**Emp Name : Radha Kadam**

Emp Id : 46218925

➢ **What is SonarQube?**

SonarQube is an open-source platform developed by SonarSource for continuous inspection of code quality to perform automatic reviews with static analysis of code to detect bugs, code smells on 29 programming languages.

➢ **Why SonarQube?**

SonarQube reduces the risk of software development within a very short amount of time. It detects bugs in the code automatically and alerts developers to fix them before rolling it out for production. SonarQube also highlights the complex areas of code that are less covered by unit tests.

➢ **SonarQube Architecture :**

SonarQube Architecture
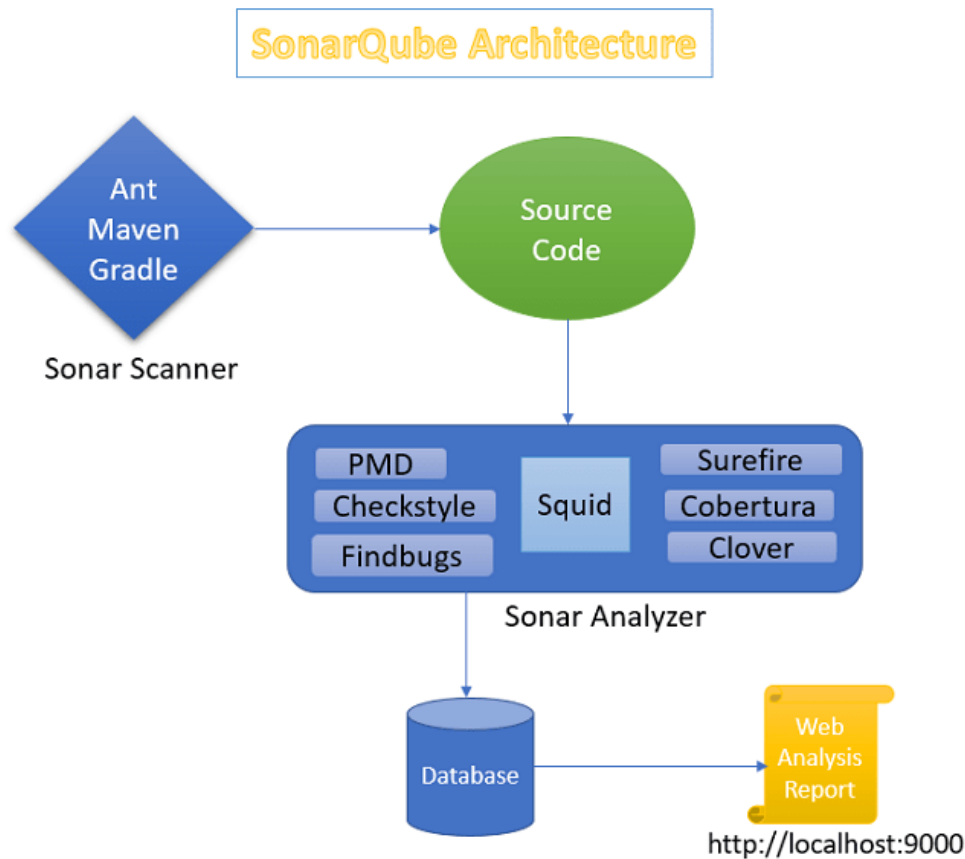
- **Sonar Scanner:**
  An analysis request is triggered using one of three possible methods:
    - Maven Plugin
    - Ant Task
    - Java Runner
- **Source Code:**
  Source code which need to be analysed.
- **Sonar Analyzer:**
  Sonar receives the request and starts analysing the source code of the project. The analysis is based on the Sonar profile of the project, activating any additional plugins or reporting capabilities, if any.
- **SonarQube Database:**
  When the analysis is finished, the results will be stored in the database for future reference and history tracking.
- **Reports:**
  Finally, the user interface (IDE: Eclipse/Web dashboard

Reports) and its components are updated with the new data. You can access the data from your web browser and dashboard. Sonar reporting is also made available within your IDE, either Eclipse or IDEA, which allows you to review and correct code violations on the spot.

➢ SonarQube Installation Steps:
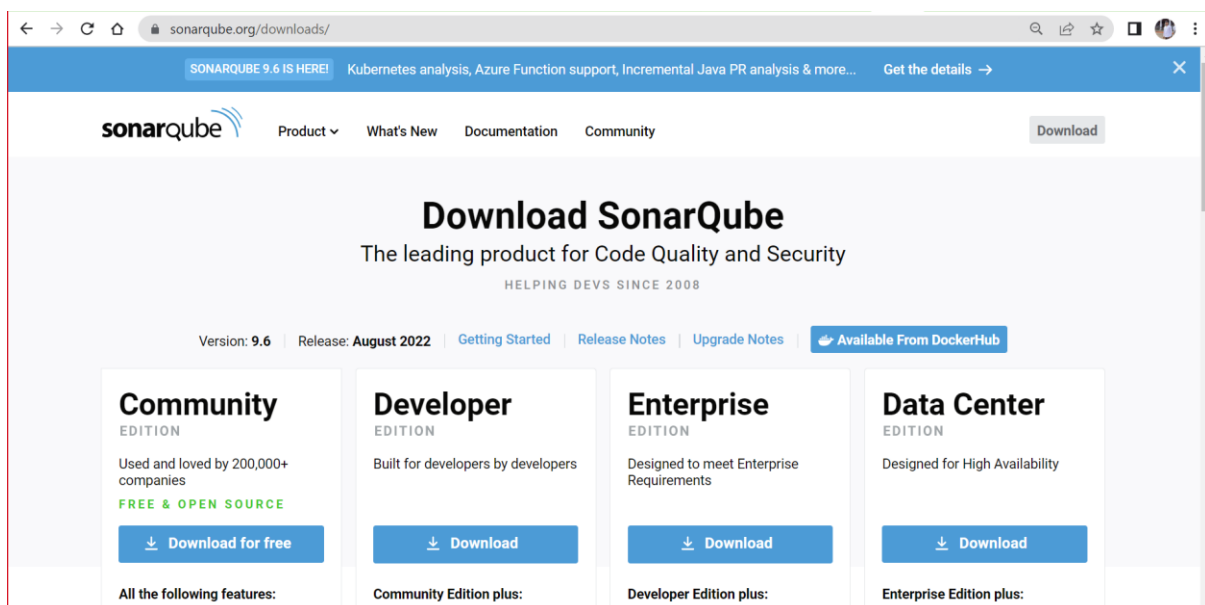
After downloading community…extract the zip file
Now open the cmd and then enter the cmd as below

```
Microsoft Windows [Version 10.0.19043.1889]
(c) Microsoft Corporation. All rights reserved.

C:\Users\AJALINDA\Downloads\sonarqube-9.6.1.59531\bin\windows-x86-64>StartSonar.bat
Starting SonarQube...
2022.09.16 10:34:21 INFO  app[][o.s.a.AppFileSystem] Cleaning or creating temp directory C:\Users\AJALINDA\Downloads\sonarqube-9.6.1.59531\temp
2022.09.16 10:34:21 INFO  app[][o.s.a.es.EsSettings] Elasticsearch listening on [HTTP: 127.0.0.1:9001, TCP: 127.0.0.1:56978]
2022.09.16 10:34:21 INFO  app[][o.s.a.ProcessLauncherImpl] Launch process[ELASTICSEARCH] from [C:\Users\AJALINDA\Downloads\sonarqube-9.6.1.59531\elasticsearch]: C:\Program
Files\Eclipse Foundation\jdk-11.0.12.7-hotspot\bin\java -XX:+UseG1GC -Djava.io.tmpdir=C:\Users\AJALINDA\Downloads\sonarqube-9.6.1.59531\temp -XX:ErrorFile=../logs/es_hs_err
_pid%p.log -Des.networkaddress.cache.ttl=60 -Des.networkaddress.cache.negative.ttl=10 -XX:+AlwaysPreTouch -Xss1m -Djava.awt.headless=true -Dfile.encoding=UTF-8 -Djna.nosys=
true -Djna.tmpdir=C:\Users\AJALINDA\Downloads\sonarqube-9.6.1.59531\temp -XX:-OmitStackTraceInFastThrow -Dio.netty.noUnsafe=true -Dio.netty.noKeySetOptimization=true -Dio.n
etty.recycler.maxCapacityPerThread=0 -Dio.netty.allocator.numDirectArenas=0 -Dlog4j.shutdownHookEnabled=false -Dlog4j2.disable.jmx=true -Dlog4j2.formatMsgNoLookups=true -Dj
ava.locale.providers=COMPAT -Dcom.redhat.fips=false -Xmx512m -Xms512m -XX:MaxDirectMemorySize=256m -XX:+HeapDumpOnOutOfMemoryError -Delasticsearch -Des.path.home=C:\Users\A
JALINDA\Downloads\sonarqube-9.6.1.59531\elasticsearch -Des.path.conf=C:\Users\AJALINDA\Downloads\sonarqube-9.6.1.59531\temp\conf\es -cp lib/* org.elasticsearch.bootstrap.El
asticsearch
```



```
2022.09.16 10:34:21 INFO  app[][o.s.a.SchedulerImpl] Waiting for Elasticsearch to be up and running
2022.09.16 10:34:30 INFO  app[][o.s.a.SchedulerImpl] Process[es] is up
2022.09.16 10:34:30 INFO  app[][o.s.a.ProcessLauncherImpl] Launch process[WEB_SERVER] from [C:\Users\AJALINDA\Downloads\sonar
ndation\jdk-11.0.12.7-hotspot\bin\java -Djava.awt.headless=true -Dfile.encoding=UTF-8 -Djava.io.tmpdir=C:\Users\AJALINDA\Down
TraceInFastThrow --add-opens=java.base/java.util=ALL-UNNAMED --add-opens=java.base/java.lang=ALL-UNNAMED --add-opens=java.ba
rmi.transport=ALL-UNNAMED --add-exports=java.base/jdk.internal.ref=ALL-UNNAMED --add-opens=java.base/java.nio=ALL-UNNAMED --
-opens=java.management/sun.management=ALL-UNNAMED --add-opens=jdk.management/com.sun.management.internal=ALL-UNNAMED -Dcom.r
OnOutOfMemoryError -Dhttp.nonProxyHosts=localhost|127.*|[::1] -cp ./lib/sonar-application-9.6.1.59531.jar;C:\Users\AJALINDA\
.1.212.jar org.sonar.server.app.WebServer C:\Users\AJALINDA\Downloads\sonarqube-9.6.1.59531\temp\sq-process82117574674956740
2022.09.16 10:35:05 INFO  app[][o.s.a.SchedulerImpl] Process[web] is up
2022.09.16 10:35:05 INFO  app[][o.s.a.ProcessLauncherImpl] Launch process[COMPUTE_ENGINE] from [C:\Users\AJALINDA\Downloads\
 Foundation\jdk-11.0.12.7-hotspot\bin\java -Djava.awt.headless=true -Dfile.encoding=UTF-8 -Djava.io.tmpdir=C:\Users\AJALINDA
tackTraceInFastThrow --add-opens=java.base/java.util=ALL-UNNAMED --add-exports=java.base/jdk.internal.ref=ALL-UNNAMED --add-
s=java.base/java.nio=ALL-UNNAMED --add-opens=java.base/sun.nio.ch=ALL-UNNAMED --add-opens=java.management/sun.management=ALL
gement.internal=ALL-UNNAMED -Dcom.redhat.fips=false -Xmx512m -Xms128m -XX:+HeapDumpOnOutOfMemoryError -Dhttp.nonProxyHosts=l
-9.6.1.59531.jar;C:\Users\AJALINDA\Downloads\sonarqube-9.6.1.59531\lib\jdbc\h2\h2-2.1.212.jar org.sonar.ce.app.CeServer C:\U
mp\sq-process1505684048438286389properties
2022.09.16 10:35:05 WARN  app[][startup] ######################################################################
2022.09.16 10:35:05 WARN  app[][startup] Default Administrator credentials are still being used. Make sure to change the pas
2022.09.16 10:35:05 WARN  app[][startup] ######################################################################
2022.09.16 10:35:09 INFO  app[][o.s.a.SchedulerImpl] Process[ce] is up
2022.09.16 10:35:09 INFO  app[][o.s.a.SchedulerImpl] SonarQube is operational
```

Open the localhost:9000 in chrome
Both credentials are admin,login to SonarQube

localhost:9000/sessions/new?return_to=%2F

Log In to SonarQube

Login

Password

Log in Cancel

SonarQube™ technology is powered by SonarSource SA
LGPL v3 - Community - Documentation - Plugins

localhost:9000/account/reset_password

Update your password

This account should not use the default password.

Enter a new password

All fields marked with * are required

Old Password *

New Password *

Confirm Password *

Update

localhost:9000/projects/create

sonarqube Projects Issues Rules Quality Profiles Quality Gates Administration ? Search for projects... A

There's an update available for your SonarQube instance. Please update to make sure you benefit from the latest security and bug fixes. Learn More ✕

How do you want to create your project?

Do you want to benefit from all of SonarQube's features (like repository import and Pull Request decoration)? Create your project from your favorite DevOps platform.
First, you need to set up a DevOps platform configuration.

From Azure DevOps
Set up global configuration

From Bitbucket
Set up global configuration

From GitHub
Set up global configuration

From GitLab
Set up global configuration

Are you just testing or have an advanced use-case? Create a project manually.

< >

Get the most out of SonarQube!
Take advantage of the whole ecosystem by using SonarLint, a free IDE plugin that helps you find and fix issues earlier in your workflow. Connect SonarLint to SonarQube to sync rule sets and issue states.

Learn More

Dismiss

Add this in text in pom.xml (under plugins)

```xml
<plugin>
        <groupId>org.sonarsource.scanner.maven</groupId>
        <artifactId>sonar-maven-plugin</artifactId>
        <version>3.8.0.2131</version>
        </plugin>

        <plugin>
        <groupId>org.jacoco</groupId>
        <artifactId>jacoco-maven-plugin</artifactId>
        <version>0.8.5</version>
        <executions>
          <execution>
            <id>prepare-agent</id>
            <goals>
             <goal>prepare-agent
             </goal>
            </goals>
          </execution>
          <execution>
          <id>report</id>
          <goals>
          <goal>report</goal>
          </goals>
          </execution>
        </executions>
                </plugin>
```
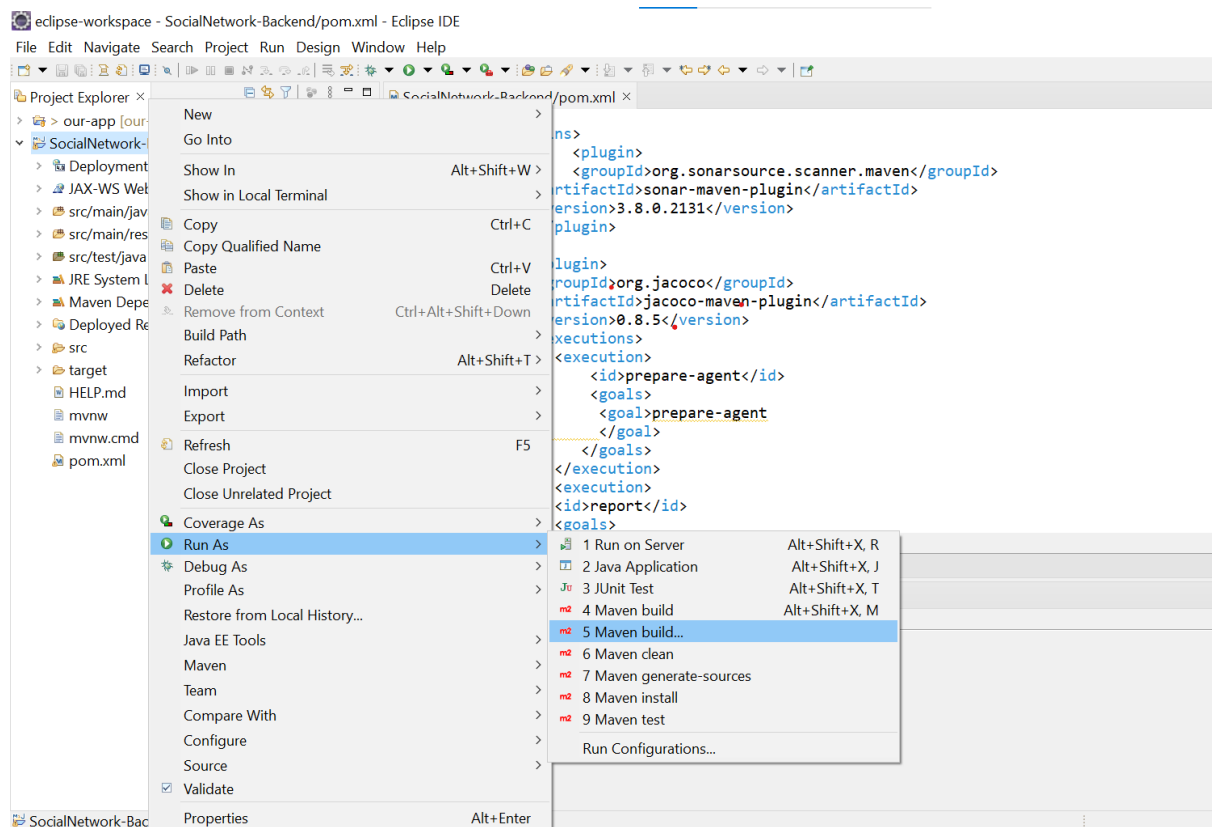
```xml
78  <build>
79    <plugins>
80      <plugin>
81        <groupId>org.sonarsource.scanner.maven</groupId>
82        <artifactId>sonar-maven-plugin</artifactId>
83        <version>3.8.0.2131</version>
84      </plugin>
85
86      <plugin>
87        <groupId>org.jacoco</groupId>
88        <artifactId>jacoco-maven-plugin</artifactId>
89        <version>0.8.5</version>
90        <executions>
91          <execution>
92            <id>prepare-agent</id>
93            <goals>
94              <goal>prepare-agent
95              </goal>
96            </goals>
97          </execution>
98          <execution>
99            <id>report</id>
100           <goals>
```

| Overview | Dependencies | Dependency Hierarchy | Effective POM | pom.xml |

In goals text field paste the code as below ,apply and run

Help

Edit Configuration   □   ✕

Edit configuration and launch.   ▶

Name: social-network-backend (3)

🖥 Main ⬛ JRE 🔧 Refresh 🌿 Source 🔷 Environment 🖥 Common

Base directory:

${project_loc:SocialNetwork-Backend}

                          Workspace... File System... Variables...

Goals: clean org.jacoco:jacoco-maven-plugin:prepare-agent install

Profiles: pom.xml

User settings: C:\Users\AJALINDA\.m2\settings.xml

                          Workspace... File System... Variables...

☐ Offline   ☐ Update Snapshots
☐ Debug Output   ☐ Skip Tests ☐ Non-recursive

                          Revert   Apply

  ⑦   Run   Close
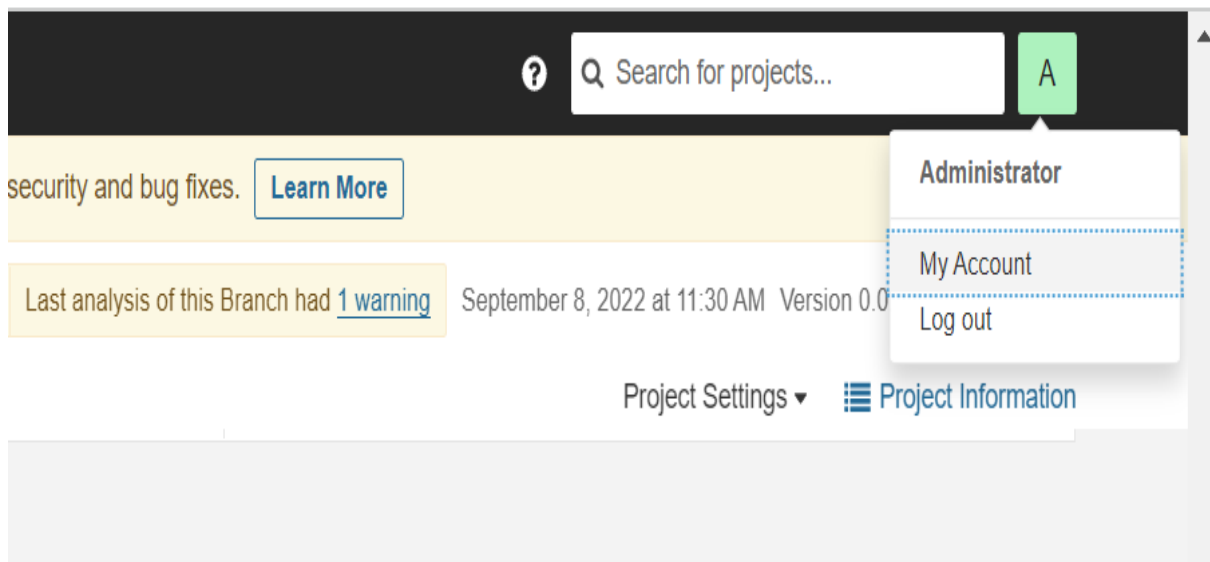
</executions>
    </plugin>

        </plugins>
    </build>

view | Dependencies | Dependency Hierarchy | Effective POM | pom.xml

nsole × | 🔲 Problems | 🔟 Debug Shell

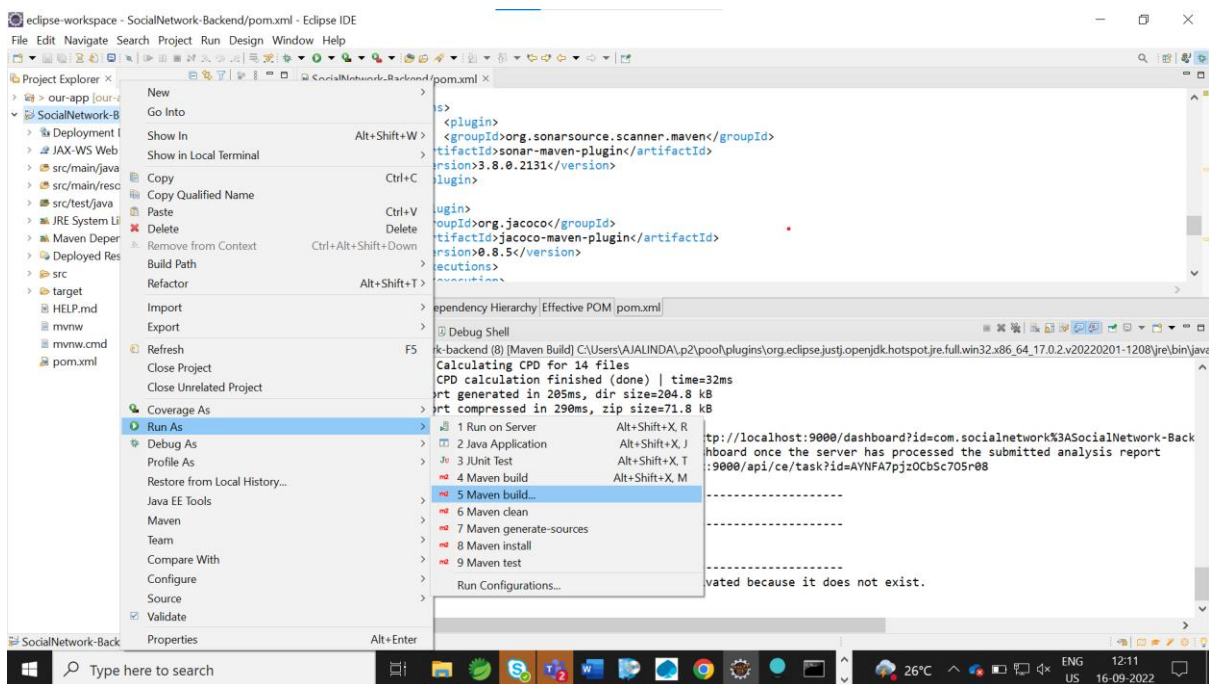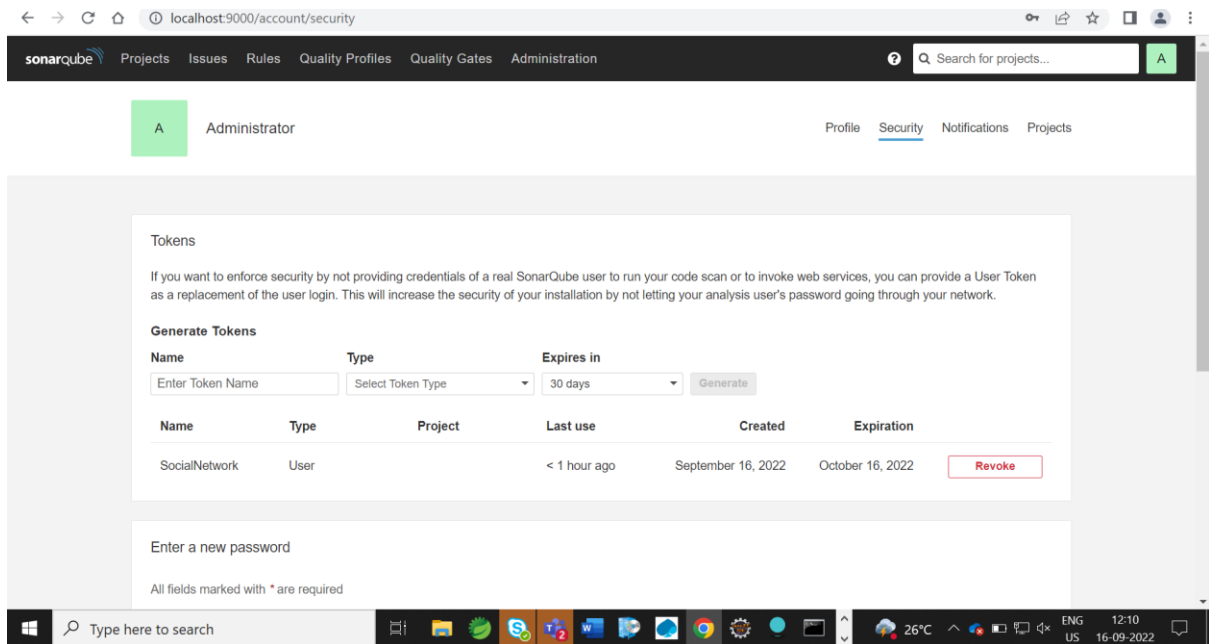-network-backend (2) [Maven Build] C:\Users\AJALINDA\.p2\pool\plugins\org.eclipse.justj.openjdk.hotspot.jre.full.win32.x8
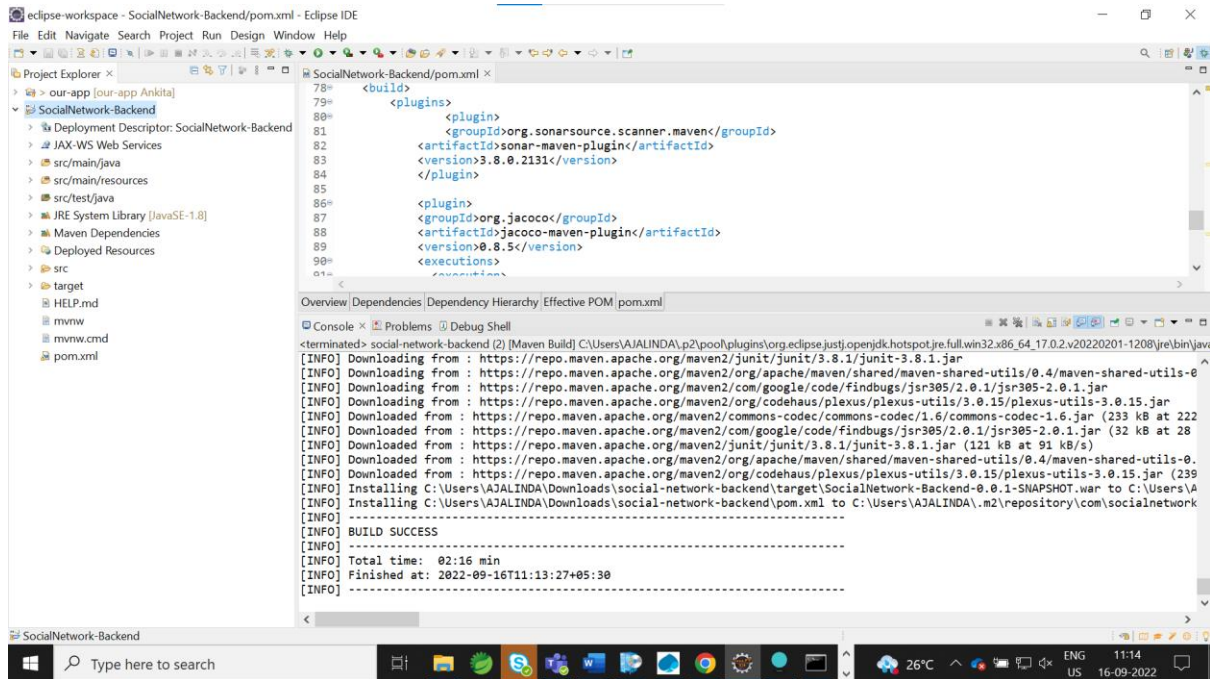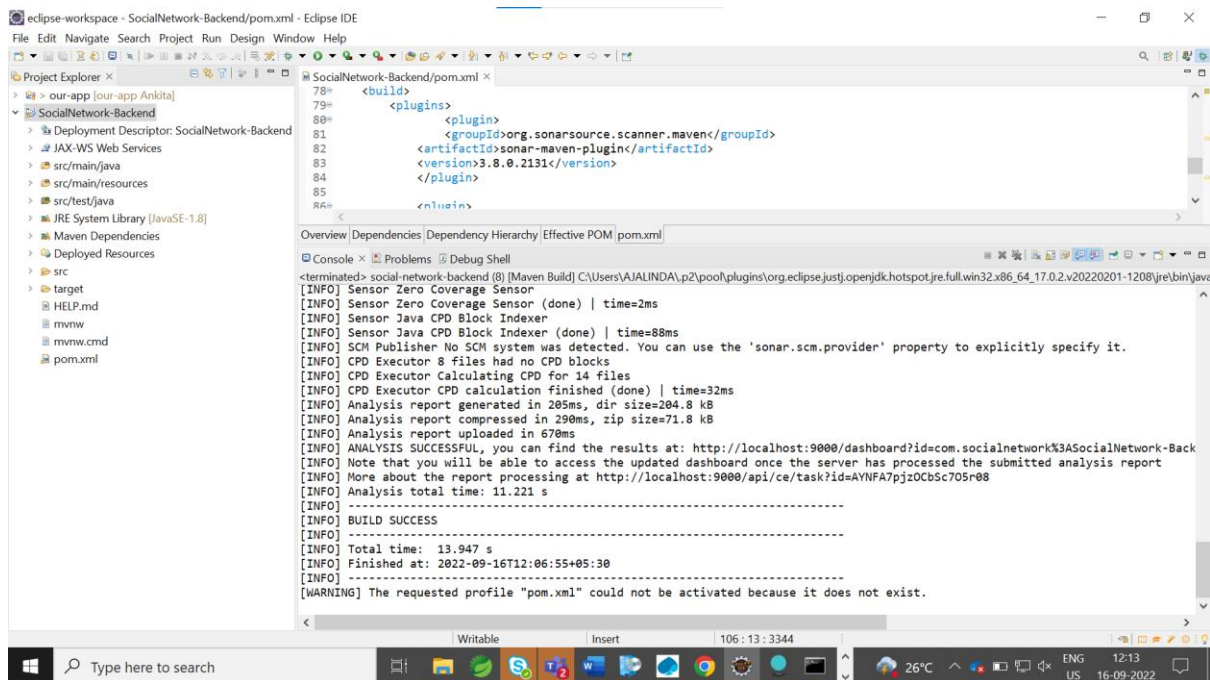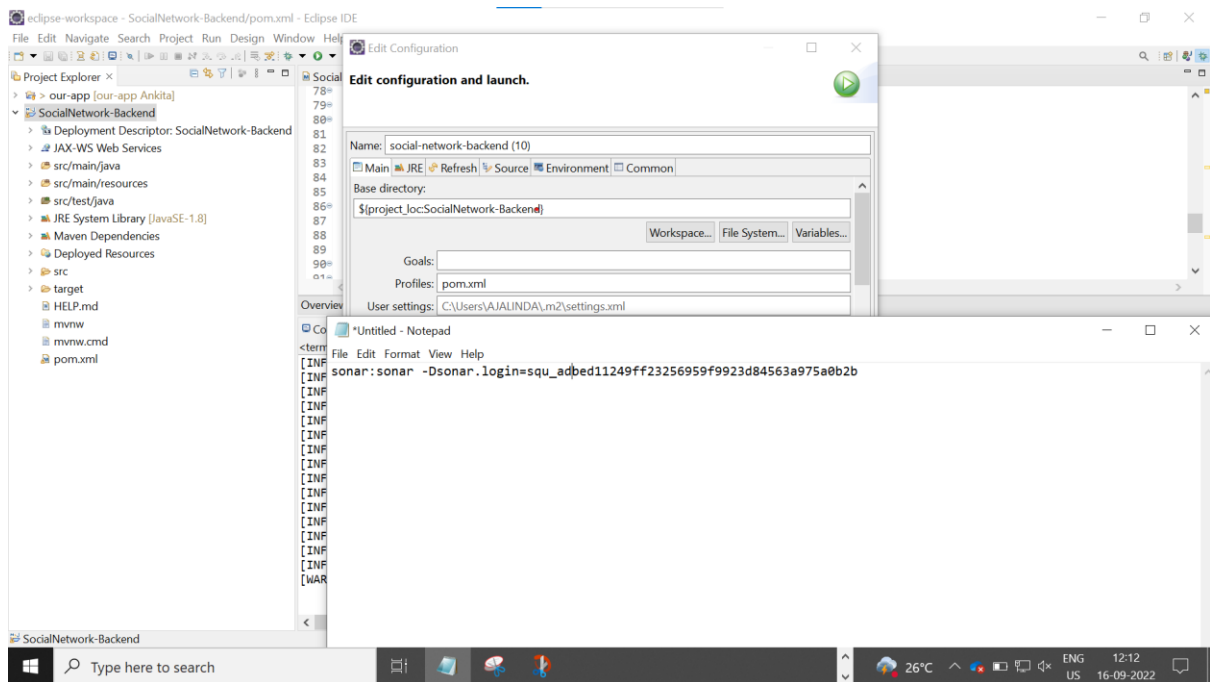
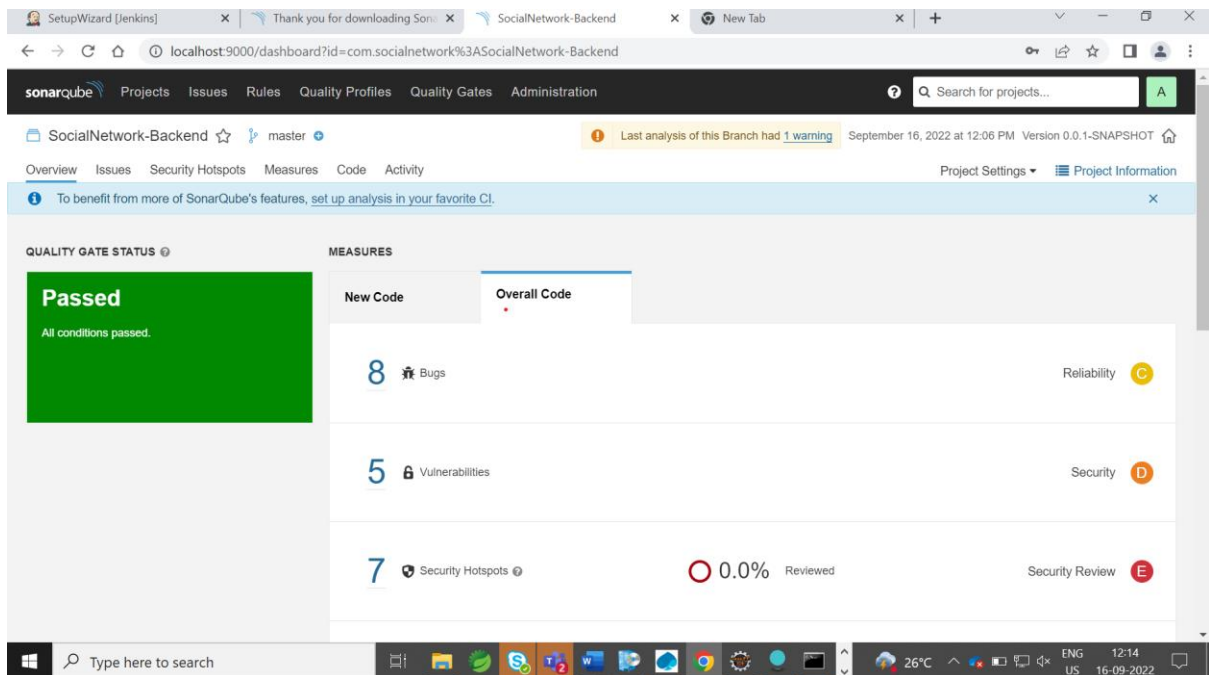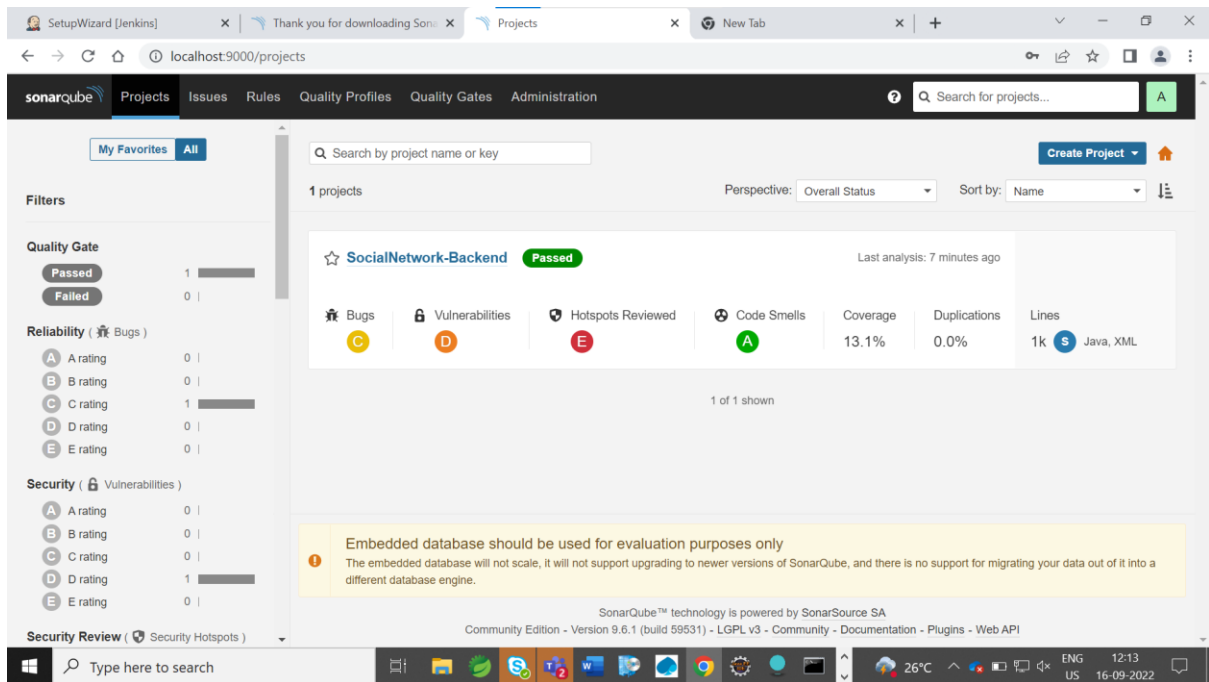open sonar in chrome using localhost:9000

Open security and then generate token like below and copy the generated token use the token in eclipse

In goals text field copy paste the code like below shown format+generated token

After build success open localhost:9000 in there check project

Build passed…