

02Lab

Advanced testing, mocking, integration

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One slide sum-up on Acceptance Testing

Unit testing

- clean and simple tests for isolated units of code
- trade-off between completeness and cost of maintenance
- coverage could be a measure, but it has limits
- dependencies must be finely-mocked: use Mockito

Integration testing

- when we test collaborations, with are quitting unit testing
- mocking still needs to be used to isolate few collaborations at a time

Starting point and goals

References

- Mockito: <https://site.mockito.org/>
- 02-repo-testing:
<https://github.com/mviroli/mviroli-asmd23-public-02-testing>
- ChatGPT: <https://chat.openai.com/>
- Slide 02 provide few examples of mockito/Junit

General goals

- be operative with Mockito and JUnit
- understand mocking in its details
- exercise with integration testing
- pre-check ability of ChatGPT to help you in unit and integration testing

Tasks

REORGANISE

The repo has a device example, discussed in room. Play with it. Reorganise tests, which are currently grouped by type of mock. Seek for the perfect unit test!

TOOLING

Experiment with installing/using Mockito with Scala and/or in VSCode. Is VSCode better at all here? What's the state of mocking technologies for Scala?

REENGINEER

Take an existing implemented small app with GUI, e.g. an OOP exam. Add a requirement that it outputs to console some relevant messages, through a log class. Now you have an App with at least 3 classes (GUI, Model, Log). How would you write integration tests for it? Search here: <https://bitbucket.org/mviroli/oop2023-esami> (2023, 2022,...)

GUI-TESTER

Generally, GUIs are a problem with testing. How do we test them? How do we automatise as most as possible testing of an app with a GUI? Play with a simple example and derive some useful consideration.

TESTING-LLM

LLMs/ChatGPT can arguably help in write/improve/complete/implement/reverse-engineer a JUnit test, either unit or integration test. Experiment with this, based on the above tasks or in other cases. Is ChatGPT useful for all that?