

# Collaborating with GitHub

## Objective

Learners will fork and clone a repository on GitHub and use branches to open pull requests.

## Lesson Outline

- Review Homework:
  - Anyone put a repo on GitHub? Any difficulties encountered?
- Live Coding: Collaborating with GitHub
  - Share a repo with everyone & have everyone clone w/ RStudio
  - Ask 1 (one) volunteer to make a change and practice commit + push
  - Instructor makes commit + push, volunteer pulls
- Live Coding: Merge conflict
  - Instructor makes commit to README and pushes to GitHub
  - Volunteer makes commit to the same line of README and pushes **without pulling first**
  - Should error for volunteer
- Slides: Resolving merge conflict
- Live Coding: Resolve merge conflict
  - Try following the hints in the error and pull
  - New error about divergent branches
  - Then have everyone set `git config pull.rebase false`
- Working on branches (slides)
- Live Coding:
  - Make a branch with your name in RStudio
  - Add your name to README and commit
  - Switch between branches and see the file change in RStudio AND in File Explorer / Finder
  - Push & see branches on GitHub
- Pull Requests (slides)
- Live Coding:
  - Have everyone make a PR to add their name to the README
  - Demo merging one or two & ask volunteer to resolve any merge conflicts
- Forks (slides)

- Discuss when you would work on a branch of a fork vs. working in a branch but on the same repo
- Live Coding:
  - Have students create a fork of a second example repo and clone their fork
  - In pairs, have them practice making a branch, making changes, commit + push, and make a PR on GitHub
- Homework:
  - Maybe try cloning a repo that you don't have permission to push to to see what happens
  - Try using `usethis::pr_finish()` on a branch that was already merged on GitHub and take note of what it does