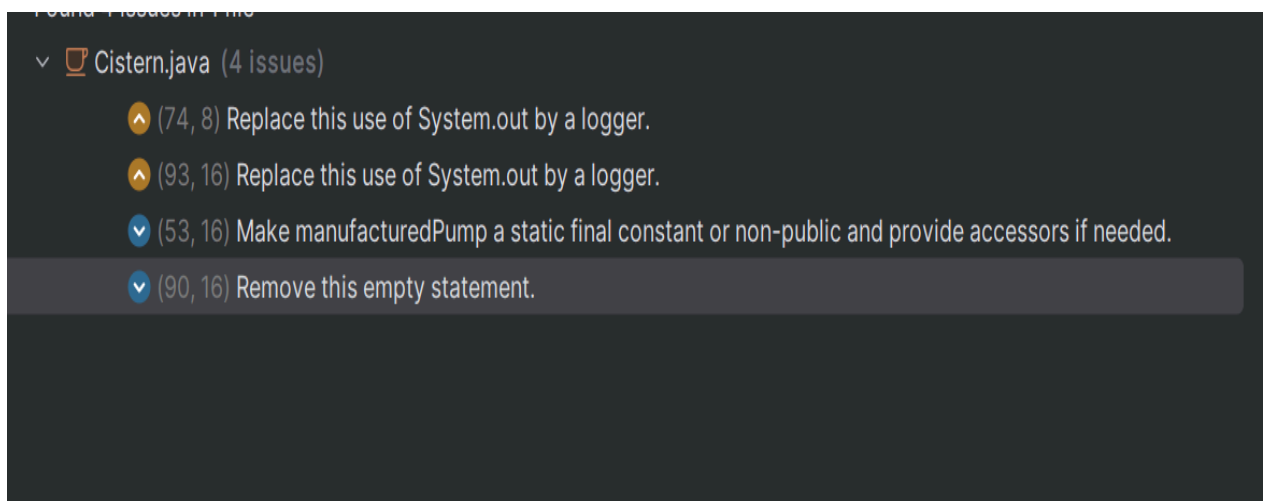
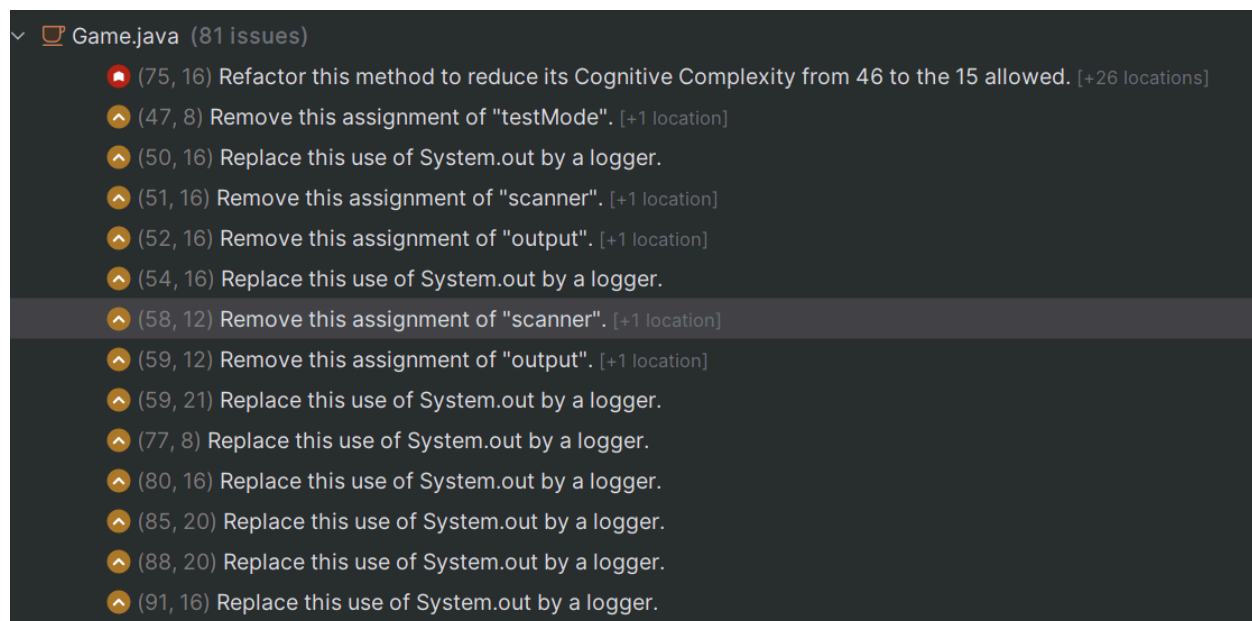


For this task, we used SonarLint, a static analysis tool, to review the "Cistern.java" file. During the review, four issues were identified. Firstly, it was suggested to swap out ``System.out`` with a logger to enhance logging control and debugging. Secondly, another occurrence of ``System.out`` needed replacement with a logger to maintain consistency. Additionally, SonarLint recommended making the variable ``manufacturedPump`` a static final constant or non-public and providing accessors if needed, which would improve code maintainability. Lastly, an empty statement in the code was advised for removal to prevent confusion and potential errors. To address these issues, we made significant changes. We imported necessary classes for logging, like `Logger` and `Level`, and created a `Logger` object at the start of the `Cistern` class for logging throughout the file. Then, we replaced all ``System.out.println`` calls with ``logger.log`` calls using the `INFO` level. These changes make logging management easier, especially for debugging, and ensure smooth code operation. Overall, these adjustments strengthen the code and make maintenance easier.



The static analysis tool identified 81 issues in the "Game.java" file. The highlighted problems include suggestions for refactoring methods to reduce Cognitive Complexity, removing unnecessary assignments, and replacing `System.out` with a logger for improved logging. To address these issues, we followed specific steps. First, we refactored the method at line 75 to reduce its complexity. Next, we removed the assignment of "testMode" at line 47 if it was unnecessary. Then, throughout the file, we replaced instances of `System.out` with a logger, importing the necessary logger class and initializing a logger object at the beginning of the class. Additionally, we removed assignments of "scanner" and "output" if they weren't used elsewhere in the code. These steps were repeated for all flagged occurrences. Finally, thorough testing was conducted to ensure the code's functionality remained intact after implementing the fixes.



The rest of the classes are the same, the most issue sonar lint picked up is replacing the printing method with a logger.