Internship 2023: Test suite

Links

Smalldata_tools github: https://github.com/slac-lcls/smalldata_tools

S3DF: https://s3df.slac.stanford.edu/public/doc/#/

S3DF OnDemand: https://s3df.slac.stanford.edu/pun/sys/dashboard

PyTest: https://docs.pytest.org/en/6.2.x/contents.html

Example test from pcdsdevices: https://github.com/pcdshub/pcdsdevices/tree/master/pcdsdevices/tests

Pytest fixture: https://betterprogramming.pub/understand-5-scopes-of-pytest-fixtures-1b607b5c19ed

On-boarding

- LCLS Linux account
- S3DF account
- Setup bashrc and environment
- Clone smalldata_tools
- Read pytest docs

Implementation

- Two test suites:
    - LCLS-I
    - LCLS-II (TBD)
- Source env (`subprocess.run`? or have a bash script to source env and run tests)
- Tests:
    - Bash script to run the tests:
        - Source env
        - Run detector tests
    - One file per detector
    - Load / instantiate the different detectors
    - Test commonly used function: see 1.2.2 Details of the area detector analysis: DetObjectFunc to see how to implement functions
        - ROI
        - Projection
        - Azimuthal integration
        - Droplet
        - Photon
    - Cube

Run table

Exp	Run	Corresponding run in xpptut15	Detector	Test to implement
xpplv9818	127	650	Jungfrau	ROI, projection, Spectrum Cube: image
			Opal	
xppx49520	267	630	Epix100	droplet, photon, droplet-to-photon
			Zyla	
xppx49520	602	631	Epix100	droplet, photon, droplet-to-photon

mfxc00118	239	660		Rayonix	Azimuthal integration Cube: azav

Git

Workflow

- Make a branch: `git checkout -b branch_name`
- Develop code on the branch
- Commit at regular interval: `git commit -m "a commit message"`
- Keep track of master branch: if another pull request has been merged, you want to include these new changes in your code.
    - `git checkout master`
    - `git pull`
    - `git checkout branch_name`
    - `git merge master`
    - Resolve conflict if any
- When a milestone or an important step is reached make a pull request on github

Some useful commands

- `git status`
- `git diff`: show uncommitted changes
- `git log`: show commit history