**Git and GitHub**

What is a Version Control System (VCS)

* A way to manage files and directories
* Track changes over time
* Recall previous versions
* Source Control is a subset of VCS

Git Distributed version Control (DVC)

* NO need to connect to central server
* Can work without internet connection
* No Single Fialure Point
* Devs can work independently and merge their work later
* Every copy of Git repository can serve either as the server or the client
* Tracks

Repository (Repos)

* Used to organize a single project
* Repos can contain folders, files, images, videos, spreadsheets, and any other data constructs

Branching

* When youre working on a project, youre going to have a bunch of different features or ideas in progress at any given time – some of which are ready to go, and others which are not. Branching exists to help you magae this workflow

Main (master)

* The main starting branch; every repo has one
* This has the latest working commit
* Normally, you do not want to make changes directly to this, you want to “branch” off of this and work with the “test” area
* Branching is a core concept in Git, and the entire GitHUb flow is based upon it. Theress only one rule: anything in the main branch is always deployable
* Because of this, it’s extremely important

Commits

* Once your new branch off main has been created , it is time to start making changes
* Whenever you add, edit, or delete a file, youre making commits, and adding them to your branch
* This process of adding commits keeps track of your progress as you work on a feature branch
* Commits also create a transparent history of your work that others can follow to understand what you've done and why.
* Each commit has an associated commit message, which is a description explaining why a particular change was made.
* Work in small segments.
* Furthermore, each commit is considered a separate unit of change.
* This lets you roll back changes if a bug is found, or if you decide to head in a different direction.
* Write clear concise committee messages.