**CI/CD Pipeline for vProfile Project**

**Project Overview**

The **vProfile Project** is a Java-based web application that follows a **CI/CD pipeline** using **Jenkins, Maven, SonarQube, Nexus, and Slack notifications**. This documentation outlines the pipeline setup, integration with tools, and the workflow used to automate build, test, code quality analysis, and artifact deployment.

**CI/CD Pipeline Workflow**

The pipeline consists of the following stages:

1. **Fetch Code**: Clones the repository from GitHub.
2. **Build**: Compiles the application using Maven.
3. **Unit Testing**: Runs automated tests.
4. **Code Analysis (Checkstyle & SonarQube)**: Ensures code quality and security.
5. **Quality Gate Check**: Validates code against SonarQube quality gate.
6. **Upload Artifacts to Nexus**: Stores built artifacts in Nexus Repository.
7. **Slack Notification**: Sends build status notifications to Slack.

**Jenkins Pipeline Configuration**

**Prerequisites**

Ensure the following tools are installed and configured:

* **Jenkins** with required plugins
* **Maven 3.9**
* **JDK 17**
* **SonarQube** (SonarScanner 6.2)
* **Nexus Repository**
* **Slack Notification Plugin**

**Jenkins Pipeline Script (Separate file)  
https://github.com/maheshkoheda/CI-Project**

**SonarQube Configuration**

* Install SonarQube on an EC2 instance.
* Set up **SonarQube Scanner** in Jenkins global tool configuration.
* Define the **SonarQube server** in Jenkins under **Manage Jenkins > Configure System**.

**Nexus Configuration**

* Install Nexus Repository Manager on an EC2 instance.
* Create a new **Maven Repository** in Nexus.
* Configure Jenkins to upload artifacts using the **Nexus Artifact Uploader Plugin**.

**Screenshots**

(Add screenshots here for each stage: Jenkins console logs, SonarQube analysis results, Nexus repository artifacts, and Slack notifications.)

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Create and configure a quality gate for our repo in sonarqube

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Create a Jenkins web hook for sonarqube

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Create a new maven repo in Nexus to upload artifacts

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Integrating Jenkins to slack channel

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