**Code smell** 1- Local variables should not shadow class fields

Code snippet:

Text

Description automatically generated

Location of the code: src/main/java/jabref/logic/remote/client/RemoteClient.java

In this specific piece of code there is overriding or shadowing of the variable port declared in an outer scope. This can make the code difficult to read and can have a huge impact on the maintainability of the code or it could even lead to bugs since maintainers might be confused and use the wrong variable.

This code smell can easily be fixed by renaming the local variable so that there is no overriding or shadowing of the variable declared before.

Refactoring proposal:

Text

Description automatically generated

**Code smell** 2- Pattern Matching for "instanceof" operator should be used instead of simple "instanceof" + cast

Code snippet:

Text

Description automatically generated

Location of the code: src/main/java/jabref/logic/remote/server/RemoteListenerServer.java

A java feature "Pattern matching for instanceof" is present in this specific piece of code. This feature replaces the previous technique that consisted in 3 operations: check the variable type, cast it, and assign the casted value to the new variable.

This rule raises an issue when an instanceof check followed by a cast and an assignment could be replaced by pattern matching.

This code smell can be fixed by using the declared variable instead of an instanceof check followed by a cast and an assignment.

Refactoring proposal:

Text

Description automatically generated

**Code smell** 3- Unused "private" fields should be removed

Code snippet:

Text

Description automatically generated

Location of the code: src/main/java/jabref/logic/remote/shared/Protocol.java

In this specific piece of code there is what can be considered dead code. Removing dead code, in this case a private field that is declared but never used, will improve maintainability and readability since maintainers won’t have to wonder what the variable is used for. This code smell can easily be fixed by removing the dead code.

Refactoring proposal:

Graphical user interface, text

Description automatically generated