

PMDの概要

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PMDについて



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- あらゆる種類の言語のソースコードを静的解析するツール
 - どの部分にバグの可能性があるかをtext、xml、htmlなどの形式で出力する
 - CUI、Eclipseのプラグインなどの環境で実行できる
 - 出力結果は英語のみ

CUIでの実行方法

- ダウンロード後binディレクトリのパスを通す
- 以下のコマンドを実行({}の部分は適切に置き換えてください)
 - `pmd -d {path/to/src} -R {ruleset} -f {file_format} -r {output}`
- rulesetにはソースコードがjavaの場合、java-basicなどが入る
- file_formatにはtxtファイルを出力したい場合はtext、xmlファイルを出力したい場合はxmlを入れる

ruleset(一部)

- java-basic

- 従うべき習慣についての基本的なルールセット
- UnconditionalIfStatement, CollapsibleIfStatementsなど

- java-design

- 最適でないコードの実行を避けるためのルールセット
- SwitchStmtsShouldHaveDefault, AvoidDeeplyNestedIfStmtsなど

- java-junit

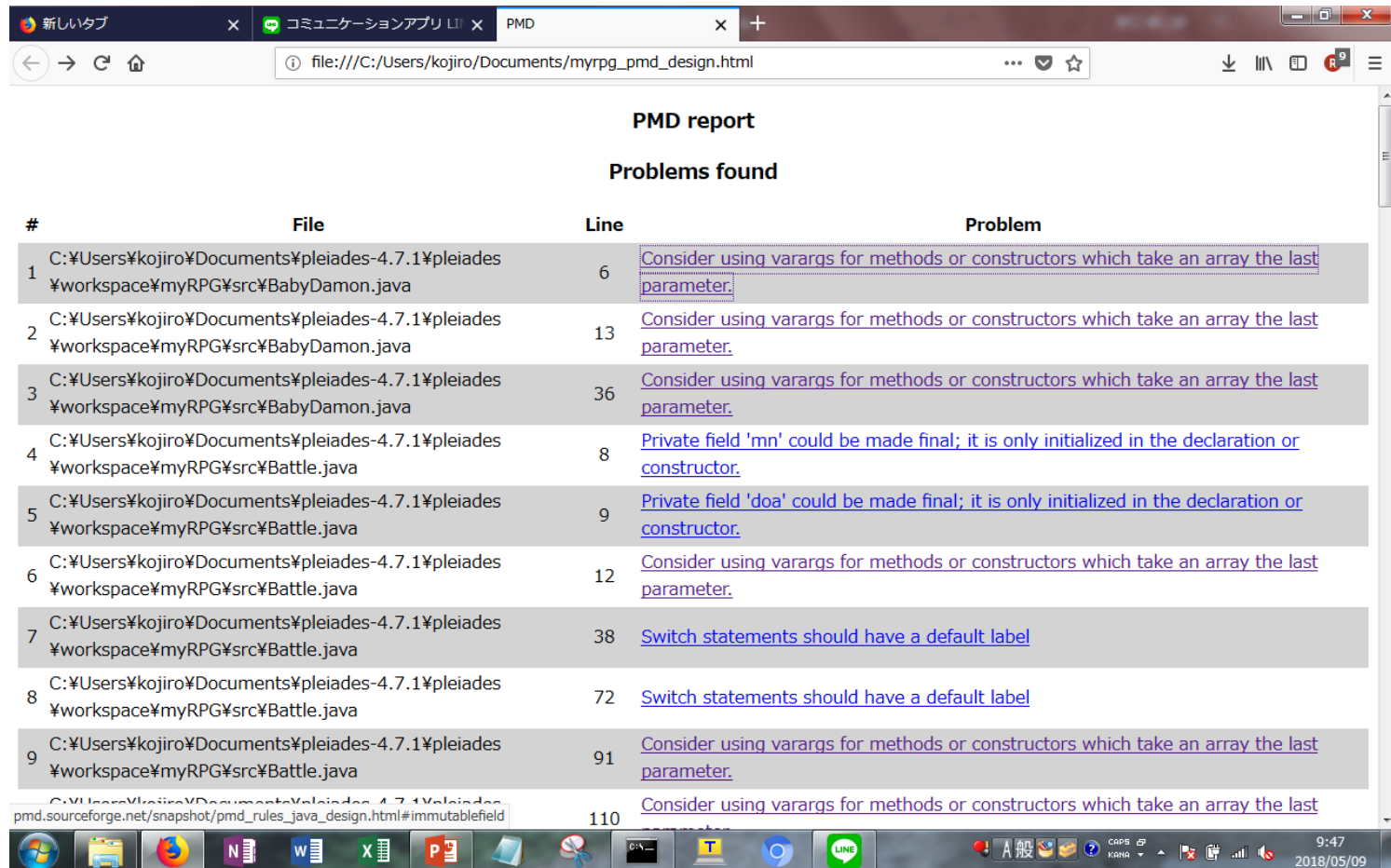
- junitを扱う際の問題についてのルールセット
- TestClassWithoutTestCases, JUnitSpellingなど

実行例

準備

- 対象のソースコード
 - OOP演習で作成したRPG
- Windows環境でCUIとEclipseプラグインで実行
- CUIでは以下のコマンドを実行
 - `pmd -d pleiades-4.7.1¥pleiades¥workspace¥myRPG¥src -R java-design -f html -r myrpg_pmd_design.html`

CUIの実行結果(html)

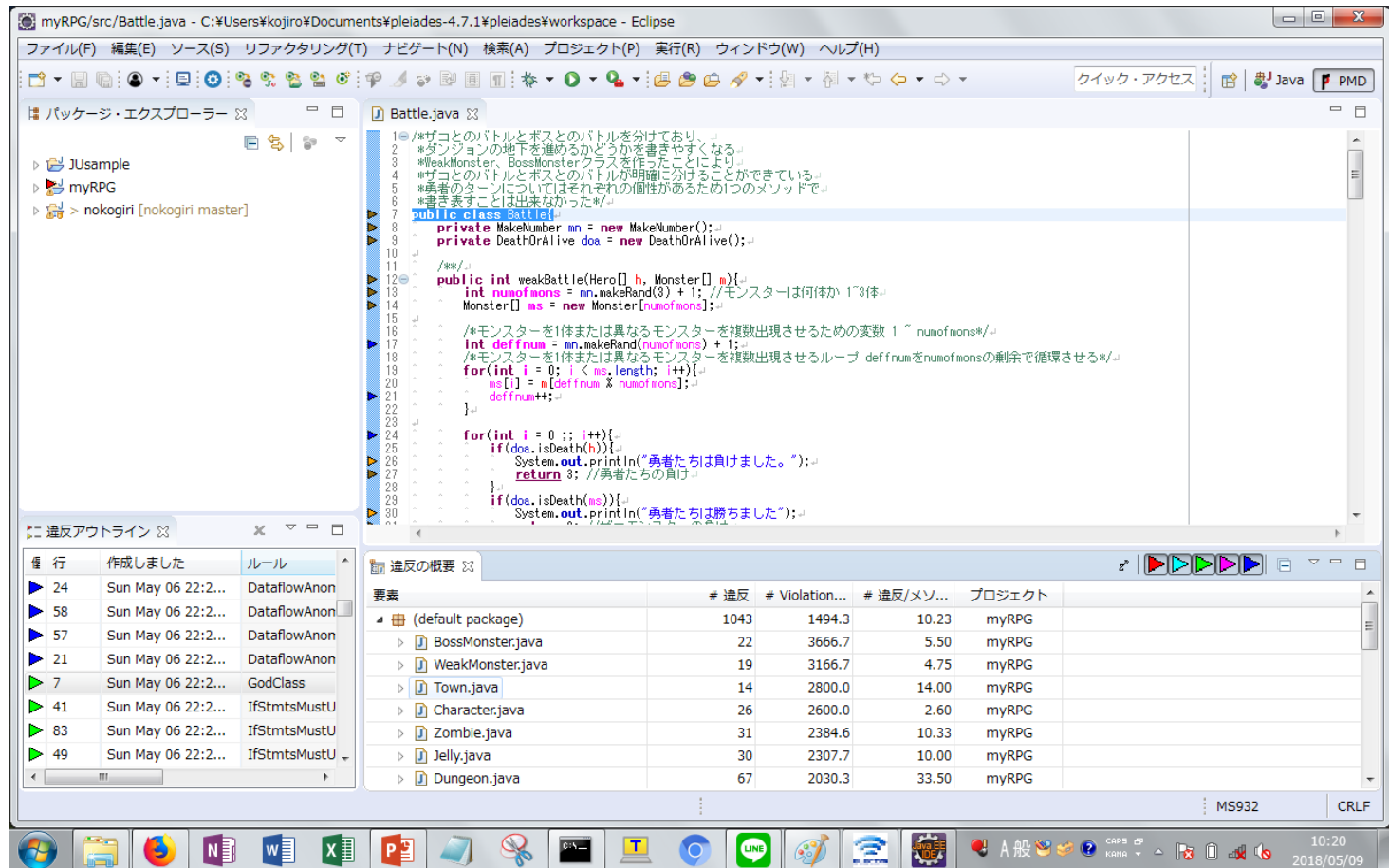


The screenshot shows a web browser window with the address bar displaying `file:///C:/Users/kojiro/Documents/myrpg_pmd_design.html`. The page title is "PMD report". Below the title, the text "Problems found" is displayed. A table lists 11 problems found in Java files. The table has four columns: #, File, Line, and Problem. The problems are listed as follows:

#	File	Line	Problem
1	C:\Users\kojiro\Documents\pleiades-4.7.1\pleiades\workspace\myRPG\src\BabyDamon.java	6	Consider using varargs for methods or constructors which take an array the last parameter.
2	C:\Users\kojiro\Documents\pleiades-4.7.1\pleiades\workspace\myRPG\src\BabyDamon.java	13	Consider using varargs for methods or constructors which take an array the last parameter.
3	C:\Users\kojiro\Documents\pleiades-4.7.1\pleiades\workspace\myRPG\src\BabyDamon.java	36	Consider using varargs for methods or constructors which take an array the last parameter.
4	C:\Users\kojiro\Documents\pleiades-4.7.1\pleiades\workspace\myRPG\src\Battle.java	8	Private field 'mn' could be made final; it is only initialized in the declaration or constructor.
5	C:\Users\kojiro\Documents\pleiades-4.7.1\pleiades\workspace\myRPG\src\Battle.java	9	Private field 'doa' could be made final; it is only initialized in the declaration or constructor.
6	C:\Users\kojiro\Documents\pleiades-4.7.1\pleiades\workspace\myRPG\src\Battle.java	12	Consider using varargs for methods or constructors which take an array the last parameter.
7	C:\Users\kojiro\Documents\pleiades-4.7.1\pleiades\workspace\myRPG\src\Battle.java	38	Switch statements should have a default label
8	C:\Users\kojiro\Documents\pleiades-4.7.1\pleiades\workspace\myRPG\src\Battle.java	72	Switch statements should have a default label
9	C:\Users\kojiro\Documents\pleiades-4.7.1\pleiades\workspace\myRPG\src\Battle.java	91	Consider using varargs for methods or constructors which take an array the last parameter.
10	C:\Users\kojiro\Documents\pleiades-4.7.1\pleiades\workspace\myRPG\src\Battle.java	110	Consider using varargs for methods or constructors which take an array the last parameter.

The browser's taskbar at the bottom shows various application icons, including Windows Explorer, Firefox, and several Microsoft Office applications. The system clock in the bottom right corner indicates the time is 9:47 on 2018/05/09.

Eclipseプラグインでの実行



The screenshot shows the Eclipse IDE interface. The main editor displays the source code of `Battle.java`. The code includes comments in Japanese and Java code for a battle simulation. The left sidebar shows the Package Explorer with the project structure. The bottom-left pane shows the Violation Outline, and the bottom-right pane shows the Violation Summary table.

違反アウトライン (Violation Outline):

行	作成しました	ルール
24	Sun May 06 22:2...	DataflowAnon
58	Sun May 06 22:2...	DataflowAnon
57	Sun May 06 22:2...	DataflowAnon
21	Sun May 06 22:2...	DataflowAnon
7	Sun May 06 22:2...	GodClass
41	Sun May 06 22:2...	IfStmtsMustU
83	Sun May 06 22:2...	IfStmtsMustU
49	Sun May 06 22:2...	IfStmtsMustU

違反の概要 (Violation Summary):

要素	# 違反	# Violation...	# 違反/メソ...	プロジェクト
(default package)	1043	1494.3	10.23	myRPG
BossMonster.java	22	3666.7	5.50	myRPG
WeakMonster.java	19	3166.7	4.75	myRPG
Town.java	14	2800.0	14.00	myRPG
Character.java	26	2600.0	2.60	myRPG
Zombie.java	31	2384.6	10.33	myRPG
Jelly.java	30	2307.7	10.00	myRPG
Dungeon.java	67	2030.3	33.50	myRPG