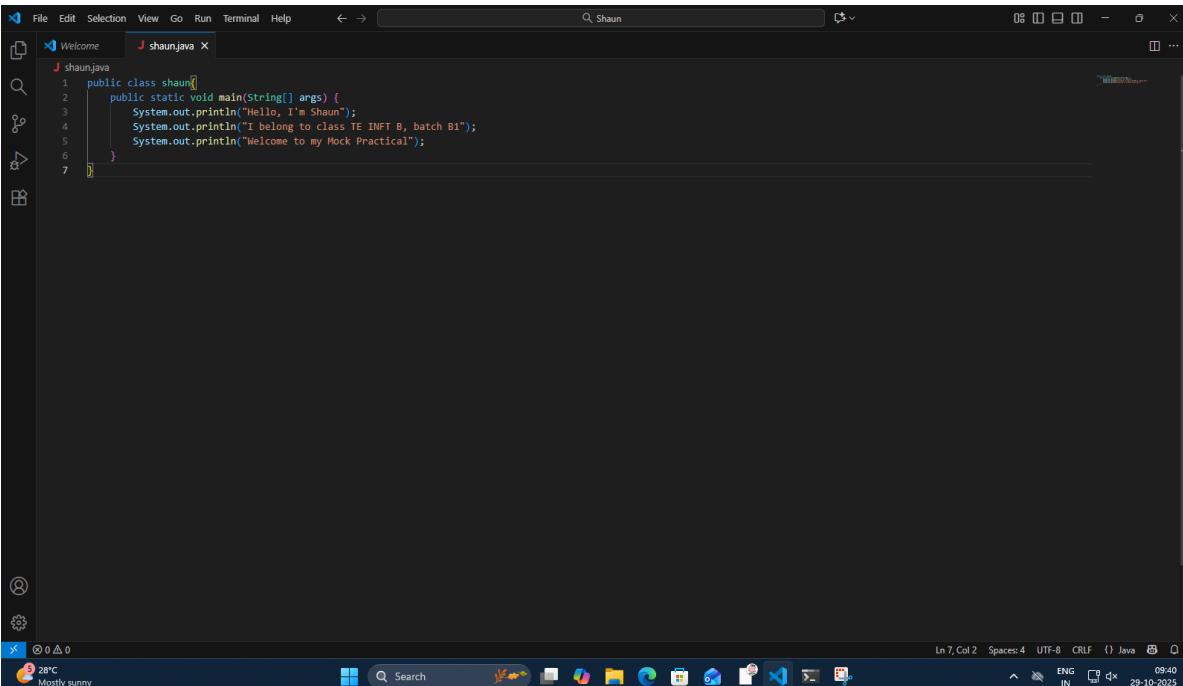


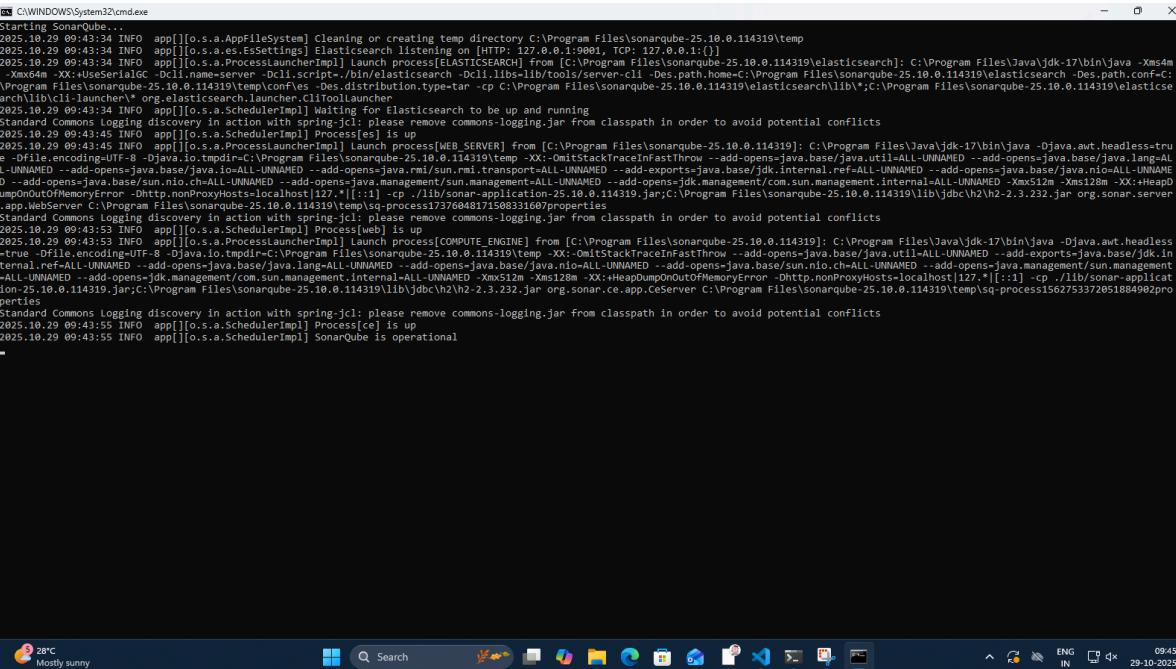
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**Borivali (West), Mumbai-400103**  
**Department of Information Technology**  
**ADL Practical Exam**

Name: Shaun Mascarenhas	Date: 29/10/2025
Class: TE INFT B	Exam seat no: -
PID: 231068	Time: 9.30 to 10.30
Roll No: 02	No. of Pages:
Duration: One Hour	

<b>Sr No</b>	<b>Problem Statement (Type here): To use SonarQube on windows machine to test a JAVA file. Include passed and failed test scenarios.</b>
1.	<p>Step 1 (creation/configuration/initial step(s)): (write step clearly)  <b>To create the java file on the windows machine</b></p> <p>In this step, a Java file was created and saved to "C:\Users\student\Desktop\Shaun\shaun.java"</p> <p>Screenshot 1:</p>  <pre> public class shaun{     public static void main(String[] args) {         System.out.println("Hello, I'm Shaun");         System.out.println("I belong to class TE INFT B, batch B1");         System.out.println("Welcome to my Mock Practical");     } } </pre>

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2.	<p>Step 2 (internal step 1): (write step clearly)</p> <p><b>Starting the SonarQube Service</b></p> <p>In this step, the SonarQube service was started. The file was located in "C:\Program Files\sonarqube-25.10.0.114319\bin\windows-x86-64\StartSonar.bat"</p> <p>Screenshot 2:</p>  <pre> Starting SonarQube... 2025.10.29 09:43:34 INFO app[] [o.s.a.AppFileSystem] Cleaning or creating temp directory C:\Program Files\sonarqube-25.10.0.114319\temp 2025.10.29 09:43:34 INFO app[] [o.s.a.es.EsSettings] Elasticsearch listening on HTTP://127.0.0.1:9001, TCP: 127.0.0.1:1024 2025.10.29 09:43:34 INFO app[] [o.s.a.ProcessLauncherImpl] Launching Elasticsearch process [Elasticsearch] from [C:\Program Files\sonarqube-25.10.0.114319\elasticsearch]; C:\Program Files\Java\jdk-17\bin\java -Xms512m -Xmx512m -XX:+useSerialGC -Dcli.name=server -Dcli.script=./bin/elasticsearch -Dcli.lib=lib/tools/server.cli -Des.path.home=C:\Program Files\sonarqube-25.10.0.114319\elasticsearch -Des.path.conf=C:\Program Files\sonarqube-25.10.0.114319\temp\conf\names=desdistribution.type=tar -cp C:\Program Files\sonarqube-25.10.0.114319\elasticsearch\lib\*;C:\Program Files\sonarqube-25.10.0.114319\elasticsearch\lib\cli-launcher\* org.elasticsearch.launcher.CliToolLauncher 2025.10.29 09:43:34 INFO app[] [o.s.a.SchedulerImpl] Waiting for Elasticsearch to be up and running Standard Commons Logging discovery in action with spring-jcl: please remove commons-logging.jar from classpath in order to avoid potential conflicts 2025.10.29 09:43:34 INFO app[] [o.s.a.SchedulerImpl] Process[elasticsearch] is up 2025.10.29 09:43:45 INFO app[] [o.s.a.ProcessLauncherImpl] Launching SonarQube process [WEB SERVER] from [C:\Program Files\sonarqube-25.10.0.114319\temp]; C:\Program Files\Java\jdk-17\bin\java -Djava.awt.headless=true -Dfile.encoding=UTF-8 -Djava.io.tmpdir=C:\Program Files\sonarqube-25.10.0.114319\temp -XX:-OmitStackTraceInFastThrow --add-opens=java.base/java.lang=ALL-UNNAMED -add-opens=java.rmi/sun.rmi.transport=ALL-UNNAMED --add-exports=java.base/java.lang=ALL-UNNAMED -add-opens=java.base/sun.nio.ch=ALL-UNNAMED --add-opens=java.management/sun.management=ALL-UNNAMED --add-opens=jdk.management/com.sun.management.internal=ALL-UNNAMED -Xmx512m -Xms128m -XX:+HeapDumpOnOutOfMemoryError -Dhttp.nonProxyHosts=localhost127.*[:]* -cp ./lib/sonar-application-25.10.0.114319.jar;C:\Program Files\sonarqube-25.10.0.114319\lib\jdbc\h2\2.3.232.jar org.sonar.server.app.WebServer C:\Program Files\sonarqube-25.10.0.114319\temp\sq-process17376048171508331607\properties Standard Commons Logging discovery in action with spring-jcl: please remove commons-logging.jar from classpath in order to avoid potential conflicts 2025.10.29 09:43:53 INFO app[] [o.s.a.SchedulerImpl] Process[web] is up 2025.10.29 09:43:53 INFO app[] [o.s.a.ProcessLauncherImpl] Launch process [COMPUTE_ENGINE] from [C:\Program Files\sonarqube-25.10.0.114319]; C:\Program Files\Java\jdk-17\bin\java -Djava.awt.headless=true -Dfile.encoding=UTF-8 -Djava.io.tmpdir=C:\Program Files\sonarqube-25.10.0.114319\temp -XX:-OmitStackTraceInFastThrow --add-opens=java.base/java.util=ALL-UNNAMED --add-exports=java.base/jdk.internal.ref=ALL-UNNAMED -add-opens=java.base/sun.management=ALL-UNNAMED --add-opens=jdk.management/com.sun.management.internal=ALL-UNNAMED -Xmx512m -Xms128m -XX:+HeapDumpOnOutOfMemoryError -Dhttp.nonProxyHosts=localhost127.*[:]* -cp ./lib/sonar-application-25.10.0.114319.jar;C:\Program Files\sonarqube-25.10.0.114319\lib\jdbc\h2\2.3.232.jar org.sonar.ce.app.CeServer C:\Program Files\sonarqube-25.10.0.114319\temp\sq-process1562753372051884902\properties Standard Commons Logging discovery in action with spring-jcl: please remove commons-logging.jar from classpath in order to avoid potential conflicts 2025.10.29 09:43:55 INFO app[] [o.s.a.SchedulerImpl] Process[ce] is up 2025.10.29 09:43:55 INFO app[] [o.s.a.SchedulerImpl] SonarQube is operational </pre>

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3. Step 3 (internal step 2): (write step clearly)

### Logging into SonarQube

In this step, we logged into the SonarQube service, located at localhost:9000

Screenshot 3:

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4. Step 4 (internal step 3): (write step clearly)

#### To generate the analysis token on SonarQube

In this step, we generated the token to analyze the program on SonarQube  
Screenshot 4:

The screenshot shows the SonarQube interface for a project named "SFIT\_SAST16". The main heading is "1 Provide a token". Below it, there's a message: "Analyze 'SFIT\_SAST16': sqp\_e672faf154ea1d3cad77884c2ebe13a549c3cef3". Under "2 Run analysis on your project", there are dropdown menus for "What option best describes your project?" (Maven, Gradle, JS/TS & Web, J.NET, Python, Other (for Go, PHP, ...)) and "What is your OS?" (Linux, Windows, macOS). At the bottom, there are sections for "Download and unzip the Scanner for Windows" and "Execute the Scanner". The status bar at the bottom right shows the date as 29-10-2025.

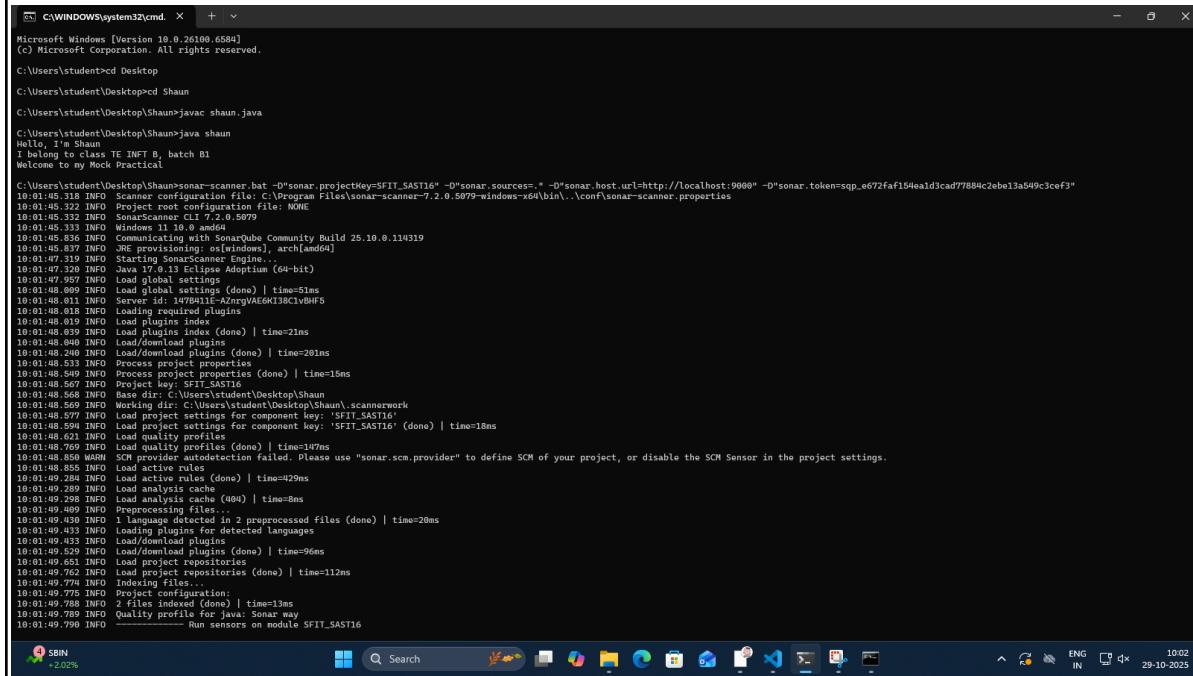
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5. Step 5 (stop/delete step) : (write step clearly)  
**To run the analysis on the code**

In this step, we run the command token and check the code quality

Screenshot 5:



```

C:\WINDOWS\system32\cmd. x + v
Microsoft Windows [Version 10.0.26100.6584]
(c) Microsoft Corporation. All rights reserved.

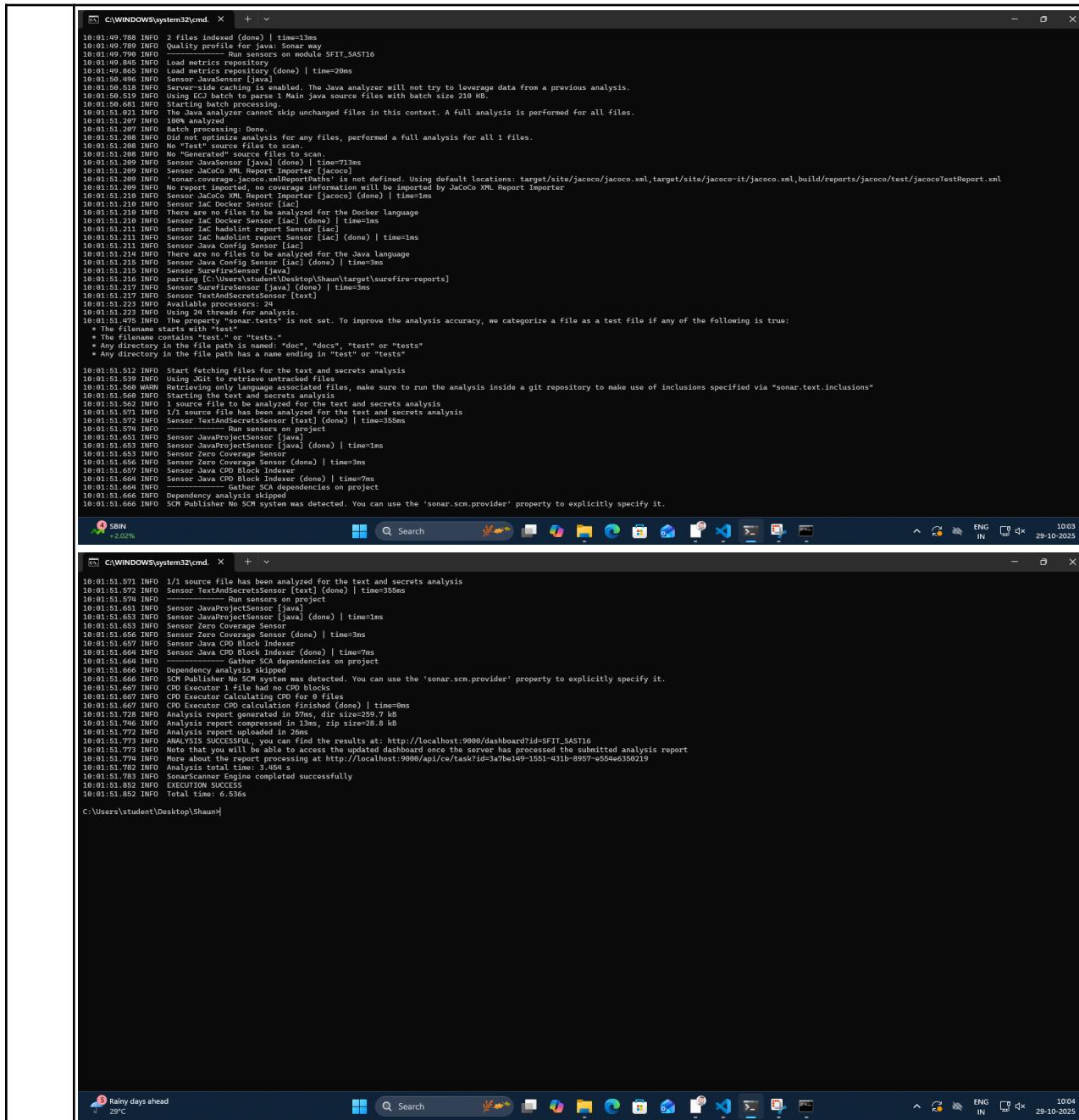
C:\Users\student>cd Desktop
C:\Users\student\Desktop>cd Shaun
C:\Users\student\Desktop\Shaun>javac shaun.java
C:\Users\student\Desktop\Shaun>java shaun
Hello, I'm Shaun
I belong to class, TE INFT B, batch B1
Welcome to my Mock Practical

C:\Users\student\Desktop\Shaun>sonar-scanner.bat -Dsonar.projectKey=SFIT_SAST16 -Dsonar.sources=. -Dsonar.host.url=http://localhost:9000 -Dsonar.token=sqp_e672faf154ea1d3cad77884c2ebe13a549c3cef3
10:01:46:322 INFO  Scanner configuration file: C:\Program Files\sonar-scanner-7.2.0.5879-windows\x64\bin..\conf\sonar-scanner.properties
10:01:46:332 INFO  Project root configuration file: NONE
10:01:45:332 INFO  SonarScanner CLI 7.2.0.5879
10:01:45:333 INFO  Windows 10.0.26100
10:01:45:333 INFO  Java 17.0.13
10:01:45:333 INFO  SonarQube Community Build 25.10.0.114319
10:01:45:897 INFO  JRE provisioning: os[windows], arch[amd64]
10:01:47:319 INFO  Starting SonarScanner Engine...
10:01:47:320 INFO  Java 17.0.13 Eclipse Adoptium (64-bit)
10:01:48:009 INFO  Load global settings (done) | time=5ms
10:01:48:011 INFO  Server id: 147B411E-A7nygVAE6K138ClvBF5
10:01:48:019 INFO  Load required plugins
10:01:48:019 INFO  Load plugins index
10:01:48:039 INFO  Load plugins index (done) | time=2ms
10:01:48:049 INFO  Load/download plugins
10:01:48:249 INFO  Load/download plugins (done) | time=20ms
10:01:48:250 INFO  Process project properties
10:01:48:549 INFO  Process project properties (done) | time=1ms
10:01:48:567 INFO  Project key: SFIT_SAST16
10:01:48:568 INFO  Working dir: C:\Users\student\Desktop\Shaun
10:01:48:569 INFO  Working dir: C:\Users\student\Desktop\Shaun\scannerwork
10:01:48:577 INFO  Load project settings for component key: 'SFIT_SAST16'
10:01:48:594 INFO  Load project settings for component key: 'SFIT_SAST16' (done) | time=18ms
10:01:48:602 INFO  Load quality profiles
10:01:48:769 INFO  Load quality profiles (done) | time=17ms
10:01:48:850 WARO  SCM provider autodetection failed. Please use "sonar.scm.provider" to define SCM of your project, or disable the SCM Sensor in the project settings.
10:01:48:855 INFO  Load active rules
10:01:48:856 INFO  Load active rules (done) | time=42ms
10:01:49:289 INFO  Load analysis cache
10:01:49:298 INFO  Load analysis cache (404) | time=8ms
10:01:49:409 INFO  Preprocessing files
10:01:49:410 INFO  Preprocessing files (done) | time=20ms
10:01:49:433 INFO  Loading plugins for detected languages
10:01:49:433 INFO  Load/download plugins
10:01:49:529 INFO  Load/download plugins (done) | time=9ms
10:01:49:530 INFO  Load project repositories
10:01:49:762 INFO  Load project repositories (done) | time=112ms
10:01:49:774 INFO  Indexing files...
10:01:49:775 INFO  Project configuration (done)
10:01:49:788 INFO  File indexed (done) | time=13ms
10:01:49:788 INFO  Quality profile for java: Sonar way
10:01:49:790 INFO  Run sensors on module SFIT_SAST16

```

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The image shows a Windows desktop environment with two command-line windows open in the foreground.

**Top Command-Line Window (C:\WINDOWS\system32\cmd.):**

```

10:01:49.788 INFO 2 files indexed (done) | time=1ms
10:01:49.789 INFO Quality profile for java: Sonar way
10:01:49.790 INFO Run sensors on module SFIT_SAST16
10:01:49.795 INFO Load metrics repository
10:01:49.845 INFO Load metrics repository (done) | time=20ms
10:01:50.495 INFO Sensor JavaSensor [java]
10:01:50.518 INFO Server-wide caching is enabled. The Java analyzer will not try to leverage data from a previous analysis.
10:01:50.521 INFO Sensor Java ECR Sensor [java] Main java source files with batch size 210 kB.
10:01:50.681 INFO Starting batch processing.
10:01:51.021 INFO The Java analyzer cannot skip unchanged files in this context. A full analysis is performed for all files.
10:01:51.022 INFO Sensor Java Test Report Importer [jacoco]
10:01:51.297 INFO Batch processing: Done.
10:01:51.298 INFO Did not optimize analysis for any files, performed a full analysis for all 1 files.
10:01:51.299 INFO No "generated" source file(s) to scan.
10:01:51.299 INFO Sensor JavaSensor [java] (done) | time=71ms
10:01:51.299 INFO Sensor Jacoco XML Report Importer [jacoco]
10:01:51.299 INFO No configuration parameter 'target' is defined. Using default locations: target/site/jacoco.xml,target/site/jacoco-it/jacoco.xml,build/reports/jacoco/test/jacocoTestReport.xml
10:01:51.299 INFO No report imported, no coverage information will be imported by Jacoco XML Report Importer
10:01:51.299 INFO Sensor Jacoco XML Report Importer [jacoco] (done) | time=1ms
10:01:51.299 INFO Sensor Java Config Sensor [iac]
10:01:51.299 INFO There are 0 files to be analyzed for the Java language
10:01:51.299 INFO Sensor Java hadoop Sensor [iac] (done) | time=1ms
10:01:51.299 INFO There are 0 files to be analyzed for the Java language
10:01:51.299 INFO Sensor Java Config Sensor [iac] (done) | time=3ms
10:01:51.299 INFO Sensor SurefireSensor [java]
10:01:51.299 INFO parsing [C:\Users\student\Desktop\Shaun\target\surefire-reports]
10:01:51.299 INFO Sensor Java Test Report Importer [jacoco] (done) | time=5ms
10:01:51.299 INFO Sensor TextAndSecretsSensor [text]
10:01:51.299 INFO Available processors: 24
10:01:51.495 INFO Available processors for analysis: 24
10:01:51.495 INFO The property 'sonar.testng.enabled' is not set. To improve the analysis accuracy, we categorize a file as a test file if any of the following is true:
* The filename starts with "test"
* The filename contains ".test"
* Any directory or file path is named: "doc", "docs", "test" or "tests"
* Any directory in the file path has a name ending in "test" or "tests"
10:01:51.512 INFO Start fetching files for the test and secrets analysis
10:01:51.539 INFO Using Git to retrieve untracked files
10:01:51.569 WARO Retrieving only language associated files, make sure to run the analysis inside a git repository to make use of inclusions specified via "sonar.text.inclusions"
10:01:51.570 INFO 1 source file to be analyzed for the test and secrets analysis
10:01:51.562 INFO 1 source file has been analyzed for the text and secrets analysis
10:01:51.571 INFO 1/1 source file has been analyzed for the text and secrets analysis
10:01:51.574 INFO Sensor TextAndSecretsSensor [text] (done) | time=35ms
10:01:51.574 INFO Running analysis project
10:01:51.574 INFO Sensor JavaProjectSensor [java]
10:01:51.653 INFO Sensor JavaProjectSensor [java] (done) | time=1ms
10:01:51.653 INFO Sensor Zero Coverage Sensor
10:01:51.654 INFO Sensor Java Project (done) | time=3ms
10:01:51.656 INFO Sensor Zero Coverage Sensor (done) | time=3ms
10:01:51.657 INFO Sensor CPD Block Indexer
10:01:51.664 INFO Sensor Java CPD Block Indexer (done) | time=7ms
10:01:51.664 INFO Sensor Java CPD Block Indexer (done) | time=7ms
10:01:51.664 INFO Gather SCA dependencies on project
10:01:51.664 INFO Dependency analysis skipped
10:01:51.666 INFO SCM Publisher No SCM system was detected. You can use the "sonar.scm.provider" property to explicitly specify it.
10:01:51.666 INFO SCM Publisher No SCM system was detected. You can use the "sonar.scm.provider" property to explicitly specify it.
10:01:51.667 INFO CPD Executor 1 file had no CPD blocks
10:01:51.667 INFO CPD Executor Calculating CPD for 0 files
10:01:51.667 INFO CPD Executor Calculating CPD for 0 files
10:01:51.672 INFO Analysis report generated in 57ms, dir size=29.7 kB
10:01:51.746 INFO Analysis report compressed in 13ms, zip size=28.8 kB
10:01:51.772 INFO Analysis report uploaded in 26ms
10:01:51.773 INFO You can now view the results at: http://localhost:9000/dashboard?id=SFIT_SAST16
10:01:51.773 INFO Note that you will be able to access the updated dashboard once the server has processed the submitted analysis report
10:01:51.774 INFO More about the report processing at http://localhost:9000/api/ce/tasks?id=3a7b0149-1551-431b-8957-e554e6350219
10:01:51.782 INFO Analysis total time: 3.454 s
10:01:51.852 INFO Analysis completed successfully
10:01:51.852 INFO EXECUTION SUCCESS
10:01:51.852 INFO Total time: 6.536s
C:\Users\student\Desktop\Shaun>

```

**Bottom Command-Line Window (C:\WINDOWS\system32\cmd.):**

```

10:01:51.571 INFO 1/1 source file has been analyzed for the text and secrets analysis
10:01:51.572 INFO Sensor TextAndSecretsSensor [text] (done) | time=35ms
10:01:51.572 INFO Running analysis project
10:01:51.651 INFO Sensor JavaProjectSensor [java]
10:01:51.653 INFO Sensor JavaProjectSensor [java] (done) | time=1ms
10:01:51.653 INFO Sensor Zero Coverage Sensor
10:01:51.654 INFO Sensor Java Project (done) | time=3ms
10:01:51.656 INFO Sensor Zero Coverage Sensor (done) | time=3ms
10:01:51.657 INFO Sensor CPD Block Indexer
10:01:51.664 INFO Sensor Java CPD Block Indexer (done) | time=7ms
10:01:51.664 INFO Sensor Java CPD Block Indexer (done) | time=7ms
10:01:51.664 INFO Gather SCA dependencies on project
10:01:51.664 INFO Dependency analysis skipped
10:01:51.666 INFO SCM Publisher No SCM system was detected. You can use the "sonar.scm.provider" property to explicitly specify it.
10:01:51.667 INFO CPD Executor 1 file had no CPD blocks
10:01:51.667 INFO CPD Executor Calculating CPD for 0 files
10:01:51.667 INFO CPD Executor Calculating CPD for 0 files
10:01:51.672 INFO Analysis report generated in 57ms, dir size=29.7 kB
10:01:51.746 INFO Analysis report compressed in 13ms, zip size=28.8 kB
10:01:51.772 INFO Analysis report uploaded in 26ms
10:01:51.773 INFO You can now view the results at: http://localhost:9000/dashboard?id=SFIT_SAST16
10:01:51.773 INFO Note that you will be able to access the updated dashboard once the server has processed the submitted analysis report
10:01:51.774 INFO More about the report processing at http://localhost:9000/api/ce/tasks?id=3a7b0149-1551-431b-8957-e554e6350219
10:01:51.782 INFO Analysis total time: 3.454 s
10:01:51.852 INFO Analysis completed successfully
10:01:51.852 INFO EXECUTION SUCCESS
10:01:51.852 INFO Total time: 6.536s
C:\Users\student\Desktop\Shaun>

```

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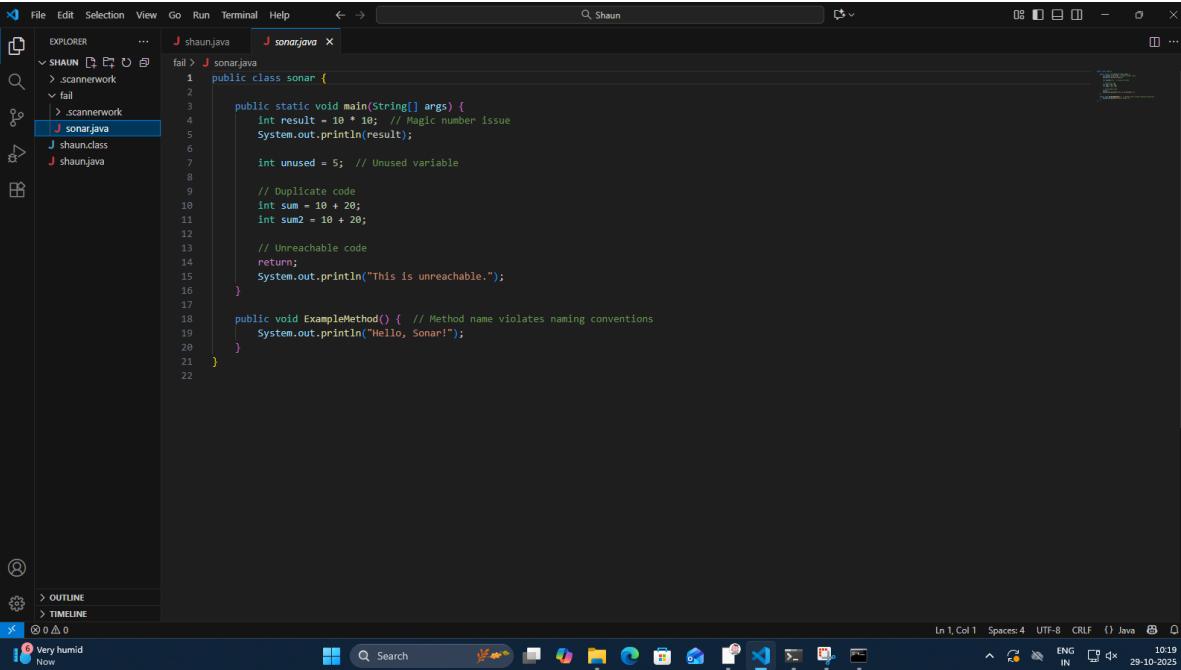
The screenshot shows a Windows desktop environment with several open windows.

- Java Code Editor:** An IDE window titled "shawn.java" displays the following Java code:

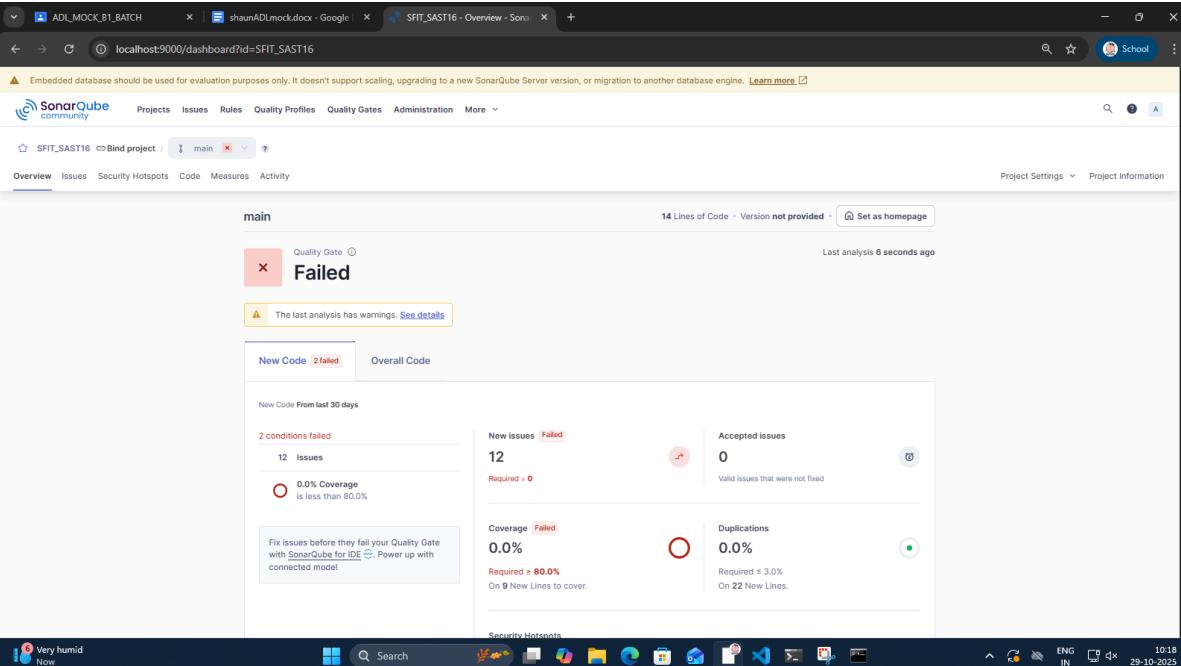
```
public class shaunaaron{
    public static void main(String[] args) {
        System.out.println("Hello, I'm Shaun");
        System.out.println("I belong to class TE INFT B, batch B1");
        System.out.println("Welcome to my Mock Practical");
    }
}
```
- SonarQube Analysis Report:** A browser window shows the SonarQube dashboard for the project "SFIT\_SAST16". The report indicates 7 lines of code, a version not provided, and a last analysis 2 minutes ago. The "main" module is shown with a green "Passed" status. Key metrics include 0 open issues, 0 accepted issues, 0 security hotspots, 0.0% coverage, and 5 maintainability issues. The report also notes 0.0% duplication.
- System Tray:** The taskbar shows system icons for battery, signal, and weather (Rainy days ahead, 29°C).
- System Information:** The bottom right corner shows system details: ENG IN, 10:19, 29-10-2025, and a battery level of 100%.

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The screenshot shows the Visual Studio Code interface with a Java file named 'sonar.java' open. The code contains several violations highlighted by SonarQube, such as magic number issues, unused variables, duplicate code, unreachable code, and naming conventions. The SonarQube extension is visible in the activity bar.



The screenshot shows the SonarQube dashboard for the project 'SFT\_SAST16'. The main summary indicates a 'Failed' status with 12 new issues found. It also shows coverage at 0.0% and duplication at 0.0%. A callout box highlights the need to fix issues before failing the quality gate.

5. Step 5 (stop/delete step) : (write step clearly)  
**Stopping the SonarQube Service.**

In this step, we stop the services and end the practical.

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