GitHub

Source Control Systems

- **Version Control & Collaboration** – management and tracking of changes to source code and documents, branching, merging, pull requests, and code reviews
- **Issues & Project Management** – Track bugs, tasks, and feature requests, and project Boards (To Do → In Progress → Done)
- **Discussions** – Q&A and collaboration around ideas
- **Wiki & Documentation** – Built-in wiki for project documentation
- **Actions** – Automate builds, tests, and deployments
- **Analytics** – Contribution graphs, activity feeds, and project health metrics

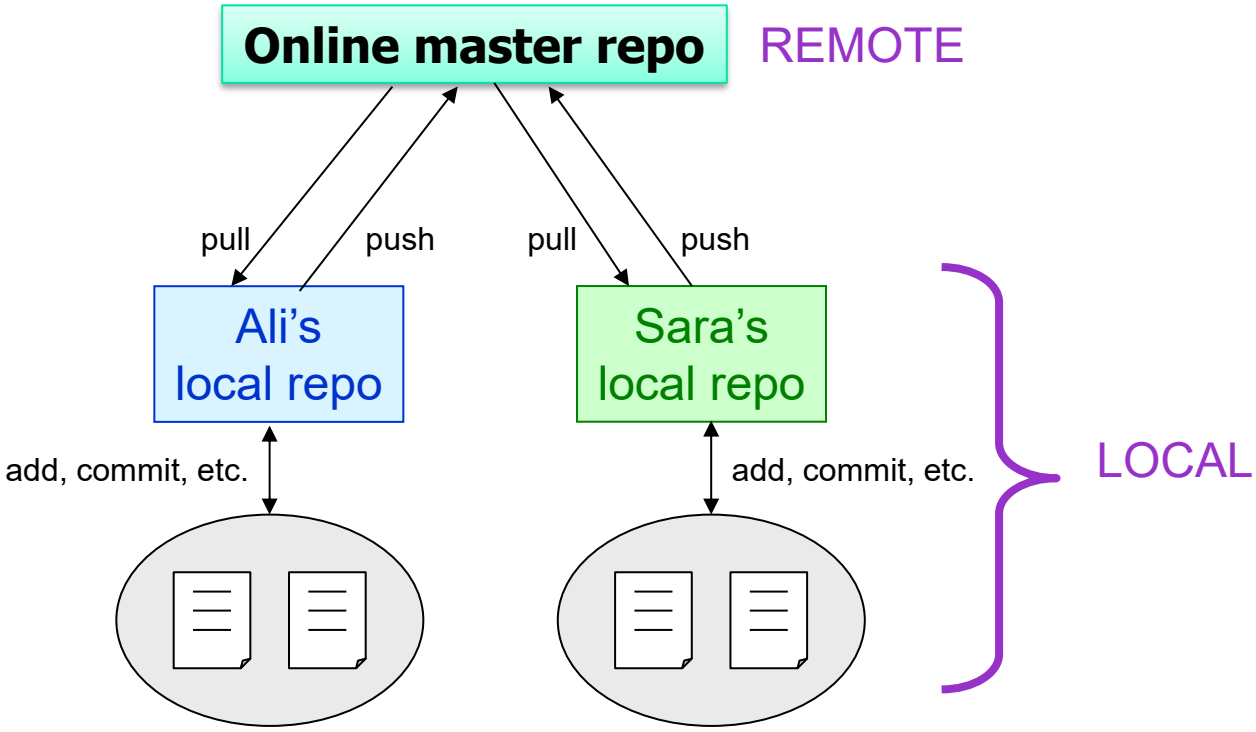
Github Source Control

- Github is a distributed source control management system
  - It also provides several collaboration features such as **wikis**, **project management**, and **issues tracking**
- Main characteristics:
  - Entire code and history is kept on the client (user) machine
  - Users can work (make changes to code) even without internet connection
  - Internet connection required only for pushing and pulling from remote repository

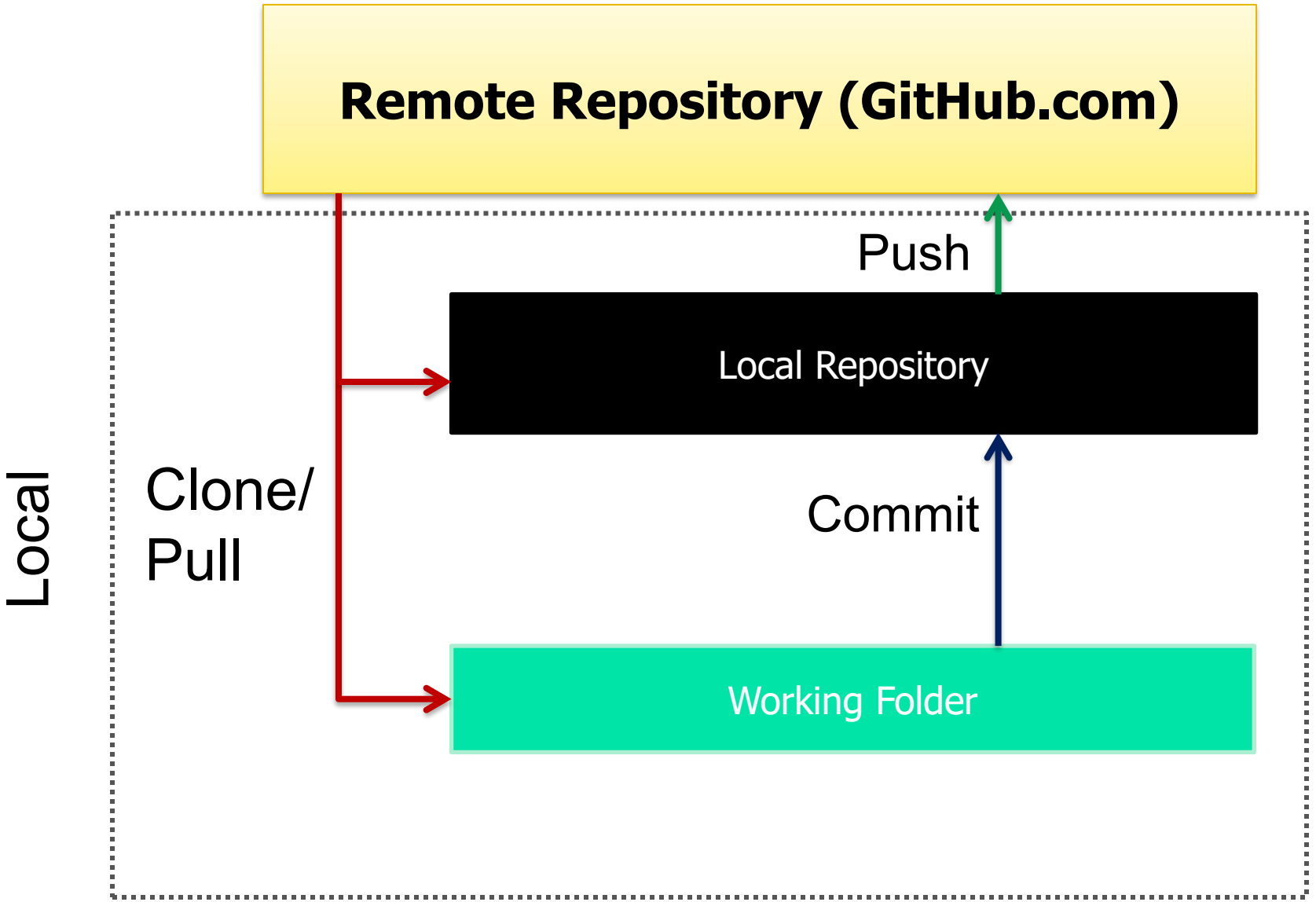
GitHub Basics

- A repository (or 'repo') is a collection of all the files and their commit history
- Copying a repository from a remote server is called **cloning**
  - Cloning allows teams to develop collaboratively
- Pulling: downloading commits that do not exist on the local machine from a remote repository
- Pushing: adding local changes (commits) to a remote repository

Local and Remote Repositories

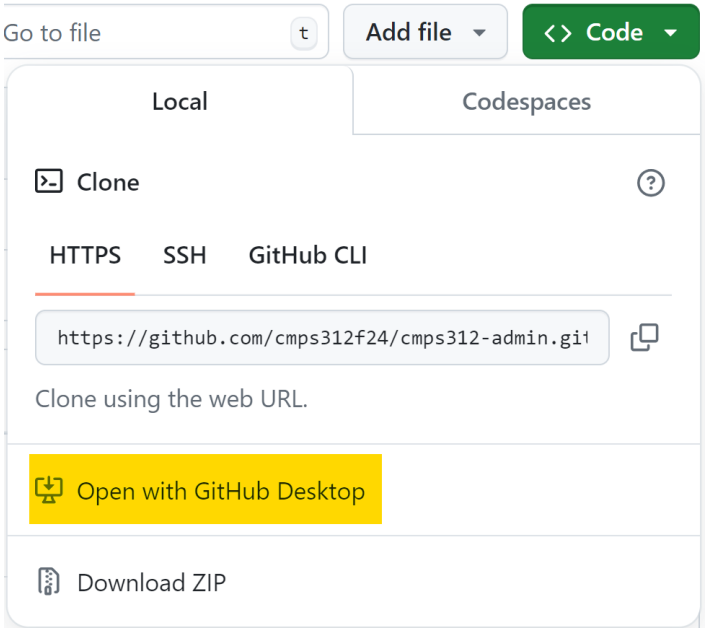


Architecture & Terminology

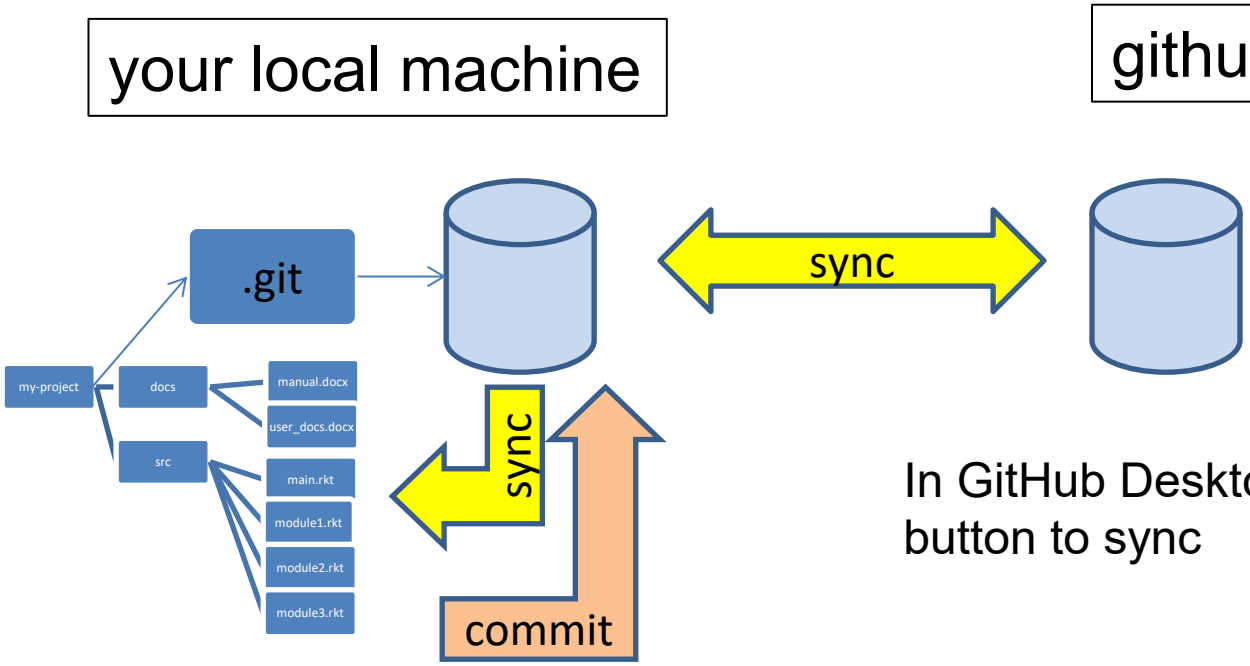


GitHub: Create Local Repository

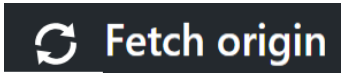
- Each team member creates local repository that is a clone of the master repository
  - Log into your personal GitHub account
  - Navigate to the team repository
  - Clone the Repository using GitHub Desktop or the Command Line



Using GitHub Desktop



In GitHub Desktop, use button to sync



In this course, we will mainly use GitHub Desktop

Resources

- GitHub Desktop

https://desktop.github.com/

- GitHub foundation short videos
- GitHub Help

https://help.github.com/

- Git Book

https://git-scm.com/book/