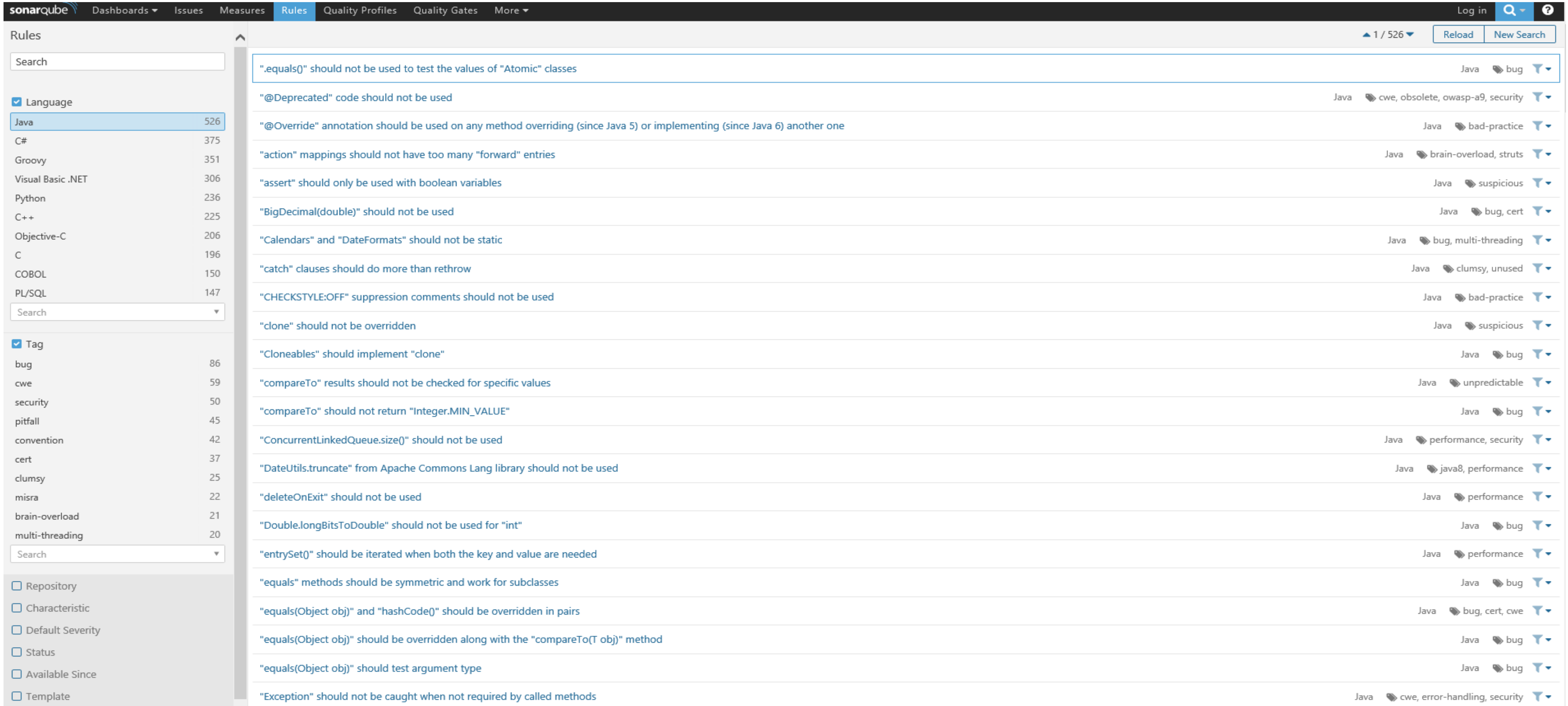
SonarQube — платформа для проверки кода на качество по правилам, основанным на соглашениях и стандартах. Поддерживает более 20 различных языков программирования.

Полный список правил для Java

https://nemo.sonarqube.org/coding_rules#languages=java



☑ Language

Java	526
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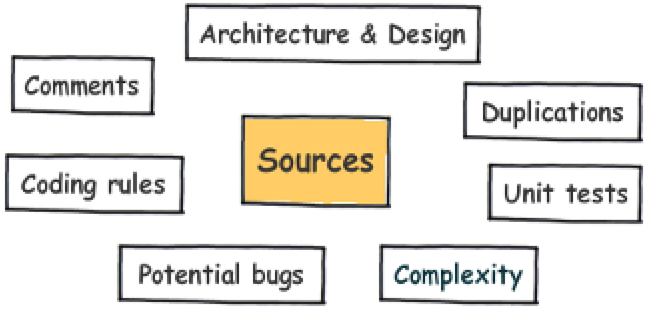
Search

□ Repository
□ Characteristic
□ Default Severity
□ Status
□ Available Since
□ Template

".equals()" should not be used to test the values of "Atomic" classes	Java	bug
"@Deprecated" code should not be used	Java	cwe, obsolete, owasp-a9, security
"@Override" annotation should be used on any method overriding (since Java 5) or implementing (since Java 6) another one	Java	bad-practice
"action" mappings should not have too many "forward" entries	Java	brain-overload, struts
"assert" should only be used with boolean variables	Java	suspicious
"BigDecimal(double)" should not be used	Java	bug, cert
"Calendars" and "DateFormats" should not be static	Java	bug, multi-threading
"catch" clauses should do more than rethrow	Java	clumsy, unused
"CHECKSTYLE:OFF" suppression comments should not be used	Java	bad-practice
"clone" should not be overridden	Java	suspicious
"Cloneables" should implement "clone"	Java	bug
"compareTo" results should not be checked for specific values	Java	unpredictable
"compareTo" should not return "Integer.MIN_VALUE"	Java	bug
"ConcurrentLinkedQueue.size()" should not be used	Java	performance, security
"DateUtils.truncate" from Apache Commons Lang library should not be used	Java	java8, performance
"deleteOnExit" should not be used	Java	performance
"Double.longBitsToDouble" should not be used for "int"	Java	bug
"entrySet()" should be iterated when both the key and value are needed	Java	performance
"equals" methods should be symmetric and work for subclasses	Java	bug
"equals(Object obj)" and "hashCode()" should be overridden in pairs	Java	bug, cert, cwe
"equals(Object obj)" should be overridden along with the "compareTo(T obj)" method	Java	bug
"equals(Object obj)" should test argument type	Java	bug
"Exception" should not be caught when not required by called methods	Java	cwe, error-handling, security

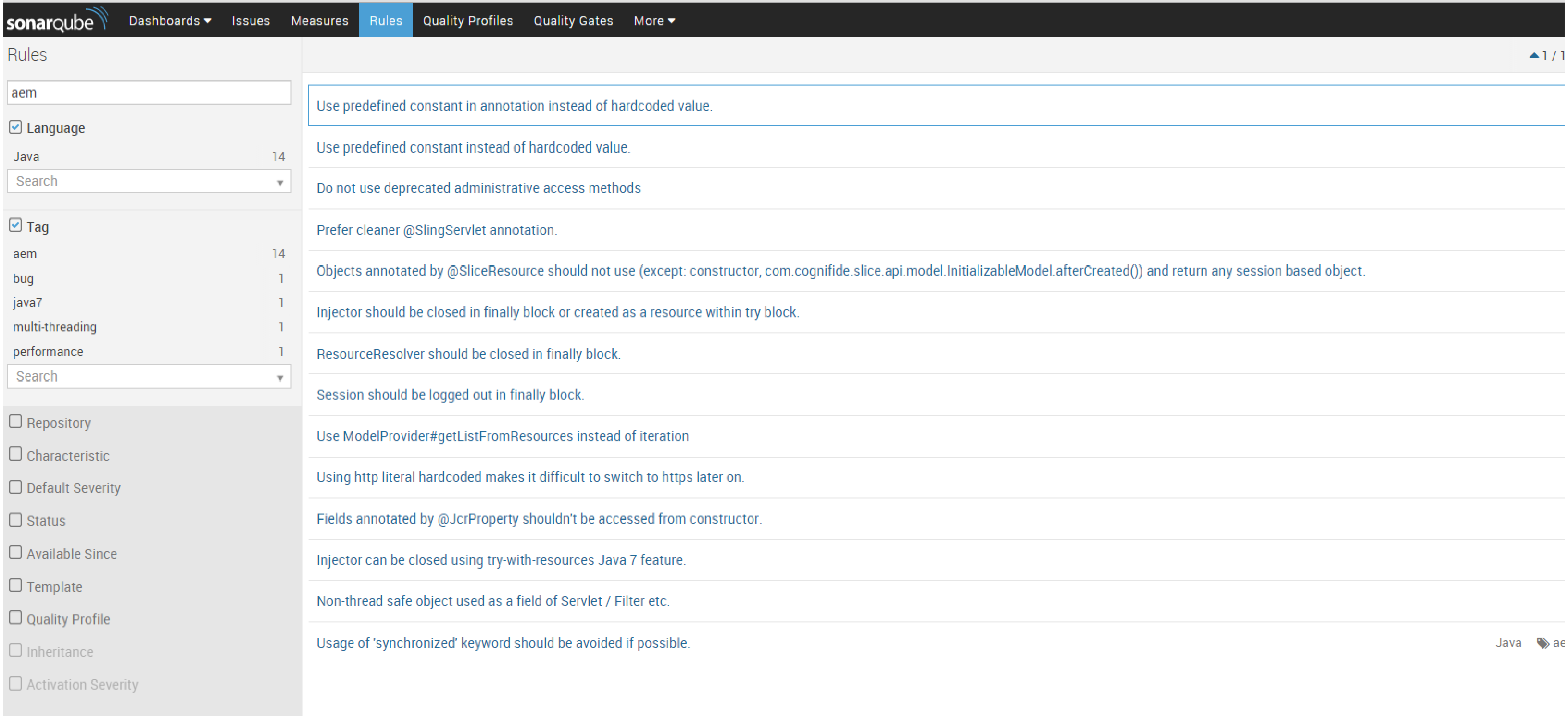
Процесс выглядит следующим образом: запускается анализатор кода (к примеру, посредством sonar maven plugin), покрывающий следующие code quality оси:



Результаты отправляются Sonar серверу, где вы сможете ознакомиться с найденными проблемами и подсказками к их решению.

AEM Rules for SonarQube plugin

На данный момент в плагине 14 правил для AEM:



Rules

aem

☑ Language

Java	14

Search ▾

☑ Tag

aem	14
bug	1
java7	1
multi-threading	1
performance	1

Search ▾

□ Repository

□ Characteristic

□ Default Severity

□ Status

□ Available Since

□ Template

□ Quality Profile

□ Inheritance

□ Activation Severity

Use predefined constant in annotation instead of hardcoded value.

Use predefined constant instead of hardcoded value.

Do not use deprecated administrative access methods

Prefer cleaner @SlingServlet annotation.

Objects annotated by @SliceResource should not use (except: constructor, com.cognifide.slice.api.model.InitializableModel.afterCreated()) and return any session based object.

Injector should be closed in finally block or created as a resource within try block.

ResourceResolver should be closed in finally block.

Session should be logged out in finally block.

Use ModelProvider#getListFromResources instead of iteration

Using http literal hardcoded makes it difficult to switch to https later on.

Fields annotated by @JcrProperty shouldn't be accessed from constructor.

Injector can be closed using try-with-resources Java 7 feature.

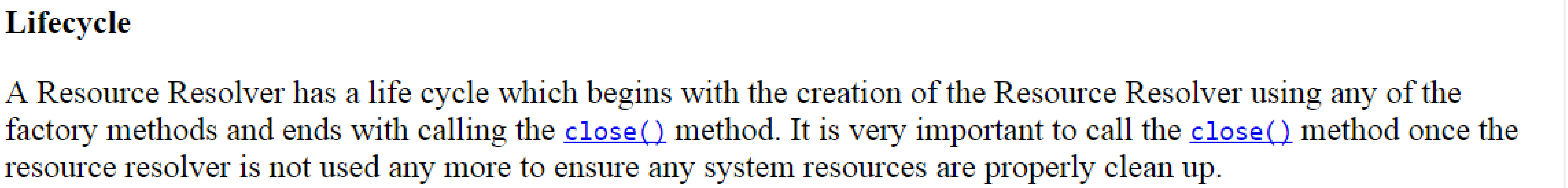
Non-thread safe object used as a field of Servlet / Filter etc.

Usage of 'synchronized' keyword should be avoided if possible. Java ae

Рассмотрим некоторые из них

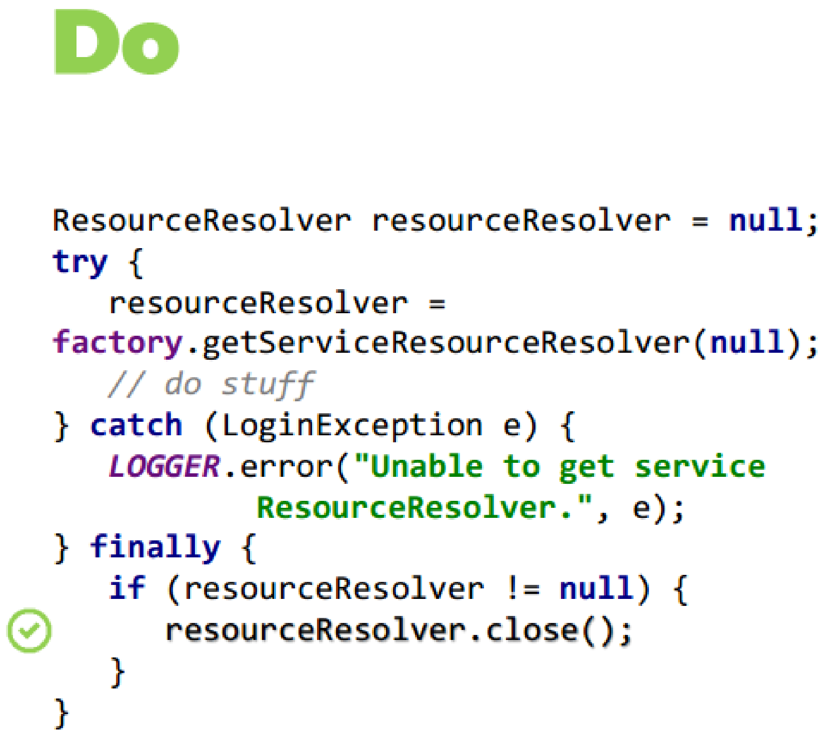
AEM-6 ResourceResolver should be closed in finally block.

- Исходя из документации:



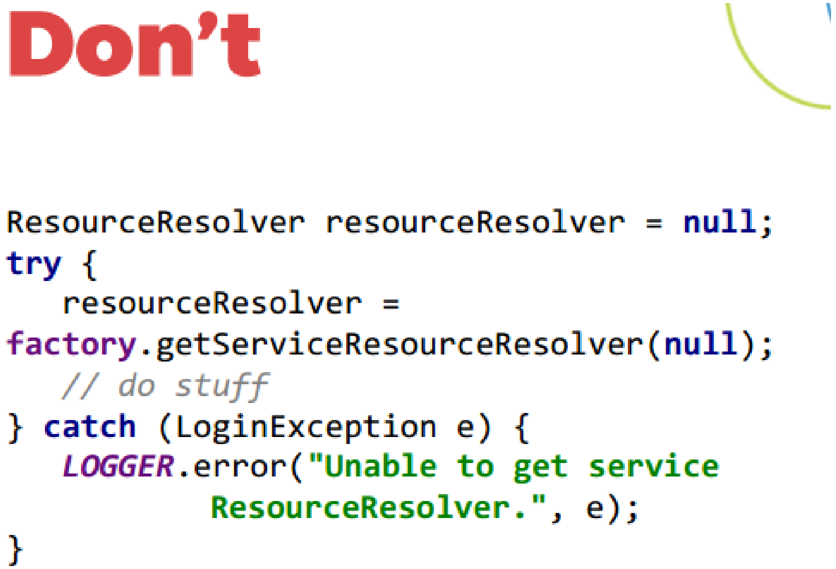
Lifecycle

A Resource Resolver has a life cycle which begins with the creation of the Resource Resolver using any of the factory methods and ends with calling the close() method. It is very important to call the close() method once the resource resolver is not used any more to ensure any system resources are properly clean up.



Do

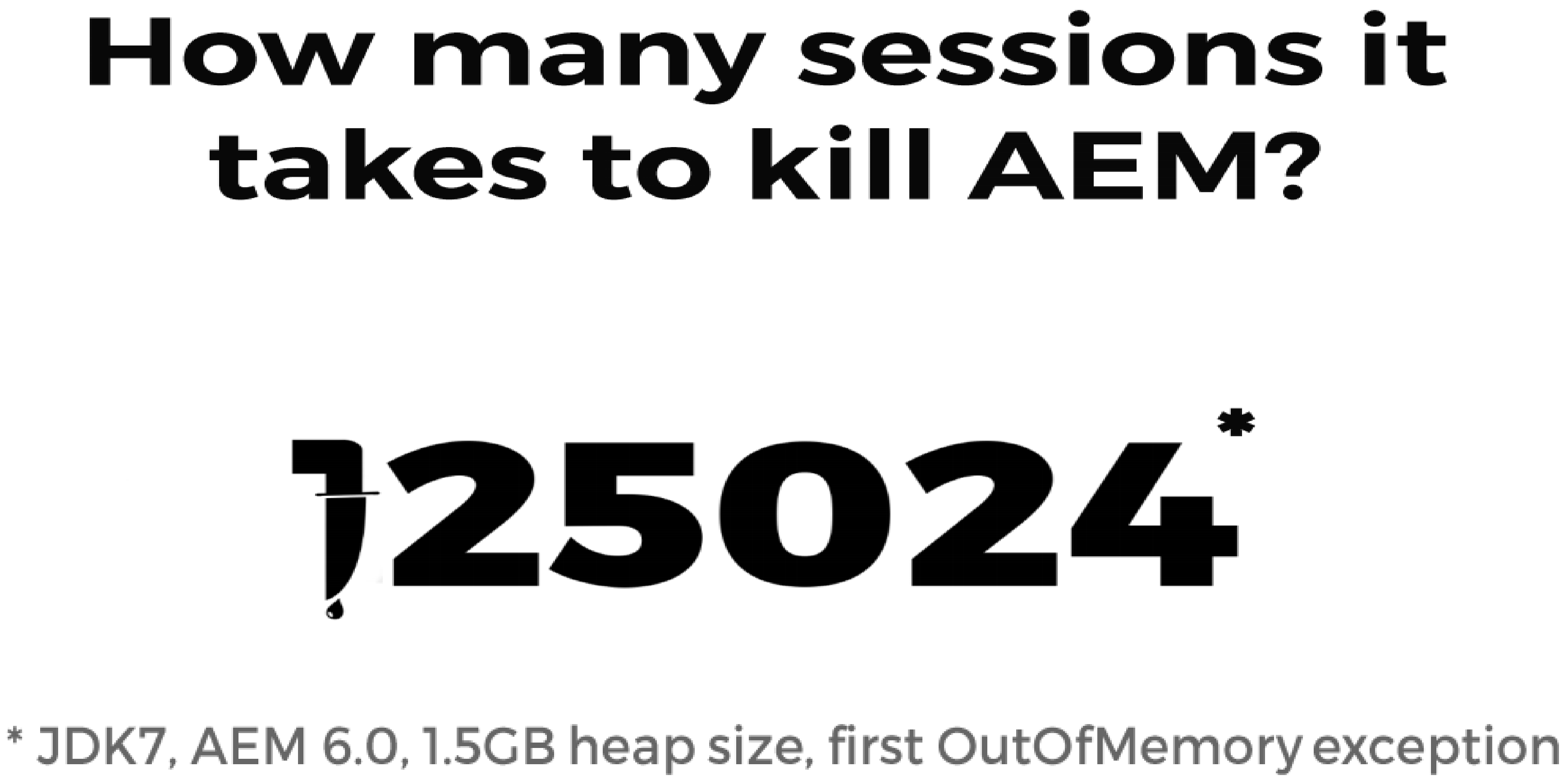
```java
ResourceResolver resourceResolver = null;
try {
    resourceResolver =
factory.getServiceResourceResolver(null);
    // do stuff
} catch (LoginException e) {
    LOGGER.error("Unable to get service
            ResourceResolver.", e);
} finally {
    if (resourceResolver != null) {
        resourceResolver.close();
    }
}
```



Don’t

```java
ResourceResolver resourceResolver = null;
try {
    resourceResolver =
factory.getServiceResourceResolver(null);
    // do stuff
} catch (LoginException e) {
    LOGGER.error("Unable to get service
            ResourceResolver.", e);
}
```

AEM-7 Session should be logged out in finally block.



How many sessions it takes to kill AEM?

125024*

* JDK7, AEM 6.0, 1.5GB heap size, first OutOfMemory exception

Утверждает Michał Chudy из компании cognifide разработавшей плагин подтвердить не удалось ☺

Assuming we open

3 sessions per minute

on average. It would take

1 month

to take down CQ/AEM.

Do

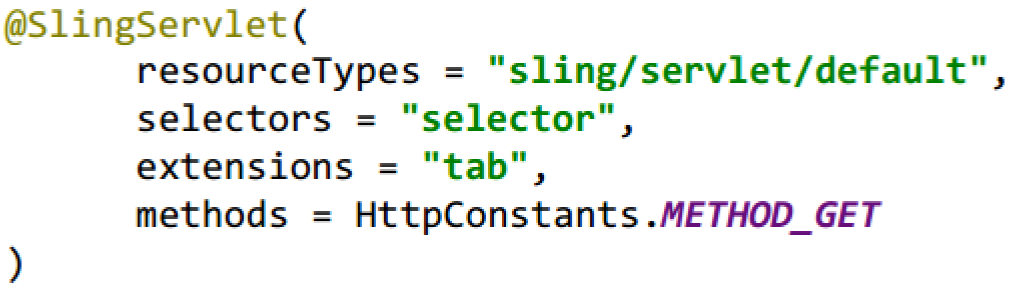
```
Session session = null;
try {
   session = repo.loginService(null, null);
   // do stuff
} catch (RepositoryException e) {
   LOGGER.error("Unable to create session", e);
} finally {
   if (session != null && session.isLive()) {
      session.logout();
   }
}
```

Don’t

```
Session session = null;
try {
   session = repo.loginService(null, null);
   // do stuff
} catch (RepositoryException e) {
   LOGGER.error("Unable to create session", e);
}
```

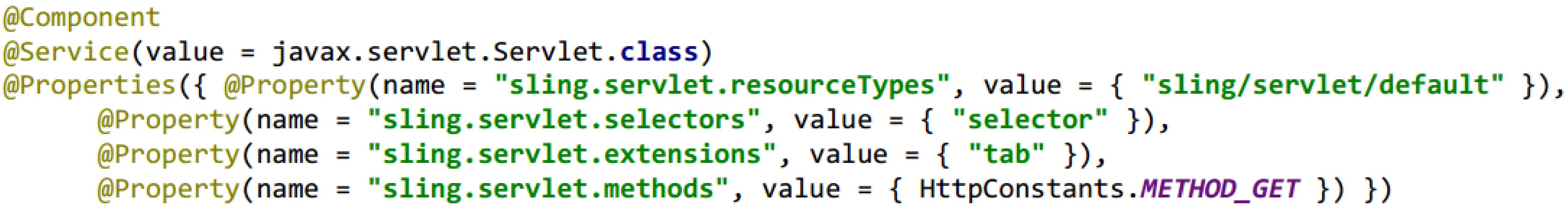
AEM-8 Prefer cleaner `@SlingServlet` annotation

Prefer...



```
@SlingServlet(
      resourceTypes = "sling/servlet/default",
      selectors = "selector",
      extensions = "tab",
      methods = HttpConstants.METHOD_GET
)
```

Over...



```
@Component
@Service(value = javax.servlet.Servlet.class)
@Properties({ @Property(name = "sling.servlet.resourceTypes", value = { "sling/servlet/default" }),
      @Property(name = "sling.servlet.selectors", value = { "selector" }),
      @Property(name = "sling.servlet.extensions", value = { "tab" }),
      @Property(name = "sling.servlet.methods", value = { HttpConstants.METHOD_GET }) })
```

Do

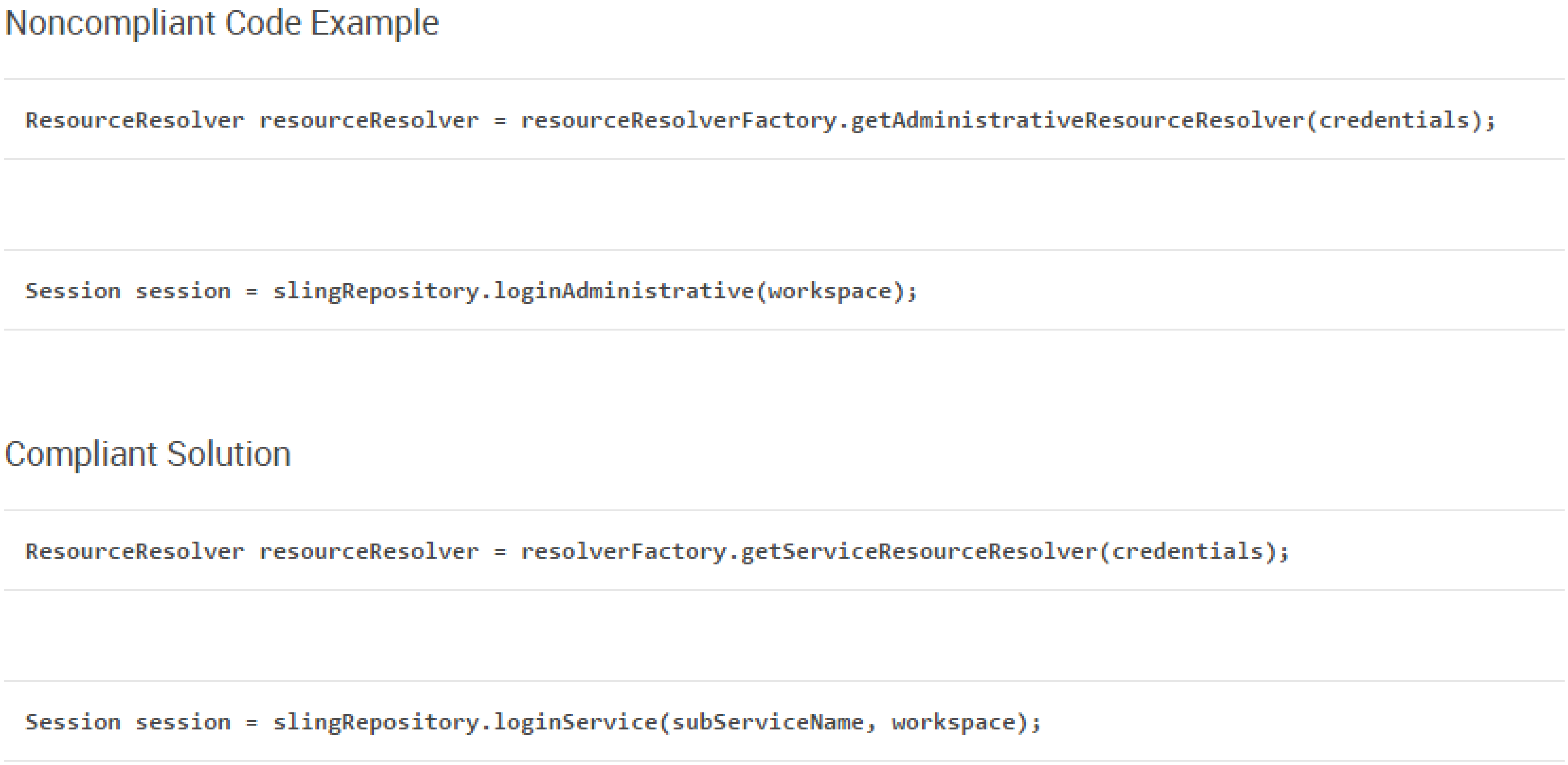
```
@SlingServlet(
        resourceTypes = "sling/servlet/default", selectors = "selector",
        extensions = "tab", methods = HttpConstants.METHOD_GET
)
@Properties({
        @Property(name = Constants.SERVICE_VENDOR, value = "Cognifide"),
        @Property(name = Constants.SERVICE_DESCRIPTION, value = "Some description")
})
```

Don’t

```
  @SlingServlet(methods = "GET")
  @Properties({
          @Property(name = Constants.SERVICE_VENDOR, value = "Cognifide"),
          @Property(name = Constants.SERVICE_DESCRIPTION, value = "Some description"),
⊗         @Property(name = "sling.servlet.selectors", value = "selector"),
⊗         @Property(name = "sling.servlet.extensions", value = "tab"),
⊗         @Property(name = "sling.servlet.resourceTypes", value = { "sling/servlet/default" })
  })
```

AEM-11 Do not use deprecated administrative access methods

- Administrative access to the resource tree and JCR Repository by means of usage of ResourceResolverFactory.getAdministrativeResourceResolver and SlingRepository.loginAdministrative has been deprecated. Use ResourceResolverFactory.getServiceResourceResolver or SlingRepository.loginService respectively



Noncompliant Code Example

```
ResourceResolver resourceResolver = resourceResolverFactory.getAdministrativeResourceResolver(credentials);
```

```
Session session = slingRepository.loginAdministrative(workspace);
```

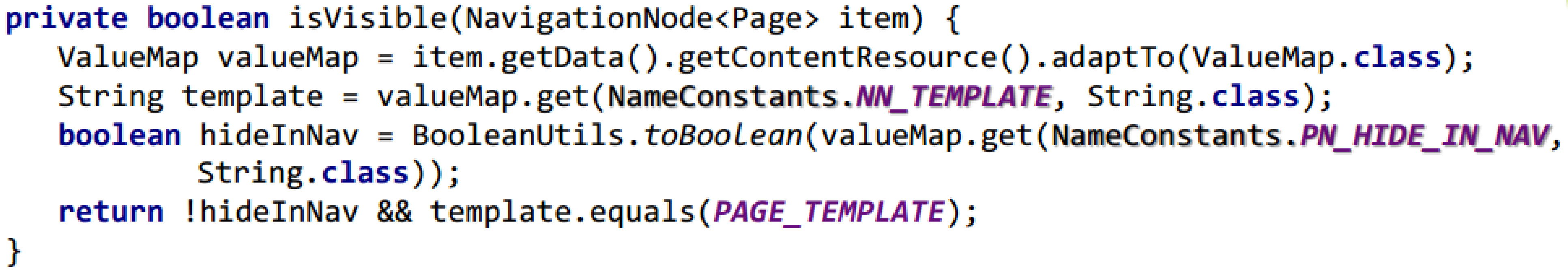
Compliant Solution

```
ResourceResolver resourceResolver = resolverFactory.getServiceResourceResolver(credentials);
```

```
Session session = slingRepository.loginService(subServiceName, workspace);
```

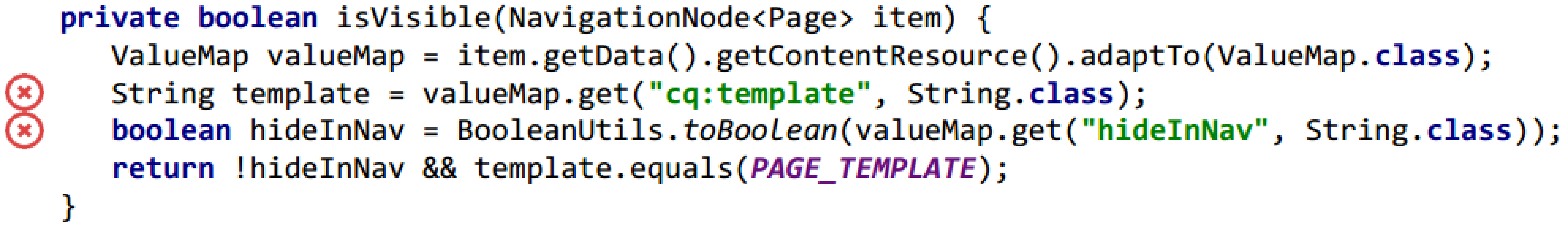
AEM-2 Use predefined constant instead of hardcoded value.

Do



```
private boolean isVisible(NavigationNode<Page> item) {
   ValueMap valueMap = item.getData().getContentResource().adaptTo(ValueMap.class);
   String template = valueMap.get(NameConstants.NN_TEMPLATE, String.class);
   boolean hideInNav = BooleanUtils.toBoolean(valueMap.get(NameConstants.PN_HIDE_IN_NAV,
           String.class));
   return !hideInNav && template.equals(PAGE_TEMPLATE);
}
```

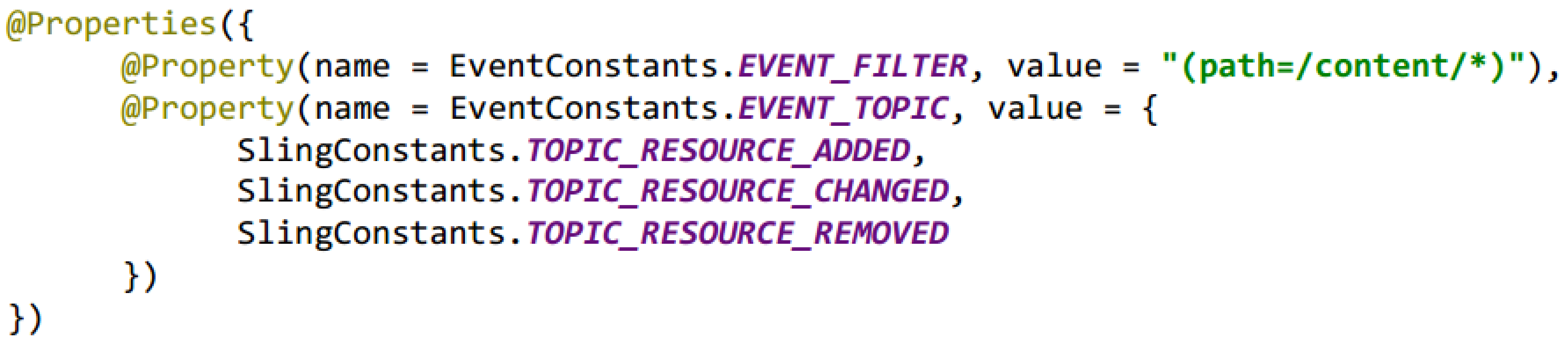
Don’t



```
private boolean isVisible(NavigationNode<Page> item) {
   ValueMap valueMap = item.getData().getContentResource().adaptTo(ValueMap.class);
   String template = valueMap.get("cq:template", String.class);
   boolean hideInNav = BooleanUtils.toBoolean(valueMap.get("hideInNav", String.class));
   return !hideInNav && template.equals(PAGE_TEMPLATE);
}
```

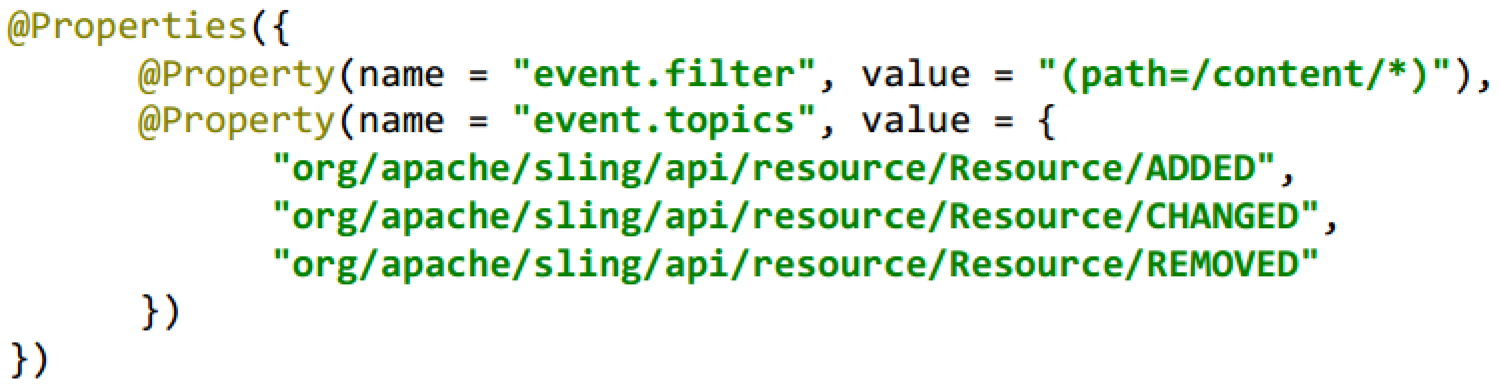
AEM-1 Use predefined constant in annotation instead of hardcoded value.

Do



```
@Properties({
    @Property(name = EventConstants.EVENT_FILTER, value = "(path=/content/*)"),
    @Property(name = EventConstants.EVENT_TOPIC, value = {
        SlingConstants.TOPIC_RESOURCE_ADDED,
        SlingConstants.TOPIC_RESOURCE_CHANGED,
        SlingConstants.TOPIC_RESOURCE_REMOVED
    })
})
```

Don’t



```
@Properties({
    @Property(name = "event.filter", value = "(path=/content/*)"),
    @Property(name = "event.topics", value = {
        "org/apache/sling/api/resource/Resource/ADDED",
        "org/apache/sling/api/resource/Resource/CHANGED",
        "org/apache/sling/api/resource/Resource/REMOVED"
    })
})
```

5 Reasons to use AEM constants

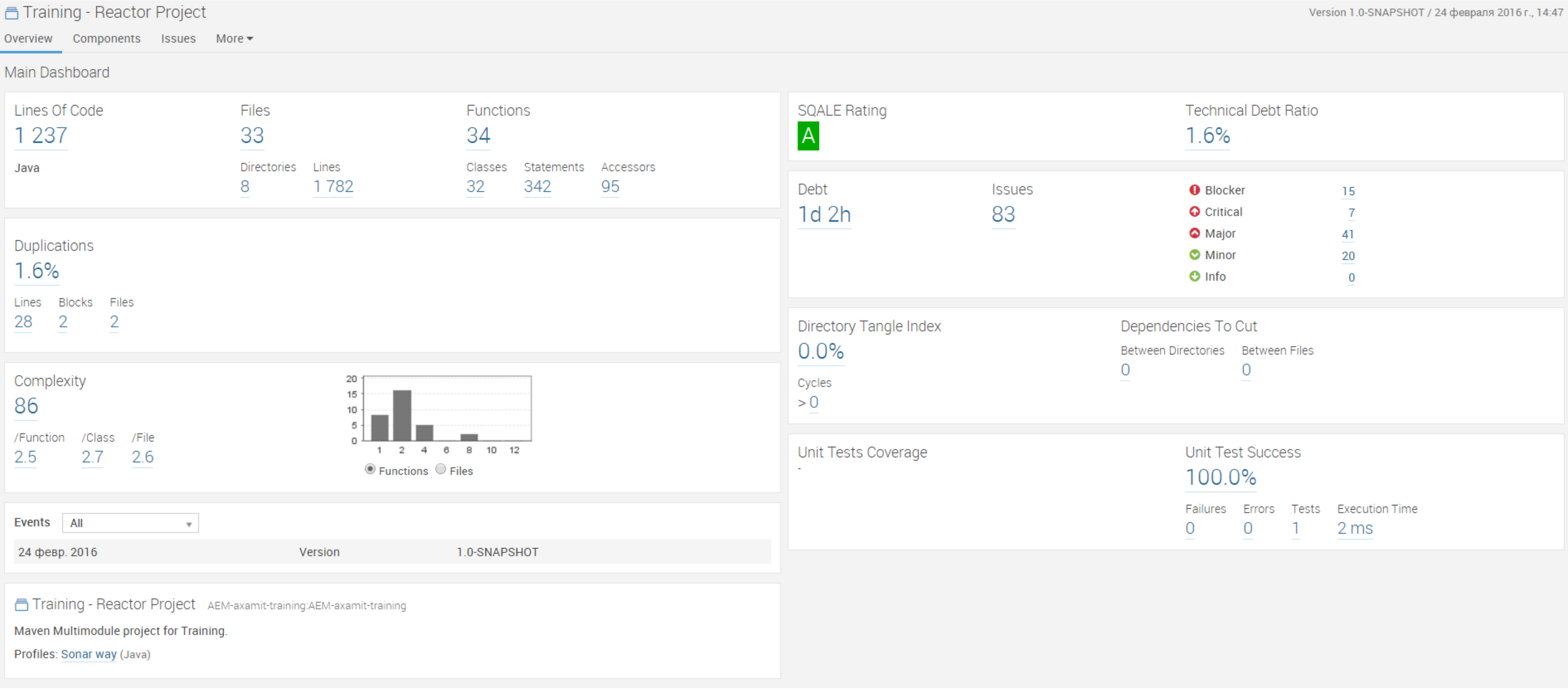
1. Consistency accross whole codebase.
2. Broader context of a value.
   `DamConstants.DC_TITLE = "dc:title"`
3. Deprecation
   `@Deprecated "filter.scope"` VS `"sling.filter.scope"`
4. Extra documentation
   `SlingPostConstants.RD_NODE_NAME` - Optional request parameter specifying a node name for a newly created node (value is ":name").
5. Hey, someone made it a constant for a reason!

7 простых шагов чтобы начать

1. Скачиваете SonarQube 4.5.4 или выше. Рекомендуем использовать 5.1.2, т.к. с этой версией плагин для Idea работает без проблем
2. Убедитесь что для SonarQube установлен Java плагин версии 3.3 или выше. Рекомендуем использовать 3.10
3. Скачиваете плагин для AEM
4. Плагин необходимо положить в `sonarqube/extensions/plugins`
5. (Пере)запустите ваш SonarQube
6. Войдите под администратором и активируйте правила для AEM
7. Из корня проекта запустите `mvn clean install sonar:sonar`

Запустим анализ проекта

```
mvn clean install sonar:sonar
```



Training - Reactor Project

Version 1.0-SNAPSHOT / 24 февраля 2016 г., 14:47

Overview Components Issues More ▾

Main Dashboard

Lines Of Code
1 237
Java

Files
33

Directories 8
Lines 1 782

Functions
34

Classes 32
Statements 342
Accessors 95

Duplications
1.6%

Lines 28
Blocks 2
Files 2

Complexity
86

/Function 2.5
/Class 2.7
/File 2.6

Events All ▾

24 февр. 2016 Version 1.0-SNAPSHOT

Training - Reactor Project AEM-axamit-training:AEM-axamit-training

Maven Multimodule project for Training.

Profiles: Sonar way (Java)

SQALE Rating
A

Technical Debt Ratio
1.6%

Debt
1d 2h

Issues
83

Blocker	15
Critical	7
Major	41
Minor	20
Info	0

Directory Tangle Index
0.0%

Cycles
> 0

Dependencies To Cut

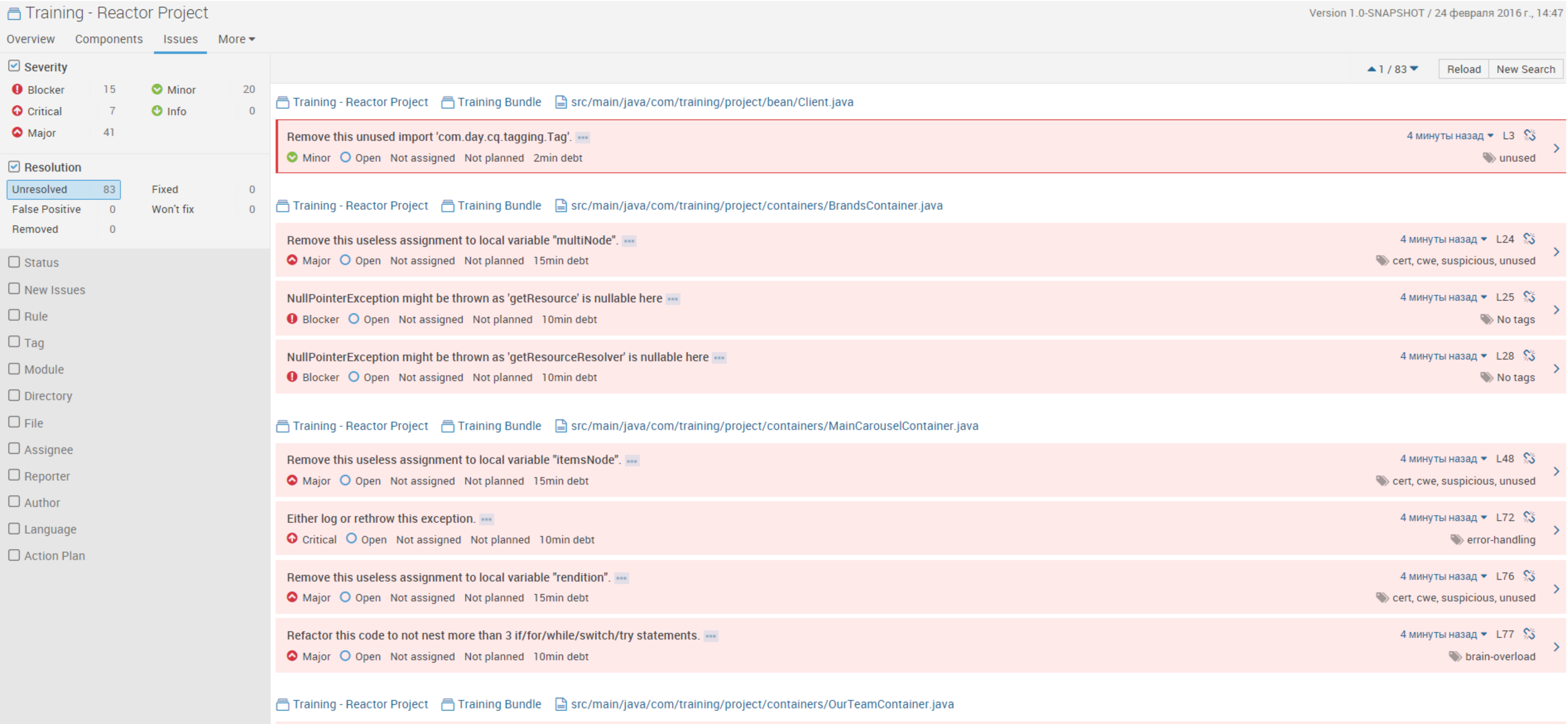
Between Directories 0
Between Files 0

Unit Tests Coverage
-

Unit Test Success
100.0%

Failures 0
Errors 0
Tests 1
Execution Time 2 ms

Найдено 83 проблемы



Training - Reactor Project

Version 1.0-SNAPSHOT / 24 февраля 2016 г., 14:47

☑ Severity

Blocker	15	Minor	20
Critical	7	Info	0
Major	41		

☑ Resolution

Unresolved	83	Fixed	0
False Positive	0	Won't fix	0
Removed	0		

- □ Status
- □ New Issues
- □ Rule
- □ Tag
- □ Module
- □ Directory
- □ File
- □ Assignee
- □ Reporter
- □ Author
- □ Language
- □ Action Plan

Training - Reactor Project Training Bundle src/main/java/com/training/project/bean/Client.java

Remove this unused import 'com.day.cq.tagging.Tag'. ··· — 4 минуты назад L3
Minor Open Not assigned Not planned 2min debt — unused

Training - Reactor Project Training Bundle src/main/java/com/training/project/containers/BrandsContainer.java

Remove this useless assignment to local variable "multiNode". ··· — 4 минуты назад L24
Major Open Not assigned Not planned 15min debt — cert, cwe, suspicious, unused

NullPointerException might be thrown as 'getResource' is nullable here ··· — 4 минуты назад L25
Blocker Open Not assigned Not planned 10min debt — No tags

NullPointerException might be thrown as 'getResourceResolver' is nullable here ··· — 4 минуты назад L28
Blocker Open Not assigned Not planned 10min debt — No tags

Training - Reactor Project Training Bundle src/main/java/com/training/project/containers/MainCarouselContainer.java

Remove this useless assignment to local variable "itemsNode". ··· — 4 минуты назад L48
Major Open Not assigned Not planned 15min debt — cert, cwe, suspicious, unused

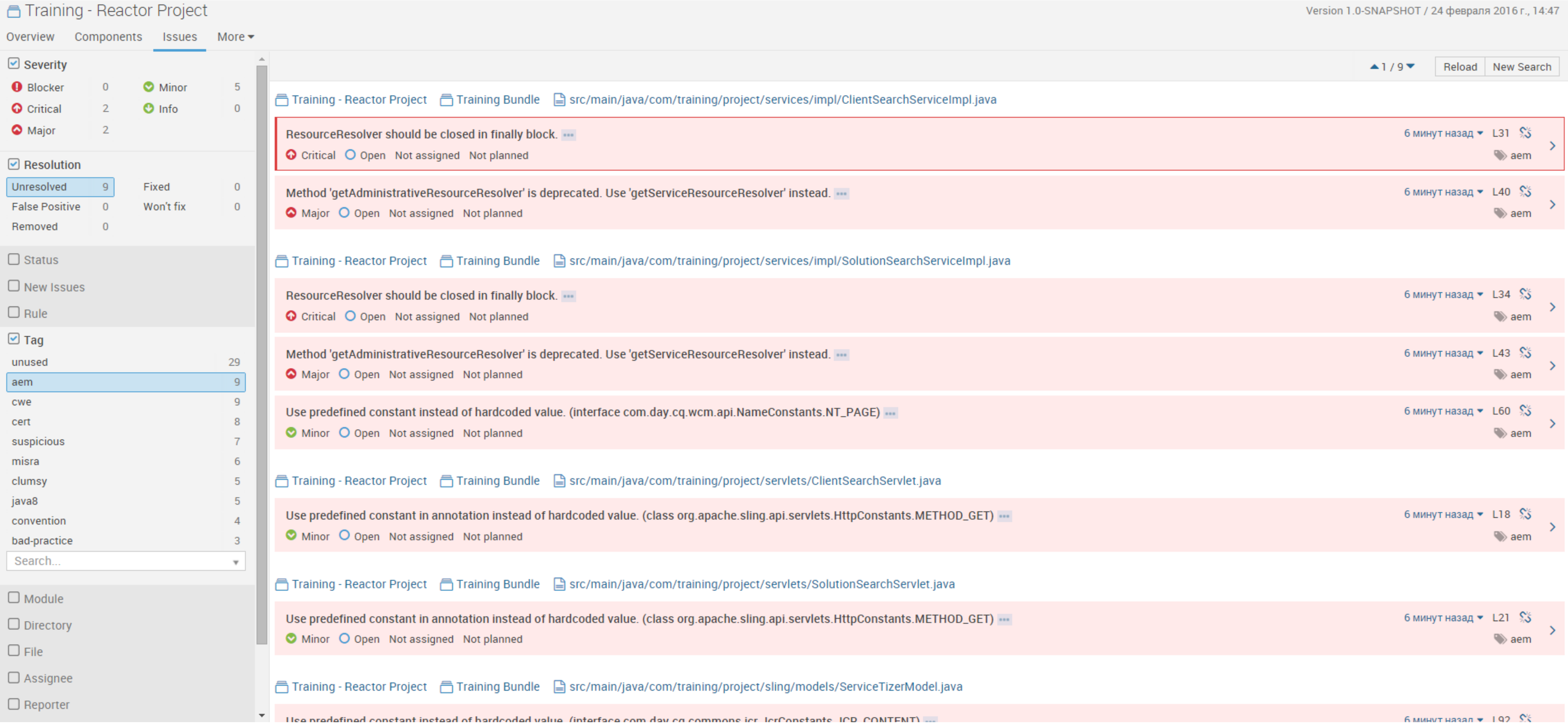
Either log or rethrow this exception. ··· — 4 минуты назад L72
Critical Open Not assigned Not planned 10min debt — error-handling

Remove this useless assignment to local variable "rendition". ··· — 4 минуты назад L76
Major Open Not assigned Not planned 15min debt — cert, cwe, suspicious, unused

Refactor this code to not nest more than 3 if/for/while/switch/try statements. ··· — 4 минуты назад L77
Major Open Not assigned Not planned 10min debt — brain-overload

Training - Reactor Project Training Bundle src/main/java/com/training/project/containers/OurTeamContainer.java

В том числе 9 по правилам AEM



Training - Reactor Project

Version 1.0-SNAPSHOT / 24 февраля 2016 г., 14:47

Overview Components Issues More

☑ Severity

Blocker	0	Minor	5
Critical	2	Info	0
Major	2		

☑ Resolution

Unresolved	9	Fixed	0
False Positive	0	Won't fix	0
Removed	0		

☐ Status

☐ New Issues

☐ Rule

☑ Tag

unused	29
aem	9
cwe	9
cert	8
suspicious	7
misra	6
clumsy	5
java8	5
convention	4
bad-practice	3

Search...

☐ Module

☐ Directory

☐ File

☐ Assignee

☐ Reporter

1 / 9 Reload New Search

Training - Reactor Project Training Bundle src/main/java/com/training/project/services/impl/ClientSearchServiceImpl.java

ResourceResolver should be closed in finally block. — 6 минут назад L31
Critical Open Not assigned Not planned — aem

Method 'getAdministrativeResourceResolver' is deprecated. Use 'getServiceResourceResolver' instead. — 6 минут назад L40
Major Open Not assigned Not planned — aem

Training - Reactor Project Training Bundle src/main/java/com/training/project/services/impl/SolutionSearchServiceImpl.java

ResourceResolver should be closed in finally block. — 6 минут назад L34
Critical Open Not assigned Not planned — aem

Method 'getAdministrativeResourceResolver' is deprecated. Use 'getServiceResourceResolver' instead. — 6 минут назад L43
Major Open Not assigned Not planned — aem

Use predefined constant instead of hardcoded value. (interface com.day.cq.wcm.api.NameConstants.NT_PAGE) — 6 минут назад L60
Minor Open Not assigned Not planned — aem

Training - Reactor Project Training Bundle src/main/java/com/training/project/servlets/ClientSearchServlet.java

Use predefined constant in annotation instead of hardcoded value. (class org.apache.sling.api.servlets.HttpConstants.METHOD_GET) — 6 минут назад L18
Minor Open Not assigned Not planned — aem

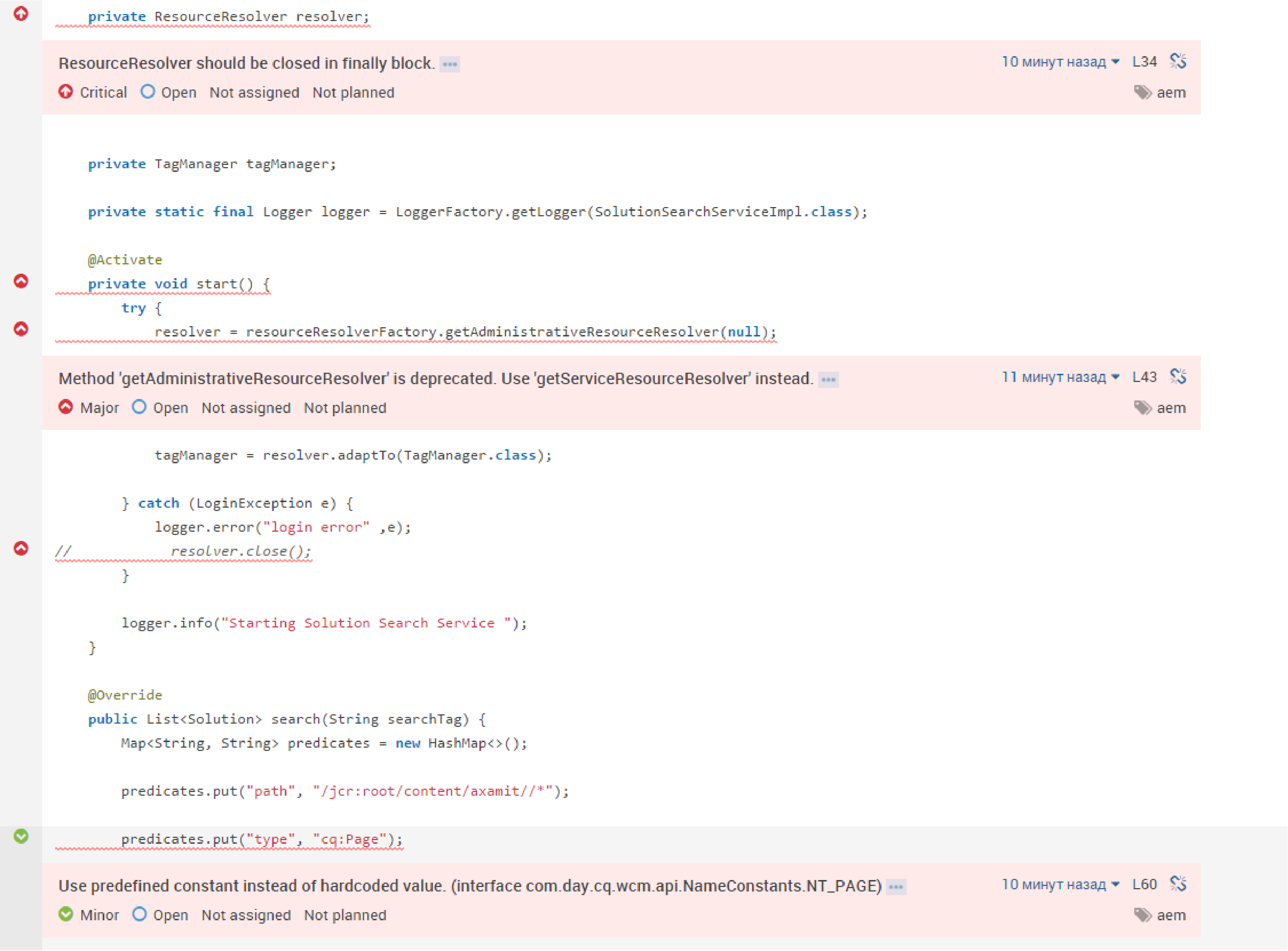
Training - Reactor Project Training Bundle src/main/java/com/training/project/servlets/SolutionSearchServlet.java

Use predefined constant in annotation instead of hardcoded value. (class org.apache.sling.api.servlets.HttpConstants.METHOD_GET) — 6 минут назад L21
Minor Open Not assigned Not planned — aem

Training - Reactor Project Training Bundle src/main/java/com/training/project/sling/models/ServiceTizerModel.java

Use predefined constant instead of hardcoded value. (interface com.day.cq.commons.jcr.JcrConstants.JCR_CONTENT) — 6 минут назад L92

Примеры найденных проблем



```java
    private ResourceResolver resolver;
```

ResourceResolver should be closed in finally block. ··· 10 минут назад ▾ L34

Critical ○ Open Not assigned Not planned aem

```java

    private TagManager tagManager;

    private static final Logger logger = LoggerFactory.getLogger(SolutionSearchServiceImpl.class);

    @Activate
    private void start() {
        try {
            resolver = resourceResolverFactory.getAdministrativeResourceResolver(null);
```

Method 'getAdministrativeResourceResolver' is deprecated. Use 'getServiceResourceResolver' instead. ··· 11 минут назад ▾ L43

Major ○ Open Not assigned Not planned aem

```java
            tagManager = resolver.adaptTo(TagManager.class);

        } catch (LoginException e) {
            logger.error("login error" ,e);
//              resolver.close();
        }

        logger.info("Starting Solution Search Service ");
    }

    @Override
    public List<Solution> search(String searchTag) {
        Map<String, String> predicates = new HashMap<>();

        predicates.put("path", "/jcr:root/content/axamit//*");

        predicates.put("type", "cq:Page");
```

Use predefined constant instead of hardcoded value. (interface com.day.cq.wcm.api.NameConstants.NT_PAGE) ··· 10 минут назад ▾ L60

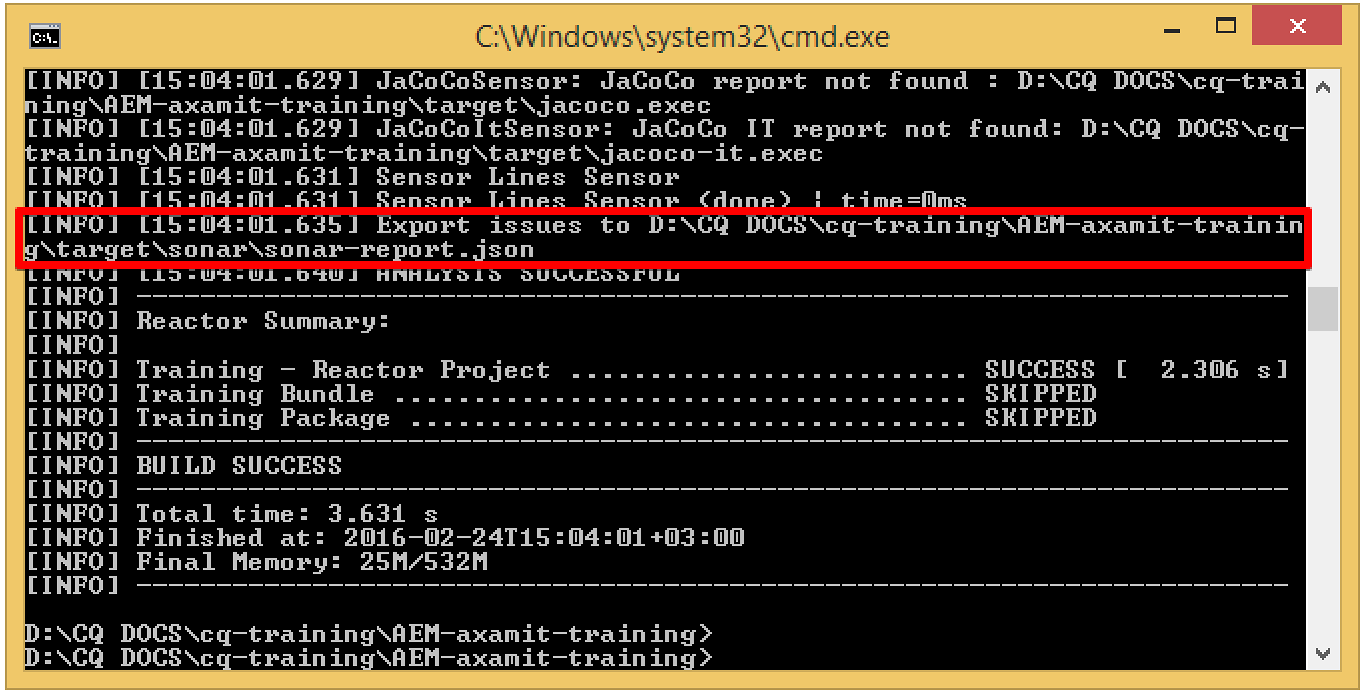
Minor ○ Open Not assigned Not planned aem

Использование плагина для Intellij Idea
SonarQube IntelliJ Community Plugin
github.com/sonar-intellij-plugin/sonar-intellij-plugin

- Из корня проекта запускаем команду

```
mvn sonar:sonar -DskipTests=true -Dsonar.analysis.mode=incremental  -Dsonar.host.url=http://localhost:9000
```

- Из результата ее выполнения нам необходим путь к json с отчетом

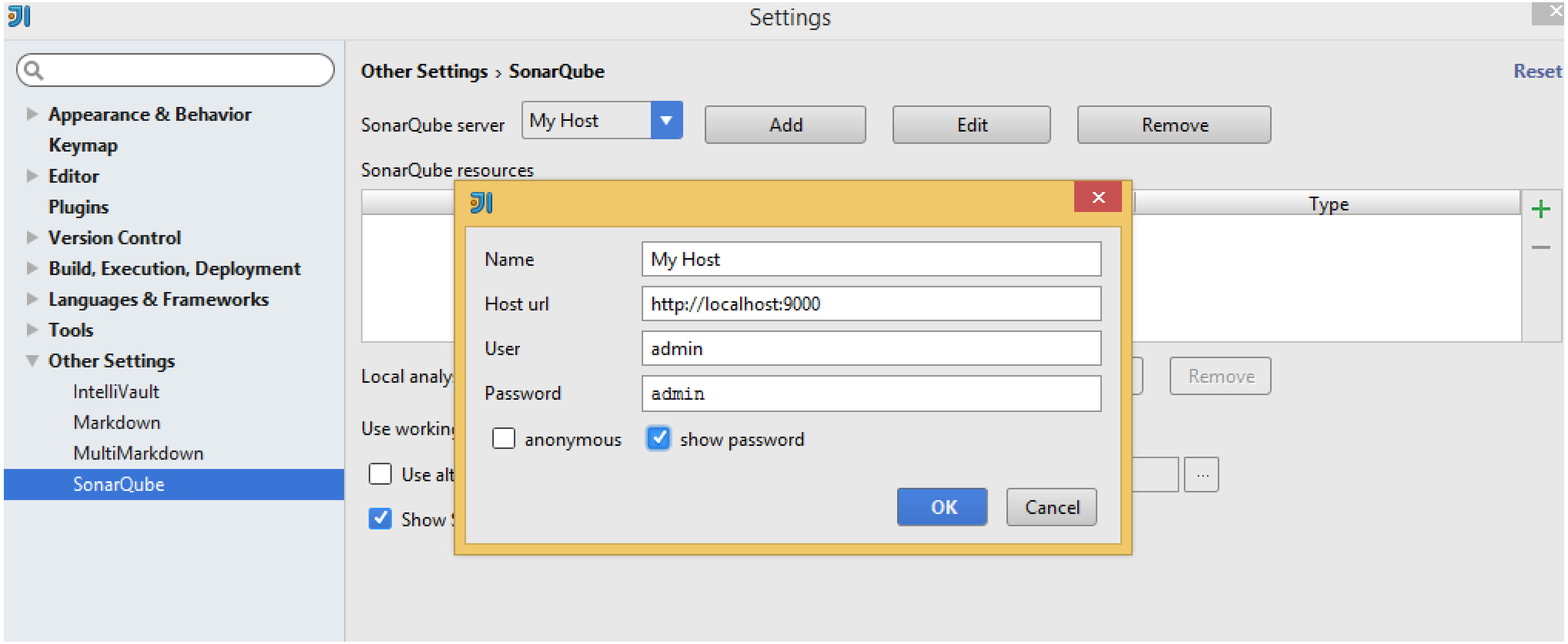


```
[INFO] [15:04:01.629] JaCoCoSensor: JaCoCo report not found : D:\CQ DOCS\cq-trai
ning\AEM-axamit-training\target\jacoco.exec
[INFO] [15:04:01.629] JaCoCoItSensor: JaCoCo IT report not found: D:\CQ DOCS\cq-
training\AEM-axamit-training\target\jacoco-it.exec
[INFO] [15:04:01.631] Sensor Lines Sensor
[INFO] [15:04:01.631] Sensor Lines Sensor (done) | time=0ms
[INFO] [15:04:01.635] Export issues to D:\CQ DOCS\cq-training\AEM-axamit-trainin
g\target\sonar\sonar-report.json
[INFO] [15:04:01.640] ANALYSIS SUCCESSFUL
[INFO] ------------------------------------------------------------------------
[INFO] Reactor Summary:
[INFO]
[INFO] Training - Reactor Project ......................... SUCCESS [  2.306 s]
[INFO] Training Bundle .................................... SKIPPED
[INFO] Training Package ................................... SKIPPED
[INFO] ------------------------------------------------------------------------
[INFO] BUILD SUCCESS
[INFO] ------------------------------------------------------------------------
[INFO] Total time: 3.631 s
[INFO] Finished at: 2016-02-24T15:04:01+03:00
[INFO] Final Memory: 25M/532M
[INFO] ------------------------------------------------------------------------

D:\CQ DOCS\cq-training\AEM-axamit-training>
D:\CQ DOCS\cq-training\AEM-axamit-training>
```

Настраиваем плагин

- Добавляем хост



SonarQube server My Host

Name My Host

Host url http://localhost:9000

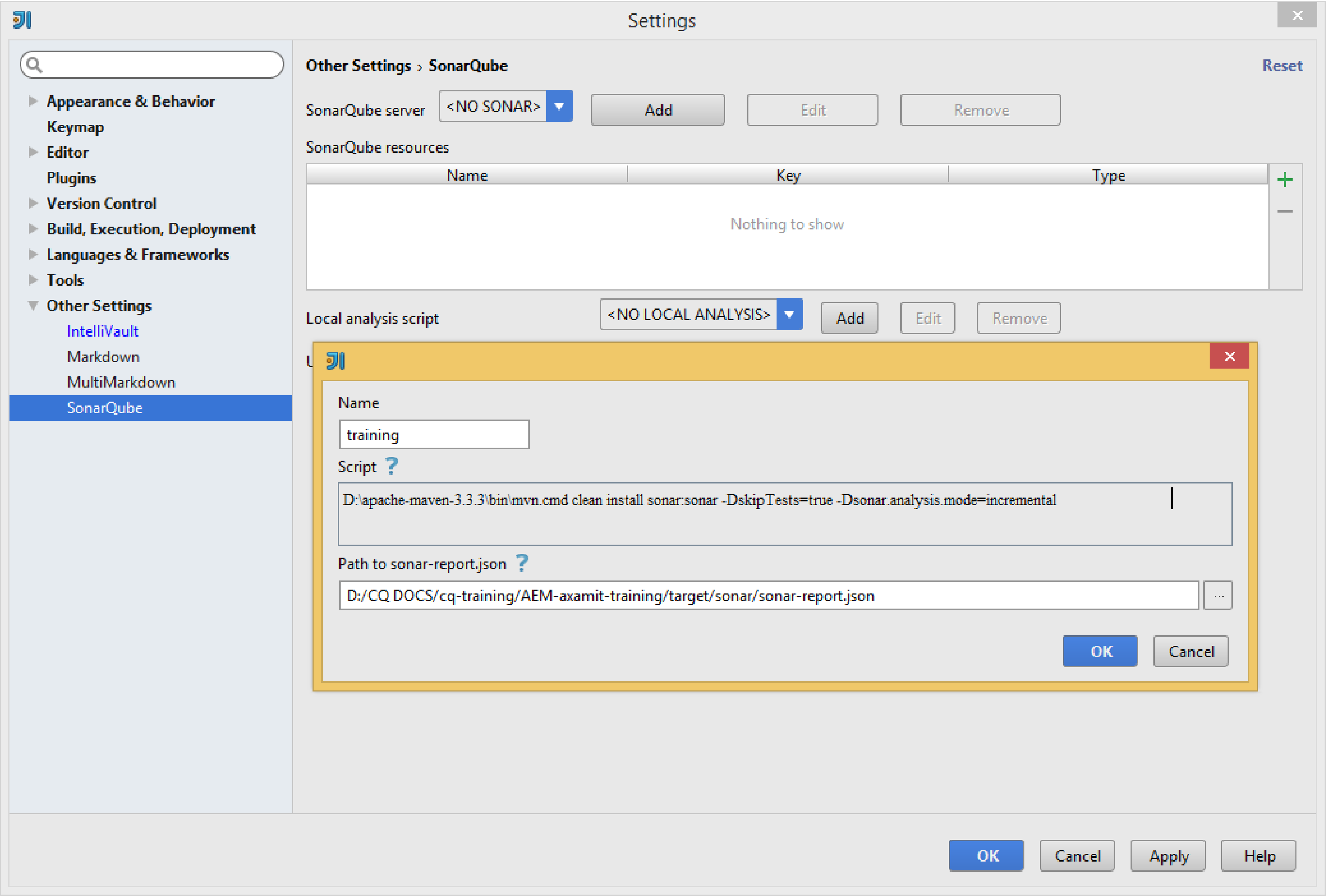
User admin

Password admin

□ anonymous ☑ show password

OK Cancel

- А также скрипт для локального анализа



Name: training

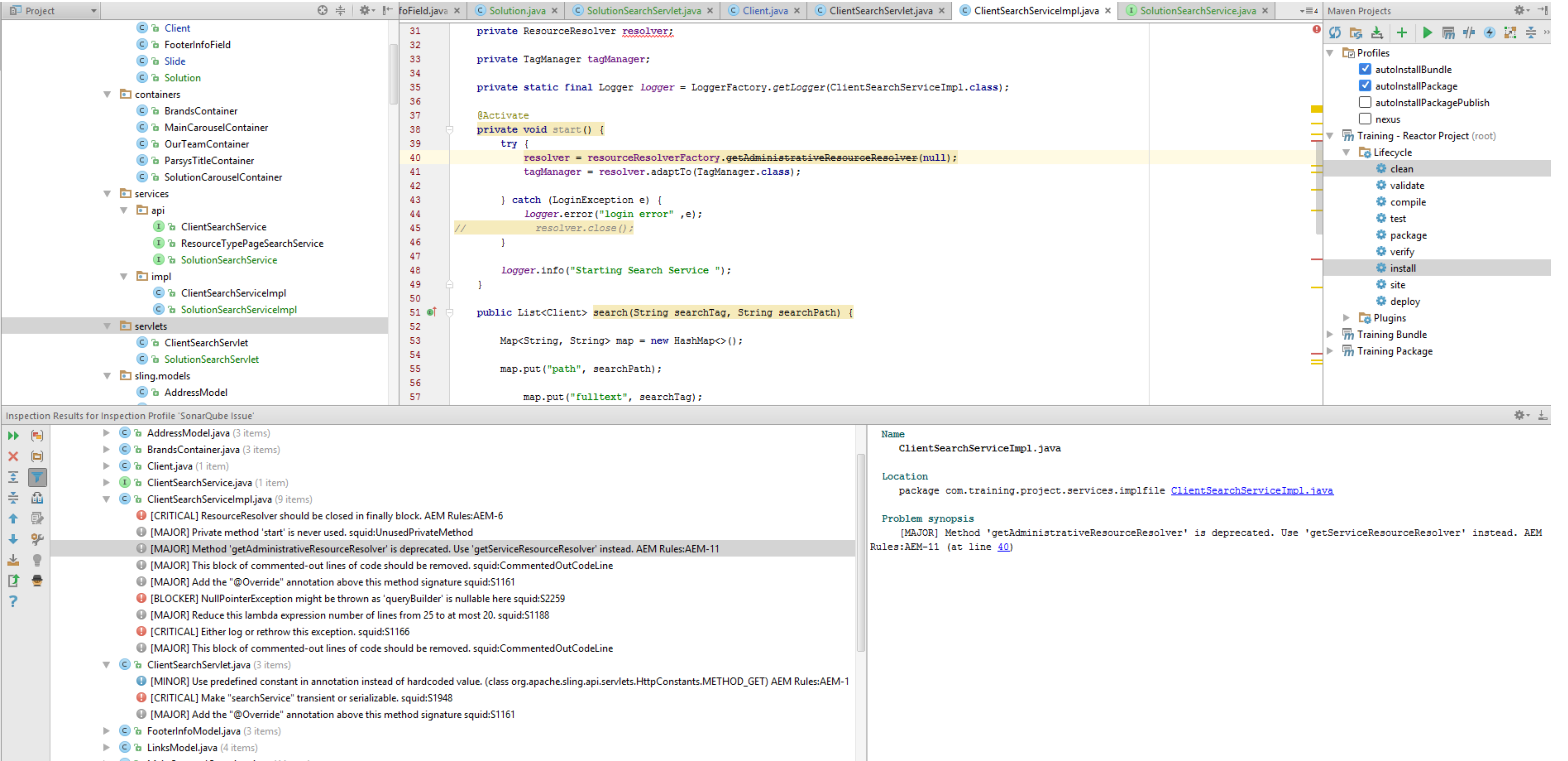
Script:

```
D:\apache-maven-3.3.3\bin\mvn.cmd clean install sonar:sonar -DskipTests=true -Dsonar.analysis.mode=incremental
```

Path to sonar-report.json: D:/CQ DOCS/cq-training/AEM-axamit-training/target/sonar/sonar-report.json

Запускаем анализ в Idea

- Analyze – Run Inspection by Name – SonarQube



Maven Projects — Profiles:

☑ autoInstallBundle
☑ autoInstallPackage
□ autoInstallPackagePublish
□ nexus

```java
    private ResourceResolver resolver;

    private TagManager tagManager;

    private static final Logger logger = LoggerFactory.getLogger(ClientSearchServiceImpl.class);

    @Activate
    private void start() {
        try {
            resolver = resourceResolverFactory.getAdministrativeResourceResolver(null);
            tagManager = resolver.adaptTo(TagManager.class);

        } catch (LoginException e) {
            logger.error("login error" ,e);
//              resolver.close();
        }

        logger.info("Starting Search Service ");
    }

    public List<Client> search(String searchTag, String searchPath) {

        Map<String, String> map = new HashMap<>();

        map.put("path", searchPath);

            map.put("fulltext", searchTag);
```

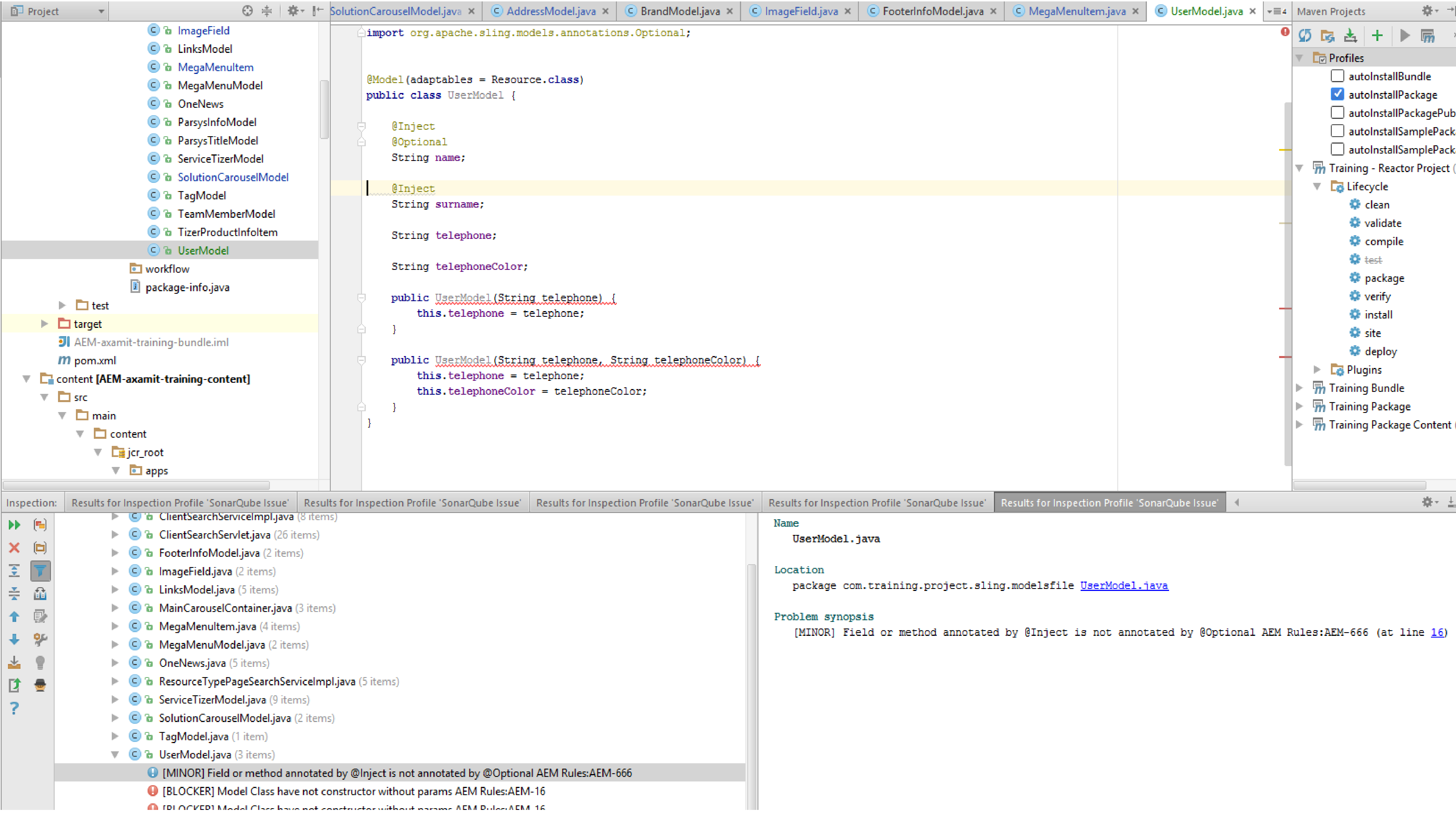
Inspection Results for Inspection Profile 'SonarQube Issue'

```
AddressModel.java (3 items)
BrandsContainer.java (3 items)
Client.java (1 item)
ClientSearchService.java (1 item)
ClientSearchServiceImpl.java (9 items)
    [CRITICAL] ResourceResolver should be closed in finally block. AEM Rules:AEM-6
    [MAJOR] Private method 'start' is never used. squid:UnusedPrivateMethod
    [MAJOR] Method 'getAdministrativeResourceResolver' is deprecated. Use 'getServiceResourceResolver' instead. AEM Rules:AEM-11
    [MAJOR] This block of commented-out lines of code should be removed. squid:CommentedOutCodeLine
    [MAJOR] Add the "@Override" annotation above this method signature squid:S1161
    [BLOCKER] NullPointerException might be thrown as 'queryBuilder' is nullable here squid:S2259
    [MAJOR] Reduce this lambda expression number of lines from 25 to at most 20. squid:S1188
    [CRITICAL] Either log or rethrow this exception. squid:S1166
    [MAJOR] This block of commented-out lines of code should be removed. squid:CommentedOutCodeLine
ClientSearchServlet.java (3 items)
    [MINOR] Use predefined constant in annotation instead of hardcoded value. (class org.apache.sling.api.servlets.HttpConstants.METHOD_GET) AEM Rules:AEM-1
    [CRITICAL] Make "searchService" transient or serializable. squid:S1948
    [MAJOR] Add the "@Override" annotation above this method signature squid:S1161
FooterInfoModel.java (3 items)
LinksModel.java (4 items)
```

```
Name
    ClientSearchServiceImpl.java

Location
    package com.training.project.services.implfile ClientSearchServiceImpl.java

Problem synopsis
    [MAJOR] Method 'getAdministrativeResourceResolver' is deprecated. Use 'getServiceResourceResolver' instead. AEM
Rules:AEM-11 (at line 40)
```


Project
SolutionCarouselModel.java
AddressModel.java
BrandModel.java
ImageField.java
FooterInfoModel.java
MegaMenuItem.java
UserModel.java
Maven Projects
Inspection:
Results for Inspection Profile 'SonarQube Issue'
Results for Inspection Profile 'SonarQube Issue'
Results for Inspection Profile 'SonarQube Issue'
Results for Inspection Profile 'SonarQube Issue'
Results for Inspection Profile 'SonarQube Issue'

```
ImageField
LinksModel
MegaMenuItem
MegaMenuModel
OneNews
ParsysInfoModel
ParsysTitleModel
ServiceTizerModel
SolutionCarouselModel
TagModel
TeamMemberModel
TizerProductInfoItem
UserModel
workflow
package-info.java
test
target
AEM-axamit-training-bundle.iml
pom.xml
content [AEM-axamit-training-content]
src
main
content
jcr_root
apps
```

```java
import org.apache.sling.models.annotations.Optional;


@Model(adaptables = Resource.class)
public class UserModel {

    @Inject
    @Optional
    String name;

    @Inject
    String surname;

    String telephone;

    String telephoneColor;

    public UserModel(String telephone) {
        this.telephone = telephone;
    }

    public UserModel(String telephone, String telephoneColor) {
        this.telephone = telephone;
        this.telephoneColor = telephoneColor;
    }
}
```

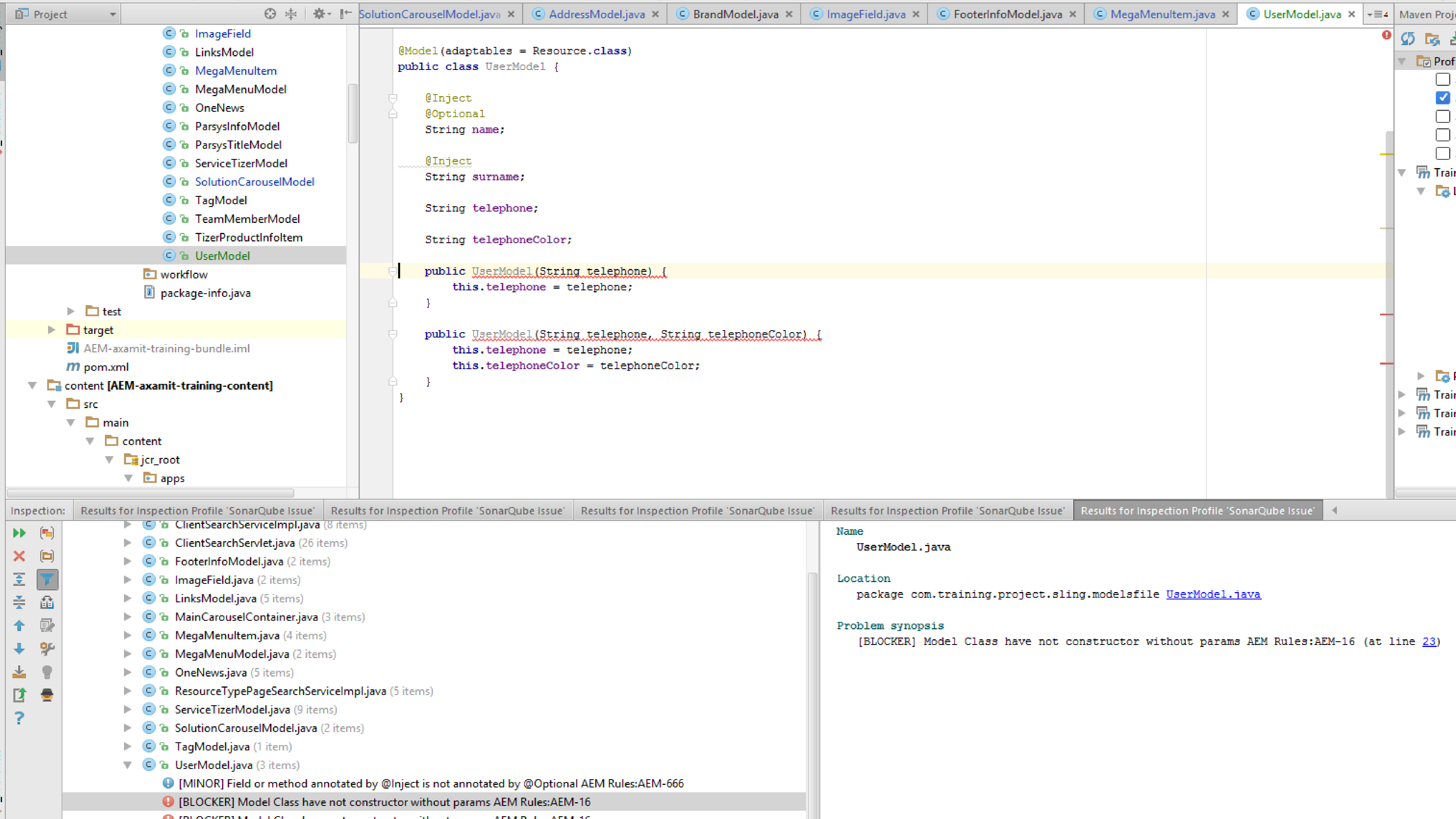
```
Profiles
☐ autoInstallBundle
☑ autoInstallPackage
☐ autoInstallPackagePub
☐ autoInstallSamplePack
☐ autoInstallSamplePack
Training - Reactor Project (
  Lifecycle
    clean
    validate
    compile
    ~~test~~
    package
    verify
    install
    site
    deploy
  Plugins
Training Bundle
Training Package
Training Package Content (
```

```
ClientSearchServiceImpl.java (8 items)
ClientSearchServlet.java (26 items)
FooterInfoModel.java (2 items)
ImageField.java (2 items)
LinksModel.java (5 items)
MainCarouselContainer.java (3 items)
MegaMenuItem.java (4 items)
MegaMenuModel.java (2 items)
OneNews.java (5 items)
ResourceTypePageSearchServiceImpl.java (5 items)
ServiceTizerModel.java (9 items)
SolutionCarouselModel.java (2 items)
TagModel.java (1 item)
UserModel.java (3 items)
    [MINOR] Field or method annotated by @Inject is not annotated by @Optional AEM Rules:AEM-666
    [BLOCKER] Model Class have not constructor without params AEM Rules:AEM-16
    [BLOCKER] Model Class have not constructor without params AEM Rules:AEM-16
```

```
Name
   UserModel.java

Location
   package com.training.project.sling.modelsfile UserModel.java

Problem synopsis
   [MINOR] Field or method annotated by @Inject is not annotated by @Optional AEM Rules:AEM-666 (at line 16)
```



```
@Model(adaptables = Resource.class)
public class UserModel {

    @Inject
    @Optional
    String name;

    @Inject
    String surname;

    String telephone;

    String telephoneColor;

    public UserModel(String telephone) {
        this.telephone = telephone;
    }

    public UserModel(String telephone, String telephoneColor) {
        this.telephone = telephone;
        this.telephoneColor = telephoneColor;
    }
}
```

```
ClientSearchServiceImpl.java (8 items)
ClientSearchServlet.java (26 items)
FooterInfoModel.java (2 items)
ImageField.java (2 items)
LinksModel.java (5 items)
MainCarouselContainer.java (3 items)
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ServiceTizerModel.java (9 items)
SolutionCarouselModel.java (2 items)
TagModel.java (1 item)
UserModel.java (3 items)
    [MINOR] Field or method annotated by @Inject is not annotated by @Optional AEM Rules:AEM-666
    [BLOCKER] Model Class have not constructor without params AEM Rules:AEM-16
    [BLOCKER] Model Class have not constructor without params AEM Rules:AEM-16
```

```
Name
   UserModel.java

Location
   package com.training.project.sling.modelsfile UserModel.java

Problem synopsis
   [BLOCKER] Model Class have not constructor without params AEM Rules:AEM-16 (at line 23)
```