

## Task 2. Maintenance

The objective of this exercise is to carry out maintenance tasks on a specific project. The given application retrieves project issues from GitLab and performs various analyses on them in the `IssueService` class. The `IssueServiceTest` class contains several unit tests that verify the behaviour of the methods in the service class.

You are required to perform the following maintenance tasks:

1. Create a copy of the `getIssuesTest` unit test in the `IssueServiceMockTest` class and modify it to decouple it from the actual service implementation by using mocks. Maintain the same input values and assertions. (1.25 points)
2. Create a copy of the `getMostVotedIssuesTest` unit test in the `IssueServiceMockTest` class and modify it to decouple it from the actual service implementation by using mocks. Use the same input values and assertions. (1.25 points)
3. Create a copy of the `getDistinctAuthorsTest` unit test in the `IssueServiceMockTest` class and modify it to decouple it from the actual service implementation by using mocks. Keep the same input values and assertions. (1.25 points)
4. Create a copy of the `getOpenedIssueForMoreThanOneYearTest` unit test in the `IssueServiceMockTest` class and modify it to decouple it from the actual service implementation by using mocks. Keep the same input values and assertions. (1.25 points)
5. The `getIssues` method in the service class contains a bug. Modify the corresponding unit test in `IssueServiceMockTest` to detect the fault. Once detected, fix the method in the service class. (1.25 points)
6. The `getMostVotedIssues` method in the service class contains a bug. Update the relevant test(s) in `IssueServiceMockTest` to expose this fault, and fix the method accordingly. (1.25 points)
7. The `getDistinctAuthors` method in the service class contains a bug. Adapt the tests in `IssueServiceMockTest` to reveal the issue, and correct the method. (1.25 points)
8. The `getOpenedIssueForMoreThanOneYear` method in the service class contains a bug. Modify the related test(s) in `IssueServiceMockTest` to detect the fault and then fix the method. (1.25 points)