep old versions of code and/or documentation
 - Can revert back to old versions
 - Can see differences (“diffs”) between versions
- Typically through maintenance of repository on a server
 - Can sync up code between different machines
 - Can share code updates across many people
- “git”: One of the most popular version control systems
 - Each “project” goes into a different “repository”
 - Repositories can be public (e.g., homework assignments) or private (e.g., homework solutions prior to the due date :D)
 - We will use GitHub to manage assignments in this course



git illustration



git illustration

