

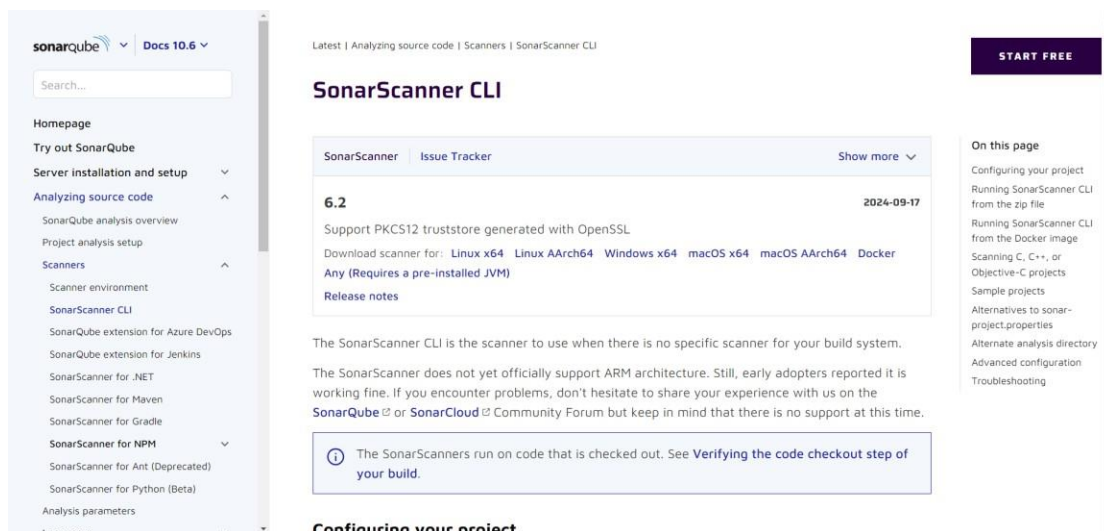
Name:- Swaraj Patil

Roll :- 40

Experiment no 8

Aim: Create a Jenkins CICD Pipeline with SonarQube / GitLab Integration to perform a static analysis of the code to detect bugs, code smells, and security vulnerabilities on a sample Web / Java / Python application.

Step 1: Download sonar scanner

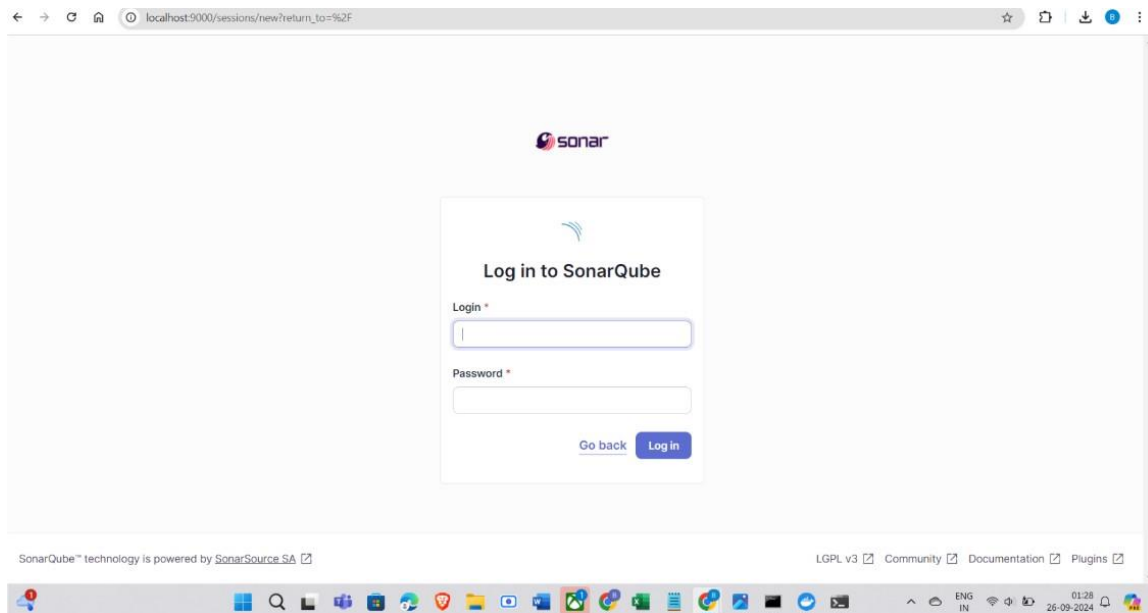


The screenshot shows the SonarScanner CLI documentation page. The left sidebar contains a navigation menu with options like 'Homepage', 'Try out SonarQube', 'Server installation and setup', 'Analyzing source code', 'Scanners', and 'Analysis parameters'. The main content area is titled 'SonarScanner CLI' and shows version '6.2' with a release date of '2024-09-17'. It lists download links for various operating systems and architectures. A note mentions that the scanner does not yet officially support ARM architecture. A 'START FREE' button is visible in the top right corner.

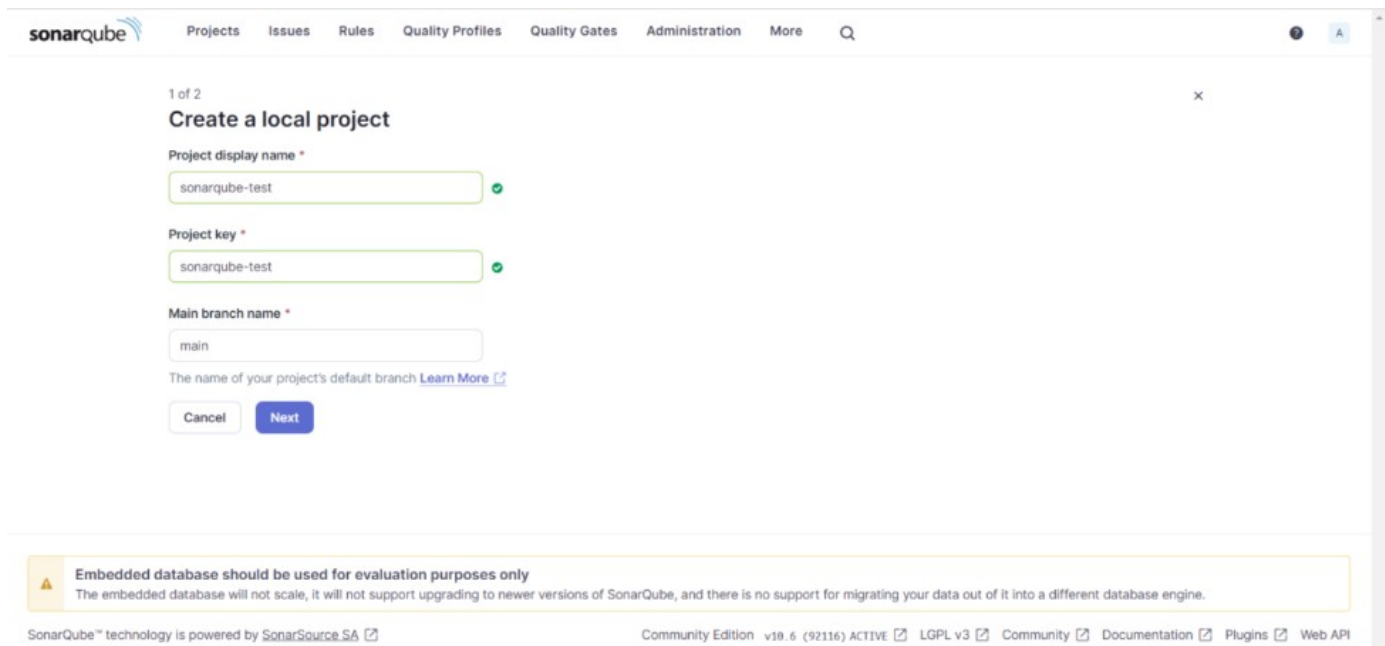
1. Command: docker pull sonarqube

```
C:\Windows\System32>docker pull sonarqube
Using default tag: latest
latest: Pulling from library/sonarqube
Digest: sha256:72e9feec71242af83faf65f95a40d5e3bb2822a6c3b2cda8568790f3d31aecde
Status: Image is up to date for sonarqube:latest
docker.io/library/sonarqube:latest
```

2. Login the details



3. Give the name of the project



4. Open up Jenkins Dashboard on localhost, port 8081 or which ever port it is at for you.

Dashboard >

+ New Item

Build History

Manage Jenkins

My Views

Build Queue

No builds in the queue.

Build Executor Status

built-in node (0 of 10 executors busy)

All +

S	W	Name	Last Success	Last Failure	Last Duration
✓	☀	bbparil	10 days #1	N/A	5.3 sec
⋮	☀	bhagyesh	N/A	N/A	N/A
✗	☁	bhagyesh patil opo	N/A	1 day 0 hr #2	8.7 sec
✗	☁	bhagyesh_mavev	N/A	1 day 0 hr #2	7.8 sec
⋮	☀	bhagyesh_niraj	N/A	N/A	N/A
✗	☁	bhagyesh_Niraj_final	N/A	6 hr 13 min #1	4.7 sec
✓	☀	bhagyeshpipi	8 days 10 hr #1	N/A	5.5 sec
✗	☁	bp_nk	N/A	6 hr 13 min #1	9.4 sec
✓	☀	lipo	1 day 0 hr #1	N/A	0.36 sec

5. to Manage Jenkins and search for SonarQube Scanner for Jenkins and install it.

Name

sonarqube

Server URL

Default is http://localhost:9000

http://localhost:9000

Server authentication token

SonarQube authentication token. Mandatory when anonymous access is disabled.

- none -

+ Add

Advanced

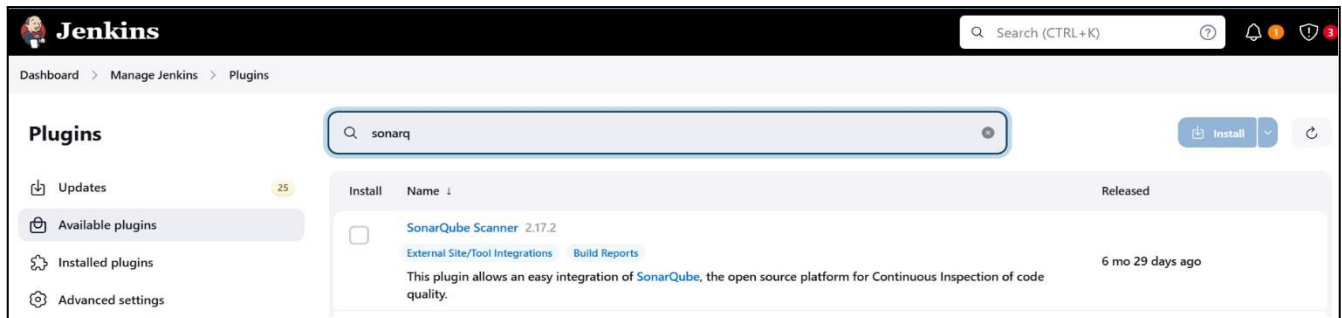
2. SonarQubeServers

and enter the details.

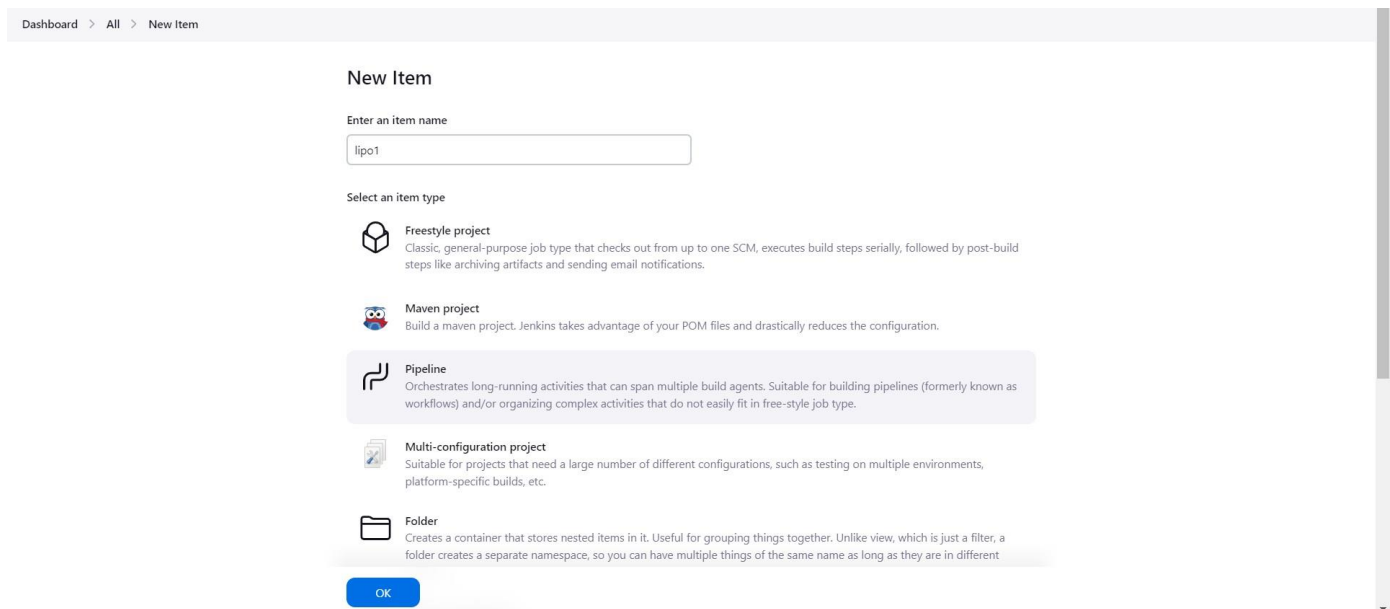
Enter the Server Authentication token if needed.

In SonarQube installations: Under **Name** add <project name of sonarqube> for me
adv_devops_7_sonarqube

In **Server URL** Default is <http://localhost:9000>



6. After configuration, create a New Item → choose a pipeline project.



This is java code put in the pipeline script

Under Pipeline script, enter the following:

```
node {
  stage('Cloning the GitHub Repo') {
    git 'https://github.com/shazforiot/GOL.git'
  }

  stage('SonarQube analysis') {
    withSonarQubeEnv('<Name_of_SonarQube_environment_on_Jenki
ns>') {
      sh """
        <PATH_TO_SONARQUBE_SCANNER_FOLDER>/bin/sonar-scanner \
        -D sonar.login=<SonarQube_USERNAME> \
        -D sonar.password=<SonarQube_PASSWORD> \
        -D sonar.projectKey=<Project_KEY> \
```

```

-D sonar.exclusions=vendor/**,resources/**,**/*.java \
-D sonar.host.url=<SonarQube_URL>(default:
http://localhost:9000/)""
}
}

```

Definition

Pipeline script

Script ?

```

1 node {
2   stage('Cloning the GitHub Repo') {
3     git 'https://github.com/shazforiot/GOL.git'
4   }
5
6   stage('SonarQube analysis') { withSonarQubeEnv('<Name_of_SonarQube_environment_on_Jenkins>') {
7     sh """
8     <PATH_TO_SONARQUBE_SCANNER_FOLDER>/bin/sonar-scanner \
9     -D sonar.login=admin \
10    -D sonar.password=admin \
11    -D sonar.projectKey=sonarqube \
12    -D sonar.exclusions=vendor/**,resources/**,**/*.java \
13    -D sonar.host.url=http://localhost:9000
14    """
15   }
16 }
17 }

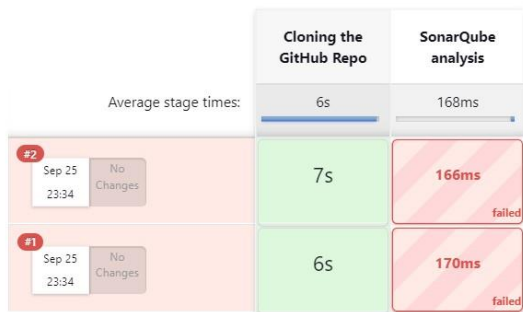
```

☒ Use Groovy Sandbox ?

[Pipeline Syntax](#)

7. Build project

Stage View



Permalinks

- Last build (#2), 1 day 1 hr ago
- Last failed build (#2), 1 day 1 hr ago
- Last unsuccessful build (#2), 1 day 1 hr ago
- Last completed build (#2), 1 day 1 hr ago

This error come in pc but next step output come in clg pc

Console Output

[Download](#)[Copy](#)[View as plain text](#)

```
Started by user bbpatil
[Pipeline] Start of Pipeline
[Pipeline] node
Running on Jenkins in C:\ProgramData\Jenkins\.jenkins\workspace\lipo12
[Pipeline] {
[Pipeline] stage
[Pipeline] { (Cloning the GitHub Repo)
[Pipeline] git
The recommended git tool is: NONE
No credentials specified
Cloning the remote Git repository
Cloning repository https://github.com/shazforiot/GOL.git
> git.exe init C:\ProgramData\Jenkins\.jenkins\workspace\lipo12 # timeout=10
Fetching upstream changes from https://github.com/shazforiot/GOL.git
> git.exe --version # timeout=10
> git --version # 'git version 2.46.0.windows.1'
> git.exe fetch --tags --force --progress -- https://github.com/shazforiot/GOL.git +refs/heads/*:refs/remotes/origin/* # timeout=10
> git.exe config remote.origin.url https://github.com/shazforiot/GOL.git # timeout=10
> git.exe config --add remote.origin.fetch +refs/heads/*:refs/remotes/origin/* # timeout=10
Avoid second fetch
> git.exe rev-parse "refs/remotes/origin/master^{commit}" # timeout=10
Checking out Revision ba799ba7e1b576f04a4612322b0412c5e6e1e5e4 (refs/remotes/origin/master)
> git.exe config core.sparsecheckout # timeout=10
> git.exe checkout -f ba799ba7e1b576f04a4612322b0412c5e6e1e5e4 # timeout=10
> git.exe branch -a -v --no-abbrev # timeout=10
> git.exe checkout -b master ba799ba7e1b576f04a4612322b0412c5e6e1e5e4 # timeout=10
Commit message: "Update Jenkinsfile"
```

8. Check Console

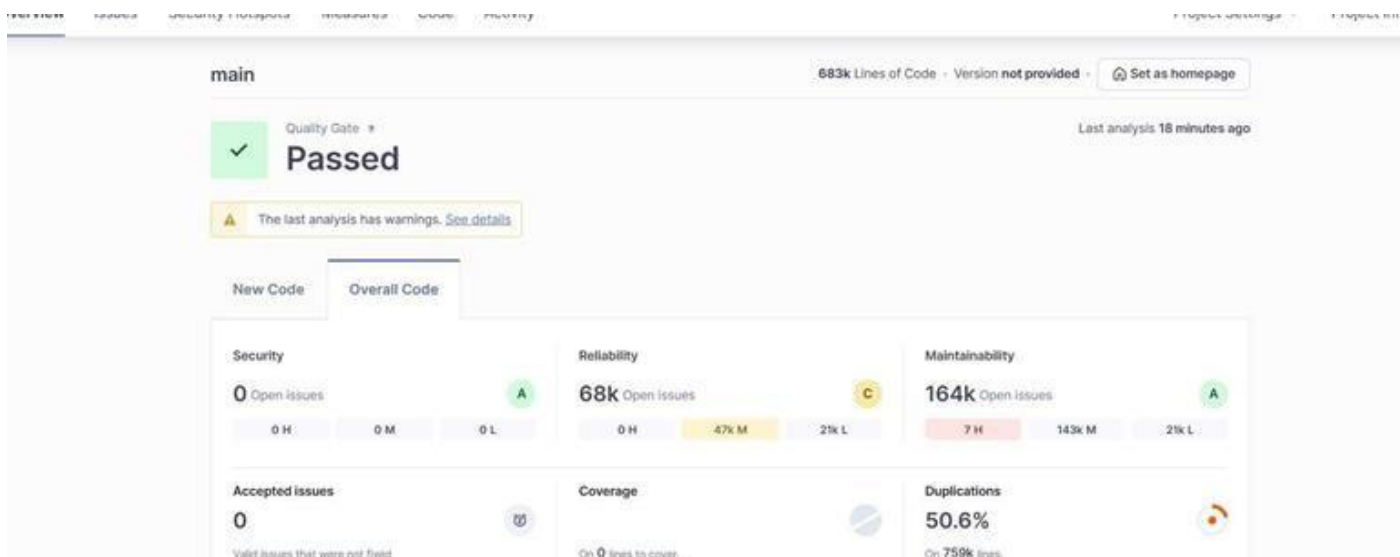
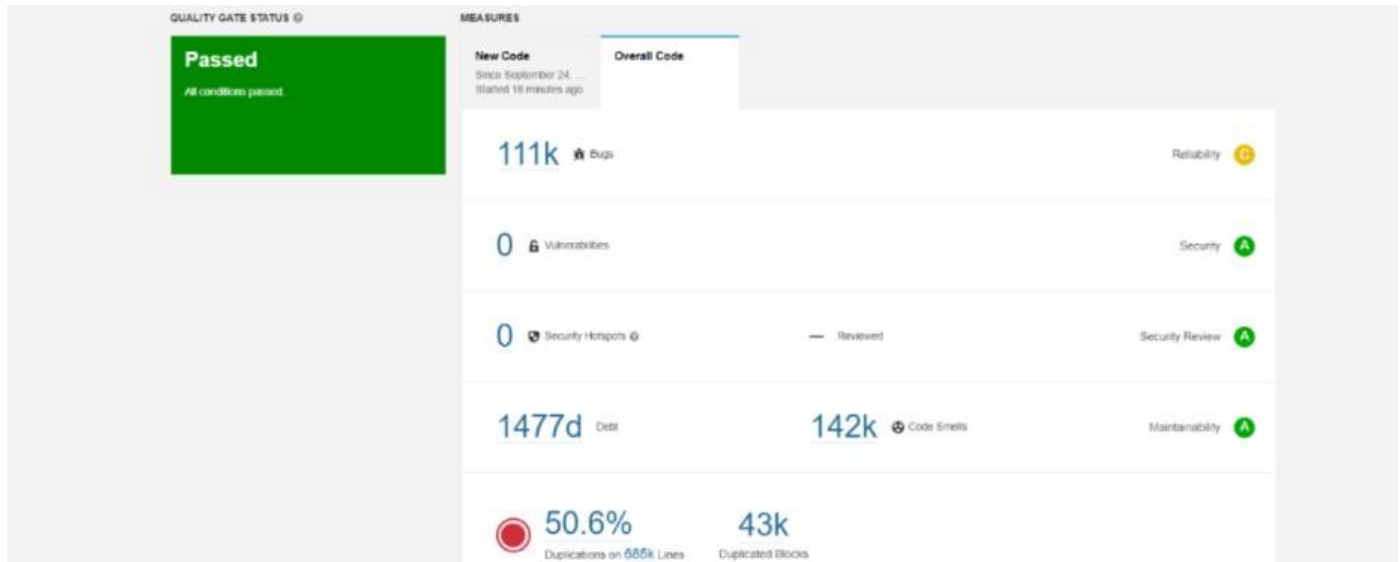
[Status](#)[Changes](#)[Console Output](#)[View as plain text](#)[Edit Build Information](#)[Delete build '#9'](#)[Timings](#)[Git Build Data](#)[Pipeline Overview](#)[Pipeline Console](#)[Replay](#)[Pipeline Steps](#)[Workspaces](#)[Previous Build](#)

Console Output

[Skipping 4,246 KB. Full Log](#)

```
16:19:49.751 WARN Too many duplication references on file gameoflife-web/tools/jmeter/docs/api/org/apache/jmeter/visualizers/PropertyControlGui.html for block at line
512. Keep only the first 100 references.
16:19:49.751 WARN Too many duplication references on file gameoflife-web/tools/jmeter/docs/api/org/apache/jmeter/visualizers/PropertyControlGui.html for block at line
248. Keep only the first 100 references.
16:19:49.751 WARN Too many duplication references on file gameoflife-web/tools/jmeter/docs/api/org/apache/jmeter/visualizers/PropertyControlGui.html for block at line
886. Keep only the first 100 references.
16:19:49.751 WARN Too many duplication references on file gameoflife-web/tools/jmeter/docs/api/org/apache/jmeter/visualizers/PropertyControlGui.html for block at line
249. Keep only the first 100 references.
16:19:49.751 WARN Too many duplication references on file gameoflife-web/tools/jmeter/docs/api/org/apache/jmeter/visualizers/PropertyControlGui.html for block at line
662. Keep only the first 100 references.
16:19:49.751 WARN Too many duplication references on file gameoflife-web/tools/jmeter/docs/api/org/apache/jmeter/visualizers/PropertyControlGui.html for block at line
615. Keep only the first 100 references.
16:19:49.751 WARN Too many duplication references on file gameoflife-web/tools/jmeter/docs/api/org/apache/jmeter/visualizers/PropertyControlGui.html for block at line
664. Keep only the first 100 references.
16:19:49.752 WARN Too many duplication references on file gameoflife-web/tools/jmeter/docs/api/org/apache/jmeter/visualizers/PropertyControlGui.html for block at line
913. Keep only the first 100 references.
16:19:49.752 WARN Too many duplication references on file gameoflife-web/tools/jmeter/docs/api/org/apache/jmeter/visualizers/PropertyControlGui.html for block at line
810. Keep only the first 100 references.
16:19:49.752 WARN Too many duplication references on file gameoflife-web/tools/jmeter/docs/api/org/apache/jmeter/visualizers/PropertyControlGui.html for block at line
668. Keep only the first 100 references.
16:19:49.752 WARN Too many duplication references on file gameoflife-web/tools/jmeter/docs/api/org/apache/jmeter/visualizers/PropertyControlGui.html for block at line
548. Keep only the first 100 references.
16:19:49.752 WARN Too many duplication references on file gameoflife-web/tools/jmeter/docs/api/org/apache/jmeter/visualizers/PropertyControlGui.html for block at line
543. Keep only the first 100 references.
16:19:49.752 WARN Too many duplication references on file gameoflife-web/tools/jmeter/docs/api/org/apache/jmeter/visualizers/PropertyControlGui.html for block at line
152. Keep only the first 100 references.
```

9. Now, check the project in SonarQube



10 .Consistency

My Issues All

☐ Bulk Change

Select Issues

Navigate to Issue

190,662 issues 3075d effort

Filters

Clear All Filters

Issues in new code

Clean Code Attribute

1 X

Consistency 197k

Intentionality 14k

Adaptability 0

Responsibility 0

Add to selection Ctrl + click

Software Quality

Security 0

Reliability 54k

gameoflife-core/build/reports/tests/all-tests.html

☐ Insert a <DOCTYPE> declaration to before this <html> tag.

Consistency

Reliability

user-experience

☐ Open ☐ Not assigned

L1 - 5min effort - 4 years ago - @ Bug - @ Major

☐ Remove this deprecated "width" attribute.

Consistency

Maintainability

html5 obsolete

☐ Open ☐ Not assigned

L8 - 5min effort - 4 years ago - @ Code Smell - @ Major

☐ Remove this deprecated "align" attribute.

Consistency

Maintainability

html5 obsolete

☐ Open ☐ Not assigned

L11 - 5min effort - 4 years ago - @ Code Smell - @ Major

11. Intentionality

Overview Issues Security Hotspots Measures Code Activity Project Settings Project Information

My Issues All

Filters Clear All Filters

Issues in new code

Clean Code Attribute 1 X

Consistency 197k

Intentionality 14k

Adaptability 0

Responsibility 0

Add to selection Ctrl + click

Software Quality

Security 0

Reliability 14k

Bulk Change

Select Issues Navigate to Issue 13,887 issues 59d effort

gameoflife-acceptance-tests/Dockerfile

Use a specific version tag for the image. Intentionality

Maintainability

No tags

Open Not assigned L1 - 5min effort - 4 years ago - @ Code Smell - @ Major

Surround this variable with double quotes; otherwise, it can lead to unexpected behavior. Intentionality

Maintainability

No tags

Open Not assigned L12 - 5min effort - 4 years ago - @ Code Smell - @ Major

Surround this variable with double quotes; otherwise, it can lead to unexpected behavior. Intentionality

Maintainability

No tags

Open Not assigned L12 - 5min effort - 4 years ago - @ Code Smell - @ Major

12. Bugs

Bulk Change

Select Issues Navigate to Issue 67,624 issues 1646d effort

gameoflife-core/build/reports/tests/all-tests.html

Add "lang" and/or "xml:lang" attributes to this "<html>" element Intentionality

Reliability

accessibility wcag2-a

Open Not assigned L1 - 2min effort - 4 years ago - @ Bug - @ Major

Insert a <!DOCTYPE> declaration to before this <html> tag. Consistency

Reliability

user-experience

Open Not assigned L1 - 5min effort - 4 years ago - @ Bug - @ Major

Add "<th>" headers to this "<table>". Intentionality

Reliability

accessibility wcag2-a

Open Not assigned L1 - 2min effort - 4 years ago - @ Bug - @ Major

13. Code smell

The screenshot shows a code quality tool interface. On the left, there is a 'Filters' sidebar with a 'Clear All Filters' button. Under 'Clean Code Attribute', 'Consistency' is set to 154k. Under 'Software Quality', 'Maintainability' is set to 154k. The main area displays a list of code smells for the file 'gameoflife-acceptance-tests/Dockerfile'. Each item includes a checkbox, a description, a 'Maintainability' score, and a 'Code Smell' tag. The items are:

- ☐ Use a specific version tag for the image. (Maintainability: 13, Code Smell: Major)
- ☐ Surround this variable with double quotes; otherwise, it can lead to unexpected behavior. (Maintainability: 132, Code Smell: Major)
- ☐ Surround this variable with double quotes; otherwise, it can lead to unexpected behavior. (Maintainability: 133, Code Smell: Major)

14. Cyclomatic Complexities

The screenshot shows a code quality tool interface with a 'measures' tab selected. The left sidebar lists various measures, with 'Cyclomatic Complexity' selected, showing a value of 1,112. The main area displays a list of code smells for the file 'gameoflife-acceptance-tests'. Each item includes a checkbox, a description, a 'Cyclomatic Complexity' score, and a 'Code Smell' tag. The items are:

- ☐ gameoflife-acceptance-tests (Cyclomatic Complexity: —)
- ☐ gameoflife-build (Cyclomatic Complexity: —)
- ☐ gameoflife-core (Cyclomatic Complexity: 18)
- ☐ gameoflife-deploy (Cyclomatic Complexity: —)
- ☐ gameoflife-web (Cyclomatic Complexity: 1,094)
- ☐ pom.xml (Cyclomatic Complexity: —)