

Lab Report G4

GIT REPO: <https://github.com/rarivera14/CodingStandards>

Students:

- Ricardo Aurelio Rivera Guerra
- Walter Alfredo Santacruz Astudillo
- Ricardo Alejandro Villacis Rivadeneira

Objectives:

- Use Checkstyle as code quality metric tool to detect and enforce Java coding standards
- Obtain a html report with the different detected issues in the code using Maven.

Requirements:

- Eclipse IDE for Java Developers >= 2021-03 Download from Eclipse || Get executable
- Git

Introduction:

Checkstyle is an open-source tool that enforces coding conventions and best practice rules for Java code. It automates the process of checking Java code to spare humans of this boring (but important) task. This makes it ideal for projects that want to enforce a coding standard. Checkstyle can check many aspects of your source code. It can find class design problems, method design problems. It also can check code layout, formatting issues and generate project-wide reports that summarize the breaches found. Checkstyle provides many checks that you can apply to your source code:

- Annotations
- Block Checks
- Class Design
- Coding
- Headers
- Imports
- Javadoc Comments
- Metrics
- Miscellaneous
- Modifiers
- Naming Conventions
- Regexp

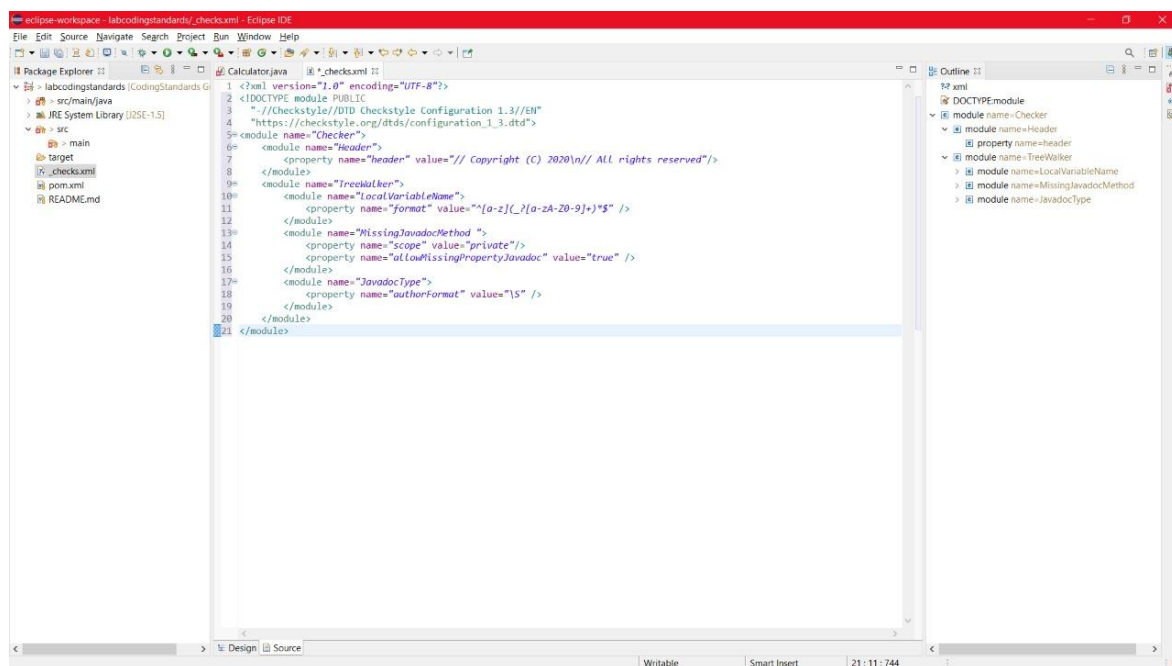
- Size Violations
- Whitespace

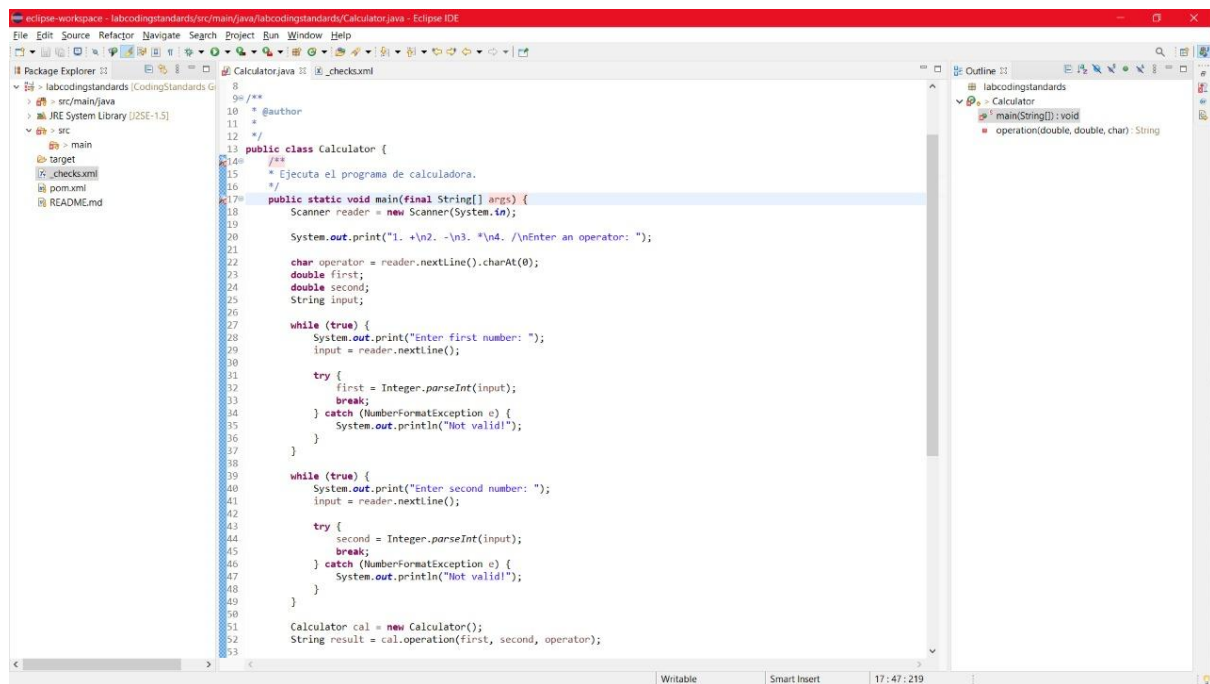
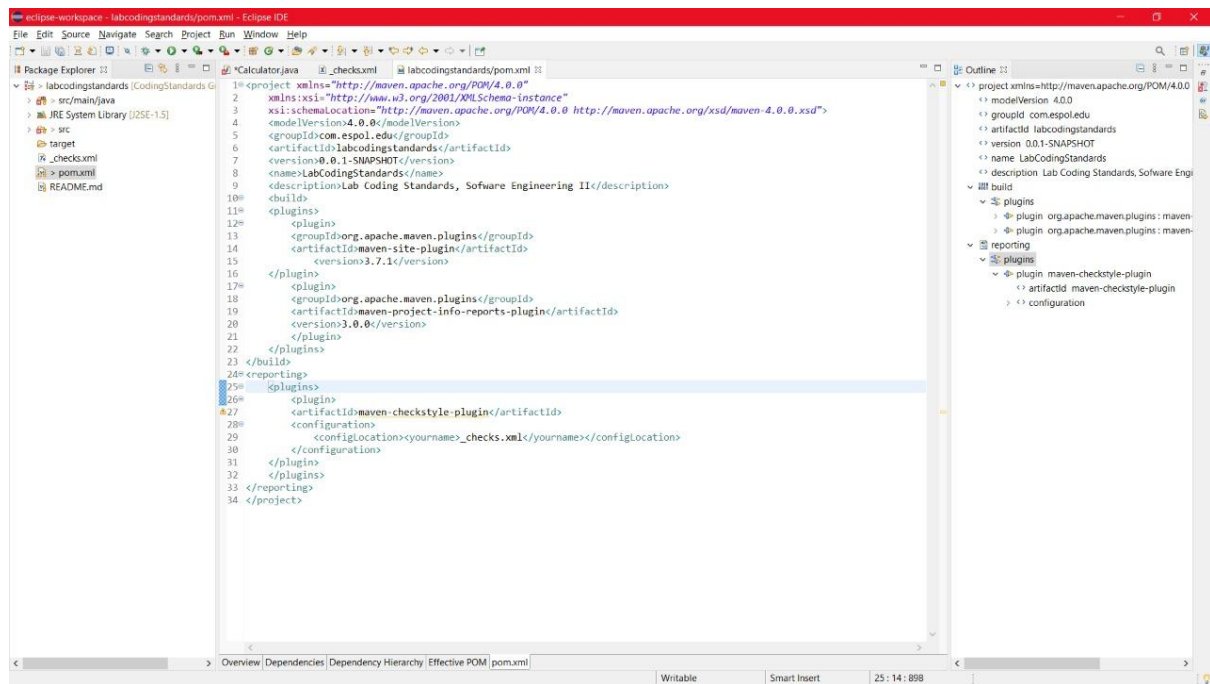
There are several ways to use this tool, including the command line and build automation tools. In this lab, Eclipse will be used in conjunction with Maven to facilitate the use of Checkstyle.

Steps:

1. We first need to set up the checkstyle plugin by adding it to the global preferences.
2. Then we make another file to add a local preference set up for maven
3. We add all the rules we want to the maven XML file
4. We build the project with maven
5. Then we check for all of the possible warnings that appear because of the rules we added to the XML file and also check the report file.
6. We fix any warnings
7. We compile again and then get the final report file with no errors.

Evidence:





eclipse-workspace - File/C/Users/1/ENOV0/Desktop/Espol/PAO2021/J/IngenieriaSoftware2/Talleres/CodingStandards/target/site/index.html - Eclipse IDE

File Edit Navigate Search Project Run Window Help

Package Explorer

- labcodingstandards (CodingStandards G)
- src/main/java
- labcodingstandards
- Calculator.java
- JRE System Library [J2SE-1.5]
- src
- main
- target
- site
- css
- images
- checkstyle.html
- checkstyle.rss
- dependency-info.html
- index.html
- plugin-management.html
- plugins.html
- project-info.html
- project-reports.html
- summary.html
- checkstyle-cachefile
- checkstyle-checker.xml
- checkstyle-result.xml
- _checks.xml
- pom.xml
- README.md

Calculator.java

LabCodingStandards - Checkstyle Results

file:///C:/Users/LENOVO/Desktop/Espol/PAO2021/J/IngenieriaSoftware2/Talleres/CodingStandards/target/site/checkstyle.html

There is no active editor that provides an outline.

LabCodingStandards

Last Published: 2021-06-03 | Version: 0.0.1-SNAPSHOT

Project Documentation

- Project Information
- Project Reports
- Checkstyle

Checkstyle Results

The following document contains the results of Checkstyle 8.29 with _checks.xml ruleset.

Summary

Files	Info	Warnings	Errors
1	0	0	0

Files

File	Info	Warnings	Errors
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Rules

Category	Rule	Violations	Severity
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Details

Copyright © 2021. All rights reserved.

Summary

Files	Info	Warnings	Errors
1	0	0	9

Files

File	Info	Warnings	Errors
labcodingstandards/Calculator.java	0	0	9

Rules

Category	Rule	Violations	Severity
header	Header ID • header 1: // Copyright (C) 2020 2: // All rights reserved	1	Error
javadoc	JavadocType ID • authorFormat: "%s"	1	Error
	MissingJavadocMethod ID • allowMissingPropertyJavadoc: "true" • scope: "private"	2	Error
naming	LocalVariableName ID • format: "[a-zA-Z_][a-zA-Z0-9]*"	1	Error
whitespace	WhitespaceAfter ID • tokens: "COBOL, SDT"	4	Error

Details

labcodingstandards/Calculator.java

Severity	Category	Rule	Message	Line
Error	header	Header	Line does not match expected header line of // Copyright (C) 2020.	1
Error	javadoc	JavadocType	Type Javadoc comment is missing @author tag.	13
Error	javadoc	MissingJavadocMethod	Missing a Javadoc comment.	15
Error	naming	LocalVariableName	Name 'first' must match pattern "[a-zA-Z0-9]*".	21
Error	whitespace	WhitespaceAfter	'.' is not followed by whitespace.	50
Error	whitespace	WhitespaceAfter	'.' is not followed by whitespace.	50
Error	javadoc	MissingJavadocMethod	Missing a Javadoc comment.	56
Error	whitespace	WhitespaceAfter	'.' is not followed by whitespace.	56
Error	whitespace	WhitespaceAfter	'.' is not followed by whitespace.	56

Files			
File			
labcodingstandards/Calculator.java	I	W	E
	0	0	10
Rules			
Category	Rule	Violations	Severity
header	Header ID • header 1: // Copyright (C) 2020 2: // All rights reserved	1	Error
javadoc	JavadocType ID • authorFormat: "%s"	1	Error
	MissingJavadocMethod ID • allowMissingPropertyJavadoc: "true" • scope: "private"	2	Error
naming	LocalVariableName ID • format: "[a-z]_[a-zA-Z0-9]+";	1	Error
	MethodName ID • format: "[a-z]_[a-zA-Z0-9]+";	1	Error
whitespace	WhitespaceAfter ID • tokens: "COMMA, SEMI"	4	Error

Details				
labcodingstandards/Calculator.java				
Severity	Category	Rule	Message	Line
Error	header	Header	Line does not match expected header line of '// Copyright (C) 2020'.	1
Error	javadoc	JavadocType	Type Javadoc comment is missing @author tag.	13
Error	javadoc	MissingJavadocMethod	Missing a Javadoc comment.	13
Error	naming	LocalVariableName	Name 'first' must match pattern '[a-z]_[a-zA-Z0-9]+';	21
Error	whitespace	WhitespaceAfter	'/' is not followed by whitespace.	50
Error	whitespace	WhitespaceAfter	'/' is not followed by whitespace.	50
Error	javadoc	MissingJavadocMethod	Missing a Javadoc comment.	56
Error	naming	MethodName	Name 'Operation' must match pattern '[a-z]_[a-zA-Z0-9]+';	56
Error	whitespace	WhitespaceAfter	'/' is not followed by whitespace.	56
Error	whitespace	WhitespaceAfter	'/' is not followed by whitespace.	56

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Project Information

Project Reports

Checkstyle

Built by:



Checkstyle Results

The following document contains the results of Checkstyle 8.29 with _checks.xml ruleset. [XML](#)

Summary

Files	Info	Warnings	Errors
1	0	0	0

Files

File	I	W	E
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Rules

Category	Rule	Violations	Severity
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Details