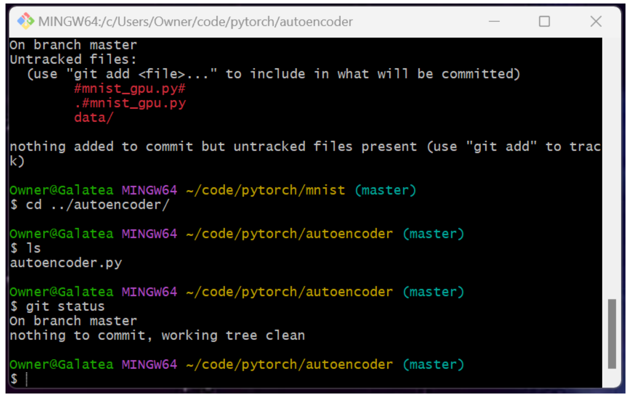


```
On branch master
Untracked files:
  (use "git add <file>..." to include in what will be committed)
        #mnist_gpu.py#
        .#mnist_gpu.py
        data/

nothing added to commit but untracked files present (use "git add" to trac
k)

Owner@Galatea MINGW64 ~/code/pytorch/mnist (master)
$ cd ../autoencoder/

Owner@Galatea MINGW64 ~/code/pytorch/autoencoder (master)
$ ls
autoencoder.py

Owner@Galatea MINGW64 ~/code/pytorch/autoencoder (master)
$ git status
On branch master
nothing to commit, working tree clean

Owner@Galatea MINGW64 ~/code/pytorch/autoencoder (master)
$
```

CTD Intro Week 17

git in more depth

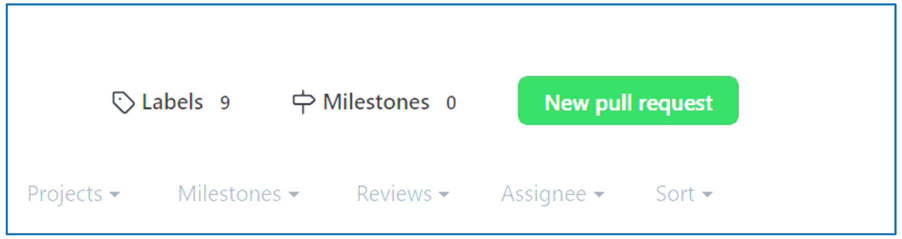
GitHub

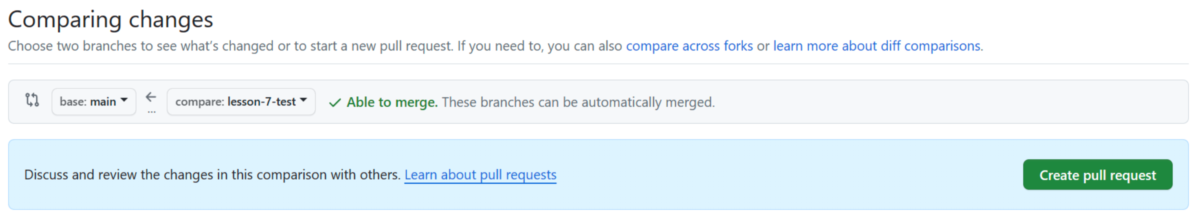
Git Command Review

- Create a new public repository in your github account (e.g. *yourName-classname*)
  - [New repository (github.com)](https://github.com/new) – green button on the upper left in your dashboard view
- Clone the github repo to your local machine
  - git clone https://github.com/*YourGithubHandle*/*your-new-repository*.git (your forked repo)
  - This is run on your local command line in the directory (folder) where you put CTD repositories
    - E.g. ~/code-the-dream
- git init (set up a local repository – not needed if cloning)
- git status (which file are modified, etc.)
- git diff (what's changed)
- git log (all the commit log messages)
- git branch (what branches are there?, what's the current branch?)
- git checkout (change branches)
  - git checkout –b branch-name (create a new branch with current changes)
- git add (stage files for commit)
- git commit –m commit log message (opens editor if no –m)
- git push (pushes changes upstream e.g. to github)
- git pull (pull changes from upstream e.g. github)

Pull Requests

- Standard workflow for making changes to a shared repository
- Allows your supervisor and peers to review and comment
- Flow:
  - Clone the repository
  - Make a new branch for your changes ‘git checkout –b lesson-X’
  - Make and validate your edits
  - Push your branch to github ‘git push’
    - may need `git push --set-upstream origin lesson-X the first time`
  - Create a pull request (PR) from your branch
  - Request reviews for your PR
    - You can push more commits to the pull request branch to address review feedback.
  - Merge your pull request when reviews are satisfied



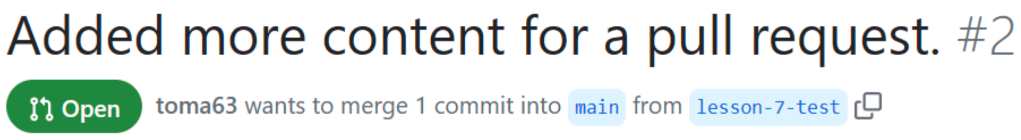

Comparing changes

Choose two branches to see what's changed or to start a new pull request. If you need to, you can also compare across forks or learn more about diff comparisons.

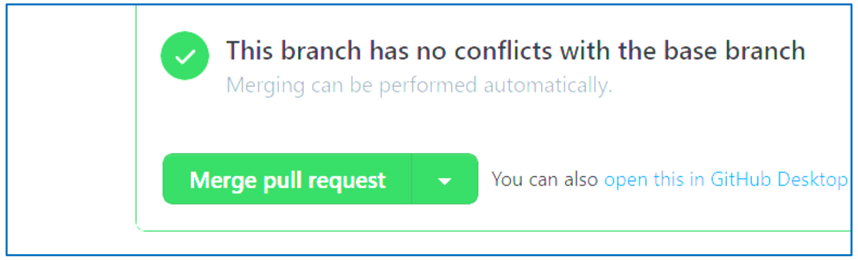
base: main ← compare: lesson-7-test ✓ Able to merge. These branches can be automatically merged.

Discuss and review the changes in this comparison with others. Learn about pull requests

Create pull request


Added more content for a pull request. #2

Open toma63 wants to merge 1 commit into `main` from `lesson-7-test`


This branch has no conflicts with the base branch

Merging can be performed automatically.

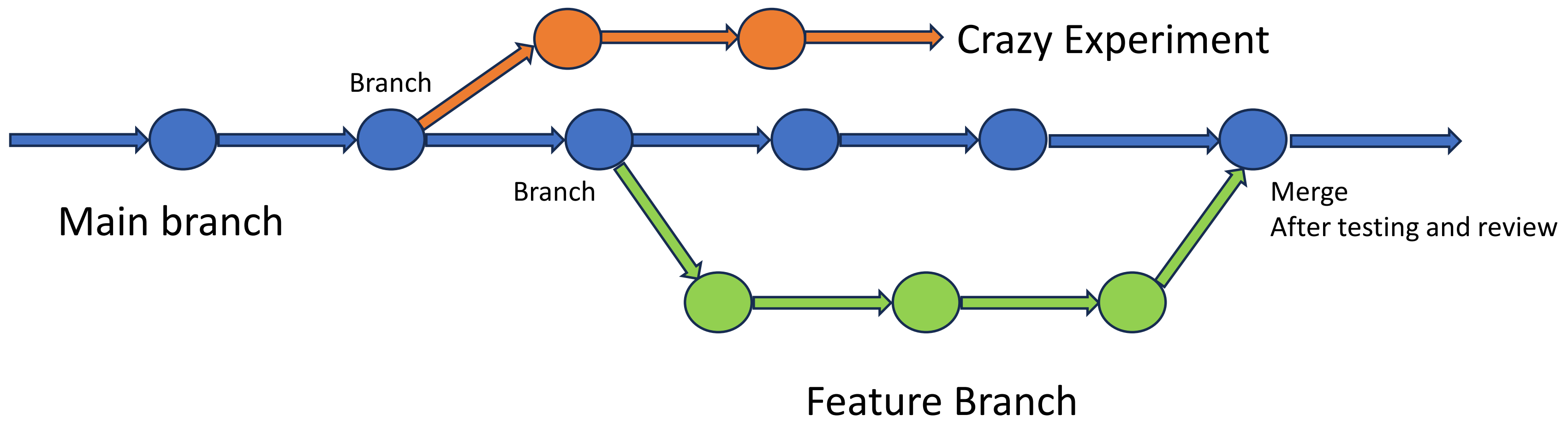
Merge pull request

You can also open this in GitHub Desktop

More git commands and terminology

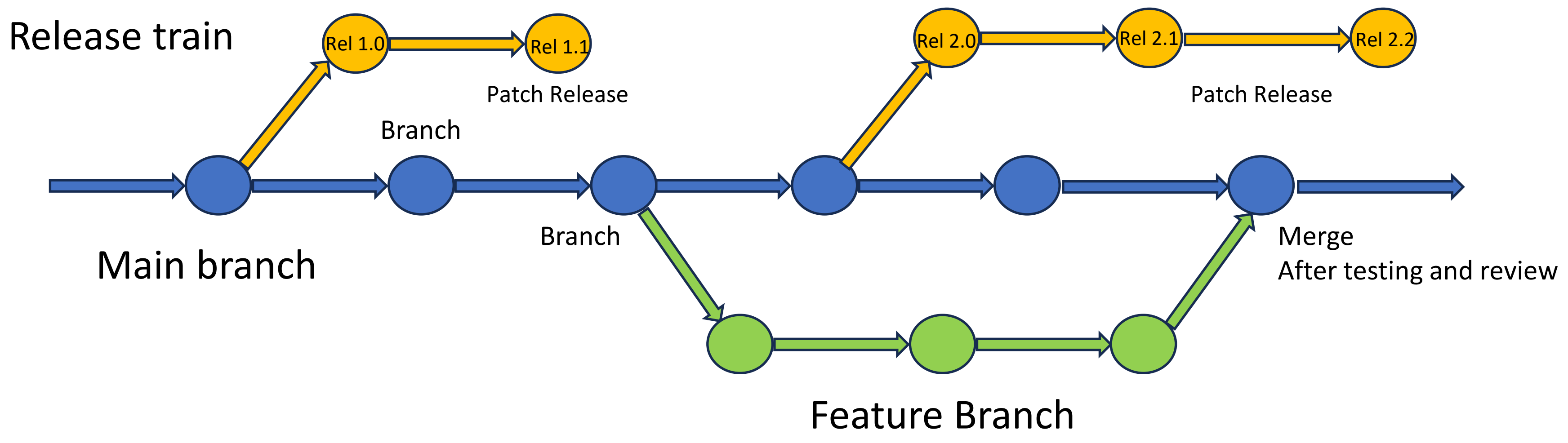
- HEAD – the tip of the current branch
- Remote
  - The remote repository associated with the current repository
    - git remote –v
- Relative references
  - HEAD (tip), HEAD^ (one commit before), HEAD~2 (two commits before)
- Commit Hash
  - 160 bit SHA1 secure hash (essentially unique0
  - 40 bit shorthand (just the beginning)
  - git rev-parse [--short] <symbolic-name>
- Revert and restore (and –staged)
- git help <topic/command>

Git Branches



- Do experiments safely
- Build and review new features
- Manage a release process

Production Release Process



- Main branch
  - Always functional, automated testing and review to merge a PR
- Feature branches
  - Separate development of new features until stabilized
    - Avoid breaking the main branch until stable and well tested
- Release Train
  - Regular cadence
  - Feature which meet the QA deadline are incorporated
  - Not held up for any given feature and hence predictable
  - Special process for critical patch releases

Q & A
Demo
Final Project Previews