

**Assignment 3 in Lab4**  
**Levels of testing (A3Integration)**

**Assignment Objectives:**

- Generating test cases for different levels of testing, integration testing.
- Use JUnit for implementing the test cases.
- Use Jenkins for Continuous Integration.
- Use Testlink for test case management.

**Assignment = In-Class assignment + Take-Home assignment**

- **In-Class assignment**
  - First hour of the laboratory.
  - Maxim 50 XP
  - TO DO:
    1. **[Big-bang Integration Testing]** (20 XP)
      - Creating Maven project. [See Maven tutorial]
      - Create 1 Test Case for **addGrade** feature (Black-box or White-box approach).
      - **Big-Bang integration**
        - 1 Test case for **addStudent**
        - 1 Test case for **addAssignment**
        - 1 Test case for **addGrade**
        - Integration testing: all **addStudent, addAssignment, addGrade**
        - **Remark:** You will create a test class having 4 test methods, one for each point above, 3 test cases calling one functionality and the 4th test case calling all 3 functionalities.
    - Add the project to git (github, public) project.
  - 2. **[TestLink]** (20 XP)
    - Creating in TestLink the 4 implemented test cases + Requirement specification.
    - [See **TestLink** tutorial]
  - 3. **[Jenkins]** (10 XP)
    - Creating a job in Jenkins for executing the 4 test cases. [See Jenkins tutorial]
- **Take-Home assignment**
  - At home.
  - Maxim 150 XP
  - TO DO:
    1. **Incremental integration (top-down)** (50XP)
      - 1 Test case for **addStudent**
      - 1 integration test for **addAssignment (addStudent+addAssignment)**
      - 1 integration test for **addGrade (addStudent+addAssignment+addGrade)**
    2. Testlink test cases (add the new implemented test cases ) (50 XP)
    3. Jenkins job for all test cases (no modification required, use from IC assignment) (30 XP)
    4. Modification of the source code (errors identified and corrected) (20 XP)

**Assignment and Delivery date:**

1. Assignment date: laboratory 4
2. Delivery date for **In-Class assignment:** laboratory 4 (max 50 XP)
3. Delivery date (first) for **Take-Home assignment:** laboratory 6 (max 150 XP)

**Turn in:**

Delivered and presented in class AND upload on canvas after Delivery in class the following archives (IC for In-Class delivery, TH for Take-Home delivery, 93X change with your group, Name01Name02 the name of the team)

- a. Lab4\_IC\_93X\_Name01Name02.zip
  - i. Source code:Implementation of the test cases.
- b. Lab4\_TH\_93X\_Name01Name02.zip
  - i. Source code:Implementation of the test cases.
- c. **Remark: Lab4 (A3Integration) and Lab5 (A3UIWeb) TakeHome must be delivered in the same archive.**

**References** - See Lecture 4.