CST 205 — Git for teams

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- **Git** is a tool used for distributed version control.
- **GitHub** can be used as a centralized copy of the repository.
- We have previously seen how to use Git and GitHub for a solo project.

Basic idea

- Captain creates repository (just as we did for Project 1) and adds team members as *collaborators* on GitHub.
- Each team member creates a copy of the repository.
    - Creating a *clone*
- Can store different versions of the project within a single repository.
    - Different versions tracked via *branches*

Initialize and clone

- One team member, say *John*, initializes the central repository.
- Every team member clones the central repository using the `git clone` command
  - `git clone <repo>` where `<repo>` is the GitHub repository web URL.

Different feature branches

- One team member, say *Yoko*, creates a feature branch with a descriptive name.
  - e.g., `git checkout -b yoko-feature`
  - She works on this particular feature, staging and locally committing these changes.

- Another team member, say *Paul*, creates a different feature branch for his feature, likewise staging and locally committing changes.

- During development, each person in the team regularly pushes their feature branch to the central repository
  - e.g., `git push -u origin yoko-feature`

Merging features

- Once finished with the feature, *Yoko* pushes final code to her feature branch.
- On the GitHub website for his project, *Yoko* pushes the "Pull Request" button and selects the "master" branch.
    - Alternatively, one can create a separate "develop" branch which is later merged into "master".

- *John* receives the pull request and takes a look at the code.
  - The team can discuss the feature and make changes if needed.

- A team member needs to check out the latest code from the master branch
  - e.g., execute `git pull origin yoko-feature`
- Finally, the team member needs to issue the typical commands to add, commit, and push to master.

- For further reading, refer to Feature Branch Workflow