

Forge Flow

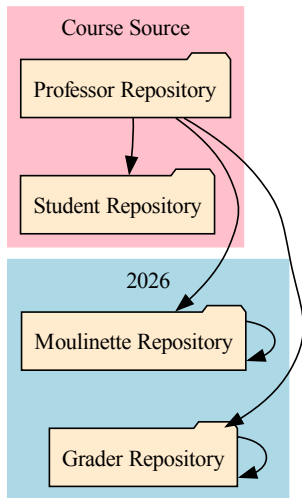
Jim Newton

August 3, 2026

Context

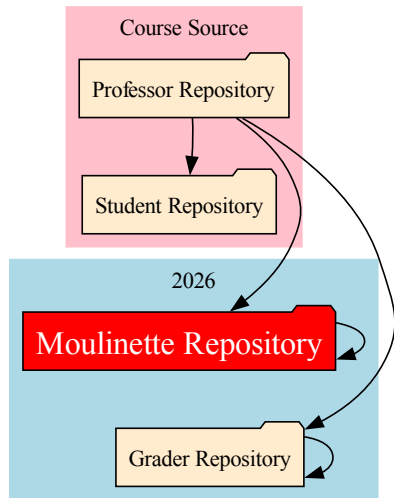
We will discuss one professor's flow for developing and maintaining programming assignments for a course at EPITA using the Forge/Intranet service.

Four Repositories



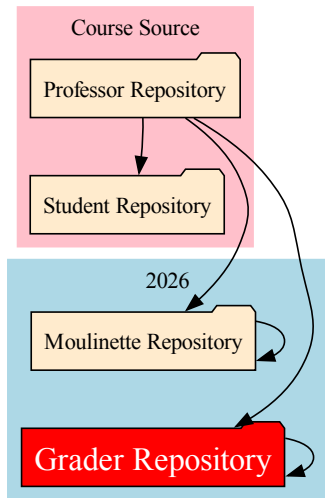
- Moulinette Repository:
- Grader Repository:
- Professor Repository:
- Student Repository:

Four Repositories



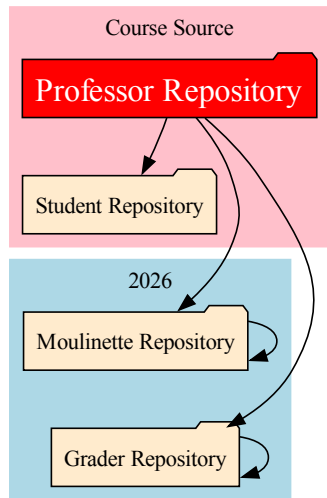
- **Moulinette Repository:** Required by Forge/Intranet, contains `activities.yml`, `launch_testsuite.csh`, `docker`, ...
- **Grader Repository:**
- **Professor Repository:**
- **Student Repository:**

Four Repositories



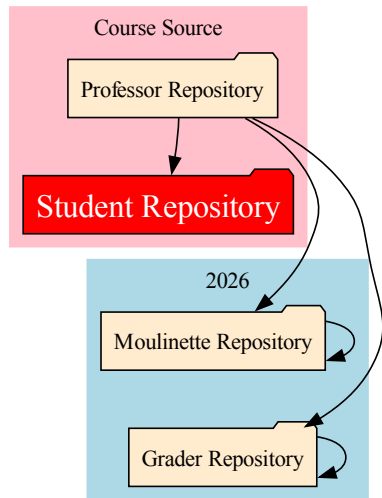
- Moulinette Repository:
- Grader Repository: Forge requires student to `git clone`, `git tag`, `git push`, etc.
- Professor Repository:
- Student Repository:

Four Repositories



- **Moulinette Repository:**
- **Grader Repository:**
- **Professor Repository:** Multi-year course development, lecture notes, homework development, *plus* solutions
- **Student Repository:**

Four Repositories



- **Moulinette Repository:**
- **Grader Repository:**
- **Professor Repository:**
- **Student Repository:** Auto-generated, lecture notes, homework problems *without* solutions, live coding, student must `git pull` regularly

Points of View

- Student
- Professor

Points of View

- Student

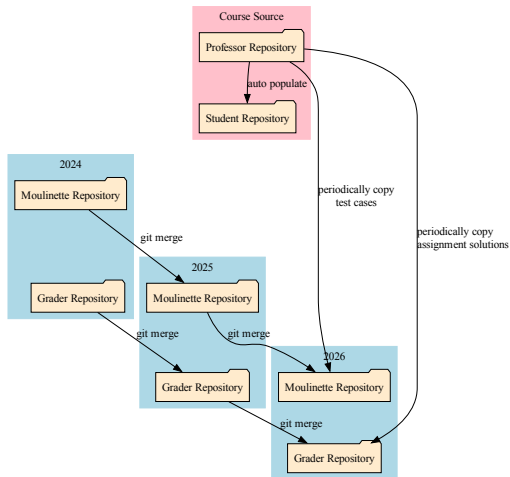
- Get updates if lecture notes or homework changes
- Test homework solutions locally Linux, MacOS, Windows
- Submit HW solutions to the auto-grader using Forge/Intranet
- Easily integrate changes (bug fixes, in-class live coding)

- Professor

Points of View

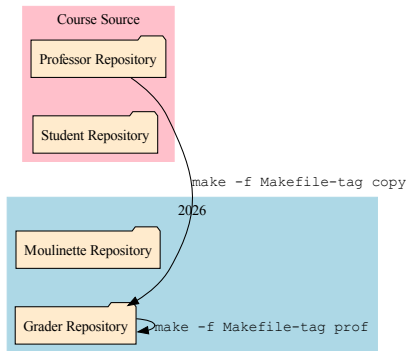
- Student
- Professor
 - Support expert or debutante students
 - Release lecture notes.
 - Fulfill Forge/Intranet requirements
 - Auto-generate HW templates w/o solutions
 - Test, release, maintain HW problems
 - Support many programming languages
 - Compile grades CSV (final and incremental)

Multi-year Flow



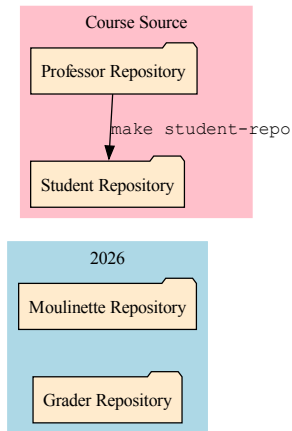
- Professor repository developed over multiple years
- Forge repos re-cloned each year, incremental updates
- One Professor may control several courses: SCALAIN, APFON

Grader Repository



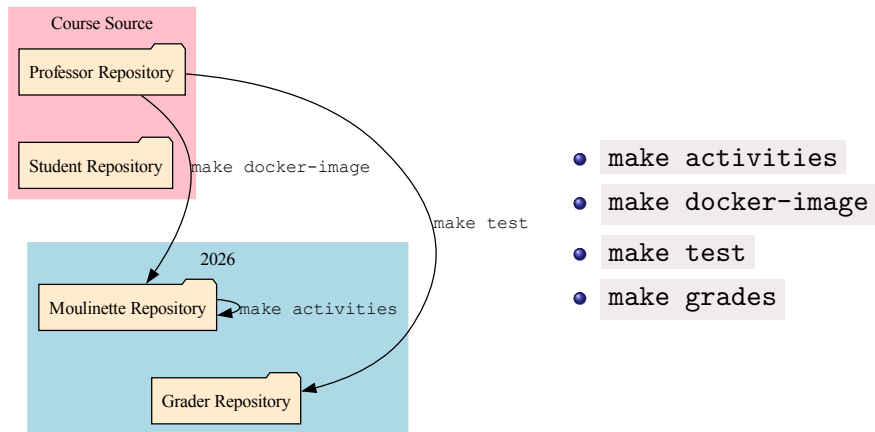
- `make -f Makefile-tag copy`
- `make -f Makefile-tag prof`

Professor Repository

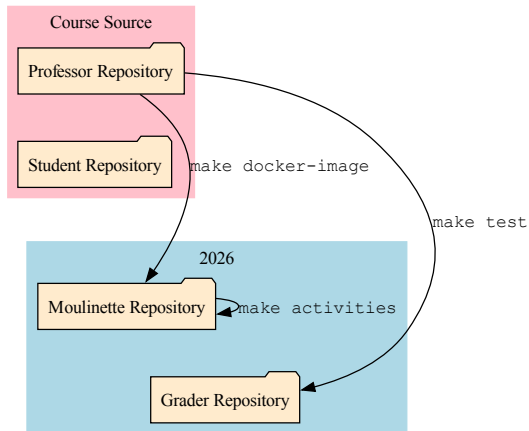


- make student-repo
- make filter

Moulinette Repository



Moulinette Repository



DEMO

- Update `hello.py`
- Update `hello_test.py`
- check-in changes
- `make docker-image`
- `make test`