A Jenkins server was created on localhost.

All the required Plugins were installed, major plugins are listed below:

Email Extension

Git plugin

GitHub Authentication plugin

GitHub Integration Plugin

GitHub plugin

JaCoCo plugin

Maven Integration plugin

OWASP Dependency-Check Plugin

PAM Authentication plugin

Pipeline Maven Integration Plugin

Pipeline: GitHub

Pipeline: Groovy

Pipeline: SCM Step

SonarQube Scanner for Jenkins

Some global tool configuration & system configuration were added to provide the executable path, and some other configs :

Git installations, SonarQube Scanner installations, Maven installations, Dependency-Check installations , Extended E-mail Notification, SonarQube servers

Jenkins Job configuration:

Job type: pipeline

Pipeline definition using pipeline script . ( Content of pipeline script has been attached )

Stages in Jenkins job:

Checkout

onarQube Analysis

Build with JaCoCo

Run Tests with JaCoCo

Publish JaCoCo Coverage Report

Run Cyclomatic Complexity Analysis')

Run Dependency-Check'

rchive Reports

Publish Dependency-Check Results'

Credentials created:

Cred for sonarqube

Cred for github

NVD-API-KEY

Components installed:

[sonar-scanner-cli-6.2.1.4610-windows-x64.zip](https://binaries.sonarsource.com/Distribution/sonar-scanner-cli/sonar-scanner-cli-6.2.1.4610-windows-x64.zip?_gl=1*1hg5a59*_gcl_au*MTcwOTM3MjIwNi4xNzMxNTYzMjI3*_ga*MTU0NTk4MDY3Mi4xNzMxNTYzMjI3*_ga_9JZ0GZ5TC6*MTczMTU2MzIyNy4xLjEuMTczMTU2MzI0OS4zOC4wLjA.)

sonarqube-10.7.0.96327.zip

jdk-17.0.12\_windows-x64\_bin.exe

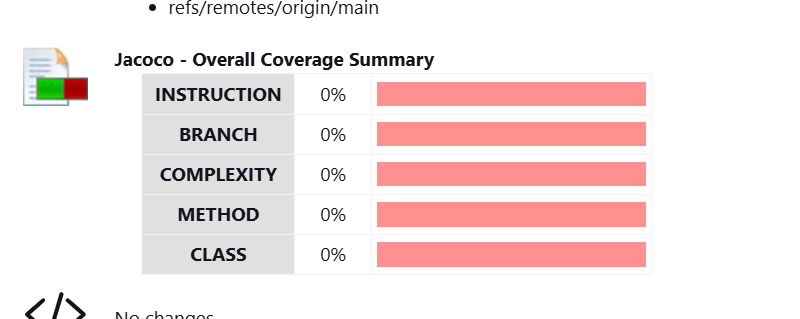
[Git-2.47.0.2-64-bit.exe](https://objects.githubusercontent.com/github-production-release-asset-2e65be/23216272/bfdf16e8-03fa-4c64-a1d3-a789f642fcc4?X-Amz-Algorithm=AWS4-HMAC-SHA256&X-Amz-Credential=releaseassetproduction%2F20241112%2Fus-east-1%2Fs3%2Faws4_request&X-Amz-Date=20241112T190827Z&X-Amz-Expires=300&X-Amz-Signature=458efba66acce9d8e4082582a47aeecf8658008142d0230689592e75007e0b40&X-Amz-SignedHeaders=host&response-content-disposition=attachment%3B%20filename%3DGit-2.47.0.2-64-bit.exe&response-content-type=application%2Foctet-stream)

[jenkins.war](https://2.mirrors.in.sahilister.net/jenkins/war/2.485/jenkins.war)

maven

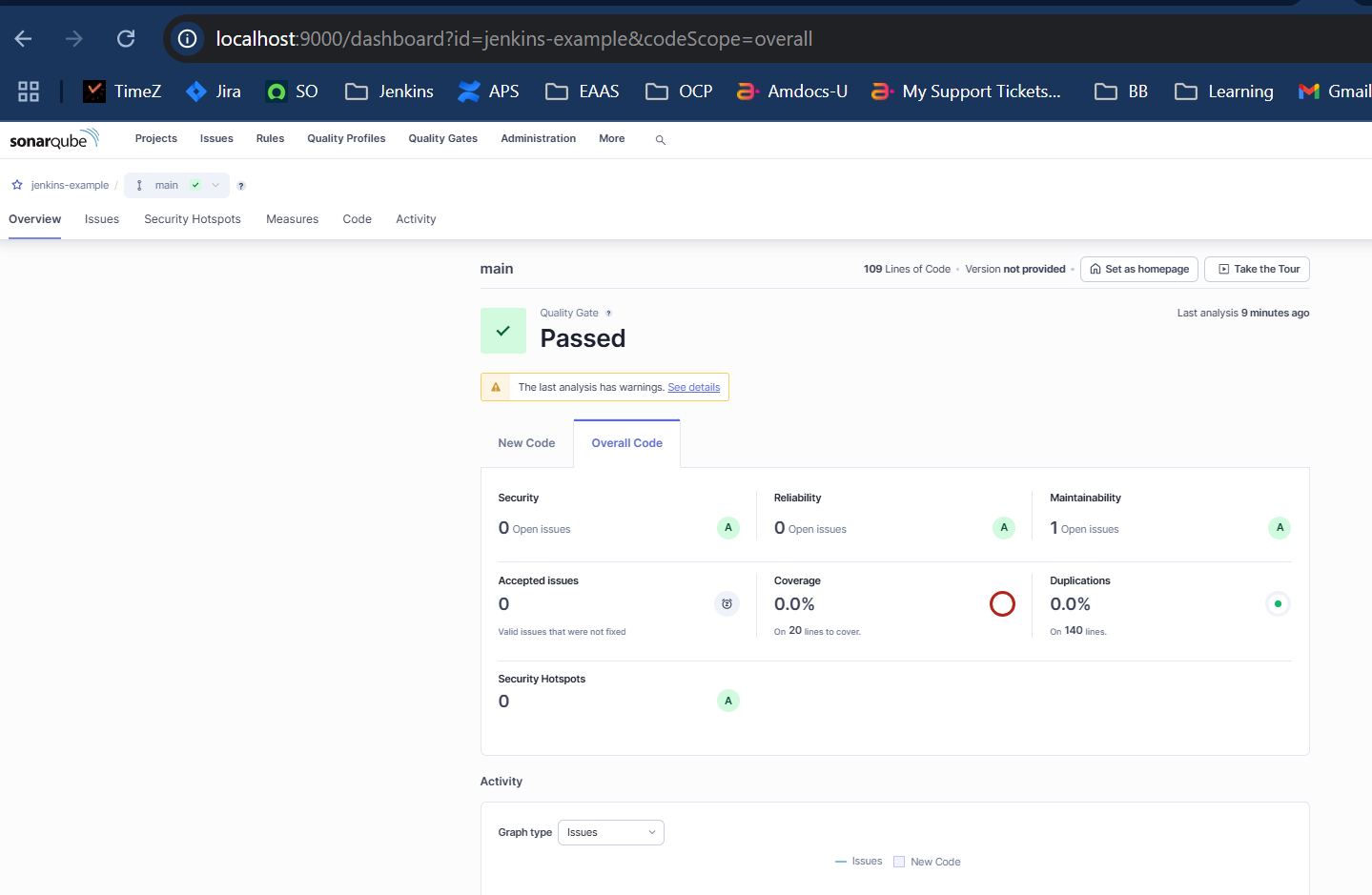
lizard

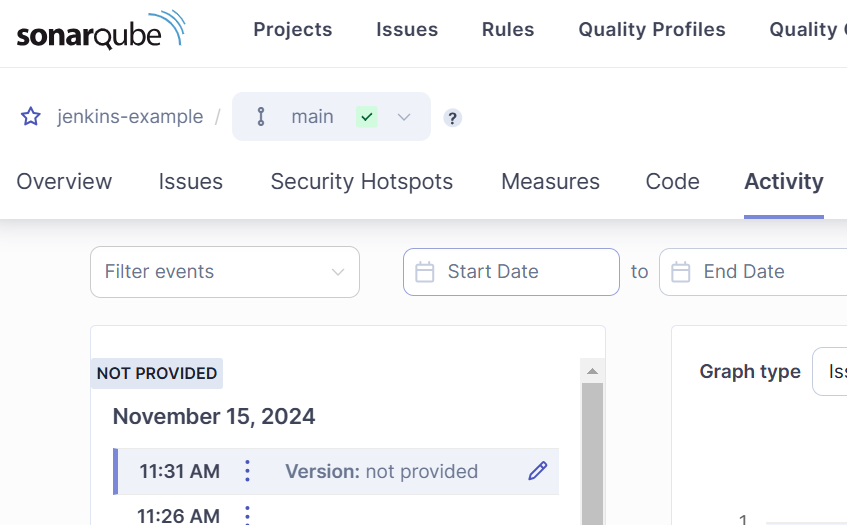


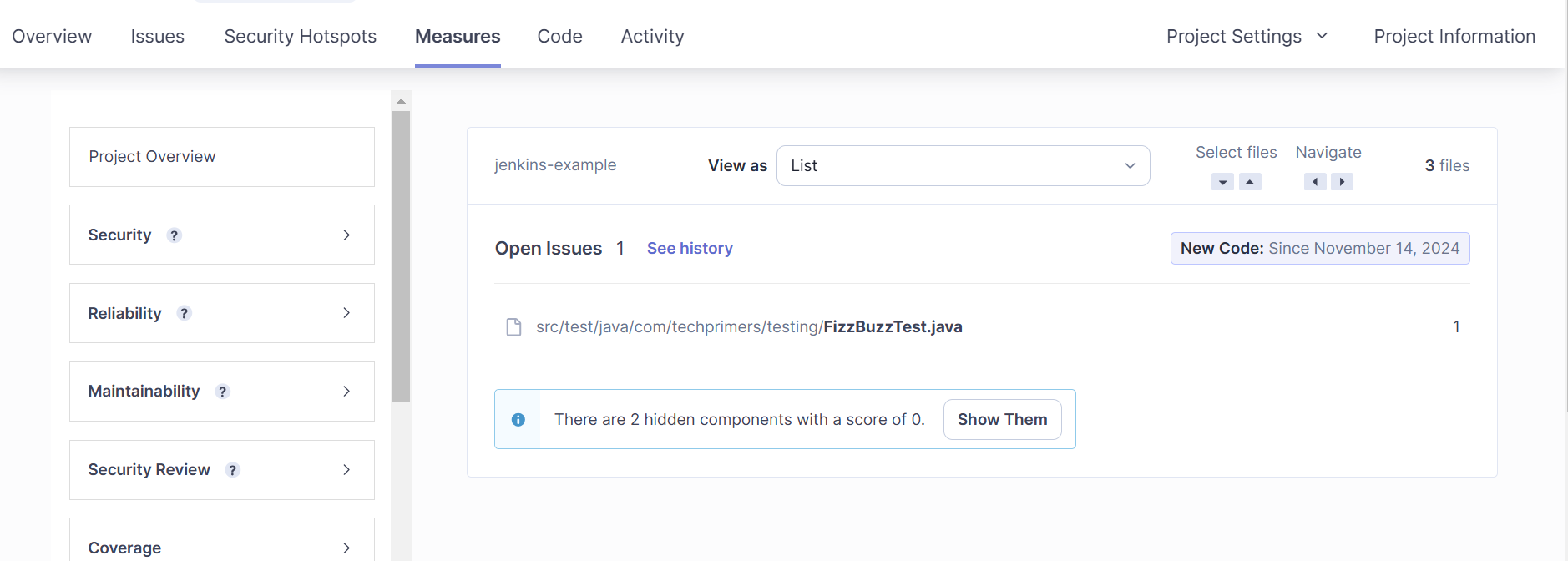




Sonarqube dashboard snippets:









Cyclomatic Complexity Analysis using lizard:

attached in github repo also

OWASP Dependency-Check report: It was not generated because it is taking too much tme and failing in between

C:\Users\guptanku\.jenkins\workspace\Assignment>"C:\Program Files\dependency-check\dependency-check/bin/dependency-check.bat" --scan . --out dependency-check-report --format HTML --nvdApiKey be7f8997-aef6-4e00-9c65-3176a78afabd

[INFO] Checking for updates

[INFO] NVD API has 269,799 records in this update

[INFO] Downloaded 10,000/269,799 (4%)

[INFO] Downloaded 20,000/269,799 (7%)

[INFO] Downloaded 30,000/269,799 (11%)

[WARN] Retrying request /rest/json/cves/2.0?resultsPerPage=2000&startIndex=28000 : 2 time

[WARN] Retrying request /rest/json/cves/2.0?resultsPerPage=2000&startIndex=32000 : 2 time

[WARN] Retrying request /rest/json/cves/2.0?resultsPerPage=2000&startIndex=34000 : 2 time

[WARN] Retrying request /rest/json/cves/2.0?resultsPerPage=2000&startIndex=28000 : 3 time

[WARN] Retrying request /rest/json/cves/2.0?resultsPerPage=2000&startIndex=32000 : 3 time

[WARN] Retrying request /rest/json/cves/2.0?resultsPerPage=2000&startIndex=32000 : 4 time

[WARN] NVD API request failures are occurring; retrying request for the 5 time