Jenkins Tasks - 04

- Setup Jenkins CICD pipeline using freestyle job using Docker containers using below code.

Source Code: https://github.com/betawins/hiring-app.git

Stages:

- **Git Clone**

```
jenkins@881f212cdcf4:~/workspace$ ls
Project-01
jenkins@881f212cdcf4:~/workspace$ cd Project-01/
jenkins@881f212cdcf4:~/workspace/Project-01$ ls
 Dockerfile   Jenkinsfile   README.md  'Untitled Diagram.drawio'   jenkinsfile-cicd   pom.xml   src   target
jenkins@881f212cdcf4:~/workspace/Project-01$ 
```

- **SonarQube Integration**

☆ **Test** PUBLIC   ✔ Passed

Last analysis: 3 minutes ago • **45** Lines of Code • XML, Docker, …

Ⓐ 0	Ⓒ 3	Ⓐ 0	Ⓔ 0.0%	—	● 0.0%
Security	Reliability	Maintainability	Hotspots Reviewed	Coverage	Duplications

1 of 1 shown

- **Maven Compilation**

```
 Dockerfile   Jenkinsfile   README.md  'Untitled Diagram.drawio'   jenkinsfile-cicd   pom.xml   src   target
jenkins@881f212cdcf4:~/workspace/Project-01$ cd target/
jenkins@881f212cdcf4:~/workspace/Project-01/target$ ls
hiring   hiring.war   maven-archiver
jenkins@881f212cdcf4:~/workspace/Project-01/target$ 
```

- **Nexus Artifactory**

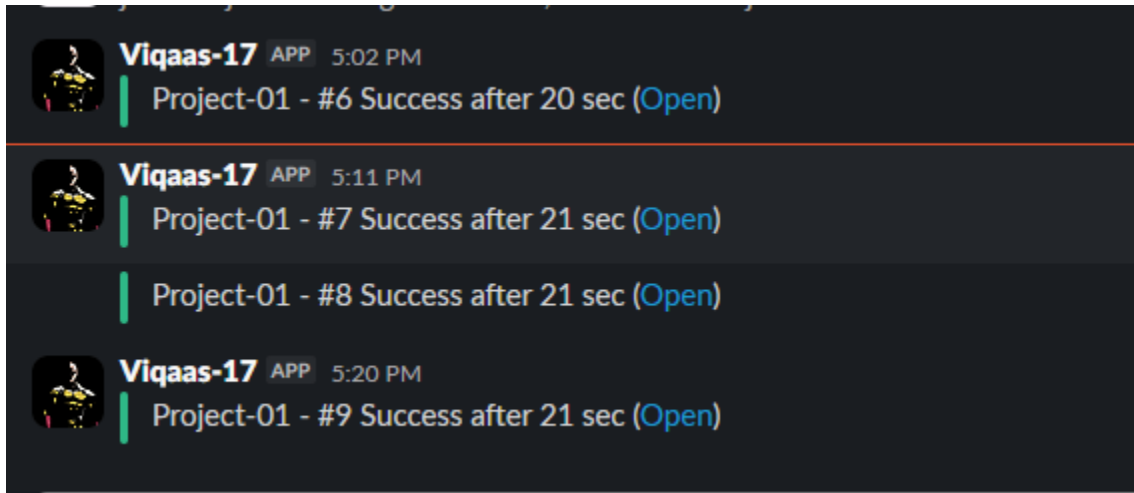🗄 **Browse** / 🗄 Project-01

⬆ Upload component | HTML View

- 📂 in
  - 📂 javahome
    - 📂 hiring
      - 🔒 0.1
        - 📄 hiring-0.1.war
        - 📄 hiring-0.1.war.md5
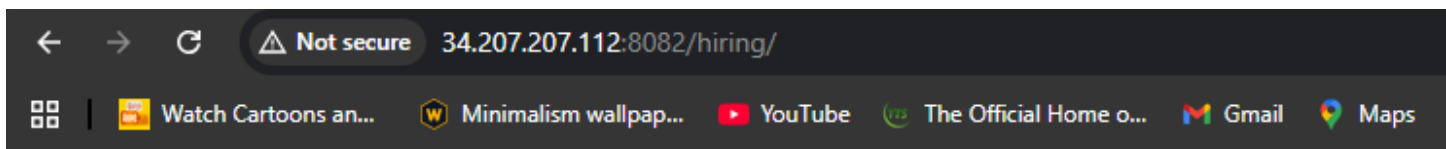   - 📄 hiring-0.1.war.sha1

- **Slack Notification**

Jenkins Tasks - 04

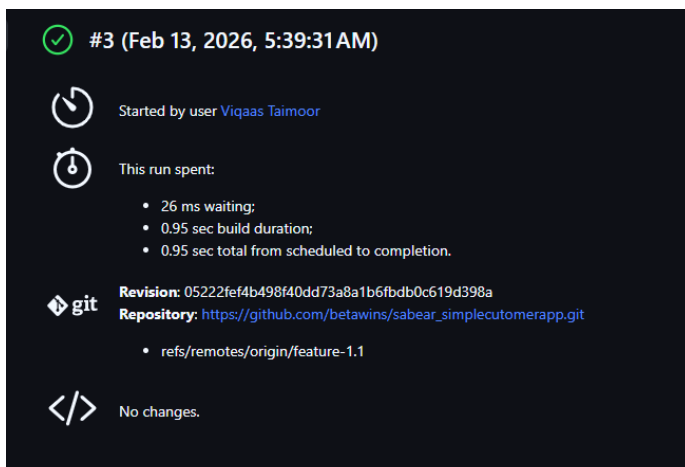- **Deploy On tomcat**

2) Setup a Jenkins CICD pipeline using Declarative pipeline using feature-1.1 branch.

Source Code: https://github.com/betawins/sabear_simplecutomerapp/tree/feature-1.1

stages:

- **Git Clone**

Jenkins Tasks - 04

```
jenkins@881f212cdcf4:~/workspace/Project-02$ ls
Jenkinsfile  Service-API.dockerfile  WebContent  XMLSave.txt  build  build.xml  pom.xml  sonar-project.properties  src  target
jenkins@881f212cdcf4:~/workspace/Project-02$
```

- **SonarQube Integration**

```
[INFO] 05:58:02.010 Analysis report uploaded in 163ms
[INFO] 05:58:02.012 ANALYSIS SUCCESSFUL, you can find the results at: http://3.88.107.160:9000/dashboard?id=com.javatpoint%3ASimpleCustomerApp
[INFO] 05:58:02.012 Note that you will be able to access the updated dashboard once the server has processed the submitted analysis report
[INFO] 05:58:02.012 More about the report processing at http://3.88.107.160:9000/api/ce/task?id=edc8383e-866d-46d7-865e-8d2709cdd570
[INFO] 05:58:02.025 Analysis total time: 4.370 s
[INFO] ------------------------------------------------------------------------
[INFO] BUILD SUCCESS
[INFO] ------------------------------------------------------------------------
[INFO] Total time:  9.831 s
[INFO] Finished at: 2026-02-13T05:58:02Z
[INFO] ------------------------------------------------------------------------
[Pipeline] }
[Pipeline] // withSonarQubeEnv
[Pipeline] }
[Pipeline] // stage
[Pipeline] }
[Pipeline] // node
[Pipeline] End of Pipeline
Finished: SUCCESS
```

☆ **SimpleCustomerApp** PUBLIC   ✔ Passed

Last analysis: 2 minutes ago · **28** Lines of Code · XML

A 0	A 0	A 0	A —	—	● 0.0%
Security	Reliability	Maintainability	Hotspots Reviewed	Coverage	Duplications

- **Maven Compilation**

```
[INFO] Packaging webapp
[INFO] Assembling webapp [SimpleCustomerApp] in [/var/jenkins_home/workspace/test/target/SimpleCustomerApp-11-SNAPSHOT]
[INFO] Processing war project
[INFO] Building war: /var/jenkins_home/workspace/test/target/SimpleCustomerApp-11-SNAPSHOT.war
[INFO]
[INFO] --- install:3.1.2:install (default-install) @ SimpleCustomerApp ---
[INFO] Installing /var/jenkins_home/workspace/test/pom.xml to /var/jenkins_home/.m2/repository/com/javatpoint/SimpleCustomerApp/11-SNAPSHOT/SimpleCustomer
[INFO] Installing /var/jenkins_home/workspace/test/target/SimpleCustomerApp-11-SNAPSHOT.war to /var/jenkins_home/.m2/repository/com/javatpoint/SimpleCusto
SNAPSHOT/SimpleCustomerApp-11-SNAPSHOT.war
[INFO] ------------------------------------------------------------------------
[INFO] BUILD SUCCESS
[INFO] ------------------------------------------------------------------------
[INFO] Total time:  5.894 s
[INFO] Finished at: 2026-02-13T06:08:10Z
[INFO] ------------------------------------------------------------------------
[Pipeline] }
[Pipeline] // stage
[Pipeline] }
[Pipeline] // node
[Pipeline] End of Pipeline
Finished: SUCCESS
```
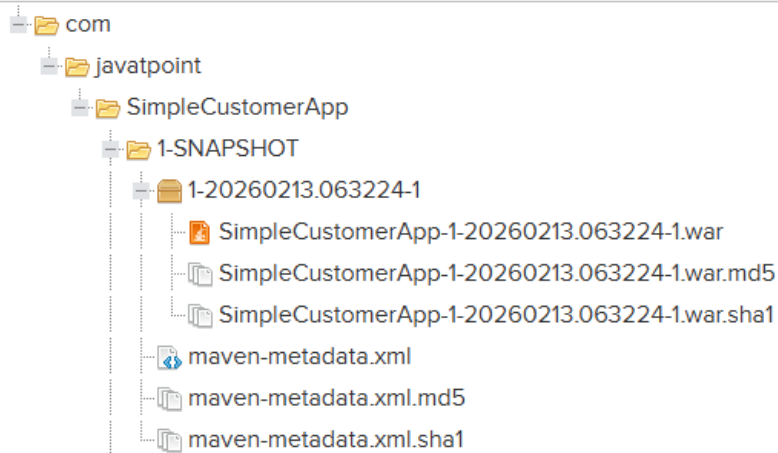
```
jenkins@881f212cdcf4:~/workspace/Project-02/target$ ls
SimpleCustomerApp-1-SNAPSHOT   SimpleCustomerApp-1-SNAPSHOT.war   maven-archiver
jenkins@881f212cdcf4:~/workspace/Project-02/target$
```
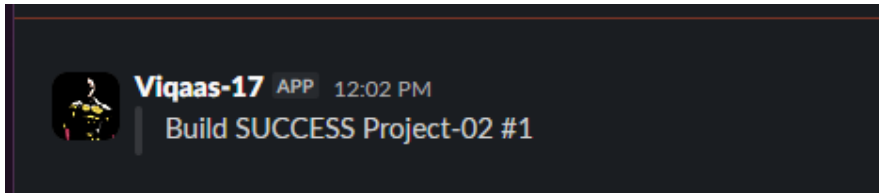
- **Nexus Artifactory**

```
Uploading artifact SimpleCustomerApp-13-SNAPSHOT.war started....
GroupId: com.javatpoint
ArtifactId: SimpleCustomerApp
Classifier:
Type: war
Version: 13-SNAPSHOT
File: SimpleCustomerApp-13-SNAPSHOT.war
Repository:Project-02
Downloading: http://52.207.98.83:8081/repository/Project-02/com/javatpoint/SimpleCustomerApp/13-SNAPSHOT/maven-metadata.xml
Uploading: http://52.207.98.83:8081/repository/Project-02/com/javatpoint/SimpleCustomerApp/13-SNAPSHOT/SimpleCustomerApp-13-20260213.061438-1.war
100 % completed (1.4 kB / 1.4 kB).
Uploaded: http://52.207.98.83:8081/repository/Project-02/com/javatpoint/SimpleCustomerApp/13-SNAPSHOT/SimpleCustomerApp-13-20260213.061438-1.war (1.4 kB at 20 kB/s)
Uploading: http://52.207.98.83:8081/repository/Project-02/com/javatpoint/SimpleCustomerApp/13-SNAPSHOT/maven-metadata.xml
Uploaded: http://52.207.98.83:8081/repository/Project-02/com/javatpoint/SimpleCustomerApp/13-SNAPSHOT/maven-metadata.xml (602 B at 2.9 kB/s)
Uploading artifact SimpleCustomerApp-13-SNAPSHOT.war completed.
[Pipeline] }
[Pipeline] // stage
[Pipeline] }
[Pipeline] // node
[Pipeline] End of Pipeline
Finished: SUCCESS
```

-
HTML View

```
com
  javatpoint
    SimpleCustomerApp
      1-SNAPSHOT
        1-20260213.063224-1
          SimpleCustomerApp-1-20260213.063224-1.war
          SimpleCustomerApp-1-20260213.063224-1.war.md5
          SimpleCustomerApp-1-20260213.063224-1.war.sha1
        maven-metadata.xml
        maven-metadata.xml.md5
        maven-metadata.xml.sha1
```

-
- **Slack Notification**

Viqaas-17 **APP** 12:02 PM
Build SUCCESS Project-02 #1

-
- **Deploy On tomcat**

```
Type: war
Version: 15-SNAPSHOT
File: SimpleCustomerApp-15-SNAPSHOT.war
Repository:Project-02
Downloading: http://52.207.98.83:8081/repository/Project-02/com/javatpoint/SimpleCustomerApp/15-SNAPSHOT/maven-metadata.xml
Uploading: http://52.207.98.83:8081/repository/Project-02/com/javatpoint/SimpleCustomerApp/15-SNAPSHOT/SimpleCustomerApp-15-20260213.061838-1.war
100 % completed (1.4 kB / 1.4 kB).
Uploaded: http://52.207.98.83:8081/repository/Project-02/com/javatpoint/SimpleCustomerApp/15-SNAPSHOT/SimpleCustomerApp-15-20260213.061838-1.war (1.4 kB at 29 kB/s)
Uploading: http://52.207.98.83:8081/repository/Project-02/com/javatpoint/SimpleCustomerApp/15-SNAPSHOT/maven-metadata.xml
Uploaded: http://52.207.98.83:8081/repository/Project-02/com/javatpoint/SimpleCustomerApp/15-SNAPSHOT/maven-metadata.xml (602 B at 13 kB/s)
Uploading artifact SimpleCustomerApp-15-SNAPSHOT.war completed.
[Pipeline] }
[Pipeline] // stage
[Pipeline] stage
[Pipeline] { (Deploy On Tomcat)
[Pipeline] sh
+ docker cp target/SimpleCustomerApp-15-SNAPSHOT.war tomcat-container:/usr/local/tomcat/webapps/
[Pipeline] }
[Pipeline] // stage
[Pipeline] }
[Pipeline] // node
[Pipeline] End of Pipeline
Finished: SUCCESS
```

-

Not secure 34.207.207.112:8082/SimpleCustomerApp-2-SNAPSHOT/

| Watch Cartoons an... | Minimalism wallpap... | YouTube | The Official Home o... | Gmail | Maps | Viqaas Taimoor's ac... | Dashboard | Simultrain® 12 | pr... | Dashboard - Flemin...

HOME   APPLY NOW   LEARNING

1 Your basic info

Full Name:

Email:

Password:

-

3) Setup a Jenkins CICD pipeline using Scripted pipeline using feature-1.1 branch.
Source Code: https://github.com/betawins/sabear_simplecutomerapp/tree/feature-1.1
stages:

- **Git Clone**

Jenkins Tasks - 04

```
Avoid second fetch
 > git rev-parse refs/remotes/origin/feature-1.1^{commit} # timeout=10
Checking out Revision 05222fef4b498f40dd73a8a1b6fbdb0c619d398a (refs/remotes/origin/feature-1.1)
 > git config core.sparsecheckout # timeout=10
 > git checkout -f 05222fef4b498f40dd73a8a1b6fbdb0c619d398a # timeout=10
 > git branch -a -v --no-abbrev # timeout=10
 > git checkout -b feature-1.1 05222fef4b498f40dd73a8a1b6fbdb0c619d398a # timeout=10
Commit message: "Update pom.xml"
First time build. Skipping changelog.
[Pipeline] }
[Pipeline] // stage
[Pipeline] }
[Pipeline] // node
[Pipeline] End of Pipeline
Finished: SUCCESS
```

-

```
jenkins@881f212cdcf4:~/workspace/Project-03$ ls
Jenkinsfile  Service-API.dockerfile  WebContent  XMLSave.txt  build  build.xml  pom.xml  sonar-project.properties  src  target
```

-

- **SonarQube Integration**

☆ **SimpleCustomerApp** PUBLIC   ✔ Passed

Last analysis: 2 minutes ago • **28** Lines of Code • XML

| A 0 | A 0 | A 0 | A — | — | • 0.0% |
| Security | Reliability | Maintainability | Hotspots Reviewed | Coverage | Duplications |

-

```
[1;34mINFO[m 06:46:53.285 ANALYSIS SUCCESSFUL, you can find the results at: http://3.88.107.160:9000/dashboard?id=com.javatpoint%3ASimpleCustomerApp
[1;34mINFO[m 06:46:53.285 Note that you will be able to access the updated dashboard once the server has processed the submitted analysis report
[1;34mINFO[m 06:46:53.285 More about the report processing at http://3.88.107.160:9000/api/ce/task?id=985dbd69-ea62-4614-9990-a2bfa2b79ac3
[1;34mINFO[m 06:46:53.297 Analysis total time: 3.983 s
[1;34mINFO[m [1m-------------------------------------------------------------[m
[1;34mINFO[m [1;32mBUILD SUCCESS[m
[1;34mINFO[m [1m-------------------------------------------------------------[m
[1;34mINFO[m Total time:  7.211 s
[1;34mINFO[m Finished at: 2026-02-13T06:46:53Z
[1;34mINFO[m [1m-------------------------------------------------------------[m
[Pipeline] }
[Pipeline] // withSonarQubeEnv
[Pipeline] }
[Pipeline] // stage
[Pipeline] }
[Pipeline] // node
[Pipeline] End of Pipeline
Finished: SUCCESS
```
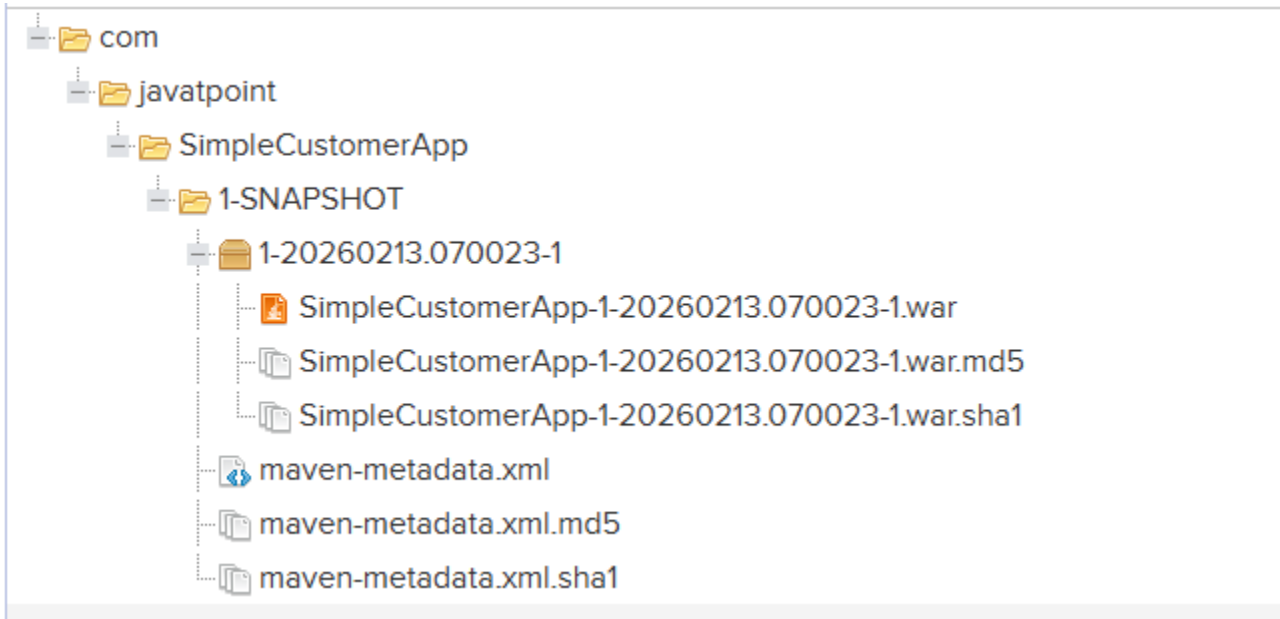
-

- **Maven Compilation**

```
[0[1;34mINFO0[m] Assembling webapp [SimpleCustomerApp] in [/var/jenkins_home/workspace/Test-02/target/SimpleCustomerApp-5-SNAPSHOT]
[0[1;34mINFO0[m] Processing war project
[0[1;34mINFO0[m] Building war: /var/jenkins_home/workspace/Test-02/target/SimpleCustomerApp-5-SNAPSHOT.war
[0[1;34mINFO0[m]
[0[1;34mINFO0[m] 0[1m--- 0[0;32minstall:3.1.2:install0[m 0[1m(default-install)0[m @ 0[36mSimpleCustomerApp0[0;1m ---0[m
[0[1;34mINFO0[m] Installing /var/jenkins_home/workspace/Test-02/pom.xml to /var/jenkins_home/.m2/repository/com/javatpoint/SimpleCustomerApp/5-SNAPSHOT/SimpleCustomerApp-5-SNAPSHOT.pom
[0[1;34mINFO0[m] Installing /var/jenkins_home/workspace/Test-02/target/SimpleCustomerApp-5-SNAPSHOT.war to /var/jenkins_home/.m2/repository/com/javatpoint/SimpleCustomerApp/5-
SNAPSHOT/SimpleCustomerApp-5-SNAPSHOT.war
[0[1;34mINFO0[m] 0[1m------------------------------------------------------------------------0[m
[0[1;34mINFO0[m] 0[1;32mBUILD SUCCESS0[m
[0[1;34mINFO0[m] 0[1m------------------------------------------------------------------------0[m
[0[1;34mINFO0[m] Total time:  2.329 s
[0[1;34mINFO0[m] Finished at: 2026-02-13T06:47:49Z
[0[1;34mINFO0[m] 0[1m------------------------------------------------------------------------0[m
[Pipeline] }
[Pipeline] // stage
[Pipeline] }
[Pipeline] // node
[Pipeline] End of Pipeline
Finished: SUCCESS
```

```
jenkins@881f212cdcf4:~/workspace/Project-03/target$ ls
SimpleCustomerApp-1-SNAPSHOT   SimpleCustomerApp-1-SNAPSHOT.war   maven-archiver
jenkins@881f212cdcf4:~/workspace/Project-03/target$
```
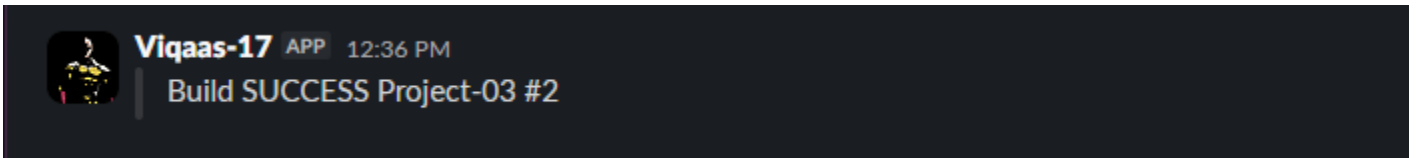
- **Nexus Artifactory**

```
Uploading artifact SimpleCustomerApp-6-SNAPSHOT.war started....
GroupId: com.javatpoint
ArtifactId: SimpleCustomerApp
Classifier:
Type: war
Version: 6-SNAPSHOT
File: SimpleCustomerApp-6-SNAPSHOT.war
Repository:Project-02
Downloading: http://52.207.98.83:8081/repository/Project-02/com/javatpoint/SimpleCustomerApp/6-SNAPSHOT/maven-metadata.xml
Uploading: http://52.207.98.83:8081/repository/Project-02/com/javatpoint/SimpleCustomerApp/6-SNAPSHOT/SimpleCustomerApp-6-20260213.064912-1.war
100 % completed (1.4 kB / 1.4 kB).
Uploaded: http://52.207.98.83:8081/repository/Project-02/com/javatpoint/SimpleCustomerApp/6-SNAPSHOT/SimpleCustomerApp-6-20260213.064912-1.war (1.4 kB at 32 kB/s)
Uploading: http://52.207.98.83:8081/repository/Project-02/com/javatpoint/SimpleCustomerApp/6-SNAPSHOT/maven-metadata.xml
Uploaded: http://52.207.98.83:8081/repository/Project-02/com/javatpoint/SimpleCustomerApp/6-SNAPSHOT/maven-metadata.xml (600 B at 14 kB/s)
Uploading artifact SimpleCustomerApp-6-SNAPSHOT.war completed.
[Pipeline] }
[Pipeline] // stage
[Pipeline] }
[Pipeline] // node
[Pipeline] End of Pipeline
Finished: SUCCESS
```
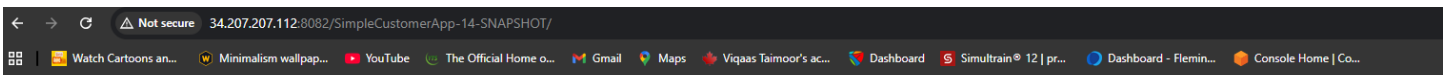
Jenkins Tasks - 04

-
- **Slack Notification**

-
- **Deploy On tomcat**

-

4) Write a sample skeleton of pipelines.

Jenkins Tasks - 04

- **Descriptive Pipeline:**

```
pipeline {

  agent any


  stages {


    stage('Git Clone') {

      steps {

        echo 'Clone code from repository'

      }

    }


    stage('SonarQube Integration') {

      steps {

        echo 'Run code quality analysis'

      }

    }


    stage('Maven Compilation') {

      steps {

        echo 'Build application using Maven'

      }

    }


    stage('Nexus Artifactory') {

      steps {
```

```
        echo 'Upload artifact to Nexus'

      }

    }


    stage('Deploy On Tomcat') {

      steps {

        echo 'Deploy WAR to Tomcat'

      }

    }


  }


  post {

    success {

      echo 'Send success notification'

    }

    failure {

      echo 'Send failure notification'

    }

  }

}
```

- A Declarative pipeline uses a predefined structured syntax with blocks like **pipeline**, **agent**, **stages**, and **steps**. It is easier to read, safer for beginners, and provides built-in lifecycle handling such as post actions for success or failure. This format is widely used for standard CI/CD workflows because it enforces consistency and reduces scripting errors.

Jenkins Tasks - 04

Jenkins Tasks - 04

- **Scripted Pipeline:**

```groovy
node {

  try {

    stage('Git Clone') {
      echo 'Clone code from repository'
    }

    stage('SonarQube Integration') {
      echo 'Run code quality analysis'
    }

    stage('Maven Compilation') {
      echo 'Build application using Maven'
    }

    stage('Nexus Artifactory') {
      echo 'Upload artifact to Nexus'
    }

    stage('Deploy On Tomcat') {
      echo 'Deploy WAR to Tomcat'
    }

    echo 'Send success notification'

  } catch (err) {

    echo 'Send failure notification'
    throw err
  }
}
```

- A Scripted pipeline is written using Groovy code inside a node {} block, allowing full programming flexibility. Instead of predefined sections like Declarative pipelines, stages and logic are manually controlled, often using try–catch for error handling. This approach is useful when pipelines require dynamic behavior, loops, or complex decision-making.

Jenkins Tasks - 04

- Declarative pipelines focus on simplicity and structure, making them ideal for predictable CI/CD flows, while scripted pipelines provide low-level control using Groovy, allowing engineers to implement complex logic and dynamic pipeline behavior.
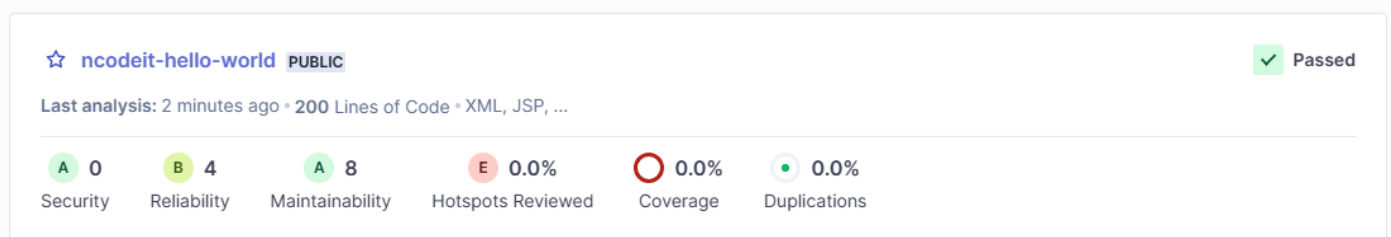
5) Create a parameterized job in Jenkins.

Source Code: https://github.com/betawins/spring3-mvc-maven-xml-hello-world-1.git

- Git

```
jenkins@881f212cdcf4:~/workspace/Project-04$ ls
Jenkinsfile  Jenkinsfile_parameterized  Jenkinsfile_scriptbased  LICENSE  README.md  Run_jenkins_job.md  pom.xml  src  targe
jenkins@881f212cdcf4:~/workspace/Project-04$
```
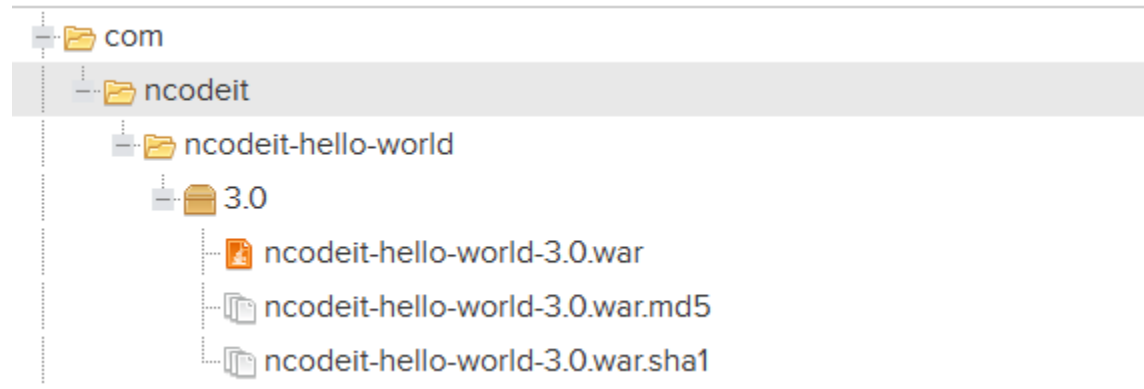
- SonarQube

☆ ncodeit-hello-world **PUBLIC**   ✔ **Passed**

Last analysis: 2 minutes ago · **200** Lines of Code · XML, JSP, ...

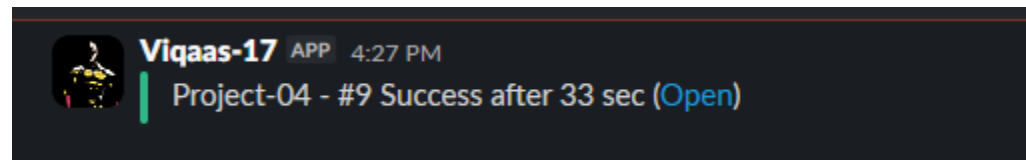| A 0	B 4	A 8	E 0.0%	◯ 0.0%	● 0.0%
Security	Reliability	Maintainability	Hotspots Reviewed	Coverage	Duplications

- Maven

```
jenkins@881f212cdcf4:~/workspace/Project-04/target$ ls
classes  generated-sources  maven-archiver  maven-status  ncodeit-hello-world-3.0  ncodeit-hello-world-3.0.war
jenkins@881f212cdcf4:~/workspace/Project-04/target$
```
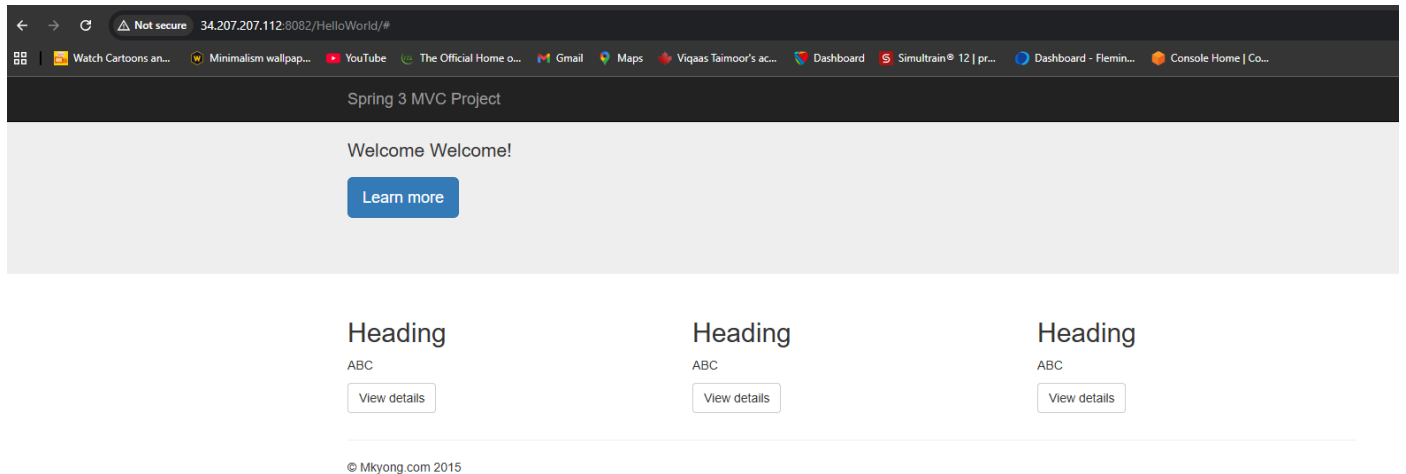
- Nexus

```
📂 com
  📂 ncodeit
    📂 ncodeit-hello-world
      📦 3.0
        📄 ncodeit-hello-world-3.0.war
        📄 ncodeit-hello-world-3.0.war.md5
        📄 ncodeit-hello-world-3.0.war.sha1
```

- Slack Notification

Viqaas-17 APP 4:27 PM
Project-04 - #9 Success after 33 sec (Open)

-

- Tomcat

6) Setup one slave machine for Jenkins.