

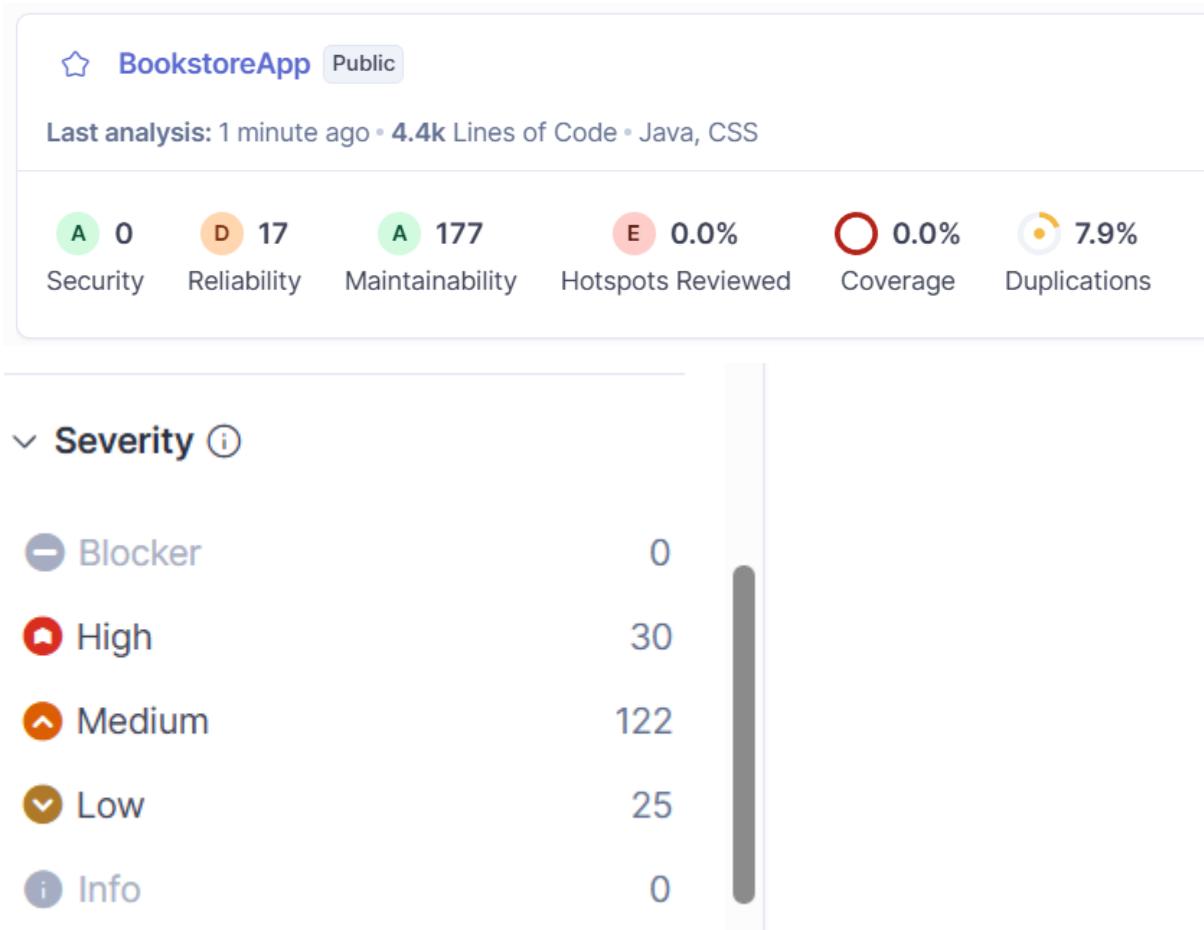
Code Review Findings

Introduction

In this code review and code clean-up/refactoring, SonarCube + SonarScanner and SpotBugs was used. Concentrating mainly around the code clean-up, after that SpotBugs was used to review the refactored code. The method worked well, since after using SonarGube, most of the time SpotsBugs couldn't find any issues. We found that SpotBugs and SonarQube detected the same issues.

Code Clean-Up analysis

In the beginning of the clean-ups, we had over 200 **maintainability issues**. We managed to lower the results under 160, but it ended up increasing every time new code was written into the project.



Most of the alerts were **medium severity**, regarding the need to use “logger” instead of “System.out.print” or “System.err.println” commands. This is marked as code smell because console prints are hard to manage and they are not suitable for real applications. It is suggested to replace them with a logger (for example Java Logger), because it offers better control, filtering, formatting, and it is a standard way to handle outputs.

Another one that repeated, was the use of generic exceptions. Using too many generic exceptions makes it hard to understand what really went wrong. It is recommended to use more specific or custom exceptions.

src/main/java/com/group9/service/BookService.java

Where is the issue?	Why is this an issue?	How can I fix it?	Activity	More info
57 gerli... 58 veeti...		<pre> } else { throw new RuntimeException("Book with ID " + rs.getInt("book_id") + " not found for order item ID " + rs.getInt("id"));</pre>		Replace generic exceptions with specific library exceptions or a custom exception.

High severity often indicated that there were unnecessary duplications or cognitive complexities, when one method contained too many if or try catch commands.

Refactor this method to reduce its Cognitive Complexity from 16 to the 15 allowed. [🔗](#)

Cognitive Complexity of methods should not be too high [java:S3776](#)

Line affected: L130 • Effort: 6min • Introduced: 3 days ago

Open Not assigned brain-overload ... +

Where is the issue?	Why is this an issue?	How can I fix it?	Activity	More info
140 141 142 143 144 145 146 147 ...	<pre>// Gather translations List<BookAttributeTranslation> translationsToSave = new ArrayList<>(); for (String langCode : nameFields.keySet()) { if (langCode.equals("en")) continue; // Skip default language String name = nameFields.get(langCode).getText().trim(); String desc = descFields.get(langCode).getText().trim(); if (!name.isEmpty() &amp; !desc.isEmpty()) { translationsToSave.add(new BookAttributeTranslation(langCode, name, desc)); } }</pre>			Uncovered code

Suggestion for code duplications, was to use **constants** instead.

Define a constant instead of duplicating this literal "unknownAttributeTypeError" 3 times. [🔗](#)

String literals should not be duplicated [java:S1192](#)

Line affected: L110 • Effort: 8min • Introduced: 3 days ago

Open Not assigned design +

Where is the issue?	Why is this an issue?	How can I fix it?	Activity
	<pre>private static final String ACTION_1 = "action1"; // Compliant public void run() { prepare(ACTION_1); // Compliant execute(ACTION_1); release(ACTION_1); }</pre>		

Low severity issues were mainly about used method-, field names, or constants not being static final.

<input type="checkbox"/> Rename this field "nameTextField_ja" to match the regular expression '^[a-z][a-zA-Z0-9]*\$'.	Consistency
Maintainability Low	convention +
Open Not assigned	L38 • 2min effort • 4 days ago
<input type="checkbox"/> Rename this field "nameTextField_ar" to match the regular expression '^[a-z][a-zA-Z0-9]*\$'.	Consistency
Maintainability Low	convention +
Open Not assigned	L39 • 2min effort • 4 days ago
<input type="checkbox"/> Rename this field "descTextField_en" to match the regular expression '^[a-z][a-zA-Z0-9]*\$'.	Consistency
Maintainability Low	convention +
Open Not assigned	L41 • 2min effort • 4 days ago

- [Make languageCode a static final constant or non-public and provide accessors if needed.](#) Adaptability
Maintainability Low cwe +
 - Open Not assigned
 - L4 = 10min effort • 3 days ago
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- [Make translatedName a static final constant or non-public and provide accessors if needed.](#) Adaptability
Maintainability Low cwe +
 - Open Not assigned
 - L5 = 10min effort • 3 days ago
-
- [Make translatedDescription a static final constant or non-public and provide accessors if needed.](#) Adaptability
Maintainability Low cwe +
 - Open Not assigned
 - L6 = 10min effort • 3 days ago