**Complexity Metrics**

MetricsReloaded Plugin

Complexity metrics are measured based on cyclomatic complexity. The complexity of a module is the number of independent cycles in the flow graph (all the paths that can be traversed during a program execution). This metric correlates complexity with maintenance effort, meaning the more complex a module is the harder it is to maintain.

|  |  |  |
| --- | --- | --- |
| package | Average Cyclomatic Complexity | Total Cyclomatic Complexity |
| |  |  |  | | --- | --- | --- | | org.jabref.gui |  |  | | 2,01 | 595 |
| |  |  |  | | --- | --- | --- | | org.jabref.logic |  |  | | 1,18 | 13 |
| |  |  |  | | --- | --- | --- | | org.jabref.migrations |  |  | | 2,56 | 100 |
| |  |  |  | | --- | --- | --- | | org.jabref.model |  |  | | 1,96 | 106 |
| |  |  |  | | --- | --- | --- | | org.jabref.preferences |  |  | | 1,44 | 511 |

**java/org/jabref/gui**

This package has an average cyclomatic of 2,01 (being one of the highest of all packages) and a total cyclomatic complexity of 595, being the package with the highest total complexity which means this package has many different paths in its flow graph. It might have a higher total cyclomatic complexity because it has to deal with all the options that a User Interface has to offer. However, there are some code smells, for instance in *java/org/jabref/gui/EntryTypeView.java* there is a switch statement that iterates through all the values in the Enum. For each case there is a new path wich increases the complexity.

**java/org/jabref/logic**

This package has an average cyclomatic of 1.18 (the lowest) and a total cyclomatic complexity of 13 (the lowest). Since this is the package with the lowest complexity, one would say that this is the easiest one to maintain. However, there are some code smells that make it harder to understand the code such as the one in *jabref/src/main/java/org/jabref/logic/bst/VM.java* which has many comments within the method or the cognitive complexity in *jabref/src/main/java/org/jabref/logic/bst/BibtexCaseChanger.java*.

**java/org/jabref/migration**

**java/org/jabref/model**

**java/org/jabref/preferences**