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.

```xml
<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.

```xml
<executions>
  <execution>
    <goals>
      <goal>check</goal>
    </goals>
  </execution>
</executions>
```

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

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

```
mvn clean -DskipTests install
```

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

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Modules
   Docs Core
   Docs Web Commons
   Docs Web
Project Documentation
▶ Project Information
▼ Project Reports
    PMD
    CPD

Built by:
maven

PMD Results

The following document contains the results of PMD ⧉ 7.0.0.

Violations By Priority

Priority 3

Docs Core - com/sismics/docs/core/dao/GroupDao.java

Rule	Violation
CyclomaticComplexity ⧉	The method 'findByCriteria(GroupCriteria, SortCriteria)' has a cyclomatic complexi

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.