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Practice 7

Deadline: Check onsite on or before week 8 lab.

PMD is a source code analyzer or linter. It finds common programming flaws like unused variables, empty catch blocks, unnecessary object creation, and so forth.

You could use it as standalone software, IDE plugin or Maven plugin. We'll use it as a Maven plugin in this practice.

You could add maven-pmd-plugin in the <build> section of your pom.xml to run PMD in your Maven project. By default, PMD checks the project using a default ruleset In the maven PMD plugin configuration, you can also specify a custom ruleset file to use.

```
<configuration>
  <rulesets>
    <ruleset>customize-rules.xml</ruleset>
    </rulesets>
</configuration>
```

The PMD maven plugin has several goals, including pmd:pmd, pmd:cpd, pmd:check, pmd:cpd-check, etc. Please check the documentation for details. You can also specify the goals to execute in the <executions> section of the plugin configuration.

By default, PMD is executed in the verify phase of the Maven lifecycle.

```
        ✓ com.sismics.docs:docs-core.jar.1.12-SNAPSHOT 4 sec, 567 ms

        ✓ resources
        130 ms

        ✓ compile
        213 ms

        ✓ testResources
        5 ms

        ✓ testCompile
        31 ms

        ✓ test
        163 ms

        ✓ jar
        5 zr ms

        ✓ pmd
        2 sec, 119 ms

        ✓ check
        9 ms

        ✓ cpd
        886 ms

        ✓ pd-check
        7 ms

        ✓ install
        17 ms
```

After configuring the PMD plugin in the pom.xml, run:

```
mvn clean -DskipTests install
```

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Then, you will see pmd report (pmd.html) under docs-core/target/site, docs-web/target/site, and docs-web-common/target/site.

Task

In this practice, you'll define a customized PMD ruleset that includes only the following rules that we've covered in the lecture:

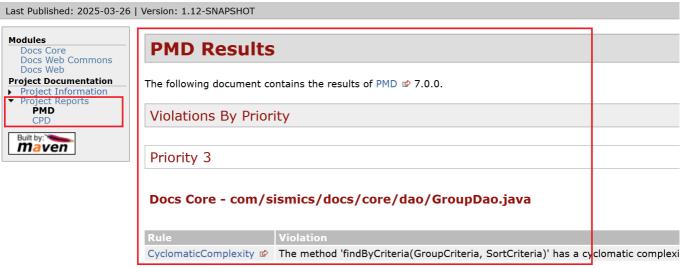
- Lines of code (LoC)
- Cyclomatic Complexity (CC)
- Weighted Methods per Class (WMC)
- Coupling Between Objects (CBO)
- Lack of Cohesion in Methods (LCOM)

In addition, we want to include the PMD report in the site documentation of Teedy.

Steps

- 1. Check here to learn how to define a customized PMD ruleset.
- 2. Check here for a list of available Java Rules. You need to pick the ones that correspond to or are closely related to the above 5 metrics, and add them into your customized ruleset.
- 3. Configure pom.xml in Teedy to use the customized ruleset and generate the PMD report in the site documentation.
- 4. Run mvn site.
- 5. Open the generated target/site/index.html in your browser. The site should now include the PMD report. Note that, the PMD report should include problems detected by the customized ruleset that you defined in step 2.

Docs Parent



Docs Core - com/sismics/docs/core/service/InboxService.java

Rule	Violation
CouplingBetweenObjects &	High amount of different objects as members denotes a high coupling
CyclomaticComplexity 🕏	The method 'importMessage(Message, Map <string, string="">)' has a cyclomatic complexity of 12.</string,>