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D15B/08

## Experiment No 8

AIM: Integrating Jenkins with SonarQube.

Open up Jenkins Dashboard on localhost, port 8080

Run SonarQube in a Docker container using this command -

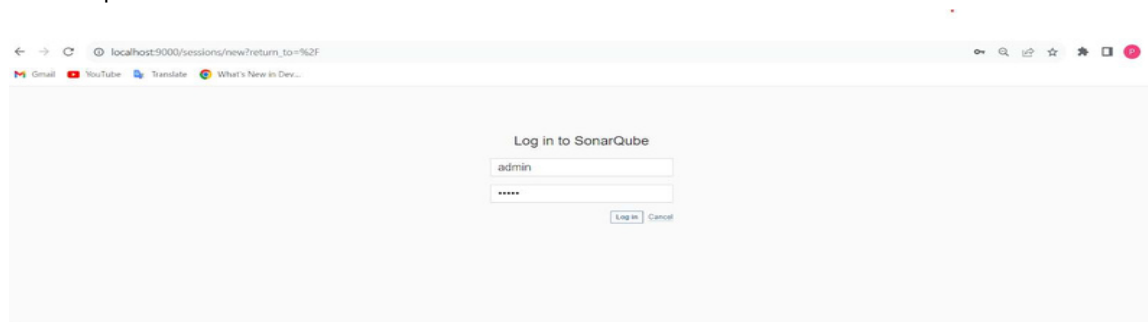
\$ docker run -d --name sonarqube -e

SONAR\_ES\_BOOTSTRAP\_CHECKS\_DISABLE=true -p 9000:9000

sonarqube: latest

```
PS D:\Desktop\DockerFile> docker run -d --name sonarqube -e SONAR_ES_BOOTSTRAP_CHECKS_DISABLE=true -p 9000:9000 sonarqube:latest
Unable to find image 'sonarqube:latest' locally
latest: Pulling from library/sonarqube
44ba2882f8eb: Pull complete
2cabec57fa36: Pull complete
c20481384b6a: Pull complete
bf7b17ee74f8: Pull complete
38617faac714: Pull complete
b795b715553d: Pull complete
c5244f6c9231: Pull complete
Digest: sha256:1ffdd122cfb37ce982289dc7f5d38bb702ba05af7b5a50f7cb077ae25e60b5b9a
Status: Downloaded newer image for sonarqube:latest
1442c4e613b25aaedec05c060f020a00802b1c6dbaa27e8c5c0dad4ed8fc1f76
```

sonarqube



Create project manually

## Create a project

Project display name \*

Up to 255 characters. Some scanners might override the value you provide.

Project key \*

The project key is a unique identifier for your project. It may contain up to 400 characters. Allowed characters are alphanumeric, "-" (dash), "\_" (underscore), "." (period) and ":" (colon), with at least one non-digit.

Main branch name \*

The name of your project's default branch [Learn More](#)

Next

The screenshot shows the SonarQube web interface. At the top, a green notification bar says "Congratulations! Your project has been created." Below the navigation bar, the project name "AdDevopsLab8" and branch "main" are displayed. The "Analysis Method" section is active, showing options for how to analyze the repository. The options are: "With Jenkins", "With GitHub Actions", "With Bitbucket Pipelines", "With GitLab CI", "With Azure Pipelines", and "Other CI". The "Locally" option is also present but marked as not recommended for production use.

In Jenkins create a pipeline here named “SonarQube”

The screenshot shows the Jenkins dashboard. At the top, there is a search bar and a user profile for "Urvashi Changlani". Below the dashboard, the "Enter an item name" dialog is open. The input field contains the text "SonarQube". Below the input field, there are three options: "Freestyle project", "Maven project", and "Pipeline". The "Pipeline" option is selected, and its description is visible: "Orchestrates long-running activities that can span multiple build agents. Suitable for building pipelines (formerly known as workflows)".

Enter the following in pipeline script:

```
node {
  stage('Cloning the GitHub Repo') {
    git 'https://github.com/PrajaktaUpadhye6/MSBuild_firstproject.git'
  }
  stage('SonarQube analysis') {
    withSonarQubeEnv('sonarqube') {
      bat "D:/sonar-scanner-cli-5.0.1.3006-windows/sonar-scanner-5.0.1.3006-
windows/bin/sonar-scanner.bat \
        -D sonar.login=admin \
        -D sonar.password=abc \
        -D sonar.projectKey=AdDevops \
        -D sonar.exclusions=vendor/**,resources/**,*/*.java \
        -D sonar.host.url=http://127.0.0.1:9000/"
    }
  }
}
```

#### Pipeline

##### Definition

Pipeline script

##### Script ?

```
1 node {
2   stage('Cloning the GitHub Repo') {
3     git 'https://github.com/PrajaktaUpadhye6/MSBUILD_TRIAL.git'
4   }
5   stage('SonarQube analysis') {
6     withSonarQubeEnv('sonarqube') {
7       bat "D:/sonar-scanner-cli-5.0.1.3006-windows/sonar-scanner-5.0.1.3006-windows/bin/sonar-scanner.bat \
8         -D sonar.login=admin \
9         -D sonar.password=abc \
10        -D sonar.projectKey=AdDevops \
11        -D sonar.exclusions=vendor/**,resources/**,*/*.java \
12        -D sonar.host.url=http://127.0.0.1:9000/"
13     }
14   }
15 }
```

☒ Use Groovy Sandbox ?

[Pipeline Syntax](#)

Save

Apply

It is a java sample project which has a lot of repetitions and issues that will be detected by SonarQube. Build and run:

Status

Changes

Build Now

Configure

Delete Pipeline

Full Stage View

GitHub

SonarQube

Rename

Pipeline Syntax

Build History

Filter builds...

Sep 20, 2023, 12:38 PM

Atom feed for all

Atom feed for failures

Pipeline SonarQube

Lab 8

Stage View

Average stage times:  
(Average full run time: ~36s)

Cloning the  
GitHub Repo

SonarQube  
analysis

2s

33s

2s

33s

Permalinks

- Last build (#8), 1 min 44 sec ago
- Last stable build (#8), 1 min 44 sec ago
- Last successful build (#8), 1 min 44 sec ago
- Last completed build (#8), 1 min 44 sec ago

Console output:

Started by user Urvashi Changani

[Pipeline] Start of Pipeline

[Pipeline] node

Running on Jenkins in C:\ProgramData\Jenkins\jenkins\workspace\SonarQube

[Pipeline] {

[Pipeline] stage

[Pipeline] { (Cloning the GitHub Repo)

[Pipeline] git

The recommended git tool is: NONE

No credentials specified

> git.exe rev-parse --resolve-git-dir C:\ProgramData\Jenkins\jenkins\workspace\SonarQube\git # timeout=10

fetching changes from the remote git repository

> git.exe config remote.origin.url https://github.com/Prajaktaipadhye/MSBuild\_FirstProject.git # timeout=10

fetching upstream changes from https://github.com/Prajaktaipadhye/MSBuild\_FirstProject.git

> git.exe --version # timeout=10

> git --version # 'git version 2.46.0.windows.1'

> git.exe fetch --tags --progress -- https://github.com/Prajaktaipadhye/MSBuild\_FirstProject.git

\*refs/heads/\*:refs/remotes/origin/\* # timeout=10

INFO: Sensor Analysis warnings Import [chary] (done) | time=0ms

INFO: Sensor CM File Caching Sensor [chary]

WARN: Incremental PR analysis: Could not determine common base path, cache will not be computed. Consider setting 'sonar.project

INFO: Sensor CM File Caching Sensor [chary] (done) | time=0ms

INFO: Sensor Zero Coverage Sensor

INFO: Sensor Zero Coverage Sensor (done) | time=0ms

INFO: SCM Publisher SCM provider for this project is: git

INFO: SCM Publisher 4 source files to be analyzed

INFO: SCM Publisher 4/4 source files have been analyzed (done) | time=890ms

INFO: CPD Executor Calculating CPD for 4 files

INFO: CPD Executor CPD calculation finished (done) | time=0ms

INFO: Analysis report generated in 94ms, dir size=139.1 KB

INFO: Analysis report compressed in 47ms, zip size=139.1 KB

INFO: Analysis report uploaded in 205ms

INFO: ANALYSIS SUCCESSFUL, you can find the results at: http://127.0.0.1:9000/dashboard?id=AdDevops408

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://127.0.0.1:9000/api/ci/task?id=470a7115860510d4y6l

INFO: Analysis total time: 25.831 s

INFO: EXECUTION SUCCESS

INFO: Total time: 30.481s

INFO: Final Memory: 20M/70M

[Pipeline] }

[Pipeline] // withSonarQubeEnv

[Pipeline] }

[Pipeline] // stage

[Pipeline] }

[Pipeline] // node

[Pipeline] End of Pipeline

Finished: SUCCESS

sonarqube:

AdDevops PUBLIC

Passed

Last analysis: 3 minutes ago · 543 Lines of Code · HTML, CSS

E 7

A 0

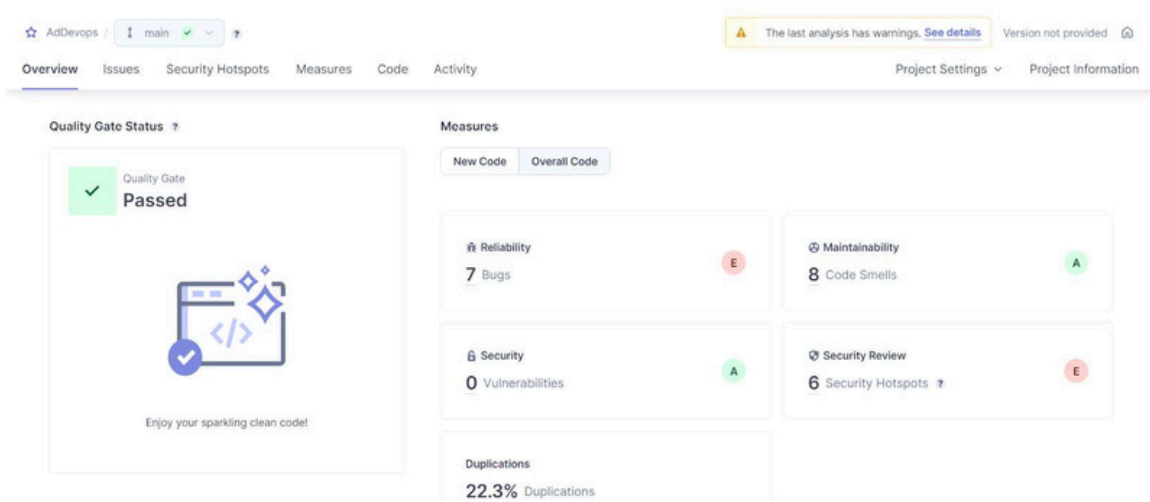
E 0.0%

A 8

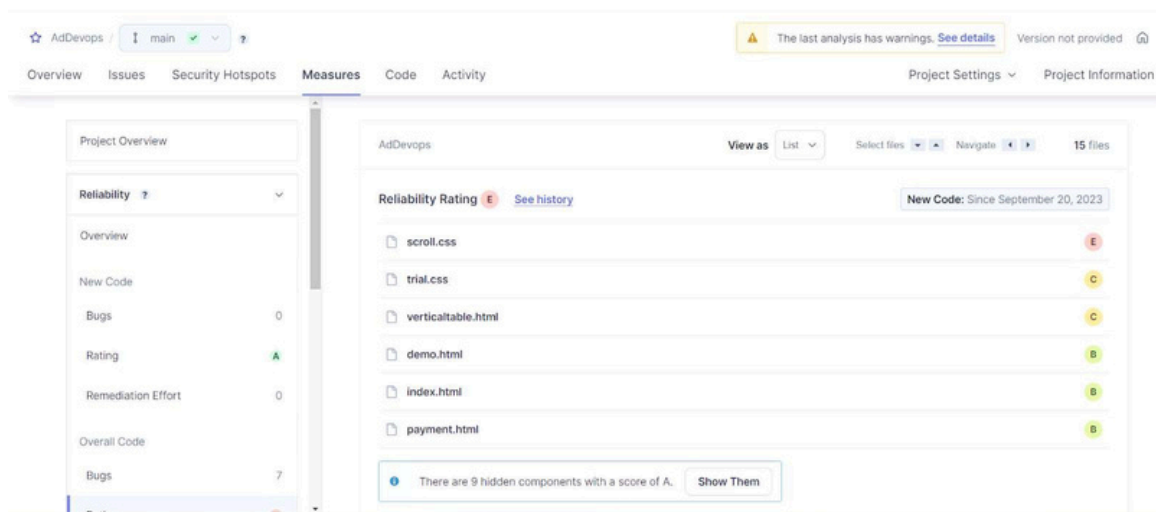
—

22.3%

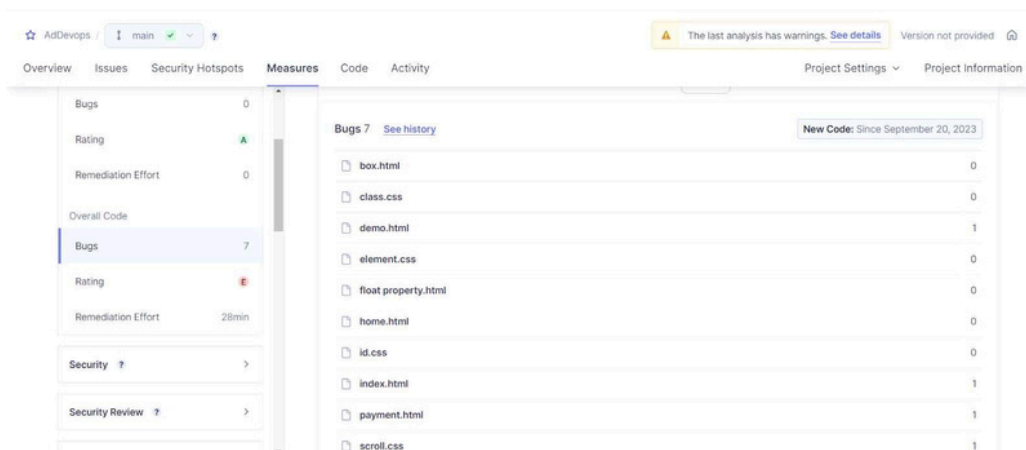
Bugs Vulnerabilities Hotspots Reviewed Code Smells Coverage Duplications



Reliability:



Bugs:



## Maintanaibility:

AdDevops / main [dropdown] [help]

The last analysis has warnings. [See details](#) Version not provided

Overview Issues Security Hotspots **Measures** Code Activity Project Settings Project Information

Project Overview

Reliability [help] >

Security [help] >

Security Review [help] >

Maintainability [help] [dropdown]

Overview

New Code

Code Smells 0

AdDevops View as List Select files Navigate 15 files

Maintainability Rating **A** [See history](#) New Code: Since September 20, 2023

box.html	A
class.css	A
demo.html	A
element.css	A
float property.html	A
home.html	A
id.css	A
index.html	A

## Security:

AdDevops / main [dropdown] [help]

The last analysis has warnings. [See details](#) Version not provided

Overview Issues Security Hotspots **Measures** Code Activity Project Settings Project Information

Project Overview

Reliability [help] >

Security [help] >

Security Review [help] [dropdown]

New Code

Security Hotspots 0

Rating **A**

Overall Code

Security Hotspots 6

AdDevops View as List Select files Navigate 15 files

Security Review Rating **E** [See history](#) New Code: Since September 20, 2023

demo.html	E
home.html	E
index.html	E

There are 12 hidden components with a score of A. [Show Them](#)

## Duplications:

The screenshot shows the AdDevOps interface with the 'Measures' tab selected. The left sidebar contains a 'Project Overview' section with links to Reliability, Security, Security Review, Maintainability, Coverage, and Duplications. The main content area displays 'Duplicated Lines (%) 22.3%' with a 'See history' link and a 'New Code: Since September 20, 2023' label. A table lists files with their duplication percentages and line counts.

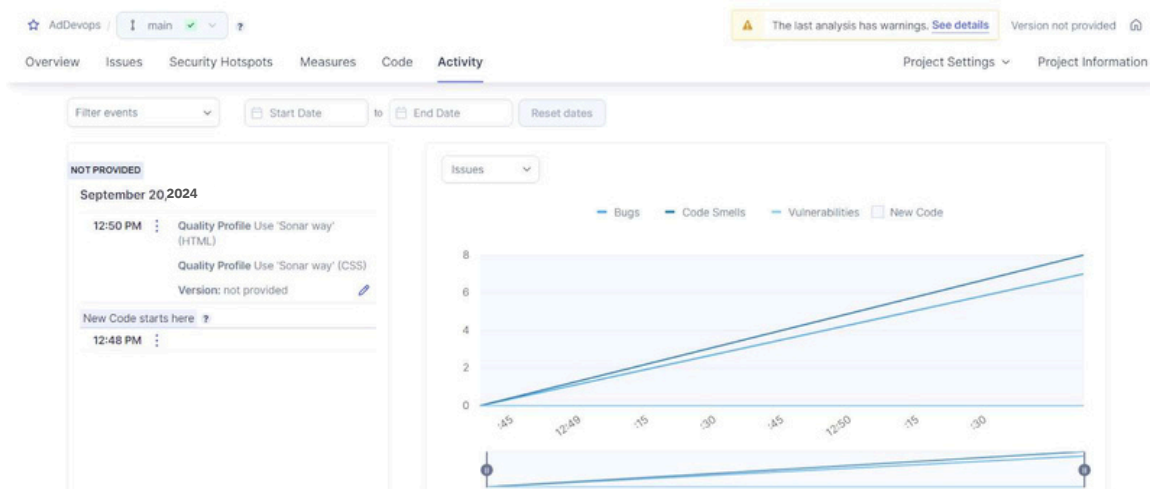
File	Duplicated Lines (%)	Duplicated Lines
demo.html	100%	67
index.html	100%	67
box.html	0.0%	0
class.css	0.0%	0
element.css	0.0%	0
float property.html	0.0%	0
home.html	0.0%	0

## Cyclomatic complexity:

The screenshot shows the AdDevOps interface with the 'Measures' tab selected. The left sidebar shows a 'Complexity' section with 'Cyclomatic Complexity' set to 9. The main content area displays 'Cyclomatic Complexity 9' with a 'See history' link and a 'New Code: Since September 20, 2023' label. A table lists files with their cyclomatic complexity values.

File	Cyclomatic Complexity
box.html	1
demo.html	1
float property.html	1
home.html	1
index.html	1
payment.html	1
start.html	1
trial.html	1
verticaltable.html	1

## Activity:



Conclusion: Thus, we have successfully integrated Jenkins with SonarQube.



