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Category Partitioning Testing Tool

Project Team

T1

Date

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2.3 Metrics

2.3.1 Analysis Result

1 SonarQube

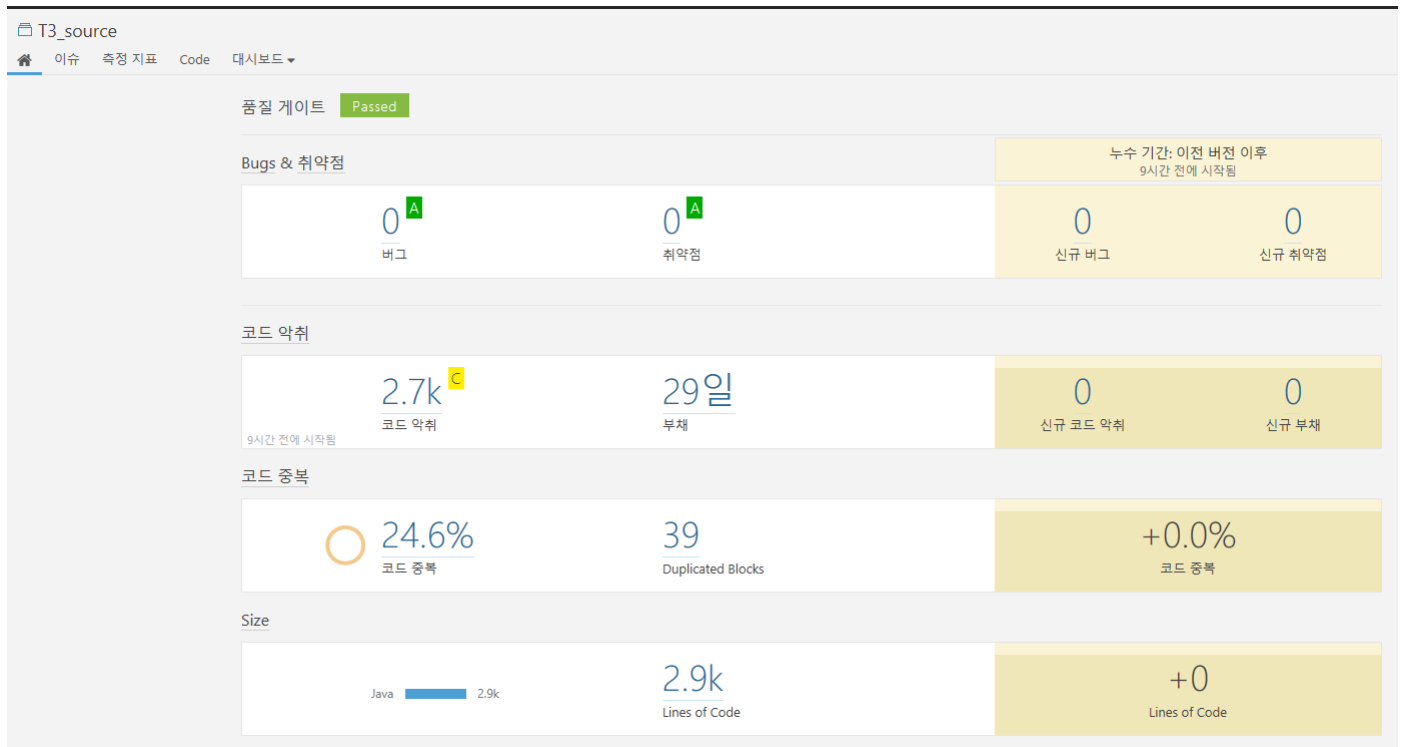
1.1 CheckStyle

1.1.1 Rules

	Check ResultSet
	Comments Indentation
	Custom Import Order
	Exception should not be created without being thrown
	Indentation
	Line Length
	Method Name
	Methods should not be empty
	Multiple Variable Declarations
	Parameter Name
	Return values should not be ignored when function calls don't have any side effects
	Variable Declaration Usage Distance


1.1.2 Analysis Result

1.1.2.1 T3



T3_source Control/GUIManager.java

Add a nested comment explaining why this method is empty, throw an UnsupportedOperationException or complete the implementation. ...

Code Smell  Critical  Closed (Removed) 할당되지 않음 5min effort


Line is longer than 80 characters (found 85). ...

Code Smell  Major  Closed (Removed) 할당되지 않음 5min effort

Line is longer than 80 characters (found 81). ...

Code Smell  Major  Closed (Removed) 할당되지 않음 5min effort

Line is longer than 80 characters (found 85). ...

Code Smell  Major  Closed (Removed) 할당되지 않음 5min effort

Line is longer than 80 characters (found 87). ...

Code Smell  Major  Closed (Removed) 할당되지 않음 5min effort

Line is longer than 80 characters (found 93). ...

Code Smell  Major  Closed (Removed) 할당되지 않음 5min effort



Line is longer than 80 characters (found 91). ...

Code Smell  Major  Closed (Removed) 할당되지 않음 5min effort

Line is longer than 80 characters (found 97). ...

Code Smell  Major  Closed (Removed) 할당되지 않음 5min effort

Line is longer than 80 characters (found 81). ...

Code Smell  Major  Closed (Removed) 할당되지 않음 5min effort

T3_source Control/ProjectManager.java

Name 'RPValueNum' must match pattern '^[a-z][a-zA-Z0-9]*\$'. ...
Code Smell Major Closed (Removed) 할당되지 않음 10min effort

Name 'RPValueName' must match pattern '^[a-z][a-zA-Z0-9]*\$'. ...
Code Smell Major Closed (Removed) 할당되지 않음 10min effort

'method def modifier' has incorrect indentation level 8, expected level should be 4. ...
Code Smell Minor Closed (Removed) 할당되지 않음 5min effort

'member def modifier' has incorrect indentation level 8, expected level should be 4. ...
Code Smell Minor Closed (Removed) 할당되지 않음 5min effort

'ctor def modifier' has incorrect indentation level 8, expected level should be 4. ...
Code Smell Minor Closed (Removed) 할당되지 않음 5min effort

'ctor def rcurly' has incorrect indentation level 8, expected level should be 4. ...
Code Smell Minor Closed (Removed) 할당되지 않음 5min effort

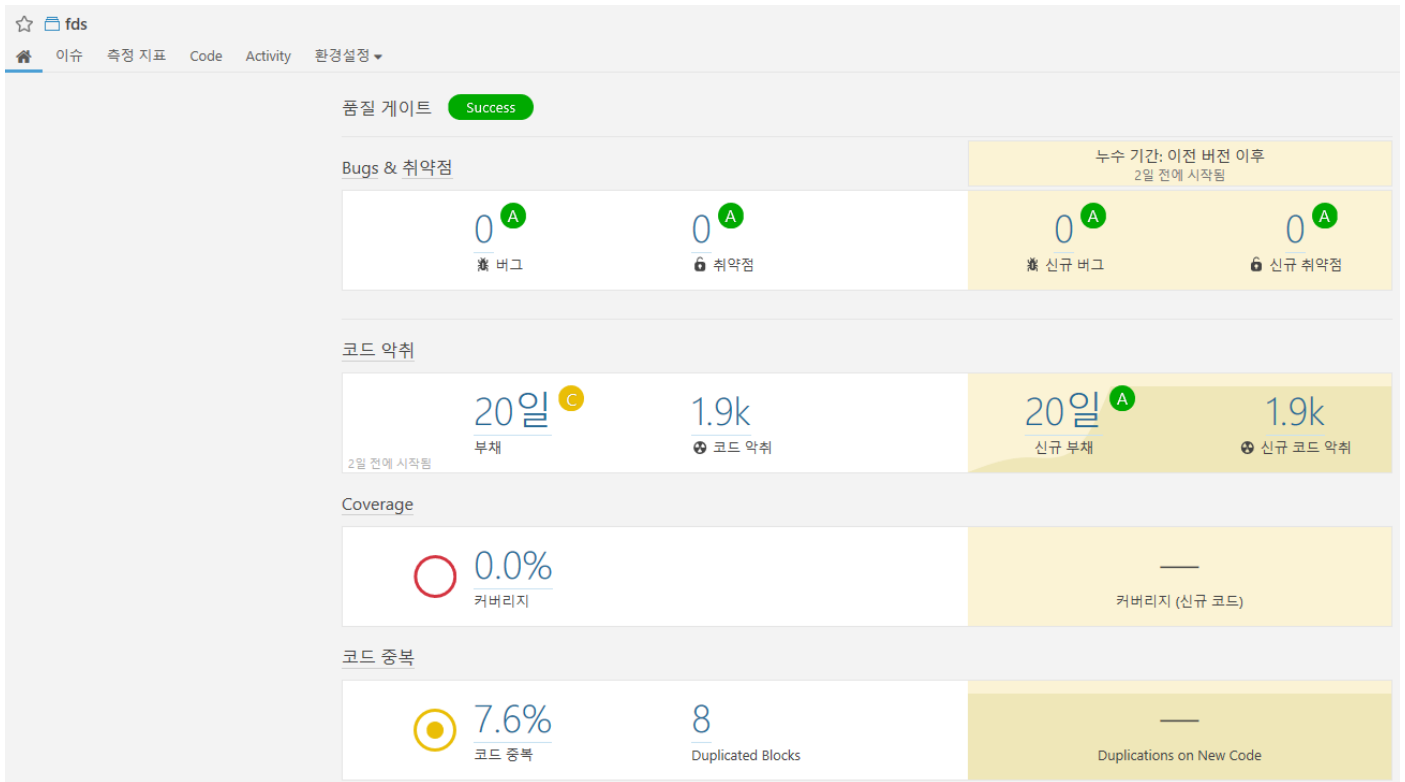
'ctor def' child has incorrect indentation level 16, expected level should be 8. ...
Code Smell Minor Closed (Removed) 할당되지 않음 5min effort

'method def modifier' has incorrect indentation level 8, expected level should be 4. ...
Code Smell Minor Closed (Removed) 할당되지 않음 5min effort

'method def' child has incorrect indentation level 16, expected level should be 8. ...
Code Smell Minor Closed (Removed) 할당되지 않음 5min effort

'method def' child has incorrect indentation level 16, expected level should be 8. ...
Code Smell Minor Closed (Removed) 할당되지 않음 5min effort

1.1.2.2 T4



src/System/FileManager.java

- 'member def modifier' has incorrect indentation level 8, expected level should be 4. ...
Code Smell, Minor, Open, 할당되지 않음, 5min effort, 코멘트
- 'member def modifier' has incorrect indentation level 8, expected level should be 4. ...
Code Smell, Minor, Open, 할당되지 않음, 5min effort, 코멘트
- 'member def type' has incorrect indentation level 8, expected level should be 4. ...
Code Smell, Minor, Open, 할당되지 않음, 5min effort, 코멘트
- 'ctor def modifier' has incorrect indentation level 8, expected level should be 4. ...
Code Smell, Minor, Open, 할당되지 않음, 5min effort, 코멘트
- 'ctor def' child has incorrect indentation level 16, expected level should be 8. ...
Code Smell, Minor, Open, 할당되지 않음, 5min effort, 코멘트
- 'ctor def' child has incorrect indentation level 16, expected level should be 8. ...
Code Smell, Minor, Open, 할당되지 않음, 5min effort, 코멘트

src/GUI/Explorer.java

'member def type' has incorrect indentation level 8, expected level should be 4. [...](#)
🔍 Code Smell ▼ 🟢 Minor ▼ 🔵 Open ▼ 할당되지 않음 ▼ 5min effort [코멘트](#)

'member def type' has incorrect indentation level 8, expected level should be 4. [...](#)
🔍 Code Smell ▼ 🟢 Minor ▼ 🔵 Open ▼ 할당되지 않음 ▼ 5min effort [코멘트](#)

Line is longer than 80 characters (found 89). [...](#)
🔍 Code Smell ▼ 🔴 Major ▼ 🔵 Open ▼ 할당되지 않음 ▼ 5min effort [코멘트](#)

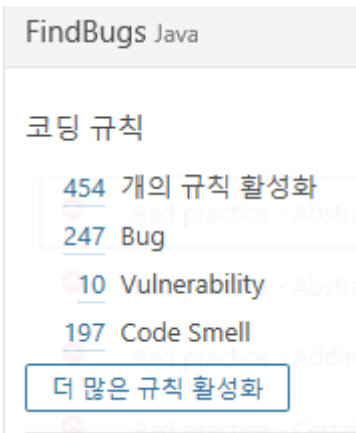
'member def type' has incorrect indentation level 8, expected level should be 4. [...](#)
🔍 Code Smell ▼ 🟢 Minor ▼ 🔵 Open ▼ 할당되지 않음 ▼ 5min effort [코멘트](#)

'member def type' has incorrect indentation level 8, expected level should be 4. [...](#)
🔍 Code Smell ▼ 🟢 Minor ▼ 🔵 Open ▼ 할당되지 않음 ▼ 5min effort [코멘트](#)

'ctor def modifier' has incorrect indentation level 8, expected level should be 4. [...](#)
🔍 Code Smell ▼ 🟢 Minor ▼ 🔵 Open ▼ 할당되지 않음 ▼ 5min effort [코멘트](#)

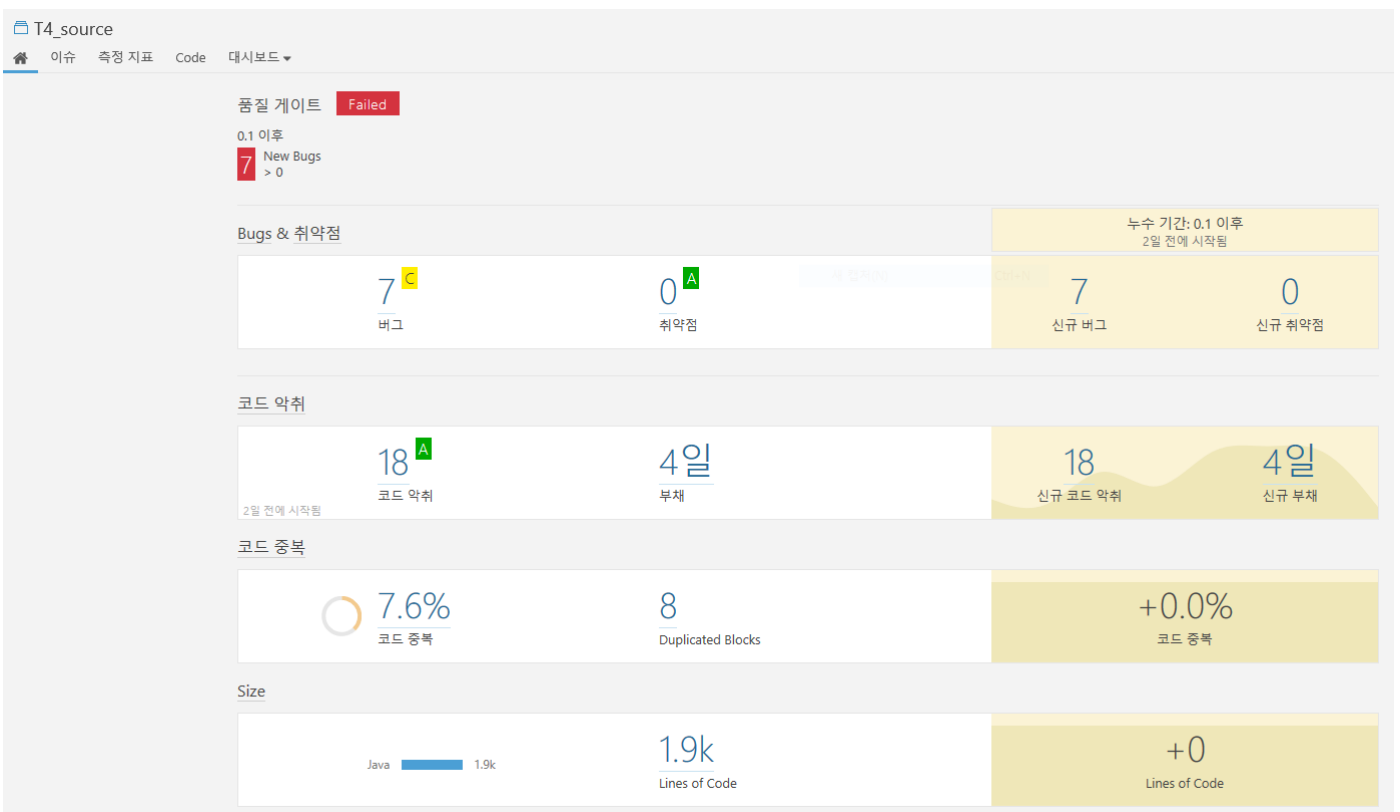
1.2 FindBugs

1.2.1 Rules



1.2.2 Analysis Result

1.2.2.1 T4



Bugs

T4_source src/GUI/Explorer.java

GUI.Explorer.doit(int, FileManager, Specification) invokes inefficient new String(String) constructor ...

Bug Major Open 할당되지 않음 30min effort

T4_source src/System/Category.java

new System.Category() invokes inefficient new String() constructor ...

Bug Major Open 할당되지 않음 30min effort

new System.Category(String, Hashtable) invokes inefficient new String(String) constructor ...

Bug Major Open 할당되지 않음 30min effort

T4_source src/System/Property.java

new System.Property() invokes inefficient new String() constructor ...

Bug Major Open 할당되지 않음 30min effort

new System.Property(String) invokes inefficient new String(String) constructor ...

Bug Major Open 할당되지 않음 30min effort

T4_source src/System/RepresentativeValue.java

new System.RepresentativeValue() invokes inefficient new String() constructor ...

Bug Major Open 할당되지 않음 30min effort

new System.RepresentativeValue(String, Hashtable) invokes inefficient new String() constructor ...

Bug Major Open 할당되지 않음 30min effort

Bug1

```
filePath = new String(filePath+".yzb");
```

GUI.Explorer.doit(int, FileManager, Specification) invokes inefficient new String(String) constructor ...

Bug Major Open 할당되지 않음 30min effort

Bug 2,3

```
T4_source
src/System/Category.java

1 package System;
2
3 import java.util.ArrayList;
4 import java.util.Hashtable;
5
6 import javax.swing.JOptionPane;
7
8 public class Category {
9     private String categoryName;
10    private ArrayList<RepresentativeValue> representativeValues;
11    private Hashtable<String, Property> pt;
12
13    //Constructor
14    public Category(){
15        this.categoryName = new String();
16
17        this.representativeValues = new ArrayList<RepresentativeValue>();
18    }
19    public Category(String categoryName, Hashtable<String, Property> pt){
20        this.categoryName = new String(categoryName);
21    }
22 }
```

new System.Category() invokes inefficient new String() constructor ...
Bug Major Open 할당되지 않음 30min effort

new System.Category(String, Hashtable) invokes inefficient new String(String) constructor ...
Bug Major Open 할당되지 않음 30min effort

Bug 4,5

T4_source
src/System/Property.java

```

1  package System;
2
3  import java.util.LinkedList;
4
5  public class Property {
6      private String name;
7      private LinkedList<String> valueNames;
8
9      public Property(){
10         this.name = new String();

```

new System.Property() invokes inefficient new String() constructor ...
Bug  Major  Open 할당되지 않음 30min effort

```

11     }
12
13     public Property(String name){
14         this.name = new String(name);

```

new System.Property(String) invokes inefficient new String(String) constructor ...
Bug  Major  Open 할당되지 않음 30min effort

Bug 6,7

```
T4_source
src/System/RepresentativeValue.java

1 package System;
2
3 import java.util.ArrayList;
4 import java.util.Hashtable;
5
6 import javax.swing.JOptionPane;
7
8 public class RepresentativeValue {
9     private String representativeValueName;
10    private ArrayList<Property> propertyConstraint;
11    private ArrayList<Property> if_propertyConstraint;
12    private int singleErrorConstraint;
13    private int priority;
14    private Hashtable<String, Property> propertyTable;
15
16    //Constructor
17    public RepresentativeValue() {
18        this.representativeValueName = new String();
19
20        this.propertyConstraint = new ArrayList<Property>();
21        this.if_propertyConstraint = new ArrayList<Property>();
22        this.priority=1;
23    }
24    public RepresentativeValue(String representativeValueName, Hashtable<String, Property> pt) {
25        this.representativeValueName = new String();

```

new System.RepresentativeValue() invokes inefficient new String() constructor ...
Bug Major Open 할당되지 않음 30min effort

new System.RepresentativeValue(String, Hashtable) invokes inefficient new String() constructor ...
Bug Major Open 할당되지 않음 30min effort

Code smell

T4_source src/GUI/FirstFrame.java

GUI.FirstFrame\$6.actionPerformed(ActionEvent) invokes System.exit(...), which shuts down the entire virtual machine ...
Code Smell 🔴 Major 🔵 Open 할당되지 않음 1h effort

T4_source src/GUI/MainFrame.java

GUI.MainFrame\$18.actionPerformed(ActionEvent) invokes System.exit(...), which shuts down the entire virtual machine ...
Code Smell 🔴 Major 🔵 Open 할당되지 않음 1h effort

T4_source src/System/Category.java

new System.Category(String, Hashtable) may expose internal representation by storing an externally mutable object into Category.pt ...
Code Smell 🟢 Info 🔵 Open 할당되지 않음 30min effort

T4_source src/System/FileManager.java

Found reliance on default encoding in new System.FileManager(Specification): new java.io.FileReader(String) ...
Code Smell 🟢 Info 🔵 Open 할당되지 않음 1h effort

Found reliance on default encoding in System.FileManager.loadSpecification(String): new java.io.FileReader(File) ...
Code Smell 🟢 Info 🔵 Open 할당되지 않음 1h effort

Found reliance on default encoding in System.FileManager.loadSpecification(String): new java.io.FileReader(String) ...
Code Smell 🟢 Info 🔵 Open 할당되지 않음 1h effort

Found reliance on default encoding in System.FileManager.loadSpecification(String): new java.io.FileWriter(String) ...
Code Smell 🟢 Info 🔵 Open 할당되지 않음 1h effort

Found reliance on default encoding in System.FileManager.saveSpecification(): new java.io.FileWriter(File) ...
Code Smell 🟢 Info 🔵 Open 할당되지 않음 1h effort

Found reliance on default encoding in System.FileManager.saveSpecification(String): new java.io.FileWriter(File) ...
Code Smell 🟢 Info 🔵 Open 할당되지 않음 1h effort

T4_source src/System/RepresentativeValue.java

new System.RepresentativeValue(String, Hashtable) may expose internal representation by storing an externally mutable object into RepresentativeValue.propertyTable ...
Code Smell ● Info ○ Open 할당되지 않음 30min effort

T4_source src/test/FileManagerTest.java

Write to static field test.FileManagerTest.file from instance method test.FileManagerTest.testNewSpecification1() ...
Code Smell ● Info ○ Open 할당되지 않음 5h effort

Exceptional return value of java.io.File.delete() ignored in test.FileManagerTest.testNewSpecification1() ...
Code Smell ● Major ○ Open 할당되지 않음 1h effort

Write to static field test.FileManagerTest.file from instance method test.FileManagerTest.testLoadSpecification1() ...
Code Smell ● Info ○ Open 할당되지 않음 5h effort

Write to static field test.FileManagerTest.file from instance method test.FileManagerTest.testLoadSpecification2() ...
Code Smell ● Info ○ Open 할당되지 않음 5h effort

T4_source src/test/RepresentativeValueTest.java

The method name test.RepresentativeValueTest.BeforeClass() doesn't start with a lower case letter ...
Code Smell ● Major ○ Open 할당되지 않음 30min effort

The method name test.RepresentativeValueTest.Before() doesn't start with a lower case letter ...
Code Smell ● Major ○ Open 할당되지 않음 30min effort























2 Eclipse Plugin

2.1 CheckStyle

2.1.1 Analysis Result

2.1.1.1 T3

Overview of Checkstyle violations - 7201 markers in 22 categories (Filter matched 7201 of 7201 items)

Checkstyle violation type	Marker count
 Name 'X' must match pattern 'X'.	84
 'X' is not preceded with whitespace.	483
 Distance between variable 'X' declaration and its first usage is X, but a...	4
 Unicode escape(s) usage should be avoided.	7
 Wrong lexicographical order for 'X' import. Should be before 'X'.	73
 'X' should be separated from previous statement.	4
 'X' child have incorrect indentation level X, expected level should be ...	48
 'X' child have incorrect indentation level X, expected level should be X.	1361
 Using the '.' form of import should be avoided - X.	2
 Line is longer than X characters (found X).	122
 'X' have incorrect indentation level X, expected level should be one of...	85
 'X' construct must use '{}'.s.	12
 'X' is followed by whitespace.	26
 'X' is preceded with whitespace.	19
 'X' at column X should be on the same line as the next part of a mult...	16
 'X' is not followed by whitespace.	474
 'X' at column X should be on the previous line.	5
 'X' have incorrect indentation level X, expected level should be X.	964
 Abbreviation in name 'X' must contain no more than 'X' consecutive ...	34
 Line contains a tab character.	3306
 Missing a Javadoc comment.	62
 Comment has incorrect indentation level X, expected is X, indentation...	10

34 errors, 7,394 warnings, 69 others (Filter matched 278 of 7497 items)

Description	Resource	Path	Location	Type
▼ ⚠ Checkstyle Problem (100 of 7201 items)				
⚠ '(' is followed by whitespace.	AddVersionView2.java	/T3_source/GUI	line 152	Checkstyle Problem
⚠ '(' is followed by whitespace.	AddVersionView2.java	/T3_source/GUI	line 153	Checkstyle Problem
⚠ '(' is followed by whitespace.	AddVersionView3.java	/T3_source/GUI	line 81	Checkstyle Problem
⚠ '(' is followed by whitespace.	AddVersionView3.java	/T3_source/GUI	line 173	Checkstyle Problem
⚠ '(' is followed by whitespace.	AddVersionView3.java	/T3_source/GUI	line 174	Checkstyle Problem
⚠ '(' is followed by whitespace.	AddVersionView4.java	/T3_source/GUI	line 146	Checkstyle Problem
⚠ '(' is followed by whitespace.	FileChooser.java	/T3_source/GUI	line 37	Checkstyle Problem
⚠ '(' is followed by whitespace.	FileChooser.java	/T3_source/GUI	line 73	Checkstyle Problem
⚠ '(' is followed by whitespace.	LeaderFeedbackView.java	/T3_source/GUI	line 43	Checkstyle Problem
⚠ '(' is followed by whitespace.	LoginView.java	/T3_source/GUI	line 42	Checkstyle Problem
⚠ '(' is followed by whitespace.	MemberVersionDisplay.java	/T3_source/GUI	line 53	Checkstyle Problem
⚠ '(' is followed by whitespace.	MemberVersionDisplay.java	/T3_source/GUI	line 55	Checkstyle Problem
⚠ '(' is followed by whitespace.	MemberVersionDisplay.java	/T3_source/GUI	line 57	Checkstyle Problem
⚠ '(' is followed by whitespace.	MemberVersionDisplay.java	/T3_source/GUI	line 59	Checkstyle Problem
⚠ '(' is followed by whitespace.	MemberVersionDisplay.java	/T3_source/GUI	line 61	Checkstyle Problem
⚠ '(' is followed by whitespace.	NetworkManager.java	/T3_source/Control	line 35	Checkstyle Problem
⚠ '(' is followed by whitespace.	NewProjectView2.java	/T3_source/GUI	line 158	Checkstyle Problem
⚠ '(' is followed by whitespace.	NewProjectView2.java	/T3_source/GUI	line 159	Checkstyle Problem
⚠ '(' is followed by whitespace.	NewProjectView3.java	/T3_source/GUI	line 81	Checkstyle Problem
⚠ '(' is followed by whitespace.	NewProjectView3.java	/T3_source/GUI	line 174	Checkstyle Problem
⚠ '(' is followed by whitespace.	NewProjectView4.java	/T3_source/GUI	line 149	Checkstyle Problem
⚠ '(' is followed by whitespace.	VersionDisplay.java	/T3_source/GUI	line 45	Checkstyle Problem
⚠ '(' is followed by whitespace.	VersionDisplay.java	/T3_source/GUI	line 47	Checkstyle Problem
⚠ '(' is followed by whitespace.	VersionDisplay.java	/T3_source/GUI	line 49	Checkstyle Problem
⚠ '(' is followed by whitespace.	VersionDisplay.java	/T3_source/GUI	line 51	Checkstyle Problem
⚠ '(' is followed by whitespace.	VersionDisplay.java	/T3_source/GUI	line 53	Checkstyle Problem
⚠ ')' is preceded with whitespace.	AddVersionView2.java	/T3_source/GUI	line 152	Checkstyle Problem
⚠ ')' is preceded with whitespace.	AddVersionView2.java	/T3_source/GUI	line 153	Checkstyle Problem
⚠ ')' is preceded with whitespace.	AddVersionView3.java	/T3_source/GUI	line 173	Checkstyle Problem
⚠ ')' is preceded with whitespace.	AddVersionView3.java	/T3_source/GUI	line 174	Checkstyle Problem
⚠ ')' is preceded with whitespace.	AddVersionView4.java	/T3_source/GUI	line 146	Checkstyle Problem
⚠ ')' is preceded with whitespace.	FileChooser.java	/T3_source/GUI	line 80	Checkstyle Problem

2.1.1.2 T4

Overview of Checkstyle violations - 4973 markers in 23 categories (Filter matched 4973 of 4973 items)

Checkstyle violation type	Marker count
⚠ Name 'X' must match pattern 'X'.	33
⚠ 'X' is not preceded with whitespace.	512
⚠ Distance between variable 'X' declaration and its first usage is X, but a...	2
⚠ Wrong lexicographical order for 'X' import. Should be before 'X'.	27
⚠ Empty X block.	6
⚠ 'X' should be separated from previous statement.	43
⚠ 'X' child have incorrect indentation level X, expected level should be ...	116
⚠ 'X' child have incorrect indentation level X, expected level should be X.	755
⚠ 'X' at column X should have line break after.	14
⚠ Using the '.*' form of import should be avoided - X.	25
⚠ Line is longer than X characters (found X).	173
⚠ First sentence of Javadoc is incomplete (period is missing) or not pres...	1
⚠ Each variable declaration must be in its own statement.	4
⚠ 'X' have incorrect indentation level X, expected level should be one of...	201
⚠ 'X' at column X should be alone on a line.	14
⚠ 'X' at column X should be on the same line as the next part of a mult...	14
⚠ 'X' is not followed by whitespace.	446
⚠ 'X' at column X should be on the previous line.	39
⚠ 'X' have incorrect indentation level X, expected level should be X.	604
⚠ Line contains a tab character.	1909
⚠ Array brackets at illegal position.	1
⚠ 'X' should be on a new line.	2
⚠ Missing a Javadoc comment.	32

34 errors, 5,166 warnings, 69 others (Filter matched 278 of 5269 items)

Description	Resource	Path	Location	Type
▼ Checkstyle Problem (100 of 4973 items)				
';' should be separated from previous statement.	CategoryTest.java	/T4_source/src/test	line 17	Checkstyle Problem
';' should be separated from previous statement.	CategoryTest.java	/T4_source/src/test	line 18	Checkstyle Problem
';' should be separated from previous statement.	RepresentativeValueTest.java	/T4_source/src/test	line 17	Checkstyle Problem
';' should be separated from previous statement.	RepresentativeValueTest.java	/T4_source/src/test	line 18	Checkstyle Problem
'{' at column 1 should be on the previous line.	CategoryTest.java	/T4_source/src/test	line 15	Checkstyle Problem
'{' at column 1 should be on the previous line.	RepresentativeValueTest.java	/T4_source/src/test	line 16	Checkstyle Problem
'{' at column 2 should be on the previous line.	CategoryTest.java	/T4_source/src/test	line 21	Checkstyle Problem
'{' at column 2 should be on the previous line.	CategoryTest.java	/T4_source/src/test	line 31	Checkstyle Problem
'{' at column 2 should be on the previous line.	CategoryTest.java	/T4_source/src/test	line 41	Checkstyle Problem
'{' at column 2 should be on the previous line.	CategoryTest.java	/T4_source/src/test	line 51	Checkstyle Problem
'{' at column 2 should be on the previous line.	Property.java	/T4_source/src/System	line 27	Checkstyle Problem
'{' at column 2 should be on the previous line.	Property.java	/T4_source/src/System	line 32	Checkstyle Problem
'{' at column 2 should be on the previous line.	Property.java	/T4_source/src/System	line 41	Checkstyle Problem
'{' at column 2 should be on the previous line.	RepresentativeValueTest.java	/T4_source/src/test	line 21	Checkstyle Problem
'{' at column 2 should be on the previous line.	RepresentativeValueTest.java	/T4_source/src/test	line 32	Checkstyle Problem
'{' at column 2 should be on the previous line.	RepresentativeValueTest.java	/T4_source/src/test	line 38	Checkstyle Problem
'{' at column 2 should be on the previous line.	RepresentativeValueTest.java	/T4_source/src/test	line 55	Checkstyle Problem
'{' at column 2 should be on the previous line.	RepresentativeValueTest.java	/T4_source/src/test	line 62	Checkstyle Problem
'{' at column 2 should be on the previous line.	RepresentativeValueTest.java	/T4_source/src/test	line 72	Checkstyle Problem
'{' at column 2 should be on the previous line.	RepresentativeValueTest.java	/T4_source/src/test	line 80	Checkstyle Problem
'{' at column 25 should have line break after.	FirstFrame.java	/T4_source/src/GUI	line 66	Checkstyle Problem
'{' at column 29 should have line break after.	MainFrame.java	/T4_source/src/GUI	line 315	Checkstyle Problem
'{' at column 3 should be on the previous line.	Category.java	/T4_source/src/System	line 62	Checkstyle Problem
'{' at column 3 should be on the previous line.	Property.java	/T4_source/src/System	line 34	Checkstyle Problem
'{' at column 3 should be on the previous line.	RepresentativeValue.java	/T4_source/src/System	line 42	Checkstyle Problem
'{' at column 3 should be on the previous line.	RepresentativeValue.java	/T4_source/src/System	line 84	Checkstyle Problem
'{' at column 3 should be on the previous line.	RepresentativeValue.java	/T4_source/src/System	line 95	Checkstyle Problem
'{' at column 3 should be on the previous line.	RepresentativeValue.java	/T4_source/src/System	line 135	Checkstyle Problem
'{' at column 3 should be on the previous line.	Specification.java	/T4_source/src/System	line 79	Checkstyle Problem
'{' at column 3 should be on the previous line.	Specification.java	/T4_source/src/System	line 165	Checkstyle Problem
'{' at column 30 should have line break after.	MainFrame.java	/T4_source/src/GUI	line 210	Checkstyle Problem

2.2 FindBugs

2.2.1 Analysis Result

2.2.1.1 T3

```

GUIManager.java: 244
Navigation
Dead store to fc in Control.GUIManager.openFileChooser()
Local variable named fc
    
```

Bug: Dead store to fc in Control.GUIManager.openFileChooser()

This instruction assigns a value to a local variable, but the value is not read or used in any subsequent instruction. Often, this indicates an error, because the value computed is never used.

Note that Sun's javac compiler often generates dead stores for final local variables. Because FindBugs is a bytecode-based tool, there is no easy way to eliminate these false positives.

Rank: Of Concern (15), **confidence:** High
Pattern: DLS_DEAD_LOCAL_STORE
Type: DLS, **Category:** STYLE (Dodgy code)

XML output:

```

<BugInstance type="DLS_DEAD_LOCAL_STORE" priority="1" rank="15" abbrev="DLS" category="STYLE" first="1">
  <Class classname="Control.GUIManager">
    <SourceLine classname="Control.GUIManager" sourcefile="GUIManager.java" sourcepath="Control/GUIManager.java">
      </Class>
    <Method classname="Control.GUIManager" name="openFileChooser" signature="()V" isStatic="false">
      <SourceLine classname="Control.GUIManager" start="244" end="246" startBytecode="0" endBytecode="8" sourcefile="GUIManager.java" sourcepath="Control/GUIManager.java"/>
    </Method>
    <LocalVariable name="fc" register="1" pc="9" role="LOCAL_VARIABLE_NAMED"/>
    <SourceLine classname="Control.GUIManager" start="244" end="244" startBytecode="8" endBytecode="8" sourcefile="GUIManager.java" sourcepath="Control/GUIManager.java"/>
    <SourceLine classname="Control.GUIManager" start="244" end="244" startBytecode="8" endBytecode="8" sourcefile="GUIManager.java" sourcepath="Control/GUIManager.java"/>
    <Property name="edu.umd.cs.findbugs.detect.DeadLocalStoreProperty.DEAD_OBJECT_STORE" value="true"/>
    <Property name="edu.umd.cs.findbugs.detect.DeadLocalStoreProperty.LOCAL_NAME" value="fc"/>
    <Property name="edu.umd.cs.findbugs.detect.DeadLocalStoreProperty.METHOD_RESULT" value="true"/>
  </BugInstance>
    
```

MainSystem.java: 22

Navigation

Write to static field Control.MainSystem.gm from instance method new Control.MainSystem()
Field Control.MainSystem.gm

Bug: Write to static field Control.MainSystem.gm from instance method new Control.MainSystem()

This instance method writes to a static field. This is tricky to get correct if multiple instances are being manipulated, and generally bad practice.

Rank: Of Concern (15), **confidence:** High

Pattern: ST_WRITE_TO_STATIC_FROM_INSTANCE_METHOD

Type: ST, **Category:** STYLE (Dodgy code)

XML output:

```
<BugInstance type="ST_WRITE_TO_STATIC_FROM_INSTANCE_METHOD" priority="1" rank="15" abbrev="ST" category="STYLE" first="1">
  <Class classname="Control.MainSystem">
    <SourceLine classname="Control.MainSystem" sourcefile="MainSystem.java" sourcepath="Control/MainSystem.java"/>
  </Class>
  <Method classname="Control.MainSystem" name="<init>" signature="()V" isStatic="false">
    <SourceLine classname="Control.MainSystem" start="20" end="25" startBytecode="0" endBytecode="106" sourcefile="MainSystem.java" sourcepath="Control/MainSystem.java"/>
  </Method>
  <Field classname="Control.MainSystem" name="gm" signature="LControl/GUIManager;" isStatic="true">
    <SourceLine classname="Control.MainSystem" sourcefile="MainSystem.java" sourcepath="Control/MainSystem.java"/>
  </Field>
  <SourceLine classname="Control.MainSystem" start="22" end="22" startBytecode="21" endBytecode="21" sourcefile="MainSystem.java" sourcepath="Control/MainSystem.java"/>
  <SourceLine classname="Control.MainSystem" start="22" end="22" startBytecode="21" endBytecode="21" sourcefile="MainSystem.java" sourcepath="Control/MainSystem.java"/>
</BugInstance>
```

2.2.1.2 T4

FileManagerTest.java: 46

Navigation

Write to static field test.FileManagerTest.file from instance method test.FileManagerTest.testLoadSpecification1()
Field test.FileManagerTest.file

Bug: Write to static field test.FileManagerTest.file from instance method test.FileManagerTest.testLoadSpecification1()

This instance method writes to a static field. This is tricky to get correct if multiple instances are being manipulated, and generally bad practice.

Rank: Of Concern (15), **confidence:** High

Pattern: ST_WRITE_TO_STATIC_FROM_INSTANCE_METHOD

Type: ST, **Category:** STYLE (Dodgy code)

XML output:

```
<BugInstance type="ST_WRITE_TO_STATIC_FROM_INSTANCE_METHOD" priority="1" rank="15" abbrev="ST" category="STYLE" first="1">
  <Class classname="test.FileManagerTest">
    <SourceLine classname="test.FileManagerTest" sourcefile="FileManagerTest.java" sourcepath="test/FileManagerTest.java"/>
  </Class>
  <Method classname="test.FileManagerTest" name="testLoadSpecification1" signature="()V" isStatic="false">
    <SourceLine classname="test.FileManagerTest" start="46" end="54" startBytecode="0" endBytecode="137" sourcefile="FileManagerTest.java" sourcepath="test/FileManagerTest.java"/>
  </Method>
  <Field classname="test.FileManagerTest" name="file" signature="Ljava/io/File;" isStatic="true">
    <SourceLine classname="test.FileManagerTest" sourcefile="FileManagerTest.java" sourcepath="test/FileManagerTest.java"/>
  </Field>
  <SourceLine classname="test.FileManagerTest" start="46" end="46" startBytecode="9" endBytecode="9" sourcefile="FileManagerTest.java" sourcepath="test/FileManagerTest.java"/>
  <SourceLine classname="test.FileManagerTest" start="46" end="46" startBytecode="9" endBytecode="9" sourcefile="FileManagerTest.java" sourcepath="test/FileManagerTest.java"/>
</BugInstance>
```

2.3 Metrics

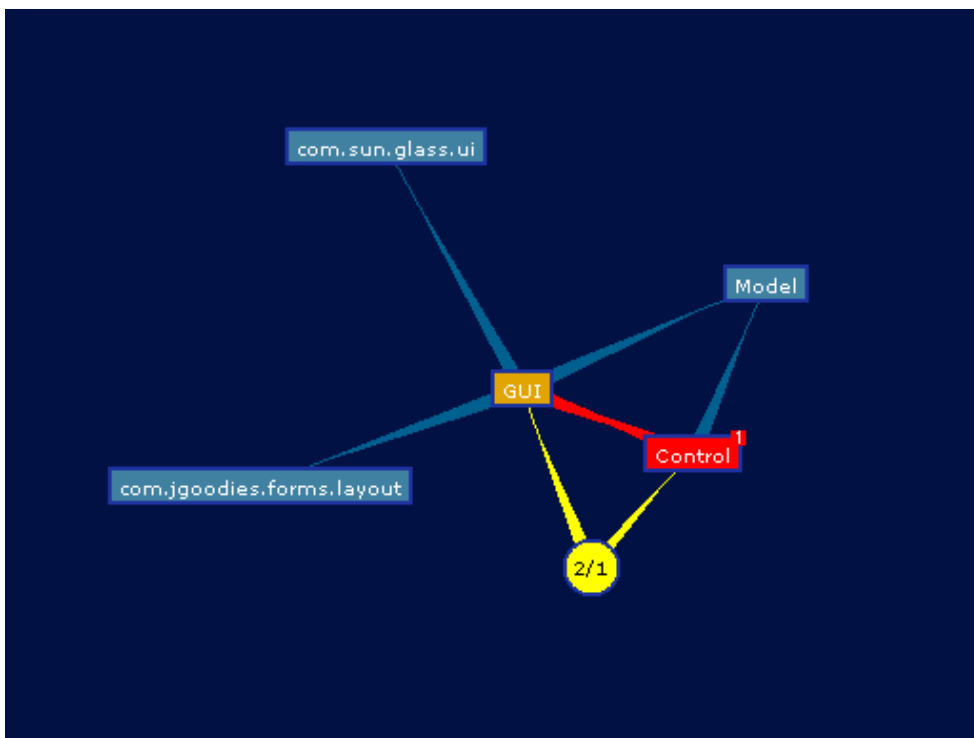
2.3.1 Analysis Result

2.3.1.1 T3

Metrics

Metric	Total	Mean	Std. Dev.	Maxim...	Resource causing Maximum	Method
> McCabe Cyclomatic Complexity (avg/max per method)		2.152	3.83	42	/T3_source/Control/ResultManager.java	calculateTestCaseNum
> Number of Parameters (avg/max per method)		0.865	0.87	8	/T3_source/Control/ResultManager.java	recurse
> Nested Block Depth (avg/max per method)		1.68	1.148	8	/T3_source/Control/ResultManager.java	recurse
> Afferent Coupling (avg/max per packageFragment)		6.5	6.801	17	/T3_source/Control	
> Efferent Coupling (avg/max per packageFragment)		5.75	6.942	17	/T3_source/GUI	
> Instability (avg/max per packageFragment)		0.551	0.431	1	/T3_source/Server	
> Abstractness (avg/max per packageFragment)		0	0	0	/T3_source/Control	
> Normalized Distance (avg/max per packageFragment)		0.449	0.431	1	/T3_source/Model	
> Depth of Inheritance Tree (avg/max per type)		3.833	2.368	6	/T3_source/GUI/NewProjectView2.java	
> Weighted methods per Class (avg/max per type)	383	12.767	13.431	78	/T3_source/Control/ResultManager.java	
> Number of Children (avg/max per type)	0	0	0	0	/T3_source/Control/GUIManager.java	
> Number of Overridden Methods (avg/max per type)	2	0.067	0.249	1	/T3_source/Control/NetworkManager.java	
> Lack of Cohesion of Methods (avg/max per type)		0.623	0.372	1.333	/T3_source/GUI/MemberVersionPanel.java	
> Number of Attributes (avg/max per type)	189	6.3	4.212	14	/T3_source/Control/GUIManager.java	
> Number of Static Attributes (avg/max per type)	4	0.133	0.718	4	/T3_source/Control/MainSystem.java	
> Number of Methods (avg/max per type)	161	5.367	5.504	24	/T3_source/Control/GUIManager.java	
> Number of Static Methods (avg/max per type)	17	0.567	2.872	16	/T3_source/Control/MainSystem.java	
> Specialization Index (avg/max per type)		0.056	0.212	1	/T3_source/Control/NetworkManager.java	
> Number of Classes (avg/max per packageFragment)	30	7.5	6.225	18	/T3_source/GUI	
> Number of Interfaces (avg/max per packageFragment)	0	0	0	0	/T3_source/Control	
> Number of Packages	4					
> Total Lines of Code	2920					
> Method Lines of Code (avg/max per method)	1936	10.876	21.151	173	/T3_source/Control/ResultManager.java	calculateTestCaseNum

Dependency Graph View



2.3.1.2 T4

Metrics

Metric	Total	Mean	Std. Dev.	Maxim...	Resource causing Maximum	Method
> McCabe Cyclomatic Complexity (avg/max per method)		2.516	3.185	20	/T4_source/src/System/FileManager.java	loadSpecification
> Number of Parameters (avg/max per method)		0.731	0.985	5	/T4_source/src/System/Specification.java	f
> Nested Block Depth (avg/max per method)		1.946	1.498	8	/T4_source/src/System/FileManager.java	loadSpecification
> Afferent Coupling (avg/max per packageFragment)		3	3.559	8	/T4_source/src/System	
> Efferent Coupling (avg/max per packageFragment)		4.333	0.943	5	/T4_source/src/GUI	
> Instability (avg/max per packageFragment)		0.702	0.311	1	/T4_source/src/test	
> Abstractness (avg/max per packageFragment)		0	0	0	/T4_source/src/GUI	
> Normalized Distance (avg/max per packageFragment)		0.298	0.311	0.727	/T4_source/src/System	
> Depth of Inheritance Tree (avg/max per type)		2.071	2.052	6	/T4_source/src/GUI/NewSpecification.java	
> Weighted methods per Class (avg/max per type)	234	16.714	18.223	58	/T4_source/src/System/FileManager.java	
> Number of Children (avg/max per type)	0	0	0	0	/T4_source/src/GUI/NewSpecification.java	
> Number of Overridden Methods (avg/max per type)	0	0	0	0	/T4_source/src/GUI/NewSpecification.java	
> Lack of Cohesion of Methods (avg/max per type)		0.381	0.342	0.846	/T4_source/src/GUI/FirstFrame.java	
> Number of Attributes (avg/max per type)	46	3.286	3.594	13	/T4_source/src/GUI/FirstFrame.java	
> Number of Static Attributes (avg/max per type)	14	1	2	6	/T4_source/src/test/RepresentativeValueTest.java	
> Number of Methods (avg/max per type)	89	6.357	4.922	18	/T4_source/src/System/RepresentativeValue.java	
> Number of Static Methods (avg/max per type)	4	0.286	0.452	1	/T4_source/src/System/MainSystem.java	
> Specialization Index (avg/max per type)		0	0	0	/T4_source/src/GUI/NewSpecification.java	
> Number of Classes (avg/max per packageFragment)	14	4.667	0.943	6	/T4_source/src/System	
> Number of Interfaces (avg/max per packageFragment)	0	0	0	0	/T4_source/src/GUI	
> Number of Packages	3					
> Total Lines of Code	1888					
> Method Lines of Code (avg/max per method)	1481	15.925	53.513	498	/T4_source/src/GUI/MainFrame.java	MainFrame

Dependency Graph View

