



eclipse-workspace - Static\_code\_analysis/src/Static\_code/SimpleWebServer.java - Eclipse IDE

File Edit Source Refactor Navigate Search Project Run Window Help

SimpleWebServer.java

```
17 import java.util.*;
18
19 public class SimpleWebServer {
20
21     /* Run the HTTP server on this TCP port. */
22     private static final int PORT = 8080;
23
24     /* The socket used to process incoming connections
25      from web clients */
26     private static ServerSocket dServerSocket;
27
28     public SimpleWebServer () throws Exception {
29         dServerSocket = new ServerSocket (PORT);
30     }
31
32     public void run() throws Exception {
33         while (true) {
34             /* wait for a connection from a client */
35             Socket s = dServerSocket.accept();
36
37             /* then process the client's request */
38             processRequest(s);
39         }
40     }
41
42     /* Reads the HTTP request from the client, and
43      responds with the file the user requested or
44      a HTTP error code. */
45     public void processRequest(Socket s) throws Exception {
46         /* used to read data from the client */
47         BufferedReader br =
48             new BufferedReader (
49                 new InputStreamReader (s.getInputStream()));
50
51         /* used to write data to the client */
52         OutputStreamWriter osw =
53             new OutputStreamWriter (s.getOutputStream());
54
55         /* read the HTTP request from the client */
```

Static fields should not be updated in constructors (java:S3010)

Code smell Major

Assigning a value to a **static** field in a constructor could cause unreliable behavior at runtime since it will change the value for all instances of the class.

Instead remove the field's **static** modifier, or initialize it statically.

**Noncompliant Code Example**

```
public class Person {
    static Date dateOfBirth;
    static int expectedFingers;

    public Person(date birthday) {
        dateOfBirth = birthday; // Noncompliant; now everyone has this birthday
        expectedFingers = 10; // Noncompliant
    }
}
```

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53             new OutputStreamWriter (s.getOutputStream());
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55         /* read the HTTP request from the client */
56         String request = br.readLine();
57
58         String command = null;
59         String pathname = null;
60
61         /* parse the HTTP request */
62         StringTokenizer st =
63             new StringTokenizer (request, " ");
64
65         command = st.nextToken();
66         pathname = st.nextToken();
67     }
```

Loops should not be infinite (java:S2189)

Bug Blocker

An infinite loop is one that will never end while the program is running, i.e., you have to kill the program to get out of the loop. Whether it is by meeting the loop's end condition or via a **break**, every loop should have an end condition.

**Noncompliant Code Example**

```
for (;;) { // Noncompliant; end condition omitted
    // ...
}

int j;
while (true) { // Noncompliant; end condition omitted
    j++;
}
```

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File Edit Source Refactor Navigate Search Project Run Window Help

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SimpleWebServer.java
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30 }
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Writable Smart Insert 63 : 59 : 2458

eclipse-workspace - Static\_code\_analysis/src/Static\_code/SimpleWebServer.java - Eclipse IDE

File Edit Source Refactor Navigate Search Project Run Window Help

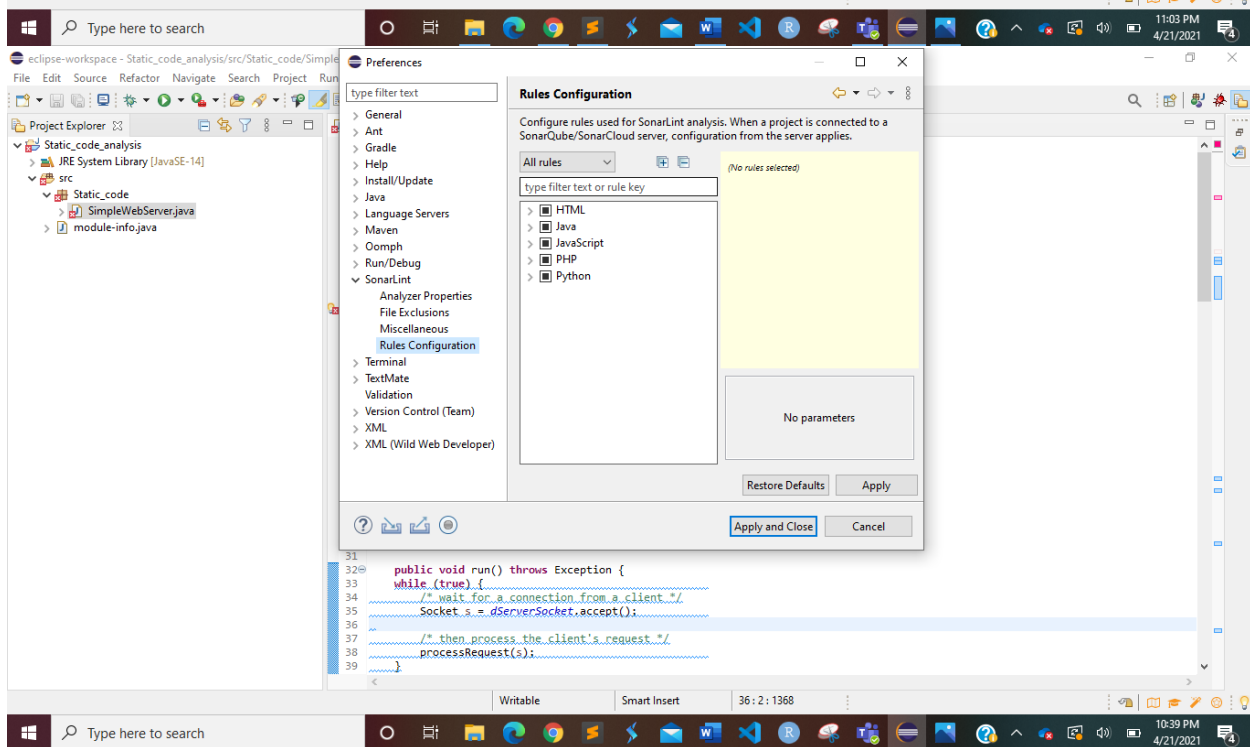
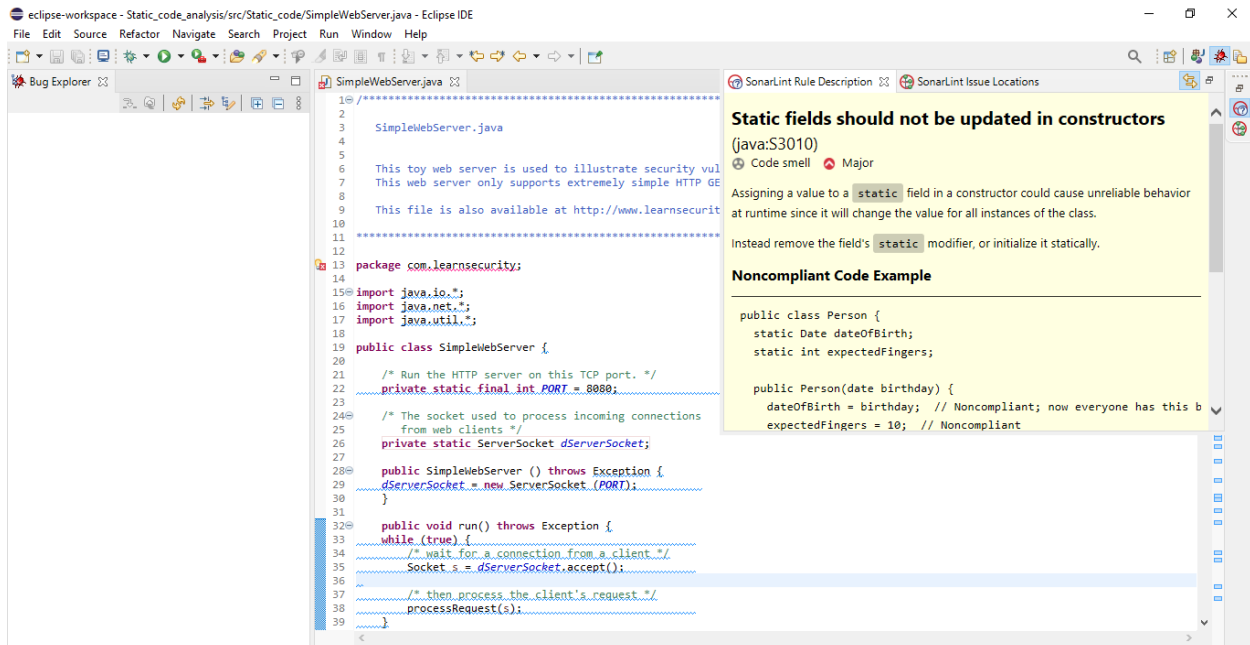
SonarLint Report 50 items

Resource	Date	Description
SimpleWebS	27 minutes ago	Move this left curly brace to the beginning of next line of code.
SimpleWebS	27 minutes ago	Move this left curly brace to the beginning of next line of code.
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SimpleWebS	27 minutes ago	Move this left curly brace to the beginning of next line of code.
SimpleWebS	27 minutes ago	Remove this use of "java.io.FileReader"
SimpleWebS	27 minutes ago	Remove this use of constructor "FileReader(String)"
SimpleWebS	27 minutes ago	Remove this use of constructor "InputStreamReader(InputStream)"
SimpleWebS	27 minutes ago	Remove this use of constructor "OutputStreamWriter(OutputStream)"
SimpleWebS	27 minutes ago	Use 'java.io.Writer' here; it is a more general type than 'OutputStreamWriter'.
SimpleWebS	27 minutes ago	Either log or rethrow this exception.
SimpleWebS	27 minutes ago	Explicitly import the specific classes needed.
SimpleWebS	27 minutes ago	Explicitly import the specific classes needed.
SimpleWebS	27 minutes ago	Explicitly import the specific classes needed.
SimpleWebS	27 minutes ago	Missing curly brace.
SimpleWebS	27 minutes ago	Missing curly brace.
SimpleWebS	27 minutes ago	Add or update the header of this file.
SimpleWebS	27 minutes ago	Remove this throws clause.
SimpleWebS	1 hour ago	Move the array designator from the variable to the type.
SimpleWebS	1 hour ago	Define and throw a dedicated exception instead of using a generic one.
SimpleWebS	1 hour ago	Define and throw a dedicated exception instead of using a generic one.
SimpleWebS	1 hour ago	Remove this assignment of "dServerSocket". [-1 location]
SimpleWebS	1 hour ago	Replace the synchronized class "StringBuffer" by an unsynchronized one such as "StringBuilder".
SimpleWebS	1 hour ago	This file "SimpleWebServer.java" should be located in "com.learnsecurity" directory, not in "C:\Users\Ap...
SimpleWebS	1 hour ago	Add an end condition to this loop.

2 files of project Static\_code\_analysis (at 21/04/2021 23:18)

Type here to search

11:19 PM 4/21/2021



eclipse-workspace - Static\_code\_analysis/src/Static\_code/SimpleWebServer.java - Eclipse IDE

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SimpleWebServer.java

```
1 //
2 SimpleWebServer.java
3
4
5
6 This toy web server is used to illustrate security vulnerabilities.
7 This web server only supports extremely simple HTTP GET requests.
8
9 This file is also available at http://www.learnsecurity.com/ntk
10
11
12
13 package com.learnsecurity;
14
15 import java.io.*;
16 import java.net.*;
17 import java.util.*;
18
19 public class SimpleWebServer {
20     /* Run the HTTP server on this TCP port. */
21     private static final int PORT = 8080;
22
23     /* The socket used to process incoming connections
24     from web clients */
25     private static ServerSocket dServerSocket;
26
27     public SimpleWebServer () throws Exception {
28         dServerSocket = new ServerSocket (PORT);
29     }
30
31     public void run() throws Exception {
32         while (true) {
33             /* wait for a connection from a client */
34             Socket s = dServerSocket.accept();
35
36             /* then process the client's request */
37             processRequest(s);
38         }
39     }
40 }
```

Bug Info SimpleWebServer.java: 26

Navigation

Unused Field: Static\_code.SimpleWebServer.dServerSocket

Field Static\_code.SimpleWebServer.dServerSocket

Package Explorer

Static\_code\_analysis

JRE System Library [JavaSE-14]

src

Static\_code

SimpleWebServer.java

module-info.java

Preferences

type filter text

General

Ant

Gradle

Help

Install/Update

Java

Appearance

Build Path

Code Coverage

Code Style

Compiler

Debugger

Editor

Installed JREs

JUnit

Properties Files Editor

SpotBugs

Language Servers

Maven

Oomph

Run/Debug

SonarLint

Analyzer Properties

File Exclusions

Miscellaneous

Rules Configuration

Terminal

TextMate

Validation

Version Control (Team)

XML

SpotBugs

analysis effort Default

Reporter Configuration Filter files Plugins and misc. Settings Detector configuration

Disabled detectors will not participate in SpotBugs analysis.  
'Grayed out' detectors will run, however they will not report any results to the UI.

☒ Show hidden detectors

Detector id	Pattern(s)	Speed	Provider	Category
<input checked="" type="checkbox"/> AppendingToOutputStream	IO	fast	SpotBugs	Correctne...
<input checked="" type="checkbox"/> AtomicityProblem	AT	fast	SpotBugs	Multithre...
<input checked="" type="checkbox"/> BadAppletConstructor	BAC	fast	SpotBugs	Correctne...
<input checked="" type="checkbox"/> BadResultSetAccess	SQL	fast	SpotBugs	Correctne...
<input checked="" type="checkbox"/> BadSyntaxForRegularExpression	RE	fast	SpotBugs	Correctne...
<input checked="" type="checkbox"/> BadUseOfReturnValue	RV	fast	SpotBugs	Dodgy co...
<input checked="" type="checkbox"/> BadlyOverriddenAdapter	BOA	fast	SpotBugs	Correctne...
<input checked="" type="checkbox"/> BooleanReturnNull	NP	fast	SpotBugs	Bad pract...
<input checked="" type="checkbox"/> BuildInterproceduralCallGraph		fast	SpotBugs	
<input checked="" type="checkbox"/> BuildObligationPolicyDatabase		fast	SpotBugs	
<input checked="" type="checkbox"/> BuildStringPassthruGraph		fast	SpotBugs	
<input checked="" type="checkbox"/> CallToUnsupportedMethod	Dm	fast	SpotBugs	Dodgy co...
<input checked="" type="checkbox"/> CalledMethods		fast	SpotBugs	

Detector details

edu.umd.cs.findbugs.detect.UselessSubclassMethod

This detector looks for subclasses that implement methods defined in the super class, that only pass the parameters untouched to the parent class method. These methods can just be removed.

Reported patterns:

Restore Defaults

Apply and Close Cancel

Add an end condition to this loop.

Type here to search

9:42 PM 4/21/2021

eclipse-workspace - Static\_code\_analysis/src/Static\_code/SimpleWebServer.java - Eclipse IDE

File Edit Source Refactor Navigate Search Project Run Window Help

8 Items

Resource	Date	Description
SimpleWebS	31 minutes ago	Move the array designator from the variable to the type.
SimpleWebS	31 minutes ago	Define and throw a dedicated exception instead of using a generic one.
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SimpleWebS	31 minutes ago	Remove this assignment of "dServerSocket". [-1 location]
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SimpleWebS	31 minutes ago	Add an end condition to this loop.
SimpleWebS	31 minutes ago	Use try-with-resources or close this "FileReader" in a "finally" clause.

File /Static\_code\_analysis/src/Static\_code/SimpleWebServer.java (at 21/04/2021 19:00)

Use try-with-resources or close this "FileReader" in a "finally" clause.

eclipse-workspace - Static\_code\_analysis/src/Static\_code/SimpleWebServer.java - Eclipse IDE

File Edit Source Refactor Navigate Search Project Run Window Help

Package Explorer

- Static\_code\_analysis
  - JRE System Library [JavaSE-14]
  - src
    - Static\_code
      - SimpleWebServer.java
      - module-info.java

SimpleWebServer.java

```

85 public void serveFile (OutputStreamWriter osw,
86                       String pathname) throws Exception {
87     FileReader fr=null;
88     int c=-1;
89     StringBuffer sb = new StringBuffer();
90
91     /* remove the initial slash at the beginning
92        of the pathname in the request */
93     if (pathname.charAt(0)=='/')
94         pathname=pathname.substring(1);
95
96     /* if there was no filename specified by the
97        client, serve the "index.html" file */
98     if (pathname.equals(""))
99         pathname="index.html";
100
101     /* try to open file specified by pathname */
102     try {
103         fr = new FileReader (pathname);
104         c = fr.read();
105     }
106     catch (Exception e) {
107         /* if the file is not found, return the
108            appropriate HTTP response code */
109         osw.write ("HTTP/1.0 404 Not Found\n\n");
110         return;
111     }
112
113     /* if the requested file can be successfully opened
114        and read, then return an OK response code and
115        send the contents of the file */
116     osw.write ("HTTP/1.0 200 OK\n\n");
117     while (c != -1) {
118         sb.append((char)c);
119         c = fr.read();
120     }
121     osw.write (sb.toString());
122 }
123

```

**Resources should be closed (java:S2095)**

Bug Blocker

Connections, streams, files, and other classes that implement the `Closeable` interface or its super-interface, `AutoCloseable`, needs to be closed after use. Further, that `close` call must be made in a `finally` block otherwise an exception could keep the call from being made. Preferably, when class implements `AutoCloseable`, resource should be created using "try-with-resources" pattern and will be closed automatically.

Failure to properly close resources will result in a resource leak which could bring first the application and then perhaps the box the application is on to their knees.

**Noncompliant Code Example**

```

private void readTheFile() throws IOException {
    Path path = Paths.get(this.fileName);
    BufferedReader reader = Files.newBufferedReader(path, this.charset);

```



eclipse-workspace - Static\_code\_analysis/src/Static\_code/SimpleWebServer.java - Eclipse IDE

File Edit Source Refactor Navigate Search Project Run Window Help

Package Explorer

- Static\_code\_analysis
  - JRE System Library [JavaSE-14]
  - src
    - Static\_code
      - SimpleWebServer.java
      - module-info.java

SimpleWebServer.java

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17 import java.util.*;
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19 public class SimpleWebServer {
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21     /* Run the HTTP server on this TCP port. */
22     private static final int PORT = 8080;
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```

**Static fields should not be updated in constructors**  
(java:S3010)  
Code smell Major

Assigning a value to a **static** field in a constructor could cause unreliable behavior at runtime since it will change the value for all instances of the class.

Instead remove the field's **static** modifier, or initialize it statically.

**Noncompliant Code Example**

```

public class Person {
    static Date dateOfBirth;
    static int expectedFingers;

    public Person(date birthday) {
        dateOfBirth = birthday; // Noncompliant: now everyone has this birthday
    }
}

```

eclipse-workspace - Static\_code\_analysis/src/Static\_code/SimpleWebServer.java - Eclipse IDE

File Edit Source Refactor Navigate Search Project Run Window Help

Package Explorer

- Static\_code\_analysis
  - JRE System Library [JavaSE-14]
  - src
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      - SimpleWebServer.java
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8 items

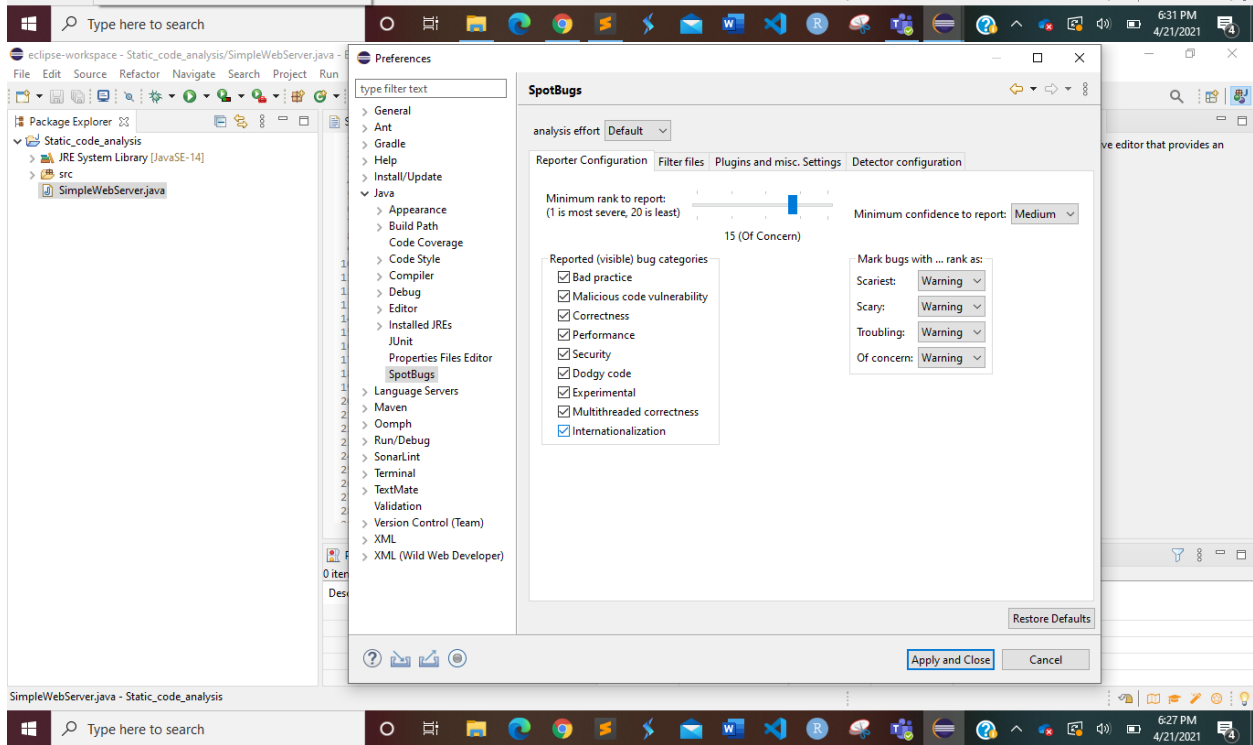
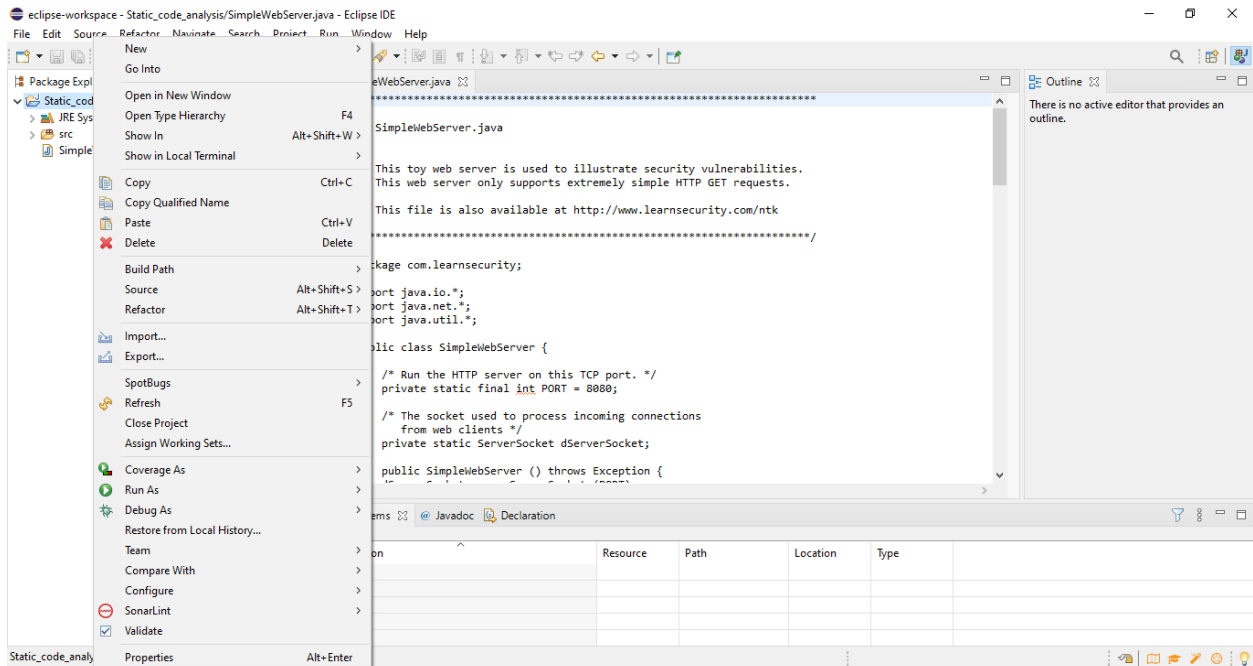
Resource	Date	Description
SimpleWebSi	3 minutes ago	Move the array desi
SimpleWebSi	3 minutes ago	Define and throw a
SimpleWebSi	3 minutes ago	Define and throw a
SimpleWebSi	3 minutes ago	Remove this assign
SimpleWebSi	3 minutes ago	Replace the synchron
SimpleWebSi	3 minutes ago	This file "SimpleWel
SimpleWebSi	3 minutes ago	Add an end conditi
SimpleWebSi	3 minutes ago	Use try-with-resour

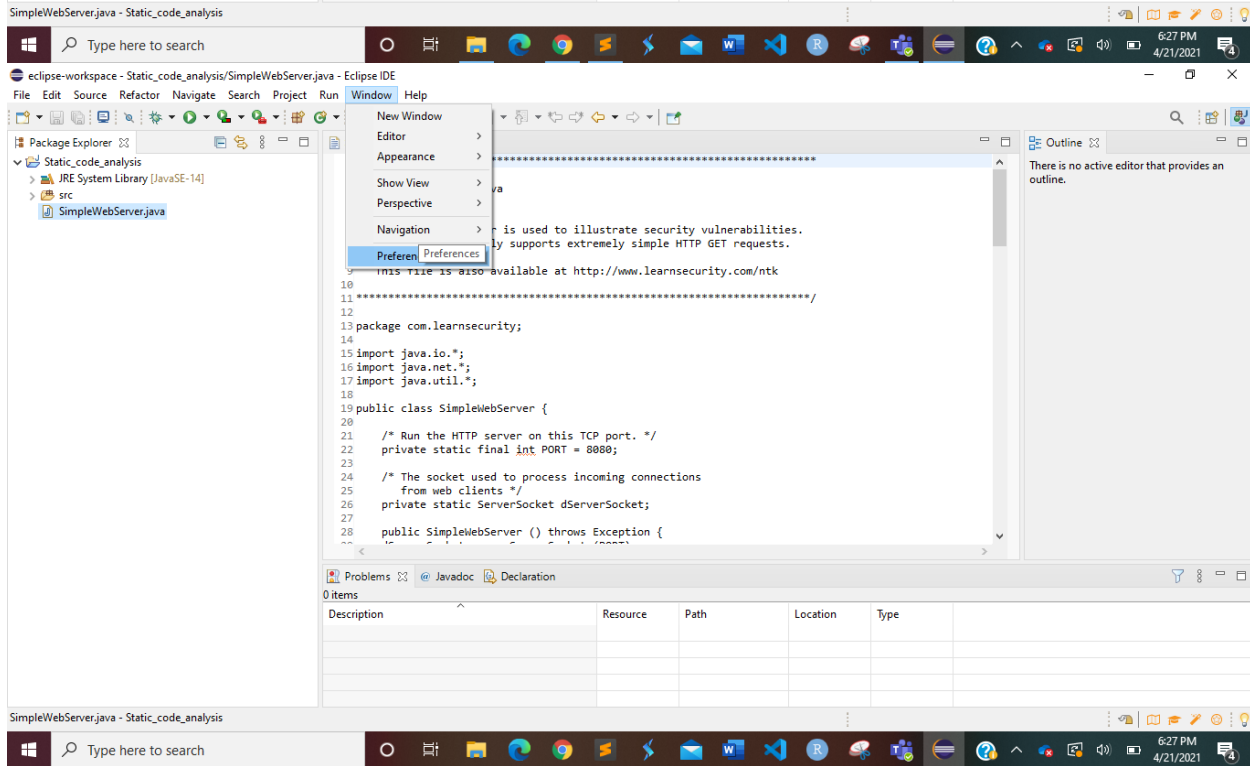
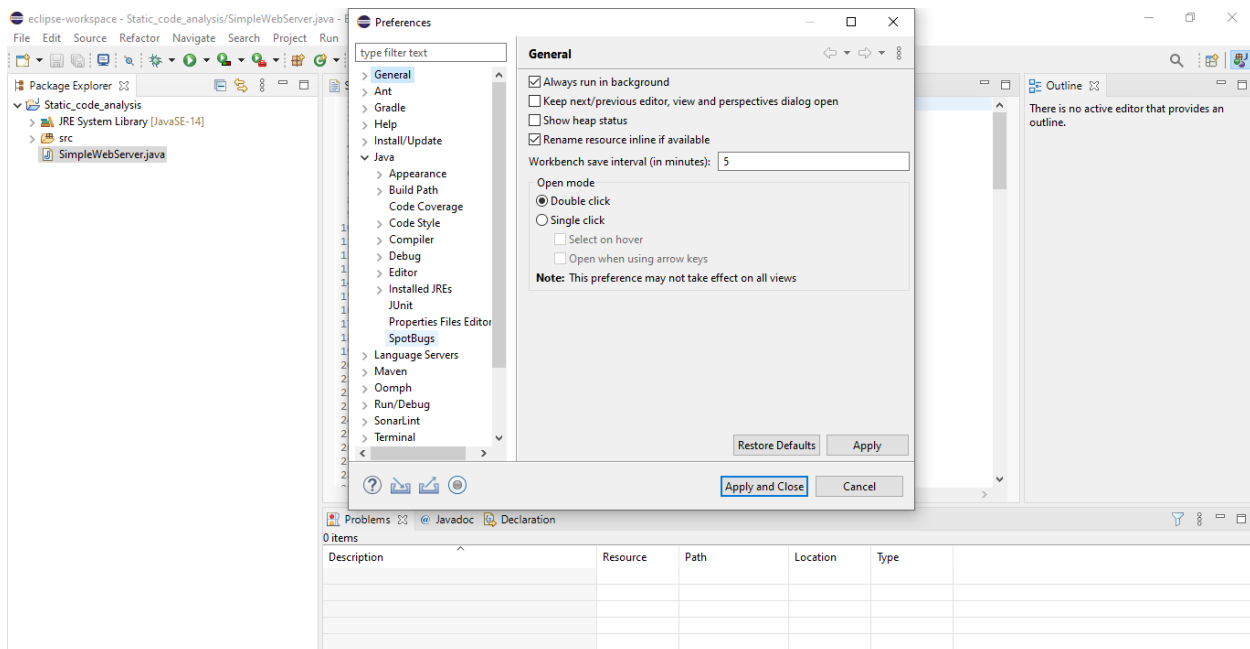
File /Static\_code\_analysis/src/Static\_code/SimpleWebServer.java (at 21/04/2021)

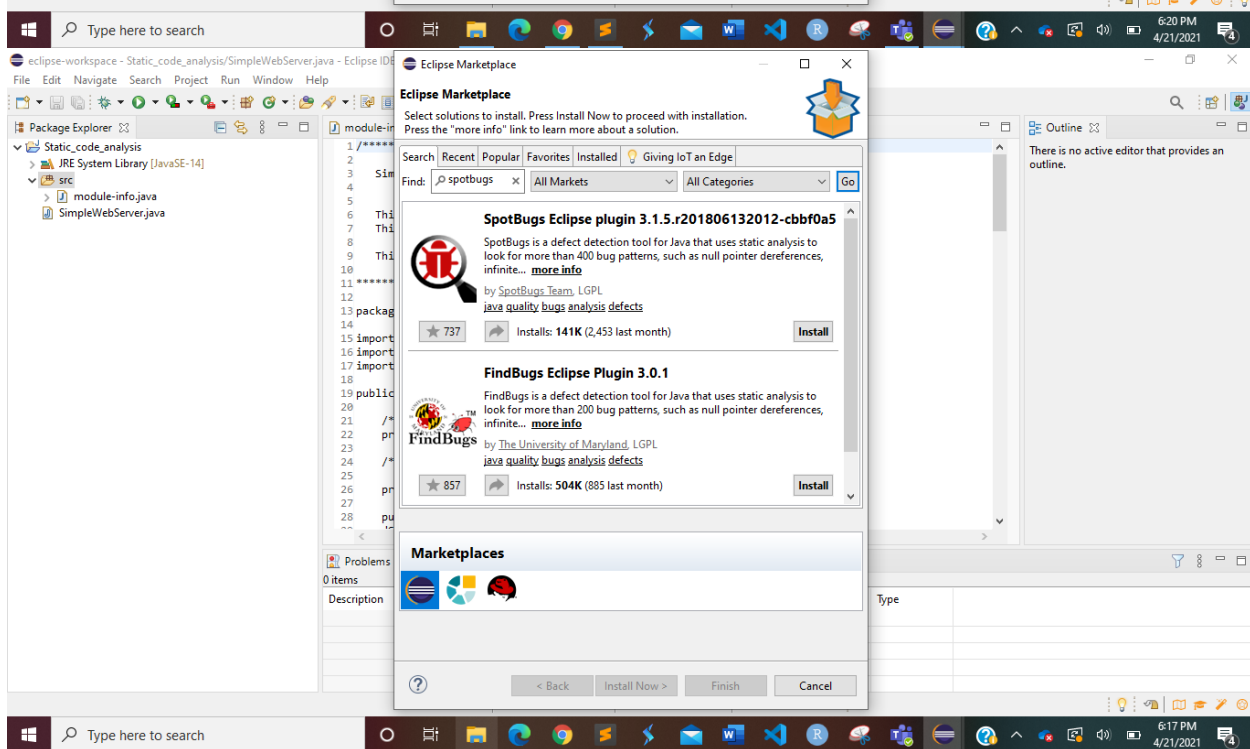
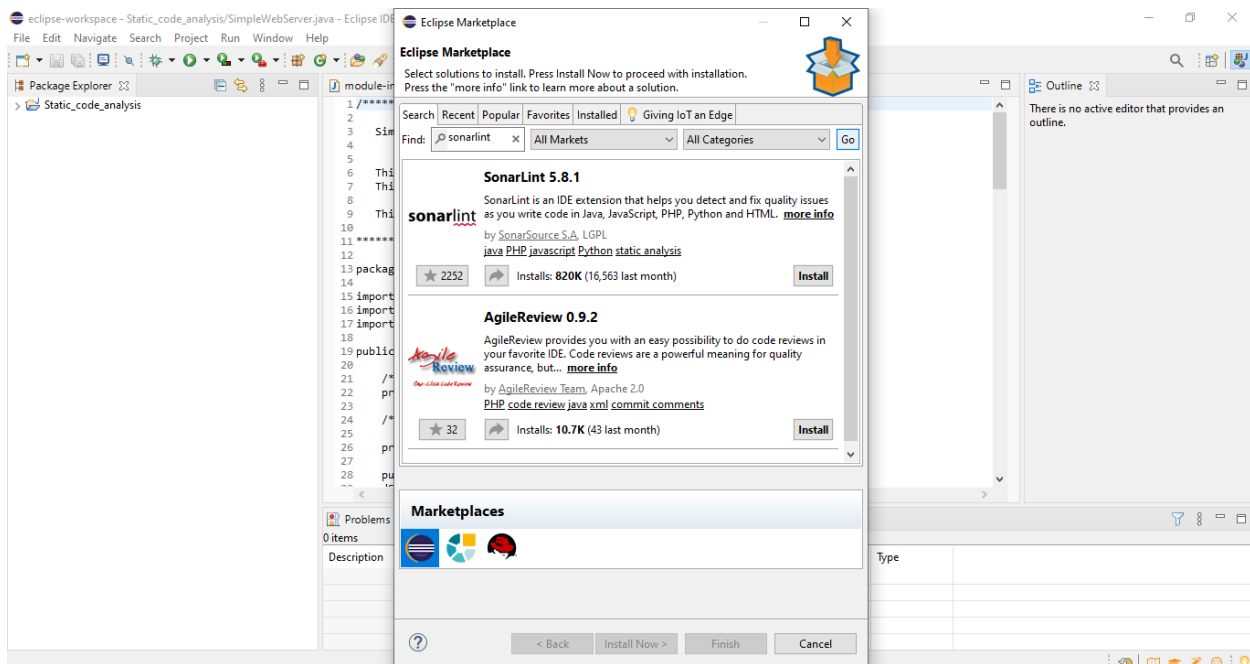
Define and throw a dedicated exception instead of using a generic one.

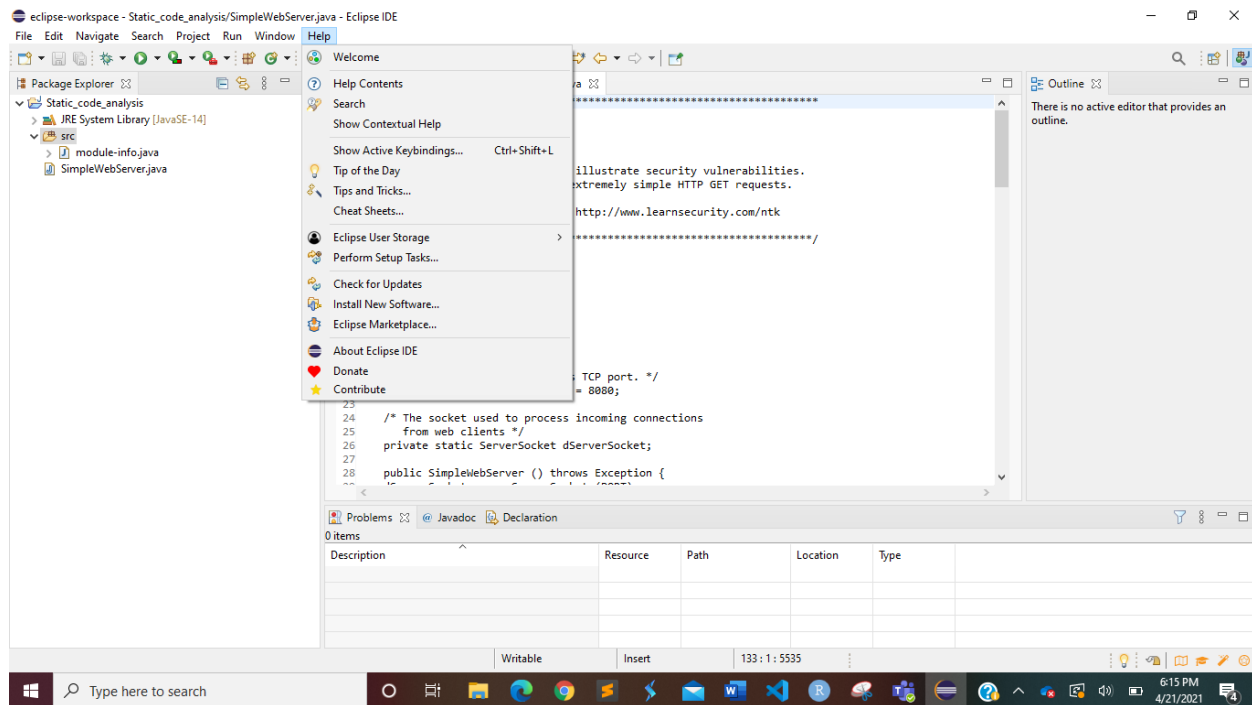
Writable Smart Insert 28:47 [9]

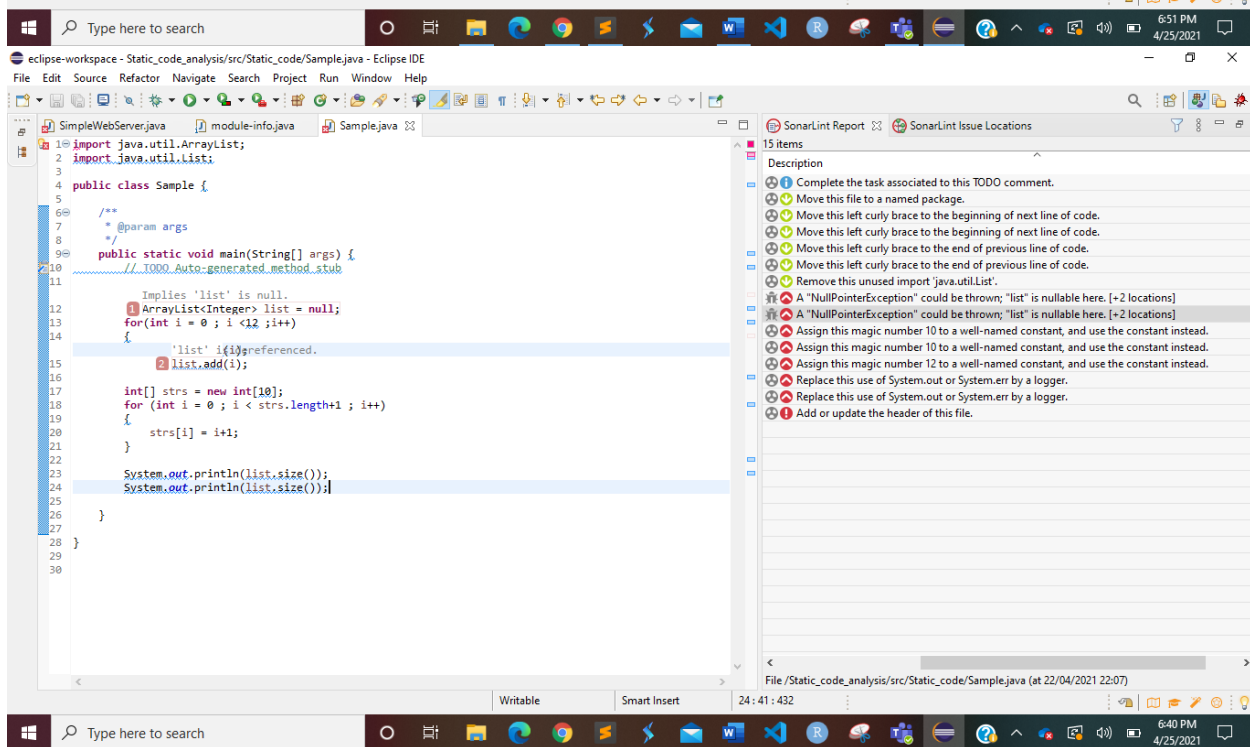
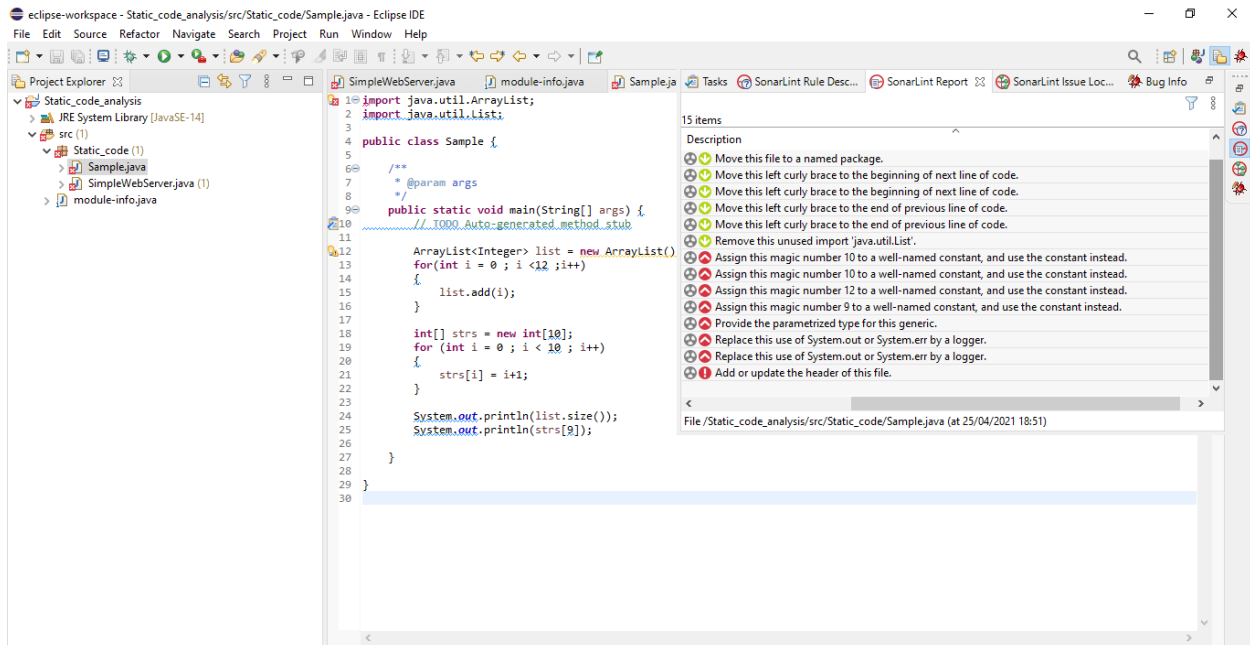












eclipse-workspace - Static\_code\_analysis/src/Static\_code/Sample.java - Eclipse IDE

File Edit Source Refactor Navigate Search Project Run Window Help

SonarLint Report 15 items

Resource	Date	Description
Sample.java	5 minutes ago	Complete the task associated to this TODO comment.
Sample.java	5 minutes ago	Move this file to a named package.
Sample.java	5 minutes ago	Move this left curly brace to the beginning of next line of code.
Sample.java	5 minutes ago	Move this left curly brace to the beginning of next line of code.
Sample.java	5 minutes ago	Move this left curly brace to the end of previous line of code.
Sample.java	5 minutes ago	Move this left curly brace to the end of previous line of code.
Sample.java	5 minutes ago	Remove this unused import 'java.util.List'.
Sample.java	5 minutes ago	A "NullPointerException" could be thrown; "list" is nullable here. [+2 locations]
Sample.java	5 minutes ago	A "NullPointerException" could be thrown; "list" is nullable here. [+2 locations]
Sample.java	5 minutes ago	Assign this magic number 10 to a well-named constant, and use the constant instead.
Sample.java	5 minutes ago	Assign this magic number 10 to a well-named constant, and use the constant instead.
Sample.java	5 minutes ago	Assign this magic number 12 to a well-named constant, and use the constant instead.
Sample.java	5 minutes ago	Replace this use of System.out or System.err by a logger.
Sample.java	5 minutes ago	Replace this use of System.out or System.err by a logger.
Sample.java	5 minutes ago	Add or update the header of this file.

File /Static\_code\_analysis/src/Static\_code/Sample.java (at 22/04/2021 22:07)

15 items selected

Type here to search

eclipse-workspace - Static\_code\_analysis/src/Static\_code/Sample.java - Eclipse IDE

File Edit Source Refactor Navigate Search Project Run Window Help

Project Explorer

- Static\_code\_analysis
  - JRE System Library [JavaSE-14]
  - src (1)
    - Static\_code (1)
      - Sample.java
      - SimpleWebServer.java (1)
      - module-info.java

SimpleWebServer.java module-info.java Sample.java

```
1 import java.util.ArrayList;
2 import java.util.List;
3
4 public class Sample {
5
6     /**
7      * @param args
8      */
9     public static void main(String[] args) {
10         // TODO: Auto-generated method stub
11
12         ArrayList<Integer> list = null;
13         for(int i = 0 ; i < 12 ; i++)
14         {
15             list.add(i);
16         }
17
18         int[] strs = new int[10];
19         for (int i = 0 ; i < strs.length+1 ; i++)
20         {
21             strs[i] = i+1;
22         }
23
24         System.out.println(list.size());
25         System.out.println(strs[10]);
26
27     }
28
29 }
30
```

15 items

Resource	Date	Description
Sample.java	5 minutes ago	Complete the task associated to this TODO comment.
Sample.java	5 minutes ago	Move this file to a named package.
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Sample.java	5 minutes ago	Add or update the header of this file.

File /Static\_code\_analysis/src/Static\_code/Sample.java (at 22/04/2021 22:07)

15 items selected

Type here to search



