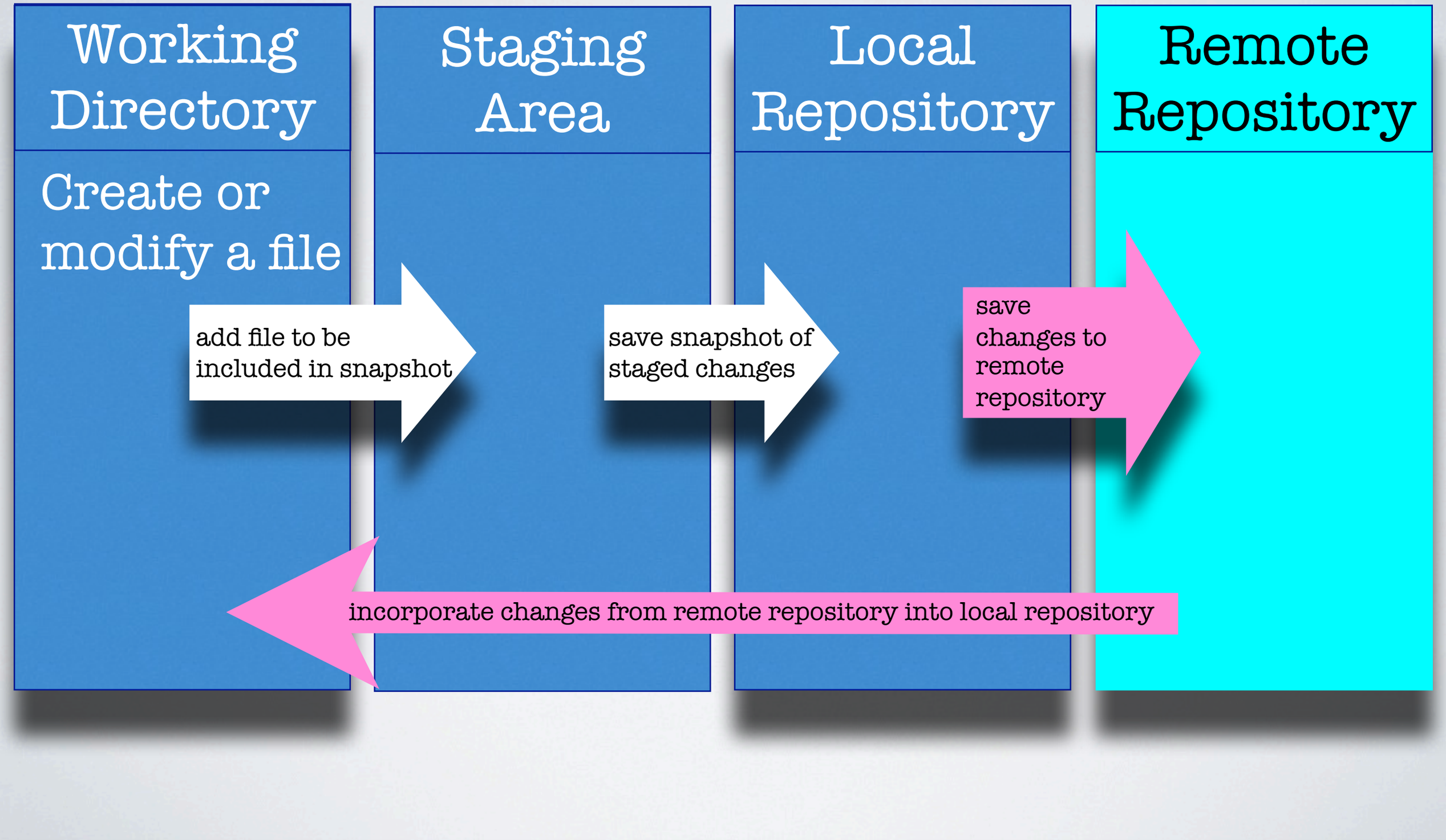
USING GIT WITH A REMOTE SERVER

sharing and collaborating

REVIEW


Working Directory
Staging Area
Local Repository
Remote Repository
Create or modify a file
add file to be included in snapshot
save snapshot of staged changes
save changes to remote repository
incorporate changes from remote repository into local repository

REMOTE REPOSITORY OPTIONS

- We will use github.com
  - free version: all repositories are public
    - with a .edu email you can get a few private repositories
- Other option: bitbucket.com
  - free version: all repositories are private and you can only share with 5 people

EXPLORE GITHUB

Go to github.com
Show our repository
- branches
- commits
- graphs

USING A REMOTE REPOSITORY

- 2 ways to use a remote repository
  - start it locally, create an empty repository, link the two (we will do this today)
  - start a remote repository (or use an existing one) and clone it (you did this yesterday)

CREATE YOUR REMOTE REPOSITORY

- go to github.com
- Click New Repository
- Name Repository swc_test_repo
- Create Repository

Do this with them, then leave up instructions
Talk about readme and gitignore
follow directions

LINK YOUR REMOTE AND LOCAL REPOSITORIES

- Follow directions to "Push an existing repository from the command line"
  - from your local swc_test_repo folder type commands
- git remote -v

EXERCISE: REVIEW

- cd to swc_test_repo
- make sure you are on the master branch
- edit your names.txt file
- add and commit names.txt

Cheat sheet:

- git add filename
- git commit -m “message”
- git status
- git help
- git branch branch_name
- git checkout testing
- git merge branch_to_merge
- git branch -d branch_to_delete

PUTTING CHANGES ON THE REMOTE SERVER

- git push origin master

- origin: alias to your remote git repository url (git remote -v)

- master: the local branch you are on (default is master)

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Check on github that changes are there

* Master is the local branch will be pushed to a remote branch also called master
* To make a remote branch local: `git checkout -b serverfix origin/serverfix`
  checkout origin/serverfix (remote) to serverfix (local)

ADDING REMOTE CHANGES TO YOUR LOCAL REPOSITORY

- git pull origin master

WORKFLOW

- git pull origin master
- make changes
- stage changes (git add)
- commit changes locally (git commit)
- push changes to the remote repository *
  - if a change has been made to the remote repository since you last pulled, you will have to pull before you push
    - why? git wants you to resolve any conflicts locally before you put anything on the remote server
    - You will have to consider whether the change (even if it does not conflict with your change) will affect your tested results

EXERCISES

No changes on Remote Server

1. Find a partner and decide who is partner 1 and who is partner 2
2. Partner 2 should clone partner 1's remote repository
3. Partner 1: modify a file and add, commit, push
4. Partner 2: pull down the changes to the remote repository, modify the same file then add, commit, and push

Non conflicting changes on Remote Server

1. Now, without pulling, both modify different lines in the same file
2. Partner 1: add, commit, and push.
   - 2.1. You will receive an error message gently reminding you to pull before you push
   - 2.2. pull, then push
3. Partner 2: Repeat step 2 on your machine

Conflicting changes on Remote Server

1. Partner 1: pull down remote changes
2. Now both modify the same line in a file
3. Partner 1: add, commit, and push
4. Partner 2: add, commit, and push
   - 4.1. You will get an error message that you need to pull. When you pull you will be told that you need to resolve conflicts.
   - 4.2. resolve conflicts (just like with branches), add, commit, and push

If time switch roles and try repeat

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Read over this one with students
Remind students how to resolve conflicts