

# Git and GitHub Workflow

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<https://guides.github.com>

# Git questions

- Q: What is Git?
  - A: A way to do decentralized Version Control
    - There are other ways (centralized) to do it.
- Q: But, What is Version Control?
  - A: Is a way to keep track of changes you do when coding
- Q: Why can we just use MSWord and track changes?
  - A: You could, but there are several shortcomings
    - Colored scripts
    - Web storage of code
    - Organization and working in teams,.. Etc.

# GitHub questions

- Q: Why GitHub and not just git?
  - A: GitHub provides a user-friendly version of git, there are many others.
- Q: Is GitHub the same as Git?
  - A: No, GitHub only administers your Git making it easier to use.
- Q: How does GitHub work:
  - A: Based on repositories. A repository is the equivalent of a project or a folder with all things necessary to complete a task

# GitHub Workflow (Solo Mode)

## 1. Repository

- Created from scratch
- Clone an existing repository
- Fork an existing repository

This can be done in....

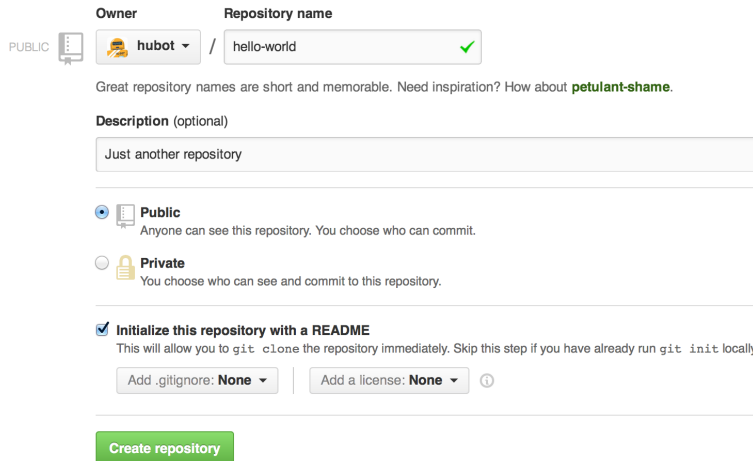
Terminal

```
$ git init
```

```
$ git status
```

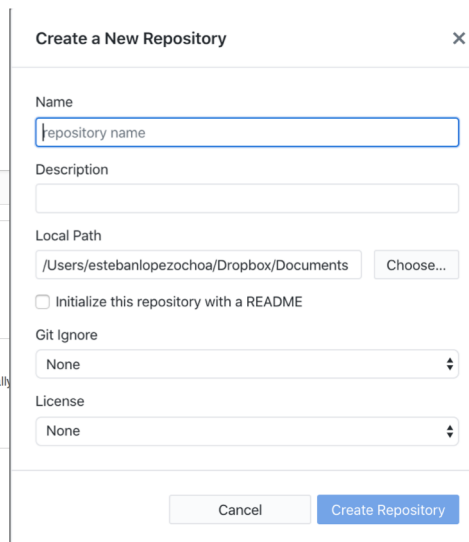
```
$ git commit
```

Web: github.com



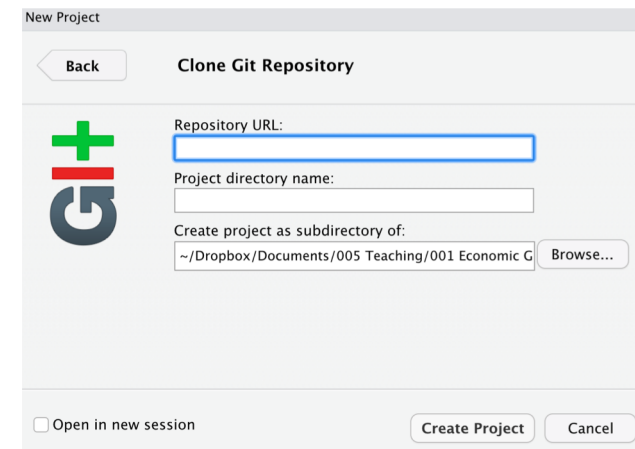
The screenshot shows the GitHub 'Create a new repository' page. The 'Owner' is 'hubot' and the 'Repository name' is 'hello-world'. The 'Description' is 'Just another repository'. The 'Public' option is selected. The 'Initialize this repository with a README' checkbox is checked. The 'Add .gitignore' and 'Add a license' buttons are visible at the bottom.

GitHub Desktop



The screenshot shows the 'Create a New Repository' dialog in GitHub Desktop. The 'Name' field is 'repository name'. The 'Description' field is empty. The 'Local Path' is '/Users/estebanlopezchoa/Dropbox/Documents'. The 'Initialize this repository with a README' checkbox is unchecked. The 'Git Ignore' is set to 'None'. The 'License' is set to 'None'. The 'Create Repository' button is highlighted.

Rstudio  
(only to clone)



The screenshot shows the 'New Project' dialog in RStudio, specifically the 'Clone Git Repository' tab. The 'Repository URL' field is empty. The 'Project directory name' field is empty. The 'Create project as subdirectory of' field is set to '~/Dropbox/Documents/005 Teaching/001 Economic G'. The 'Open in new session' checkbox is unchecked. The 'Create Project' button is highlighted.

# GitHub Workflow (Solo Mode)

- 2. Make changes, stage and commit
  - You can edit the files that are in the folder that is your repository
    - Add changes to a file, or add/delete new files
  - !! Important:
    - Make changes in sets of coding that relate to the same thing
      - For example,.. Changes from lines 3-20: cleaning variables in the data
  - Stage the changes
    - Basically, get them ready to be committed
    - This step allows you to review the differences between the old and new code
  - Commit the changes
    - This gives your computer and your Git system the order to create a snapshot of your project
  - Push the changes
    - This takes your repository snapshot to the web repository

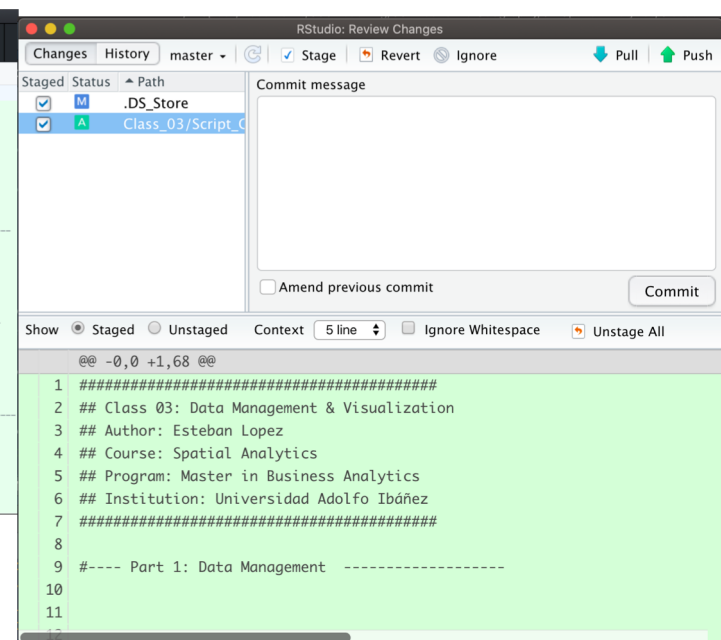
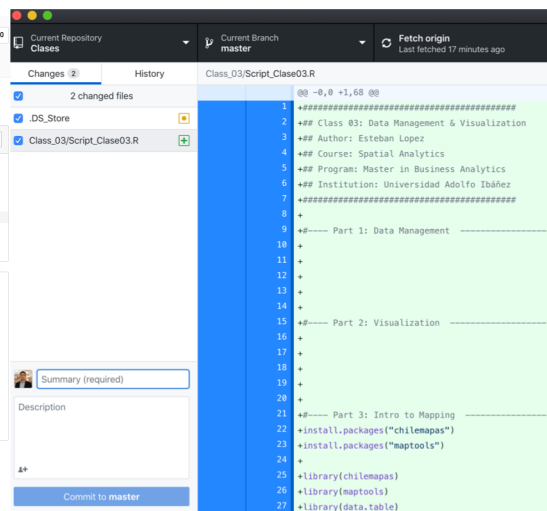
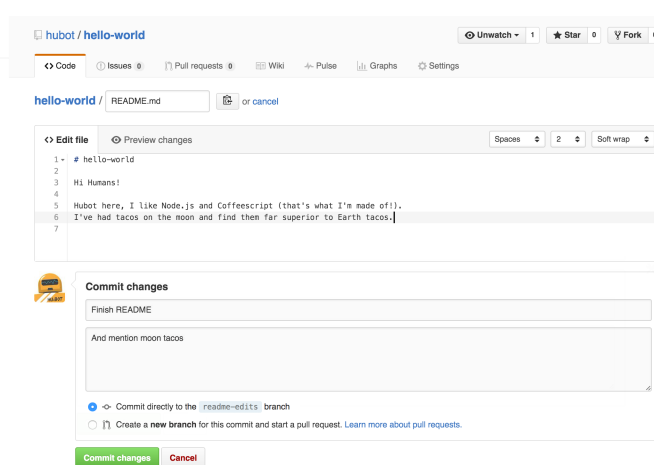
# GitHub Workflow (Solo Mode)

- 2. Make changes, stage and commit
  - This can be done in:

Web: github.com

GitHub Desktop

Rstudio  
(only to clone)



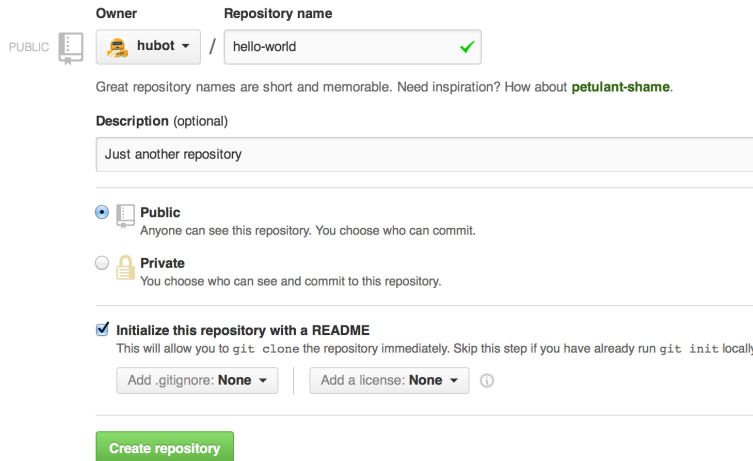
# GitHub Workflow (Team Mode)

## 1. Repository

- Created from scratch
- Clone an existing repository
- Fork an existing repository

This can be done in....

Web: github.com



Owner: hubot / Repository name: hello-world ✓

Great repository names are short and memorable. Need inspiration? How about [petulant-shame](#).

Description (optional): Just another repository

☒ Public Anyone can see this repository. You choose who can commit.

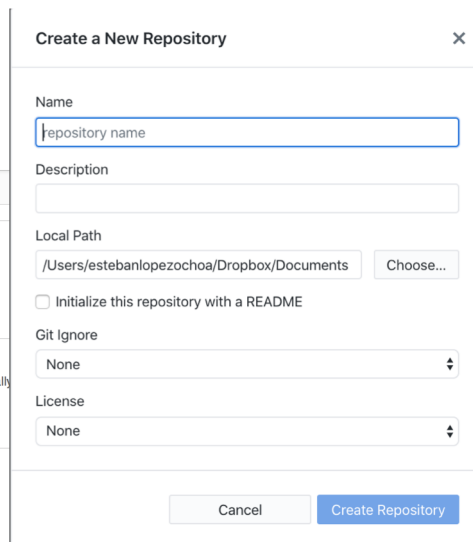
☐ Private You choose who can see and commit to this repository.

☒ Initialize this repository with a README  
This will allow you to `git clone` the repository immediately. Skip this step if you have already run `git init` locally.

Add .gitignore: **None** | Add a license: **None** ⓘ

Create repository

GitHub Desktop



Create a New Repository

Name: repository name

Description:

Local Path: /Users/estebanlopezchoa/Dropbox/Documents Choose...

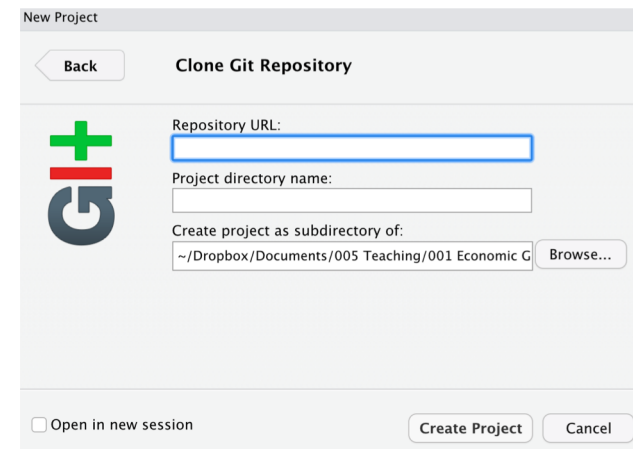
☐ Initialize this repository with a README

Git Ignore: None

License: None

Cancel Create Repository

Rstudio  
(only to clone)



New Project

Back Clone Git Repository

Repository URL:

Project directory name:

Create project as subdirectory of: ~/Dropbox/Documents/005 Teaching/001 Economic G Browse...

☐ Open in new session

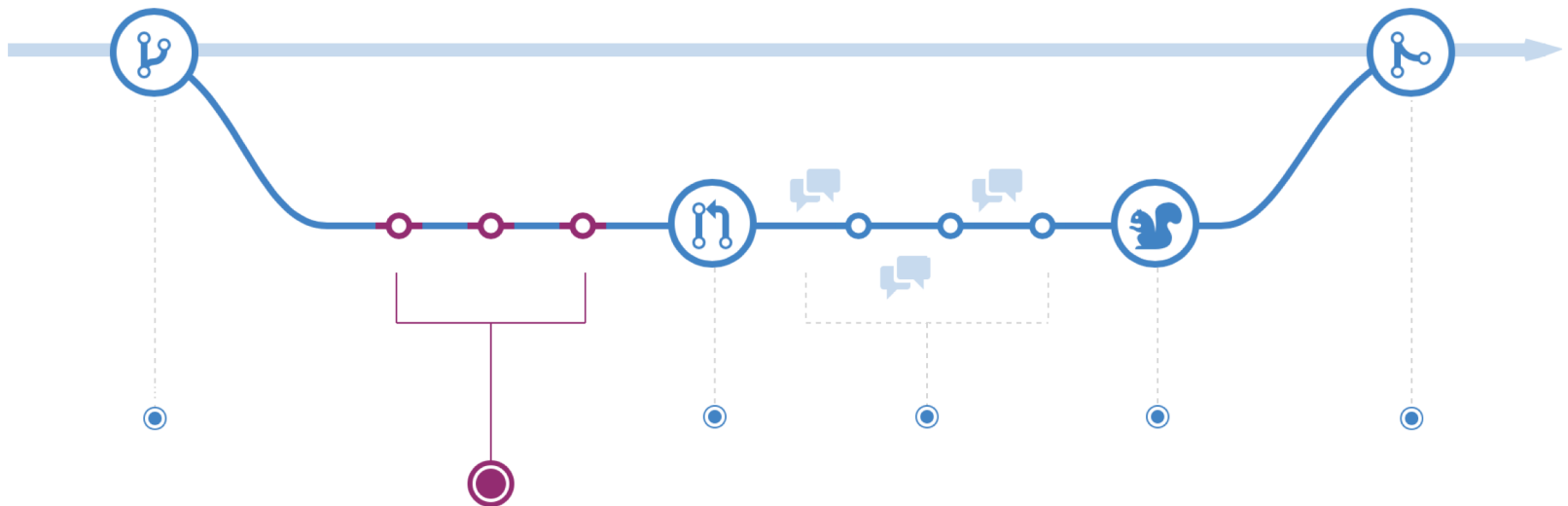
Create Project Cancel

- 
- The diagram illustrates a sequence of steps or connections. It features a horizontal blue line with an arrow pointing right. A purple circle on the left is connected to a blue circle on the right by a blue line that dips down. Along this path, there are several icons: a purple circle with a white icon, a blue circle with a white icon, a blue circle with a white icon, a blue circle with a white icon, a blue circle with a white icon, a blue circle with a white icon, a blue circle with a white icon, a blue circle with a white icon, and a blue circle with a white icon. Dashed lines connect these icons to a series of small blue circles below the main path. The overall design is clean and modern, using a color palette of purple, blue, and white.



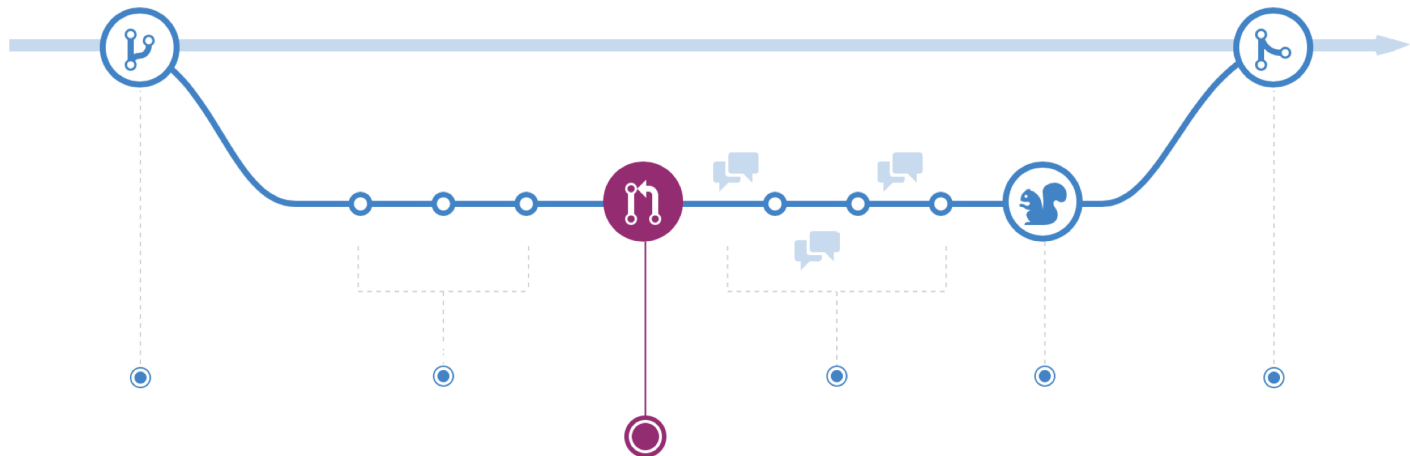
# GitHub Workflow (Team Mode)

- 3. Make changes, stage and commit
  - Same as before, make changes
  - Stage
  - Add commits – again in sets of code with a meaning!



# GitHub Workflow (Team Mode)

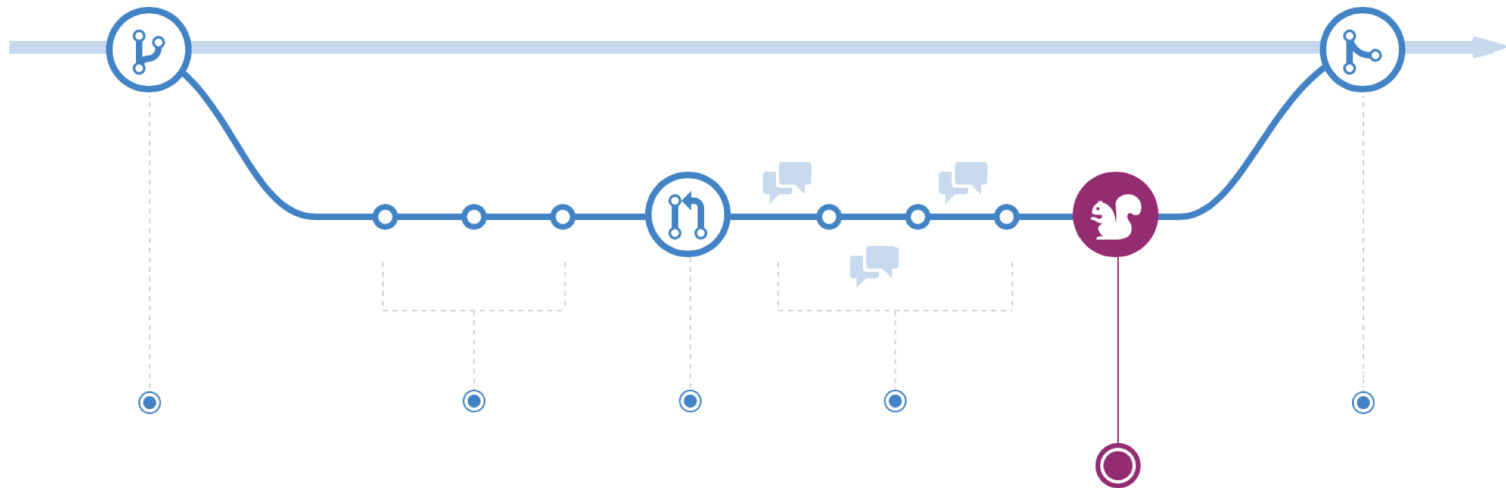
- 4. Open a Pull Request
  - Once your done, you submit your work for team revision and feedback
  - This will open a discussion with your team about your commits
  - You can also use this when you are stuck and need advice.



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# GitHub Workflow (Team Mode)

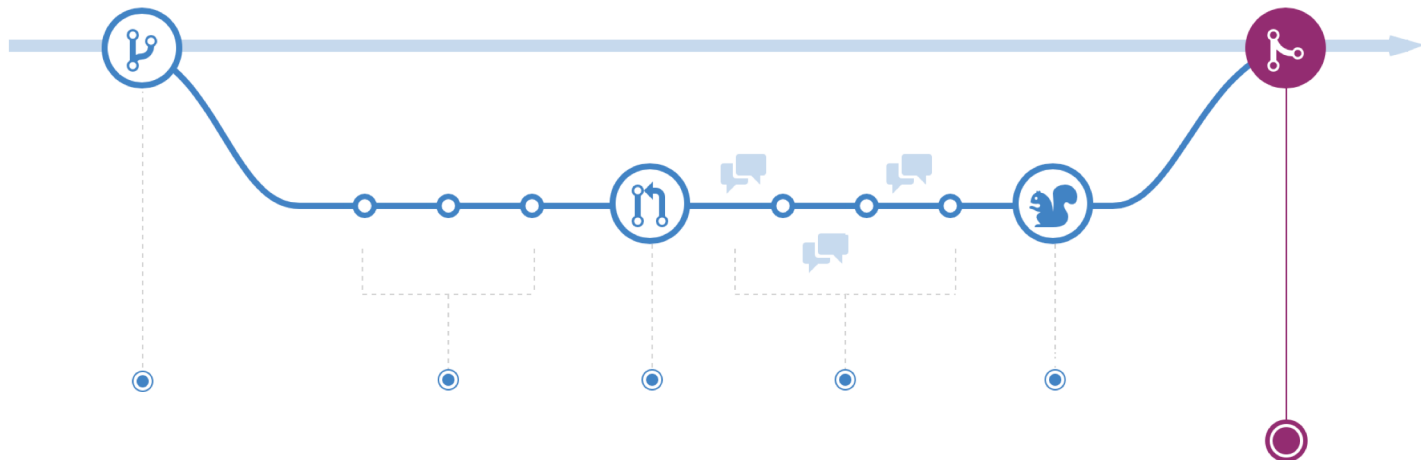
- 6. Deploy
  - When all is set and everybody agrees with the changes, you can deploy your code
  - This means that your code will be doing the final test before merging into the master



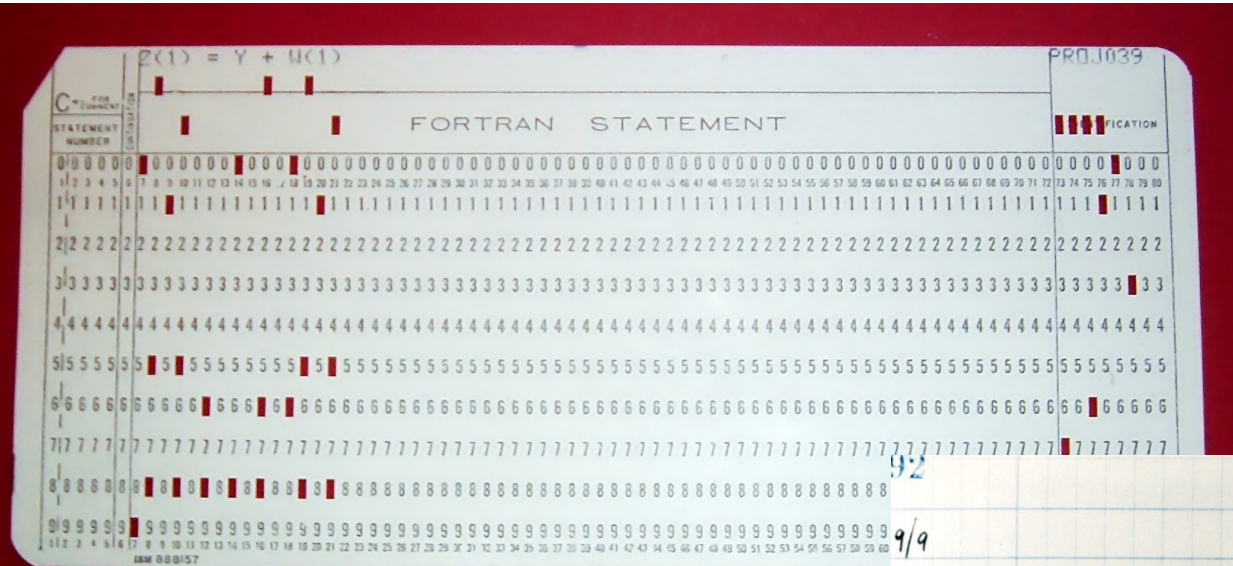
# GitHub Workflow (Team Mode)

- 7. Merge

- When your changes have been verified and seem to be no more issues or bugs, your changes are all ready to be merged into the master branch
- This constitutes a real improvement to the original code.
- A history will be recorded so you can go back in case is necessary.



# We used to be here 70 years ago...



<https://www.npr.org/sections/money/2016/07/22/487069271/episode-576-when-women-stopped-coding>



0800 Antan started  
1000 " stopped - antan ✓  
1300 (032) MP-MC 1.58267000  
033) PRO 2 2.130476415  
convd 2.130676415  
Relays 6-2 in 033 failed special speed test  
in relay 11.00 test.

1100 Started Cosine Tape (Sine check)  
1525 Started Multi-Adder Test.

1545 Relay #70 Panel F (moth) in relay.

1630 Antan started.  
1700 closed down.

Relay  
2145  
Relay 3370