

Experiment 4 (Static code analysis with Sonarqube)

1. Download sonarqube and extract it to the desired folder, iterate to the folder in command prompt in which it is present and reach to StartSonar.bat in bin folder.
2. Run “StartSonar.bat” in the prompt and wait till all the initializations.

```

Microsoft Windows [Version 10.0.18363.1082]
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C:\Users\delld>

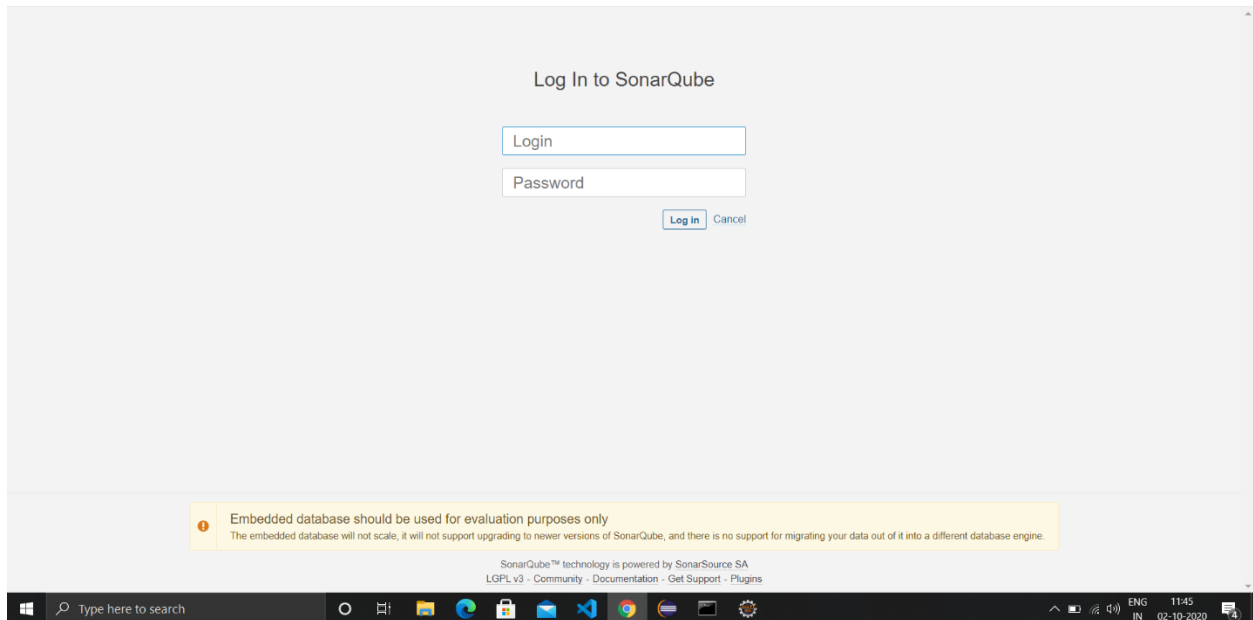
D:\>cd D:\softwares\sonarqube-8.4.1.35646\sonarqube-8.4.1.35646\bin\windows-x86-64

D:\softwares\sonarqube-8.4.1.35646\sonarqube-8.4.1.35646\bin\windows-x86-64>Startsonar.bat
wrapper | --> Wrapper Started as Console
wrapper | Launching a JVM...
jvm 1 | Wrapper (Version 3.2.3) http://wrapper.tanukisoftware.org
jvm 1 | Copyright 1999-2006 Tanuki Software, Inc. All Rights Reserved.
jvm 1 |
jvm 1 | 2020.10.02 11:27:35 INFO app[[o.s.a.AppFileSystem]] Cleaning or creating temp directory D:\softwares\sonarqube-8.4.1.35646\sonarqube-8.4.1.35646\temp
jvm 1 | 2020.10.02 11:27:35 INFO app[[o.s.a.es.EsSettings]] Elasticsearch listening on /127.0.0.1:9001
jvm 1 | 2020.10.02 11:27:36 INFO app[[o.s.a.ProcessLauncherImpl]] Launch process[[key='es', ipcIndex=1, logFilenamePrefix=es]] from [D:\softwares\sonarqube-8.4.1.35646\sonarqube-8.4.1.35646\elasticsearch]: C
:\Program Files\Java\jdk-11.0.8\bin\java -XX:+UseConcMarkSweepGC -XX:CMSInitiatingOccupancyFraction=75 -XX:+UseCMSInitiatingOccupancyOnly -Des.networkaddress.cache.ttl=60 -Des.networkaddress.cache.negative.ttl=1
0 -XX:AlwaysPreTouch -Xss1m -Djava.awt.headless=true -Dfile.encoding=UTF-8 -Djna.nosys=true -XX:-OmitStackTraceInFastThrow -Dio.netty.noUnsafe=true -Dio.netty.noKeySetOptimization=true -Dio.netty.recycler.maxCa
pacityPerThread=0 -Dlog4j2.shutdownHookEnabled=false -Dlog4j2.disable.jmx=true -Djava.io.tmpdir=D:\softwares\sonarqube-8.4.1.35646\temp -XX:ErrorFile=../logs/es_hs_err_pid%p.log -Xmx512m -Xm
s512m -XX:+HeapDumpOnOutOfMemoryError -Delasticsearch -Des.path.home=D:\softwares\sonarqube-8.4.1.35646\sonarqube-8.4.1.35646\elasticsearch -Des.path.conf=D:\softwares\sonarqube-8.4.1.35646\sonarqube-8.4.1.35646
\temp\conf\es -cp lib/* org.elasticsearch.bootstrap.Elasticsearch
jvm 1 | 2020.10.02 11:27:36 INFO app[[o.s.a.SchedulerImpl]] Waiting for Elasticsearch to be up and running
jvm 1 | Java HotSpot(TM) 64-Bit Server VM warning: Option UseConcMarkSweepGC was deprecated in version 9.0 and will likely be removed in a future release.
jvm 1 | 2020.10.02 11:27:37 INFO app[[o.e.p.PluginsService]] no modules loaded
jvm 1 | 2020.10.02 11:27:37 INFO app[[o.e.p.PluginsService]] loaded plugin [org.elasticsearch.transport.Netty4Plugin]
jvm 1 | 2020.10.02 11:28:15 INFO app[[o.s.a.SchedulerImpl]] Process[es] is up
jvm 1 | 2020.10.02 11:28:15 INFO app[[o.s.a.ProcessLauncherImpl]] Launch process[[key='web', ipcIndex=2, logFilenamePrefix=web]] from [D:\softwares\sonarqube-8.4.1.35646\sonarqube-8.4.1.35646]: C:\Program Fi
les\Java\jdk-11.0.8\bin\java -Djava.awt.headless=true -Dfile.encoding=UTF-8 -Djava.io.tmpdir=D:\softwares\sonarqube-8.4.1.35646\sonarqube-8.4.1.35646\temp -XX:-OmitStackTraceInFastThrow --add-opens=java.base/jav
a.util.ALL-UNNAMED --add-opens=java.base/java.lang.ALL-UNNAMED --add-opens=java.base/java.io.ALL-UNNAMED --add-opens=java.rmi/sun.rmi.transport.ALL-UNNAMED -Xmx512m -Xms128m -XX:+HeapDumpOnOutOfMemoryError -Dhtt
p.nonProxyHosts=localHost|127.*[::1] -cp /lib/common/*;D:\softwares\sonarqube-8.4.1.35646\sonarqube-8.4.1.35646\lib\jdbc\h2\h2-1.4.199.jar org.sonar.server.app.WebServer D:\softwares\sonarqube-8.4.1.35646\sona
rque-8.4.1.35646\temp\sq-process1854472522851713240\properties
jvm 1 | 2020.10.02 11:29:16 INFO app[[o.s.a.SchedulerImpl]] Process[web] is up
jvm 1 | 2020.10.02 11:29:16 INFO app[[o.s.a.ProcessLauncherImpl]] Launch process[[key='ce', ipcIndex=3, logFilenamePrefix=ce]] from [D:\softwares\sonarqube-8.4.1.35646\sonarqube-8.4.1.35646]: C:\Program File
s\Java\jdk-11.0.8\bin\java -Djava.awt.headless=true -Dfile.encoding=UTF-8 -Djava.io.tmpdir=D:\softwares\sonarqube-8.4.1.35646\sonarqube-8.4.1.35646\temp -XX:-OmitStackTraceInFastThrow --add-opens=java.base/java.
util.ALL-UNNAMED -Xmx512m -Xms128m -XX:+HeapDumpOnOutOfMemoryError -Dhttp.nonProxyHosts=localHost|127.*[::1] -cp /lib/common/*;D:\softwares\sonarqube-8.4.1.35646\sonarqube-8.4.1.35646\lib\jdbc\h2\h2-1.4.199.jar
org.sonar.ce.app.CeServer D:\softwares\sonarqube-8.4.1.35646\sonarqube-8.4.1.35646\temp\sq-process633991892478982647\properties
jvm 1 | 2020.10.02 11:29:40 INFO app[[o.s.a.SchedulerImpl]] Process[ce] is up
jvm 1 | 2020.10.02 11:29:40 INFO app[[o.s.a.SchedulerImpl]] SonarQube is up

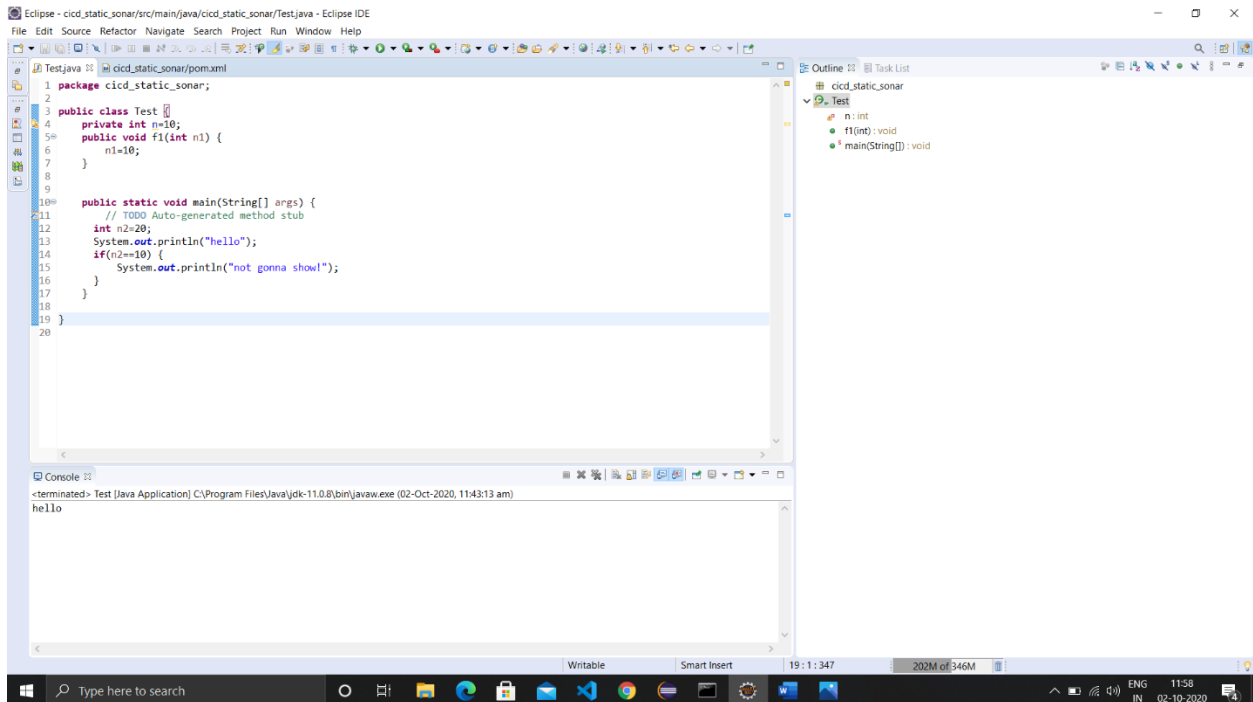
```

LAB 4

3. Open web browser and visit localhost with port number 9000 and login to sonarqube with default credentials (admin).



4. Create a maven project in eclipse with a code with some bugs.



LAB 4

5. Iterate to the project folder in command prompt and run following command
“mvn clean install sonar:sonar -Dsonar.host.url=http://localhost:9000 -Dsonar.analysis.mode=publish”

```
Command Prompt
D:\softwares\Eclipse\cid_static_sonar>mvn clean install sonar:sonar -Dsonar.host.url=http://localhost:9000 -Dsonar.analysis.mode=publish
[INFO] Scanning for projects...
[INFO] -----< CIDC_StaticSonar:cid_static_sonar >-----
[INFO] Building cid_static_sonar 0.0.1-SNAPSHOT
[INFO] -----[ jar ]-----
[INFO] --- maven-clean-plugin:2.5:clean (default-clean) @ cid_static_sonar ---
[INFO] Deleting D:\softwares\Eclipse\cid_static_sonar\target
[INFO] --- maven-resources-plugin:2.6:resources (default-resources) @ cid_static_sonar ---
[WARNING] Using platform encoding (cp1252 actually) to copy filtered resources, i.e. build is platform dependent!
[INFO] Copying 0 resource
[INFO] --- maven-compiler-plugin:3.1:compile (default-compile) @ cid_static_sonar ---
[INFO] Changes detected - recompiling the module!
[WARNING] File encoding has not been set, using platform encoding cp1252, i.e. build is platform dependent!
[INFO] Compiling 1 source file to D:\softwares\Eclipse\cid_static_sonar\target\classes
[INFO] --- maven-resources-plugin:2.6:testResources (default-testResources) @ cid_static_sonar ---
[WARNING] Using platform encoding (cp1252 actually) to copy filtered resources, i.e. build is platform dependent!
[INFO] Copying 0 resource
[INFO] --- maven-compiler-plugin:3.1:testCompile (default-testCompile) @ cid_static_sonar ---
[INFO] Nothing to compile - all classes are up to date
[INFO] --- maven-surefire-plugin:2.12.4:test (default-test) @ cid_static_sonar ---
[INFO] --- maven-jar-plugin:2.4:jar (default-jar) @ cid_static_sonar ---
[INFO] Building jar: D:\softwares\Eclipse\cid_static_sonar\target\cid_static_sonar-0.0.1-SNAPSHOT.jar
[INFO] --- maven-install-plugin:2.4:install (default-install) @ cid_static_sonar ---
[INFO] Installing D:\softwares\Eclipse\cid_static_sonar\target\cid_static_sonar-0.0.1-SNAPSHOT.jar to C:\Users\de11\m2\repository\CIDC_StaticSonar\cid_static_sonar\0.0.1-SNAPSHOT\cid_static_sonar-0.0.1-SNAPSHOT.jar
[INFO] Installing D:\softwares\Eclipse\cid_static_sonar\pom.xml to C:\Users\de11\m2\repository\CIDC_StaticSonar\cid_static_sonar\0.0.1-SNAPSHOT\cid_static_sonar-0.0.1-SNAPSHOT.pom
[INFO] -----< CIDC_StaticSonar:cid_static_sonar >-----
[INFO] Building cid_static_sonar 0.0.1-SNAPSHOT
[INFO] -----[ jar ]-----
[INFO] --- sonar-maven-plugin:3.7.0.1746:sonar (default-cli) @ cid_static_sonar ---
[INFO] User cache: C:\Users\de11\.sonar\cache
[INFO] SonarQube version: 8.4.1
[INFO] Default locale: "en_IN", source code encoding: "windows-1252" (analysis is platform dependent)
[INFO] Load global settings
[INFO] Load global settings (done) | time=272ms
[INFO] Server id: BF41A1F2-AQQLSAoA9-yXBuW4rsi4
[INFO] User cache: C:\Users\de11\.sonar\cache
[INFO] Load/download plugins
```

6. Once the build is successful , visit sonarqube dashboard and refresh and find the project.

```
Command Prompt
[INFO] Sensor SonarCSS Rules [cssfamily]
[INFO] No CSS, PHP, HTML or VueJS files are found in the project. CSS analysis is skipped.
[INFO] Sensor SonarCSS Rules [cssfamily] (done) | time=11ms
[INFO] Sensor JaCoCo XML Report Importer [jacoco]
[INFO] 'sonar.coverage.jacoco.xmlReportPaths' is not defined. Using default locations: target/site/jacoco/jacoco.xml,target/site/jacoco-it/jacoco.xml,build/reports/jacoco/test/jacocoTestReport.xml
[INFO] No report imported, no coverage information will be imported by JaCoCo XML Report Importer
[INFO] Sensor JaCoCo XML Report Importer [jacoco] (done) | time=27ms
[INFO] Sensor SurefireSensor [java]
[INFO] parsing [D:\softwares\Eclipse\cid_static_sonar\target\surefire-reports]
[INFO] Sensor SurefireSensor [java] (done) | time=12ms
[INFO] Sensor JavaXmlSensor [java]
[INFO] 1 source files to be analyzed
[INFO] Sensor JavaXmlSensor [java] (done) | time=254ms
[INFO] 1/1 source files have been analyzed
[INFO] Sensor HTML [web]
[INFO] Sensor HTML [web] (done) | time=10ms
[INFO] Sensor XML Sensor [xml]
[INFO] 1 source files to be analyzed
[INFO] Sensor XML Sensor [xml] (done) | time=250ms
[INFO] 1/1 source files have been analyzed
[INFO] ----- Run sensors on project
[INFO] Sensor Zero Coverage Sensor
[INFO] Sensor Zero Coverage Sensor (done) | time=16ms
[INFO] Sensor Java CPD Block Indexer
[INFO] Sensor Java CPD Block Indexer (done) | time=22ms
[INFO] SCM Publisher No SCM system was detected. You can use the 'sonar.scm.provider' property to explicitly specify it.
[INFO] CPD Executor 1 file had no CPD blocks
[INFO] CPD Executor Calculating CPD for 0 files
[INFO] CPD Executor CPD calculation finished (done) | time=0ms
[INFO] Analysis report generated in 145ms, dir size=2 KB
[INFO] Analysis report compressed in 46ms, zip size=13 KB
[INFO] Analysis report uploaded in 1056ms
[INFO] ANALYSIS SUCCESSFUL, you can browse http://localhost:9000/dashboard?id=CIDC_StaticSonar%3Acid_static_sonar
[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://localhost:9000/api/ce/task?id=AXtn-Lyb0xwZm34Qt0Pu
[INFO] Analysis total time: 19.260 s
[INFO] -----
[INFO] BUILD SUCCESS
[INFO] -----
[INFO] Total time: 26.516 s
[INFO] Finished at: 2020-10-02T11:51:12+05:30
[INFO] -----
[WARNING] The requested profile "profile1" could not be activated because it does not exist.
[WARNING] The requested profile "profile2" could not be activated because it does not exist.
[WARNING] The requested profile "profile3" could not be activated because it does not exist.
D:\softwares\Eclipse\cid_static_sonar>
```

LAB 4

7. Generated report of the project by sonarqube

