

1 Intro / What is a Repository?

1.1 Lecture

1.1.1 What is this course?

- Go over the Course Overview (this document)

1.1.2 The triple meaning of “repository”

History in Git plus working copy/directory/tree

- `Git_Good/`
- For our purposes, this comprises:
 - Working Directory
 - Staging Area
 - Repository

History in Git plus everything else Git-related for a given project

- `.git/`
- For our purposes, this comprises:
 - Staging Area
 - Repository

History in Git

- `.git/objects`, `.git/refs`, `.git/*HEAD`
- For our purposes, this comprises:
 - Repository

1.1.3 The three states

Working Directory

- Also known as the *Working Tree*
- Contains files you normally edit via tools that aren't Git
 - The other two states' files you typically edit only via Git
- Place to experiment, figure out what you might want to add to your Repository
- **Location:** everywhere in your directory, except for `.git/`
- **Associated action:** *Editing* happens here

Staging Area

- Also known as the *Index*
- Place where you prepare the next commit to your Repository
- **Location:** `.git/index` (binary file)
- **Associated action:** *Staging* a modified file adds it here

- We call a file *modified* when its contents differ between the HEAD of the Repository and the Working Directory

Repository

- A graph of commits
 - Commits are snapshots of the Working Directory
- Place where you store and edit your Working Directory's history
- **Location:** `.git/objects`, `.git/refs`, `.git/*HEAD`
- **Associated action:** *Committing* adds all files in the Staging Area to a new commit here

1.2 Lab/Homework

1.2.1 As a Group

- Discuss how to structure lab portion of each meeting
- Discuss how often we want to meet

1.2.2 Individually

- Install `gitui` and `git-graph`
- Create repository for class
- View the three states via `gitui`
 - Make a new file
 - Add it to the staging area
 - Commit it
- View graph of history via `git-graph`
 - Make another commit
 - Make a *branch* from the first commit, and commit there
 - Merge the branch back into the starting branch