Projects - Instructions

The proposed projects are based on real biological imaging questions using experimental microscopy data. The objective is to develop and implement a complete image analysis pipeline that could be used by non-expert researchers.
You are expected to consider various aspects, such as: what features to extract, how to quantify them, how to provide a practical tool (including visualisation of results) and the interpretation of results.
The project instructions are intentionally open-ended to encourage critical thinking, discussion, and the opportunity to propose alternative approaches.
Note that we do not expect a perfect solution that works in 100% of cases. These are real images, with real-world variability and imperfections. What matters most is your ability to reason, adapt, and justify your choices throughout the project.

Expected submission

The code submission is designed to look like a real plugin distribution, as you might be confronted to it in your career. Thus, the following items are required

- ***Executable file of the plugin, runnable on all platforms***
  - A .jar file for java code, runnable on Fiji, or jupyter notebook for python code.
  - Runnable on any OS (windows, mac and linux)
- ***Source code***
  - The full IDE project (without the .git folder)
  - The code has to be CLEAN, WELL DOCUMENTED and COMMENTED ⇒ Explain **what** you do and **not how** you do. Someone who has never heard about your project should be able to understand what you've done by reading your code.
  - Runnable on any OS (windows, mac and linux)
- ***README.md***
  - This document helps anyone understand what the code/project is about and how to use it ⇒ It is a User Manual.
  - It should at least contain the following
    - A short description of the project
    - Instructions to install the plugin (dependencies, software configurations…)
    - What kind of data is targeted by the plugin
    - Instructions to reproduce the results by a non expert ⇒ Step-by-step explanation of how to use the plugin
    - Expected outputs ⇒ what the user should expect to get at the end of the plugin

For the course purposes, we also ask you **to give us the PDF of your presentation.**
The presentation should contain:

- The presentation of the project (data description, goals,...)
- A description of the pipeline - Methodology aspect and implementation
- A presentation of the results - Critical and relevance of the quantitative results
- Outlook

The submission due date is **Tuesday May 27, 2025, 23h59 via Moodle. Only one ZIP file per group** should be **uploaded.**