Static Code Analysis Setup

For this exercise, you will be setting up SonarQube to analyze your Java project code and SonarScanner to analyze your TypeScript code.

Install SonarQube

There are 2 options to install SonarQube: **Zip File** or **Docker image**. You will likely have less issues running a Docker image, but this requires an additional install.

Option 1: Zip File Installation

1. Go to https://www.sonarqube.org/downloads/ and download the Community Edition of SonarQube, which is a free version.
2. After download, go to https://docs.sonarqube.org/latest/setup/get-started-2-minutes/ and follow the instructions to run from a zip file:
    a. As a non-root user, unzip it, let's say in C:\sonarqube or /opt/sonarqube.
    b. As a non-root user, start the SonarQube Server:

```
1. # On Windows, execute:
2. C:\sonarqube\bin\windows-x86-64\StartSonar.bat
3.
4. # On other operating systems, as a non-root user execute:
5. /opt/sonarqube/bin/[OS]/sonar.sh console
```

If your instance fails to start, check your logs to find the cause.

Option 2: Docker Image

To install the Docker image, you must first have Docker running on your computer. You can install **Docker Desktop** here:

- Windows - https://hub.docker.com/editions/community/docker-ce-desktop-windows
- Mac - https://docs.docker.com/desktop/mac/install/

Make sure you Docker Desktop running. Open a terminal window and type:

```
docker run -d --name sonarqube -e SONAR_ES_BOOTSTRAP_CHECKS_DISABLE=true -p
9000:9000 sonarqube:latest
```
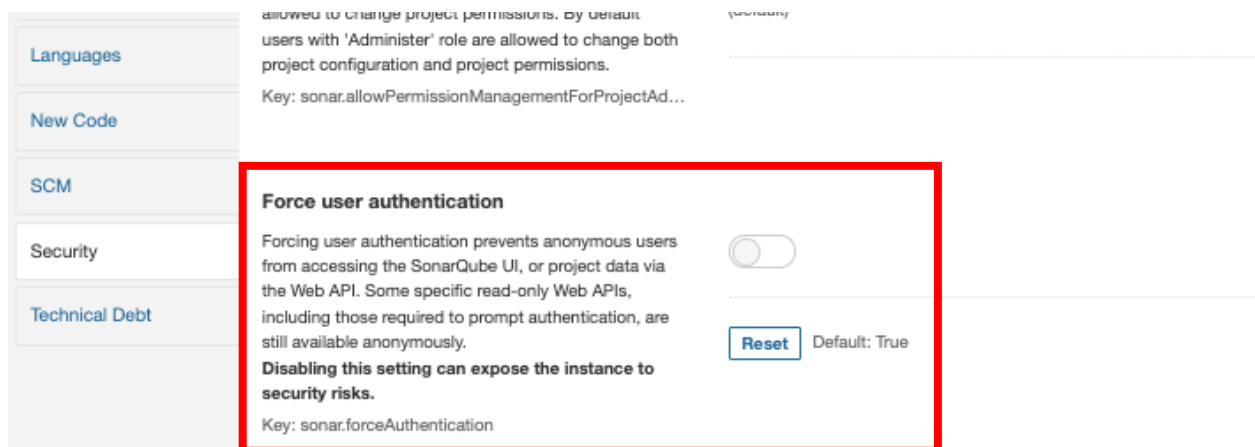
Running SonarQube

Once you have SonarQube installed, log in to http://localhost:9000 with System Administrator credentials (admin/admin) and update your password.

You should see something like this:
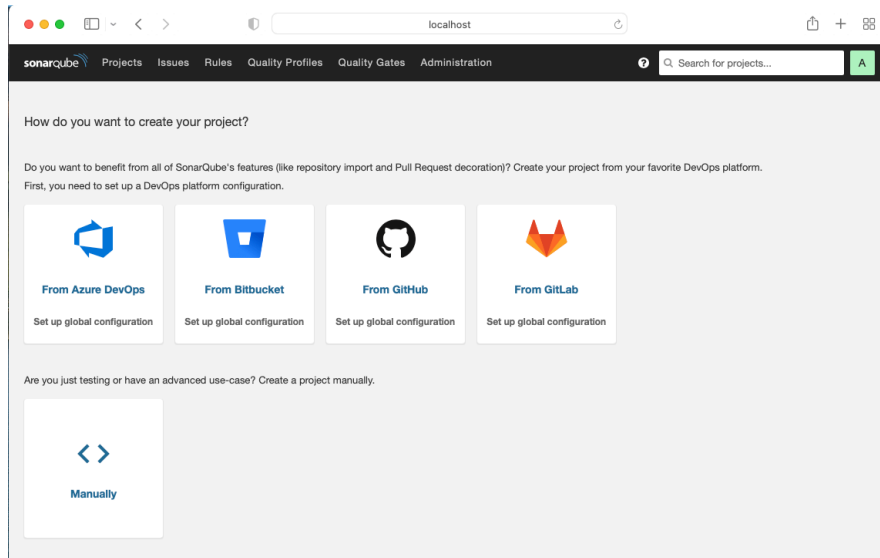
Click **Administration** from the top menu and then click **Security** on the left.

Scroll to the bottom and make sure **Force user authentication** is <u>unchecked</u>. This will allow you to freely run SonarQube without requiring any credentials.

At this point, you are done with installing SonarQube.

Install SonarScanner

1. Go to https://docs.sonarqube.org/latest/analysis/scan/sonarscanner/ and download SonarScanner.
2. Expand the downloaded file into the directory of your choice. We'll refer to it as `$install_directory` in the next steps.
3. Add the `$install_directory/bin` directory to your path.
4. Verify your installation by opening a new shell and executing the command `sonar-scanner -h` (`sonar-scanner.bat -h` on Windows). You should get output like this:

```
usage: sonar-scanner [options]

Options:
 -D,--define <arg>       Define property
 -h,--help               Display help information
 -v,--version            Display version information
 -X,--debug              Produce execution debug output
```

At this point, you are done with installing SonarScanner.

Stopping SonarQube

Option 1: Zip File Installation

To stop SonarQube, follow the instructions here:
https://docs.sonarqube.org/latest/setup/operate-server/

Option 2: Docker Image

To stop SonarQube on Docker, you must first find the container id by typing: `docker ps`

```
mikez@Mikes-MacBook-Pro-2 SWEN261 % docker ps
CONTAINER ID   IMAGE             COMMAND                CREATED        STATUS         PORTS                     NAMES
aba13f6baa38   sonarqube:latest  "/opt/sonarqube/bin/…" 5 minutes ago  Up 5 minutes   0.0.0.0:9000->9000/tcp    sonarqube
```

Next, stop the container by typing: `docker stop [container id]`
```
mikez@Mikes-MacBook-Pro-2 SWEN261 % docker stop aba13f6baa38
aba13f6baa38
```

Lastly, remove the docker container by typing: `docker rm [container id]`
```
mikez@Mikes-MacBook-Pro-2 SWEN261 % docker rm aba13f6baa38
aba13f6baa38
```