Git Commands - Notes

# Common Git Commands

* git init  
  - Starts git tracking in your folder by creating a `.git` folder.
* git clone <url>  
  - Downloads a GitHub repo to your computer.
* git add <file>  
  - Tells git to track changes in a file.
* git commit -m "your message"  
  - Saves your changes with a message describing them.
* git push  
  - Uploads your local commits to GitHub.
* git pull  
  - Fetches and merges changes from GitHub to your local repo.

# Branches

* git branch  
  - Lists branches.  
  git branch <new-branch-name>  
  - Creates a new branch.
* git checkout <branch-name>  
  - Switches to another branch.
* git checkout main  
  git merge <branch-name>  
  - Merges changes from one branch into another.

# Undoing Changes

* git reset --hard <commit-id>  
  - Resets your local repo to a previous commit (dangerous if pushed).  
  - After reset, to update remote you must force push:  
   git push --force
* git revert <commit-id>  
  - Creates a new commit that undoes a previous commit (safe for shared repos).

# Handling Push Errors (Behind Remote)

If you see:  
error: failed to push some refs  
Updates were rejected because the tip of your current branch is behind its remote counterpart.

1. Solution 1 (Safe)

git pull --rebase origin <branch-name>  
git push origin <branch-name>

1. Solution 2 (Force overwrite)

git push --force origin <branch-name>

# GitHub Forking

Forking means copying someone else’s GitHub repo to your own account so you can work independently.