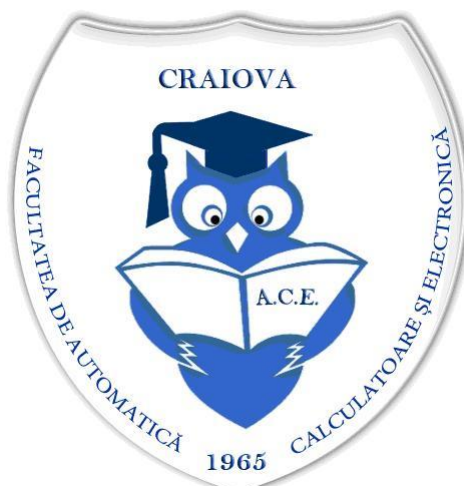


METRICI SOFTWARE ȘI INGINERIA CALITĂȚII



RAPORT - STABILIREA METRICILOR

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Anul de studiu: I

Specializarea: Inginerie Software

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Plugins and tools used into IntelliJ IDEA:

- Plugin to calculate the metrics: **MetricsReloaded** and **MetricsTree**
- Tool to find and fix coding issues: **SonarLint**
- Plugin to provide static byte code analysis to look for bugs: **SpotBugs**

I used the next metrics:

1. LOC (lines of code)
2. CLOC (lines of comment)
3. NCLOC (lines of non-comment)
4. NOM (number of methods)
5. C (number of classes in each package)
6. NOI (number of interfaces)
7. NOC (number of direct subclasses of each class that occur in the project)
8. NOSC (number of static classes)
9. WMC (weighted method complexity)
10. BUGS (average bugs per class)
11. VIOLATIONS (problems per class / errors or warnings)

The following values were obtained:

1. LOC (lines of code)

- 1020 lines of code in project
- 174 lines per class (max)
- 60 lines per method (max)

! TARGET ! <24 lines per method => seems ok

2. CLOC (lines of comment)

- 19 lines of comment in project
- 6 lines per class (max)
- 2 lines per method (max)

! TARGET ! >1 lines per method => seems ok

3. NCLOC (lines of non-comment)

- 930 lines of non-comment in project
- 60 lines of non-comment per method (max)

! TARGET ! not sure if is ok

4. NOM (number of methods)

- 85 methods in project
- 10 methods per class (max)

! TARGET ! <20 methods per class => seems ok

5. C (number of classes and interfaces in each package)

- 24 classes in project
- 6 classes per package (max)

! TARGET ! not sure if is ok

6. NOI (number of interfaces)

- 0 in project

! TARGET ! not sure if is ok

7. NOC (number of direct subclasses of each class that occur in the project)

- 0 in project

! TARGET ! <10 subclasses of each class => seems ok

8. NOSC (number of static classes)

- 0 in project

! TARGET ! not sure if is ok

9. WMC (weighted method complexity)

- 234 in project
- 38 per class (max)

! TARGET ! <100 per class => seems ok

10. BUGS (average bugs per class)

- 2 bugs in project
- 0.08 per class

! TARGET ! will have to fix it

11. VIOLATIONS (problems per class / errors or warnings)

- Warnings = 25 issues with low impact in project
- Errors = 15 issues with medium impact in project
- Critical Errors = 29 issues with high impact
- Total Issues = 69 issues in 13 classes

! TARGET ! will have to fix it

References:

1. MetricsReloaded:

- <https://blog.jetbrains.com/idea/2014/09/touring-plugins-issue-1/>
- <https://plugins.jetbrains.com/plugin/93-metricsreloaded>

2. SonarLint:

- <https://plugins.jetbrains.com/plugin/7973-sonarlint>

3. MetricsTree:

- <https://plugins.jetbrains.com/plugin/13959-metricstree>
- <https://github.com/b333vv/metricstree>

4. SpotBugs

- <https://plugins.jetbrains.com/plugin/14014-spotbugs>
- <https://spotbugs.readthedocs.io/en/stable/links.html>
- <https://spotbugs.github.io/>