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GUIDE TO RUN SONARQUBE ON SERVER

Author: *By VAMOS Team*
Date: February 2, 2024

I. Introduction

- Sonarqube (or previously known as Sonar) is an open-source Code Quality Assurance tool that collects, analyzes source code, and provides reports for the code quality of the project.

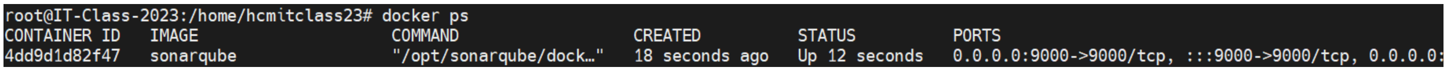
II. Installation

1. Prerequisite

- JaCoCo 0.8.11 (add to pom.xml file in BE project): [Maven Repository: org.jacoco » jacoco-maven-plugin » 0.8.11 (mvnrepository.com)]

2. Installing through Docker

docker run -d --name sonarqube -p 9000:9000 sonarqube:lts



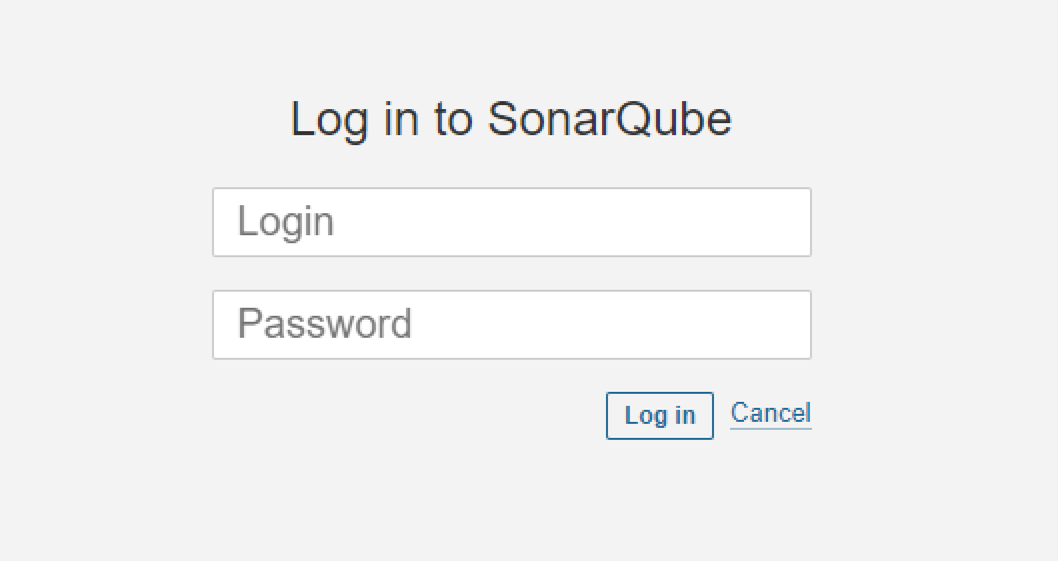
```
root@IT-Class-2023:/home/hcmitclass23# docker ps
CONTAINER ID   IMAGE                       COMMAND                  CREATED          STATUS         PORTS
4dd9d1d82f47   sonarqube                   "/opt/sonarqube/dock…"   18 seconds ago   Up 12 seconds  0.0.0.0:9000->9000/tcp, :::9000->9000/tcp, 0.0.0.0:
```

sonarqube on server

3. First login

The default credentials is

- User: admin
- Password: admin

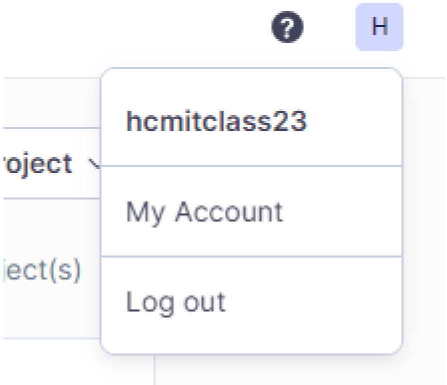


After this, you will be required to change the password

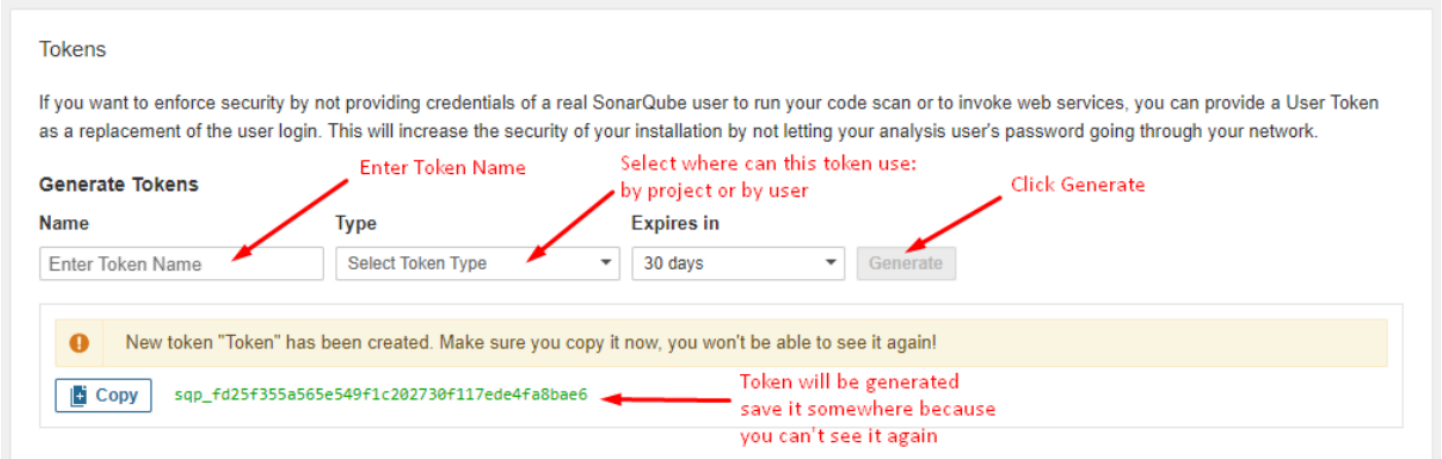
4. Generate token

We are going to create a token for later credential use

On the top right, click on the user and choose 'My Account'



Navigate to the 'Security' tab to generate the token



Tokens

If you want to enforce security by not providing credentials of a real SonarQube user to run your code scan or to invoke web services, you can provide a User Token as a replacement of the user login. This will increase the security of your installation by not letting your analysis user's password going through your network.

Generate Tokens

Name: Enter Token Name — Enter Token Name

Type: Select Token Type — Select where can this token use: by project or by user

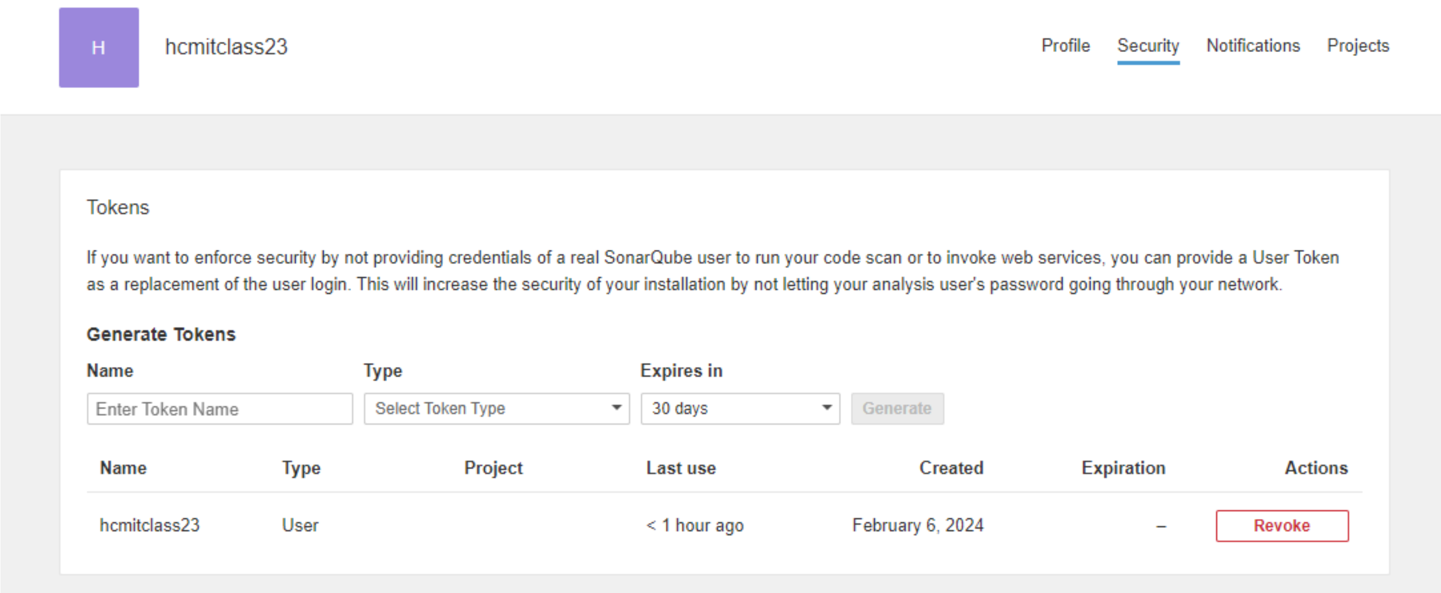
Expires in: 30 days

Generate — Click Generate

New token "Token" has been created. Make sure you copy it now, you won't be able to see it again!

Copy sqp_fd25f355a565e549f1c202730f117ede4fa8bae6 — Token will be generated save it somewhere because you can't see it again

An example for creating a token successfully:



Tokens

If you want to enforce security by not providing credentials of a real SonarQube user to run your code scan or to invoke web services, you can provide a User Token as a replacement of the user login. This will increase the security of your installation by not letting your analysis user's password going through your network.

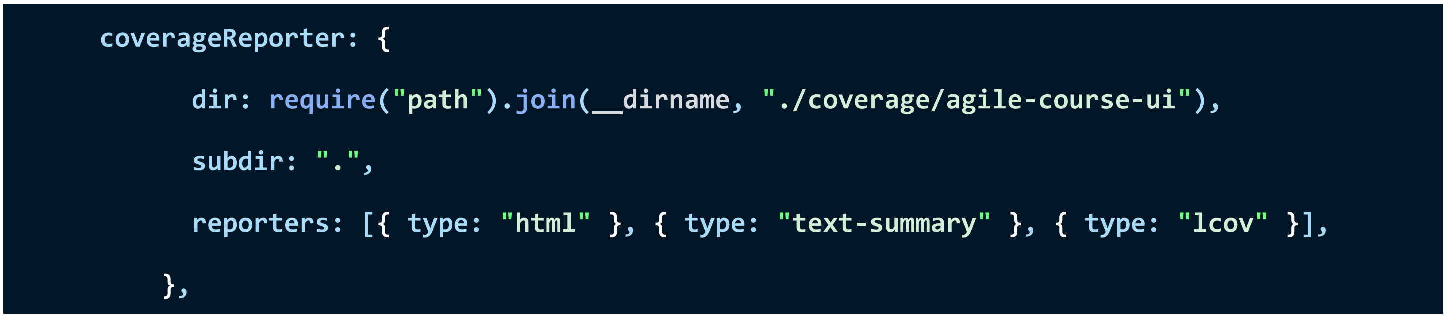
Generate Tokens

Name	Type	Project	Last use	Created	Expiration	Actions
hcmitclass23	User		< 1 hour ago	February 6, 2024	–	Revoke

III. Frontend configuration for Sonarqube check

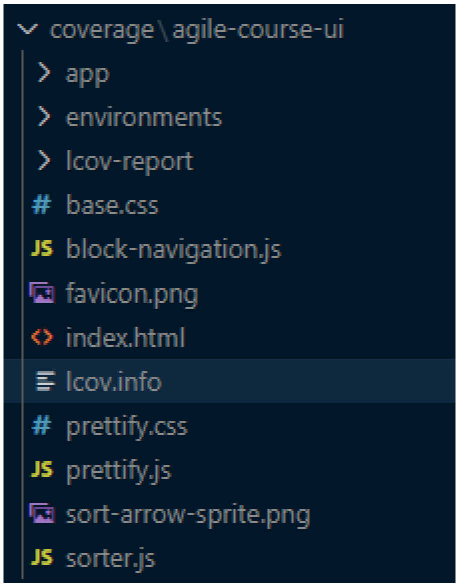
1. Create lcov file for reading code coverage

Sonar uses the lcov file report to check the code coverage. By default, Angular does not generate the supporting file to read the code coverage report, which results in the percentage of code coverage will always be 0%. Navigate to the karma.conf.js to add the lcov report file:



```
    coverageReporter: {
        dir: require("path").join(__dirname, "./coverage/agile-course-ui"),
        subdir: ".",
        reporters: [{ type: "html" }, { type: "text-summary" }, { type: "lcov" }],
      },
```

Next, run the ‘ng test —code-coverage’ commands to generate the report.



```
coverage \ agile-course-ui
  > app
  > environments
  > lcov-report
  base.css
  block-navigation.js
  favicon.png
  index.html
  lcov.info
  prettify.css
  prettify.js
  sort-arrow-sprite.png
  sorter.js
```

2. Config properties file

Create sonar-project.properties file and add the following setting:

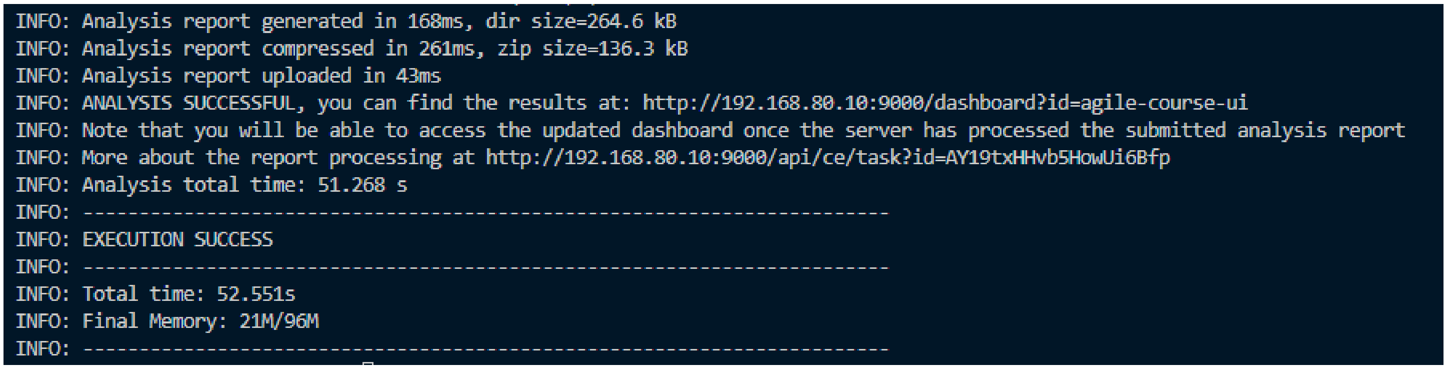
```
sonar.projectKey = "YOUR_PROJECT_KEY"

sonar.projectName = "YOUR_PROJECT_NAME"

sonar.projectVersion = "YOUR_PROJECT_VERSION"

sonar.sources=src

sonar.javascript.lcov.reportPaths=coverage/agile-course-ui/lcov.info

sonar.sourceEncoding=UTF-8

sonar.host.url="YOUR_SONAR_HOST_URL"

sonar.login="YOOR_SONAR_TOKEN"

sonar.codecoverage.ignore=**/app/**/*.spec.ts
```

3. (OPTIONAL) Create commands

Open package.json file and add the following lines:

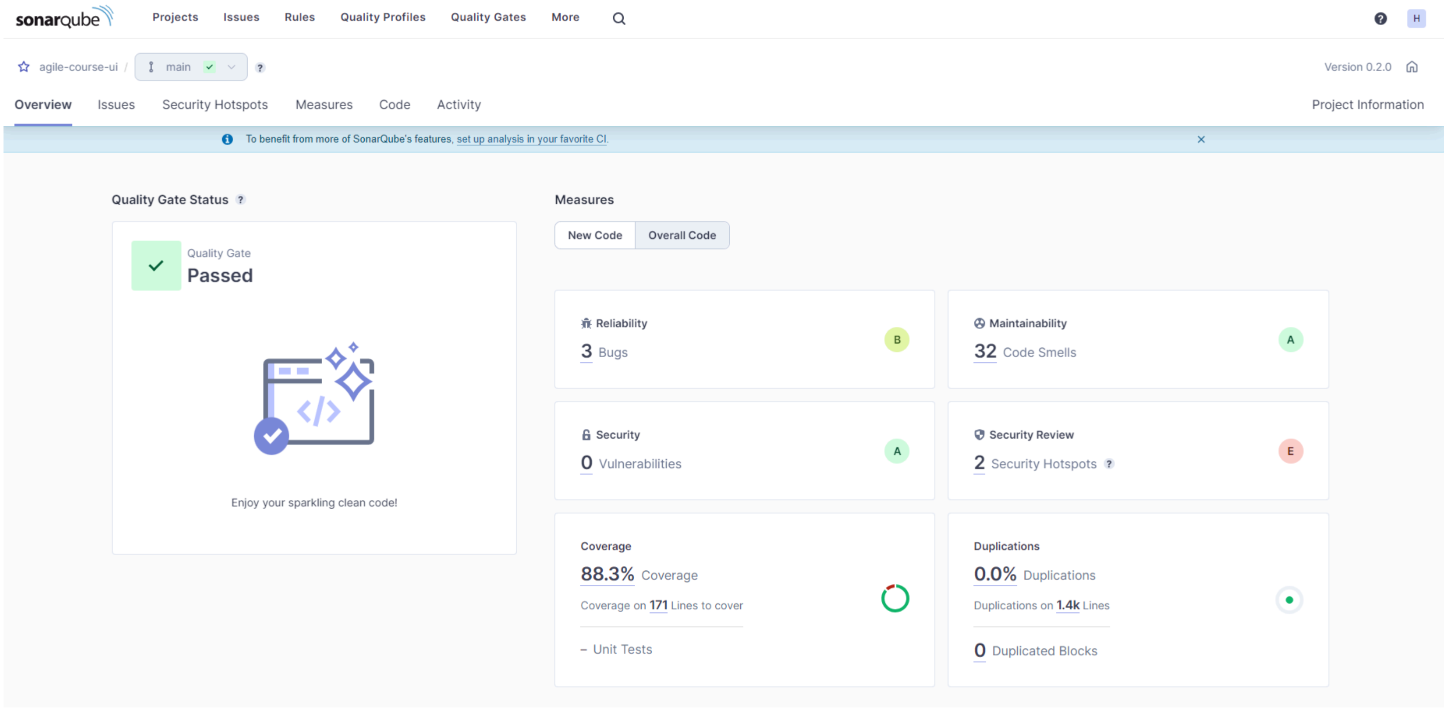
```
"scripts": {

    "sonar": "sonar-scanner"

  },
```

We use the command '**npm run sonar**' to run the sonar check. Or '**npx sonar-scanner**' if we not configure the above command



```
INFO: Analysis report generated in 168ms, dir size=264.6 kB
INFO: Analysis report compressed in 261ms, zip size=136.3 kB
INFO: Analysis report uploaded in 43ms
INFO: ANALYSIS SUCCESSFUL, you can find the results at: http://192.168.80.10:9000/dashboard?id=agile-course-ui
INFO: Note that you will be able to access the updated dashboard once the server has processed the submitted analysis report
INFO: More about the report processing at http://192.168.80.10:9000/api/ce/task?id=AY19txHHvb5HowUi6Bfp
INFO: Analysis total time: 51.268 s
INFO: ------------------------------------------------------------------------
INFO: EXECUTION SUCCESS
INFO: ------------------------------------------------------------------------
INFO: Total time: 52.551s
INFO: Final Memory: 21M/96M
INFO: ------------------------------------------------------------------------
```

The result after running sonar check:



To benefit from more of SonarQube's features, set up analysis in your favorite CI.

Quality Gate Status

Quality Gate
Passed

Enjoy your sparkling clean code!

Measures

Reliability
3 Bugs B

Maintainability
32 Code Smells A

Security
0 Vulnerabilities A

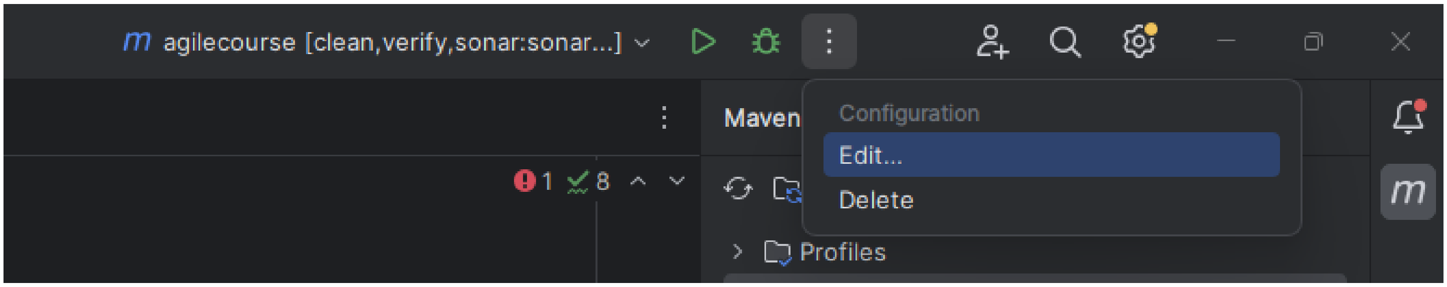
Security Review
2 Security Hotspots E

Coverage
88.3% Coverage
Coverage on 171 Lines to cover
– Unit Tests

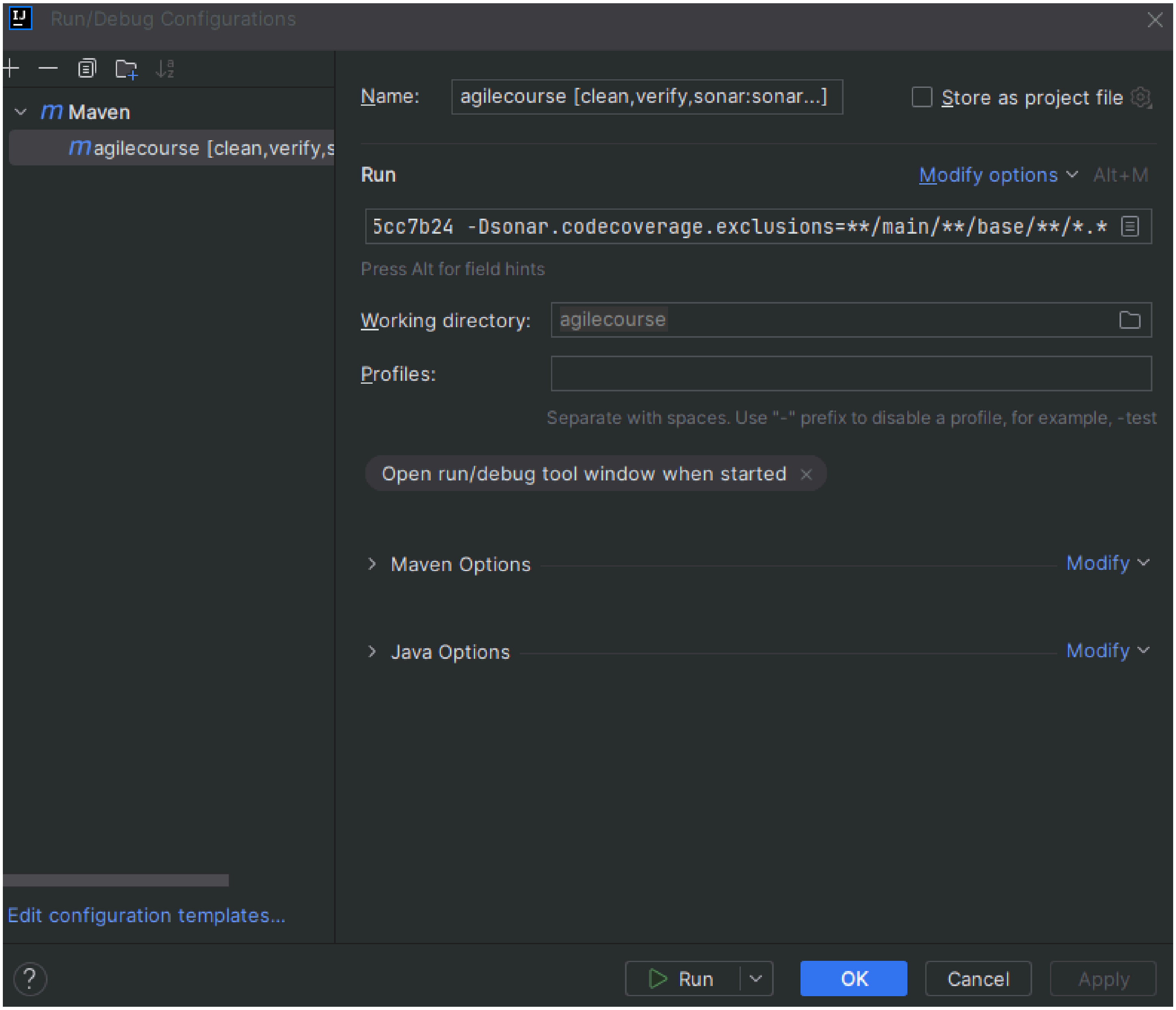
Duplications
0.0% Duplications
Duplications on 1.4k Lines
0 Duplicated Blocks

IV. Backend configuration for Sonarqube check

In contrast with the Frontend side, we cannot configure Sonar through a properties files. Instead, head to the edit section to generate the command on run:



clean install sonar:sonar -Dsonar.host.url=YOUR_URL -Dsonar.login=YOUR_TOKEN


Run/Debug Configurations
Maven
agilecourse [clean,verify,s
Store as project file
Modify options
Alt+M
Press Alt for field hints
Separate with spaces. Use "-" prefix to disable a profile, for example, -test
Open run/debug tool window when started
Maven Options
Modify
Java Options
Modify
Edit configuration templates...
Run
OK
Cancel
Apply

Name: agilecourse [clean,verify,sonar:sonar...]

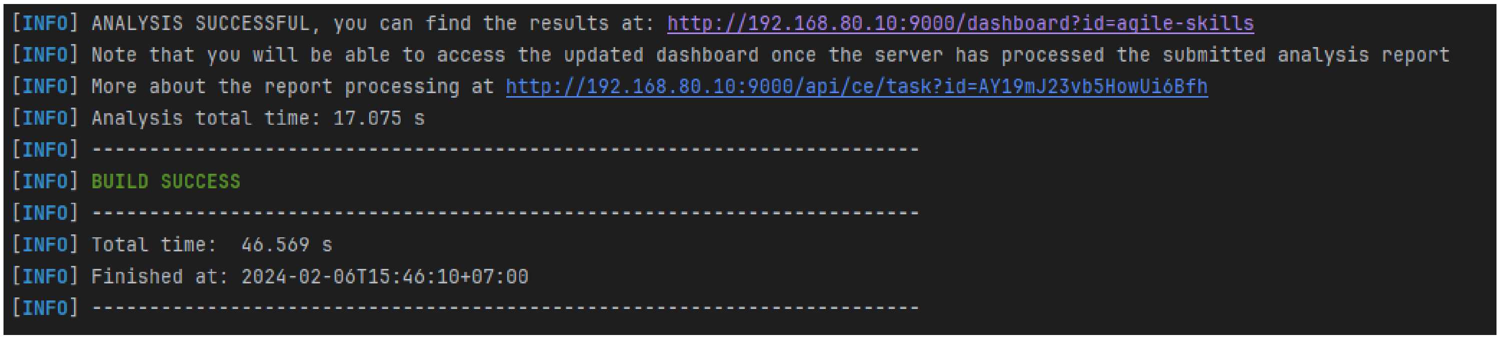
Run

```
5cc7b24 -Dsonar.codecoverage.exclusions=**/main/**/base/**/*.*
```

Working directory: agilecourse

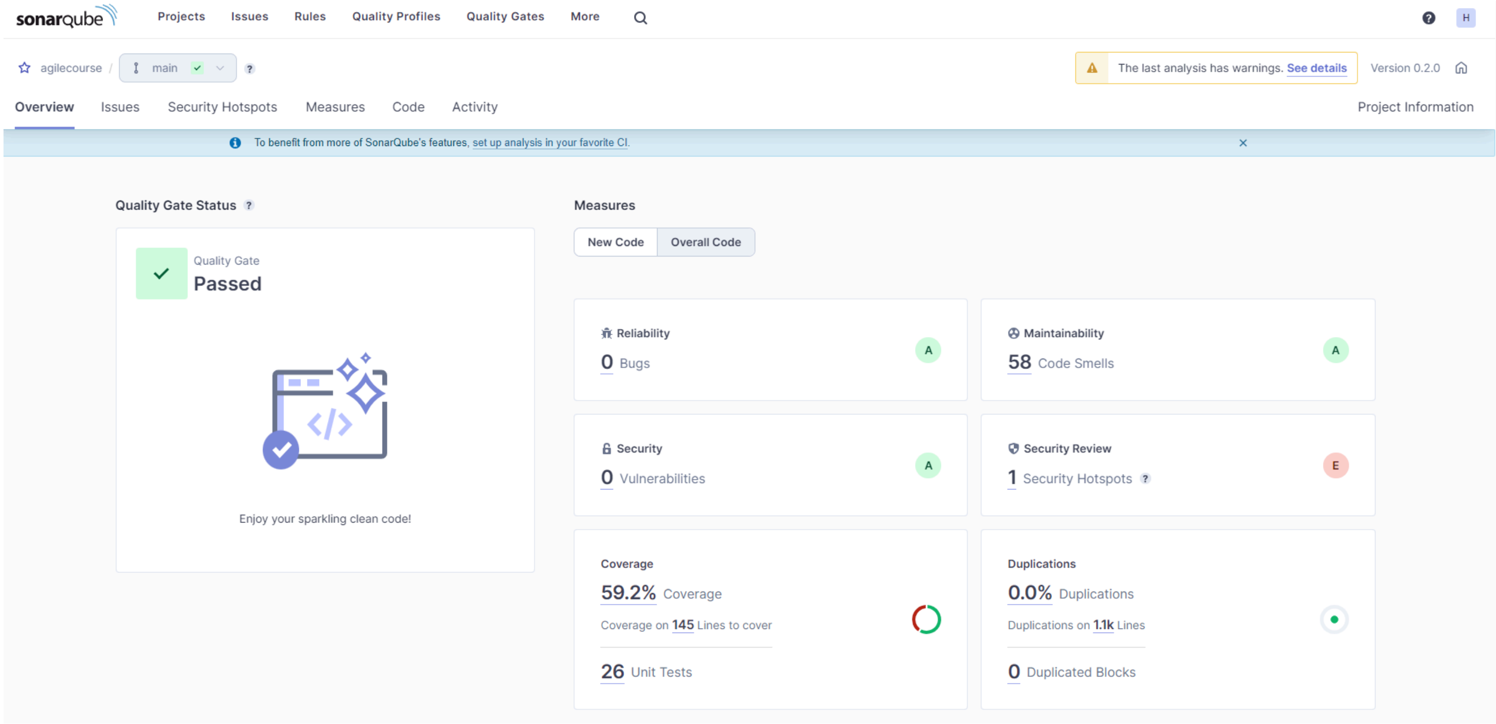
Profiles:

Run the command line we generate above



```
[INFO] ANALYSIS SUCCESSFUL, you can find the results at: http://192.168.80.10:9000/dashboard?id=agile-skills
[INFO] Note that you will be able to access the updated dashboard once the server has processed the submitted analysis report
[INFO] More about the report processing at http://192.168.80.10:9000/api/ce/task?id=AY19mJ23vb5HowUi6Bfh
[INFO] Analysis total time: 17.075 s
[INFO] ------------------------------------------------------------------------
[INFO] BUILD SUCCESS
[INFO] ------------------------------------------------------------------------
[INFO] Total time:  46.569 s
[INFO] Finished at: 2024-02-06T15:46:10+07:00
[INFO] ------------------------------------------------------------------------
```

The result after running sonar check:



The last analysis has warnings. See details

To benefit from more of SonarQube's features, set up analysis in your favorite CI.

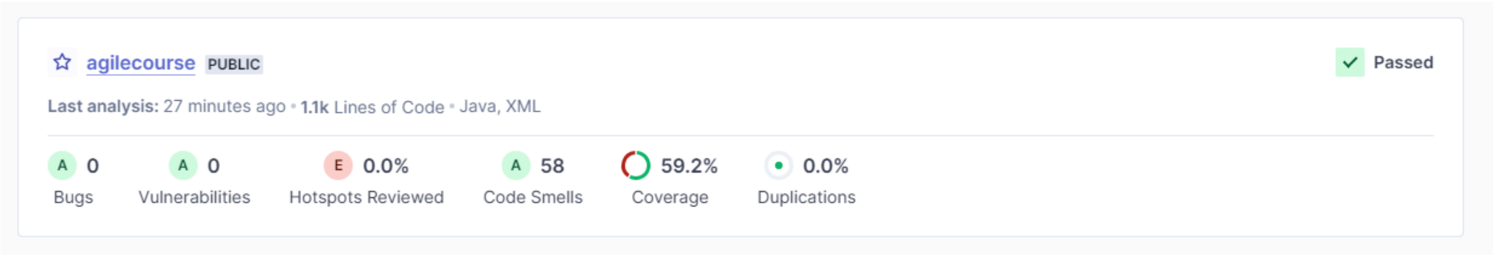
Quality Gate Status

Quality Gate Passed

Enjoy your sparkling clean code!

Measures

Reliability: 0 Bugs — A	Maintainability: 58 Code Smells — A
Security: 0 Vulnerabilities — A	Security Review: 1 Security Hotspots — E
Coverage: 59.2% Coverage Coverage on 145 Lines to cover 26 Unit Tests	Duplications: 0.0% Duplications Duplications on 1.1k Lines 0 Duplicated Blocks



agilecourse PUBLIC — ✓ Passed

Last analysis: 27 minutes ago • 1.1k Lines of Code • Java, XML

A 0	A 0	E 0.0%	A 58	59.2%	0.0%
Bugs	Vulnerabilities	Hotspots Reviewed	Code Smells	Coverage	Duplications

V. References

[*How to setup sonarqube for Angular 7 project - Stack Overflow*]

[*Code Analysis with SonarQube | Baeldung*]