

Code Review

CMSE 890-602

What is “good” code?

Reading code

- Any programmer can review code!
- If the code is not quickly understandable, comment
- Compare the code to the style guide of the project
 - Variable names
 - Function names
 - Documentation
 - Tests

Example pull requests with review comments

<https://github.com/tardis-sn/tardis/pull/3177>

<https://github.com/astropy/astropy/pull/18443>

<https://github.com/numpy/numpy/pull/29609>

In-class assignment: Feedback on code

1. Open <https://github.com/msu-cmse-courses/cmse890-602-review>
2. Click “Use this Template” -> “Create a new repository”
3. **Check “Include all branches”**
4. Share the new repository with me
5. On GitHub:
 - a. Make a pull request from each branch to main
 - b. In each pull request, leave review comments on the code
 - c. Add **at least 5 comments** to each pull request
 - d. You do not have to understand what the code is trying to do!
 - e. Criticize (and/or praise) with suggested alternatives:
 - i. Variable names
 - ii. Function names
 - iii. Documentation
 - iv. Tests
 - v. Anything else you think relevant

Homework

- **Now that we have explored how to plan and run research workflows:**
- Find an open source workflow or software package with a github repository that you know or use in your work
- Write a 1-2 page report (can be bullet pointed, but **full sentences** please)
- Briefly describe the purpose of the software
- Describe and give your reasoned opinion on:
 - The repository organization (issues, projects, pull requests, branches etc.)
 - The documentation (web hosted? Docstrings for the appropriate language? etc)
 - Tests (are they present? Unit tests? Integration tests? etc)
 - The style/contribution guide (does it exist? Is it reasonable? etc)
 - Use of github actions
- Submit to D2L at midnight Wed 18th Oct. PDF preferred.

Semester project Next Steps

- **Create a GitHub repository for your project and invite me**
- Respond to my and others comments on D2L if you have any questions
- Commit your DFD to your repository
- Begin writing pseudocode based on your DFD
 - You can commit it to your repository on a branch with an open pull request so that I can give feedback there, if you like
- Try to make regular commits as you work

Pre-class

Read this paper:

<https://www.nature.com/articles/s41586-022-04501-x>

Write a short paragraph discussing what you think FAIR data is and if it could be a useful way to think about research data.