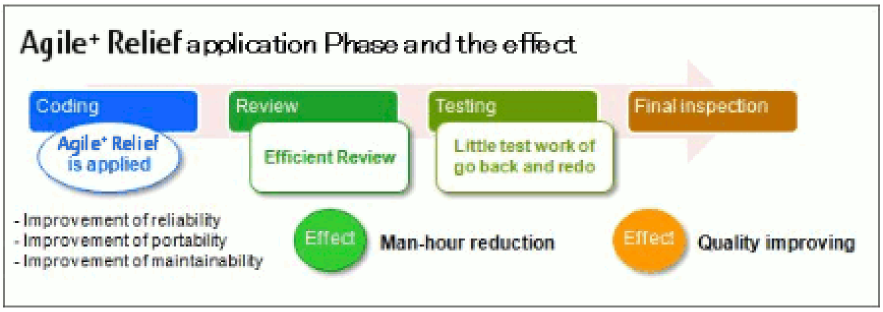
FUJITSU Software
Agile+ Relief J V1.1.1

Code check Operation Guide

B1WD-3617-01ENZ0(00)
January 2023

Preface

During software development, the product quality needs to be improved in the earlier phase of project development, thus reducing subsequent project revision and project development costs. The Agile+ Relief J is a product that is used to improve the product quality in the phase of project compiling during project development. Through the static analysis of the programs written by Java language, the problems that are ignored visually can be detected. Thus, the product quality can be improved, and the development costs can be reduced.


Agile+ Relief application Phase and the effect
Coding
Review
Testing
Final inspection
Agile+ Relief is applied
Efficient Review
Little test work of go back and redo
- Improvement of reliability
- Improvement of portability
- Improvement of maintainability
Effect
Man-hour reduction
Effect
Quality improving

What Is Agile+ Relief J?

Agile+ Relief J provides the functions of Agile+ Relief J customization (hereinafter referred to as customization) and Agile+ Relief J Code check (hereinafter referred to as Code check).

- Customization

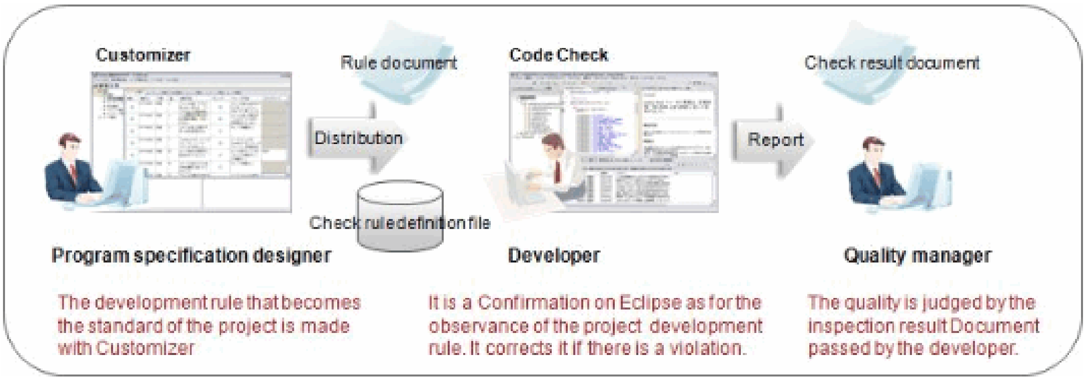
  Formulating the coding rules as the development standard of project development.

- Code check

  Statically parsing the source code described by Java language to detect coding rule violation through customizer.

Users and Roles of Agile+ Relief J

The following figure shows the users and roles of Agile+ Relief J.


Customizer
Rule document
Distribution
Check rule definition file
Code Check
Report
Check result document
Program specification designer
Developer
Quality manager
The development rule that becomes the standard of the project is made with Customizer
It is a Confirmation on Eclipse as for the observance of the project development rule. It corrects it if there is a violation.
The quality is judged by the inspection result Document passed by the developer.

- Program specification designer

  The program specification designer determines the coding rules as the development standard of project development, understands the checking rules of Agile+ Relief J, creates coding rules through customization, and publishes the formulated coding rules to the developer and quality manager.

- Developer

  The developer performs coding according to the coding rules. In addition, the developer checks whether there are rule violations exist through Code check, saves the result as a file, and sends the file to quality manager.

- Quality manager

  The quality manager performs final judgment on whether the codes comply with the coding rules, judges whether quality is abnormal or not according to the Code check result sent from the developer and confirms the validity of coding rules.

The users do not need to be of different roles. "The developer formulate coding rules and confirm whether the described codes comply with the coding rules".

Especially when the developer wants to append coding rules, the developer must fully negotiate with users.

About This Manual

This manual describes the overview and operation methods of Code check.

For details of customizer, refer to "Agile+ Relief J Customizer Operation Guide".

The operation specification of this manual has been described based on Eclipse 3.4. Please read according to the term of the development environment used when you use Eclipse of other versions or Interstage Studio.

Trademarks

- Microsoft, Windows, Windows Server are the registered trademarks or trademarks of Microsoft Corporation in the United States, and other countries
- Oracle and Java are registered trademarks of Oracle and/or its affiliates. Other names may be trademarks of their respective owners.
- Interstage is the registered trademark of Fujitsu.
- Interstage Studio is a product of Fujitsu.
- The name FindBugs™ and the FindBugs logo are trademarked by The University of Maryland
- Android is the registered trademarks or trademarks of Google Inc.
- The names of other products and services referred to in this document are trademarks of their respective developers and manufacturers.

Contents

Chapter 1 Overview

This chapter describes the overview of Code check and the applicable asset.

1.1 What is Code check?

Code check indicates the input of coding rules created by the program specification designer through customization and the check of coding rule violations by static analysis of the source program written by Java language. Code check is operated on Eclipse of Java development environment and is provided as the Eclipse plug-ins. The developer can perform Code check at any time during program development on Eclipse to check coding rule violations.

The Code check is performed in terms of the following aspects.

- Reliability

  Rules for checking the bugs that may cause complex control structure and incorrect use of API.

- Maintainability/Readability

  Rules for checking the violation of the naming rules of class and method and coding rules .etc.

- Efficiency

  Rules for checking the string and file operations, DB access and XML .etc that may cause performance deterioration.

- Functionality

  Rules for checking the security vulnerability such as SQL injection and cross site scripting (XSS).

- Portability

  Rules for checking the part with problems during the migration to other platforms such as OS-dependent code.

1.2 Applicable Asset

The assets that are set as the objects to be checked are as follows:

1.2.1 Eclipse project of target for Code check

The following Eclipse projects become objects to be checked.

Java Project

It is Eclipse project made for the development of the Java application.

Android Application Project

It is Eclipse project made for the development of the Android application.

1.2.2 File of target for Code check

The following files in the Eclipse project shown by "1.2.1 Eclipse projects of target for Code check" become objects of code check.

Java file

- The extension is ".java".
- The Java program in conformity with Java Language Specifications of JDK 1.4/5.0/6/7/8 applies.
- The character code is Cp1252 or UTF-8.
- All of the java files to be checked use the same character code.

XML file

- The extension is ".xml".
- The following XML files become objects, and it is checked by Agile[+] Relief J for the Android project.
  - AndroidManifest.xml
  - XML file under the control of resource folder (res/xml、res/menu、res/layout、res/layout-xxx)
- The cooperation with PMD is effective and the version of PMD is since 5.0. In this case, all XML files under the control of the folder to be checked become objects, and they are checked by PMD.

JSP file

- The following extensions are targeted.
  - Before PMD 4.3 : ".jsp", ".jspx"
  - Since PMD 5.0 : ".jsp"
- It becomes an object when cooperation with PMD is effective, and it is checked by PMD.

StyleSheet file

- The extension is ".xsl" and ".xslt".
- The cooperation with PMD is effective and the version of PMD is since 5.0, and they are checked by PMD.

ECMAScript file

- The extension is ".js".
- The cooperation with PMD is effective and the version of PMD is since 5.0, and they are checked by PMD.

PLSQL file

- The extension is ".sql" , ".trg", ".prc", ".fnc", ".pld", ".pls", ".plh", ".plb", ".pck", ".pks", ".pkh", ".pkb", ".typ", ".tyb", ".tps", and ".tpb".
- The cooperation with PMD is effective and the version of PMD is since 5.1, and they are checked by PMD.

Apache Velocity file

- The extension is ".vm".
- The cooperation with PMD is effective and the version of PMD is since 5.1, and they are checked by PMD.

Chapter 2 Preparations for Code check

This chapter describes the installation procedure for using Agile$^+$ Relief J on Eclipse.

2.1 Install Agile+ Relief J Plug-in

To install Agile$^+$ Relief J, JDK and Eclipse must be required as the operating environment. Please prepare the operating environment in advance.

After installing the plug-in of Agile$^+$ Relief J on Eclipse, the functions of the Agile$^+$ Relief J can be used.

2.1.1 Set the Environment Variable JAVA_HOME

Set JAVA_HOME in the environment variable of Windows. Set the installation directory of JDK in JAVA_HOME.

If JDK is not installed, please obtain JDK 5.0 or earlier versions from the website of Oracle and install it.

The website of Oracle is: http://www.oracle.com/technetwork/java/index.html

<Operations>

1. Right-click [Computer]* and select [Properties].
2. Click the "Advanced system settings" menu on the left side of the [System] window. The "System Properties" dialog box is displayed.
3. Select the [Advanced] tab in the "System Properties" dialog box and click the [Environment Variables] button.

   The [Environment Variables] dialog box is displayed.
4. Specify the path of JDK installed in the environment variable JAVA_HOME.

* Right-click [PC] since Windows8.1 or Windows Server 2012 R2.

2.1.2 Prepare Eclipse

You can obtain the Eclipse file from the download page of Eclipse Project and install Eclipse.

The Eclipse Project download page is: http://www.eclipse.org/downloads/

<Operations>

1. Decompress the downloaded Eclipse archive.
   For example, when decompressing to "c:\", unfold eclipse.exe and the files and folders required for running Eclipse to "c:\eclipse".

* Please install Interstage Studio that has it when you use Interstage Studio. Please refer to the manual of Interstage Studio for details of the installation.

2.1.3 Install Plug-in of Agile+ Relief J

Install the plug-in of Agile$^+$ Relief J in Eclipse.

Plug-in of Agile$^+$ Relief J

The following plug-in of the Agile$^+$ Relief J are stored in the "Installation folder of AgilePlus \PGReliefJava\eclipse\plugins" folder.

```
com.fujitsu.jp.fst.pgrelief.java.eclipse.doc.detail_x.x.x.jar
com.fujitsu.jp.fst.pgrelief.java.eclipse.doc.guide_x.x.x.jar
com.fujitsu.jp.fst.pgrelief.java.eclipse_x.x.x.jar
```

*x.x.x refers to the version of plug-in.

<Operations>

1. Copy the plug-in folder of the Agile^{+} Relief J installation directory to the plugins folder or the dropins folder of the Eclipse installation directory.

   Example)

   When the path for unfolding the Eclipse file is "C:\eclipse", and the path for installing Agile^{+} Relief J is "C:\Program Files\AgilePlus\PGReliefJava".

```
copy "C:\Program Files\AgilePlus\PGReliefJava\eclipse\plugins" "C:\eclipse\plugins"
```

2. Start eclipse.exe.

```
eclipse.exe
```

If [Agile+ Relief J] is displayed on the menu of Eclipse, it indicates that the plug-in is installed successfully.

Information

If [Agile+ Relief J] is not displayed on the menu of Eclipse, please confirm the perspective customization of Eclipse.

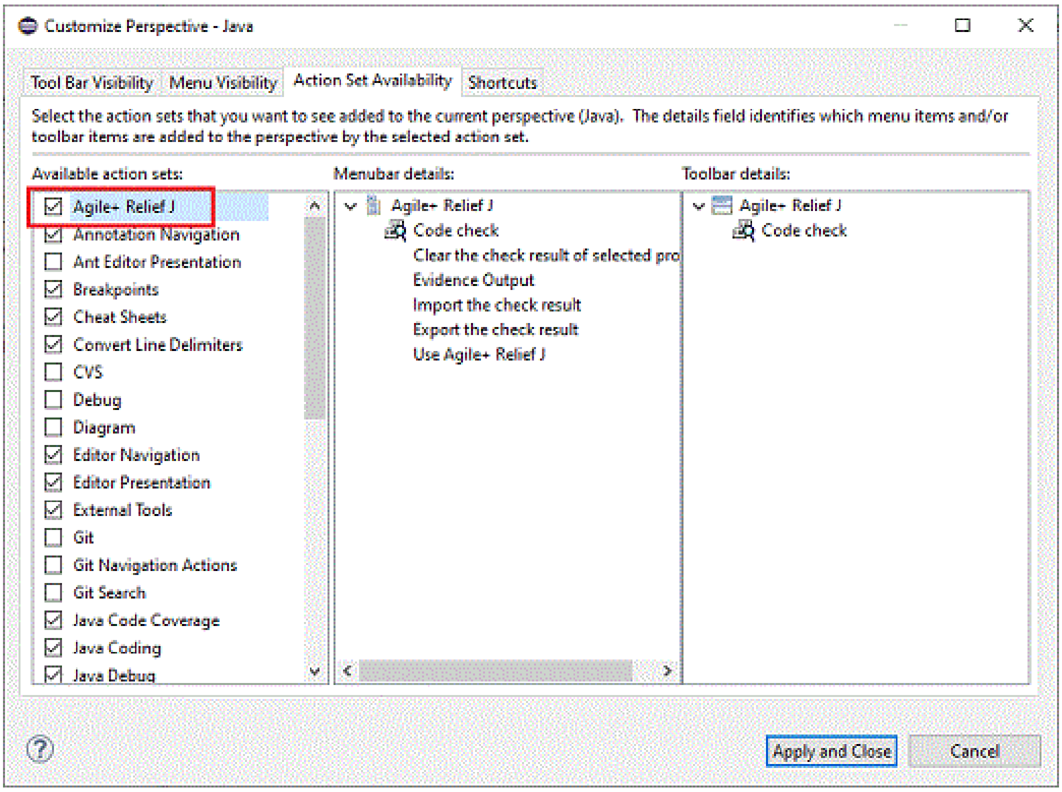
Confirm whether the commands and groups of [Agile+ Relief J] in the [Customize Perspective] dialog of Eclipse are valid. If it is invalid, validate them.

<Operations>

1. Select [Window] > [Customize Perspective...] from the menu of Eclipse.

   The [Customize Perspective] dialog is displayed.

2. Check whether [Agile+ Relief J] is selected from the list of [Commands] > [Available Command groups].



Select the action sets that you want to see added to the current perspective (Java). The details field identifies which menu items and/or toolbar items are added to the perspective by the selected action set.

Available action sets:

☑ Agile+ Relief J
☑ Annotation Navigation
☐ Ant Editor Presentation
☑ Breakpoints
☑ Cheat Sheets
☑ Convert Line Delimiters
☐ CVS
☐ Debug
☐ Diagram
☑ Editor Navigation
☑ Editor Presentation
☑ External Tools
☐ Git
☐ Git Navigation Actions
☐ Git Search
☑ Java Code Coverage
☑ Java Coding
☑ Java Debug

Menubar details:

- Agile+ Relief J
  - Code check
  - Clear the check result of selected pro
  - Evidence Output
  - Import the check result
  - Export the check result
  - Use Agile+ Relief J

Toolbar details:

- Agile+ Relief J
  - Code check

3. When [Agile+ Relief J] is not selected, select it and click the [OK] button.

   [Agile+ Relief J] is displayed on the menu of the main window.

2.1.4 Set View Display in the Eclipse

To display the view in use through the plug-in of Agile^{+} Relief J, please perform the following operations.

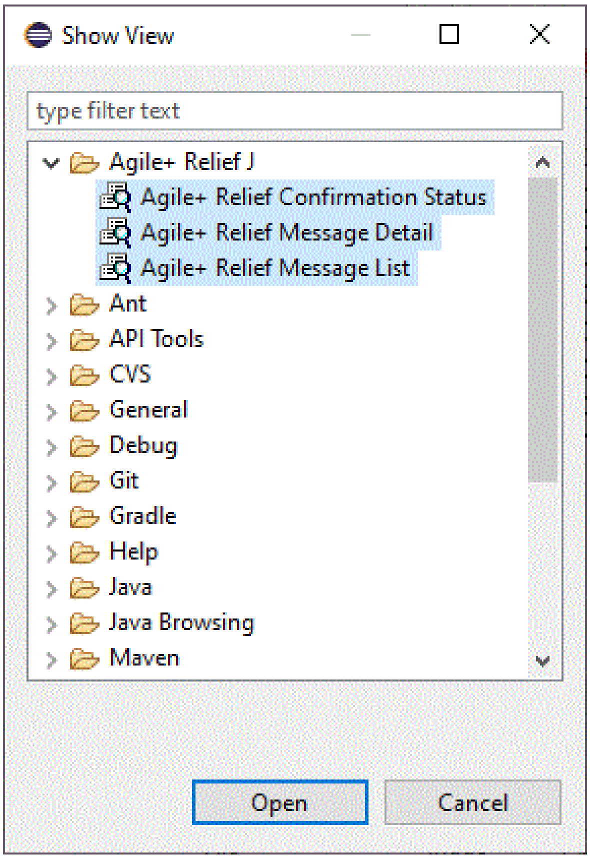
<Operations>

1. Select [Window] > [Show View] > [Other...].

   The [Show View] dialog is displayed.

2. Select the following displayed views of Agile^{+} Relief J and click the [OK] button.

   - [Agile+ Relief Confirmation Status]
   - [Agile+ Relief Message Detail]
   - [Agile+ Relief Message list]



2.2 Set Environment for Code check

Set the environment for using Agile^{+} Relief J on Eclipse.

The following items need to be set.

- Set Check Rule Definition File
- Set output folder for Code check result
- Set Options for Building
- Set Maximum Heap Size for Code check

2.2.1 Change to the Status that Agile+ Relief J can be used

Before setting the environment of Agile$^+$ Relief J, it is required change to the status of that Agile$^+$ Relief J can be used in advance.

<Operations>

1. Select [Agile+ Relief J] > [Use Agile+ Relief J] from the menu of Eclipse.

If [Agile+ Relief J] > [Use Agile+ Relief J] is selected from the menu of Eclipse, it indicates that the Agile$^+$ Relief J can be used.

2.2.2 Set Check Rule Definition File

Specify the check rule definition file of the project development rules used for Code check. (The extension of the check rule definition file is "pgrj").

The content that has been set here will be default of all the projects in the currently-developed workspace.

For details about the project-specific settings of the project unit, please refer to "2.2.6 Project-Specific Settings".

<Operations>

1. Select [Window]>[Preferences].

   The [Preferences] dialog is displayed.

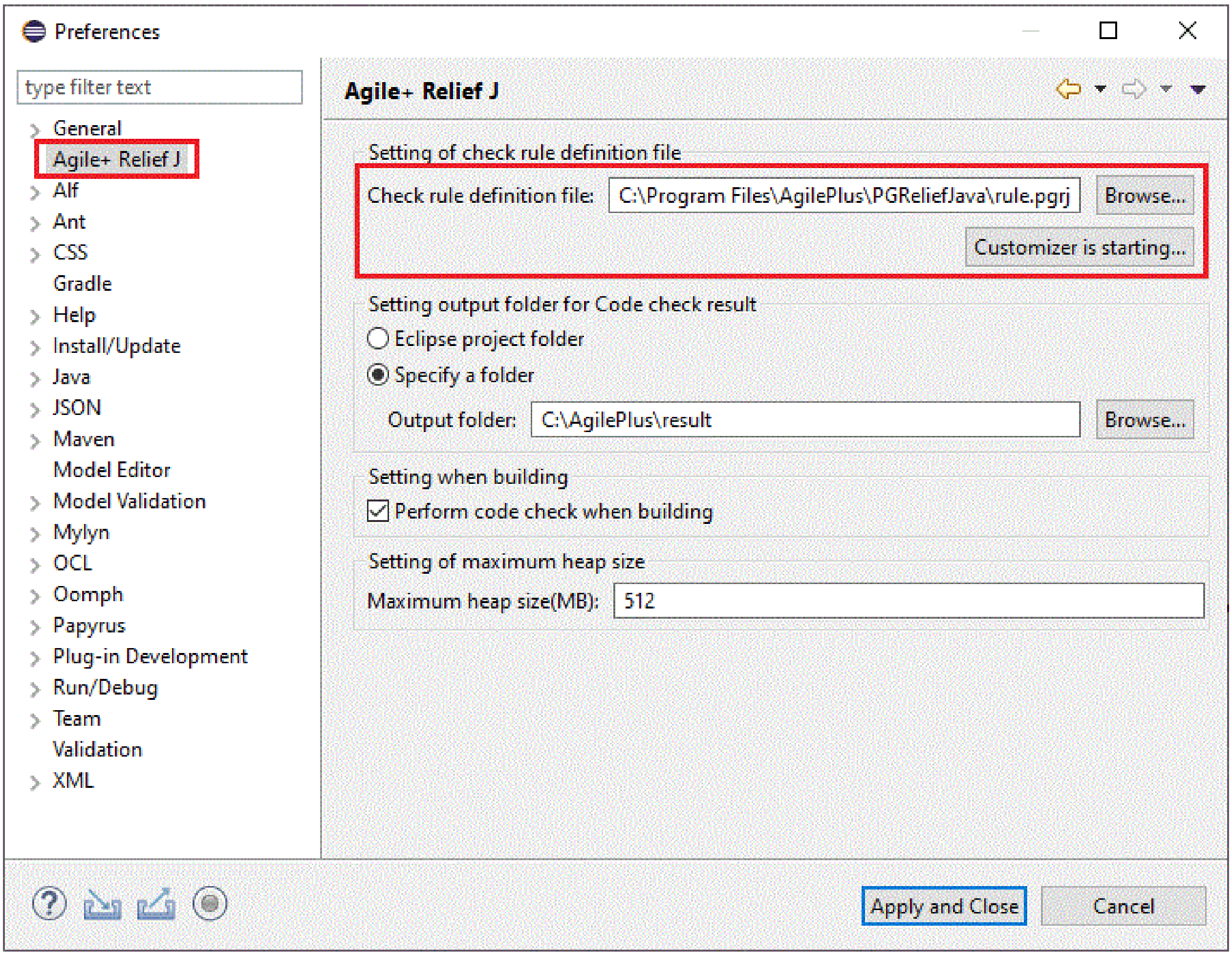
2. Select [Agile+ Relief J] from the tree.

   The setting screen of Agile$^+$ Relief J is displayed.

3. Specify the check rule definition file in [Setting of check rule definition file], perform either of the following operations.

   - Click [Browse...] and select a file from the file selection dialog box
   - Enter a file name in full path

Example: When the check rule definition file is "C:\Program Files\AgilePlus\PGReliefJava\rule.pgrj"



Agile+ Relief J

Setting of check rule definition file

Check rule definition file: C:\Program Files\AgilePlus\PGReliefJava\rule.pgrj

Setting output folder for Code check result

○ Eclipse project folder

● Specify a folder

Output folder: C:\AgilePlus\result

Setting when building

☑ Perform code check when building

Setting of maximum heap size

Maximum heap size(MB): 512

See

Click [Customizer is starting...] to start the customization and edit the preset check rule definition file.

For details on how to edit the check rule definition file, please refer to "Agile^{+} Relief J Customizer Operation Guide"

2.2.3 Set output folder for Code check result

Specify output folder for Code check result. Eclipse project folder or any other folder can be specified as the output folder. Output format to each output destination is as follows:

- If Eclipse project folder is specified:

  Output is made under the project folder of section to be checked.

- If other folder is specified:

  A folder, which has the same name as the project to be checked, is created under the specified folder and output is made under the folder.

The content that has been set here will be default of all the projects in the currently-developed workspace.

For details about the project-specific settings of the project unit, please refer to "2.2.6 Project-Specific Settings".

<Operations>

1. Select [Window]>[Preferences].

   The [Preferences] dialog is displayed.

2. Select [Agile+ Relief J] from the tree.

   The setting screen of Agile+ Relief J is displayed.

3. Specify output folder in [Setting output folder for Code check result], perform either of the following operations.

   - If output is to be made under the Eclipse project folder

     Select [Eclipse project folder].

   - If output is to be made under any folder other than the Eclipse project folder

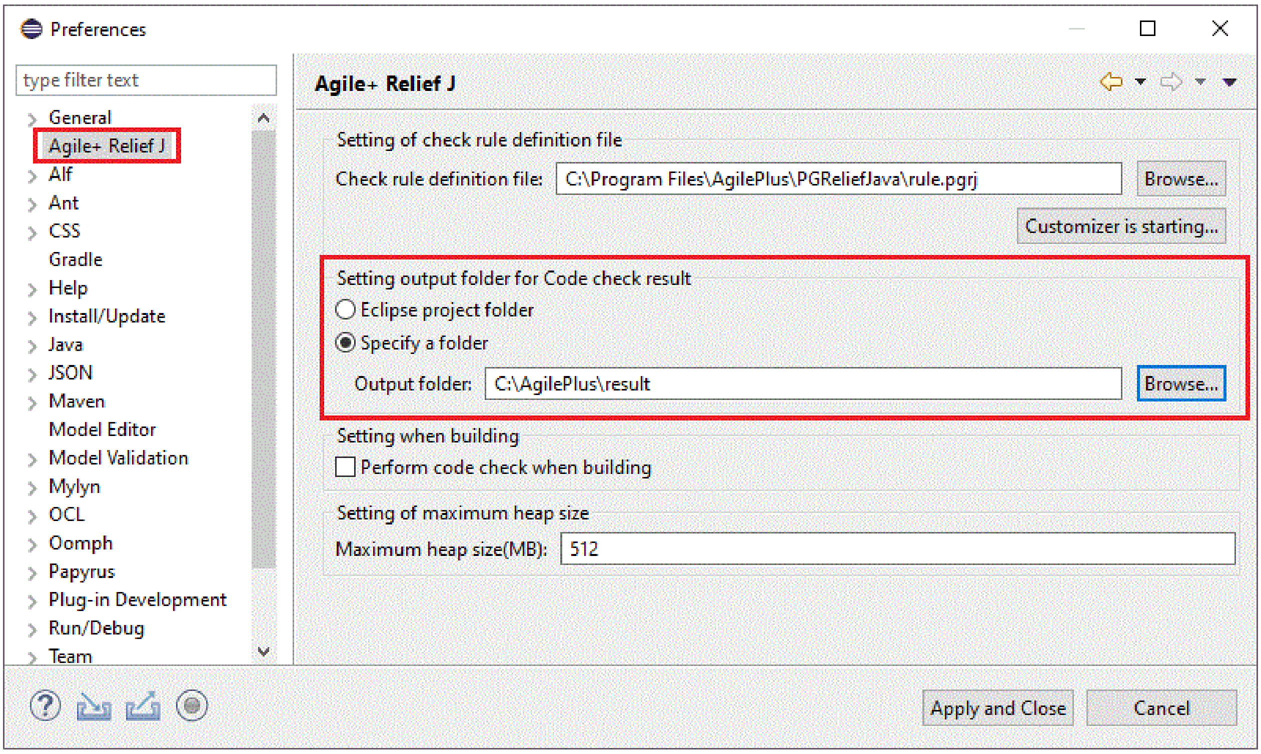
     1. Select [Specify a folder].

     2. Specify output folder, perform either of the following operations.

        - Click [Browse...] and select a folder from the folder selection dialog box

        - Enter a folder name in full path

Example: When output folder for Code check result is "C:\AgilePlus\result"



Agile+ Relief J

Setting of check rule definition file

Check rule definition file: C:\Program Files\AgilePlus\PGReliefJava\rule.pgrj

Setting output folder for Code check result

○ Eclipse project folder

● Specify a folder

Output folder: C:\AgilePlus\result

Setting when building

□ Perform code check when building

Setting of maximum heap size

Maximum heap size(MB): 512

Note

If the setting of the output folder for Code check result is changed, and Code check result exists in the folder before/after the change, delete the check result. Note that because of this, performing the Code check again would be necessary. In addition, regarding the closed project, it is not deleted even if the Code check result still exists, therefore the Code check result may not be displayed properly when the project is opened. In this case, perform the Code check once again.

2.2.4 Set Options for Building

Set the operations of Code check during building.

After [Perform code check when building] is selected, the Code check is automatically performed after building completed.

The content that has been set here will be default of all the projects in the currently-developed workspace.

For details about the project-specific settings of the project unit, please refer to "2.2.6 Project-Specific Settings".

<Operations>

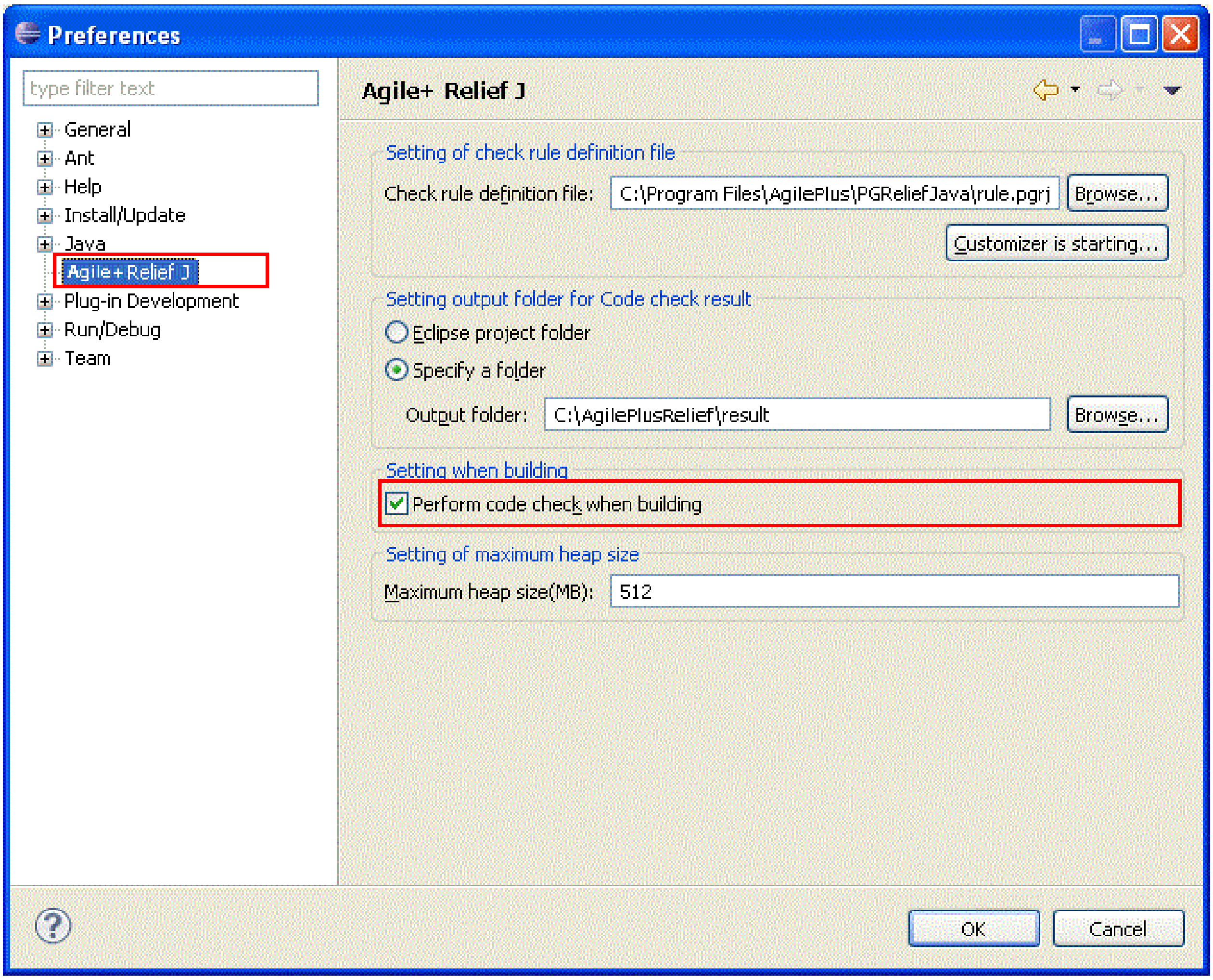
1. Select [Window] > [Preferences].

   The [Preferences] dialog is displayed.

2. Select [Agile+ Relief J] from the tree.

   The setting screen of Agile+ Relief J is displayed.

3. When Code check is performed during building, check the [Perform code check when building] checkbox.



Setting of check rule definition file

Check rule definition file: C:\Program Files\AgilePlus\PGReliefJava\rule.pgrj

Setting output folder for Code check result

○ Eclipse project folder

● Specify a folder

Output folder: C:\AgilePlusRelief\result

Setting when building

☑ Perform code check when building

Setting of maximum heap size

Maximum heap size(MB): 512

2.2.5 Set Maximum Heap Size for Code check

Set maximum heap size of Java Runtime for Code check.

Please set an bigger value as the maximum heap size when the out of memory occurs by Code check to a large-scale project etc.

The content that has been set here will be default of all the projects in the currently-developed workspace.

For details about the project-specific settings of the project unit, please refer to "2.2.6 Project-Specific Settings".

<Operations>

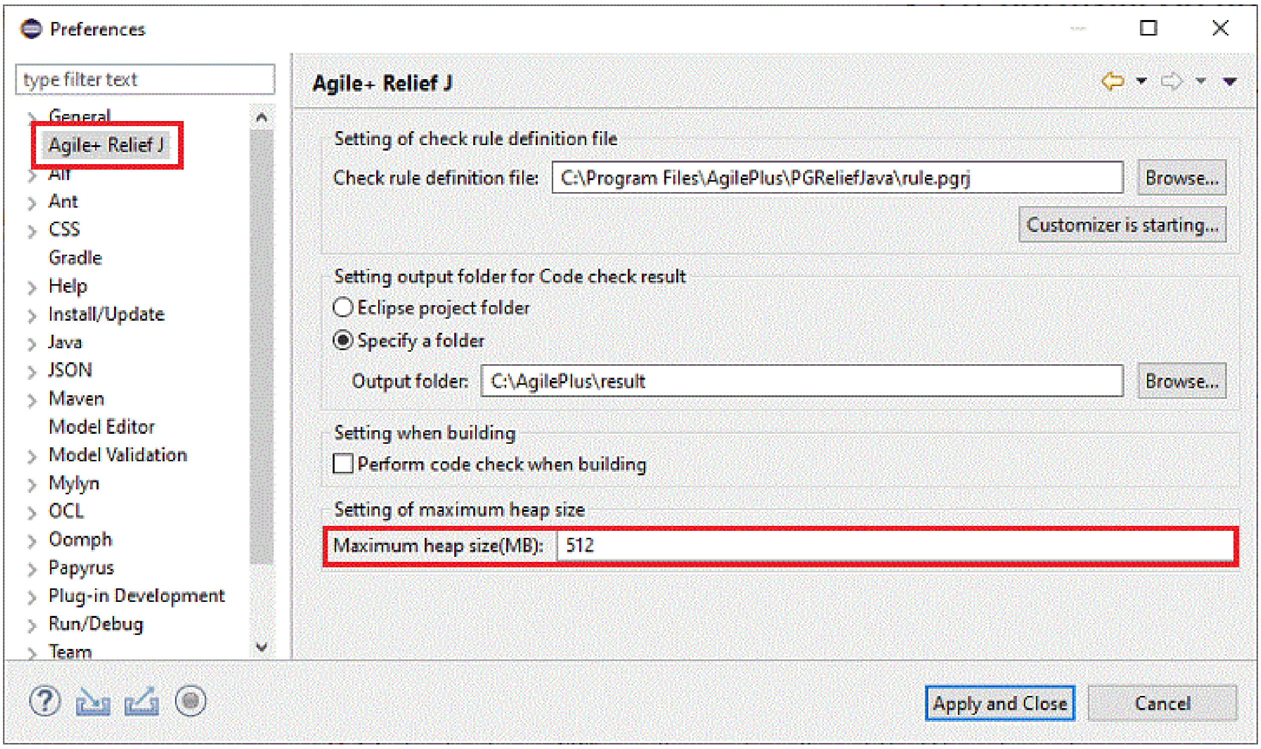
1. Select [Window] > [Preferences].

   The [Preferences] dialog is displayed.

2. Select [Agile+ Relief J] from the tree.

   The setting screen of Agile^{+} Relief J is displayed.

3. Specify the numerical value in the [Maximum heap size (MB)] textbox.



Setting of check rule definition file

Check rule definition file: C:\Program Files\AgilePlus\PGReliefJava\rule.pgrj

Setting output folder for Code check result

○ Eclipse project folder

● Specify a folder

Output folder: C:\AgilePlus\result

Setting when building

□ Perform code check when building

Setting of maximum heap size

Maximum heap size(MB): 512

See

Refer to "About Memory Insufficiency" of "6.1 Code check" for the problem of out of memory concerning Eclipse like the code check result display etc.

2.2.6 Project-Specific Settings

The check rule definition file and the output folder for Code check result and the options for building and the maximum heap size for Code check can be set as the project-specific settings of a project.

To configure the project-specific settings of a project, perform the following operations.

<Operations>

1. Select [Project] > [Properties].

   The [Properties] dialog of the applicable project is displayed.

2. Select [Agile+ Relief J] from the tree.

   The page of setting the Agile^{+} Relief J is displayed.

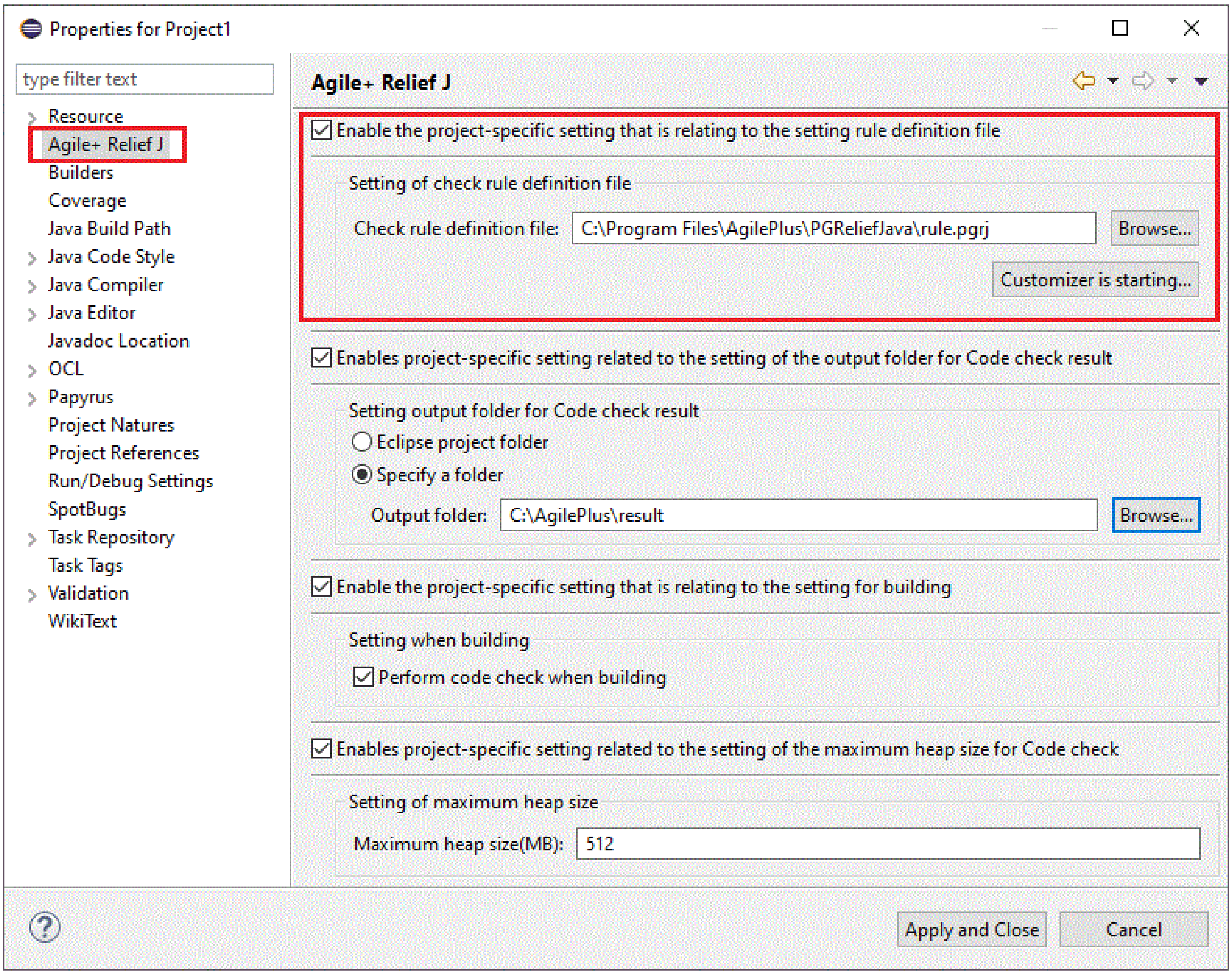
3. When specifying the check rule definition file, select [Enable the project-specific setting that is relating to the setting rule definition file].

   [Setting of check rule definition file] is enabled.

4. Specify the check rule definition file, perform either of the following operations.

   - Click [Browse...] and select a file from the file selection dialog box

   - Enter a full path to the text box.



☑ Enable the project-specific setting that is relating to the setting rule definition file

Setting of check rule definition file

Check rule definition file: C:\Program Files\AgilePlus\PGReliefJava\rule.pgrj

☑ Enables project-specific setting related to the setting of the output folder for Code check result

Setting output folder for Code check result

○ Eclipse project folder

● Specify a folder

Output folder: C:\AgilePlus\result

☑ Enable the project-specific setting that is relating to the setting for building

Setting when building

☑ Perform code check when building

☑ Enables project-specific setting related to the setting of the maximum heap size for Code check

Setting of maximum heap size

Maximum heap size(MB): 512

5. When specifying output folder for Code check result, select [Enable project-specific setting related to the setting of the output folder for Code check result].

   [Setting output folder for Code check result] is enabled.

6. Specify output folder for Code check result in [Setting output folder for Code check result], perform either of the following operations.

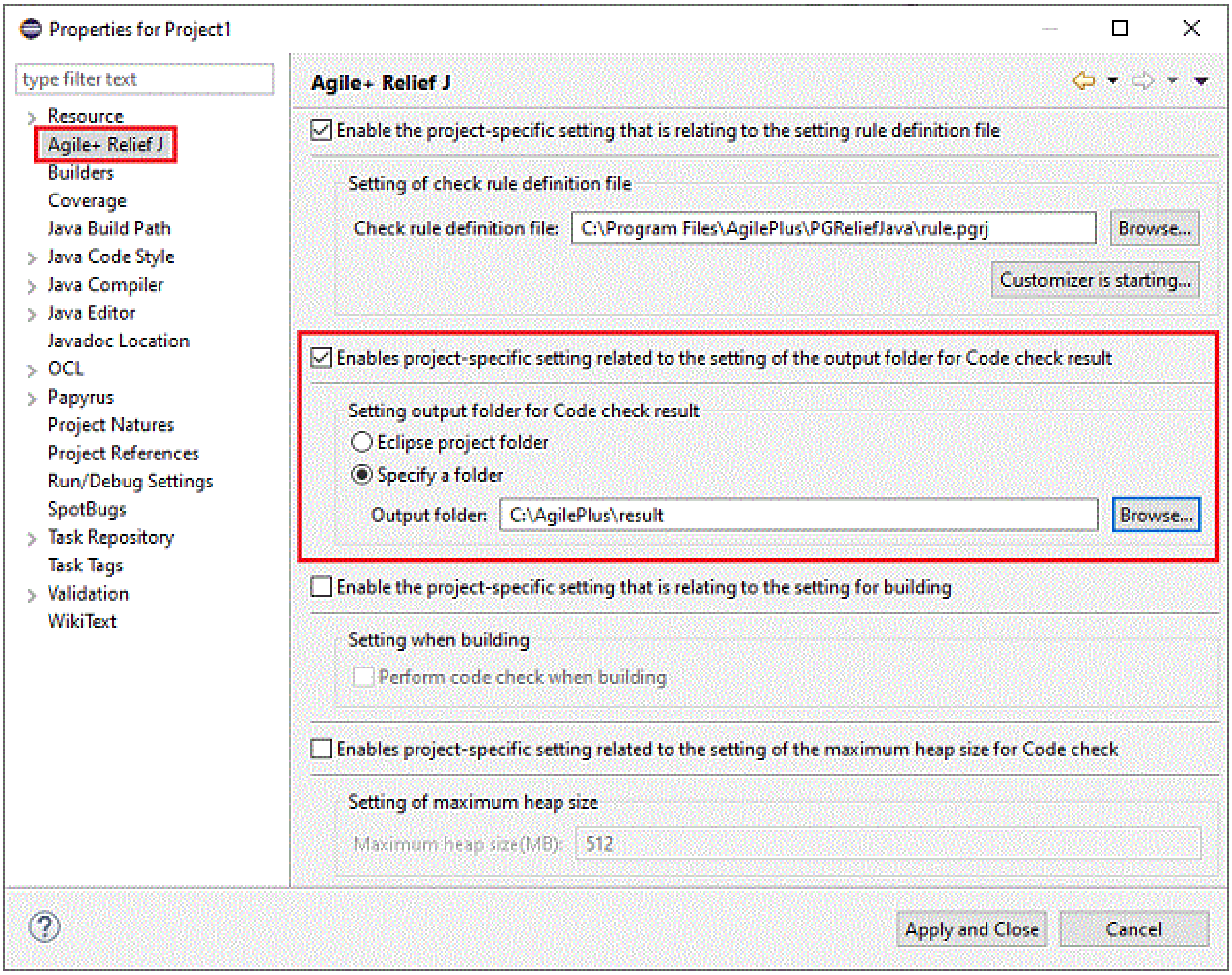
   - If output is to be made under the Eclipse project folder

     Select [Eclipse project folder].

- If output is to be made under any folder other than the Eclipse project folder

    1. Select [Specify a folder].
    2. Specify output folder, perform either of the following operations.

        - Click [Brows...] and select a folder from the folder selection dialog box
        - Enter a full path to the text box



Properties for Project1

Agile+ Relief J

☑ Enable the project-specific setting that is relating to the setting rule definition file

Setting of check rule definition file

Check rule definition file: C:\Program Files\AgilePlus\PGReliefJava\rule.pgrj

☑ Enables project-specific setting related to the setting of the output folder for Code check result

Setting output folder for Code check result

○ Eclipse project folder

● Specify a folder

Output folder: C:\AgilePlus\result

□ Enable the project-specific setting that is relating to the setting for building

Setting when building

□ Perform code check when building

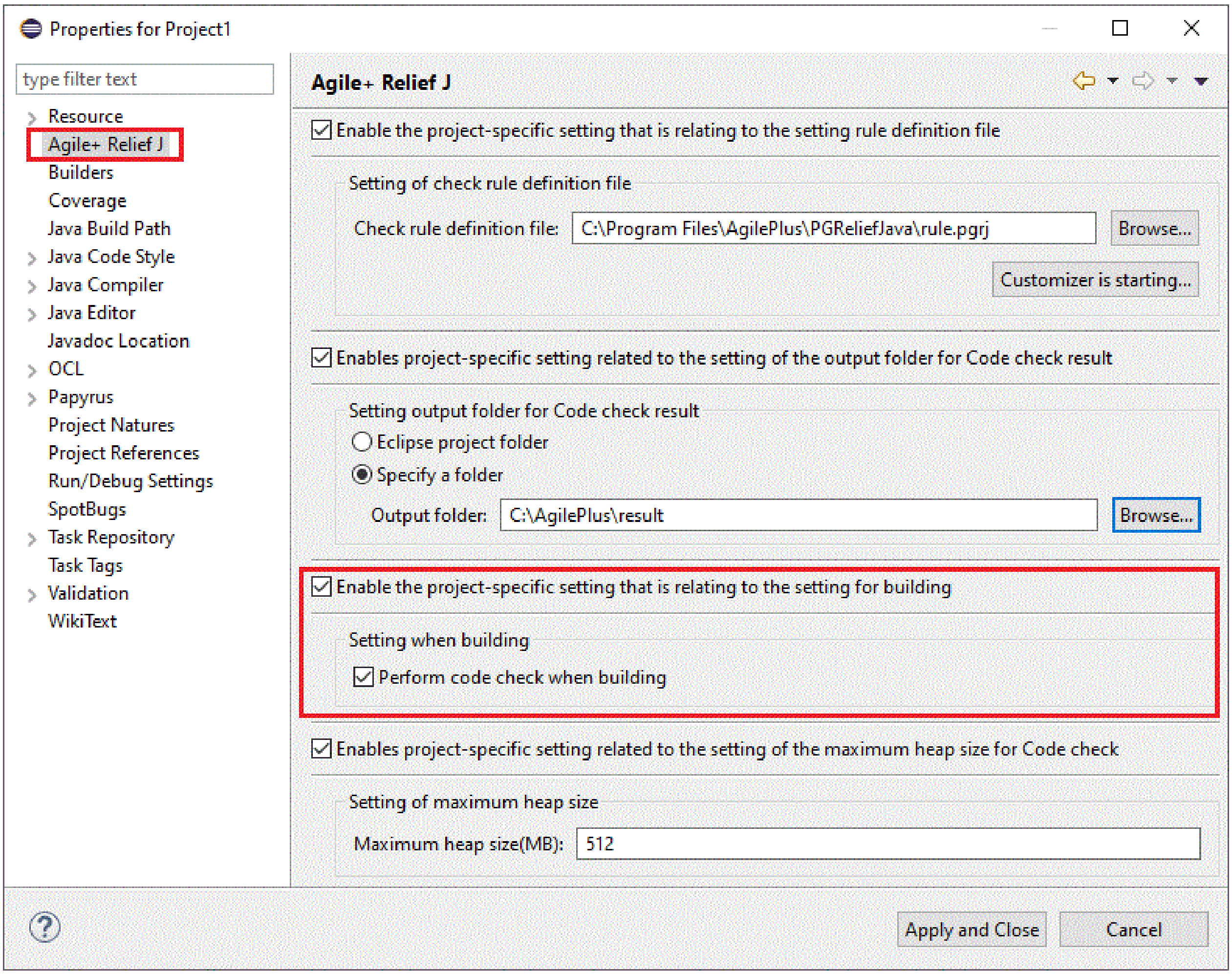
□ Enables project-specific setting related to the setting of the maximum heap size for Code check

Setting of maximum heap size

Maximum heap size(MB): 512

7. For the settings of build, you can select [Enable the project-specific setting that is relating to the setting for building]. [Setting when building] is enabled.

8. Select [Perform code check when building].



Properties for Project1

type filter text

- Resource
- Agile+ Relief J
- Builders
- Coverage
- Java Build Path
- Java Code Style
- Java Compiler
- Java Editor
- Javadoc Location
- OCL
- Papyrus
- Project Natures
- Project References
- Run/Debug Settings
- SpotBugs
- Task Repository
- Task Tags
- Validation
- WikiText

Agile+ Relief J

☑ Enable the project-specific setting that is relating to the setting rule definition file

Setting of check rule definition file

Check rule definition file: C:\Program Files\AgilePlus\PGReliefJava\rule.pgrj [Browse...]

[Customizer is starting...]

☑ Enables project-specific setting related to the setting of the output folder for Code check result

Setting output folder for Code check result

○ Eclipse project folder

● Specify a folder

Output folder: C:\AgilePlus\result [Browse...]

☑ Enable the project-specific setting that is relating to the setting for building

Setting when building

☑ Perform code check when building

☑ Enables project-specific setting related to the setting of the maximum heap size for Code check

Setting of maximum heap size

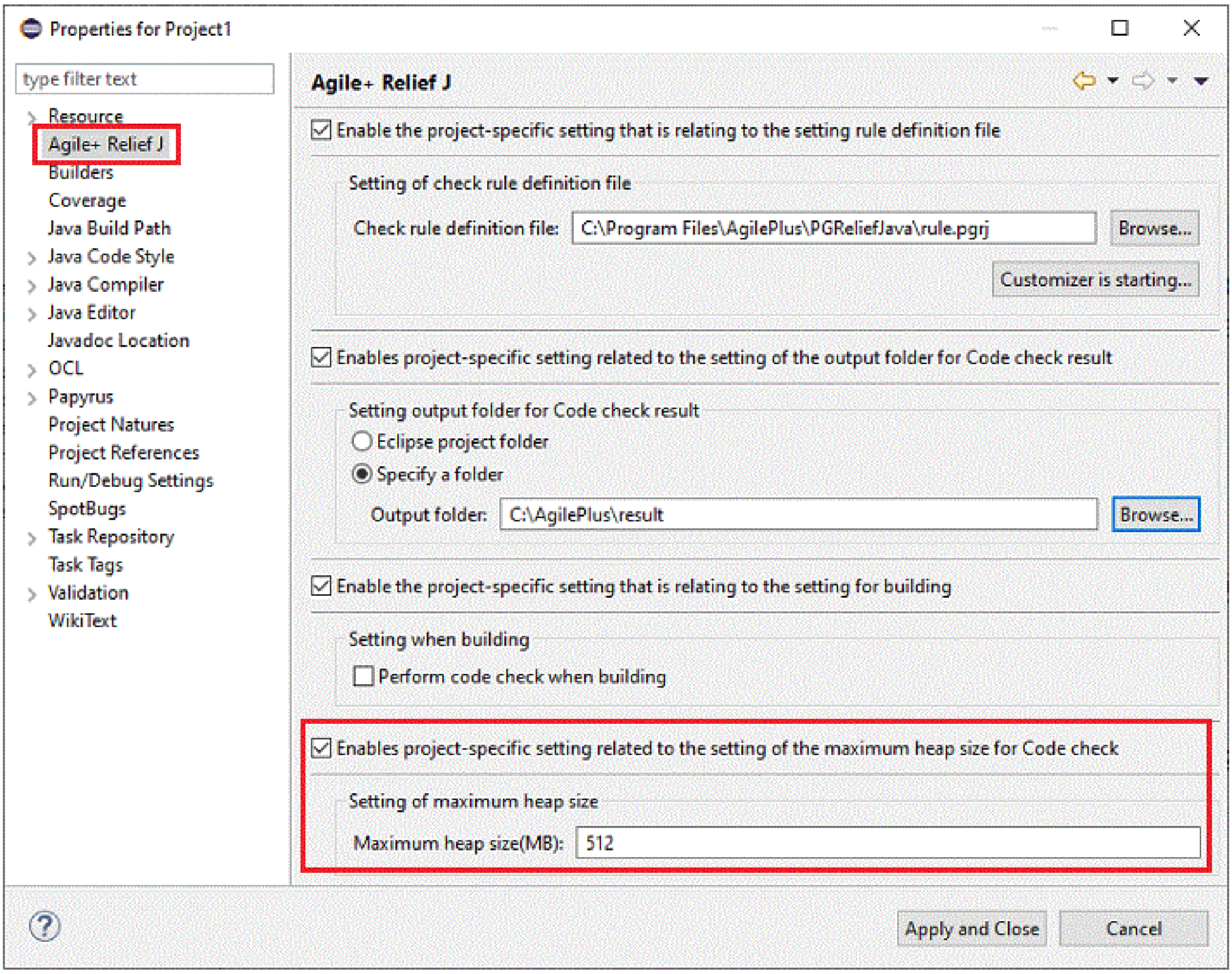
Maximum heap size(MB): 512

[Apply and Close] [Cancel]

9. When specifying the maximum heap size for Code check, select [Enables project-specific setting related to the setting of the maximum heap size for Code check].

   [Setting of maximum heap size] is enabled.

10. Specify the numerical value in the [Maximum heap size (MB)] textbox.



Agile+ Relief J

☑ Enable the project-specific setting that is relating to the setting rule definition file

Setting of check rule definition file

Check rule definition file: C:\Program Files\AgilePlus\PGReliefJava\rule.pgrj

☑ Enables project-specific setting related to the setting of the output folder for Code check result

Setting output folder for Code check result

○ Eclipse project folder

● Specify a folder

Output folder: C:\AgilePlus\result

☑ Enable the project-specific setting that is relating to the setting for building

Setting when building

□ Perform code check when building

☑ Enables project-specific setting related to the setting of the maximum heap size for Code check

Setting of maximum heap size

Maximum heap size(MB): 512

2.3 Uninstalling the Plug-in of Agile+ Relief J

To uninstall the plug-in of the Agile^{+} Relief J, please perform the following operations.

Plug-in of the Agile^{+} Relief J

The following plug-in of the Agile^{+} Relief J is stored in "Installation directory of the AgilePlus \PGReliefJava\eclipse\plugins".

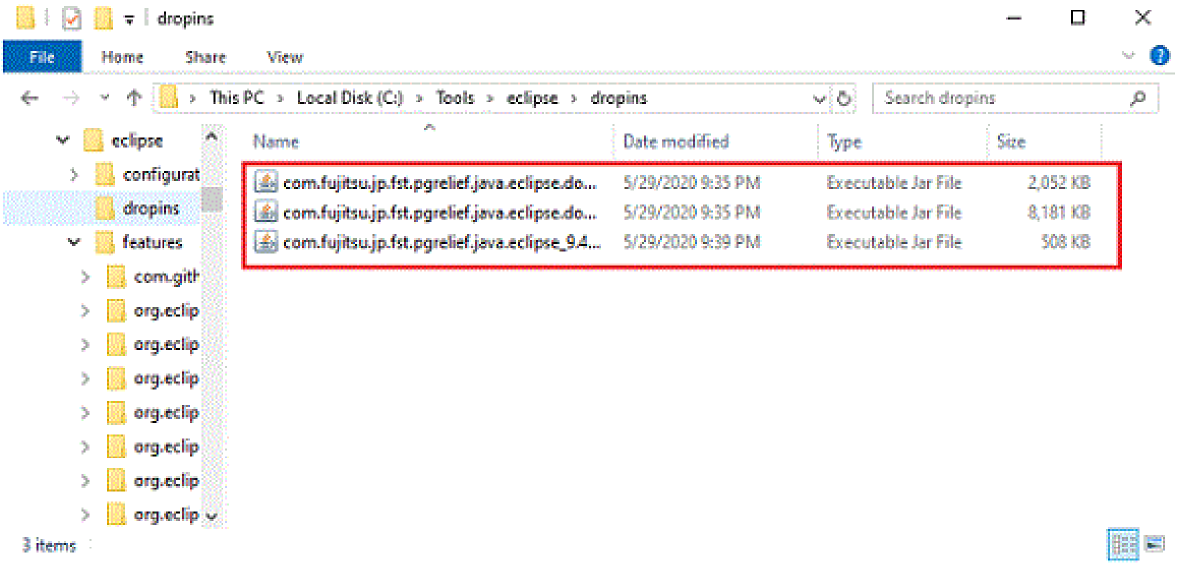
```
com.fujitsu.jp.fst.pgrelief.java.eclipse.doc.detail_x.x.x.jar
com.fujitsu.jp.fst.pgrelief.java.eclipse.doc.guide_x.x.x.jar
com.fujitsu.jp.fst.pgrelief.java.eclipse_x.x.x.jar
```

*x.x.x refers to the version of plug-in.

<Operations>

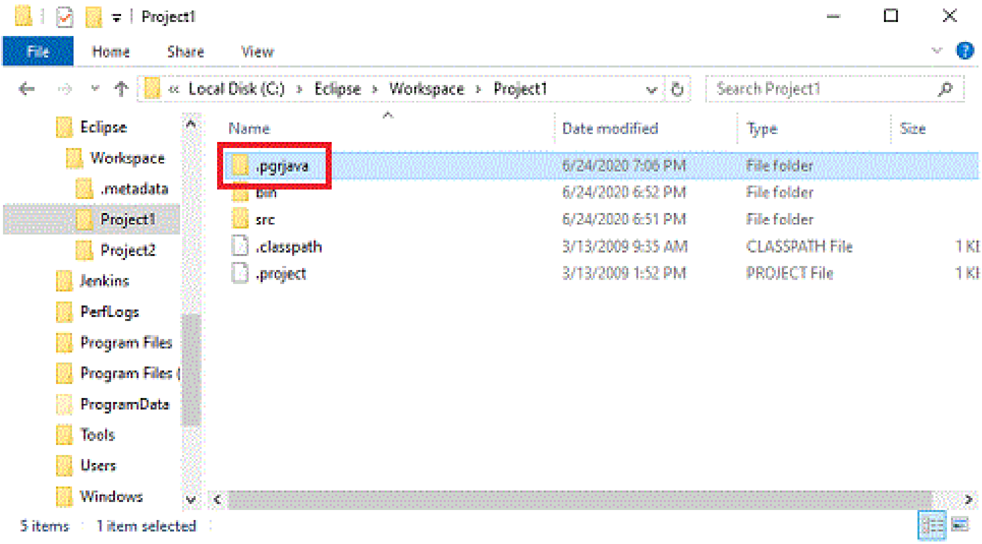
1. If Eclipse is running, exit the eclipse.

2. The plug-in of Agile+ Relief J, which are copied to the plugins folder or the dropins folder of the Eclipse installation folder are deleted.



Name	Date modified	Type	Size
com.fujitsu.jp.fst.pgrelief.java.eclipse.do...	5/29/2020 9:35 PM	Executable Jar File	2,052 KB
com.fujitsu.jp.fst.pgrelief.java.eclipse.do...	5/29/2020 9:35 PM	Executable Jar File	8,181 KB
com.fujitsu.jp.fst.pgrelief.java.eclipse_9.4...	5/29/2020 9:39 PM	Executable Jar File	508 KB

3. Delete the ".pgrjava" folder of the project in the Eclipse workspace.



Name	Date modified	Type	Size
.pgrjava	6/24/2020 7:06 PM	File folder	
bin	6/24/2020 6:52 PM	File folder	
src	6/24/2020 6:51 PM	File folder	
.classpath	3/13/2009 9:35 AM	CLASSPATH File	1 KI
.project	3/13/2009 1:52 PM	PROJECT File	1 KI

Chapter 3 Code check Procedure

This section describes the procedure of performing Code check using Agile^{+} Relief J.

3.1 Perform Code check

Perform Code check for the project that is opened. Please make sure that the Code check is performed without any compilation error.

If the auto build is not set, perform the Code check after building.

The Code check can be performed in the following three ways.

- Select a project for Code check

  One or more check target projects can be selected from workspace.

  A check target project can be selected from the view of Package Explorer, Project Explorer, or Navigator.

  If the selected project contains a non-check target project, the [Code check] command will become invalid.

- Select a file for Code check

  One or more check target files can be selected from workspace.

  A Java file can be selected from the view of the Package Explorer, Project Explorer, Navigator, or Confirmation Status.

  If the selected file contains a non-check target file, the [Code check] command will become invalid.

  If the editor that opens a check target file is active, the Code check can be performed.

- Perform Code check automatically when building

  Because of the synchronization with the building of Eclipse, after a check target file is built, the Code check for the Java file is performed automatically.

  According to the option settings during building, if [Perform code check when building] is selected, the Code check is performed when the Java file is built.

  - Setting method

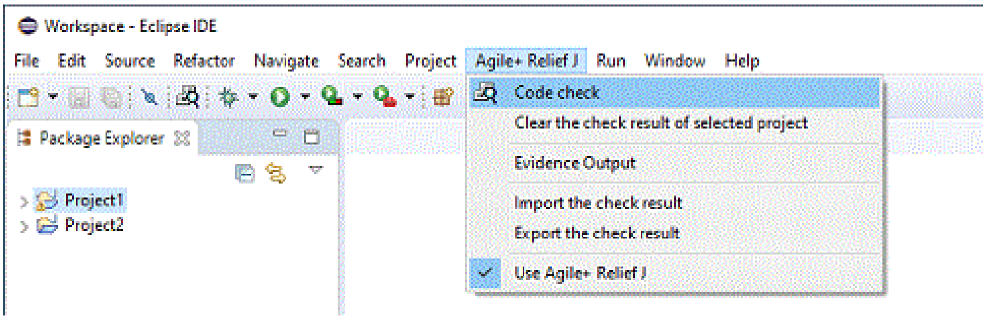
    Please refer to "Setting when building".

After Code check is performed, the views of [Agile+ Relief Message List] and [Agile+ Relief Confirmation Status] are displayed.

In addition, the ".pgrJava" folder is generated in the project folder. The ".pgrJava" folder is used by the Agile^{+} Relief J. Therefore, please do not modify this folder.

The following describes how to perform the Code check by selecting the project and file.

3.1.1 Code check from Menu Bar



Perform Code check for the selected check target project or check target file.

Multiple check target projects or check target files can be selected.

If a project is selected, the Code check is performed for all the check target files of the project.

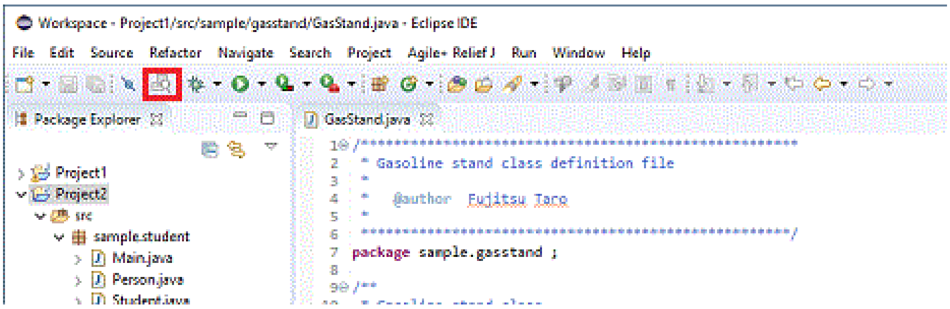
*If no check target project/check target file is selected, this function will be disabled.

*If a check target project/check target file is selected, this function will also be disabled.

<Operations>

1. Select applicable asset for Code check, perform either of the following operations.
    - Select a check target project or check target file from the view of the Package Explorer, Project Explorer, or Navigator.
    - The check target file of a check target project are displayed in an editor.
    - Select a file from the Confirmation Status view.
2. Select [Agile+ Relief J] menu > [Code check].

3.1.2 Code check from Tool bar


Workspace - Project1/src/sample/gasstand/GasStand.java - Eclipse IDE
File Edit Source Refactor Navigate Search Project Agile+ Relief J Run Window Help
Package Explorer
Project1
Project2
src
sample.student
Main.java
Person.java
Student.java
GasStand.java

```
/*******************************************************
 * Gasoline stand class definition file
 *
 *   @author  Fujitsu Taro
 *
 *******************************************************/
package sample.gasstand ;

/**
```

Perform Code check for the selected check target project or check target file.

Multiple check target projects or check target files can be selected.

If a project is selected, the Code check is performed for all the check target files of the project.

*If no check target project/check target file is selected, this function will be disabled.

*If a check target project/check target file is selected, this function will also be disabled.

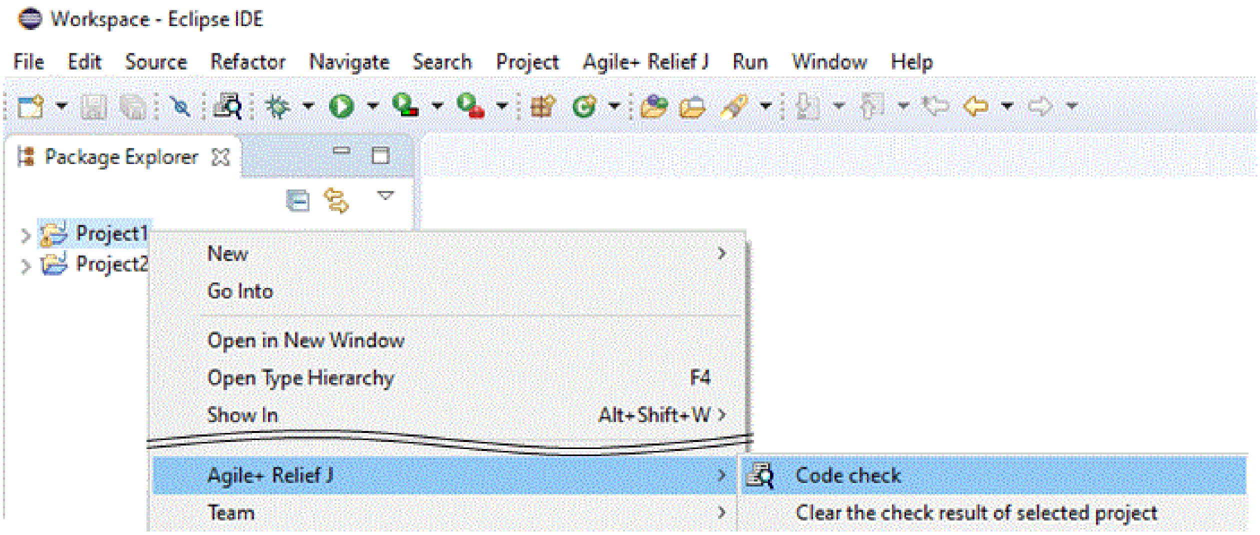
<Operations>

1. Select an object for Code check, perform either of the following operations.
    - Select a check target project or check target file from the view of the Package Explorer, Project Explorer, or Navigator.

- The check target file of a check target project are displayed in an editor.
- Select a file from the Confirmation Status view.

2. Click the icon of Code check on the tool bar

3.1.3 Code check from Pop-Up Menu



Perform Code check for the selected check target project or check target file.

Multiple check target projects or check target files can be selected.

If a project is selected, the Code check is performed for all the check target files of the project.

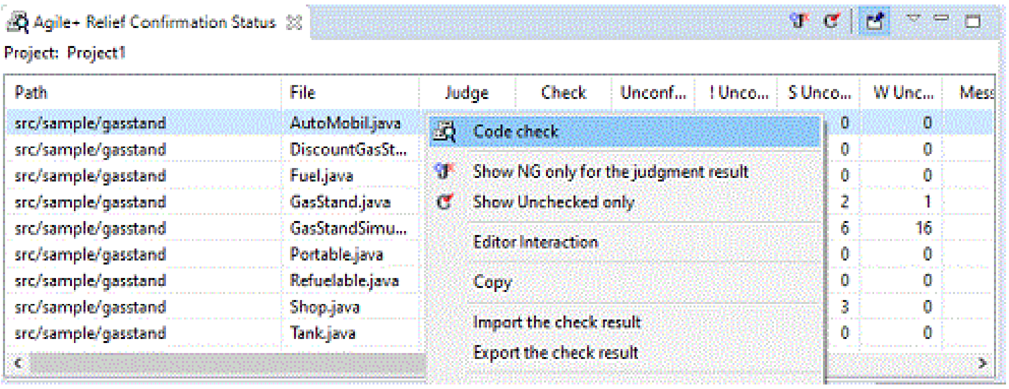
*If no check target project/check target file is selected, this function will be disabled.

*If a check target project/check target file is selected, this function will also be disabled.

<Operations>

1. Select a check target project or check target file from the view of the Package Explorer, Project Explorer, or Navigator. A pop-up menu is displayed.
2. Select [Agile+ Relief J] > [Code check].

3.1.4 Code check from Confirmation Status



Agile+ Relief Confirmation Status

Project: Project1

Path	File	Judge	Check	Unconf...	! Unco...	S Unco...	W Unc...	Mess
src/sample/gasstand	AutoMobil.java					0	0	
src/sample/gasstand	DiscountGasSt...					0	0	
src/sample/gasstand	Fuel.java					0	0	
src/sample/gasstand	GasStand.java					2	1	
src/sample/gasstand	GasStandSimu...					6	16	
src/sample/gasstand	Portable.java					0	0	
src/sample/gasstand	Refuelable.java					0	0	
src/sample/gasstand	Shop.java					3	0	
src/sample/gasstand	Tank.java					0	0	

Perform the Code check for the file corresponding to the line selected in the Confirmation Status.

Multiple lines can be selected.

<Operations>

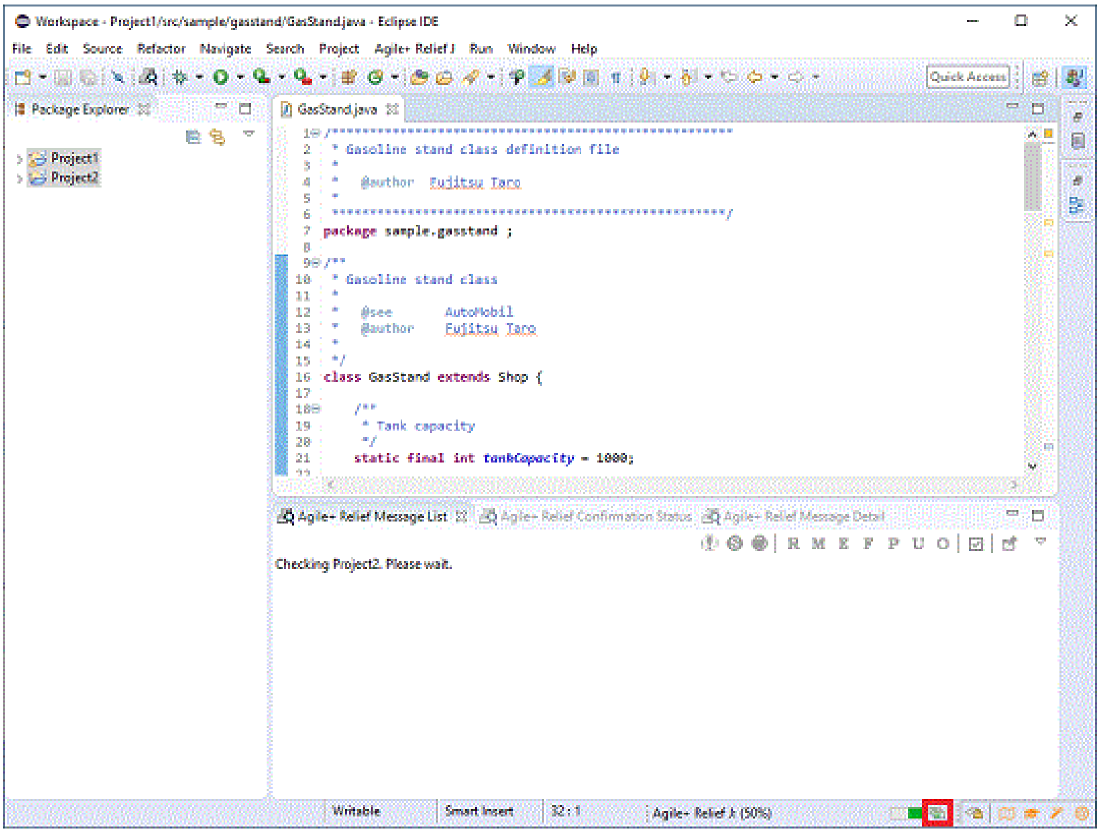
1. Select a file from the Confirmation Status.
2. Right-click the file and select [Code check].

The Code check from Confirmation Status can be performed using menu bar and tool bar.

3.1.5 Display the Process of Code check

During Code check, you can confirm the process of the Code check through the status view.

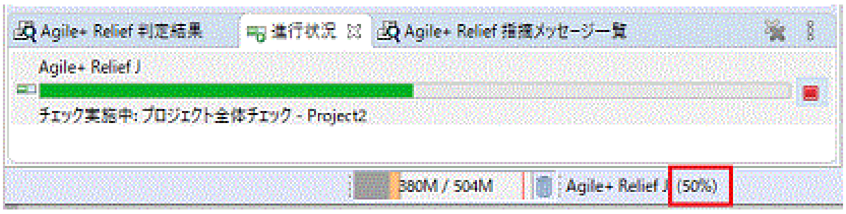
Click button at the lower-right corner in the window of Eclipse, and the status view will be displayed.


Workspace - Project1/src/sample/gasstand/GasStand.java - Eclipse IDE
File Edit Source Refactor Navigate Search Project Agile+ Relief J Run Window Help
Quick Access
Package Explorer
Project1
Project2
GasStand.java
Agile+ Relief Message List
Agile+ Relief Confirmation Status
Agile+ Relief Message Detail
R M E F P U O
Writable
Smart Insert
32 : 1
Agile+ Relief J (50%)

```
/*******************************************************
 * Gasoline stand class definition file
 *
 *   @author  Fujitsu Taro
 *
 *******************************************************/
package sample.gasstand ;

/**
 * Gasoline stand class
 *
 *   @see        AutoMobil
 *   @author     Fujitsu Taro
 *
 */
class GasStand extends Shop {

    /**
     * Tank capacity
     */
    static final int tankCapacity = 1000;
```

Checking Project2. Please wait.

When multiple projects are selected, the status of these projects are displayed in percentage on the status bar.



チェック実施中: プロジェクト全体チェック - Project2

3.2 Confirm Code check Result

Confirm the Code check result through the following views.

Open an applicable check target project and select [Use Agile+ Relief J] from the [Agile+ Relief J] menu.

- Message List

  Confirm the messages that are regarded as the check result in the message list (importance degree, confirmed, category, rule code, message, memo, file name, path name, and line number).

  - The Confirmed and Memo items are used for confirmation records of the message.

  - The file name, path name, and line number are used for editor interaction.

- Message Detail

  Message details (rules, classification, contents to be checked, meanings, and handling methods) can be confirmed.

- Confirmation Status

  The Confirmatin Status that is regarded as the check result in the message list (path name, file name, determination, check, and number of messages) can be confirmed.

The items of importance degree, category, and unconfirmed are displayed for the number of messages according to the total matrix in the file unit.

- The file name, path name, and line number are used for editor interaction.

3.2.1 Confirm Messages

The message may be indicated as rule violation during Code check. Messages can be confirmed through the view of Agile+ Relief message list.

Confirm the message through the following steps.

1. Display message list
2. Confirm messages
3. Confirm message details
4. Confirm the source codes of messages
5. Record the judgment result
6. Record the judgment memo

The messages corresponding to the selected check target project or check target file are displayed in the message list. The confirmation result of the message can be recorded through the Confirmed and Memo items in the message list.

3.2.1.1 Display Message List

The message list can be linked with the selected project in the following views to display the targeted messages.

- Package Explorer

  This view displays the messages relevant to the selected check target project, source folder, package, and check target file.

- Project Explorer

  This view displays the messages relevant to the selected check target project, source folder, package, and check target file.

- Navigator

  This view displays the messages relevant to the selected check target project, check target file, and folder.

- Confirmation Status

  This view displays the messages of the selected file.

The following table describes the actions of selecting project units in the views mentioned above.

Item to be selected	Description
Project	All the messages under the selected projects are displayed. When multiple projects are selected, the first-selected project will be targeted.
Package	All the messages right under package selected are displayed. When multiple packages are selected, the first-selected package will be targeted.
File	All the messages under the selected folders are displayed. When multiple files are selected, the first-selected file will be targeted.
Source folder	All the messages under the selected source folders are displayed. When multiple source folders are selected, the first-selected source folder will be targeted.
Folder	All the messages under the selected folders are displayed.

Item to be selected	Description
	When multiple folders are selected, the first-selected folder will be targeted.

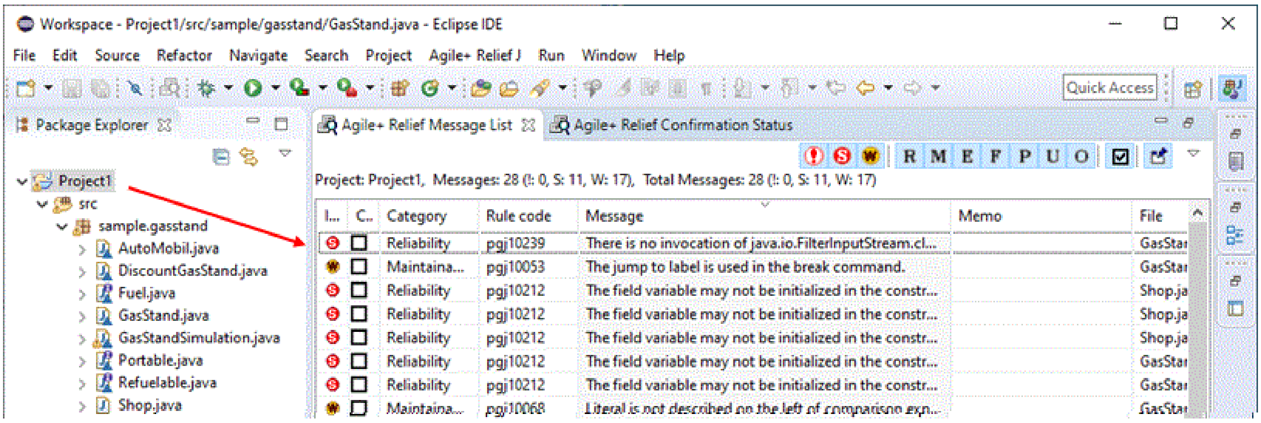
In initial state, the Collaborate with other views is enabled.

To perform direct operations on other views, the contents in the message list are directly linked with other views after (Collaborate with other views) of the tool bar is off.

Example

- Display the messages based on the project selection from the Package Explorer

  After "Project1" is selected from the Package Explorer, the messages corresponding to the Java file of "Project1" will be displayed in the message list

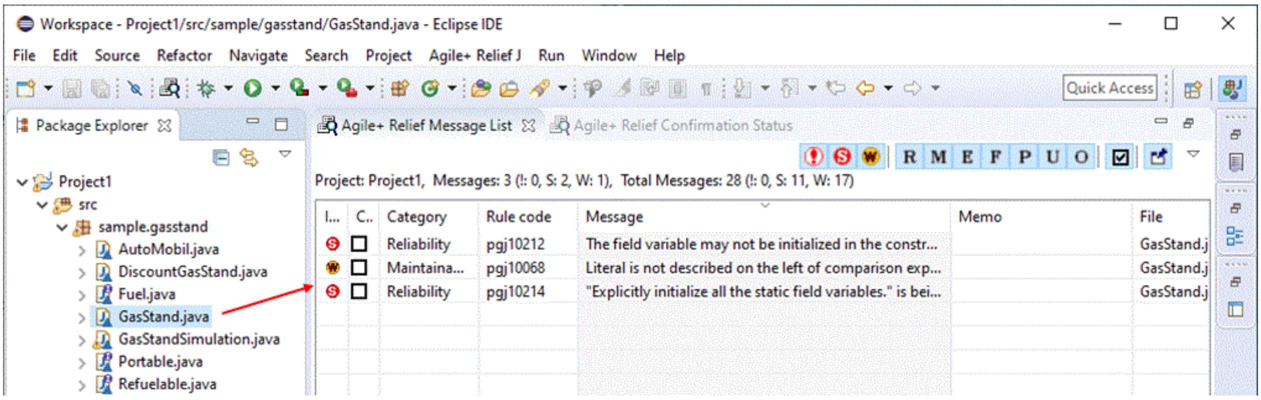

Workspace - Project1/src/sample/gasstand/GasStand.java - Eclipse IDE
File Edit Source Refactor Navigate Search Project Agile+ Relief J Run Window Help
Quick Access
Package Explorer
Project1
src
sample.gasstand
AutoMobil.java
DiscountGasStand.java
Fuel.java
GasStand.java
GasStandSimulation.java
Portable.java
Refuelable.java
Shop.java
Agile+ Relief Message List
Agile+ Relief Confirmation Status
R M E F P U O

Project: Project1, Messages: 28 (!: 0, S: 11, W: 17), Total Messages: 28 (!: 0, S: 11, W: 17)

I...	C..	Category	Rule code	Message	Memo	File
S	□	Reliability	pgj10239	There is no invocation of java.io.FilterInputStream.cl...		GasStar
W	□	Maintaina...	pgj10053	The jump to label is used in the break command.		GasStar
S	□	Reliability	pgj10212	The field variable may not be initialized in the constr...		Shop.ja
S	□	Reliability	pgj10212	The field variable may not be initialized in the constr...		Shop.ja
S	□	Reliability	pgj10212	The field variable may not be initialized in the constr...		Shop.ja
S	□	Reliability	pgj10212	The field variable may not be initialized in the constr...		GasStar
S	□	Reliability	pgj10212	The field variable may not be initialized in the constr...		GasStar
W	□	Maintaina...	pgj10068	Literal is not described on the left of comparison exp...		GasStar

- Display the messages based on the Java file selection from the Package Explorer

  After "GasStand.Java" is selected from the Package Explorer, the messages corresponding to the file will be displayed in the message list.

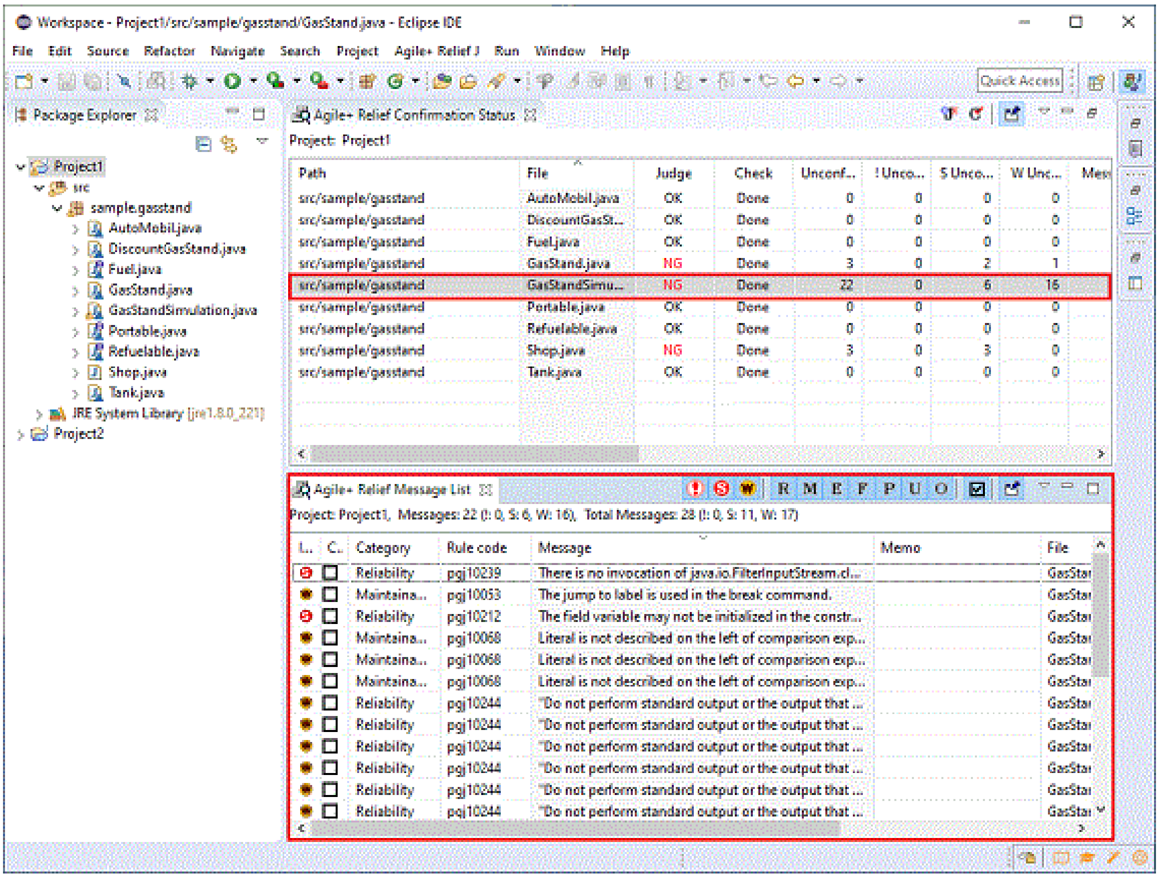

Workspace - Project1/src/sample/gasstand/GasStand.java - Eclipse IDE
File Edit Source Refactor Navigate Search Project Agile+ Relief J Run Window Help
Quick Access
Package Explorer
Project1
src
sample.gasstand
AutoMobil.java
DiscountGasStand.java
Fuel.java
GasStand.java
GasStandSimulation.java
Portable.java
Refuelable.java
Agile+ Relief Message List
Agile+ Relief Confirmation Status
R M E F P U O

Project: Project1, Messages: 3 (!: 0, S: 2, W: 1), Total Messages: 28 (!: 0, S: 11, W: 17)

I...	C..	Category	Rule code	Message	Memo	File
S	□	Reliability	pgj10212	The field variable may not be initialized in the constr...		GasStand.j
W	□	Maintaina...	pgj10068	Literal is not described on the left of comparison exp...		GasStand.j
S	□	Reliability	pgj10214	"Explicitly initialize all the static field variables." is bei...		GasStand.j

- Display the messages based on the file selection from the confirmation status

  After a line in "GasStand.Java" is selected from the confirmation status, the messages corresponding to the file will be displayed in the message list.


Workspace - Project1/src/sample/gasstand/GasStand.java - Eclipse IDE
File Edit Source Refactor Navigate Search Project Agile+ Relief J Run Window Help
Quick Access
Package Explorer
Project1
src
sample.gasstand
AutoMobil.java
DiscountGasStand.java
Fuel.java
GasStand.java
GasStandSimulation.java
Portable.java
Refuelable.java
Shop.java
Tank.java
JRE System Library [jre1.8.0_221]
Project2
Agile+ Relief Confirmation Status
Agile+ Relief Message List
R M E F P U O

Project: Project1

Path	File	Judge	Check	Unconf...	! Unco...	S Unco...	W Unc...	Mes
src/sample/gasstand	AutoMobil.java	OK	Done	0	0	0	0	
src/sample/gasstand	DiscountGasSt...	OK	Done	0	0	0	0	
src/sample/gasstand	Fuel.java	OK	Done	0	0	0	0	
src/sample/gasstand	GasStand.java	NG	Done	3	0	2	1	
src/sample/gasstand	GasStandSimu...	NG	Done	22	0	6	16	
src/sample/gasstand	Portable.java	OK	Done	0	0	0	0	
src/sample/gasstand	Refuelable.java	OK	Done	0	0	0	0	
src/sample/gasstand	Shop.java	NG	Done	3	0	3	0	
src/sample/gasstand	Tank.java	OK	Done	0	0	0	0	

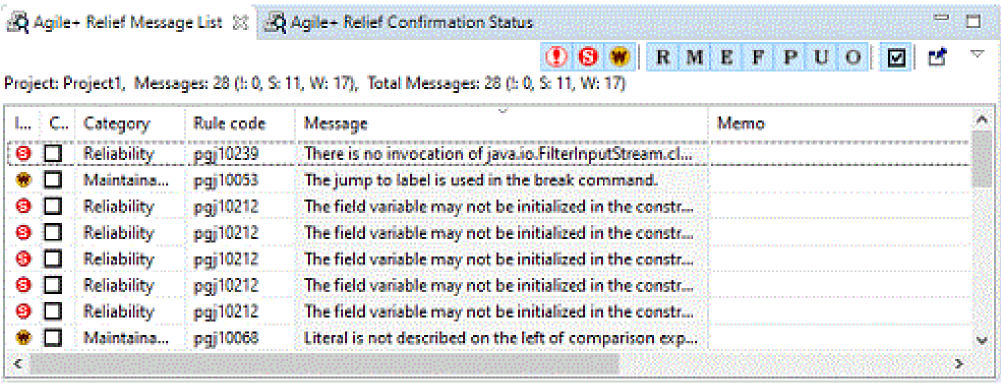
Project: Project1, Messages: 22 (!: 0, S: 6, W: 16), Total Messages: 28 (!: 0, S: 11, W: 17)

L...	C...	Category	Rule code	Message	Memo	File
S	□	Reliability	pgj10239	There is no invocation of java.io.FilterInputStream.cl...		GasStar
W	□	Maintaina...	pgj10053	The jump to label is used in the break command.		GasStar
S	□	Reliability	pgj10212	The field variable may not be initialized in the constr...		GasStar
W	□	Maintaina...	pgj10068	Literal is not described on the left of comparison exp...		GasStar
W	□	Maintaina...	pgj10068	Literal is not described on the left of comparison exp...		GasStar
W	□	Maintaina...	pgj10068	Literal is not described on the left of comparison exp...		GasStar
W	□	Reliability	pgj10244	"Do not perform standard output or the output that ...		GasStar
W	□	Reliability	pgj10244	"Do not perform standard output or the output that ...		GasStar
W	□	Reliability	pgj10244	"Do not perform standard output or the output that ...		GasStar
W	□	Reliability	pgj10244	"Do not perform standard output or the output that ...		GasStar
W	□	Reliability	pgj10244	"Do not perform standard output or the output that ...		GasStar
W	□	Reliability	pgj10244	"Do not perform standard output or the output that ...		GasStar

3.2.1.2 Confirm Messages

Confirm the messages according to the message list.

Confirm the messages and number of unconfirmed messages in the message list.



Project: Project1, Messages: 28 (!: 0, S: 11, W: 17), Total Messages: 28 (!: 0, S: 11, W: 17)

I...	C...	Category	Rule code	Message	Memo
S	□	Reliability	pgj10239	There is no invocation of java.io.FilterInputStream.cl...	
W	□	Maintaina...	pgj10053	The jump to label is used in the break command.	
S	□	Reliability	pgj10212	The field variable may not be initialized in the constr...	
S	□	Reliability	pgj10212	The field variable may not be initialized in the constr...	
S	□	Reliability	pgj10212	The field variable may not be initialized in the constr...	
S	□	Reliability	pgj10212	The field variable may not be initialized in the constr...	
S	□	Reliability	pgj10212	The field variable may not be initialized in the constr...	
W	□	Maintaina...	pgj10068	Literal is not described on the left of comparison exp...	

The following table describes the display items of the message list.

Header part

Item to Be Displayed	Description
Project	The targeted project name is displayed.
Messages	The number of messages of the selected project or file is displayed. The details of importance degree (!, S, W) is also displayed.
Total Messages	The number of messages of all projects is displayed. The details of importance degree (!, S, W) is also displayed.

List part

Item to Be Displayed	Description
Importance degree	The importance degrees of a rule are displayed in icons. The icons are as follows. ! :"Importance degree: !" indicates that the operating environment error. S :"Importance degree: S" indicates the most critical rule. W :"Importance degree: W" indicates the critical rule.
Confirmed	Display confirmation status of the messages. This item can be enabled and disabled through the check box. Through combination with the filter, it is ok to not display unnecessary information (confirmed information .etc).
Category	Display the rule category. The rules have following categories. - Reliability - Maintainability/Readability - Efficiency - Functionality - Portability - User rules - Other (Note 1)
Rule code	Display the rule code.
Message	Display the contents of rule violation.
Memo	Display the contents of memo. The reasons corresponding to the comments in revision and the messages that are no need to process can be set as the pending content.
File name	Display file name.
Path name	Display path name.
Line number	Display line number.

(Note 1) Some indication of FindBugs and the PMD may become the categories of "Other".

3.2.1.3 Confirm Message Details

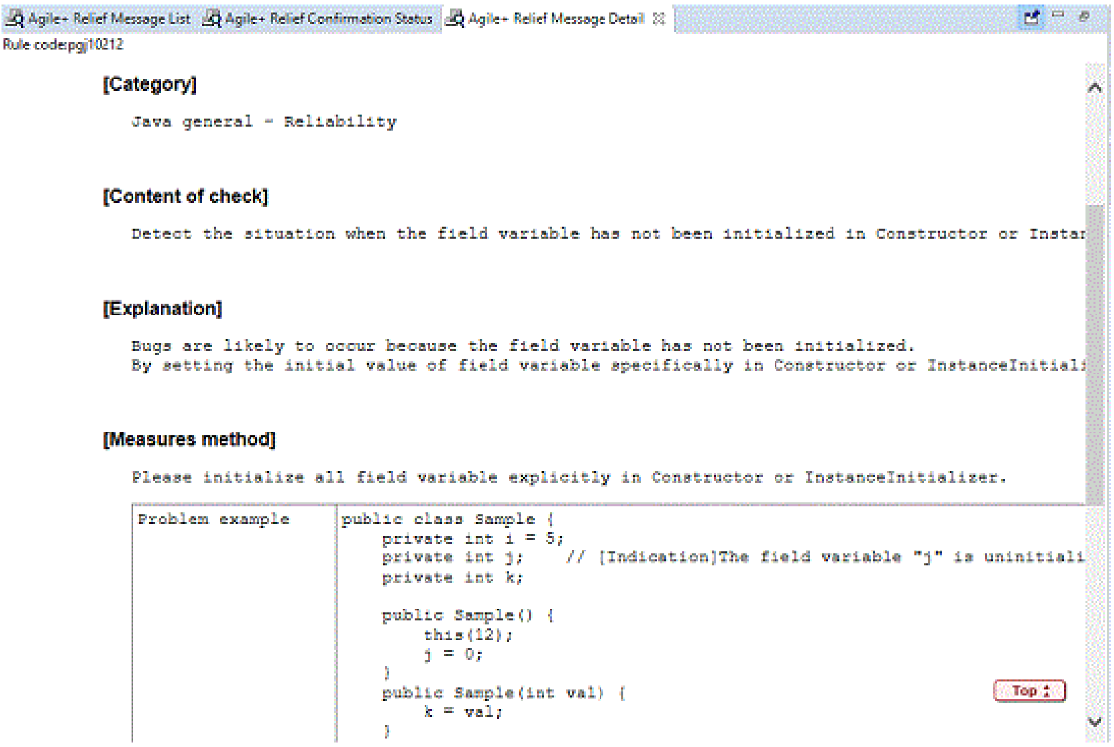
Confirm message details such as problem points and improvement methods.

If the messages whose details need to be confirmed is selected from the message list, the details are displayed in the [Agile+ Relief Message Detail] view.

In initial state, the Collaborate with other views is enabled.

To perform direct operations on other views, the contents in the message list are directly linked with other views after (Collaborate with other views) of the tool bar is off.

Display content


Agile+ Relief Message List
Agile+ Relief Confirmation Status
Agile+ Relief Message Detail
Top

Rule code:pgj10212

[Category]

```
Java general - Reliability
```

[Content of check]

```
Detect the situation when the field variable has not been initialized in Constructor or Instar
```

[Explanation]

```
Bugs are likely to occur because the field variable has not been initialized.
By setting the initial value of field variable specifically in Constructor or InstanceInitiali
```

[Measures method]

```
Please initialize all field variable explicitly in Constructor or InstanceInitializer.
```

Problem example	

```
public class Sample {
    private int i = 5;
    private int j;    // [Indication]The field variable "j" is uninitiali
    private int k;

    public Sample() {
        this(12);
        j = 0;
    }
    public Sample(int val) {
        k = val;
    }
```

The following table describes the item to be displayed.

Item to Be Displayed	Description
Rule code	Display the rule codes.
Rule content	Display the rule contents.
Category	Display the rule category.
Content of check	Display the check contents that checking the rules.
Explanation	Display the meanings and problem points of the rules.
Measures method	Display the handing methods of the rules with instances.

3.2.1.4 Confirm the Source Codes of the Messages

Confirm messages during Code check through the source code.

Through editor interaction, open the source codes of the object that is generated from the message in the editor and locate the message.

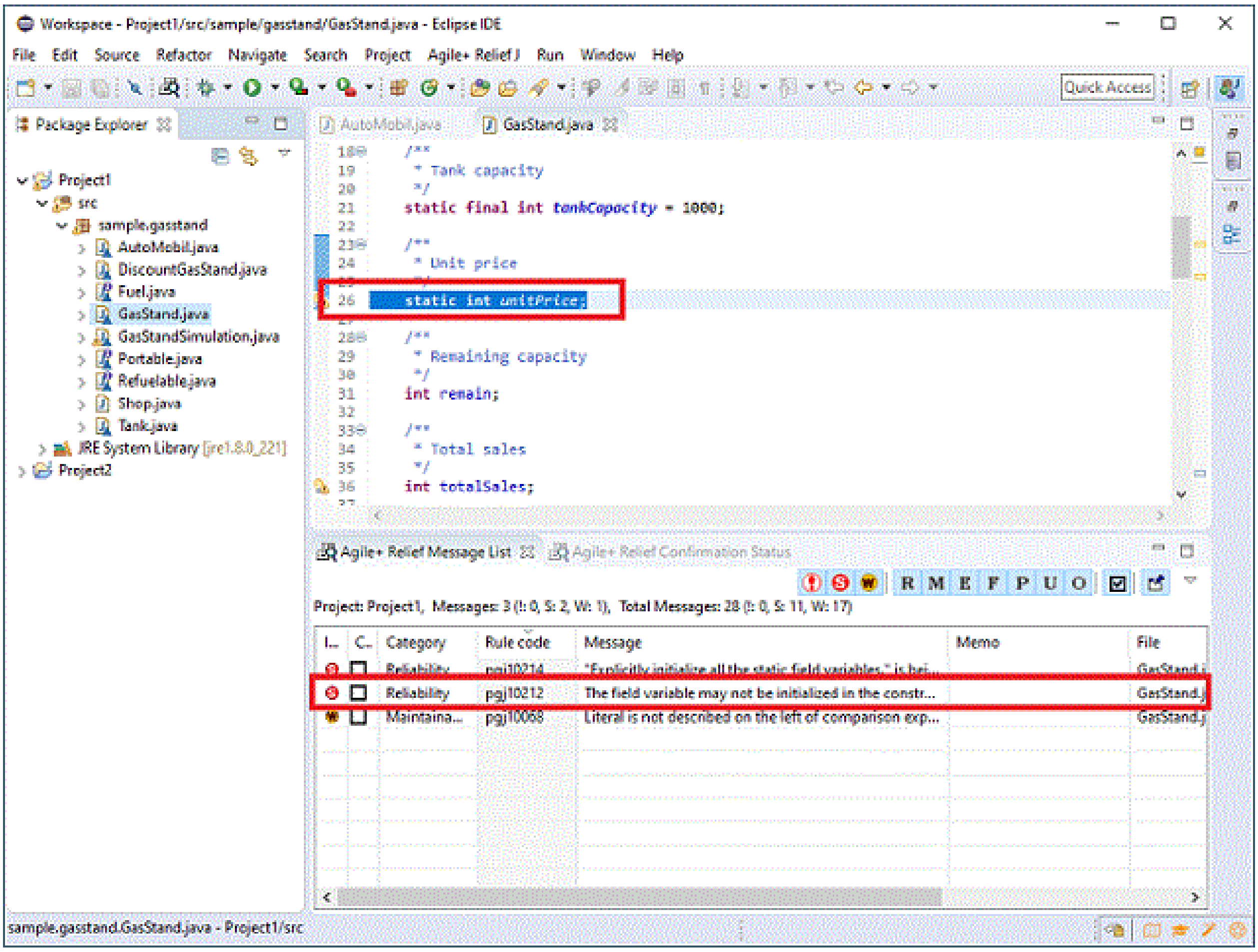
If the line number of the message is 0, the editor interaction is performed as follows.

- If the source code of an object is not opened in an editor, open them and locate the first line.
- If the source code of an object is opened in an editor, this editor is displayed directly.

<Operations>

1. Select a line from the message list and perform either of the following operations.
   - Double-click
   - Select [Editor Interaction] from the pop-up menu.

Example: double-click a line from the message list to move the focus to the line of the message of the targeted file.

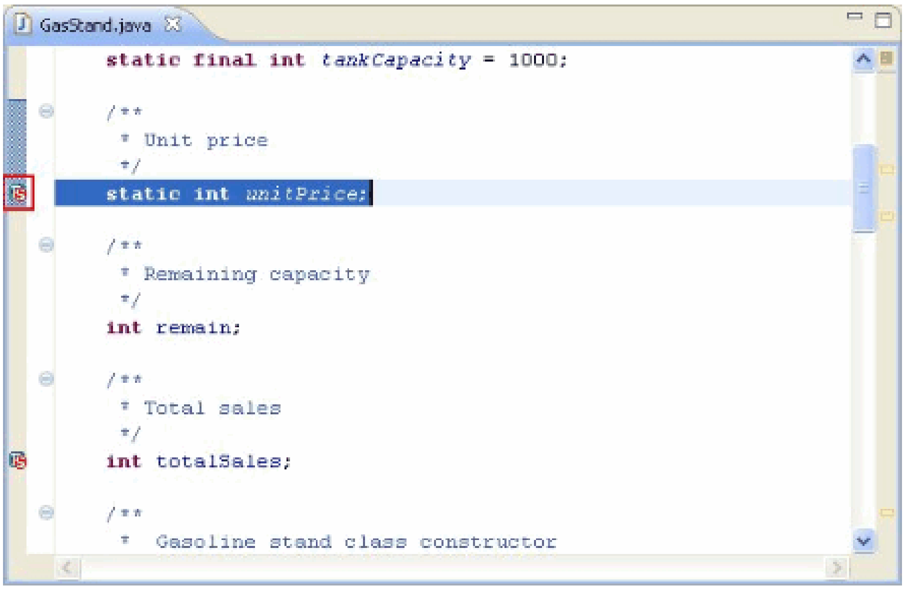

Workspace - Project1/src/sample/gasstand/GasStand.java - Eclipse IDE
File Edit Source Refactor Navigate Search Project Agile+ Relief J Run Window Help
Quick Access
Package Explorer
Project1
src
sample.gasstand
AutoMobil.java
DiscountGasStand.java
Fuel.java
GasStand.java
GasStandSimulation.java
Portable.java
Refuelable.java
Shop.java
Tank.java
JRE System Library [jre1.8.0_221]
Project2
AutoMobil.java
GasStand.java
Agile+ Relief Message List
Agile+ Relief Confirmation Status
R M E F P U O
sample.gasstand.GasStand.java - Project1/src

```
    /**
     * Tank capacity
     */
    static final int tankCapacity = 1000;

    /**
     * Unit price
     */
    static int unitPrice;

    /**
     * Remaining capacity
     */
    int remain;

    /**
     * Total sales
     */
    int totalSales;
```

Project: Project1, Messages: 3 (!: 0, S: 2, W: 1), Total Messages: 28 (!: 0, S: 11, W: 17)

I...	C...	Category	Rule code	Message	Memo	File
S	□	Reliability	pgj10214	"Explicitly initialize all the static field variables." is bei...		GasStand.j
S	□	Reliability	pgj10212	The field variable may not be initialized in the constr...		GasStand.j
W	□	Maintaina...	pgj10068	Literal is not described on the left of comparison exp...		GasStand.j

In the marker display area of the editor, rule violations in the Code check result are identified with the marker that indicates the importance degree of the message.



```
static final int tankCapacity = 1000;

/**
 * Unit price
 */
static int unitPrice;

/**
 * Remaining capacity
 */
int remain;

/**
 * Total sales
 */
int totalSales;

/**
 *  Gasoline stand class constructor
```

Put the mouse cursor on the marker, the content of the message can be displayed. If multiple messages exist in one line, the contents are displayed collectively.

Information

In Eclipse 3.4, the Agile$^+$ Relief message can be confirmed through the marker view.

3.2.1.5 Record Confirmation Status

Record the confirmation records of the message as the confirmation status.

For the record of conformation status, use the checkbox of [Confirmed] column of the message list. If Confirmed is checked, you can cancel the check to cancel the confirmation.

When only the message that is not terminated is displayed, the message can be added after the confirmed filter is off.

<Operations>

1. Select the recorded messages from the message list.
2. Record the confirmation status, perform either of the following operations.
    - Check or uncheck the [Confirmed] checkbox.
    - Select [Mark Confirmed] or [Unmark Confirmed] from the pop-up menu.

When the Code check results after the second Code check are indicated again, the confirmed message may be recorded directly as confirmed, but if the source code of the message line is different from the previous ones, the check of Confirmed will be cancelled.

3.2.1.6 Record Confirmation Memo

When the memo as confirmation record of message is required, it is recorded as the memo for the conformation of messages.

After the reason for not processing the message is recorded, the part that does not require processing can be known by referring to the memo when the same contents are indicated during the next Code check. Therefore, the content of the message does not need to be confirmed again.

<Operations>

1. Select a message.
2. Click the memo column.

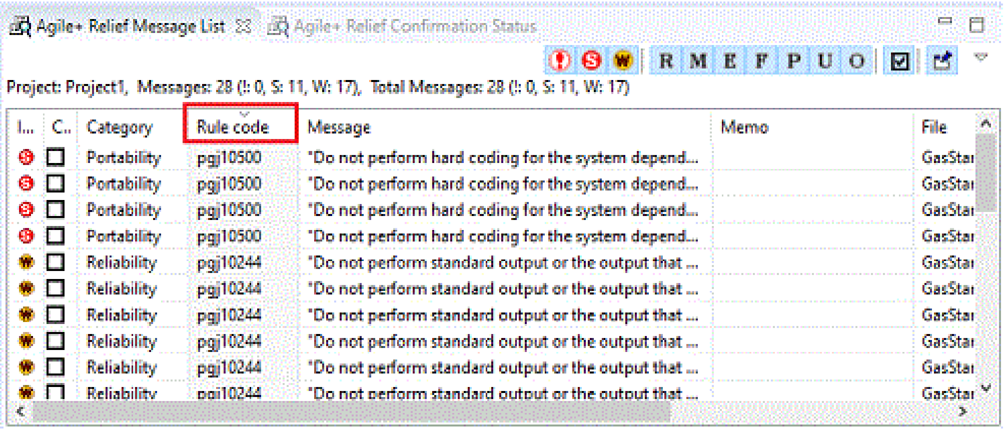
   The input field is displayed.
3. Enter memo and press the Enter key.

3.2.1.7 Sort Message List

Sort the displayed contents of messages.

The displayed content can be sort by clicking each project name on the header of message list.

Example: When sorting by Rule Code



Project: Project1, Messages: 28 (!: 0, S: 11, W: 17), Total Messages: 28 (!: 0, S: 11, W: 17)

I...	C...	Category	Rule code	Message	Memo	File
S	□	Portability	pgj10500	"Do not perform hard coding for the system depend...		GasStar
S	□	Portability	pgj10500	"Do not perform hard coding for the system depend...		GasStar
S	□	Portability	pgj10500	"Do not perform hard coding for the system depend...		GasStar
S	□	Portability	pgj10500	"Do not perform hard coding for the system depend...		GasStar
W	□	Reliability	pgj10244	"Do not perform standard output or the output that ...		GasStar
W	□	Reliability	pgj10244	"Do not perform standard output or the output that ...		GasStar
W	□	Reliability	pgj10244	"Do not perform standard output or the output that ...		GasStar
W	□	Reliability	pgj10244	"Do not perform standard output or the output that ...		GasStar
W	□	Reliability	pgj10244	"Do not perform standard output or the output that ...		GasStar
W	□	Reliability	pgj10244	"Do not perform standard output or the output that ...		GasStar

3.2.1.8 Filtering Message List

Filter according to the condition of the displayed message content.

The filtering conditions contain importance degree, category, and confirmation.

Type of filter

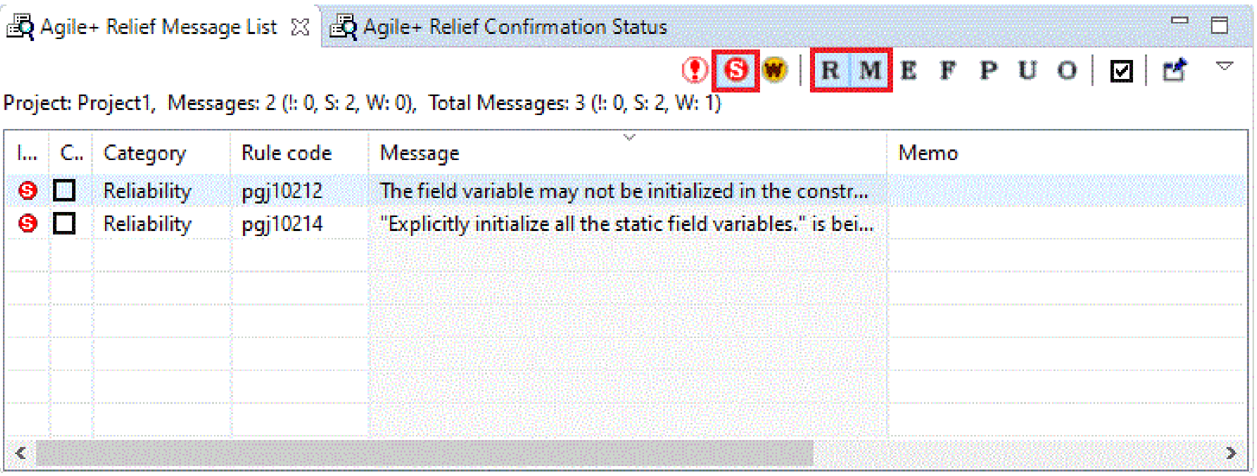
Classification	Icon	Filter items
Importance degree	!	Importance degree:!
	S	Importance degree:S
	W	Importance degree:W
Category	R	Reliability
	M	Maintainability/Readability
	E	Efficiency
	F	Functionality
	P	Portability
	U	User rules
	O	Other
Confirmation	☑	Confirmed

There are three methods for the specification of filtering, which include filtering through the icon of tool bar, view menu, and pop-up menu.

- Specify by icon of tool bar

  Select any icon for filtering from the tool bar.

  Example: When Importance degree: S, Category: R(Reliability) and M(Maintainability/Readability) are specified



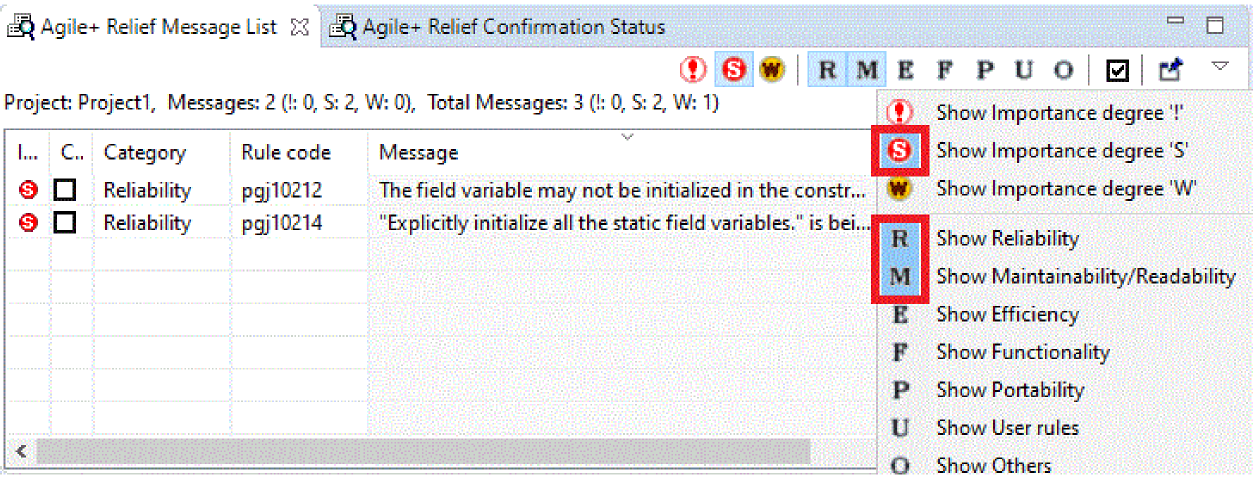
Project: Project1, Messages: 2 (!: 0, S: 2, W: 0), Total Messages: 3 (!: 0, S: 2, W: 1)

I...	C..	Category	Rule code	Message	Memo
S	□	Reliability	pgj10212	The field variable may not be initialized in the constr...	
S	□	Reliability	pgj10214	"Explicitly initialize all the static field variables." is bei...	

- Specify by view menu

  Select any project for filtering from the view menu.

  Example: When Importance degree: S, Category: R(Reliability) and M(Maintainability/Readability) are specified


Agile+ Relief Message List
Agile+ Relief Confirmation Status
! S W R M E F P U O ☑
Show Importance degree '!'
Show Importance degree 'S'
Show Importance degree 'W'
R Show Reliability
M Show Maintainability/Readability
E Show Efficiency
F Show Functionality
P Show Portability
U Show User rules
O Show Others

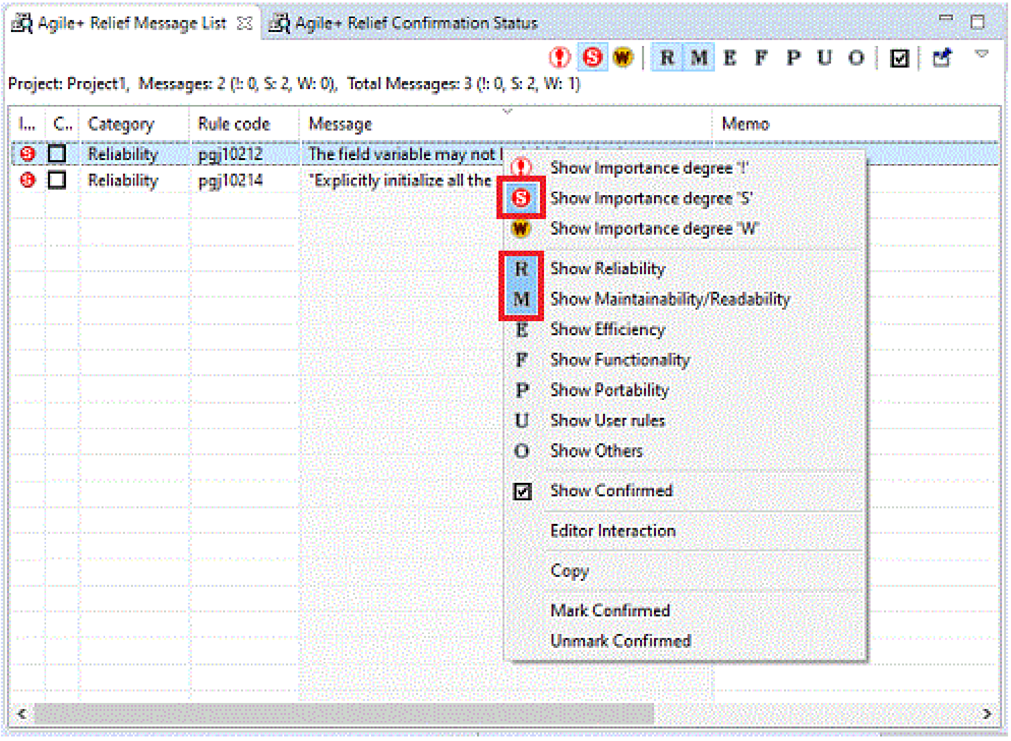
Project: Project1, Messages: 2 (!: 0, S: 2, W: 0), Total Messages: 3 (!: 0, S: 2, W: 1)

I...	C..	Category	Rule code	Message
S	□	Reliability	pgj10212	The field variable may not be initialized in the constr...
S	□	Reliability	pgj10214	"Explicitly initialize all the static field variables." is bei...

- Specify by pop-up menu

  Select any project for filtering from the pop-up menu.

Example: When Importance degree: S, Category: R(Reliability) and M(Maintainability/Readability) are specified



Project: Project1, Messages: 2 (!: 0, S: 2, W: 0), Total Messages: 3 (!: 0, S: 2, W: 1)

I...	C..	Category	Rule code	Message	Memo
S	□	Reliability	pgj10212	The field variable may not l	
S	□	Reliability	pgj10214	"Explicitly initialize all the	

3.2.2 Confirm Judgment Results

In the confirmation status, the Code check result and the confirmation status of messages are displayed as the following items.

- Judgment result (OK/NG)
- Whether Code check is performed
- Number of unconfirmed messages (importance degree)
- Number of messages (importance degree and category)

When the importance degree is "!" or "S", and the number of unconfirmed messages is greater than one, the confirmation status is displayed as NG. Otherwise, the confirmation status is displayed as OK.

Please check whether the judgment results of each file are OK or NG in the confirmation of the judgment result, and confirm the messages for NG files.

3.2.2.1 Display Judgment Results

The judgment results can be selected and linked in the following views, and the judgment results of the applicable assets are displayed.

- Package Explorer

  The judgment results that are correspondent to the selected check target project, source folder, package, and check target file are displayed.

- Project Explorer

  The judgment results that are correspondent to the selected check target project, source folder, package, and check target file are displayed.

- Navigator

  The judgment results that are correspondent to the selected check target project, check target file, and folder are displayed.

The following table describes the actions of the selected items of the views mentioned above.

Items to Be Selected	Description
Project	All the judgment results under the selected projects are displayed. When multiple projects are selected, the first-selected project will be targeted.
Package	The judgment results under the selected packages are displayed. When multiple packages are selected, the first-selected package will be targeted.
File	The judgment results under the selected files are displayed. When multiple files are selected, the first-selected file will be targeted.
Source folder	All the judgment results under the selected source folders are displayed. When multiple source folders are selected, the first-selected source folder will be targeted.
Folder	The judgment results under the selected folders are displayed. When multiple folders are selected, the first-selected folder will be targeted.

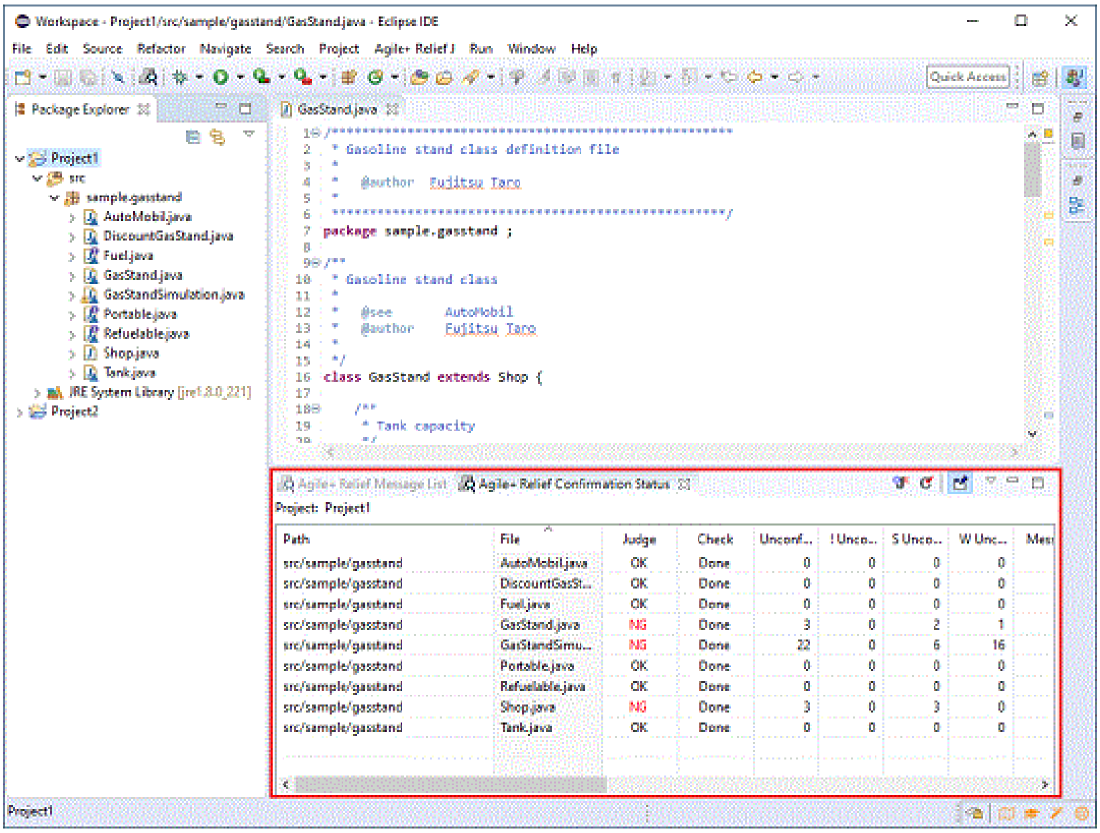
Under initial status, the Collaborate with other views is on.

To perform direct operations on other views, the contents in the message list are directly linked with other views after (Collaborate with other views) of the tool bar is off.

Example

- Display according to the project selection from the Package Explorer

  After Project1 is selected from the Package Explorer, the confirmation status corresponding to the Java files of Project1 is displayed.



Workspace - Project1/src/sample/gasstand/GasStand.java - Eclipse IDE
File Edit Source Refactor Navigate Search Project Agile+ Relief J Run Window Help
Quick Access
Package Explorer
Project1
src
sample.gasstand
AutoMobil.java
DiscountGasStand.java
Fuel.java
GasStand.java
GasStandSimulation.java
Portable.java
Refuelable.java
Shop.java
Tank.java
JRE System Library [jre1.8.0_221]
Project2
GasStand.java
Agile+ Relief Message List
Agile+ Relief Confirmation Status
Project1

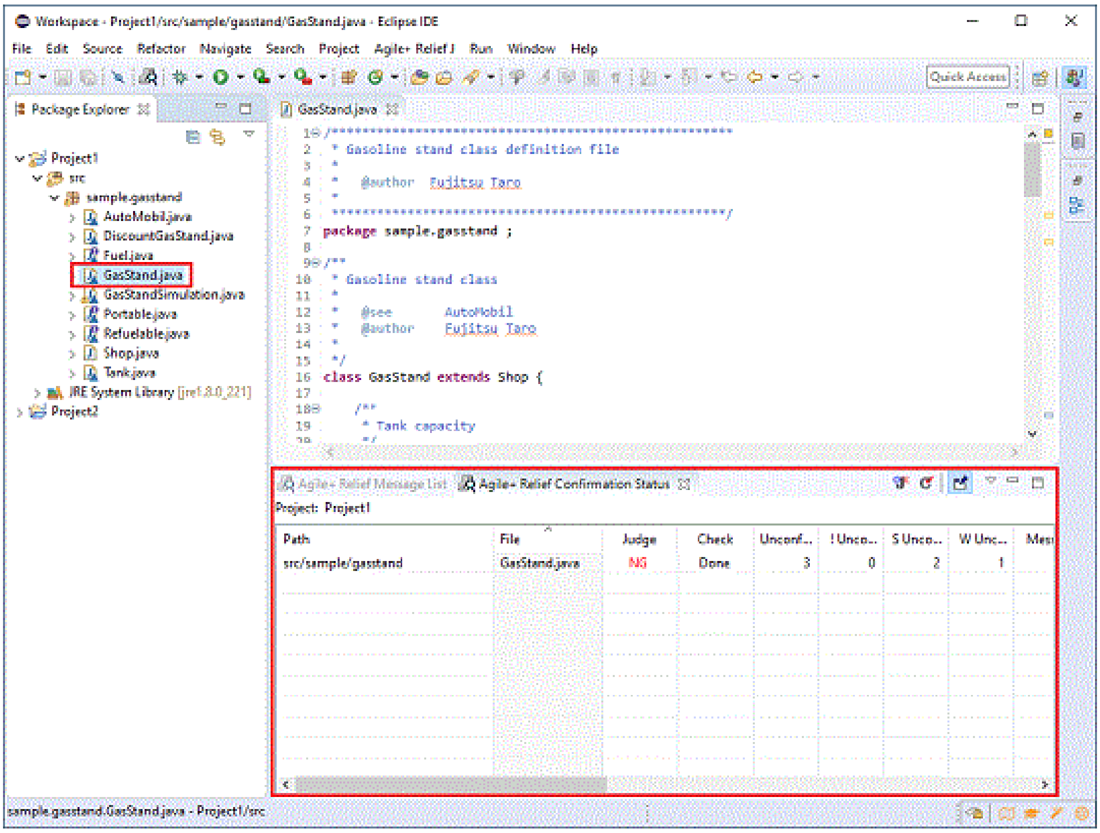
```
/*******************************************************
 * Gasoline stand class definition file
 *
 *   @author  Fujitsu Taro
 *
 *******************************************************/
package sample.gasstand ;

/**
 * Gasoline stand class
 *
 *   @see       AutoMobil
 *   @author    Fujitsu Taro
 *
 */
class GasStand extends Shop {

    /**
     * Tank capacity
```

Project: Project1

Path	File	Judge	Check	Unconf...	! Unco...	S Unco...	W Unc...	Mes
src/sample/gasstand	AutoMobil.java	OK	Done	0	0	0	0	
src/sample/gasstand	DiscountGasSt...	OK	Done	0	0	0	0	
src/sample/gasstand	Fuel.java	OK	Done	0	0	0	0	
src/sample/gasstand	GasStand.java	NG	Done	3	0	2	1	
src/sample/gasstand	GasStandSimu...	NG	Done	22	0	6	16	
src/sample/gasstand	Portable.java	OK	Done	0	0	0	0	
src/sample/gasstand	Refuelable.java	OK	Done	0	0	0	0	
src/sample/gasstand	Shop.java	NG	Done	3	0	3	0	
src/sample/gasstand	Tank.java	OK	Done	0	0	0	0	

- Display according to Java file selection from the Package Explorer

  After "GasStand.Java" is selected from the Package Explorer, the confirmation status corresponding to "GasStand.Java" is displayed.



Workspace - Project1/src/sample/gasstand/GasStand.java - Eclipse IDE
File Edit Source Refactor Navigate Search Project Agile+ Relief J Run Window Help
Quick Access
Package Explorer
Project1
src
sample.gasstand
AutoMobil.java
DiscountGasStand.java
Fuel.java
GasStand.java
GasStandSimulation.java
Portable.java
Refuelable.java
Shop.java
Tank.java
JRE System Library [jre1.8.0_221]
Project2
GasStand.java
Agile+ Relief Message List
Agile+ Relief Confirmation Status
sample.gasstand.GasStand.java - Project1/src

```
/*****************************************************
 * Gasoline stand class definition file
 *
 *   @author  Fujitsu Taro
 *
 *****************************************************/
package sample.gasstand ;

/**
 * Gasoline stand class
 *
 *   @see       AutoMobil
 *   @author    Fujitsu Taro
 *
 */
class GasStand extends Shop {

    /**
     * Tank capacity
```

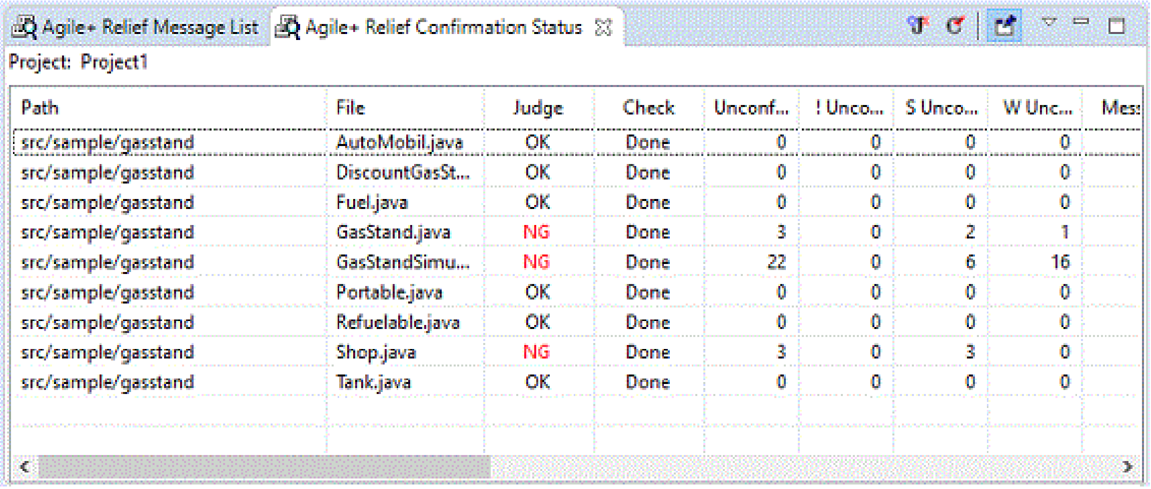
Project: Project1

Path	File	Judge	Check	Unconf...	! Unco...	S Unco...	W Unc...	Mes
src/sample/gasstand	GasStand.java	NG	Done	3	0	2	1	

3.2.2.2 Confirm Judgment Results

Confirm whether the judgment result is OK or NG in a check target file unit.

In the case of NG, the unconfirmed messages whose importance degree is S or ! are retained. Therefore, please re-examine the applicable messages in the message list.



Project: Project1

Path	File	Judge	Check	Unconf...	! Unco...	S Unco...	W Unc...	Mes
src/sample/gasstand	AutoMobil.java	OK	Done	0	0	0	0	
src/sample/gasstand	DiscountGasSt...	OK	Done	0	0	0	0	
src/sample/gasstand	Fuel.java	OK	Done	0	0	0	0	
src/sample/gasstand	GasStand.java	NG	Done	3	0	2	1	
src/sample/gasstand	GasStandSimu...	NG	Done	22	0	6	16	
src/sample/gasstand	Portable.java	OK	Done	0	0	0	0	
src/sample/gasstand	Refuelable.java	OK	Done	0	0	0	0	
src/sample/gasstand	Shop.java	NG	Done	3	0	3	0	
src/sample/gasstand	Tank.java	OK	Done	0	0	0	0	

The display content is shown as follows.

Header part

Item to Be Displayed	Description
Project	The name of applicable project is displayed.

List part

Item to Be Displayed	Description
Path	The path name is displayed.
File	The file name is displayed.
Judge	The judgment for the qualification of the number of unconfirmed messages is displayed. "OK": No message in the state of [!: unconfirmed] and [S: unconfirmed] "NG": The number of messages in the state of [!: unconfirmed] and [S: unconfirmed] is greater than one "-": The Code check is not performed, or it is performed for the files that are not targeted.
Check	The implementation status of the Code check is displayed. "Done": Code check has been performed "Not yet": Code check is not performed, or the Code check result has already been cleared "-": Code check is performed for the files that are not targeted(Note 1)
Unconfirmed	The number of unconfirmed messages is displayed. The messages for which [Confirmed] is not checked in the message list are counted as unconfirmed messages.
! unconfirmed	The number of unconfirmed messages with importance degree ! is displayed.
S unconfirmed	The number of unconfirmed messages with importance degree S is displayed.
W unconfirmed	The number of unconfirmed messages with importance degree W is displayed.
Messages	The total number of messages is displayed.
! Messages	The number of messages with importance degree! is displayed.
S Messages	The number of messages with importance degree S is displayed.
W Messages	The number of messages with importance degree W is displayed.
S Reliability	The number of messages with Reliability importance degree S is displayed.
S Maintainability/Readability	The number of messages with Maintainability/Readability importance degree S is displayed.
S Efficiency	The number of messages with Efficiency importance degree S is displayed.
S Functionality	The number of messages with Functionality importance degree S is displayed.
S Portability	The number of messages with Portability importance degree S is displayed.
S User rules	The number of messages with User rules importance degree S is displayed.
S Other	The number of messages with importance degree S of other is displayed.
W Rreliability	The number of messages with Reliability importance degree W is displayed.
W Maintainability/Readability	The number of messages with Maintainability/Readability importance degree W is displayed.
W Efficiency	The number of messages with Efficiency importance degree W is displayed.
W Functionality	The number of messages with Functionality importance degree W is displayed.

Item to Be Displayed	Description
W Portability	The number of messages with Portability importance degree W is displayed.
W User rules	The number of messages with User rules importance degree W is displayed.
W Other	The number of messages with importance degree W of other is displayed.

(Note 1) The file that is not targeted for Code check refers to the file that matches the condition of [Except file] that is defined by customizer. For details, please refer to "Agile+ Relief J Customizer Operation Guide".

3.2.2.3 Confirm the Source Codes of the Judgment Result

Confirm the source codes of judgment target through editor.

The targeted files are displayed as follows through editor interaction.

- If the source code of a targeted file is not opened in an editor, open them and locate the first line.
- If the source code of a targeted file is opened in an editor, this editor is displayed directly.

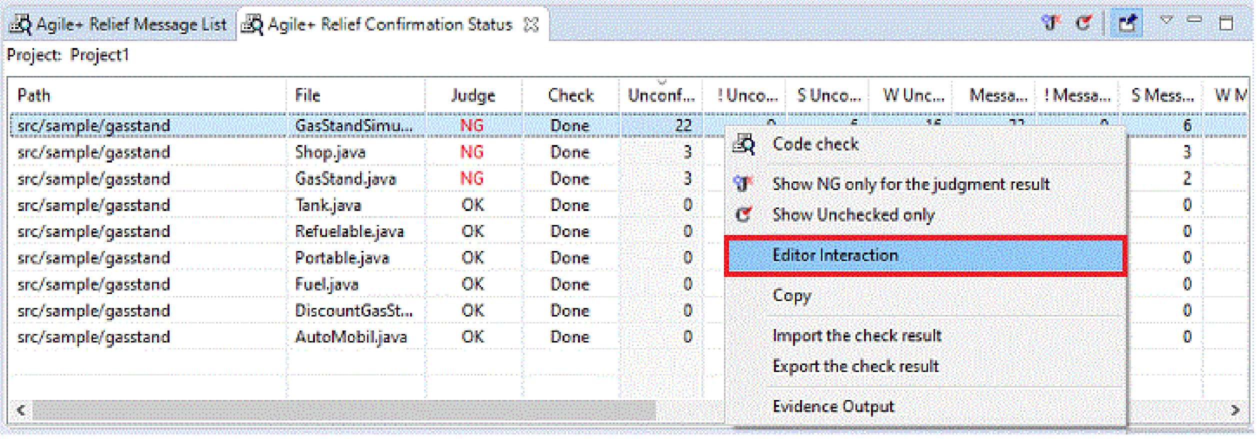
Perform editor interaction through the following procedure.

- Double-click a file name.

  Double-click a file name to display the source file.

- Jump from the pop-up menu.

  Select [Editor Interaction] from the pop-up menu to display the source file.



Project: Project1

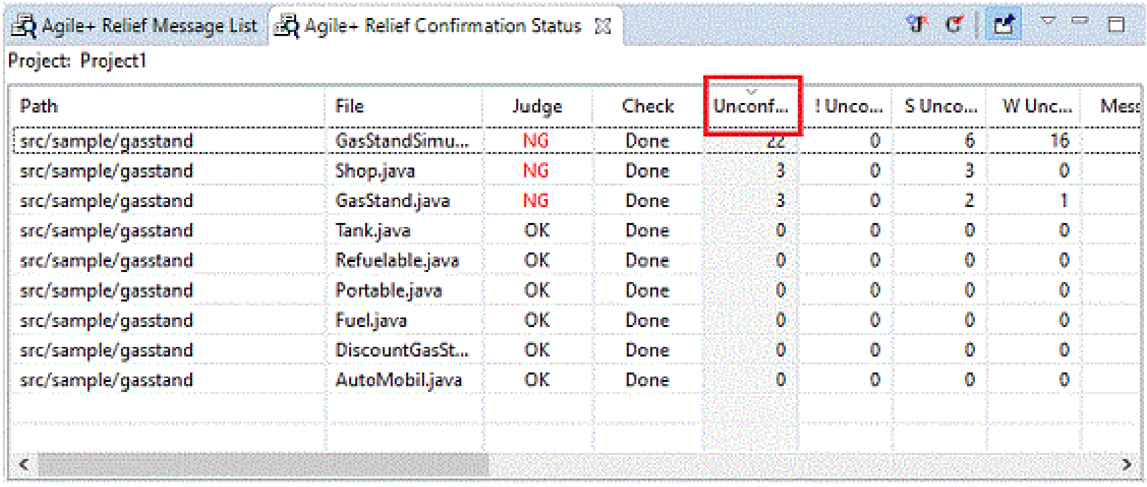
Path	File	Judge	Check	Unconf...	! Unco...	S Unco...	W Unc...	Messa...	! Messa...	S Mess...	W M
src/sample/gasstand	GasStandSimu...	NG	Done	22						6	
src/sample/gasstand	Shop.java	NG	Done	3						3	
src/sample/gasstand	GasStand.java	NG	Done	3						2	
src/sample/gasstand	Tank.java	OK	Done	0						0	
src/sample/gasstand	Refuelable.java	OK	Done	0						0	
src/sample/gasstand	Portable.java	OK	Done	0						0	
src/sample/gasstand	Fuel.java	OK	Done	0						0	
src/sample/gasstand	DiscountGasSt...	OK	Done	0						0	
src/sample/gasstand	AutoMobil.java	OK	Done	0						0	

3.2.2.4 Sort Judgment Results

The judgment results can be sorted according to the displayed item name.

Click the displayed item name on the header to switch between ascending and descending order of sorting the displayed judgment results.

Example: When sorting according to the number of unconfirmed messages



Project: Project1

Path	File	Judge	Check	Unconf...	! Unco...	S Unco...	W Unc...	Mess
src/sample/gasstand	GasStandSimu...	NG	Done	22	0	6	16	
src/sample/gasstand	Shop.java	NG	Done	3	0	3	0	
src/sample/gasstand	GasStand.java	NG	Done	3	0	2	1	
src/sample/gasstand	Tank.java	OK	Done	0	0	0	0	
src/sample/gasstand	Refuelable.java	OK	Done	0	0	0	0	
src/sample/gasstand	Portable.java	OK	Done	0	0	0	0	
src/sample/gasstand	Fuel.java	OK	Done	0	0	0	0	
src/sample/gasstand	DiscountGasSt...	OK	Done	0	0	0	0	
src/sample/gasstand	AutoMobil.java	OK	Done	0	0	0	0	

3.2.2.5 Filtering Judgment Results

Filter the displayed contents of the judgment results according to the conditions described in the following table.

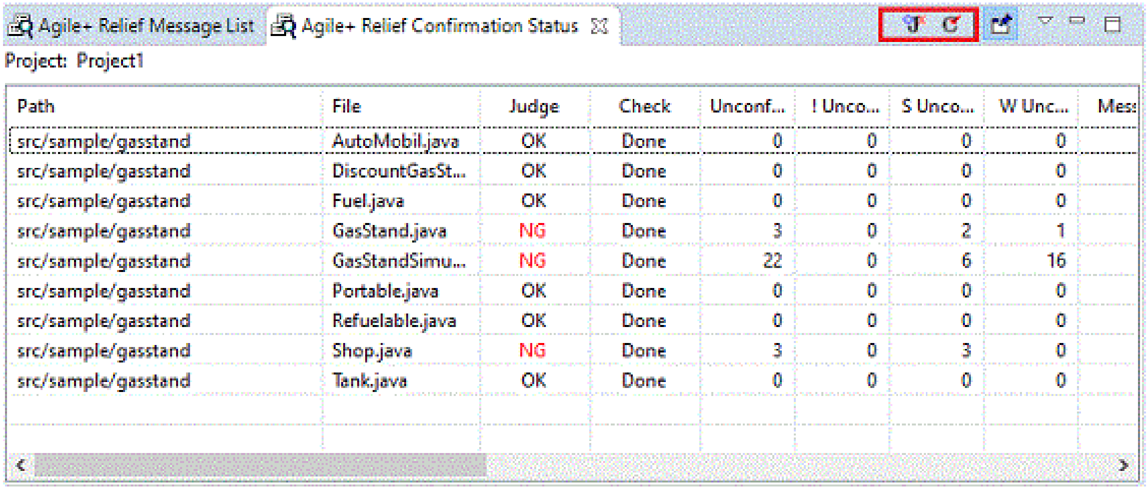
Icon	Condition	Description
	Display only the judgment results that are NG	Display only the judgment results with [Judge] being "NG".
	Display only the judgment results that are not checked	Display only the judgment results with [Check] being "Not yet".

The setting of filtering can be performed through tool bar, view menu and pop-up menu.

- Filtering from tool bar

  Select an icon of condition from the tool bar, and filter the confirmation status according to each condition.

  Example: Only the NG judgment results are displayed, and the condition of displaying only the judgment results that are not checked is not specified.



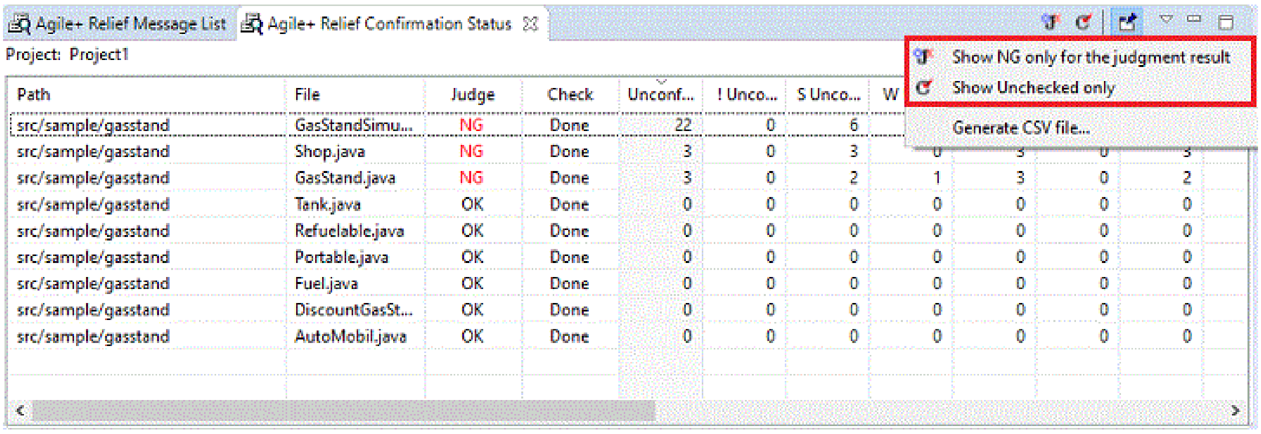
Project: Project1

Path	File	Judge	Check	Unconf...	! Unco...	S Unco...	W Unc...	Mess
src/sample/gasstand	AutoMobil.java	OK	Done	0	0	0	0	
src/sample/gasstand	DiscountGasSt...	OK	Done	0	0	0	0	
src/sample/gasstand	Fuel.java	OK	Done	0	0	0	0	
src/sample/gasstand	GasStand.java	NG	Done	3	0	2	1	
src/sample/gasstand	GasStandSimu...	NG	Done	22	0	6	16	
src/sample/gasstand	Portable.java	OK	Done	0	0	0	0	
src/sample/gasstand	Refuelable.java	OK	Done	0	0	0	0	
src/sample/gasstand	Shop.java	NG	Done	3	0	3	0	
src/sample/gasstand	Tank.java	OK	Done	0	0	0	0	

- Filtering from view menu

  Select a condition item from the view menu, and filter the judgment results according to each condition.

Example: Only the NG judgment results are displayed, and the condition of displaying only the judgment results that are not checked is not specified.


Agile+ Relief Message List
Agile+ Relief Confirmation Status
Show NG only for the judgment result
Show Unchecked only
Generate CSV file...

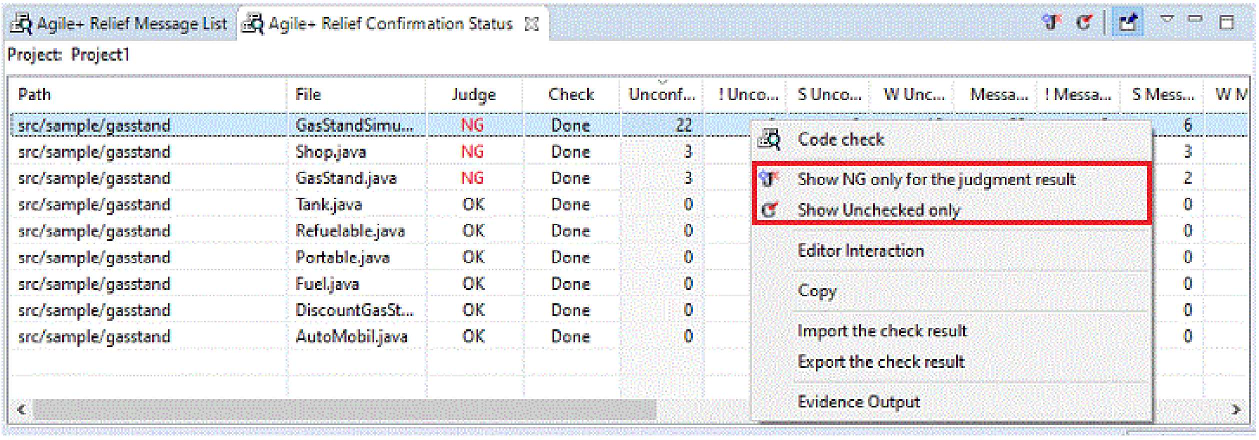
Project: Project1

Path	File	Judge	Check	Unconf...	! Unco...	S Unco...	W			
src/sample/gasstand	GasStandSimu...	NG	Done	22	0	6				
src/sample/gasstand	Shop.java	NG	Done	3	0	3	0	3	0	3
src/sample/gasstand	GasStand.java	NG	Done	3	0	2	1	3	0	2
src/sample/gasstand	Tank.java	OK	Done	0	0	0	0	0	0	0
src/sample/gasstand	Refuelable.java	OK	Done	0	0	0	0	0	0	0
src/sample/gasstand	Portable.java	OK	Done	0	0	0	0	0	0	0
src/sample/gasstand	Fuel.java	OK	Done	0	0	0	0	0	0	0
src/sample/gasstand	DiscountGasSt...	OK	Done	0	0	0	0	0	0	0
src/sample/gasstand	AutoMobil.java	OK	Done	0	0	0	0	0	0	0

- Filtering from pop-up menu

Select a condition from the pop-up menu, and filter the judgment results according to each condition.

Example: Only the NG judgment results are displayed, and the condition of displaying only the judgment results that are not checked is not specified.



Project: Project1

Path	File	Judge	Check	Unconf...	! Unco...	S Unco...	W Unc...	Messa...	! Messa...	S Mess...	W M
src/sample/gasstand	GasStandSimu...	NG	Done	22						6	
src/sample/gasstand	Shop.java	NG	Done	3						3	
src/sample/gasstand	GasStand.java	NG	Done	3						2	
src/sample/gasstand	Tank.java	OK	Done	0						0	
src/sample/gasstand	Refuelable.java	OK	Done	0						0	
src/sample/gasstand	Portable.java	OK	Done	0						0	
src/sample/gasstand	Fuel.java	OK	Done	0						0	
src/sample/gasstand	DiscountGasSt...	OK	Done	0						0	
src/sample/gasstand	AutoMobil.java	OK	Done	0						0	

3.2.3 Suppressing Collaborate with Other Views

In initial state, the views of [Agile+ Relief Message List], [Agile+ Relief Message Detail], and [Agile+ Relief Confirmation Status] are linked with other views and can be switched between each other.

To suppress the Collaborate with other views, please perform the following operations.

<Operations>

1. Turn off (Collaborate with other views) of the tool bar.

3.3 Output Code check Result

Output the Code check result as a file.

Please open an applicable check target project and enable [Use Agile+ Relief J] of the [Agile+ Relief J] menu.

The Code check result can be output through the views of [Agile+ Relief Message List] and [Agile+ Relief Confirmation Status].

3.3.1 Output Messages

Output the content currently displayed (in the state of being sorted and filtered) of the [Agile+ Relief Message List] view.
The displayed contents of each item are separated by comma and saved in a file in CSV format. The following items are different from the displayed contents of a view.

- Confirmed

  The following contents are output in the following formats according to the operations on the check box.

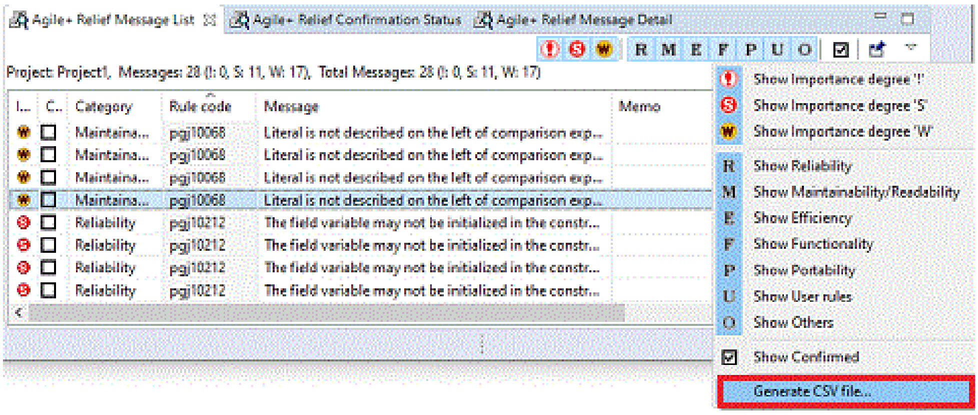
Confirmed	Output
Not checked	0
Checked	1

- Message

  If the message contains "," and "", the message must be output after being enclosed with double-quote. In addition, messages can be extended to multiple lines. At this time, messages should be output after being enclosed with double-quote.

<Operations>

1. Display the view menu of the [Agile+ Relief Message List] view, and select [Generate CSV file...].


Agile+ Relief Message List
Agile+ Relief Confirmation Status
Agile+ Relief Message Detail
R M E F P U O
Show Importance degree '!'
Show Importance degree 'S'
Show Importance degree 'W'
Show Reliability
Show Maintainability/Readability
Show Efficiency
Show Functionality
Show Portability
Show User rules
Show Others
Show Confirmed
Generate CSV file...

Project: Project1, Messages: 28 (!: 0, S: 11, W: 17), Total Messages: 28 (!: 0, S: 11, W: 17)

I...	C...	Category	Rule code	Message	Memo
W	□	Maintaina...	pgj10068	Literal is not described on the left of comparison exp...	
W	□	Maintaina...	pgj10068	Literal is not described on the left of comparison exp...	
W	□	Maintaina...	pgj10068	Literal is not described on the left of comparison exp...	
W	□	Maintaina...	pgj10068	Literal is not described on the left of comparison exp...	
S	□	Reliability	pgj10212	The field variable may not be initialized in the constr...	
S	□	Reliability	pgj10212	The field variable may not be initialized in the constr...	
S	□	Reliability	pgj10212	The field variable may not be initialized in the constr...	
S	□	Reliability	pgj10212	The field variable may not be initialized in the constr...	

2. Specify the output name of message (*. csv) in the [Output of messages] dialog box, and select the [Save] button.

CSV Output Image

```
Project: Project1,Messages: 24 (!:0, S:7, W:17), Total Messages: 24 (!:0, S:7, W:17)

Importance degree, Confirmed, Category, Rule code, Message, Memo, File, Path, Line
s, 0, Reliability, pgj10212, The field variable in the constructor may not be
initialized. ,,GasStand.java, ...
S,0, Reliability, pgj10212, the field variable in the constructor may not be
initialized. ,,GasStand.java, ...
s, 0, Reliability, pgj10214, "Clearly initialize all the variables of the static field" is
violated. ,,GasStand.java,
W,0,Maintainability/Readability, pgj10068, Literal is not described on the left of comparison
expression. ,,GasStand.java,src/sample/gasst
    ...
```

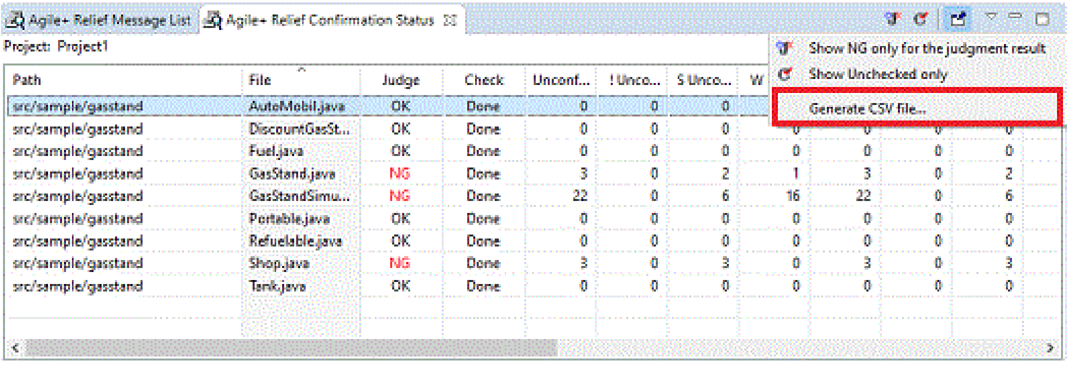
3.3.2 Output Confirmation Status

Output the content (in the state of being sorted and filtered) displayed in [Agile+ Relief Confirmation Status].

The displayed contents of each item are separated by comma and saved in a file in CSV format.

<Operations>

1. Display the view menu of the [Agile+ Relief Confirmation Status] view, and select [Generate CSV file...].


Agile+ Relief Message List
Agile+ Relief Confirmation Status
Show NG only for the judgment result
Show Unchecked only
Generate CSV file...

Project: Project1

Path	File	Judge	Check	Unconf...	! Unco...	S Unco...	W			
src/sample/gasstand	AutoMobil.java	OK	Done	0	0	0				
src/sample/gasstand	DiscountGasSt...	OK	Done	0	0	0	0	0	0	0
src/sample/gasstand	Fuel.java	OK	Done	0	0	0	0	0	0	0
src/sample/gasstand	GasStand.java	NG	Done	3	0	2	1	3	0	2
src/sample/gasstand	GasStandSimu...	NG	Done	22	0	6	16	22	0	6
src/sample/gasstand	Portable.java	OK	Done	0	0	0	0	0	0	0
src/sample/gasstand	Refuelable.java	OK	Done	0	0	0	0	0	0	0
src/sample/gasstand	Shop.java	NG	Done	3	0	3	0	3	0	3
src/sample/gasstand	Tank.java	OK	Done	0	0	0	0	0	0	0

2. Specify the output name of the specified message (*. csv) in the [Output of confirmation status] dialog box, and select the [Save] button.

CSV Output Image

```
Project: Project1

Path,File,Judge,Check,Unconfirmed,! Unconfirmed, S Unconfirmed, W Unconfirmed, Messages,! Messages, S
Messages, W Messages, ...
src/sample/gasstand,AutoMobil.java,OK,Done,,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0
src/sample/gasstand,DiscountGasStand.java,OK,Done,,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0
src/sample/gasstand,Fuel.java,OK,Done,,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0
src/sample/gasstand,GasStand.java,NG,Done,,4,0,3,1,4,0,3,1,3,0,0,0,0,0,0,0,1,0,0,0,0,0
src/sample/gasstand,GasStandSimulation.java,NG,Done,,
20,0,4,16,20,0,4,16,0,0,0,0,4,0,0,12,4,0,0,0,0,0
    ...
```

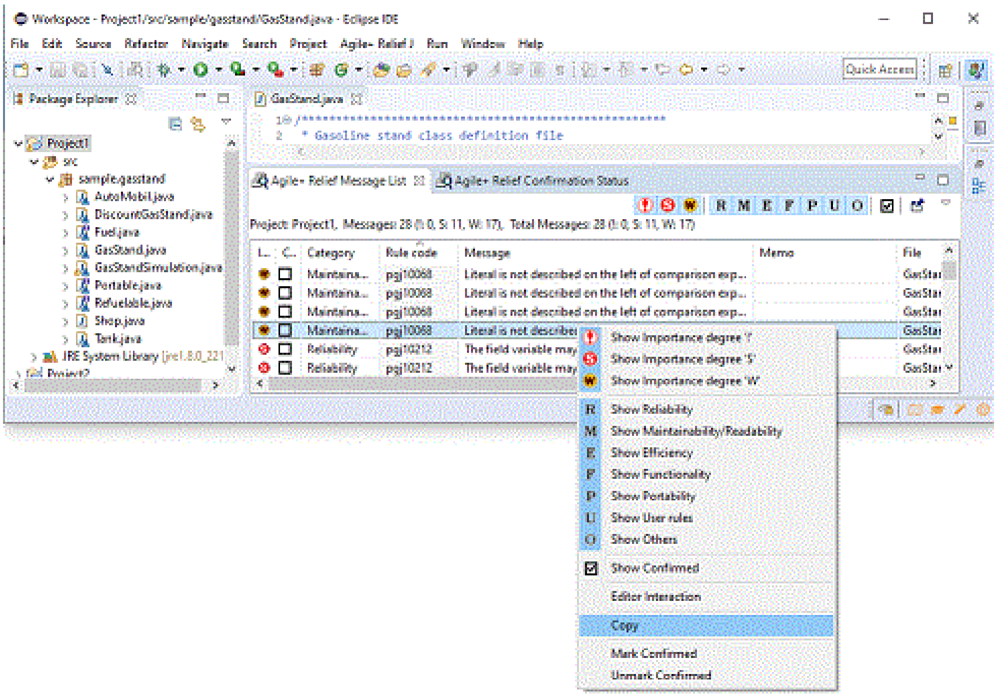
3.3.3 Copy Messages

Copy the selected messages to the clipboard. Also, multiple messages can be selected at the same time.

<Operations>

1. Select the message to be copied in the [Agile+ Relief Message List] view.

2. Select [Copy] from the pop-up menu.



```
1⊕ /*****************************************************
2   * Gasoline stand class definition file
```

Project: Project1, Messages: 28 (I: 0, S: 11, W: 17), Total Messages: 28 (I: 0, S: 11, W: 17)

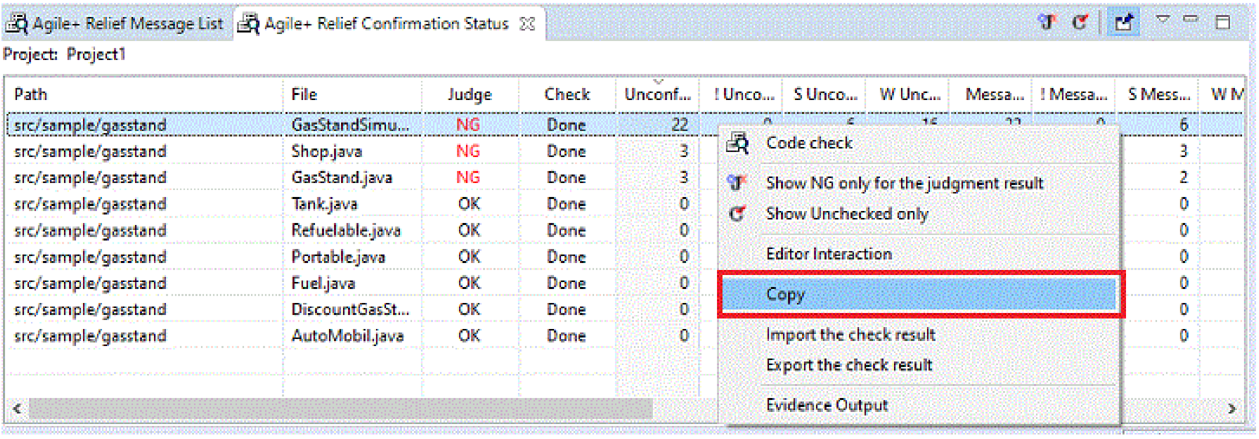
I...	C...	Category	Rule code	Message	Memo	File
W	□	Maintaina...	pgj10068	Literal is not described on the left of comparison exp...		GasStar
W	□	Maintaina...	pgj10068	Literal is not described on the left of comparison exp...		GasStar
W	□	Maintaina...	pgj10068	Literal is not described on the left of comparison exp...		GasStar
W	□	Maintaina...	pgj10068	Literal is not describe		GasStar
S	□	Reliability	pgj10212	The field variable may		GasStar
S	□	Reliability	pgj10212	The field variable may		GasStar

3.3.4 Copy Judgment Results

The selected judgment result can be copied to the clipboard. Also, multiple judgment results can be selected at a time.

<Operations>

1. Select the judgment result to be copied from the [Agile+ Relief Confirmation Status] view .
2. Select [Copy] from the pop-up menu.



Project: Project1

Path	File	Judge	Check	Unconf...	! Unco...	S Unco...	W Unc...	Messa...	! Messa...	S Mess...	W M
src/sample/gasstand	GasStandSimu...	NG	Done	22						6	
src/sample/gasstand	Shop.java	NG	Done	3						3	
src/sample/gasstand	GasStand.java	NG	Done	3						2	
src/sample/gasstand	Tank.java	OK	Done	0						0	
src/sample/gasstand	Refuelable.java	OK	Done	0						0	
src/sample/gasstand	Portable.java	OK	Done	0						0	
src/sample/gasstand	Fuel.java	OK	Done	0						0	
src/sample/gasstand	DiscountGasSt...	OK	Done	0						0	
src/sample/gasstand	AutoMobil.java	OK	Done	0						0	

3.4 Clear Code check Results

Clear the selected check target project Code check result. Multiple check target projects can be selected at a time.

In addition, to use this function, please open an applicable project and select [Use Agile+ Relief J] from the [Agile+ Relief J] menu.

*The information about "Confirmed" and "Memo" corresponding to the message is cleared.

*If no check target project is selected, this function will be disabled.

<Operations>

1. Select a check target project in the view of Package Explorer, Project Explorer, or Navigator.
2. Perform either of the following operations.
    - Select [Agile+ Relief J] > [Clear the check result of selected project].
    - Select [Agile+ Relief J] > [Clear the check result of selected project] from the pop-up menu.

3.5 Output Code check Evidence

The evidence of the Code check results are output. There is file as follows of five kinds of output evidence. All evidence files are separated by comma and saved in a file in CSV format. These are evidences of the source code analysis process by Agile$^+$ Relief J, and it is possible to take it into the quality management system etc. used.

No	Evidence File Name	Description
1	MessageList.csv	The list of the detected message is output.
2	CheckStatus_File.csv	The executing state of Code check is output to the unit of the check target file. In the executing state, there is information on the presence of the execution of Code check, and the Code check option etc.
3	CheckStatus_Rule.csv	The number of detection messages of the rule list and each rule from which the check is executed is output to the unit of the check target file.
4	Metrics_File.csv	Information on the number of lines etc. is output to the unit of the check target file.
5	Metrics_Func.csv	When the check target file is a Java file, information on the number of lines and the complexity, etc. on each method defined in that is output.

Note

Agile$^+$ Relief J provides the function to output a part of information on the evidence from the view of [Agile+ Relief Message List] and [Agile+ Relief Confirmation Status]. However, it has the possibility of causing the user's output mistake as the output result is different etc. according to the state of the filter of the view. On the other hand, such an output mistake does not happen so that the evidence output function may output all Code check result information without fail. When the Code check result is confirmed to the third party, the use of the evidence output function is recommended.

Information

In Agile$^+$ Relief J, these evidence file is input, and "Diagnosis report generation tool" that outputs the result of analyzing the information as a report of the Book-type of Microsoft(R) Office Excel(R) is being offered. Please use "Diagnosis report generation tool" from the start menu or the start screen(since Windows(R) 8, Windows Server(R) 2012) of Windows.

3.5.1 Output Evidence

The evidence of the verification outcome with Code check of the selected check target project or check target file is output. One or more check target projects or check target files can be selected. However, the following selections cannot be done.

- check target project and check target file are selected together.
- The files of a different check target project are selected together.

In addition, to use this function, please open an applicable project and select [Use Agile+ Relief J] from the [Agile+ Relief J] menu.

<Operations> Evidence output by check target project selection

1. Select a check target project in the view of Package Explorer, Project Explorer, or Navigator.
2. Perform either of the following operations.
   - Select [Agile+ Relief J] > [Evidence Output].
   - Select [Agile+ Relief J] > [Evidence Output] from the pop-up menu.
3. Specify the output folder in the [Evidence Output] dialog box, and click the [OK] button.
4. The output folder is the following.

Folder specified by Operation No.3\check target project by Operation No.1

[Example]

check target project by Operation No.1	Sample
Folder specified by Operation No.3	C:\AgilePlusReliefEvidence
Output folder	C:\AgilePlusReliefEvidence\Sample

<Operations> Evidence output by check target file selection

1. Select a check target file in the view of Package Explorer, Project Explorer, Navigator, or Agile^{+} Relief Confirmation Status.
2. Perform either of the following operations.
   - Select [Agile+ Relief J] > [Evidence Output].
   - In case of Package Explorer, Project Explorer, or Navigator, select [Agile+ Relief J] > [Evidence Output] from the pop-up menu.
   - In case of Agile^{+} Relief Confirmation Status, select [Evidence Output] from the pop-up menu.
3. Specify the output folder in the [Evidence Output] dialog box, and click the [OK] button.
4. The output folder is the following.

Folder specified by Operation No.3\Name of Eclipse project that check target file by Operation No.1 belongs

[Example]

Name of Eclipse project that check target file by Operation No.1 belongs	Sample
Folder specified by Operation No.3	C:\AgilePlusReliefEvidence
Output folder	C:\AgilePlusReliefEvidence\Sample

3.5.2 Format of evidence files

All evidence files are separated by comma and saved in a file in CSV format. The format of each evidence file is explained as follows.

3.5.2.1 FileHeader(Common)

The file header is output to the first four lines of each evidence file. It is a common output to all evidence files. Information on each evidence is output since the fifth line.

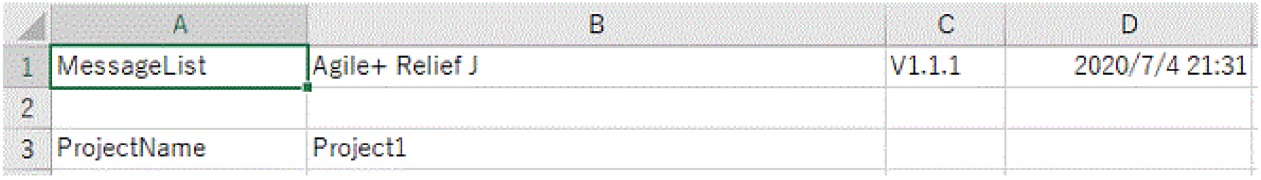
The column of the each line is explained as follows.

Line	Column	Output item	Description
1	1	Evidence type	It is a string that shows the type of the evidence.

Line	Column	Output item	Description
			Please refer to the explanation of the following each evidence for the string of the evidence type.
1	2	"Agile$^+$ Relief J"	The string recorded left is set.
1	3	Version	The version of Agile$^+$ Relief J is set.
1	4	Output date	The date(YYYY/MM/DD hh:mm:ss) when the evidence was output is set.
2	empty line		
3	1	"ProjectName"	The string recorded left is set.
3	2	Project name	The name of Eclipse project to be output is set.
4	empty line		

<Example of output>

*MessageList.csv is read by using Microsoft(R) Office Excel(R).



	A	B	C	D
1	MessageList	Agile+ Relief J	V1.1.1	2020/7/4 21:31
2				
3	ProjectName	Project1		

3.5.2.2 MessageList.csv

The list of message detected with Code check of the selected check target project or check target file is output following the file header part.

Because all messages detected with Code check can be confirmed, the action of each message can be verified.

Note

When the result of past Code check remains, the result is output even if "Unchecked" is set to "Check Status" in CheckStatus_File.csv.

<Evidence type>

The following strings are output as Evidence type that is output item in the file header part.

MessageList

<Format>

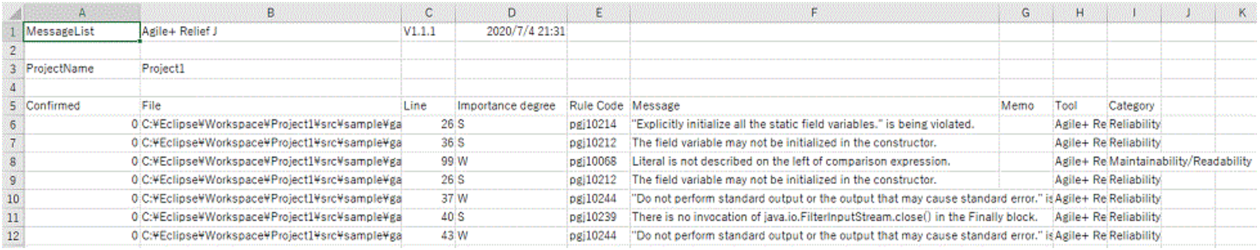
The column header that shows the meaning of each column of the message is output to the fifth line. The detected message is output by each line since the sixth line. Each column is explained as follows.

<table>
<tr><th>Column</th><th>Column Header Name</th><th>Description</th></tr>
<tr><td>1</td><td>Confirmed</td><td>Information on [Confirmed] of [Agile+ Relief Message List] is set.<table><tr><th>[Confirmed] column</th><th>value</th></tr><tr><td>Unchecked</td><td>0</td></tr><tr><td>Checked</td><td>1</td></tr></table></td></tr>
<tr><td>2</td><td>File</td><td>The full path name of the file where the message is detected is set.</td></tr>
</table>

Column	Column Header Name	Description
3	Line	The line number where the message is detected is set. The message of the operating environment error etc. might be related to not a specific line but the file whole. For that case, 0 is set.
4	Importance degree	The Importance degree of the message is set.
5	Rule Code	The Rule Code of the message is set.
6	Message	The string of message is set.
7	Memo	Information on [Memo] of [Agile+ Relief Message List] is set.
8	Tool	Either of the following tool names are set as a tool that detects the message. - Agile^{+} Relief - FindBugs - PMD *When the evidence is output by using the Code check Results before PGRelief J 2012 autumn, this column is empty.
9	Category	Either of the following categories corresponding to the message are set. - Maintainability/Readability - Reliability - Efficiency - Functionality - Portability - User rules - Operating environment error - Other *When the evidence is output by using the Code check Results before PGRelief J 2012 autumn, this column is empty.

<Example of output>

*MessageList.csv is read by using Microsoft(R) Office Excel(R).



	A	B	C	D	E	F	G	H	I	J	K
1	MessageList	Agile+ Relief J	V1.1.1	2020/7/4 21:31							
2											
3	ProjectName	Project1									
4											
5	Confirmed	File	Line	Importance degree	Rule Code	Message	Memo	Tool	Category		
6	0	C:¥Eclipse¥Workspace¥Project1¥src¥sample¥ga	26	S	pgj10214	"Explicitly initialize all the static field variables." is being violated.		Agile+ Re	Reliability		
7	0	C:¥Eclipse¥Workspace¥Project1¥src¥sample¥ga	36	S	pgj10212	The field variable may not be initialized in the constructor.		Agile+ Re	Reliability		
8	0	C:¥Eclipse¥Workspace¥Project1¥src¥sample¥ga	99	W	pgj10068	Literal is not described on the left of comparison expression.		Agile+ Re	Maintainability/Readability		
9	0	C:¥Eclipse¥Workspace¥Project1¥src¥sample¥ga	26	S	pgj10212	The field variable may not be initialized in the constructor.		Agile+ Re	Reliability		
10	0	C:¥Eclipse¥Workspace¥Project1¥src¥sample¥ga	37	W	pgj10244	"Do not perform standard output or the output that may cause standard error." is		Agile+ Re	Reliability		
11	0	C:¥Eclipse¥Workspace¥Project1¥src¥sample¥ga	40	S	pgj10239	There is no invocation of java.io.FilterInputStream.close() in the Finally block.		Agile+ Re	Reliability		
12	0	C:¥Eclipse¥Workspace¥Project1¥src¥sample¥ga	43	W	pgj10244	"Do not perform standard output or the output that may cause standard error." is		Agile+ Re	Reliability		

3.5.2.3 CheckStatus_File.csv

The list of the executing state of Code check is output to the unit of the check target file following the file header part.

Whether Code check is appropriately executed because presence of the Code check execution and an optional execution environment for the check etc. can be confirmed can be verified.

<Evidence type>

The following strings are output as Evidence type that is output item in the file header part.

CheckStatus_File

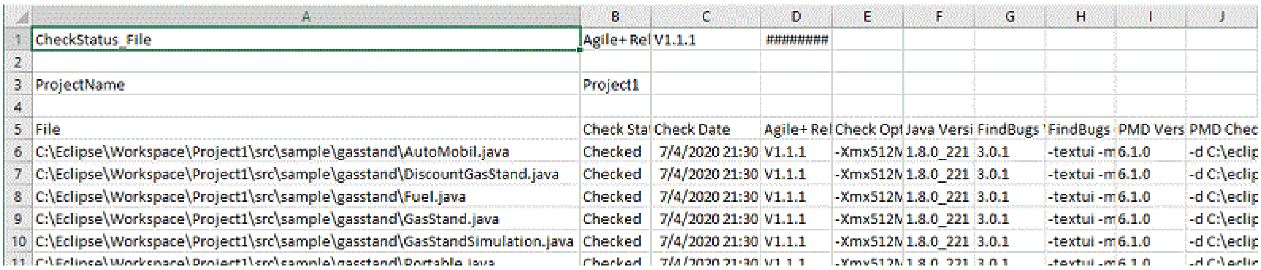
<Format>

The column header that shows the meaning of each column of the check situation is output to the fifth line. The check situation of the check target file is output by each line since the sixth line. Each column is explained as follows.

<table>
<tr><th>Column</th><th>Column Header Name</th><th>Description</th></tr>
<tr><td>1</td><td>File</td><td>The full path name of the check target file is set.</td></tr>
<tr><td>2</td><td>Check Status</td><td>The execution existence of Code check is set.
<table>
<tr><th>value</th><th>Meaning</th></tr>
<tr><td>Unchecked</td><td>Code check unexecution.</td></tr>
<tr><td>Checked</td><td>Code check has been executed.</td></tr>
<tr><td>-</td><td>The file that excludes from Code check.</td></tr>
</table>
Information might be output since column 3 when the value is "Unchecked". It is a result of Code check before.</td></tr>
<tr><td>3</td><td>Check Date</td><td>The date(YYYY/MM/DD hh:mm:ss) when Code check was executed is set.
*This column is a blank when the evidence is output by using the Code check Results before PGRelief J 2012 autumn or the file that excludes from Code check.</td></tr>
<tr><td>4</td><td>Agile$^+$ Relief Version</td><td>The version of Agile$^+$ Relief J when Code check is executed is set.
*This column is a blank when the evidence is output by using the Code check Results before PGRelief J 2012 autumn or the file that excludes from Code check.</td></tr>
<tr><td>5</td><td>Check Options</td><td>The options specified with Code check is set.
*This column is a blank when the evidence is output by using the Code check Results before PGRelief J 2012 autumn or the file that excludes from Code check.</td></tr>
<tr><td>6</td><td>Java Version</td><td>The version of Java that Agile$^+$ Relief J operated at Code check is set.
*This column is a blank when the evidence is output by using the Code check Results before PGRelief J 2012 autumn or the file that excludes from Code check.</td></tr>
<tr><td>7</td><td>FindBugs Version</td><td>When cooperation with FindBugs is effective, the version of FindBugs is set.
*This column is a blank when the evidence is output by using the Code check Results before PGRelief J 2012 autumn or the file that excludes from Code check.</td></tr>
<tr><td>8</td><td>FindBugs Check Options</td><td>The option of FindBugs specified when cooperating with FindBugs is set.
*This column is a blank when the evidence is output by using the Code check Results before PGRelief J 2012 autumn or the file that excludes from Code check.</td></tr>
<tr><td>9</td><td>PMD Version</td><td>When cooperation with PMD is effective, the version of PMD is set.
*This column is a blank when the evidence is output by using the Code check Results before PGRelief J 2012 autumn or the file that excludes from Code check.</td></tr>
<tr><td>10</td><td>PMD Check Options</td><td>The option of PMD specified when cooperating with PMD is set.
*This column is a blank when the evidence is output by using the Code check Results before PGRelief J 2012 autumn or the file that excludes from Code check.</td></tr>
</table>

<Example of output>

*CheckStatus_File.csv is read by using Microsoft(R) Office Excel(R).



	A	B	C	D	E	F	G	H	I	J
1	CheckStatus_File	Agile+ Rel	V1.1.1	#########						
2										
3	ProjectName	Project1								
4										
5	File	Check Stat	Check Date	Agile+ Rel	Check Opt	Java Versi	FindBugs '	FindBugs	PMD Vers	PMD Chec
6	C:\Eclipse\Workspace\Project1\src\sample\gasstand\AutoMobil.java	Checked	7/4/2020 21:30	V1.1.1	-Xmx512M	1.8.0_221	3.0.1	-textui -m	6.1.0	-d C:\eclip
7	C:\Eclipse\Workspace\Project1\src\sample\gasstand\DiscountGasStand.java	Checked	7/4/2020 21:30	V1.1.1	-Xmx512M	1.8.0_221	3.0.1	-textui -m	6.1.0	-d C:\eclip
8	C:\Eclipse\Workspace\Project1\src\sample\gasstand\Fuel.java	Checked	7/4/2020 21:30	V1.1.1	-Xmx512M	1.8.0_221	3.0.1	-textui -m	6.1.0	-d C:\eclip
9	C:\Eclipse\Workspace\Project1\src\sample\gasstand\GasStand.java	Checked	7/4/2020 21:30	V1.1.1	-Xmx512M	1.8.0_221	3.0.1	-textui -m	6.1.0	-d C:\eclip
10	C:\Eclipse\Workspace\Project1\src\sample\gasstand\GasStandSimulation.java	Checked	7/4/2020 21:30	V1.1.1	-Xmx512M	1.8.0_221	3.0.1	-textui -m	6.1.0	-d C:\eclip
11	C:\Eclipse\Workspace\Project1\src\sample\gasstand\Portable.java	Checked	7/4/2020 21:30	V1.1.1	-Xmx512M	1.8.0_221	3.0.1	-textui -m	6.1.0	-d C:\eclip

3.5.2.4 CheckStatus_Rule.csv

The number of detection messages of the rule list and each rule from which the check is executed is output to the unit of the check target file following the file header part.

Because the checked rules and the unchecked rules can be confirmed, it can be verified whether there is rule of the check leakage.

Note

When the result of past Code check remains, the result is output even if "Unchecked" is set to "Check Status" in CheckStatus_File.csv.

<Evidence type>

The following strings are output as Evidence type that is output item in the file header part.

```
CheckStatus_Rule
```

<Format>

The number of messages is output on the matrix format of the rule code and the check target file since the fifth line. Each column is explained as follows.

Column	Column Header Name	Description
1	Rule	The rule code is set. The rule of FindBugs and PMD is set bringing each tool together.
2	Outline	The content of the rule is set. When the rule code is FindBugs or PMD, it is not set.
Since 3	FilePathName	The full path name of all check target files is set since column 3.

The number of messages is set to the column corresponding to the rule code and the check target file. The value of the following 2 varieties is set to the number of messages.

value	Meaning
Numerical value of 0 or more	It is a detected number of messages.
Empty column	It is a rule code not checked at Code check of the check target file. *In the following cases, the rule code from which the check is executed becomes a empty column. - The evidence is output by the result of Code check before PGRelief J 2012 autumn. - Rule code whose detected number of messages is 0.

It explains by using the following output images.

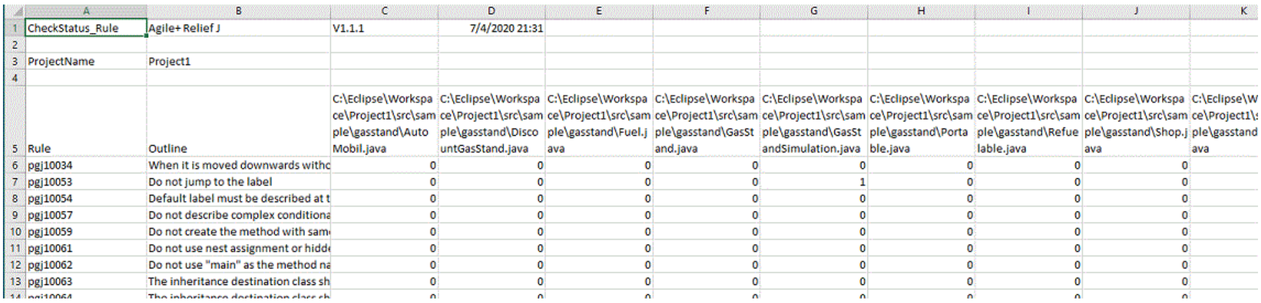
File_1 means the message of pgj10000 is 0 and the message of pgj10002 is 1. On the other hand, the check on pgj10002 is not executed though one message of pgj10000 has been detected in File_2.

[Output image]

Rule	Outline	File_1	File_2	File_3	･･･	File_n
pgj10000	File name is "class name. java" or "interface name. java".	0	1	0		1
pgj10002	File name is case-sensitive.	1		0		1

<Example of output>

*CheckStatus_Rule.csv is read by using Microsoft(R) Office Excel(R).



	A	B	C	D	E	F	G	H	I	J	K
1	CheckStatus_Rule	Agile+ Relief J	V1.1.1	7/4/2020 21:31							
2											
3	ProjectName	Project1									
4											
5	Rule	Outline	C:\Eclipse\Workspace\Project1\src\sample\gasstand\AutoMobil.java	C:\Eclipse\Workspace\Project1\src\sample\gasstand\DiscountGasStand.java	C:\Eclipse\Workspace\Project1\src\sample\gasstand\Fuel.java	C:\Eclipse\Workspace\Project1\src\sample\gasstand\GasStand.java	C:\Eclipse\Workspace\Project1\src\sample\gasstand\GasStandSimulation.java	C:\Eclipse\Workspace\Project1\src\sample\gasstand\Portable.java	C:\Eclipse\Workspace\Project1\src\sample\gasstand\Refuelable.java	C:\Eclipse\Workspace\Project1\src\sample\gasstand\Shop.java	C:\Eclipse\W ce\Project1\ ple\gasstand ava
6	pgj10034	When it is moved downwards withc	0	0	0	0	0	0	0	0	
7	pgj10053	Do not jump to the label	0	0	0	0	1	0	0	0	
8	pgj10054	Default label must be described at t	0	0	0	0	0	0	0	0	
9	pgj10057	Do not describe complex conditiona	0	0	0	0	0	0	0	0	
10	pgj10059	Do not create the method with sam	0	0	0	0	0	0	0	0	
11	pgj10061	Do not use nest assignment or hidd	0	0	0	0	0	0	0	0	
12	pgj10062	Do not use "main" as the method na	0	0	0	0	0	0	0	0	
13	pgj10063	The inheritance destination class sh	0	0	0	0	0	0	0	0	
14	pgj10064	The inheritance destination class sh	0	0	0	0	0	0	0	0	

3.5.2.5 Metrics_File.csv

The list of information concerning the number of lines of file and the number of methods (At the Java file) is output to the unit of the check target file following the file header part.

Productivity and maintainability, etc. can be verified from information on the scale like the number of lines etc.

Note

- When the result of past Code check remains, the result is output even if "Unchecked" is set to "Check Status" in CheckStatus_File.csv.
- Metrics_File.csv cannot be output from the result of Code check before PGRelief J 2012 autumn. Please output the evidence after executing Code check since PGRelief J 2013 when Metrics_File.csv is necessary.
- Metrics information on the file (XML file, JSP file, StyleSheet file, ECMAScript file, PLSQL file, Apache Velocity file) that becomes an input of PMD is not output.

<Evidence type>

The following strings are output as Evidence type that is output item in the file header part.

Metrics_File

<Format>

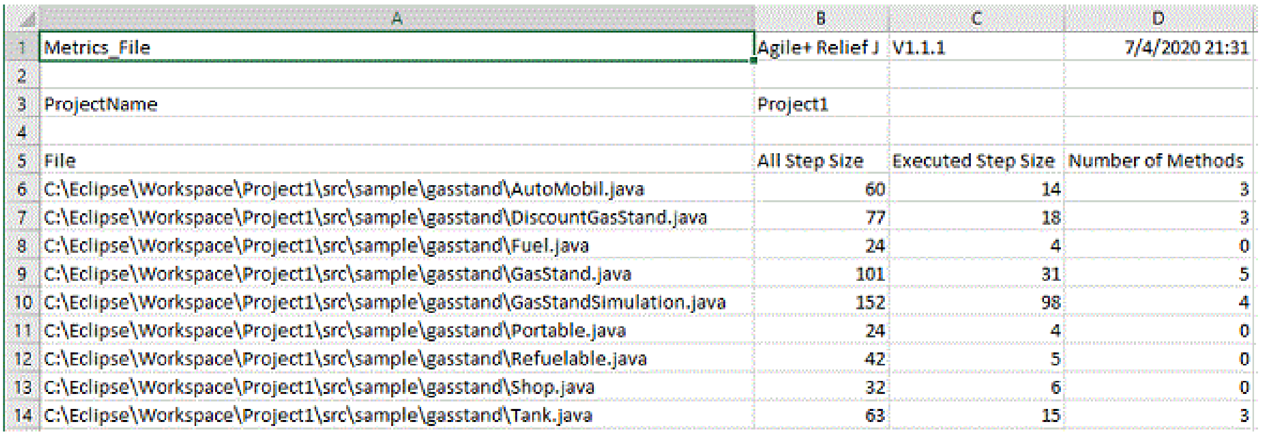
The column header that shows the meaning of each column of the metrics information is output to the fifth line. The metrics information of the check target file is output by each line since the sixth line. Each column is explained as follows.

Column	Column Header Name	Description
1	File	The full path name of the check target file is set.
2	All Step Size	The number of lines including the null line and the commentline are set.

Column	Column Header Name	Description
3	Executed Step Size	The number of lines except the null line and the commentline are set. When the check target file is xml file, the same value as the total number of lines is set.
4	Number of Methods	The number of methods defined in the file is set. When the check target file is xml, 0 is set.

<Example of output>

*Metrics_File.csv is read by using Microsoft(R) Office Excel(R).



	A	B	C	D
1	Metrics_File	Agile+ Relief J	V1.1.1	7/4/2020 21:31
2				
3	ProjectName	Project1		
4				
5	File	All Step Size	Executed Step Size	Number of Methods
6	C:\Eclipse\Workspace\Project1\src\sample\gasstand\AutoMobil.java	60	14	3
7	C:\Eclipse\Workspace\Project1\src\sample\gasstand\DiscountGasStand.java	77	18	3
8	C:\Eclipse\Workspace\Project1\src\sample\gasstand\Fuel.java	24	4	0
9	C:\Eclipse\Workspace\Project1\src\sample\gasstand\GasStand.java	101	31	5
10	C:\Eclipse\Workspace\Project1\src\sample\gasstand\GasStandSimulation.java	152	98	4
11	C:\Eclipse\Workspace\Project1\src\sample\gasstand\Portable.java	24	4	0
12	C:\Eclipse\Workspace\Project1\src\sample\gasstand\Refuelable.java	42	5	0
13	C:\Eclipse\Workspace\Project1\src\sample\gasstand\Shop.java	32	6	0
14	C:\Eclipse\Workspace\Project1\src\sample\gasstand\Tank.java	63	15	3

3.5.2.6 Metrics_Func.csv

The list of information on the Java methods of the number of lines and the complexity, etc. is output following the file header part about the Java file output in Metrics_File.csv.

Maintainability and readability, etc. can be verified.

Note

- When the result of past Code check remains, the result is output even if "Unchecked" is set to "Check Status" in CheckStatus_File.csv.
- Metrics_File.csv cannot be output from the result of Code check before PGRelief J 2012 autumn. Please output the evidence after executing Code check since PGRelief J 2013 when Metrics_File.csv is necessary.
- Metrics information on the file (XML file, JSP file, StyleSheet file, ECMAScript file, PLSQL file, Apache Velocity file) that becomes an input of PMD is not output.

<Evidence type>

The following strings are output as Evidence type that is output item in the file header part.

```
Metrics_Func
```

<Format>

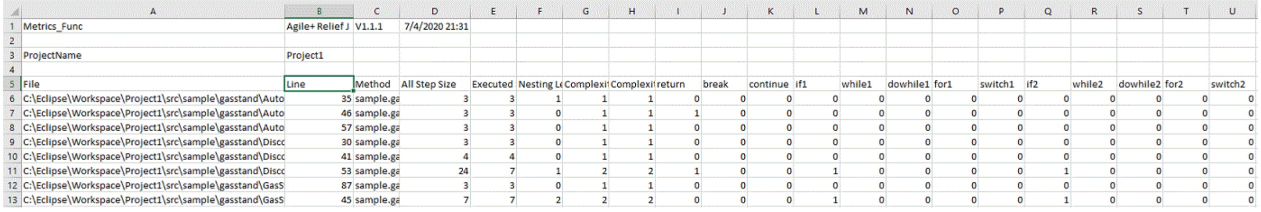
The column header that shows the meaning of each column of the metrics information is output to the fifth line. The metrics information of the Java method is output by each line since the sixth line. Each column is explained as follows.

Column	Column Header Name	Description
1	File	The full path name of the check target file is set.
2	Line	The line number of the method is set.

Column	Column Header Name	Description
3	Method	The method name to be gathered metrics is set.
4	All Step Size	The number of lines including the null line and the commentline are set.
5	Executed Step Size	The number of lines except the null line and the commentline are set.
6	Nesting Levels	The maxima of the nest by if statement, while statement, do-while statement, for statement, switch statement, try statement, synchronized statement, and block is set.
7	Complexity 1	The value which added 1 to the sum total of if1, while1, dowhile1, for1 and switch1 is set.
8	Complexity 2	The value which added 1 to the sum total of if2, while2, dowhile2, for2 and switch2 is set.
9	return	The total of the return statement is set.
10	break	The total of the break statement is set.
11	continue	The total of the continue statement is set.
12	if1	The total of the if statement is set.
13	while1	The total of the while statement is set.
14	dowhile1	The total of the do-while statement is set.
15	for1	The total of the for statement is set.
16	switch1	The total of the switch statement is set.
17	if2	Total in which the number of "&&" and "||" in conditional expression of the if statement is considered is set. For instance, it counts with two for "if(A && B)". if1 is counted with one.
18	while2	Total in which the number of "&&" and "||" in conditional expression of the while statement is considered is set. For instance, it counts with two for "while(A && B)". while1 is counted with one.
19	dowhile2	Total in which the number of "&&" and "||" in conditional expression of the do-while statement is considered is set. For instance, it counts with two for "while(A && B)". do-while1 is counted with one.
20	for2	Total in which the number of "&&" and "||" in conditional expression of the for statement is considered is set. For instance, it counts with two for "for(; A && B ;)". for1 is counted with one.
21	switch2	The total of the case statement and the default statement is set.

<Example of output>

*Metrics_Func.csv is read by using Microsoft(R) Office Excel(R).



	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U
1	Metrics_Func	Agile+ Relief J	V1.1.1	7/4/2020 21:31																	
2																					
3	ProjectName	Project1																			
4																					
5	File	Line	Method	All Step Size	Executed	Nesting Le	Complexi	Complexi	return	break	continue	if1	while1	dowhile1	for1	switch1	if2	while2	dowhile2	for2	switch2
6	C:\Eclipse\Workspace\Project1\src\sample\gasstand\Auto	35	sample.ga	3	3	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
7	C:\Eclipse\Workspace\Project1\src\sample\gasstand\Auto	46	sample.ga	3	3	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0
8	C:\Eclipse\Workspace\Project1\src\sample\gasstand\Auto	57	sample.ga	3	3	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
9	C:\Eclipse\Workspace\Project1\src\sample\gasstand\Disc	30	sample.ga	3	3	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
10	C:\Eclipse\Workspace\Project1\src\sample\gasstand\Disc	41	sample.ga	4	4	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
11	C:\Eclipse\Workspace\Project1\src\sample\gasstand\Disc	53	sample.ga	24	7	1	2	2	1	0	0	1	0	0	0	0	1	0	0	0	0
12	C:\Eclipse\Workspace\Project1\src\sample\gasstand\GasS	87	sample.ga	3	3	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
13	C:\Eclipse\Workspace\Project1\src\sample\gasstand\GasS	45	sample.ga	7	7	2	2	2	0	0	0	1	0	0	0	0	1	0	0	0	0

3.6 Share Code check result

The code check result (include the state of the confirmation and the confirmation memo) is shared among the developers.

The code check result is shared by the following operation.

1. The shared code check result is exported.
2. The shared code check result is imported.

Other developers' code check results can be shared, and the time of the re-analysis can be reduced. Moreover, the result of the confirmation allotting it among the developers can be consolidated.

3.6.1 Export Code check result

Export the selected check target project's code check result or the selected check target file's code check result. However, the following selections cannot be done.

- One or more check target projects are selected.
- Check target project and check target file are selected together.
- The files of a different check target project are selected together.

When you use this operation, open a check target project and select [Use Agile+ Relief J] from the [Agile+ Relief J] menu.

<Operations> when do exporting of the code check result of selected check target project

1. Select a check target project in the view of Package Explorer, Project Explorer, or Navigator.
2. Perform either of the following operations.
   - Select [Agile+ Relief J] menu > [Export the check result].
   - Select [Agile+ Relief J] menu > [Export the check result] from the pop-up menu.
3. In the [Export the check result] dialog, specify the exporting file name(*.pgrjres), and click the [Save] button.

<Operations> when do exporting of the code check result of selected check target file

1. Select one or more check target file in the view of Package Explorer, Project Explorer, Navigator, or the views of [Agile+ Relief Confirmation Status].
2. Perform either of the following operations.
   - Select [Agile+ Relief J] menu > [Export the check result]
   - Select [Agile+ Relief J] menu > [Export the check result] from the pop-up menu, when the operation is executed in the view of Package Explorer, Project Explorer, or Navigator.
   - Select [Export the check result] from the pop-up menu, when the operation is executed in the views of [Agile+ Relief Confirmation Status].
3. In the [Export the check result] dialog, specify the exporting file name(*.pgrjres), and click the [Save] button.

3.6.2 Import Code check result

Import the selected check target project's code check result and check target file's code check result. However, the following selections cannot be done.

- One or more check target projects are selected.
- Check target project are check target file are selected together.
- The files of a different check target project are selected together

When you use this operation, open a check target project and select [Use Agile+ Relief J] from the [Agile+ Relief J] menu.

<Operations> when do importing of the code check result of selected check target project

1. Select a check target project in the view of Package Explorer, Project Explorer, or Navigator.
2. Perform either of the following operations.
    - Select [Agile+ Relief J] menu > [Import the check result].
    - Select [Agile+ Relief J] menu > [Import the check result] from the pop-up menu.
3. In the [Import the check result] dialog, specify the importing file name(*.pgrjres), and click the [Open] button.

<Operations> when do importing of the code check result of selected check target file

1. Select one or more check target file in the view of Package Explorer, Project Explorer, or Navigator.
2. Perform either of the following operations.
    - Select [Agile+ Relief J] menu > [Import the check result].
    - Select [Agile+ Relief J] menu > [Import the check result] from the pop-up menu, when the operation is executed in the view of Package Explorer, Project Explorer, or Navigator.
    - Select [Agile+ Relief J] menu > [Import the check result] from the pop-up menu, when the operation is executed in the views of [Agile+ Relief Confirmation Status].
3. In the [Import the check result] dialog, specify the importing file name(*.pgrjres), and click the [Open] button.

Note

- When the code check result exists in the selected check target file, the dialog that selects the importing method is displayed. Select either of the following importing methods.

Import method	Operation
Replace all	The code check result (include the confirmation and the confirmation memo) is replaced.
Replace only confirmed information and comment.	Only the state of the confirmation and the confirmation memo are replaced with message of the importing destination.

- The message that importing is not done by the source modification and the source deletion, etc. is output to the file of the csv form. The log file is output to the same folder as the importing check result file.

<File Name>

```
ProjectName_import_yyyyMMddhhmmss.log
```

<Format>

The column header that shows the meaning of each column is output to the 1st line. The message of each line that importing is not done is output since the 2nd line. Each column is explained as follows.

<table>
<tr><th>Column</th><th>Column Header Name</th><th>Description</th></tr>
<tr><td>1</td><td>Confirmed</td><td>Information on [Confirmed] of [Agile+ Relief Message List] is set.
<table>
<tr><th>[Confirmed] column</th><th>value</th></tr>
<tr><td>Unchecked</td><td>0</td></tr>
<tr><td>Checked</td><td>1</td></tr>
</table></td></tr>
<tr><td>2</td><td>Rule Code</td><td>The Rule Code of the message is set.</td></tr>
<tr><td>3</td><td>Message</td><td>The string of message is set.</td></tr>
</table>

Column	Column Header Name	Description
4	Memo	Information on [Memo] of [Agile+ Relief Message List] is set.
5	FileName	The name of the file where the message is detected is set.
6	FilePath	The path of the file where the message is detected is set.
7	Line	The line number where the message is detected is set.

3.7 Help Display

3.7.1 Display Index

The help index is displayed.

<Operations>

1. Select Help from [Help] > [Help Contents].
2. Select [Agile+ Relief J Code check Operation Guide] from the index.

3.7.2 Display Related Topic

The topic related to the following views can be displayed.

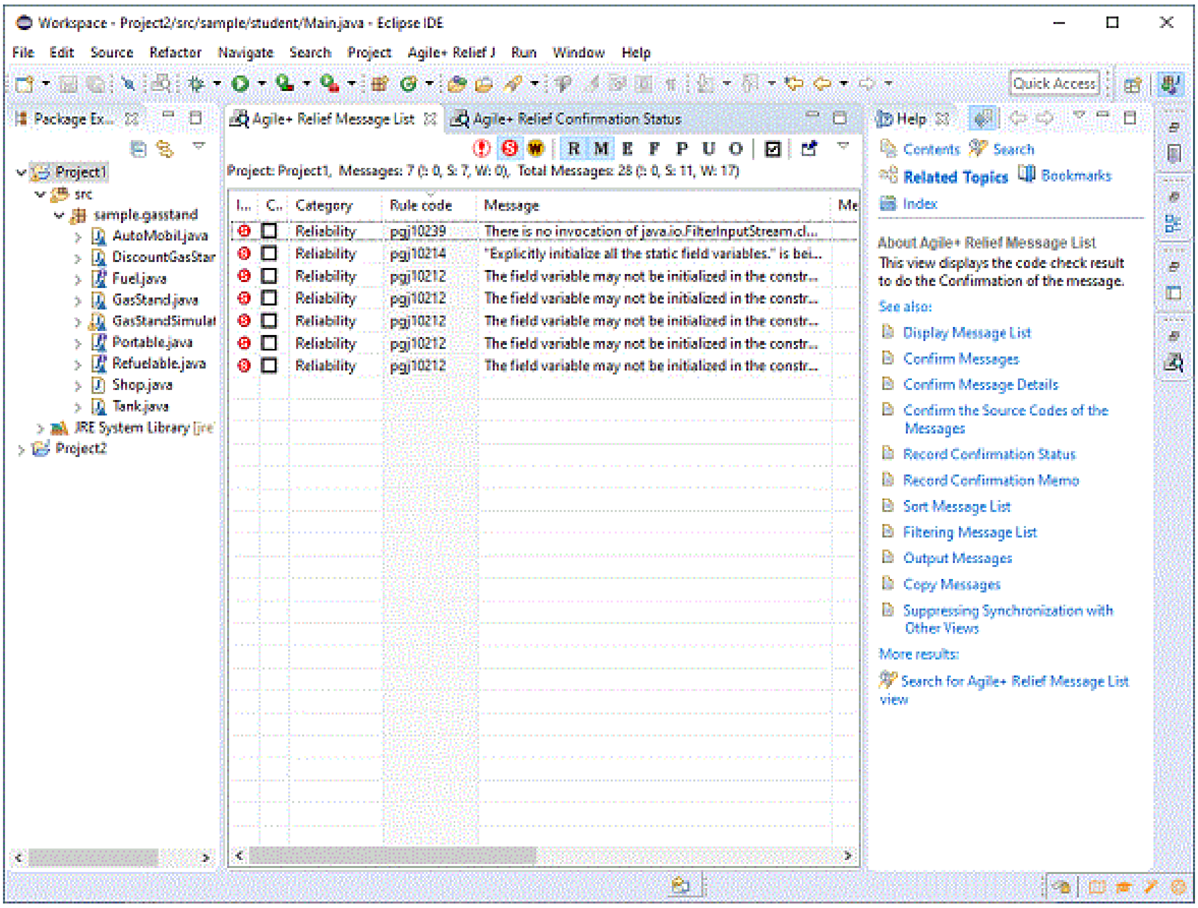
- Agile^{+} Relief Message List
- Agile^{+} Relief Message Detail
- Agile^{+} Relief Confirmation Status
- Preferences- [Agile+ Relief J]
- Properties for Project - [Agile+ Relief J]

<Operations>

1. Press the [F1] key in view with focus state.

   Related topics are displayed.

Example: When [F1] key is pressed in the message list.



Project: Project1, Messages: 7 (: 0, S: 7, W: 0), Total Messages: 28 (: 0, S: 11, W: 17)

I...	C...	Category	Rule code	Message	Me
S	□	Reliability	pgj10239	There is no invocation of java.io.FilterInputStream.cl...	
S	□	Reliability	pgj10214	"Explicitly initialize all the static field variables." is bei...	
S	□	Reliability	pgj10212	The field variable may not be initialized in the constr...	
S	□	Reliability	pgj10212	The field variable may not be initialized in the constr...	
S	□	Reliability	pgj10212	The field variable may not be initialized in the constr...	
S	□	Reliability	pgj10212	The field variable may not be initialized in the constr...	
S	□	Reliability	pgj10212	The field variable may not be initialized in the constr...	

About Agile+ Relief Message List

This view displays the code check result to do the Confirmation of the message.

See also:

- Display Message List
- Confirm Messages
- Confirm Message Details
- Confirm the Source Codes of the Messages
- Record Confirmation Status
- Record Confirmation Memo
- Sort Message List
- Filtering Message List
- Output Messages
- Copy Messages
- Suppressing Synchronization with Other Views

More results:

Search for Agile+ Relief Message List view

Chapter 4 How to Use Code check

This chapter describes the operations of Agile+ Relief J and the order of using samples. The samples stored in the folder "Agile+ Relief installation folder\PGReliefJava\sample\JavaProject" can be used.
The codes that violate rules are recorded in the Java source code of samples in advance. The following sample is taken as an example to describe the procedure from performing Code check, to confirming and outputting results.

Sample

- Storage path: C:\Program Files\AgilePlus\PGReliefJava\sample\JavaProject
- Project: Project2

4.1 Prepare Sample Project

Create a sample project on Eclipse.

1. Select [Import...] from the [File] menu of Eclipse. The [Import]-[Select] wizard is displayed.
2. Select [General]-[Existing Project into Workspace] from the [Select an import source], and click [Next >] button. The [Import]-[Import Projects] wizard is displayed.
3. Specify C:\Program Files\AgilePlus\PGReliefJava\sample\JavaProject for the folder by [Select root directory] textbox.
4. Select Project2 from project, and click the [Finish] button.

   After copying the sample to the work space, select [Copy project into workspace] checkbox.

Build the project after it has been created.

4.2 Activate Agile+ Relief J

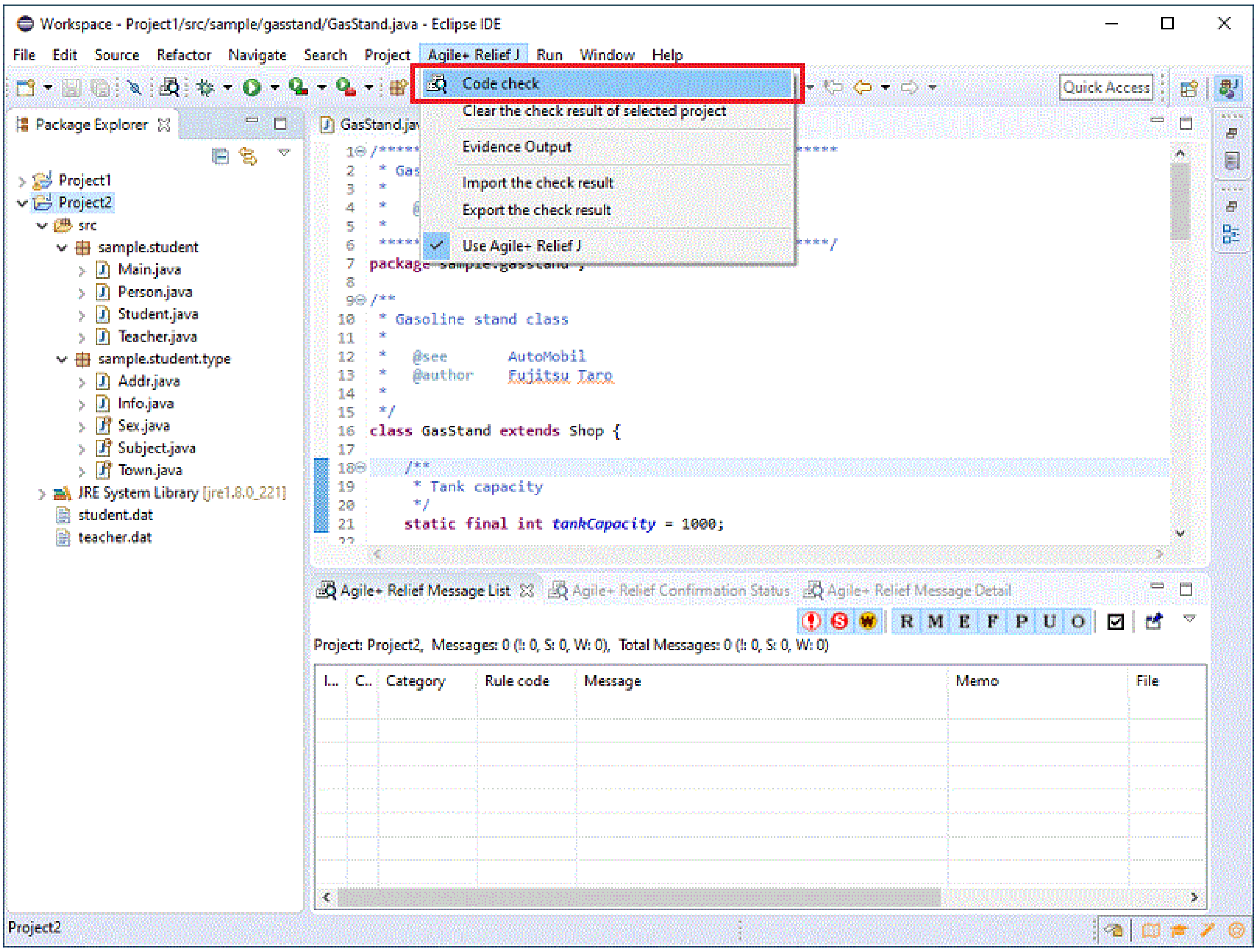
Activate [Use Agile+ Relief J] from the [Agile+ Relief J] menu, Agile+ Relief J can be used.

After the Agile+ Relief J is activated, the views of [Agile+ Relief Message List], [Agile+ Relief Message Detail], and [Agile+ Relief Confirmation Status] are displayed.

4.3 Perform Code check

Perform Code check for the sample project.

Select Project2 from Package Explorer, and select [Code check] from the [Agile+ Relief J] menu, the Code check will start.



```
/*****
 * Gas
 *
 *   @
 *
 *****                    ****/
package
```

```
/**
 * Gasoline stand class
 *
 *   @see      AutoMobil
 *   @author   Fujitsu Taro
 *
 */
class GasStand extends Shop {

    /**
     * Tank capacity
     */
    static final int tankCapacity = 1000;
```

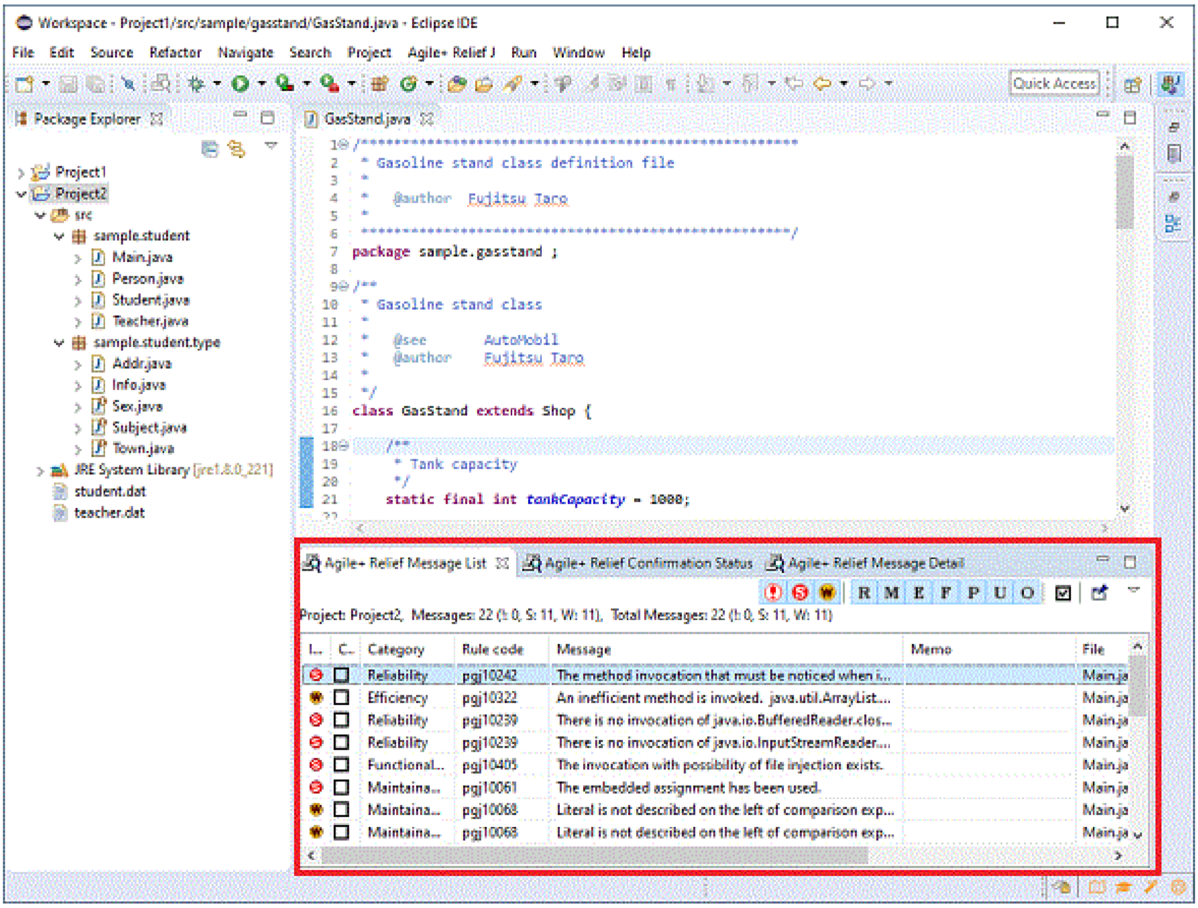
Project: Project2, Messages: 0 (!: 0, S: 0, W: 0), Total Messages: 0 (!: 0, S: 0, W: 0)

After the Code check has completed, the check result is displayed in the views of [Agile+ Relief Message List] and [Agile+ Relief Confirmation Status].

4.4 Confirm Messages

Confirm accusation messages that are set as the Code check result.

After Project2 is selected from Package Explorer, the message corresponding to the java source code of Project2 is displayed in the [Agile + Relief Message List] view.


Workspace - Project1/src/sample/gasstand/GasStand.java - Eclipse IDE
File Edit Source Refactor Navigate Search Project Agile+ Relief J Run Window Help
Quick Access
Package Explorer
Project1
Project2
src
sample.student
Main.java
Person.java
Student.java
Teacher.java
sample.student.type
Addr.java
Info.java
Sex.java
Subject.java
Town.java
JRE System Library [jre1.8.0_221]
student.dat
teacher.dat
GasStand.java
Agile+ Relief Message List
Agile+ Relief Confirmation Status
Agile+ Relief Message Detail
R M E F P U O

```
/*******************************************************
 * Gasoline stand class definition file
 *
 *   @author  Fujitsu Taro
 *
 *******************************************************/
package sample.gasstand ;

/**
 * Gasoline stand class
 *
 *   @see      AutoMobil
 *   @author   Fujitsu Taro
 *
 */
class GasStand extends Shop {

    /**
     * Tank capacity
     */
    static final int tankCapacity = 1000;
```

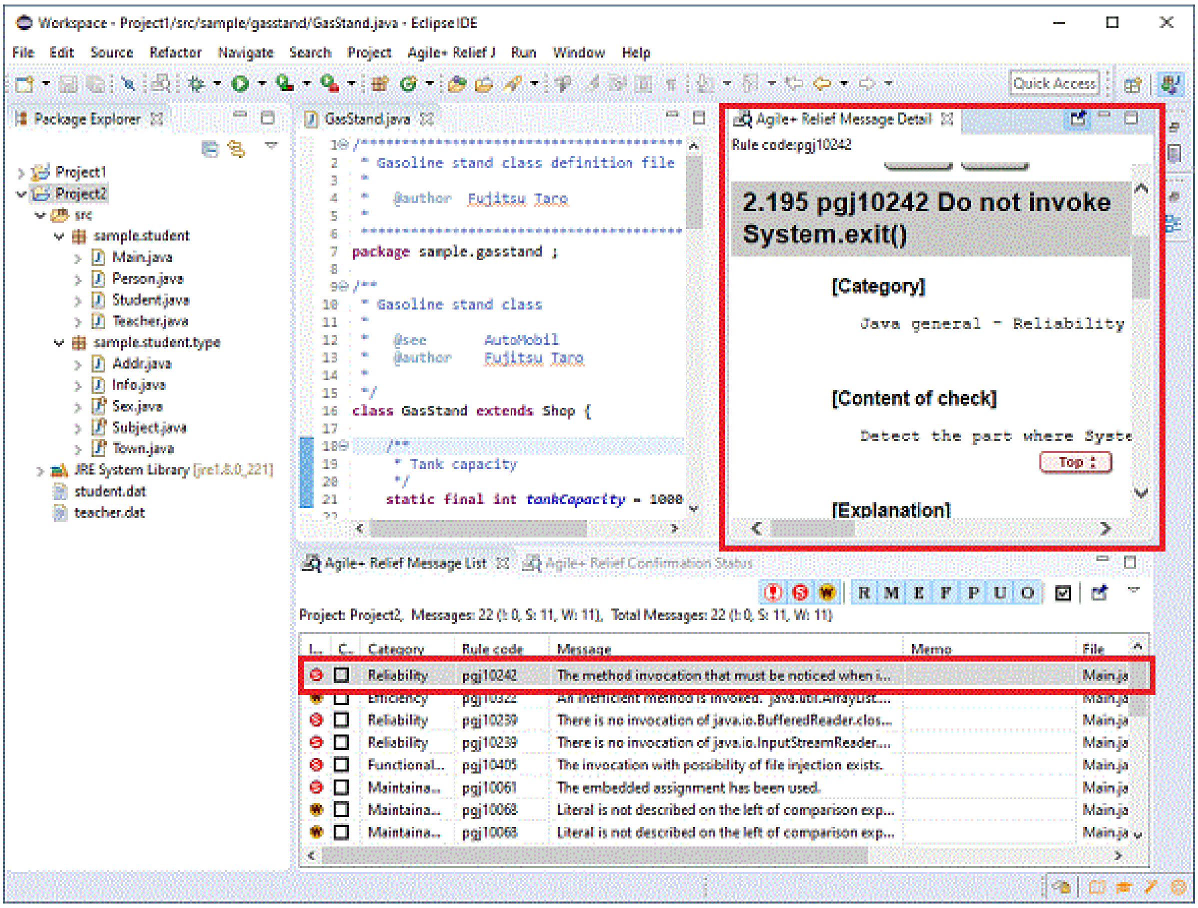
Project: Project2, Messages: 22 (I: 0, S: 11, W: 11), Total Messages: 22 (I: 0, S: 11, W: 11)

I...	C...	Category	Rule code	Message	Memo	File
S	□	Reliability	pgj10242	The method invocation that must be noticed when i...		Main.ja
W	□	Efficiency	pgj10322	An inefficient method is invoked. java.util.ArrayList...		Main.ja
S	□	Reliability	pgj10239	There is no invocation of java.io.BufferedReader.clos...		Main.ja
S	□	Reliability	pgj10239	There is no invocation of java.io.InputStreamReader....		Main.ja
S	□	Functional...	pgj10405	The invocation with possibility of file injection exists.		Main.ja
S	□	Maintaina...	pgj10061	The embedded assignment has been used.		Main.ja
W	□	Maintaina...	pgj10068	Literal is not described on the left of comparison exp...		Main.ja
W	□	Maintaina...	pgj10068	Literal is not described on the left of comparison exp...		Main.ja

4.5 Confirm Message Details

Confirm message details, including the rules, category, contents to be checked, meanings, and handling methods.

After the message of pgj10242 is selected from the [Agile+ Relief Message List] view, details about pgj10242 are displayed in the [Agile + Relief Message Detail] view.



Workspace - Project1/src/sample/gasstand/GasStand.java - Eclipse IDE
File Edit Source Refactor Navigate Search Project Agile+ Relief J Run Window Help
Quick Access
Package Explorer
Project1
Project2
src
sample.student
Main.java
Person.java
Student.java
Teacher.java
sample.student.type
Addr.java
Info.java
Sex.java
Subject.java
Town.java
JRE System Library [jre1.8.0_221]
student.dat
teacher.dat
GasStand.java
Agile+ Relief Message Detail
Top
Agile+ Relief Message List
Agile+ Relief Confirmation Status
R M E F P U O

```
/*****************************************
 * Gasoline stand class definition file
 *
 *   @author  Fujitsu Taro
 *
 *****************************************
package sample.gasstand ;

/**
 * Gasoline stand class
 *
 *   @see       AutoMobil
 *   @author    Fujitsu Taro
 *
 */
class GasStand extends Shop {

    /**
     * Tank capacity
     */
    static final int tankCapacity = 1000
```

Rule code:pgj10242

2.195 pgj10242 Do not invoke System.exit()

[Category]

Java general - Reliability

[Content of check]

Detect the part where Syste

[Explanation]

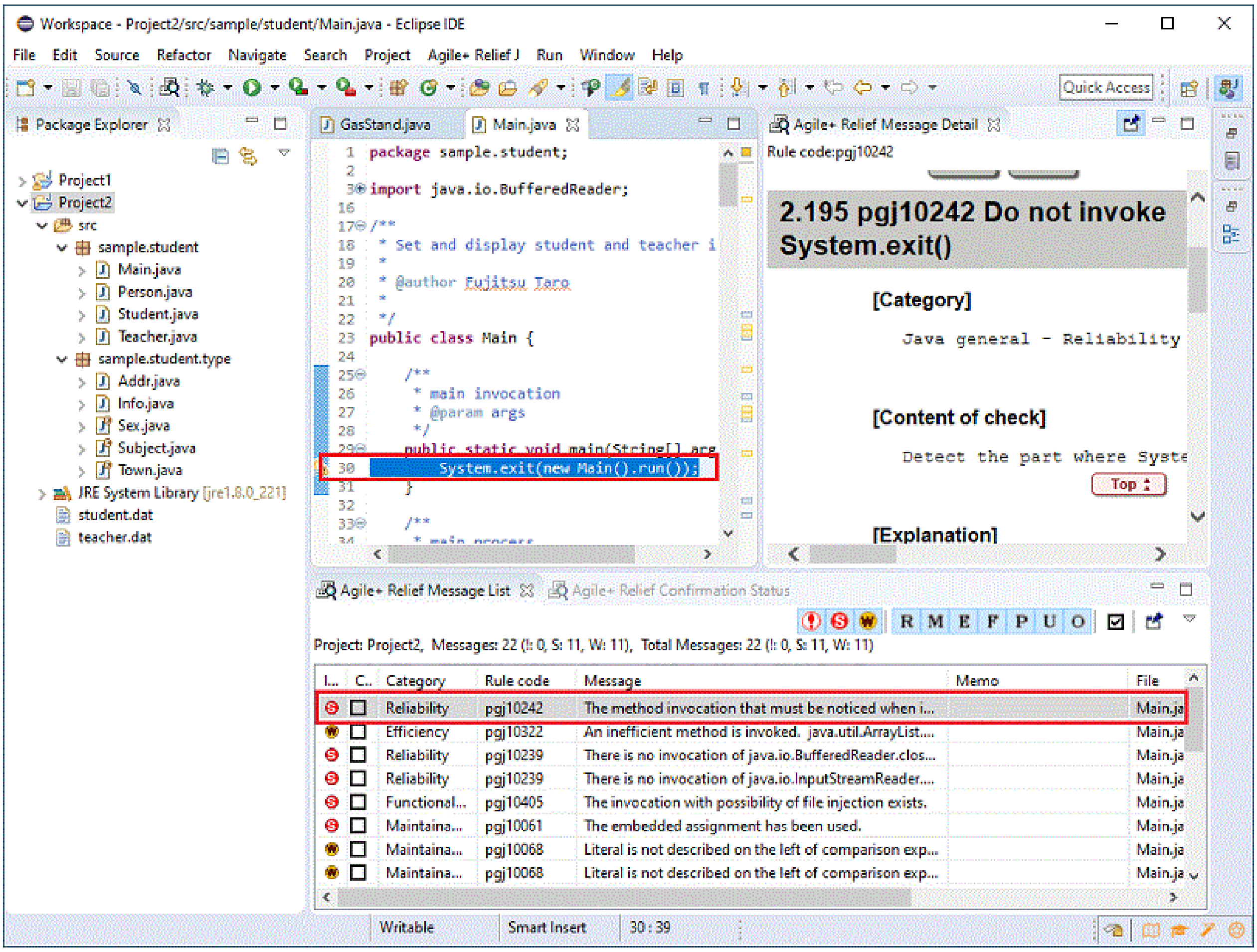
Project: Project2, Messages: 22 (I: 0, S: 11, W: 11), Total Messages: 22 (I: 0, S: 11, W: 11)

I...	C...	Category	Rule code	Message	Memo	File
S	□	Reliability	pgj10242	The method invocation that must be noticed when i...		Main.ja
W	□	Efficiency	pgj10322	An inefficient method is invoked. java.util.ArrayList...		Main.ja
S	□	Reliability	pgj10239	There is no invocation of java.io.BufferedReader.clos...		Main.ja
S	□	Reliability	pgj10239	There is no invocation of java.io.InputStreamReader....		Main.ja
S	□	Functional...	pgj10405	The invocation with possibility of file injection exists.		Main.ja
S	□	Maintaina...	pgj10061	The embedded assignment has been used.		Main.ja
W	□	Maintaina...	pgj10068	Literal is not described on the left of comparison exp...		Main.ja
W	□	Maintaina...	pgj10068	Literal is not described on the left of comparison exp...		Main.ja

4.6 Confirm Source Codes

Open an editor and confirm the messages of the source code.

Click the message line of pgj10242 in the [Agile+ Relief Message List] view, and the message line of "Main.java" will be located and displayed in the editor. Also, marker will be attached to indication location on the editor.


Workspace - Project2/src/sample/student/Main.java - Eclipse IDE

```
package sample.student;

import java.io.BufferedReader;

/**
 * Set and display student and teacher i
 *
 * @author Fujitsu Taro
 *
 */
public class Main {

    /**
     * main invocation
     * @param args
     */
    public static void main(String[] arg
        System.exit(new Main().run());
    }

    /**
     * main process
```

Rule code:pgj10242

2.195 pgj10242 Do not invoke System.exit()

[Category]

Java general - Reliability

[Content of check]

Detect the part where Syste

[Explanation]

Agile+ Relief Message List   Agile+ Relief Confirmation Status

Project: Project2, Messages: 22 (!: 0, S: 11, W: 11), Total Messages: 22 (!: 0, S: 11, W: 11)

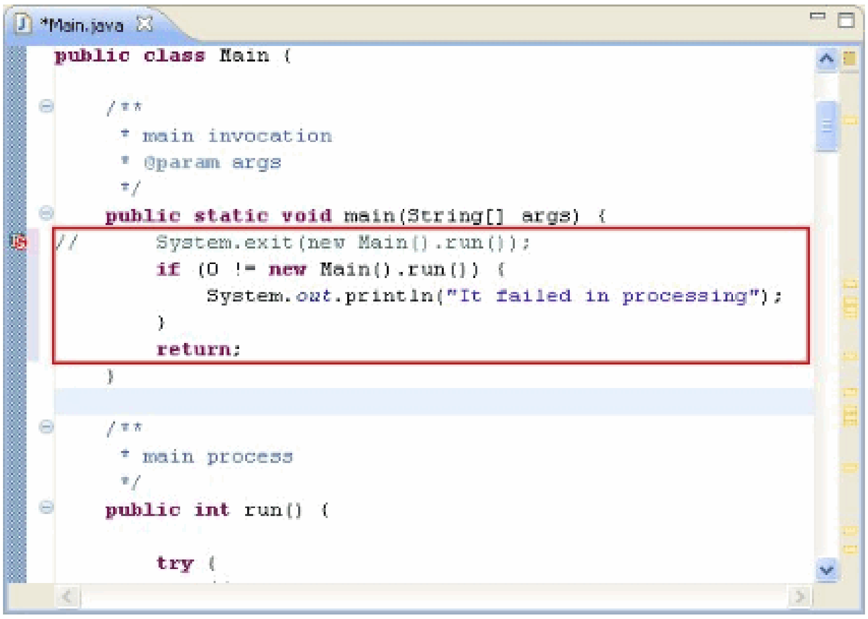
I...	C...	Category	Rule code	Message	Memo	File
S	□	Reliability	pgj10242	The method invocation that must be noticed when i...		Main.ja
W	□	Efficiency	pgj10322	An inefficient method is invoked. java.util.ArrayList....		Main.ja
S	□	Reliability	pgj10239	There is no invocation of java.io.BufferedReader.clos...		Main.ja
S	□	Reliability	pgj10239	There is no invocation of java.io.InputStreamReader....		Main.ja
S	□	Functional...	pgj10405	The invocation with possibility of file injection exists.		Main.ja
S	□	Maintaina...	pgj10061	The embedded assignment has been used.		Main.ja
W	□	Maintaina...	pgj10068	Literal is not described on the left of comparison exp...		Main.ja
W	□	Maintaina...	pgj10068	Literal is not described on the left of comparison exp...		Main.ja

Writable   Smart Insert   30 : 39

4.7 Modify Source Codes

Correct the indication location of source code according to the message and message detail.

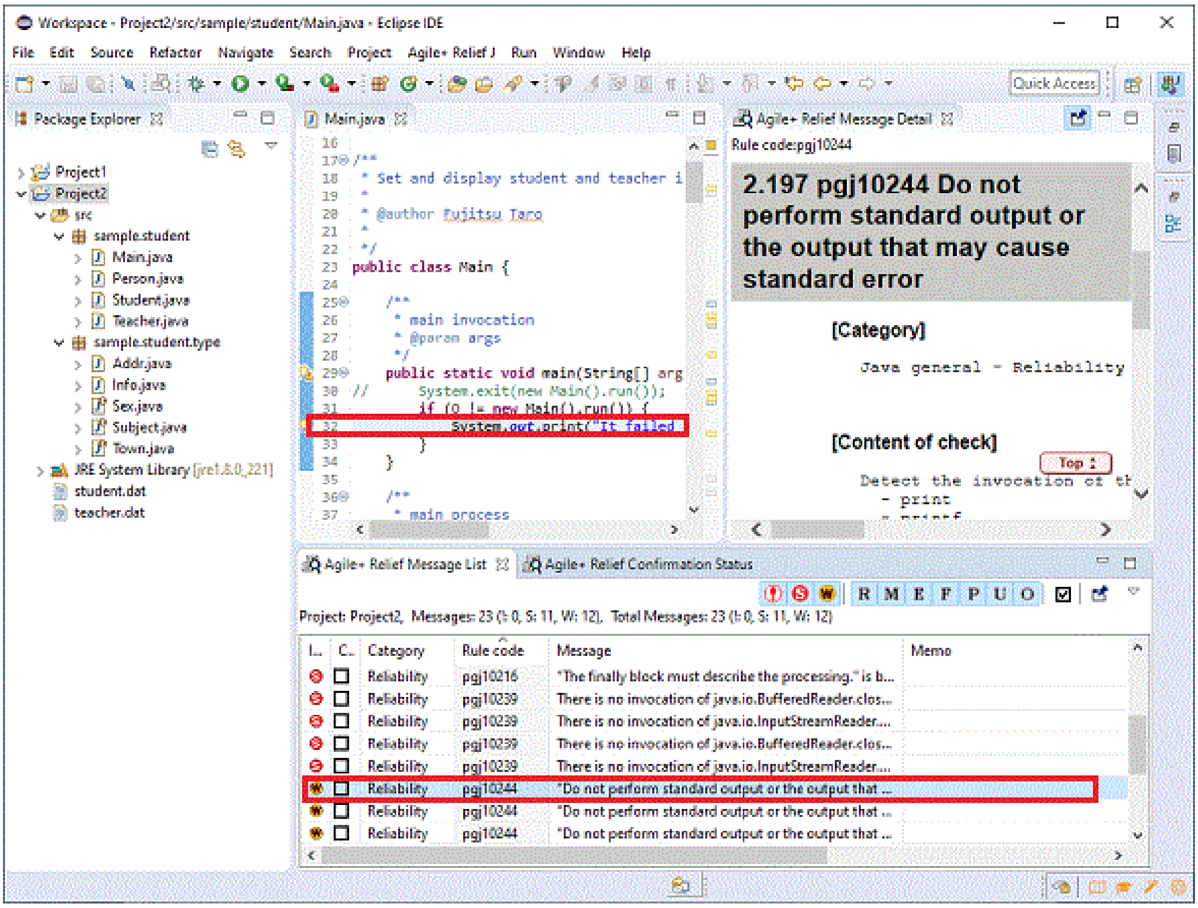
Pgj10242 is a rule that does not invoke System.exit(). Therefore, the run () method of Main class will be invoked instead of the System.exit() method. When the return value is not 0, output messages and correct it to returned.


*Main.java

```
public class Main {

    /**
     * main invocation
     * @param args
     */
    public static void main(String[] args) {
//      System.exit(new Main().run());
        if (0 != new Main().run()) {
            System.out.println("It failed in processing");
        }
        return;
    }

    /**
     * main process
     */
    public int run() {

        try {
```

Save the source and perform Code check again.

The modification of messages can be confirmed.


Workspace - Project2/src/sample/student/Main.java - Eclipse IDE
File Edit Source Refactor Navigate Search Project Agile+ Relief J Run Window Help
Quick Access
Package Explorer
Project1
Project2
src
sample.student
Main.java
Person.java
Student.java
Teacher.java
sample.student.type
Addr.java
Info.java
Sex.java
Subject.java
Town.java
JRE System Library [jre1.8.0_221]
student.dat
teacher.dat
Main.java
Agile+ Relief Message Detail
Top ↕
Agile+ Relief Message List
Agile+ Relief Confirmation Status
R M E F P U O

```
/**
 * Set and display student and teacher i
 *
 * @author Fujitsu Taro
 *
 */
public class Main {

    /**
     * main invocation
     * @param args
     */
    public static void main(String[] arg
//      System.exit(new Main().run());
        if (0 != new Main().run()) {
            System.out.print("It failed
        }
    }

    /**
     * main process
```

Rule code:pgj10244

2.197 pgj10244 Do not perform standard output or the output that may cause standard error

[Category]

Java general - Reliability

[Content of check]

Detect the invocation of th
- print

Project: Project2, Messages: 23 (!: 0, S: 11, W: 12), Total Messages: 23 (!: 0, S: 11, W: 12)

I...	C...	Category	Rule code	Message	Memo
S	□	Reliability	pgj10216	"The finally block must describe the processing." is b...	
S	□	Reliability	pgj10239	There is no invocation of java.io.BufferedReader.clos...	
S	□	Reliability	pgj10239	There is no invocation of java.io.InputStreamReader....	
S	□	Reliability	pgj10239	There is no invocation of java.io.BufferedReader.clos...	
S	□	Reliability	pgj10239	There is no invocation of java.io.InputStreamReader....	
W	□	Reliability	pgj10244	"Do not perform standard output or the output that ...	
W	□	Reliability	pgj10244	"Do not perform standard output or the output that ...	
W	□	Reliability	pgj10244	"Do not perform standard output or the output that ...	

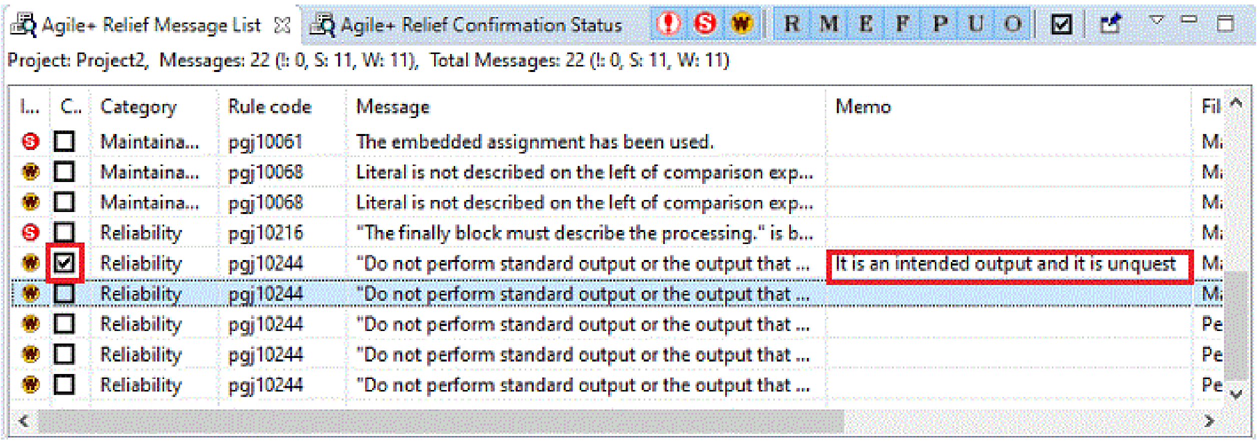
4.8 Record Confirmation and Abstracts

Perform responsive actions for a new message.

This message is not for standard output. However, the current program is proposed for standard output.

Therefore, actions of correct the message is not needed.

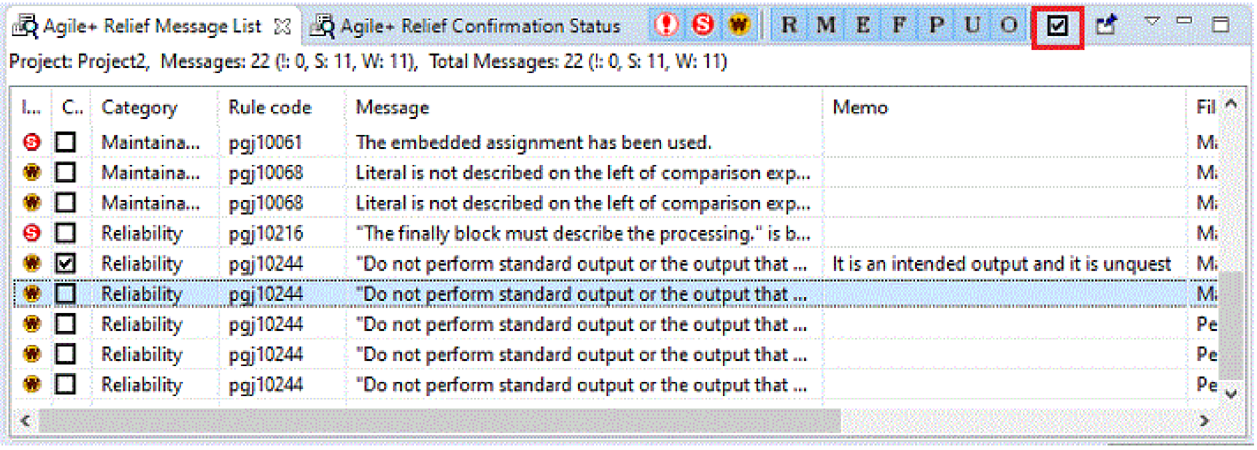
Select the [Confirmed] checkbox and recode reasons in the [Memo] column.



Project: Project2, Messages: 22 (!: 0, S: 11, W: 11), Total Messages: 22 (!: 0, S: 11, W: 11)

I...	C...	Category	Rule code	Message	Memo	Fil
S	□	Maintaina...	pgj10061	The embedded assignment has been used.		M
W	□	Maintaina...	pgj10068	Literal is not described on the left of comparison exp...		M
W	□	Maintaina...	pgj10068	Literal is not described on the left of comparison exp...		M
S	□	Reliability	pgj10216	"The finally block must describe the processing." is b...		M
W	☑	Reliability	pgj10244	"Do not perform standard output or the output that ...	It is an intended output and it is unquest	M
W	□	Reliability	pgj10244	"Do not perform standard output or the output that ...		M
W	□	Reliability	pgj10244	"Do not perform standard output or the output that ...		Pe
W	□	Reliability	pgj10244	"Do not perform standard output or the output that ...		Pe
W	□	Reliability	pgj10244	"Do not perform standard output or the output that ...		Pe

If ☑ (indicating the confirmed state) on the tool bar is disabled, the messages for which the [Confirmed] checkbox is selected will not be displayed. By performing this operation, displaying only the important messages is enabled, and efficient confirmation can be performed.



Project: Project2, Messages: 22 (!: 0, S: 11, W: 11), Total Messages: 22 (!: 0, S: 11, W: 11)

I...	C..	Category	Rule code	Message	Memo	Fil
S	□	Maintaina...	pgj10061	The embedded assignment has been used.		M:
W	□	Maintaina...	pgj10068	Literal is not described on the left of comparison exp...		M:
W	□	Maintaina...	pgj10068	Literal is not described on the left of comparison exp...		M:
S	□	Reliability	pgj10216	"The finally block must describe the processing." is b...		M:
W	☑	Reliability	pgj10244	"Do not perform standard output or the output that ...	It is an intended output and it is unquest	M:
W	□	Reliability	pgj10244	"Do not perform standard output or the output that ...		M:
W	□	Reliability	pgj10244	"Do not perform standard output or the output that ...		Pe
W	□	Reliability	pgj10244	"Do not perform standard output or the output that ...		Pe
W	□	Reliability	pgj10244	"Do not perform standard output or the output that ...		Pe

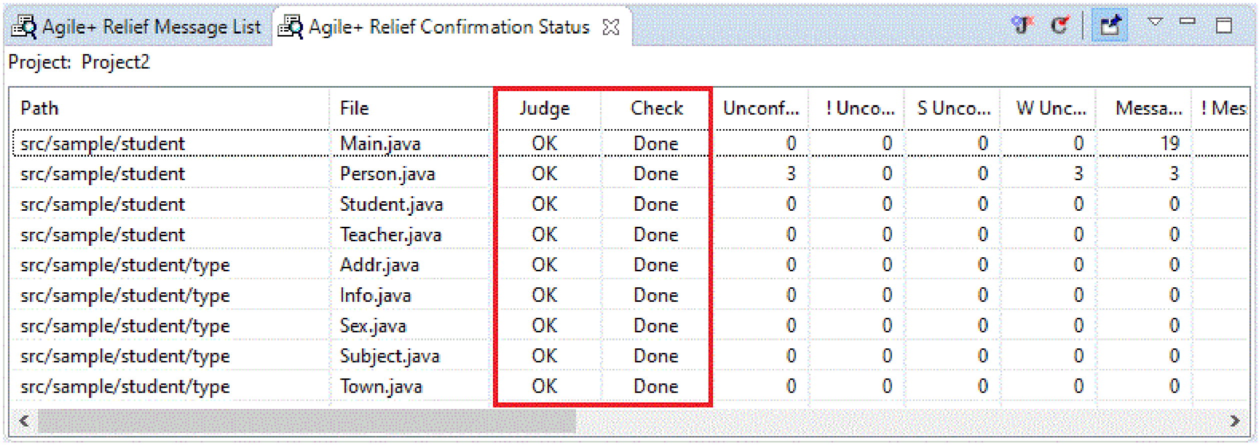
4.9 Confirm Judgment Results

The responsive action state of messages can be confirmed in the [Agile+ Relief Confirmation Status] view.

Confirm the [Judge] column and [Check] column.

For the source that is NG in the [Judge] column, please confirm the messages in the [Agile+ Relief Message List] view and correct them.

For the source that is [Not yet] in the [Check] column, please perform Code check and confirm the judgment result.



Project: Project2

Path	File	Judge	Check	Unconf...	! Unco...	S Unco...	W Unc...	Messa...	! Mes
src/sample/student	Main.java	OK	Done	0	0	0	0	19	
src/sample/student	Person.java	OK	Done	3	0	0	3	3	
src/sample/student	Student.java	OK	Done	0	0	0	0	0	
src/sample/student	Teacher.java	OK	Done	0	0	0	0	0	
src/sample/student/type	Addr.java	OK	Done	0	0	0	0	0	
src/sample/student/type	Info.java	OK	Done	0	0	0	0	0	
src/sample/student/type	Sex.java	OK	Done	0	0	0	0	0	
src/sample/student/type	Subject.java	OK	Done	0	0	0	0	0	
src/sample/student/type	Town.java	OK	Done	0	0	0	0	0	

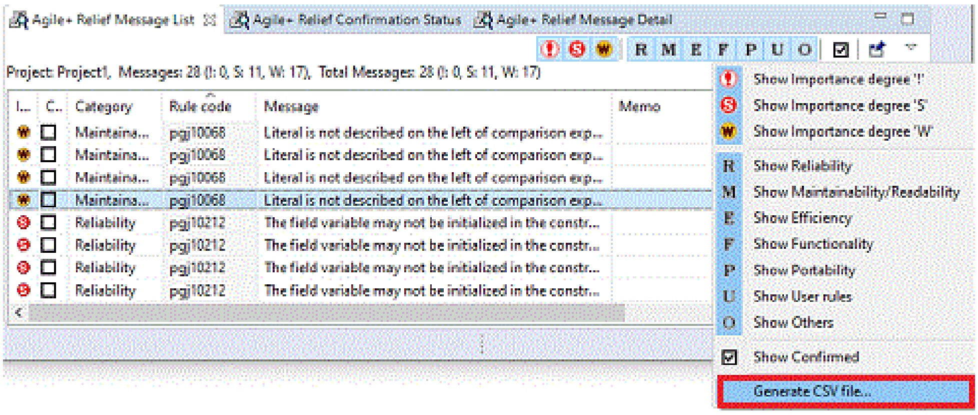
4.10 Output Message Result

After all messages are corrected, output the message results as a file, and use as a supplementary document for reviewing.

To review all the results, please output the message results when the filter setting of the view is used to display all results.

Output Message list

Select [Generate CSV file...] from the view menu of the message list and specify the output destination in the [Save As...] dialog box. Please turn on all the filter items for displaying all the messages.

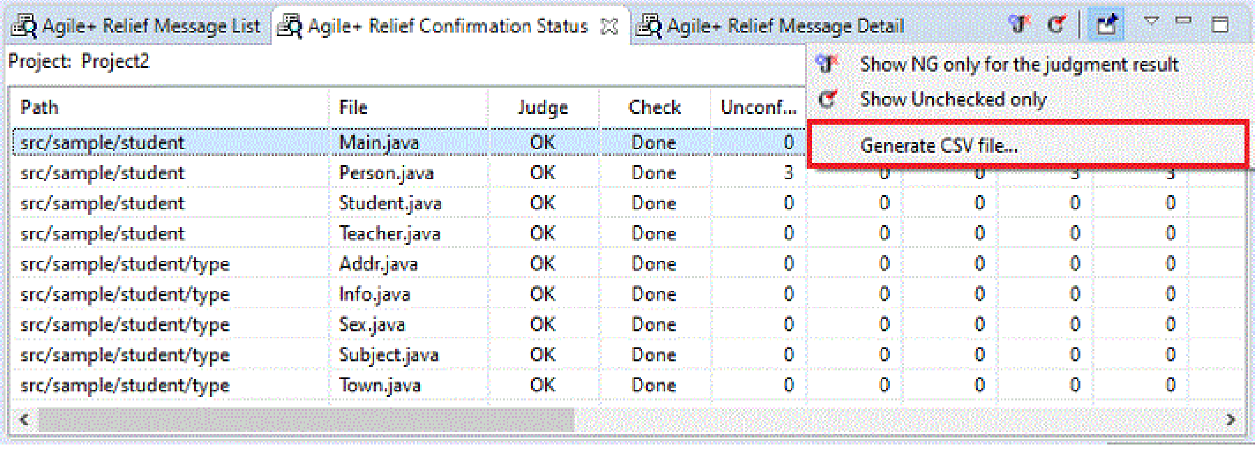

Agile+ Relief Message List
Agile+ Relief Confirmation Status
Agile+ Relief Message Detail
R M E F P U O
Show Importance degree '!'
Show Importance degree 'S'
Show Importance degree 'W'
Show Reliability
Show Maintainability/Readability
Show Efficiency
Show Functionality
Show Portability
Show User rules
Show Others
Show Confirmed
Generate CSV file...

Project: Project1, Messages: 28 (I: 0, S: 11, W: 17), Total Messages: 28 (I: 0, S: 11, W: 17)

I...	C...	Category	Rule code	Message	Memo
W	□	Maintaina...	pgj10068	Literal is not described on the left of comparison exp...	
W	□	Maintaina...	pgj10068	Literal is not described on the left of comparison exp...	
W	□	Maintaina...	pgj10068	Literal is not described on the left of comparison exp...	
W	□	Maintaina...	pgj10068	Literal is not described on the left of comparison exp...	
S	□	Reliability	pgj10212	The field variable may not be initialized in the constr...	
S	□	Reliability	pgj10212	The field variable may not be initialized in the constr...	
S	□	Reliability	pgj10212	The field variable may not be initialized in the constr...	
S	□	Reliability	pgj10212	The field variable may not be initialized in the constr...	

Output Judgment Results

Select [Generate CSV file...] from the view menu of Confirmation Status and select the output destination in the [Save As...] dialog box. Please turn off all the filter items for outputting all the judgment results.


Agile+ Relief Message List
Agile+ Relief Confirmation Status
Agile+ Relief Message Detail
Show NG only for the judgment result
Show Unchecked only
Generate CSV file...

Project: Project2

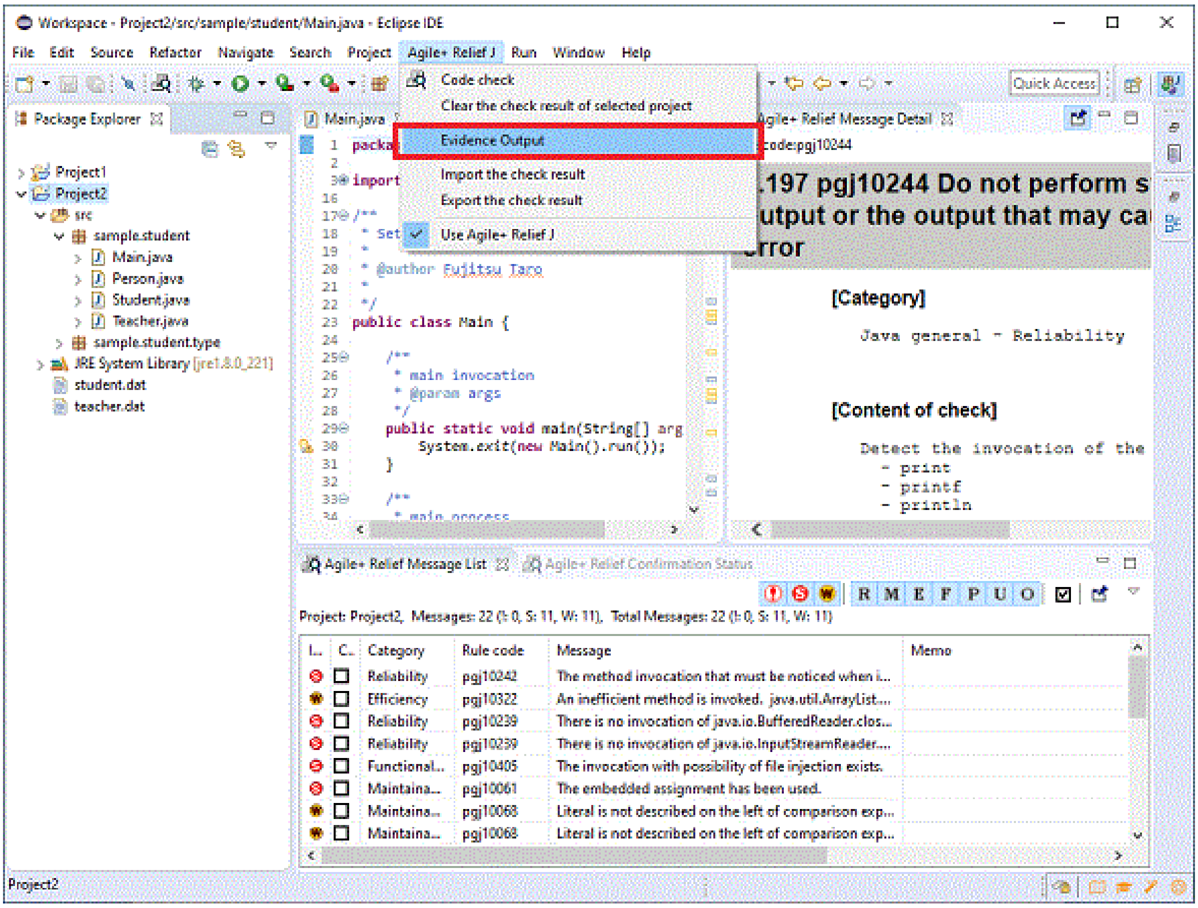
Path	File	Judge	Check	Unconf...				
src/sample/student	Main.java	OK	Done	0				
src/sample/student	Person.java	OK	Done	3	0	0	3	3
src/sample/student	Student.java	OK	Done	0	0	0	0	0
src/sample/student	Teacher.java	OK	Done	0	0	0	0	0
src/sample/student/type	Addr.java	OK	Done	0	0	0	0	0
src/sample/student/type	Info.java	OK	Done	0	0	0	0	0
src/sample/student/type	Sex.java	OK	Done	0	0	0	0	0
src/sample/student/type	Subject.java	OK	Done	0	0	0	0	0
src/sample/student/type	Town.java	OK	Done	0	0	0	0	0

4.11 Output Evidence

When the action of the message detected with Code check is completed, the evidence is output.

The evidence is used to confirm Code check is properly executed by the program review etc.

Select Project2 from Package Explorer, and select [Evidence Output] from the [Agile+ Relief J] menu, the evidence output will start.



```
packa
import
/**
 * Set
 *
 * @author Fujitsu Taro
 *
 */
public class Main {

    /**
     * main invocation
     * @param args
     */
    public static void main(String[] arg
        System.exit(new Main().run());
    }

    /**
     * main process
```

code:pgj10244

.197 pgj10244 Do not perform s utput or the output that may ca rror

[Category]

Java general - Reliability

[Content of check]

```
Detect the invocation of the
  - print
  - printf
  - println
```

Project: Project2, Messages: 22 (I: 0, S: 11, W: 11), Total Messages: 22 (I: 0, S: 11, W: 11)

I...	C...	Category	Rule code	Message	Memo
S	□	Reliability	pgj10242	The method invocation that must be noticed when i...	
W	□	Efficiency	pgj10322	An inefficient method is invoked. java.util.ArrayList...	
S	□	Reliability	pgj10239	There is no invocation of java.io.BufferedReader.clos...	
S	□	Reliability	pgj10239	There is no invocation of java.io.InputStreamReader....	
S	□	Functional...	pgj10405	The invocation with possibility of file injection exists.	
S	□	Maintaina...	pgj10061	The embedded assignment has been used.	
W	□	Maintaina...	pgj10068	Literal is not described on the left of comparison exp...	
W	□	Maintaina...	pgj10068	Literal is not described on the left of comparison exp...	

Chapter 5 Operating Environment Error

The following lists shows the meaning and responsive actions for operating environment errors that are notified by Agile+ Relief J.

When the operating environment error occurs, Agile+ Relief J interrupts processing to the demanded operation. Please execute a similar operation again after solving the operating environment error referring to the following.

Table 5.1 List of Operating Environment Errors

Code	Message Character String	Meaning	Responsive Action
ERR001	Error occurred during check operation.	Exception occurred in Agile+ Relief J.	Please contact the inquiry window of our company.
ERR002	Insufficient memory.	The memory was not enough during the execution of Agile+ Relief J.	- Please specify the larger value as the maximum heap size for code check, and execute again. - Please reduce the number of sources being targeted for code check, and execute again.
ERR003	Agile+ Relief J installation environment error.	Installation environment of Agile+ Relief J may be destroyed.	Please re-install Agile+ Relief J.
ERR004	JDK environment setting (JAVA_HOME) error.	- JDK is not installed. - The environment variable JAVA_HOME is not set or the setting includes an error.	- Please install JDK. - Please set the environment variable JAVA_HOME.
ERR100	Failed to input file.	- No privilege to read the Java source file. - The specified encoding is different from the encoding of the Java source file.	- Please confirm the existence of the file, access privilege and network, and make the file into readable state. - Please change the encoding of the file to the encoding that is supported by Agile+ Relief J.
ERR101	Failed to parse the file.	A syntax error is detected in Java source codes.	Please correct the syntax error, and execute code check again.
ERR102	The class library that is necessary for parsing is not found.	Specification of class library is insufficient.	Please specify all the necessary class libraries.
ERR103	The file to be checked is not found.	- The specified file does not exist. - The file to be checked under the specified project does not exist. - The specified project folder does not exist.	Please confirm the existence of the file and the folder.
ERR104	Class file is not found.	Class file is not found.	Please build the Java source code as a targeted for check, and create the class file.
ERR105	Failed to input/output work file.	- There is no privilege for reading/writing. - The disk capacity is insufficient. - The network is cut off.	Please confirm the access privilege of the target folder and disk capacity, and change it into readable/writable state.
ERR106	Class file may not be the latest version. Please build the Java	Class file may not be the latest version.	Please build the Java source code as a targeted for check, and create the class file.

	source code as a targeted for check, and create the class file.		
ERR203	Failed to output the check result.	- There is no privilege for reading/ writing. - The disk capacity is insufficient. - The network is cut off. - Multi byte character is used for the Java identifier. (Using PMD cooperation)	- Please confirm the access privilege of the target folder and disk capacity, and change it into readable/writable state. - Please do not use the PMD cooperation when Multi byte character is used for the Java identifier. For details, refer to "B.4 Troubleshooting".
ERR204	Encoding specification error.	The specified encoding is not supported.	Please specify the encoding that is supported by Agile^{+} Relief J.
ERR205	The format of check rule definition file is incorrect.	- code=001 The specified path does not exist. - code=002 A higher version of a check rule definition file or a non-check rule definition file is specified.	Please specify a correct "Check rule definition file".
ERR500	Error occurred during check operation of the cooperation tool. Please check the error details at console.	By executing FindBugs or PMD, an error occurred.	Please confirm the console and handle the error according to the error message output by the cooperation tool.
ERR501	Failed to start the cooperation tool.	Definition of "plugins.xml" has an error.	Please confirm the definition of "plugins.xml".
ERR502	"plugins.xml" definition error.	Format of "plugins.xml" has an error.	Please confirm the format of "plugins.xml".
ERR900	Error has been detected in the license management system. Please handle it according to "Messages and disposal of license management system" of "Installation Guide".		

Chapter 6 Cautions

6.1 Code check

- About Environment Variables

  The environment variable JAVA_HOME must be registered. Please register the path of JDK that is used to JAVA_HOME.

- About the Java File Can Be Checked
  - The Java program in conformity with Java Language Specifications of JDK 1.4/5.0/6/7/8 applies.
  - A Java program using assert or enum as identifiers cannot be checked.
  - A Java file contains more than 5,000 lines cannot be checked.
  - If the character code is not Cp1252 or UTF-8, the check cannot be performed correctly.
  - If the path name of a file contains more than 259 characters, this file cannot be read normally.
  - If the filename of a file contains more than 255 characters, this file cannot be read normally.
  - The Code check cannot be performed for anonymous class or local class.
    Therefore, when variables and methods are defined in an anonymous class or a local class, they are detected as rule violation.
  - If the line feed code is not CRLF, a code check is not executed definitely.
  - Please specify the Java file that has no error to check.

- About class file
  - The code check needs class file. Please build the Java source code as a targeted for check, and create the class file.
  - In a compile time, please specify the following options by all means. When the following options are not specified, the code check is not executed definitely.

    <The option of the "javac" command>

    -g:source,lines

    < Setting in Eclipse>

    Please check the following in [Properties]-[Java Compiler] of the project.

    - Add line number attributes to generated class files (used by the debugger)
    - Add source file name to generated class file (used by the debugger)

- About Output of Result File

  If the message "Failed to output the result file" is displayed during Code check, please confirm the writing privilege and disk capacity of the notified folder.

- About Memory Insufficiency

  The message "Out of memory." is displayed during Code check for the project of large-scale development asset.

  [Prevention method]

  After the maximum heap size is specified to a value more than default (more than 256 MB is recommended), start Eclipse.

- In case of Eclipse

  Specify "-vmargs -Xmx256M" in the startup option of Eclipse.

  For details on the startup option, please refer to "Workbench User Guide"-"Tasks"-"Running Eclipse" from the Help of Eclipse.

- About the case that cannot be correctly detected

  - In the case of no declaration between file initial comment and class comment

    For the code without declaration between file initial comment and class comment, it will be indicated incorrectly by rule pgj10075.

    <Example>

    In the following program example, no declaration like import statement exists between file initial comment and class comment. Therefore, the class comment in the sixth line will be recognized as file initial comment, and because there is "/**", the code is indicated as a violation of rule pgj10075.

    Rule pgj10075: The header comment must be described at the initial part of source.

```
 1   /*
 2    * file name : MyClass.java
 3    * ...
 4    */
 5
 6   /**  <- Incorrectly indicated as violation of rule pgj10075
 7    * class name : MyClass
 8    * ...
 9    */
10   public class MyClass {
11       :
12   }
```

6.2 Eclipse Operation

- About the Startup Option of Eclipse

  After updated the plug-ins of Agile^{+} Relief J, use the "-clean" option to start Eclipse.

- About the Link Asset

  - The source files linked in Eclipse project are not targeted for Code check. Please arrange the asset to the sub folder of the Eclipse project folder.
  - When created a Java project by selecting [Java Project from Existing Ant buildfile] from Create New Project, the applicable asset will be linked and become not applicable for Code check. Therefore, please create the Java project not by using the existing Ant build file.

- About Build Settings

  The option of automatic check after building ([Window] > [Preferences] > [Agile+ Relief J] > [Setting when building]) is only effective for the project that is being configured.

  The settings are not applicable for new projects. Therefore, when a new project is added, perform the settings for building again.

- About Display Switch

  If there are too many Code check results to display, the switch between [Agile+ Relief Message List] view and [Agile+ Relief Confirmation Status] view will be time-consuming.

- About Result Display

  If the result for Code check is not displayed in the [Agile+ Relief Message List] view or [Agile+ Relief Confirmation Status] view, please confirm the following content.

  - Selection of applicable asset

    Select applicable asset (project or Java file) from the view of Package Explorer, Project Explorer, or Navigator.

  - Synchronization with other views

    Turn on (synchronize with other views) from the toolbar of [Agile+ Relief Message List] view or [Agile+ Relief Confirmation Status] view to achieve the synchronization with other views and select the applicable asset again.

  - Filter

    Set the filter of [Agile+ Relief Message List] view and [Agile+ Relief Confirmation Status] view again.

- About Message List

  Even if the Code check is performed again, the contents of the [Confirmed] and [Memo] columns in the message list can be interconnected. However, contents may not be interconnected in the following cases.

  - When the messages are corrected, and the contents are not indicated in next Code check
  - When the file name is modified
  - When the file is moved
  - When the project name is modified

- About Editor Interaction

  - If the file cannot be displayed due to operating environment error, the editor cannot be interaction.
  - If (synchronize with other views) in the [Agile+ Relief Message List] view or [Agile+ Relief Confirmation Status] view is off, and the project to be displayed is closed, the editor interaction cannot be performed.

- About the Marker of Editor

  When modifying project name through refactoring, the result of the Code check before modification cannot be displayed correctly.

  At this time, please perform Code check again after clearing the check results.

- About the Output of Code check Results

  It can output CSV file from the [Agile+ Relief Message List] view or [Agile+ Relief Confirmation Status] view. If the number of CSV file exceeds 65535 lines, this file cannot be opened through Excel. (May be able in some version of Excel)

- About the Case required for Next Code check

  After the following operations are performed, the information about the [Marker], [Confirmed], and [Memo] cannot be set again normally. This is because this part of source is deleted during modification.
  In this case, please perform Code check again.

  - Synchronous processing (such as Commit/Update) with configuration management (such as CVS .etc)

- Configuration change of the Eclipse
    - Change of source folder name, package name, folder name, and file name
    - Moving of source folder, package, folder, and file
- Direct change through the tools except Eclipse
    - Change of source folder name, package name, folder name, and file name
    - Moving of source folder, package, folder, and file
    - Change of the file name or file contents

When the following contents are modified, the integrity with the applicable asset of Code check and the Code check result cannot be achieved. Therefore, please perform Code check again after clearing the check results.

- Moving the workspace
- Modifying the project name
- Moving a project
- Replacing the check rule definition file outside the Eclipse

- About the Processing Operations

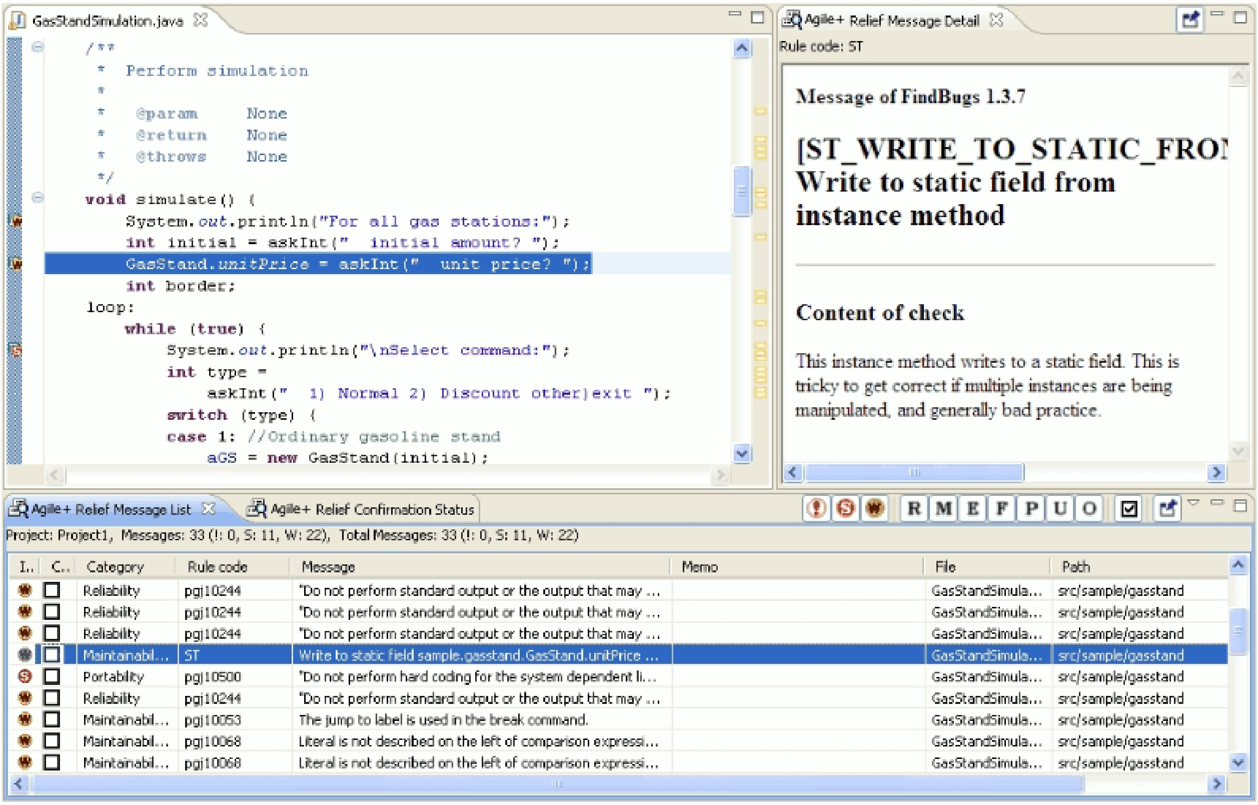
  During Code check or result reading, the functions of Agile$^+$ Relief J are disabled.

Appendix A About cooperation with FindBugs

This appendix describes the FindBugs cooperation function of Agile+ Relief J and how to use the function.

A.1 What is FindBugs cooperation?

By FindBugs cooperation, the indication of FindBugs can be operated from Agile+ Relief J by cooperation with the sFindBugs which is the static analysis tool of open source.



```
    /**
     *  Perform simulation
     *
     *   @param     None
     *   @return    None
     *   @throws    None
     */
    void simulate() {
        System.out.println("For all gas stations:");
        int initial = askInt("  initial amount? ");
        GasStand.unitPrice = askInt("  unit price? ");
        int border;
    loop:
        while (true) {
            System.out.println("\nSelect command:");
            int type =
                askInt("  1) Normal 2) Discount other)exit ");
            switch (type) {
            case 1: //Ordinary gasoline stand
                aGS = new GasStand(initial);
```

Rule code: ST

Message of FindBugs 1.3.7

[ST_WRITE_TO_STATIC_FROI
Write to static field from instance method

Content of check

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

Project: Project1, Messages: 33 (!: 0, S: 11, W: 22), Total Messages: 33 (!: 0, S: 11, W: 22)

I..	C..	Category	Rule code	Message	Memo	File	Path
●	□	Reliability	pgj10244	"Do not perform standard output or the output that may ...		GasStandSimula...	src/sample/gasstand
●	□	Reliability	pgj10244	"Do not perform standard output or the output that may ...		GasStandSimula...	src/sample/gasstand
●	□	Reliability	pgj10244	"Do not perform standard output or the output that may ...		GasStandSimula...	src/sample/gasstand
●	□	Maintainabil...	ST	Write to static field sample.gasstand.GasStand.unitPrice ...		GasStandSimula...	src/sample/gasstand
Ⓢ	□	Portability	pgj10500	"Do not perform hard coding for the system dependent li...		GasStandSimula...	src/sample/gasstand
●	□	Reliability	pgj10244	"Do not perform standard output or the output that may ...		GasStandSimula...	src/sample/gasstand
●	□	Maintainabil...	pgj10053	The jump to label is used in the break command.		GasStandSimula...	src/sample/gasstand
●	□	Maintainabil...	pgj10068	Literal is not described on the left of comparison expressi...		GasStandSimula...	src/sample/gasstand
●	□	Maintainabil...	pgj10068	Literal is not described on the left of comparison expressi...		GasStandSimula...	src/sample/gasstand

FindBugs cooperation provides the following functions.

- FindBugs is automatically executed at the time of code check operation.
- The indication of FindBugs can be confirmed in the [Agile+ Relief Message List] view.
- Indication details of FindBugs can be confirmed in the [Agile+ Relief Message Detail] view.

By using FindBugs cooperation, code check can be enhanced and quality can be improved.

A.2 Using FindBugs

To use FindBugs, it is necessary to operate according to the following procedure.

<Operations>

1. Install FindBugs

   Download the distributed material from the public website (http://findbugs.sourceforge.net/) of FindBugs. Please refer to ReadMe.txt under the folder "Agile+ Relief installation folder \PGReliefJava" for the target version.

   Unzip the distributed material that has been downloaded to any folder.

2. Prepare the "plugins.xml" file

   Rename the model file of plugin file under the folder "Agile+ Relief installation folder\PGReliefJava" from "plugins.xml.tools" to "plugins.xml".

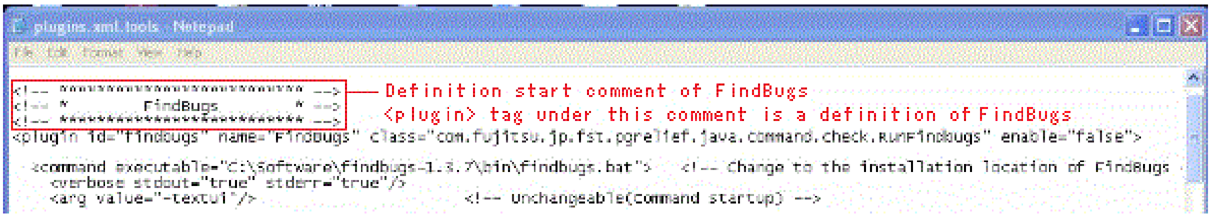
   When the existing plugin file is being renamed based on the setting of PMD cooperation this operation is unnecessary.

3. Edit the "plugins.xml" file

   Here, edit according to the following procedure.

   - Enable/Disable FindBugs cooperation
   - Define the file path of FindBugs command
   - Define FindBugs command options

   The <plugin> tag after the following comment in the "plugins.xml" file is the definition of FindBugs cooperation.



```
<!-- **************************** -->
<!-- *          FindBugs        * -->
<!-- **************************** -->
<plugin id="findbugs" name="FindBugs" class="com.fujitsu.jp.fst.pgrelief.java.command.check.RunFindbugs" enable="false">

  <command executable="C:\Software\findbugs-1.3.7\bin\findbugs.bat">   <!-- Change to the installation location of FindBugs
    <verbose stdout="true" stderr="true"/>
    <arg value="-textui"/>                         <!-- Unchangeable(Command startup) -->
```

Definition start comment of FindBugs

<plugin> tag under this comment is a definition of FindBugs

Following is the detail of definition content.

Definition content

Definition item	Tag	Attribute	Content of Configuration
Tool cooperation flag	plugin	enable	Enable/Disable FindBugs cooperation.
FindBugs command	command	executable	Define the file path of FindBugs command.
FindBugs command option	arg	value	Define FindBugs command options.

Tool cooperation flag

The FindBugs cooperation can be enabled or disabled by changing the tool cooperation flag. It can specify "true" of "false" to the value of the "enable" attribute of the <plugin> tag.

[When FindBugs cooperation is enabled]

```
<plugin id="findbugs" name="FindBugs" class=" ..... " enable="true">
```

[When FindBugs cooperation is disabled]

```
<plugin id="findbugs" name="FindBugs" class=" ..... " enable="false">
```

FindBugs command

Specify an execution file (batch file) of FindBugs which is saved in installation folder of FindBugs.

```
<command executable="FindBugs installation folder\bin\findbugs.bat">
```

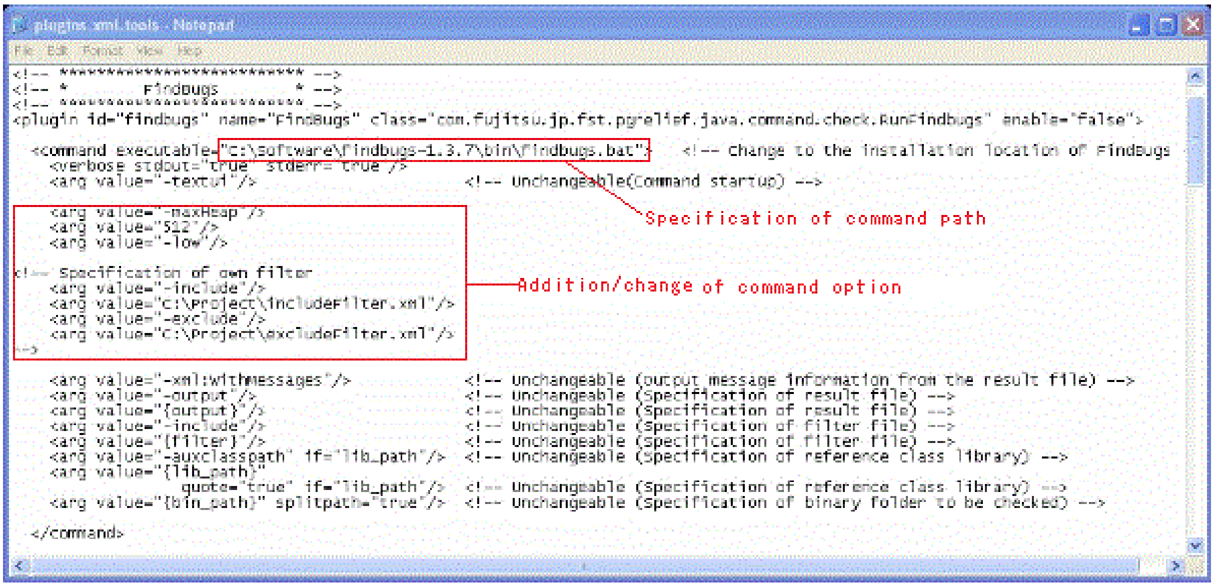
FindBugs command option

Specify a FindBugs option to be passed to the execution file of FindBugs. The option specifies the combination of option name and the parameter by <arg> tag. In case of no parameter, only specify the option name by <arg> tag.

Example) Specify the "-maxHeap 512" option

```
<arg value="-maxHeap"/>

<arg value="512"/>
```

The option is defined in plugins.xml file in advance. Please modify it if necessary. However, for the option that is the comment such as <!-- unchangeable -->, please do not modify or delete it.



plugins.xml.tools - Notepad
File Edit Format View Help
Specification of command path
Addition/change of command option

```
<!-- ************************** -->
<!-- *        FindBugs        * -->
<!-- ************************** -->
<plugin id="findbugs" name="FindBugs" class="com.fujitsu.jp.fst.pgrelief.java.command.check.RunFindbugs" enable="false">

  <command executable="C:\software\findbugs-1.3.7\bin\findbugs.bat">   <!-- Change to the installation location of FindBugs
    <verbose stdout="true" stderr="true"/>
    <arg value="-textui"/>                         <!-- Unchangeable(Command startup) -->

    <arg value="-maxHeap"/>
    <arg value="512"/>
    <arg value="-low"/>

<!-- Specification of own filter
    <arg value="-include"/>
    <arg value="C:\Project\includeFilter.xml"/>
    <arg value="-exclude"/>
    <arg value="C:\Project\excludeFilter.xml"/>
-->

    <arg value="-xml:withMessages"/>               <!-- Unchangeable (output message information from the result file) -->
    <arg value="-output"/>                         <!-- Unchangeable (Specification of result file) -->
    <arg value="{output}"/>                        <!-- Unchangeable (Specification of result file) -->
    <arg value="-include"/>                        <!-- Unchangeable (Specification of filter file) -->
    <arg value="{filter}"/>                        <!-- Unchangeable (Specification of filter file) -->
    <arg value="-auxclasspath" if="lib_path"/>     <!-- Unchangeable (Specification of reference class library) -->
    <arg value="{lib_path}"
                 quote="true" if="lib_path"/>      <!-- Unchangeable (Specification of reference class library) -->
    <arg value="{bin_path}" splitpath="true"/>     <!-- Unchangeable (Specification of binary folder to be checked) -->

  </command>
```

The trouble happens to the operation of FindBugs because the limit of the character length of command line of FindBugs is exceeded when you specify a lot of reference class libraries.

Change a command option as follows when you specify a lot of reference class libraries by using since FindBugs3.0.0.

[Old]

```
<arg value="-auxclasspath" if="lib_path"/> <!-- Unchangeable (Specification of reference class library) -->
<arg value="{lib_path}" quote="true" if="lib_path"/> <!-- Unchangeable (Specification of reference class
library) -->
```

[New]

```
<arg value="-auxclasspathFromFile" if="lib_path_file"/> <!-- Unchangeable (Specification of reference class
library) -->
<arg value="{lib_path_file}" quote="true" if="lib_path_file"/> <!-- Unchangeable (Specification of reference
class library) -->
```

4. Execute FindBugs

   Execute FindBugs by operating the code check of Agile^{+} Relief J.

   In addition, the editing process of plugins.xml should be ended before using Agile^{+} Relief J. If the plugins.xml is edited in the process of using Agile^{+} Relief J, please stop the usage of Agile^{+} Relief J through [Agile+ Relief J] - [Use Agile+ Relief J] menu, and set it to usage state again.

5. Confirm the result of FindBugs

   The messages of FindBugs are mapped in the format of the messages of Agile^{+} Relief J and can be confirmed in [Agile+ Relief Message List] view and [Agile+ Relief Message Detail] view.

A.3 Mapping of FindBugs Messages

The messages of the FindBugs are converted into categories of Agile^{+} Relief J according to the mapping rule of the following categories, and displayed in the [Agile+ Relief Message List] view.

Category

In "plugins.xml.tools" that is the model file of plugin file, the relation between the FindBugs category and the Agile^{+} Relief J category is defined as shown in the following tables. The FindBugs category that has not been described in the table is associated with "Other" of the Agile^{+} Relief J category.

Table A.1 Mapping of FindBugs category and Agile+ Relief J category in "plugins.xml.tools"

FindBugs	Agile^{+} Relief J (Display format in Message List)
Bad practice	Reliability
Performance	Efficiency
Correctness	Reliability
Internationalization	Portability
Multithreaded correctness	Reliability
Malicious code vulnerability	Functionality
Dodgy	Maintainability/Readability
Security	Functionality
Experimental	Other

This relation is defined with <option> tag in plugin file (plugins.xml) as follows in each category. The relation can be customized by changing this definition.

<option id="category.*FindBugs category name*" value="Agile^{+} Relief *J category name*"/>

Example) "BAD_PRACTICE" of FindBugs is associated with "Reliability" of Agile^{+} Relief J.

```
<option id="category.BAD_PRACTICE" value="CATEGORY_RELIABILITY"/>
```

The category name of Agile^{+} Relief J must use the following.

Table A.2 Agile+ Relief J category name

Agile^{+} Relief J category name	Meaning
CATEGORY_MANITAINABILITY	Maintainability/Readability
CATEGORY_RELIABILITY	Reliability

Agile+ Relief J category name	Meaning
CATEGORY_EFFICIENCY	Efficiency
CATEGORY_FUNCTIONNALITY	Functionality
CATEGORY_PORTABILITY	Portability
CATEGORY_OTHER	Other

Importance degree

The importance degree is defined as shown in the following tables. It is not possible to change.

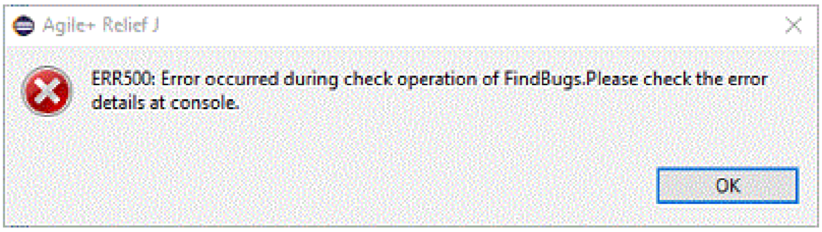
Table A.3 Mapping of FindBugs importance degree and Agile+ Relief J importance degree

FindBugs	Agile+ Relief J (Display format in Message List)
high-priority warning	Importance degree: S
medium-priority warning	Importance degree: W
low-priority warning	Importance degree: W

A.4 Troubleshooting

This section describes the problems that frequently occur in FindBugs interaction and responsive actions.

- The following errors are displayed during code check



ERR500: Error occurred during check operation of FindBugs.Please check the error details at console.

Please confirm the errors according to the content output to the console and by referring to the Manual of FindBugs.

The errors that occur frequently are shown as follows according to example of output to the [Console] view.

- Option errors of FindBugs is displayed

  When the invalid option is specified for the command parameter of FindBugs, the following option errors are displayed. Please confirm the command parameter in the configuration file for plugin (plugins.xml), and perform the code check again after modifying it to the correct one.

  Example of output from console (When -maxHea instead of -maxHeap is specified)

```
plugin: FindBugs

FindBugs: Unknown option: -maxHea
FindBugs: Usage: findbugs [general options] -textui [command line options...] [jar/zip/class
files, directories...]
FindBugs: General options:
FindBugs:    -gui             Use the Graphical UI (default behavior)
FindBugs:    -gui1            Use the older Graphical UI
FindBugs:    -textui          Use the Text UI
    :
```

- Insufficient memory of FindBugs is displayed

  This error is displayed when the memory is insufficient during the execution of FindBugs. Please specify the memory space required for parsing through the command parameter (-maxHeap option) in the configuration file for plugin (plugins.xml).

  Example of output from the console

```
plugin: FindBugs

FindBugs: Out of memory
FindBugs: Total memory: ...
FindBugs:  free memory: 0M
FindBugs: Analyzed: D:\Work\CT_Security\PGRJava_CodeRev_Engine\bin
FindBugs: Exception in thread "main" java.lang.OutOfMemoryError: Java heap space
FindBugs:  at edu.umd.cs.findbugs.asm.FBClassReader.readLabel(FBClassReader.java:53)
FindBugs:  at org.objectweb.asm.ClassReader.accept(Unknown Source)
    :
```

- In the message list, the message of ERR500 is indicated

  Please refer to the responsive actions to the error during the above-mentioned FindBugs execution.

- In the message list, the line number of indication of FindBugs is 0

  In part of messages of FindBugs, it is likely that the line number information cannot be obtained from FindBugs. In this case, the line number of applicable messages in Agile^{+} Relief J is displayed as 0.

- In editor, marker is not attached to the messages of FindBugs

  If the line number of a message is not found in the file that is displayed in the editor, market will not be set in the editor. The same situation occurs when the line number of a message is 0 (Refer to the previous content for details).

- When editor interaction is performed from the message list, the cursor locates the first line of the file in the editor

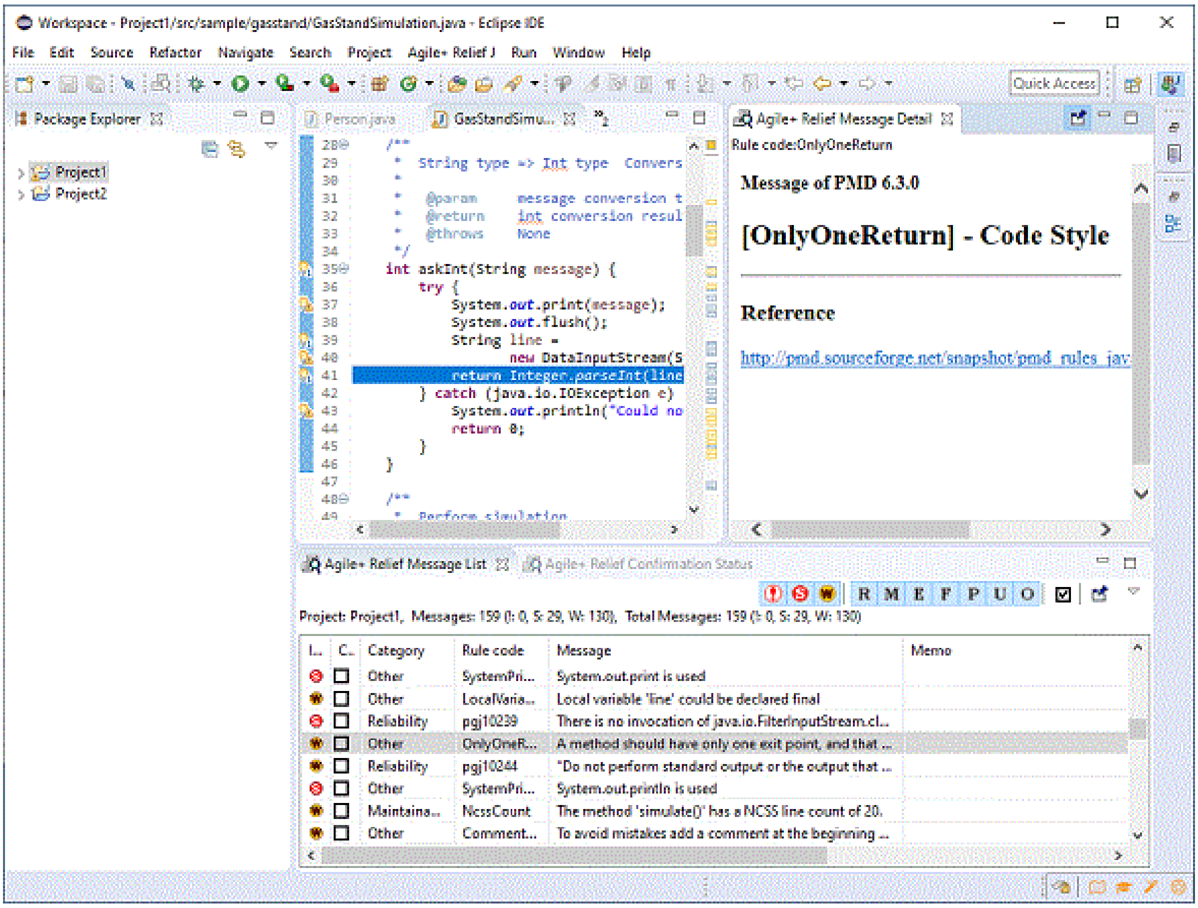
  If the line number of a message is not found in the file that is displayed in the editor, the cursor locates the first line of the file in the editor. The same situation occurs when the message line number is 0 (Refer to the previous content for details).

Appendix B About cooperation with PMD

This appendix describes the PMD cooperation function of Agile^{+} Relief J and how to use the function.

B.1 What is PMD cooperation?

By PMD cooperation, the indication of PMD can be operated from Agile^{+} Relief J by cooperation with the PMD which is the static analysis tool of open source.


Workspace - Project1/src/sample/gasstand/GasStandSimulation.java - Eclipse IDE
File Edit Source Refactor Navigate Search Project Agile+ Relief J Run Window Help
Quick Access
Package Explorer
Project1
Project2
Person.java
GasStandSimu...
Agile+ Relief Message Detail
Agile+ Relief Message List
Agile+ Relief Confirmation Status
R M E F P U O

```
    /**
     *  String type => Int type  Convers
     *
     *   @param      message conversion t
     *   @return     int conversion resul
     *   @throws     None
     */
    int askInt(String message) {
        try {
            System.out.print(message);
            System.out.flush();
            String line =
                    new DataInputStream(S
            return Integer.parseInt(line
        } catch (java.io.IOException e)
            System.out.println("Could no
            return 0;
        }
    }

    /**
     *  Perform simulation
```

Rule code:OnlyOneReturn

Message of PMD 6.3.0

[OnlyOneReturn] - Code Style

Reference

http://pmd.sourceforge.net/snapshot/pmd_rules_jav

Project: Project1, Messages: 159 (I: 0, S: 29, W: 130), Total Messages: 159 (I: 0, S: 29, W: 130)

I...	C...	Category	Rule code	Message	Memo
S	□	Other	SystemPri...	System.out.print is used	
W	□	Other	LocalVaria...	Local variable 'line' could be declared final	
S	□	Reliability	pgj10239	There is no invocation of java.io.FilterInputStream.cl...	
W	□	Other	OnlyOneR...	A method should have only one exit point, and that ...	
W	□	Reliability	pgj10244	"Do not perform standard output or the output that ...	
S	□	Other	SystemPri...	System.out.println is used	
W	□	Maintaina...	NcssCount	The method 'simulate()' has a NCSS line count of 20.	
W	□	Other	Comment...	To avoid mistakes add a comment at the beginning ...	

PMD cooperation provides the following functions.

- PMD is automatically executed at the time of code check operation.
- The indication of PMD can be confirmed in the [Agile+ Relief Message List] view.
- Indication details of PMD can be confirmed in the [Agile+ Relief Message Detail] view.

By using PMD cooperation, code check can be enhanced and quality can be improved.

B.2 Using PMD

To use PMD, it is necessary to operate according to the following procedure.

<Operations>

1. Install PMD

   Download the distributed material from the public website (http://pmd.sourceforge.net/) of PMD. Please refer to ReadMe.txt under the folder "Agile+ Relief installation folder \PGReliefJava" for the target version.

   Unzip the distributed material that has been downloaded to any folder.

2. Prepare the "plugins.xml" file

   Rename the model file of plugin file under the folder "Agile+ Relief installation folder\PGReliefJava" from "plugins.xml.tools" to "plugins.xml".

   When the existing plugin file is being renamed based on the setting of FindBugs cooperation this operation is unnecessary.

3. Edit the "plugins.xml" file

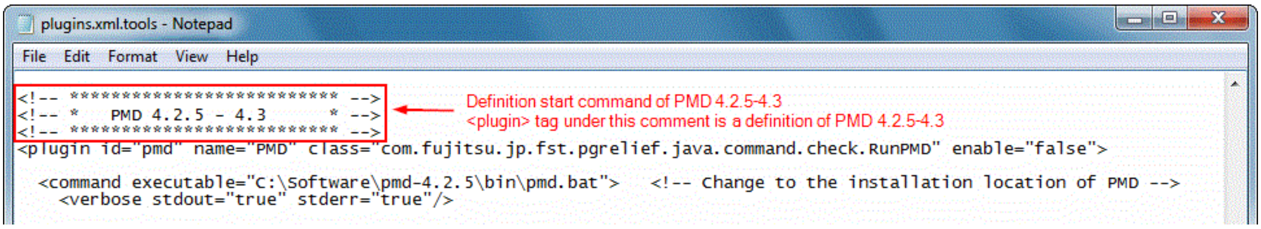
   Here, edit according to the following procedure.

   - Enable/Disable PMD cooperation
   - Define the file path of PMD command
   - Define PMD command options

   The <plugin> tag after the following comment in the "plugins.xml" file is the definition of PMD cooperation.

   Three kinds of <plugin> tag for the PMD cooperation is in each version of PMD. Please edit corresponding <plugin> tag to the version of PMD used.

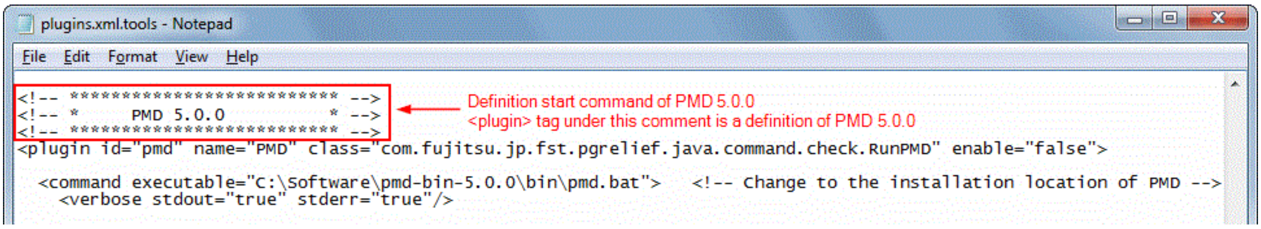
[For PMD 4.2.5-4.3]



```
<!-- ************************** -->
<!-- *    PMD 4.2.5 - 4.3     * -->
<!-- ************************** -->
<plugin id="pmd" name="PMD" class="com.fujitsu.jp.fst.pgrelief.java.command.check.RunPMD" enable="false">

  <command executable="C:\Software\pmd-4.2.5\bin\pmd.bat">   <!-- Change to the installation location of PMD -->
    <verbose stdout="true" stderr="true"/>
```

Definition start command of PMD 4.2.5-4.3
<plugin> tag under this comment is a definition of PMD 4.2.5-4.3

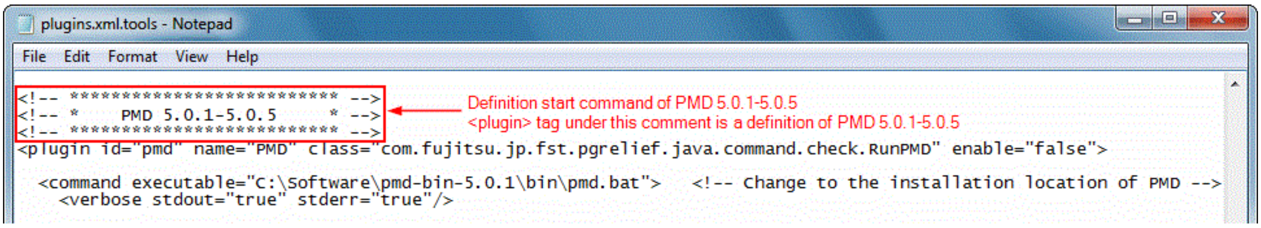
[For PMD 5.0.0]



```
<!-- ************************** -->
<!-- *      PMD 5.0.0         * -->
<!-- ************************** -->
<plugin id="pmd" name="PMD" class="com.fujitsu.jp.fst.pgrelief.java.command.check.RunPMD" enable="false">

  <command executable="C:\Software\pmd-bin-5.0.0\bin\pmd.bat">   <!-- Change to the installation location of PMD -->
    <verbose stdout="true" stderr="true"/>
```

Definition start command of PMD 5.0.0
<plugin> tag under this comment is a definition of PMD 5.0.0

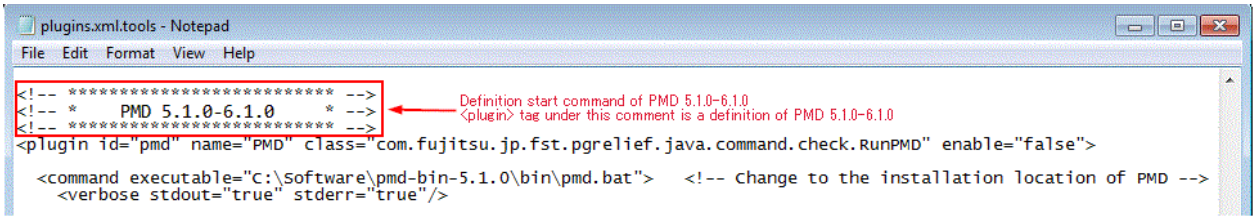
[For PMD 5.0.1-5.0.5]



```
<!-- ************************** -->
<!-- *     PMD 5.0.1-5.0.5    * -->
<!-- ************************** -->
<plugin id="pmd" name="PMD" class="com.fujitsu.jp.fst.pgrelief.java.command.check.RunPMD" enable="false">

  <command executable="C:\Software\pmd-bin-5.0.1\bin\pmd.bat">   <!-- Change to the installation location of PMD -->
    <verbose stdout="true" stderr="true"/>
```

Definition start command of PMD 5.0.1-5.0.5
<plugin> tag under this comment is a definition of PMD 5.0.1-5.0.5

[For PMD 5.1.0-6.1.0]



```
<!-- *************************** -->
<!-- *     PMD 5.1.0-6.1.0     * -->
<!-- *************************** -->
<plugin id="pmd" name="PMD" class="com.fujitsu.jp.fst.pgrelief.java.command.check.RunPMD" enable="false">

  <command executable="C:\Software\pmd-bin-5.1.0\bin\pmd.bat">   <!-- Change to the installation location of PMD -->
    <verbose stdout="true" stderr="true"/>
```

Definition start command of PMD 5.1.0-6.1.0
<plugin> tag under this comment is a definition of PMD 5.1.0-6.1.0

Following is the detail of definition content.

Definition content

Definition item	Tag	Attribute	Content of Configuration
Tool cooperation flag	plugin	enable	Enable/Disable PMD cooperation.
PMD command option	command	executable	Define the file path of PMD command.
PMD command option	arg	value	Define PMD command options.

Tool cooperation flag

The PMD cooperation can be enabled or disabled by changing the tool cooperation flag. It can specify "true" of "false" to the value of the "enable" attribute of the <plugin> tag.

[When PMD cooperation is enabled]

```
<plugin id="pmd" name="PMD" class=" ..... " enable="true">
```

[When PMD cooperation is disabled]

```
<plugin id="pmd" name="PMD" class=" ..... " enable="false">
```

PMD command

Specify an execution file (batch file) of PMD which is saved in installation folder of PMD.

```
<command executable="PMD installation folder\bin\pmd.bat">
```

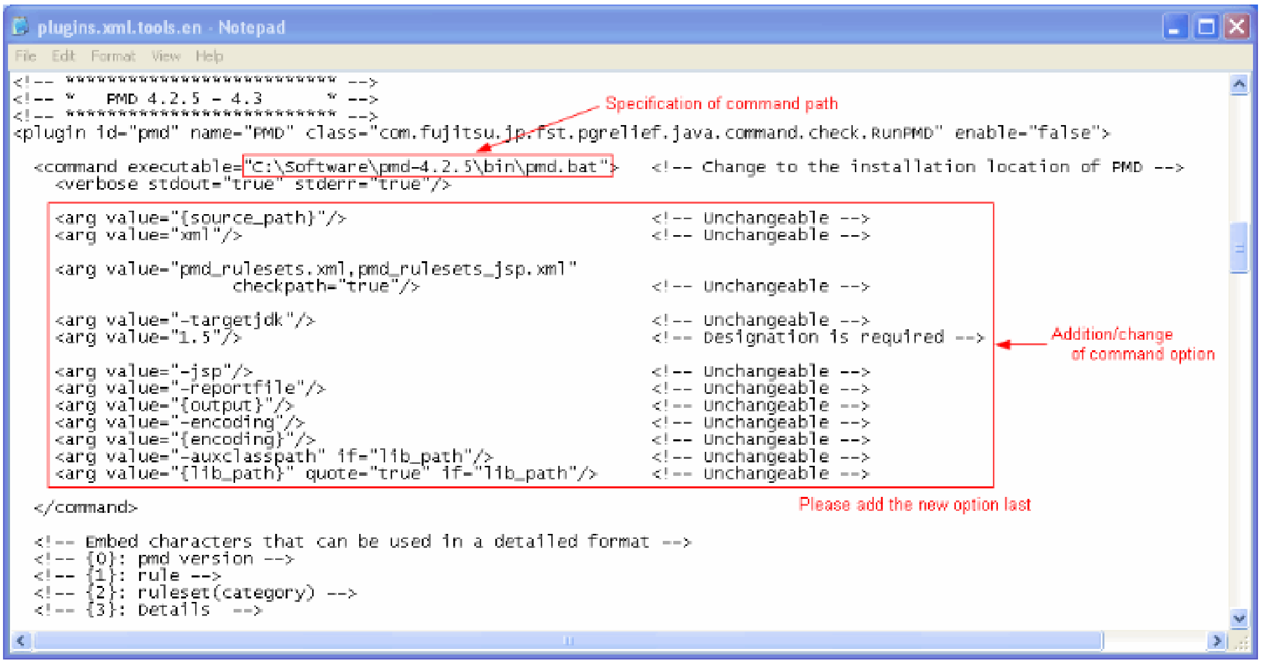
PMD command option

Specify a PMD option to be passed to the execution file of PMD. The option specifies the combination of option name and the parameter by <arg> tag. In case of no parameter, only specify the option name by <arg> tag.

Example) Specify the "-targetjdk 1.5" option (For PMD 4.2.5-4.3)

```
<arg value="-targetjdk"/>

<arg value="1.5"/>
```

The option is defined in plugins.xml file in advance. Please modify it if necessary. However, for the option that is the comment such as <!-- unchangeable -->, please do not modify or delete it.


plugins.xml.tools.en - Notepad
File Edit Format View Help
Specification of command path
Addition/change of command option
Please add the new option last

```
<!-- ***************************** -->
<!-- *   PMD 4.2.5 - 4.3        * -->
<!-- ***************************** -->
<plugin id="pmd" name="PMD" class="com.fujitsu.jp.fst.pgrelief.java.command.check.RunPMD" enable="false">

  <command executable="C:\Software\pmd-4.2.5\bin\pmd.bat">   <!-- Change to the installation location of PMD -->
    <verbose stdout="true" stderr="true"/>

    <arg value="{source_path}"/>                              <!-- Unchangeable -->
    <arg value="xml"/>                                        <!-- Unchangeable -->

    <arg value="pmd_rulesets.xml,pmd_rulesets_jsp.xml"
                 checkpath="true"/>                           <!-- Unchangeable -->

    <arg value="-targetjdk"/>                                 <!-- Unchangeable -->
    <arg value="1.5"/>                                        <!-- Designation is required -->

    <arg value="-jsp"/>                                       <!-- Unchangeable -->
    <arg value="-reportfile"/>                                <!-- Unchangeable -->
    <arg value="{output}"/>                                   <!-- Unchangeable -->
    <arg value="-encoding"/>                                  <!-- Unchangeable -->
    <arg value="{encoding}"/>                                 <!-- Unchangeable -->
    <arg value="-auxclasspath" if="lib_path"/>                <!-- Unchangeable -->
    <arg value="{lib_path}" quote="true" if="lib_path"/>      <!-- Unchangeable -->
  </command>

  <!-- Embed characters that can be used in a detailed format -->
  <!-- {0}: pmd version -->
  <!-- {1}: rule -->
  <!-- {2}: ruleset(category) -->
  <!-- {3}: Details  -->
```

Please confirm the option that specifies the Java version for parsing source. Please specify the same Java version as the environment used.

Definition method of the Java version in each version of PMD is shown below. Please change the Java version shown in the underlined part.

[For PMD 4.2.5-4.3]

<arg value="-targetjdk"/>   <!-- Unchangeable -->

<arg value="*1.5*"/>   <!-- Designation is required -->

[For PMD 5.0.0]

<arg value="-version"/>   <!-- Unchangeable -->

<arg value="java"/>   <!-- Unchangeable -->

<arg value="*1.7*"/>   <!-- Designation is required -->

[For PMD 5.0.1-5.0.5]

<arg value="-version"/>   <!-- Unchangeable -->

<arg value="*1.7*"/>   <!-- Designation is required -->

[For PMD 5.1.0-6.1.0]

<arg value="-version"/>   <!-- Unchangeable -->

<arg value="*1.8*"/>   <!-- Designation is required -->

The trouble happens to the operation of PMD because the limit of the character length of command line of PMD is exceeded when you specify a lot of reference class libraries.

Change a command option as follows when you specify a lot of reference class libraries.

[Old]

```
<arg value="-auxclasspath" if="lib_path"/> <!-- Unchangeable -->
<arg value="{lib_path}" quote="true" if="lib_path"/> <!-- Unchangeable -->
```

[New]

```
<arg value="-auxclasspath" if="lib_path_file"/> <!-- Unchangeable -->
<arg value="file:///{lib_path_file}" quote="true" if="lib_path_file"/> <!-- Unchangeable -->
```

4. Edit of the rule set file

The check rule of PMD is defined by the following rule set files under the folder "Agile$^+$ Relief installation folder\PGReliefJava".

[For PMD 4.2.5-4.3]

pmd_rulesets.xml	Check rule of Java
pmd_rulesets_jsp.xml	Check rule of JSP

[For PMD 5.0.0-5.0.5]

pmd5_rulesets.xml	The following rule set is defined. - Check rule of Java - Check rule of JSP - Check rule of XML - Check rule of XSL - Check rule of ECMAScript

[For PMD 5.1.0-6.1.0]

pmd5_1_rulesets.xml	The following rule set is defined. - Check rule of Java - Check rule of JSP - Check rule of XML - Check rule of XSL - Check rule of ECMAScript - Check rule of PLSQL - Check rule of Apache Velocity

In the rule set file that was mentioned above, the rule set offered by PMD project has already been defined. Please delete or add it if necessary.

In addition, the description format of these rule set files follows the description format of the rule set of PMD. Please refer to the public website (http://pmd.sourceforge.net/) of the PMD for details.

5. Execute PMD

Execute PMD by operating the code check of Agile$^+$ Relief J.

In addition, the editing process of plugins.xml should be ended before using Agile$^+$ Relief J. If the plugins.xml is edited in the process of using Agile$^+$ Relief J, please stop the usage of Agile$^+$ Relief J through [Agile+ Relief J] - [Use Agile+ Relief J] menu, and set it to usage state again.

6. Confirm the result of PMD

   The messages of PMD are mapped in the format of the messages of Agile+ Relief J and can be confirmed in [v Message List] view and [Agile+ Relief Message Detail] view.

B.3 Mapping of PMD Messages

The messages of the PMD are converted into categories of Agile+ Relief J according to the mapping rule of the following categories, and displayed in the [Agile+ Relief Message List] view.

Categories

In "plugins.xml.tools" that is the model file of plugin file, the relation between the PMD category and the Agile+ Relief J category is defined as shown in the following tables. The PMD category that has not been described in the table is associated with "Other" of the Agile+ Relief J category.

Table B.1 Mapping of PMD category and Agile+ Relief J category in "plugins.xml.tools"

Language	PMD 4.2.5-4.3	PMD 5.0.0-5.0.5	PMD 5.1.0-6.1.0	Agile+ Relief J(Display format in Message List)
Java	Android Rules	Android	Android	Other
Java	Basic Rules	Basic	Basic	Maintainability/ Readability
Java	Braces Rules	Braces	Braces	Maintainability/ Readability
Java	Clone Implementation Rules	Clone Implementation	Clone Implementation	Reliability
Java	Code Size Rules	Code Size	Code Size	Maintainability/ Readability
Java	Controversial Rules	Controversial	Controversial	Reliability
Java	Coupling Rules	Coupling	Coupling	Maintainability/ Readability
Java	Design Rules	Design	Design	Maintainability/ Readability
Java	Finalizer Rules	Finalizer	Finalizer	Reliability
Java	Import Statement Rules	Import Statements	Import Statements	Maintainability/ Readability
Java	J2EE Rules	J2EE	J2EE	Portability
Java	JavaBean Rules	JavaBean	JavaBean	Other
Java	JUnit Rules	JUnit	JUnit	Other
Java	Jakarta Commons Logging Rules	Jakarta Commons Logging	Jakarta Commons Logging	Other
Java	Java Logging Rules	Java Logging	Java Logging	Reliability
Java	Migration Rules	Migration	Migration	Portability
Java	Naming Rules	Naming	Naming	Maintainability/ Readability

Language	PMD 4.2.5-4.3	PMD 5.0.0-5.0.5	PMD 5.1.0-6.1.0	Agile$^+$ Relief J(Display format in Message List)
Java	Optimization Rules	Optimization	Optimization	Efficiency
Java	Strict Exception Rules	Strict Exception	Strict Exception	Reliability
Java	String and StringBuffer Rules	String and StringBuffer	String and StringBuffer	Efficiency
Java	Security Code Guidelines	Security Code Guidelines	Security Code Guidelines	Functionality
Java	Type Resolution Rules	Type Resolution	Type Resolution	Other
Java	Unused Code Rules	Unused	Unused	Maintainability/ Readability
Java	-	Comments	Comments	Maintainability/ Readability
Java	-	Empty Code	Empty Code	Maintainability/ Readability
Java	-	Unnecessary	Unnecessary	Maintainability/ Readability
JSP	Basic JSF Rules	Basic JSF	Basic JSF	Other
JSP	Basic JSP Rules	Basic JSP	Basic JSP	Other
ECMAScript	-	Basic Ecmascript	Basic Ecmascript	Other
ECMAScript	-	Braces	Braces	Maintainability/ Readability
ECMAScript	-	Unnecessary	Unnecessary	Maintainability/ Readability
ECMAScript	-	-	Controversial Ecmascript	Reliability
XML	-	Basic XML	Basic XML	Other
XSL	-	XPath in XSL	XPath in XSL	Other
PLSQL	-	-	Tom Kyte's Despair	Other
PLSQL	-	-	Code Size	Maintainability/ Readability
PLSQL	-	-	PLSQL DATETIME	Reliability
Apache Velocity	-	-	Basic Velocity	Other

This relation is defined with <option> tag in plugin file (plugins.xml) as follows in each category. The relation can be customized by changing this definition.

```
<option id="category.PMD category name" value=" Agile+ Relief J category name"/>
```

Example) "Basic Rules" of PMD is associated with "Maintainability/Readability" of Agile$^+$ Relief J.

```
<option id="category.Basic Rules" value="CATEGORY_MANITAINABILITY"/>
```

The category name of Agile$^+$ Relief J must use the following.

Table B.2 Agile+ Relief J category name

Agile+ Relief J category name	Meaning
CATEGORY_MANITAINABILITY	Maintainability/Readability
CATEGORY_RELIABILITY	Reliability
CATEGORY_EFFICIENCY	Efficiency
CATEGORY_FUNCTIONNALITY	Functionality
CATEGORY_PORTABILITY	Portability
CATEGORY_OTHER	Other

Importance degree

The importance degree is defined as shown in the following tables. It is not possible to change.

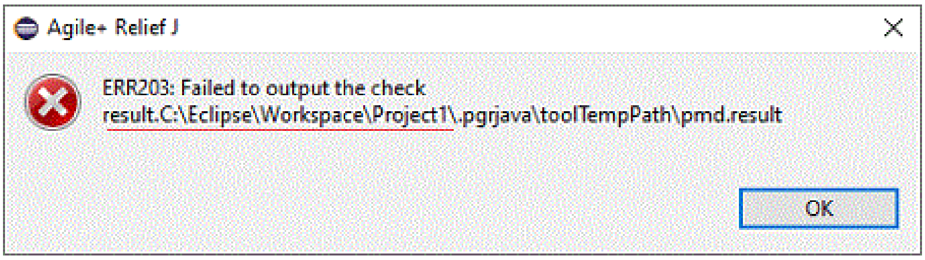
Table B.3 Mapping of PMD importance degree and Agile+ Relief J importance degree

PMD	Agile+ Relief J(Display format in Message List)
priority:1	Importance degree: S
priority:2	Importance degree: S
Other than the above	Importance degree: W

B.4 Troubleshooting

This section describes the problems that frequently occur in PMD interaction and responsive actions.

- The following errors are displayed during code check



ERR203: Failed to output the check result.C:\Eclipse\Workspace\Project1\.pgrjava\toolTempPath\pmd.result

note) The underlined pass depends on the environment.

Please check if any following message is output to the Console view.

```
plugin: PMD

[Fatal Error] pmd.result:10:154: The entity "u65e5" was referenced, but not declared.
```

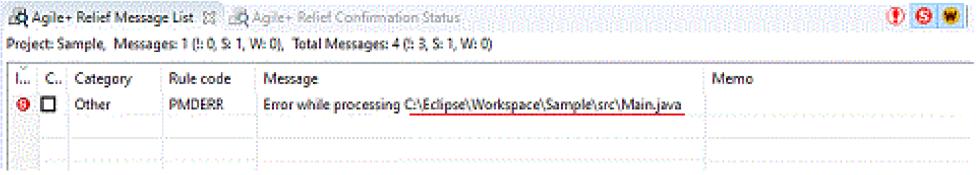
note) The underlined text depends on the environment.

This is the Java source to be analyzed, the Java identifier is most likely caused by the use of Multi byte character.

In PMD, when Multi byte character is used for the Java identifier, a normal analytical result might not be output.

In this case, the cooperation with the PMD cannot be used.

- In [Agile+ Relief Message List] view, the following PMDERR is indicated



Project: Sample, Messages: 1 (!: 0, S: 1, W: 0), Total Messages: 4 (!: 3, S: 1, W: 0)

I...	C...	Category	Rule code	Message	Memo
●	□	Other	PMDERR	Error while processing C:\Eclipse\Workspace\Sample\src\Main.java	

note) The underlined pass depends on the environment.

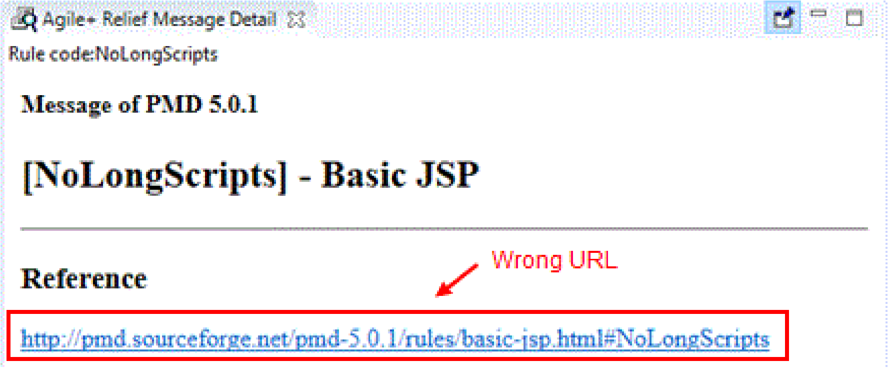
The following two are confirmed as a cause where the above-mentioned error occurs despite of a syntax mistake which is not found in the property for analysis.

- Multi byte character is used for the Java identifier.
- The Java file is a file of the UTF-8 encode with BOM(Byte Order Mark).

In PMD, the analysis cannot be normally executed when the situation is such as the above-mentioned.

In this case, the cooperation with the PMD cannot be used.

- URL displayed in the [Agile+ Relief Message Detail] view is wrong.



Rule code:NoLongScripts

Message of PMD 5.0.1

[NoLongScripts] - Basic JSP

Reference

Wrong URL

http://pmd.sourceforge.net/pmd-5.0.1/rules/basic-jsp.html#NoLongScripts

In a specific PMD version, URL displayed in the [Agile+ Relief Message Detail] view is wrong. Wrong URL by a specific PMD version is returned though information on URL is acquired from the execution result of PMD.

For this case, please refer from the homepage of PMD to a target document.