Static Code Review Report

Introduction

This report represents the results of a code cleaning process carried out on the library management system code using **SonarQube/SonarCloud**. The goal was to identify problems in the code, understand their impact, and improve overall code quality. The analysis focused on issues as bugs, code smells, security risks, and maintainability. Based on the findings, fixes were made to make the system more stable, easier to read, and easier to maintain.

Objectives

- Added a static code analysis tool (SonarCloud/SonarScanner) to detect code quality issues.
- Cleaned and improved overall code quality and maintainability based on analysis results.

Obstacle Identification

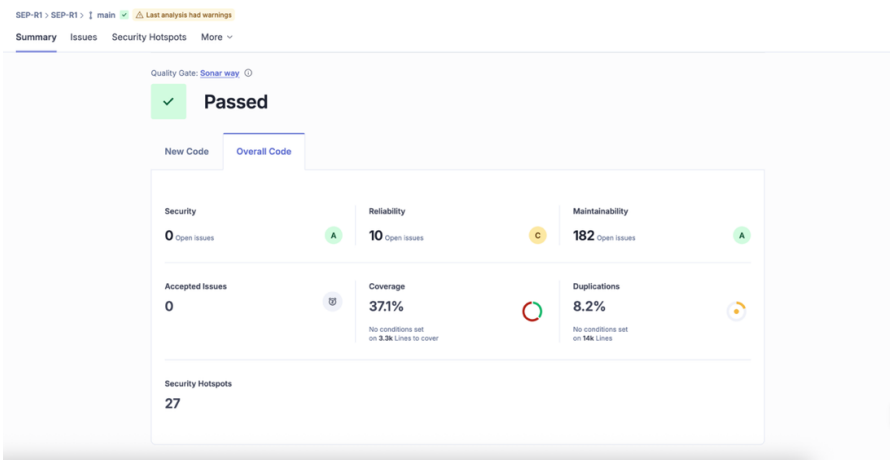
- SonarScanner started, but SonarQube/SonarCloud did not accept or finish the scan.

SonarQloud Results

- **Code Cleaning:** The team used **SonarCloud/SonarScanner** and **ESLint** to review code quality issues. Several problems were fixed, including such as unused code, formatting errors, duplicated logic, and missing types.

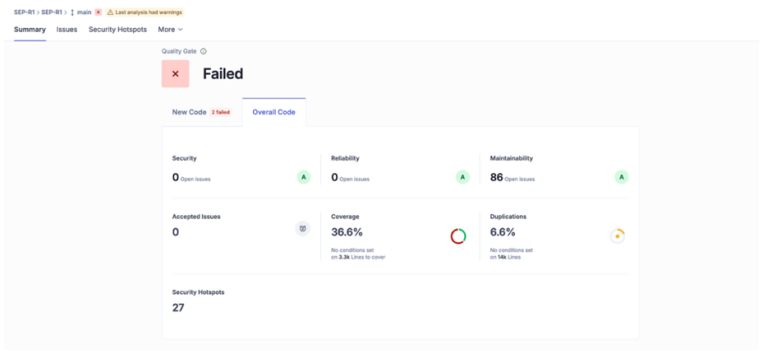
SonarCloud Starting Point:

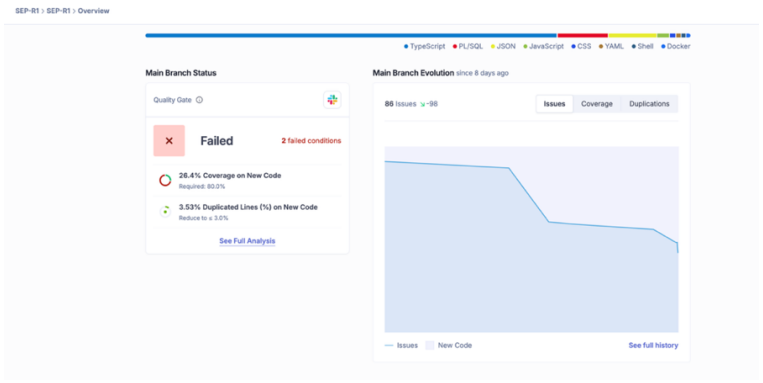
Before the cleaning work began, the project was analyzed with SonarCloud to see the initial code quality status. The following picture shows the starting point of the analysis.

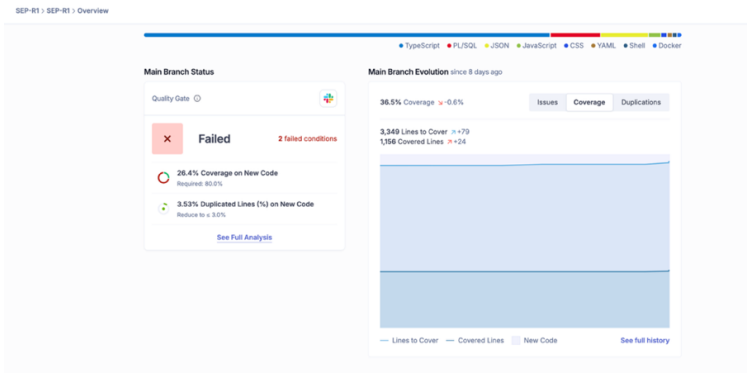


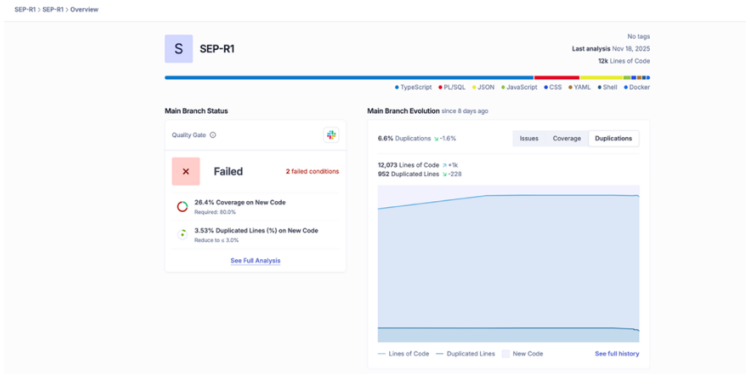
SonarCloud Results After Code Cleaning:

After the improvements were made, the project was scanned again. The results show better code quality, fewer issues, and higher maintainability. The picture below presents the updated analysis.

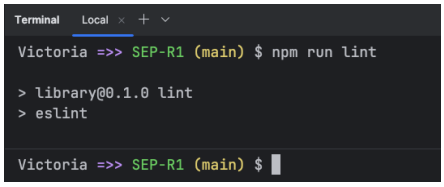








ESLint results (no errors, no warnings):
After the cleanup, ESLint reported **no errors** and **no warnings**, showing that the code follows the defined style and quality rules.



Conclusion

The library management system improved clearly after code cleaning process. Using SonarCloud, SonarScanner, and ESLint helped the team find weak areas the code and fix them in a structured way. As a result, the project now has fewer issues, better readability, and stronger maintainability. These improvements make the system more reliable and easier to develop further in the future.