Assignment 4
Levels of testing - Integration testing and Exploratory testing

Assignment Objectives:

- Generating test cases for different levels of testing, integration testing and Exploratory testing (SBTM).
- Use JUnit for implementing the TCs. Use Jenkins for Continuous Integration. Use Testlink for test case management.

Assignment = In-Class assignment + Take-Home assignment

Before Lab3: Docker-Jenkins-Gitea–AllureReport - install on your computer

See ***Info_CI_CD.pdf*** **tutorial.**

- **In-Class assignment**
  - First hour of the laboratory. Maxim 25 XP
  - TO DO:
    1. **[Big-bang Integration Testing]** (10 XP)
       - 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 (unit testing) and the 4th test case calling all 3 functionalities (integration testing).
       - Add the project to git using gitea.
    2. **[Big-bang Integration Tests]** (10 XP)
       - Create 4 test cases. Add the project to git using gitea.
    3. **[Jenkins]** (5 XP): Creating a job in Jenkins for executing the 4 test cases.
       - Maven project created in Lab 01. Use the Info-Maven.pdf tutorial.
       - Creating a pipeline job in Jenkins for executing the 4 test cases.
- **Take-Home assignment**
  - At home. Maxim 75 XP
  - TO DO:
    1. **Incremental integration (**10XP) (1 test case for **addStudent,** 1 integration test for **addAssignment** (**addStudent+addAssignment**), 1 integration test for **addGrade** (**addStudent+addAssignment+addGrade**)). Add the new implemented test cases to gitea.
    2. Use mockito - creating mock objects for repositories (Student, Assignment) (10XP)
    3. Jenkins job for all test cases (no modification required, use from IC assignment) (5 XP)
    4. Modification of the source code (errors identified and corrected)
    5. **Session Based Test Management – SBTM (See Lecture 6)** (50 XP)
       - For the **addGrade** feature conduct a SBTM session.
       - Each student from the team for 30-60 minutes
       - Each student will create a different file + the charts and analysis of the session
       - SBTM template available here (u**se your gmail account**):
       - https://altom.com/version-2-1-of-the-sbtm-session-template-was-released/
       - Instructions how to use the template
       - https://altom.com/sbtm-with-itester-and-google-drive/

Assignment and Delivery date:

1. Assignment date: laboratory 4
2. Delivery date for **In-Class assignment:** laboratory 4 (max 25 XP)
3. Delivery date (first) **for Take-Home assignment**: laboratory 5 (max 75 XP)
4. Delivery date (last) **for Take-Home assignment**: laboratory 6 (max 25XP)

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. Screen capture from Jenkins (Test execution)
b. Lab4_TH_93X_Name01Name02.zip
   i. Source code: Implementation of the test cases + SBTM files (bugs + charts + analysis)

References - See Lecture 3, Lecture 6