# Sonarqube:

SonarQube is a **Code Quality Assurance tool** that collects and analyzes source code, and provides reports for the code quality of your project. It combines static and dynamic analysis tools and enables quality to be measured continually over time.

## History & Origin of SonarQube?

**Simon Brandhof starts developing the Sonar platform by integrating best-of-breed open source tools for Java**. The two of them are joined in September 2007 by Olivier Gaudin, who was enthused by the Sonar platform's vision and starts contributing to it.

Back in **2007**, when first lines of code were created, the founders of SonarQube (originally called Sonar) had a dream to one day provide every developer the ability to measure the code quality of his projects. Their motto: "Continuous Inspection must become mainstream as Continuous Integration".

Covering 27 programming languages, while pairing-up with your existing software pipeline, SonarQube provides clear remediation guidance for developers to understand and fix issues and for teams overall to deliver better, safer software. With over 170,000 deployments, helping small development teams as well as global organizations, SonarQube provides the means for all teams and companies, around the world, to own and impact their Code Quality and Security.

## Why should we use 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.

## What is SonarQube and its features?

SonarQube is a **Code Quality Assurance tool that collects and analyzes source code**, and provides reports for the code quality of your project. … Sonarqube also ensures code reliability, Application security, and reduces technical debt by making your code base clean and maintainable.

## Feature and Advantage of using SonarQube

SonarQube platform **significantly increases the lifetime of applications by reducing complexities, duplications and potential bugs in the code, by keeping neat and clean code architecture and increased unit tests**. SonarQube increases maintainability of the software. It also has the ability to handle changes.

## Benefits of SonarQube

Sustainability – Reduces complexity, possible vulnerabilities, and code duplications, optimising the life of applications.

Increase productivity – Reduces the scale, cost of maintenance, and risk of the application; as such, it removes the need to spend more time changing the code.

## How to Use SonarQube Tool For Code Quality:

1. Step 1: Download and Unzip SonarQube. Prerequisites: Java (Oracle JRE11 or OpenJDK 11 minimum) …

2. Step 2: Run the SonarQube local server. …

3. Step 3: Start a new SonarQube project. …

4. Step 4: Setup Project properties and SonarScanner.

5. Step 5: View your analysis report on Sonar Dashboard

# How SonarQube works aka SonarQube architecture?

1. One SonarQube Server starting 3 main processes:

1. Web Server for developers, managers to browse quality snapshots and configure the SonarQube instance

2. Search Server based on Elasticsearch to back searches from the UI

3. Compute Engine Server in charge of processing code analysis reports and saving them in the SonarQube Database

2. One SonarQube Database to store:

1. the configuration of the SonarQube instance (security, plugins settings, etc.)

2. the quality snapshots of projects, views, etc.

3. Multiple SonarQube Plugins installed on the server, possibly including language, SCM, integration, authentication, and governance plugins

4. One or more SonarScanners running on your Build / Continuous Integration Servers to analyze projects.

```
CodeQuality Tools (SonarQube)

1. Error types
Blocker ✓
Critical ♯
Major
Minor
Info

2. CodeQuality percentage

3. duplicate code

4. Code Coverage (bugs and line number details)

5. this is static Code Analysis
```
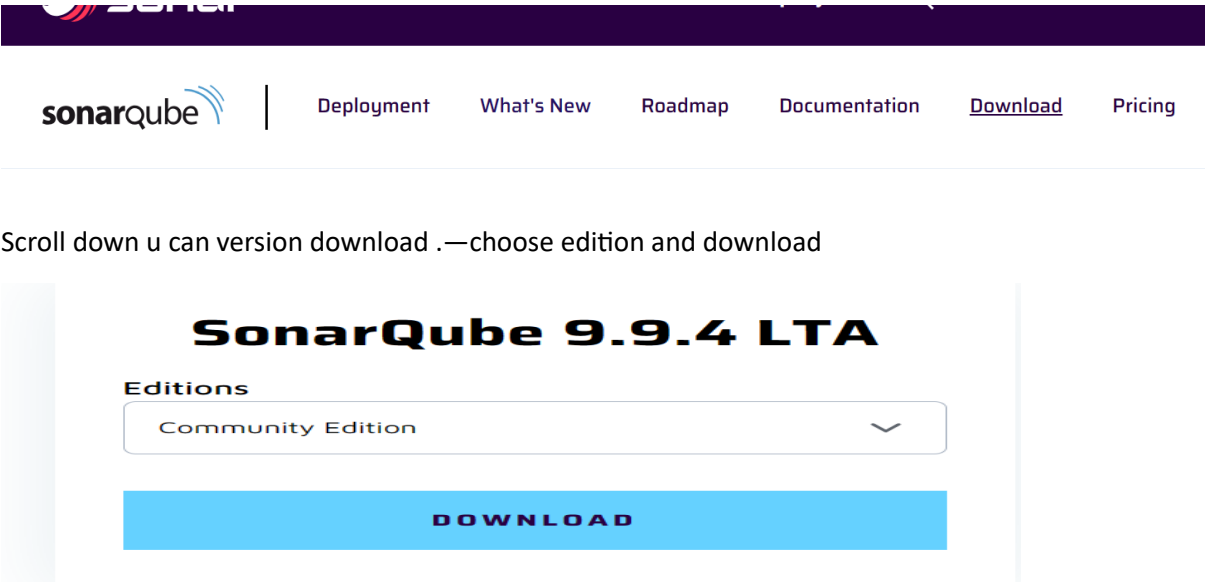
# Installation process :

SonarQube downloaded path  : [Download Previous SonarQube Versions | Sonar (sonarsource.com)](#)        (or)

1.Goto google search sonarQube download  - see first link click it –  downlod  click .



Scroll down u can version download .—choose edition and download



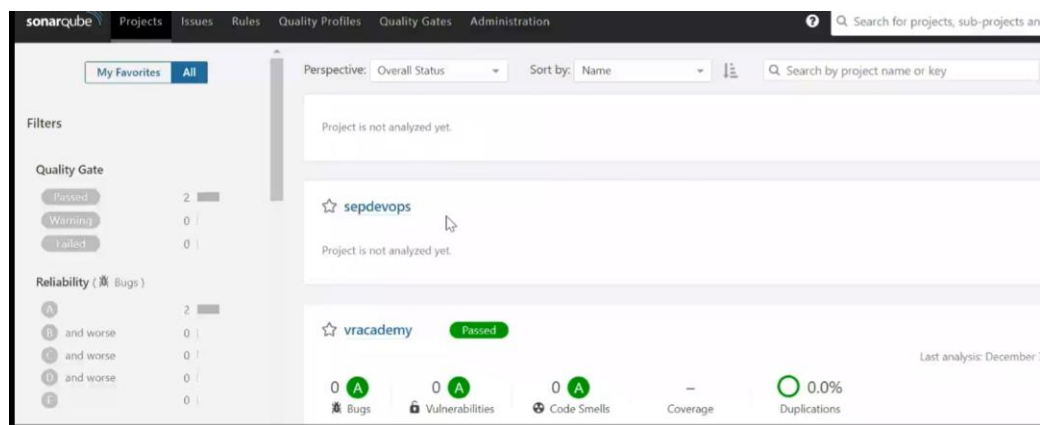After download   -- goto downloads extract that file – u can extract that file open it – open bin – click on windows
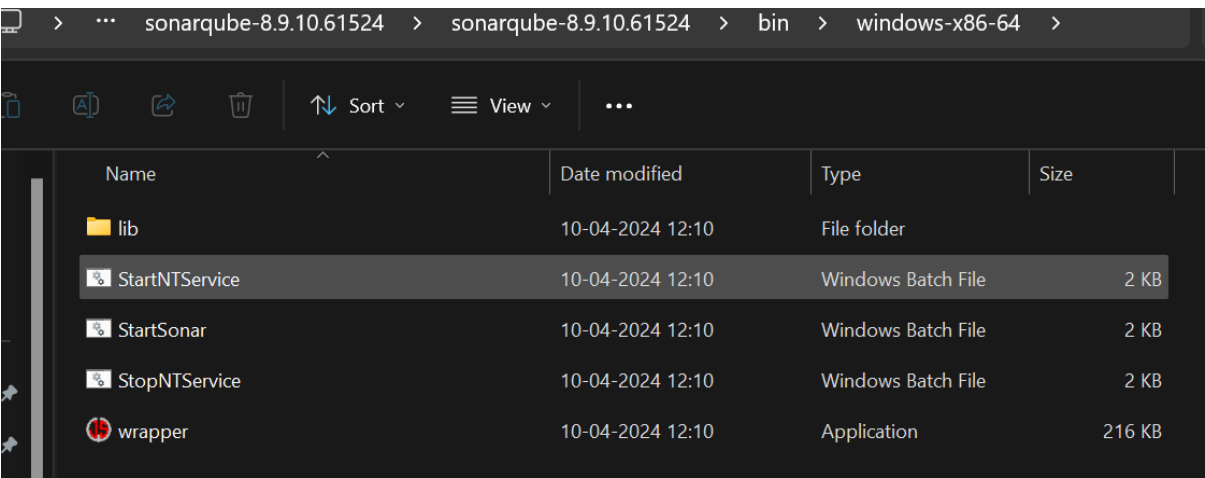


Above images  u can see … now   right click on StartSonar . click on run administration then activate your SonarQube.   Now u can goto browser enter  localhost:9000.

 Default sonar port  localhost:9000


login id: admin    default it ill give

password : admin

After login sonar page displayed above images type.

How to create project in sonarqube :

Goto administration-- select projects – click on managements – right side see create project option click it



give project name          Ex:Facebook

key : facebbok          [ realtime u give your prj]

visible --- public          [ your wish ]

click on create

now u can check project created or not

click on project u can see u created project ……..
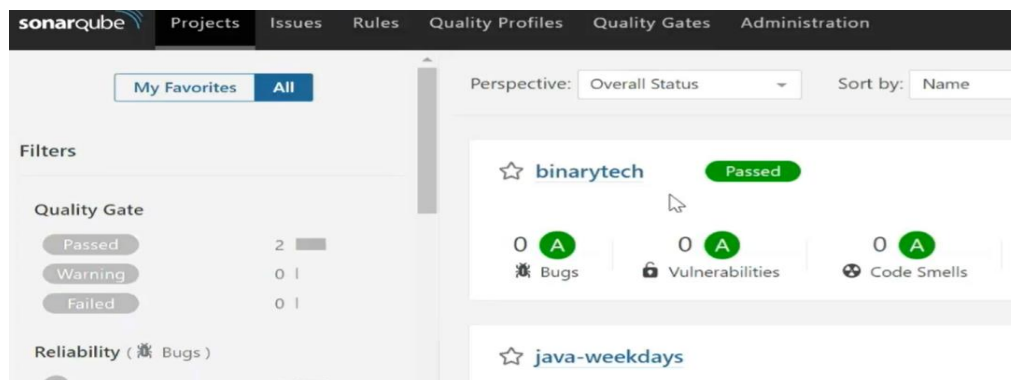


Sonarqube allowed so many languages    . were we see that languages go to rules option u can see all languages rules

Quality profile:   collection of  language rules when ever we have analysis so that time this profile execute based on this profile condition your code will validate.

Here we see what is output we are getting that code quality details it ill displayed here.

Github link: https://github.com/Rajendra2327/Devops-notes.git

**Quality gate:** Quality Gates in SonarQube are the set of conditions a project must meet before it should be pushed to further environments[1]. Quality Gates considers all of the quality metrics for a project and assigns a passed or failed designation for that project.

**How to create quality gate:** in the quality gate we can mention set of conditions this conditions must and meet the our project other wise this stage will fail our job I going to stop here.
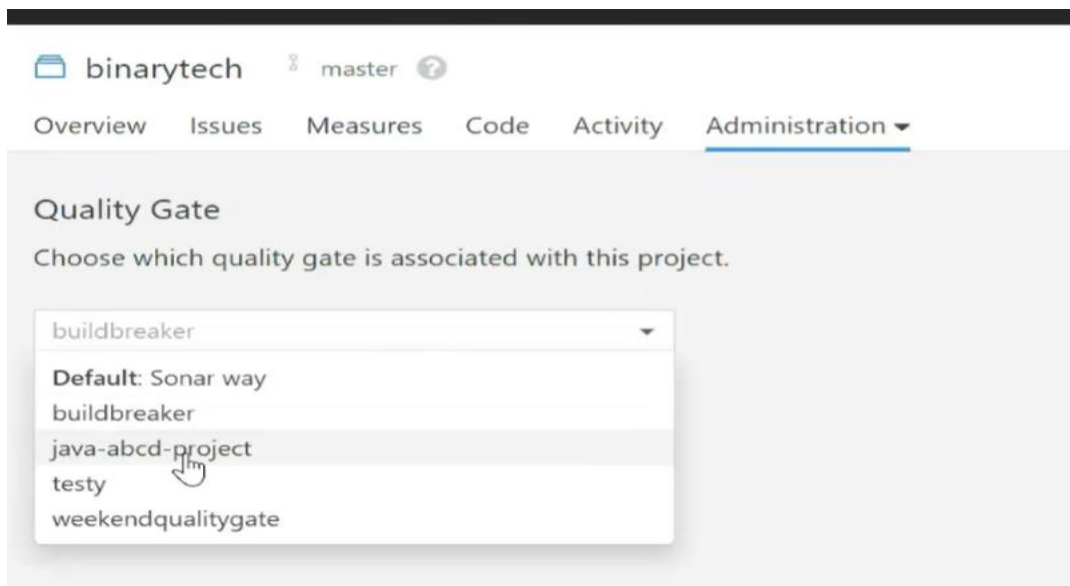
Create quality gate click on create gve the name java -abcd project
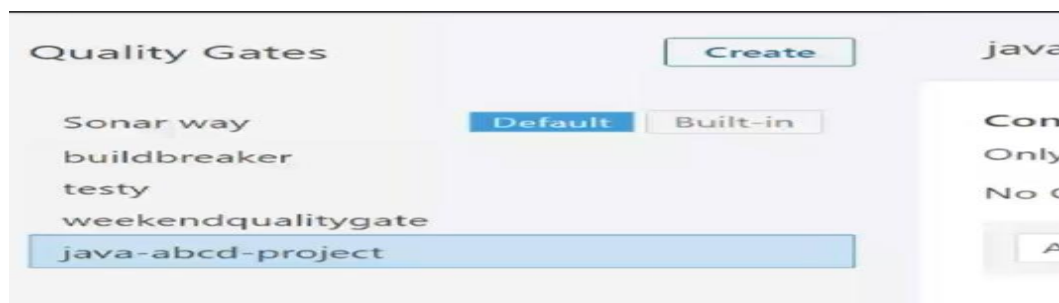


Add the conditions .. what are conditions u needed u can added and give values .



How to attached quality gate in required project : Goto required project – go to project administration- select quality gate – choose your required project and click.
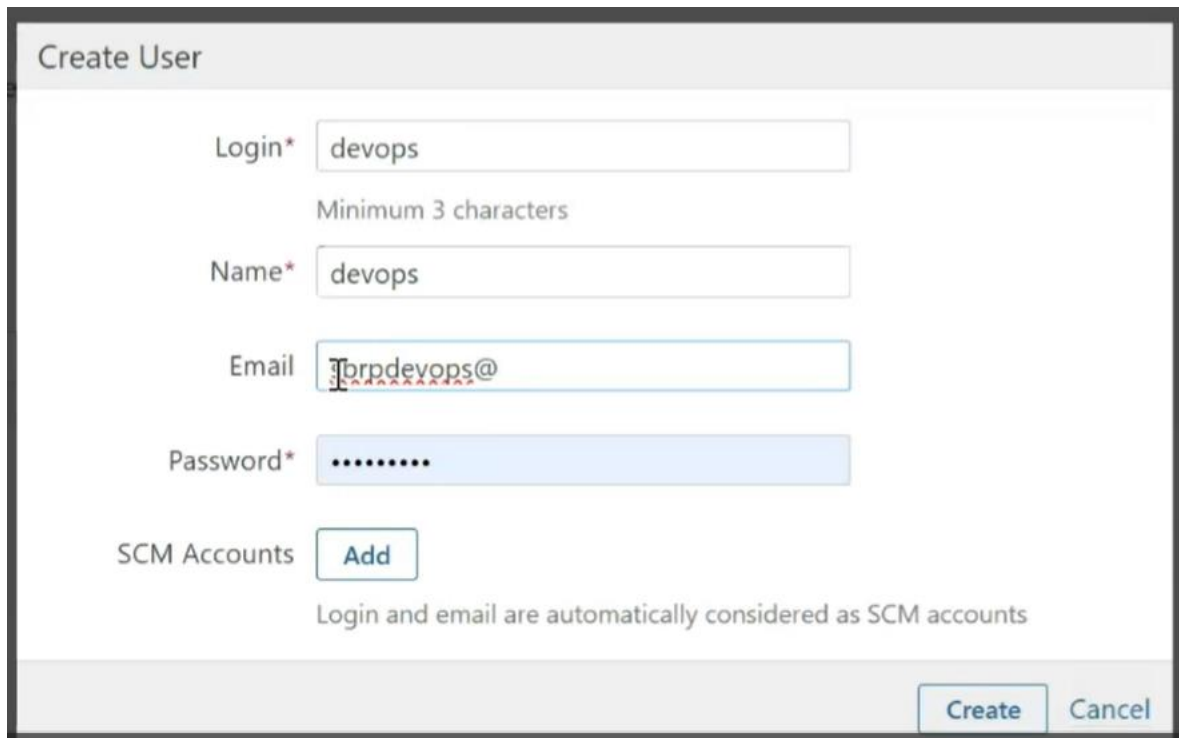
How to install in plugins Sonarqube : goto sonarqube administration -goto market place – choose required plugin click on install.
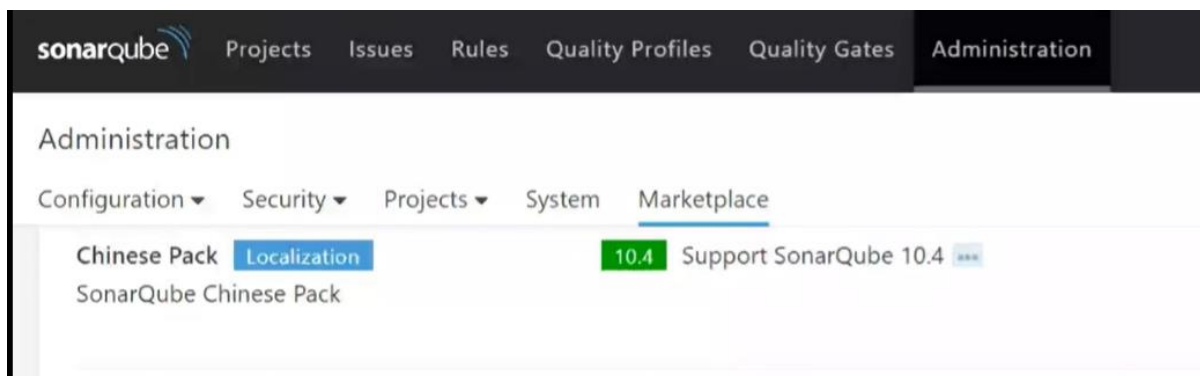


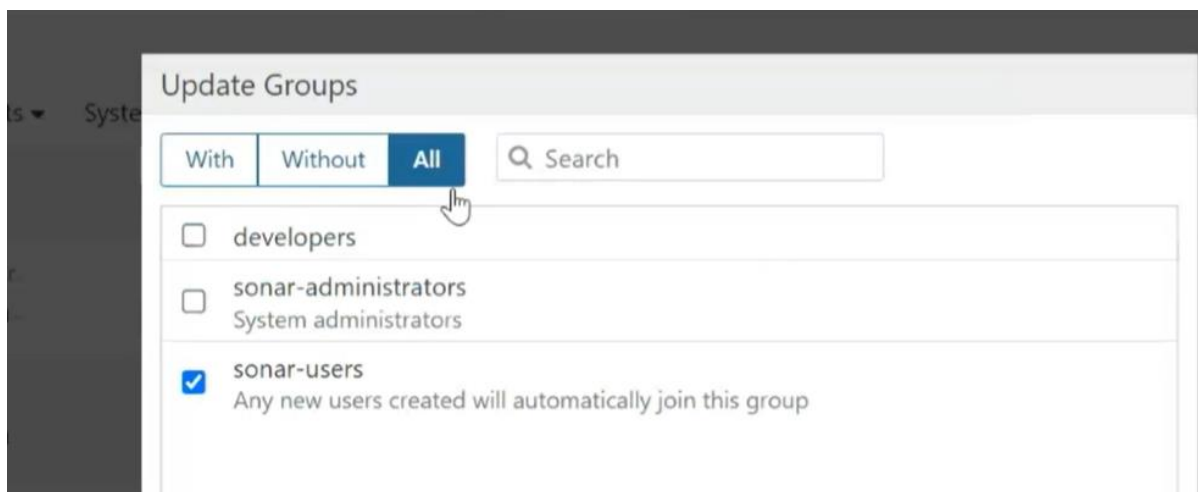Create users &groups: goto sonarqube administration – click on security – click on user
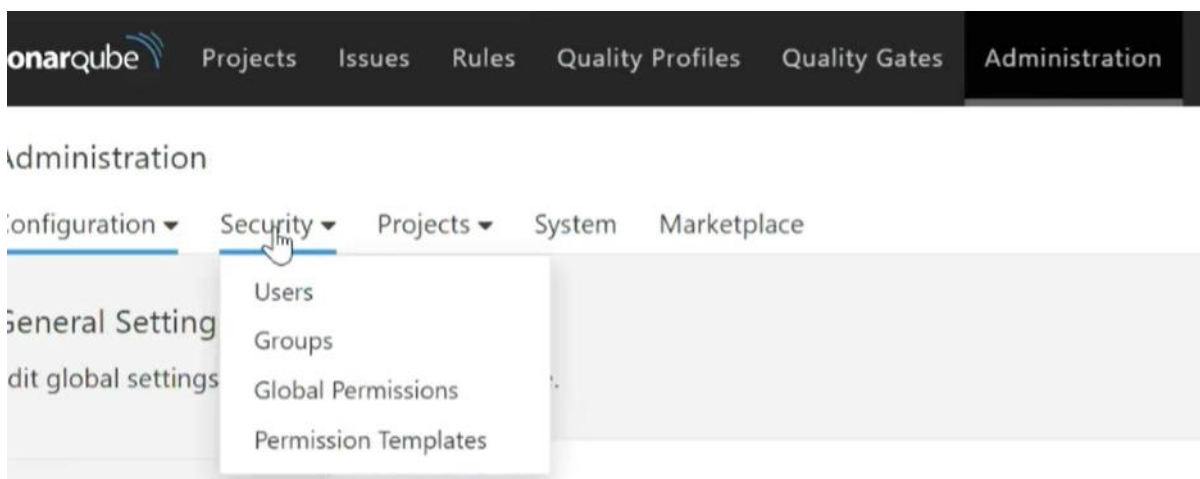


Click on create user – fill the user details

## Create User

| | |
|---|---|
| Login* | devops |
| | Minimum 3 characters |
| Name* | devops |
| Email | Jbrpdevops@ |
| Password* | ••••••••• |
| SCM Accounts | Add |
| | Login and email are automatically considered as SCM accounts |

Create    Cancel

How to give permissions Select user -click on user   -- group icon there click on -  goto  all u see give administration access .

## Update Groups

| With | Without | **All** | Q Search |
|---|---|---|---|

☐ developers

☐ sonar-administrators
System administrators

☑ sonar-users
Any new users created will automatically join this group

Github link:   https://github.com/Rajendra2327/Devops-notes.git