



ESCUELA SUPERIOR
PÓLITECNICA DEL LITORAL

WORKSHOP OF CODE INSPECTION

AUTORES:

- AGUILAR MORA OSWALDO
- BERMUDEZ MOREIRA KAREN
- BERNAL MOREIRA GUILLERMO
- ORTIZ HOLGUIN EDUARDO
- WONG PAVON HUGO

SUBJECT: ING. SOFTWARE II

TUTOR: DR. MERA CARLOS

DEADLINE: 2020/06/26

1. Abstract

This document contains the technical report corresponding to the first group workshop called **"WORKSHOP OF CODE INSPECTIOn"** of **GROUP#4** belonging to the **SOFTWARE II ENGINEERING** course of **2020-PAO I**.

The report contains a description of the workshop, the code, the JAVA implementation and the reports.

2. Description

PMD is a source code analyzer. It finds common programming flaws like unused variables, empty catch blocks, unnecessary object creation, and so forth. Like other tools, PMD can verify that coding conventions and standards are followed. PMD is more focused on preventive defect detection. It comes with a vast set of rules and is highly configurable. PMD can also configure -in a simple way - particular rules to use in a specific project .

PMD integrates well with IDEs such as Eclipse and NetBeans, and it also fits well into the build process thanks to its smooth integration with Ant and Maven.

3. Source Code

3.1. Repository

Github was used as a collaboration tool for the development of the workshop, the link is:

- https://github.com/kbermude/Whorskop_CodeInspection

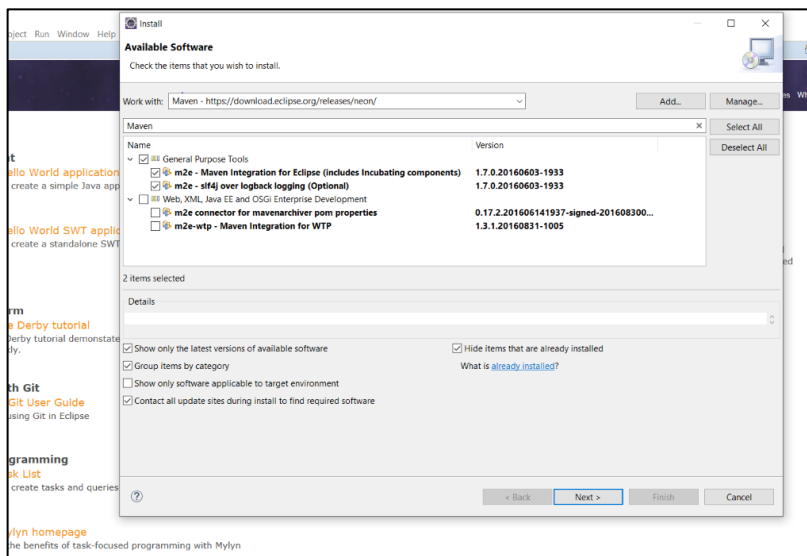
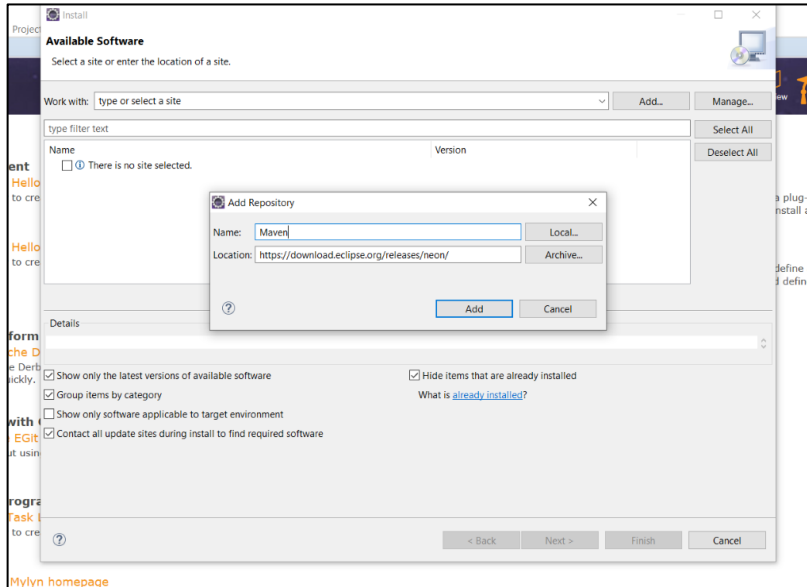
3.2. Development Considerations

For the development of the activity and its implementation, the following points were considered:

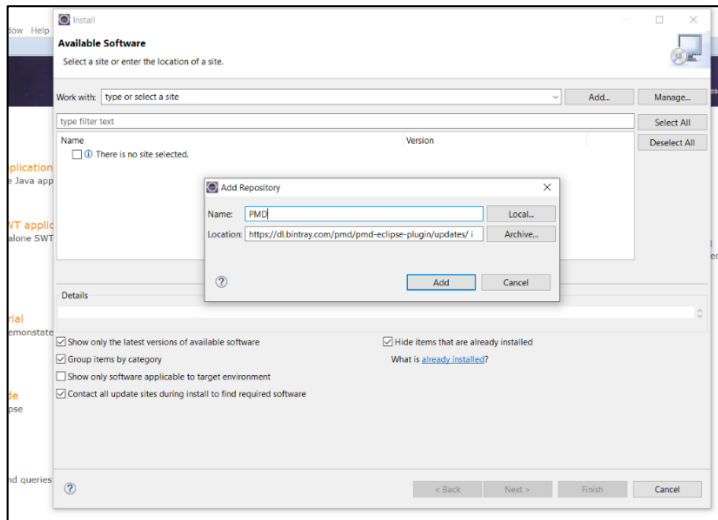
- **Eclipse** was used as Java IDE.

4. Activity Screenshots

4.1. Part 1: Install Maven for Eclipse.



4.2. Part 2: Install the Eclipse PDM plug-in



4.3. Part 3: Download and configure the project

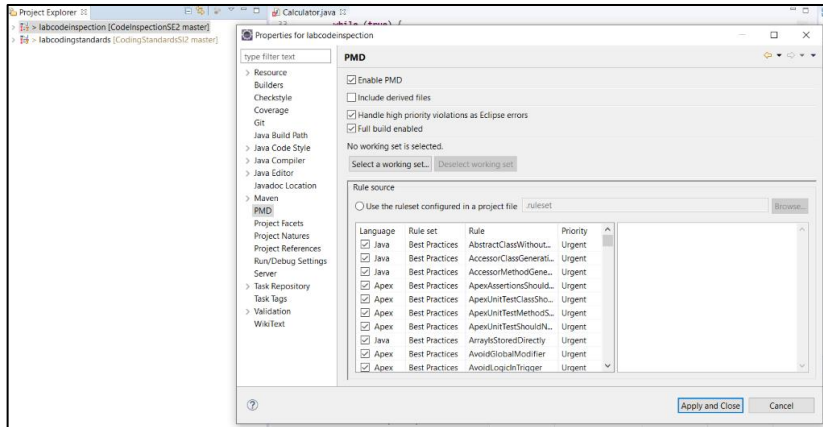
```
C:\Windows\System32\cmd.exe
Microsoft Windows [Version 10.0.18362.900]
(c) 2019 Microsoft Corporation. All rights reserved.

E:\Documents\Universidad\8voS\Software II\Talleres\Taller3>git clone https://github.com/kbermude/Whorskop_CodeInspection
.git
Cloning into 'Whorskop_CodeInspection'...
warning: You appear to have cloned an empty repository.

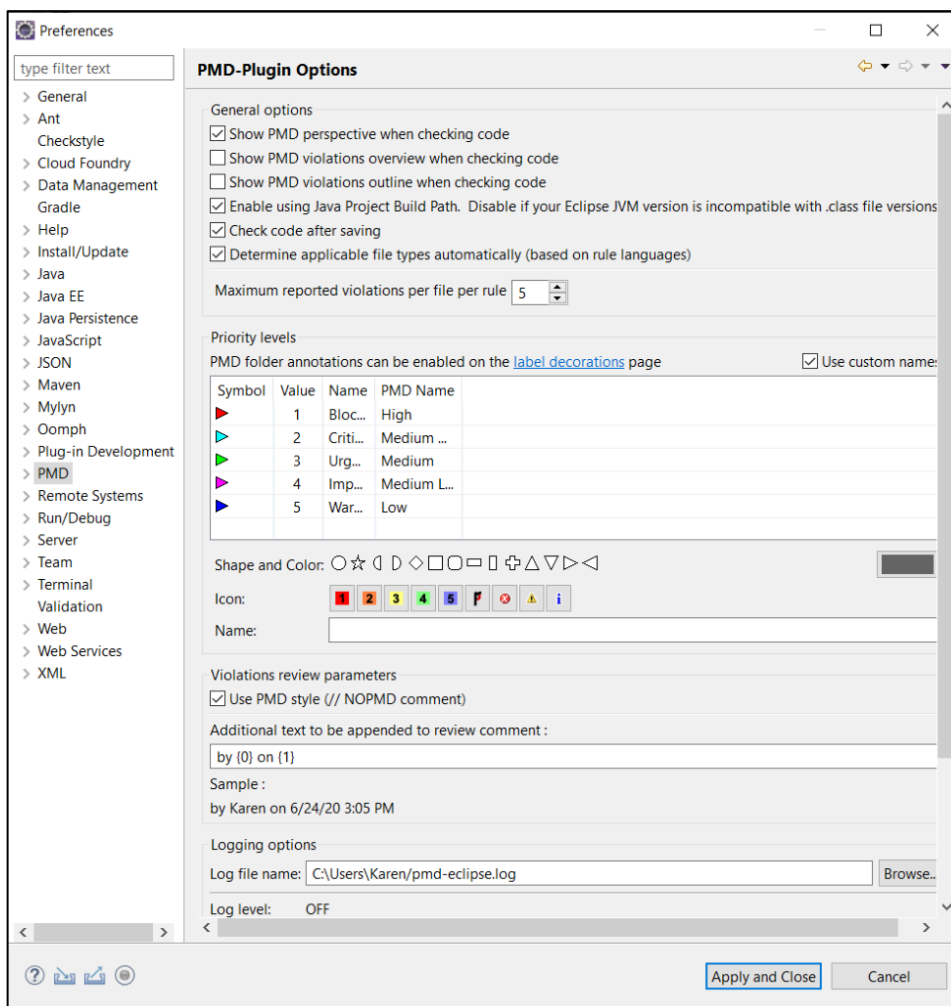
E:\Documents\Universidad\8voS\Software II\Talleres\Taller3>cd Whorskop_CodeInspection

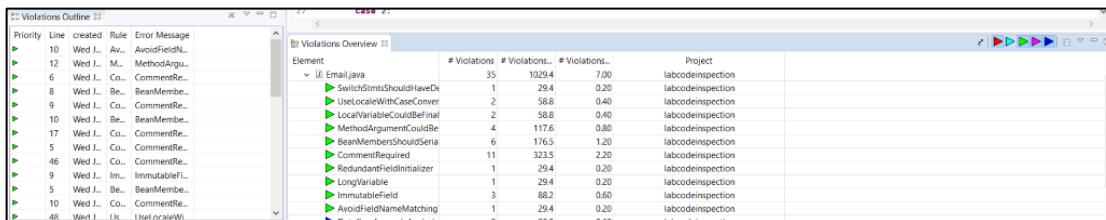
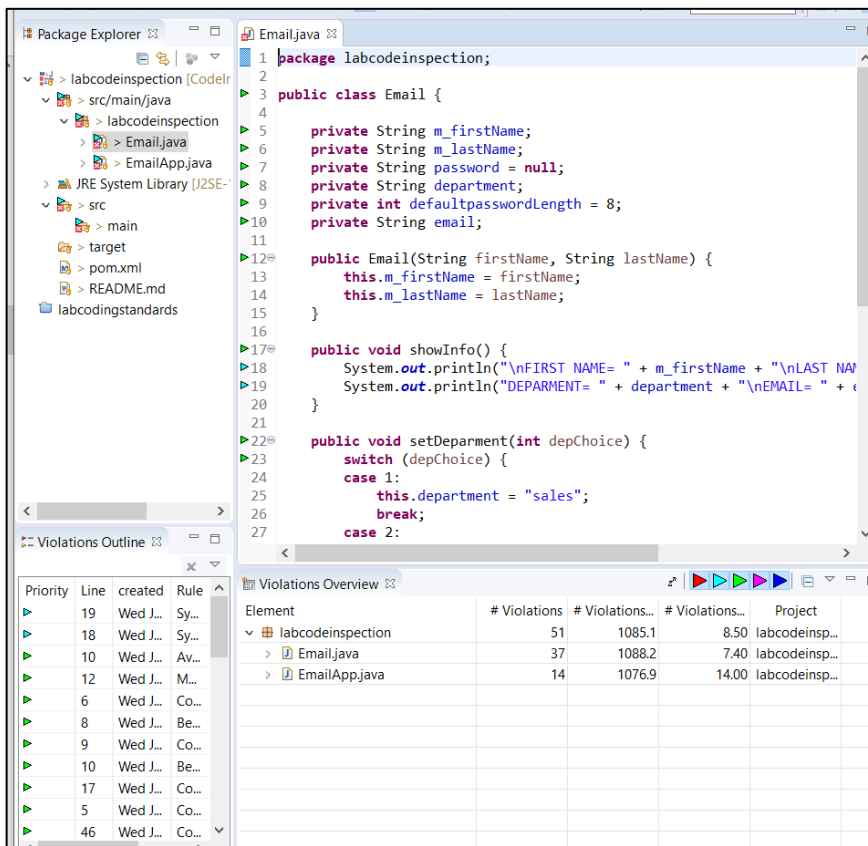
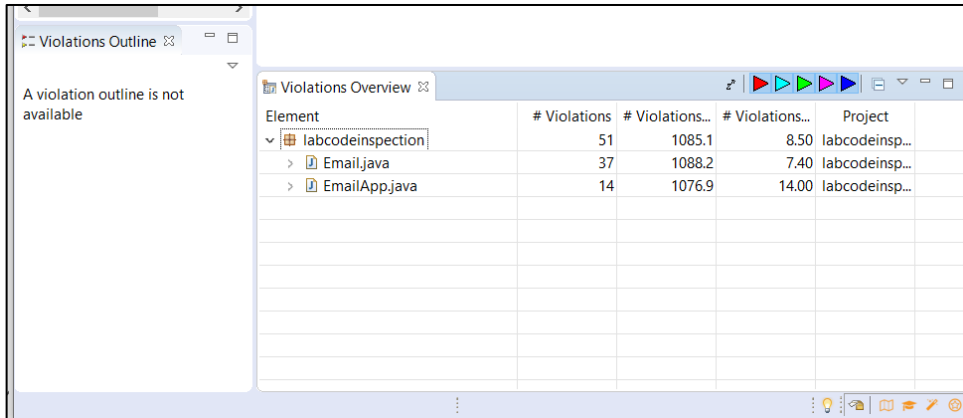
E:\Documents\Universidad\8voS\Software II\Talleres\Taller3\Whorskop_CodeInspection>git clone https://github.com/JoseAndr
esEscobar19/CodeInspectionSE2
Cloning into 'CodeInspectionSE2'...
remote: Enumerating objects: 24, done.
remote: Counting objects: 100% (24/24), done.
remote: Compressing objects: 100% (18/18), done.
remote: Total 24 (delta 0), reused 21 (delta 0), pack-reused 0
Unpacking objects: 100% (24/24), done.

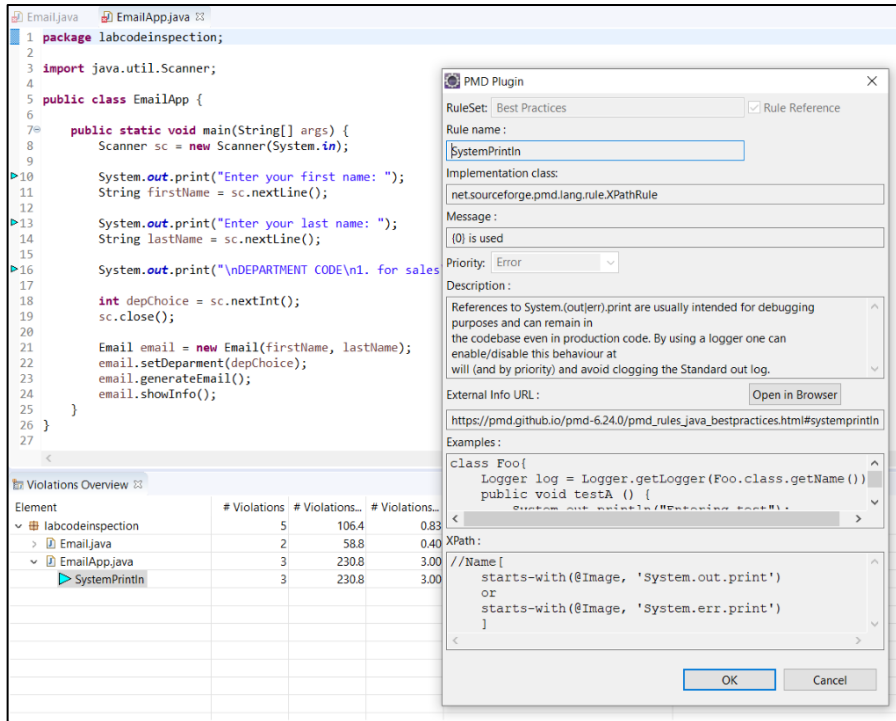
E:\Documents\Universidad\8voS\Software II\Talleres\Taller3\Whorskop_CodeInspection>
```



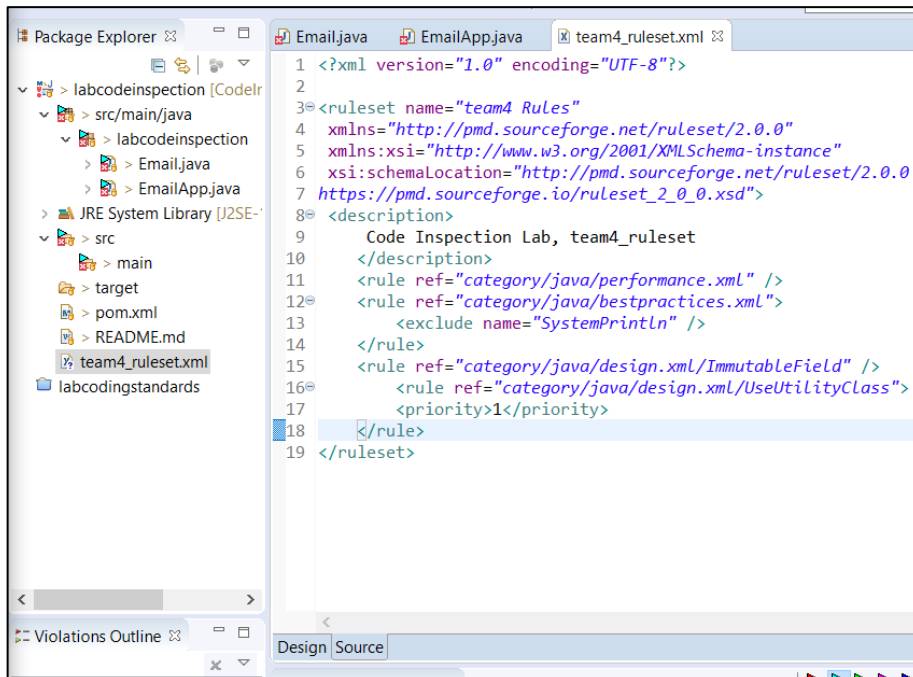
4.4. Part 4: Using PMD



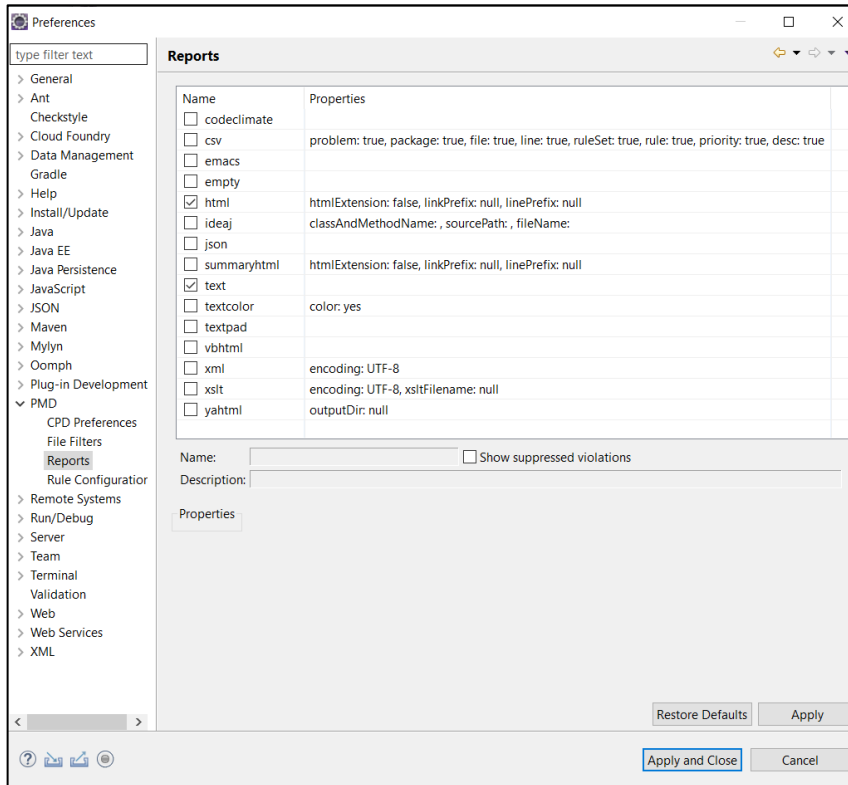




4.5. Part 5: Creating PMD rulesets



4.6. Part 6: Generating a PMD report



PMD report				
Problems found				
#	File	Line	Problem	
1	src/main/java/labcodeinspection/Email.java	3	CommentRequired: Class comments are required	
2	src/main/java/labcodeinspection/Email.java	3	CommentRequired: Class comments are required	
3	src/main/java/labcodeinspection/Email.java	5	BeanMembersShouldSerialize: Found non-transient, non-static member. Please mark as transient or provide accessors.	
4	src/main/java/labcodeinspection/Email.java	5	BeanMembersShouldSerialize: Found non-transient, non-static member. Please mark as transient or provide accessors.	
5	src/main/java/labcodeinspection/Email.java	5	CommentRequired: Field comments are required	
6	src/main/java/labcodeinspection/Email.java	5	CommentRequired: Field comments are required	
7	src/main/java/labcodeinspection/Email.java	5	ImmutableField: Private field 'm_firstName' could be made final: it is only initialized in the declaration or constructor.	
8	src/main/java/labcodeinspection/Email.java	5	ImmutableField: Private field 'm_firstName' could be made final: it is only initialized in the declaration or constructor.	
9	src/main/java/labcodeinspection/Email.java	6	BeanMembersShouldSerialize: Found non-transient, non-static member. Please mark as transient or provide accessors.	
10	src/main/java/labcodeinspection/Email.java	6	BeanMembersShouldSerialize: Found non-transient, non-static member. Please mark as transient or provide accessors.	
11	src/main/java/labcodeinspection/Email.java	6	CommentRequired: Field comments are required	
12	src/main/java/labcodeinspection/Email.java	6	CommentRequired: Field comments are required	
13	src/main/java/labcodeinspection/Email.java	6	ImmutableField: Private field 'm_lastName' could be made final: it is only initialized in the declaration or constructor.	
14	src/main/java/labcodeinspection/Email.java	6	ImmutableField: Private field 'm_lastName' could be made final: it is only initialized in the declaration or constructor.	
15	src/main/java/labcodeinspection/Email.java	7	BeanMembersShouldSerialize: Found non-transient, non-static member. Please mark as transient or provide accessors.	
16	src/main/java/labcodeinspection/Email.java	7	BeanMembersShouldSerialize: Found non-transient, non-static member. Please mark as transient or provide accessors.	
17	src/main/java/labcodeinspection/Email.java	7	CommentRequired: Field comments are required	
18	src/main/java/labcodeinspection/Email.java	7	CommentRequired: Field comments are required	
19	src/main/java/labcodeinspection/Email.java	7	RedundantFieldInitializer: Avoid using redundant field initializer for 'password'	
20	src/main/java/labcodeinspection/Email.java	7	RedundantFieldInitializer: Avoid using redundant field initializer for 'password'	
21	src/main/java/labcodeinspection/Email.java	8	BeanMembersShouldSerialize: Found non-transient, non-static member. Please mark as transient or provide accessors.	
22	src/main/java/labcodeinspection/Email.java	8	BeanMembersShouldSerialize: Found non-transient, non-static member. Please mark as transient or provide accessors.	
23	src/main/java/labcodeinspection/Email.java	8	CommentRequired: Field comments are required	
24	src/main/java/labcodeinspection/Email.java	8	CommentRequired: Field comments are required	
25	src/main/java/labcodeinspection/Email.java	9	BeanMembersShouldSerialize: Found non-transient, non-static member. Please mark as transient or provide accessors.	
26	src/main/java/labcodeinspection/Email.java	9	BeanMembersShouldSerialize: Found non-transient, non-static member. Please mark as transient or provide accessors.	

4.7. Part 7: Suppressing PMD Rules

```

1 package labcodeinspection;
2
3 public class Email {
4
5     private String m_firstName; //NOPMD This field will be manipulated
6     private String m_lastName;
7     private String password = null;
8     private String department;
9     private int defaultpasswordLength = 8;
10    private String email;

```

```

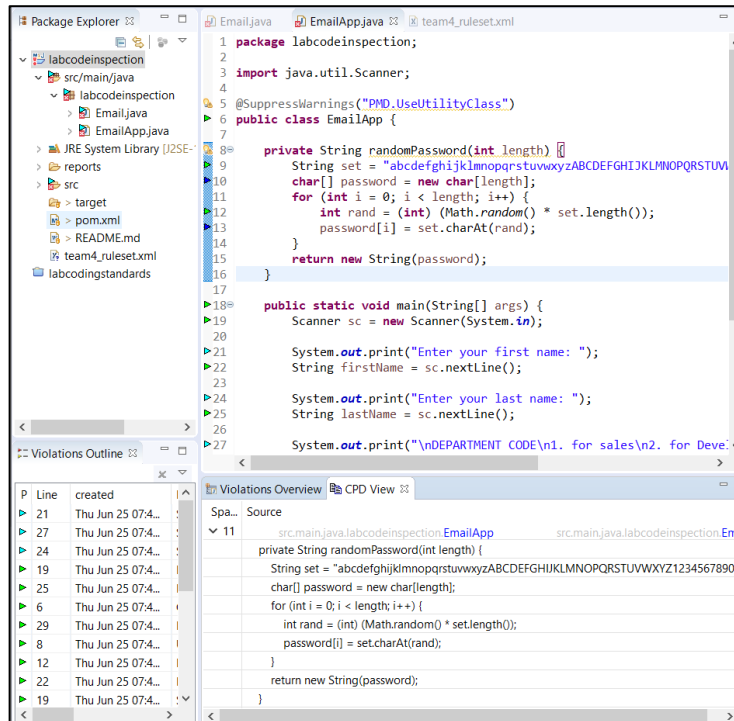
1 package labcodeinspection;
2
3 import java.util.Scanner;
4
5 public class EmailApp {
6
7     public static void main(String[] args) {
8         Scanner sc = new Scanner(System.in);
9
10        System.out.print("Enter your first name: ");
11        String firstName = sc.nextLine();
12
13        System.out.print("Enter your last name: ");
14        String lastName = sc.nextLine();
15
16        System.out.print("\nDEPARTMENT CODE\n1. for sales\n2. for I
17
18        int depChoice = sc.nextInt();
19        sc.close();
20
21        Email email = new Email(firstName, lastName);
22        email.setDepartment(depChoice);
23        email.generateEmail();
24        email.showInfo();
25    }
26 }
27

```

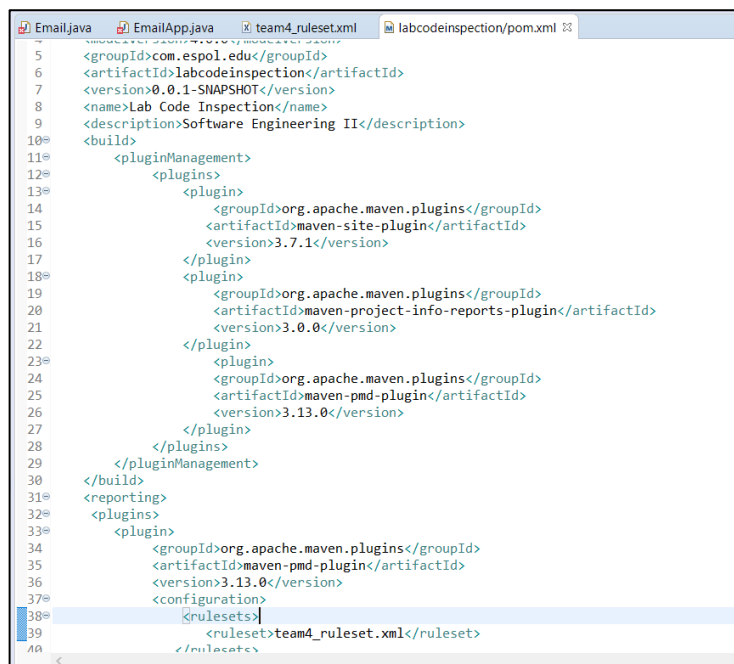
Element	# Violations	# Violations...	# Violations...
labcodeinspection	48	3692.3	48.00
EmailApp.java	14	1076.9	14.00
UseUtilityClass	1	76.9	1.00

Element	# Violations	# Violations...	# Violations...	Pro
labcodeinspection	47	N/A	N/A	labcode
Email.java	34	N/A	N/A	labcode
EmailApp.java	13	N/A	N/A	labcode
LocalVariableCouldBeFinal	5	N/A	N/A	labcode
MethodArgumentCouldBe	1	N/A	N/A	labcode
CommentRequired	2	N/A	N/A	labcode
SystemPrintln	3	N/A	N/A	labcode
ShortVariable	1	N/A	N/A	labcode
CloseResource	1	N/A	N/A	labcode

4.8. Part 8: Detecting Cut-and-Paste with CPD



4.9. Part 9: PMD and Maven



FMD report			
Problems found			
#	File	Line	Problem
1	src/main/java/labcodeinspection/Email.java	3	CommentRequired: Class comments are missing
2	src/main/java/labcodeinspection/Email.java	3	CommentRequired: Class comments are missing
3	src/main/java/labcodeinspection/Email.java	5	BeanMembersShouldSerialize: Found non-transient, non-static member. Please mark as transient or provide accessors.
4	src/main/java/labcodeinspection/Email.java	5	BeanMembersShouldSerialize: Found non-transient, non-static member. Please mark as transient or provide accessors.
5	src/main/java/labcodeinspection/Email.java	5	CommentRequired: Field comments are required
6	src/main/java/labcodeinspection/Email.java	5	CommentRequired: Field comments are required
7	src/main/java/labcodeinspection/Email.java	5	ImmutableField: Private field 'm_firstName' could be made final: it is only initialized in the declaration or constructor.
8	src/main/java/labcodeinspection/Email.java	5	ImmutableField: Private field 'm_firstName' could be made final: it is only initialized in the declaration or constructor.
9	src/main/java/labcodeinspection/Email.java	6	BeanMembersShouldSerialize: Found non-transient, non-static member. Please mark as transient or provide accessors.
10	src/main/java/labcodeinspection/Email.java	6	BeanMembersShouldSerialize: Found non-transient, non-static member. Please mark as transient or provide accessors.
11	src/main/java/labcodeinspection/Email.java	6	CommentRequired: Field comments are required
12	src/main/java/labcodeinspection/Email.java	6	CommentRequired: Field comments are required
13	src/main/java/labcodeinspection/Email.java	6	ImmutableField: Private field 'm_lastName' could be made final: it is only initialized in the declaration or constructor.
14	src/main/java/labcodeinspection/Email.java	6	ImmutableField: Private field 'm_lastName' could be made final: it is only initialized in the declaration or constructor.
15	src/main/java/labcodeinspection/Email.java	7	BeanMembersShouldSerialize: Found non-transient, non-static member. Please mark as transient or provide accessors.
16	src/main/java/labcodeinspection/Email.java	7	BeanMembersShouldSerialize: Found non-transient, non-static member. Please mark as transient or provide accessors.
17	src/main/java/labcodeinspection/Email.java	7	CommentRequired: Field comments are required
18	src/main/java/labcodeinspection/Email.java	7	CommentRequired: Field comments are required
19	src/main/java/labcodeinspection/Email.java	7	RedundantFieldInitializer: Avoid using redundant field initializer for 'password'
20	src/main/java/labcodeinspection/Email.java	7	RedundantFieldInitializer: Avoid using redundant field initializer for 'password'
21	src/main/java/labcodeinspection/Email.java	8	BeanMembersShouldSerialize: Found non-transient, non-static member. Please mark as transient or provide accessors.
22	src/main/java/labcodeinspection/Email.java	8	BeanMembersShouldSerialize: Found non-transient, non-static member. Please mark as transient or provide accessors.
23	src/main/java/labcodeinspection/Email.java	8	CommentRequired: Field comments are required
24	src/main/java/labcodeinspection/Email.java	8	CommentRequired: Field comments are required
25	src/main/java/labcodeinspection/Email.java	9	BeanMembersShouldSerialize: Found non-transient, non-static member. Please mark as transient or provide accessors.
26	src/main/java/labcodeinspection/Email.java	9	BeanMembersShouldSerialize: Found non-transient, non-static member. Please mark as transient or provide accessors.

6. Conclusions

- This plug-in is a usefull tool to the code inspection.
- The report has a clear format.
- Is easy to implment if you have a guide.