Java Assignment-5

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Date: 15-10-2025

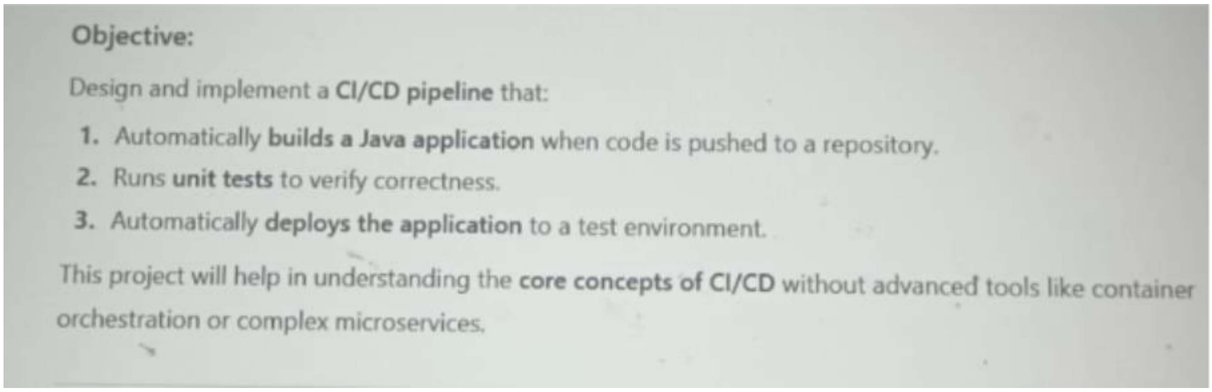
Emp id: ENC/16811

Batch: Java Full Stack – Spark Team

Trainer: Shiva Kumar

Jenkins Integration with Java Project

Exercise – 5:



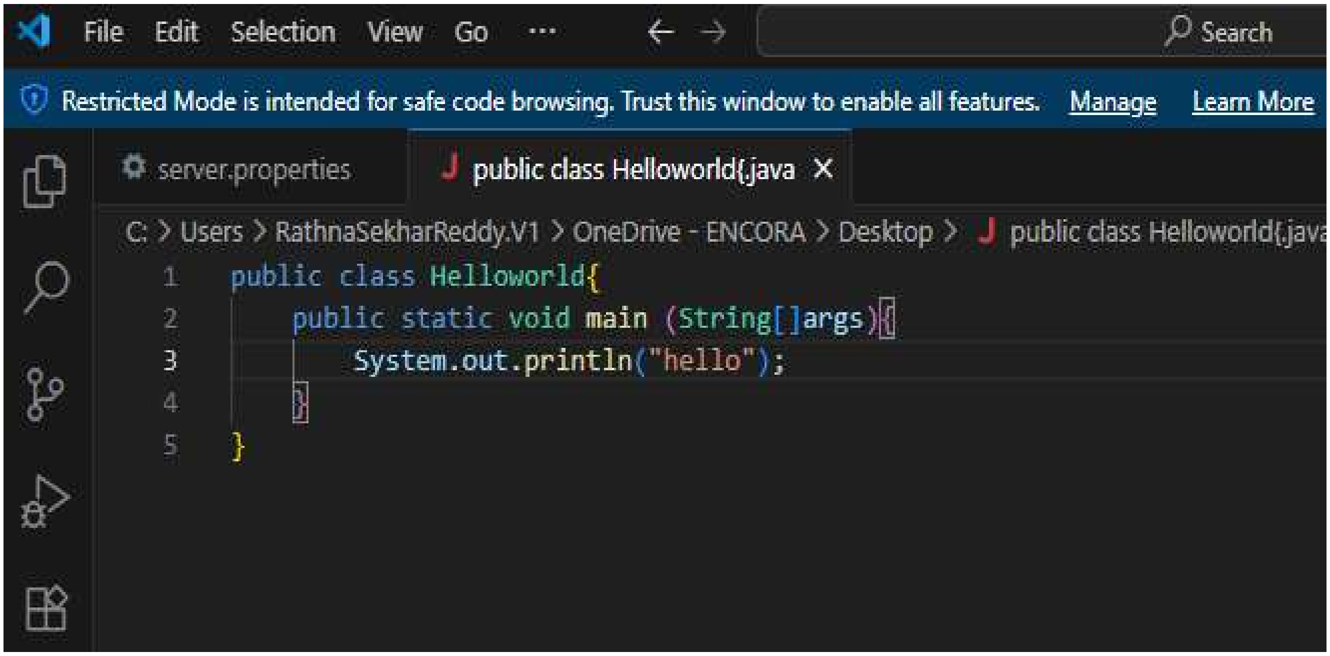
Objective:

Design and implement a **CI/CD pipeline** that:

1. Automatically **builds a Java application** when code is pushed to a repository.
2. Runs **unit tests** to verify correctness.
3. Automatically **deploys the application** to a test environment.

This project will help in understanding the **core concepts of CI/CD** without advanced tools like container orchestration or complex microservices.

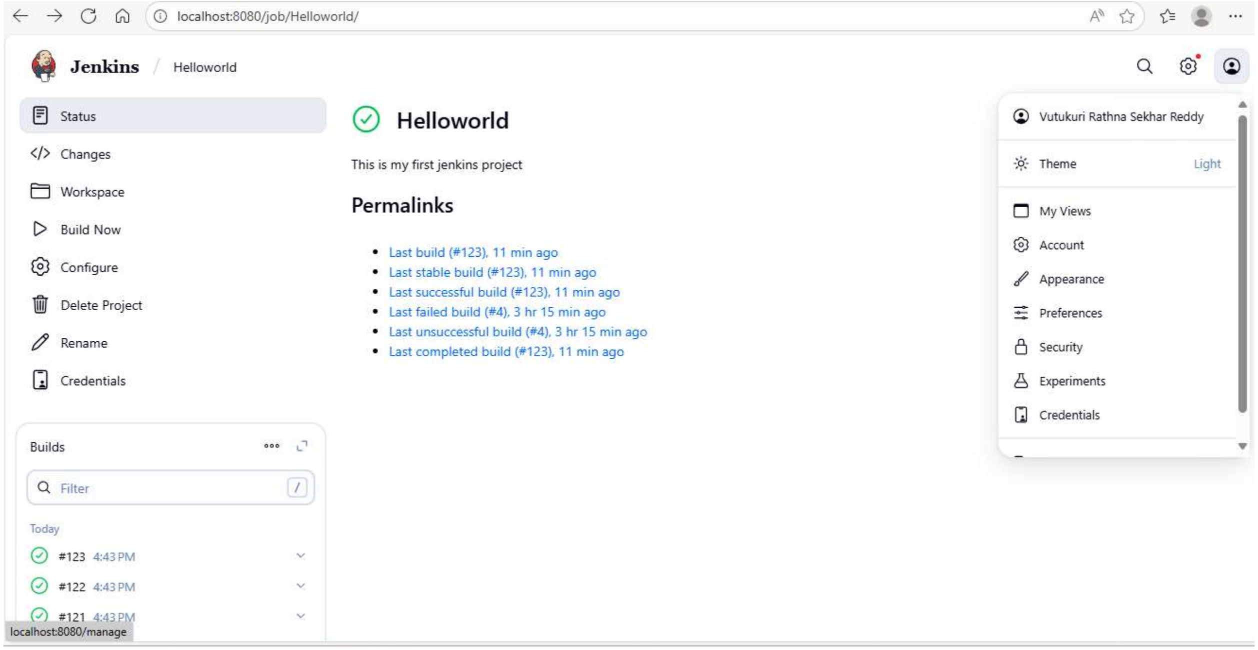
CODE:



Restricted Mode is intended for safe code browsing. Trust this window to enable all features. Manage Learn More

C: > Users > RathnaSekharReddy.V1 > OneDrive - ENCORA > Desktop > public class Helloworld{.java

```java
public class Helloworld{
    public static void main (String[]args){
        System.out.println("hello");
    }
}
```



localhost:8080/job/Helloworld/

Helloworld

This is my first jenkins project

Permalinks

- Last build (#123), 11 min ago
- Last stable build (#123), 11 min ago
- Last successful build (#123), 11 min ago
- Last failed build (#4), 3 hr 15 min ago
- Last unsuccessful build (#4), 3 hr 15 min ago
- Last completed build (#123), 11 min ago

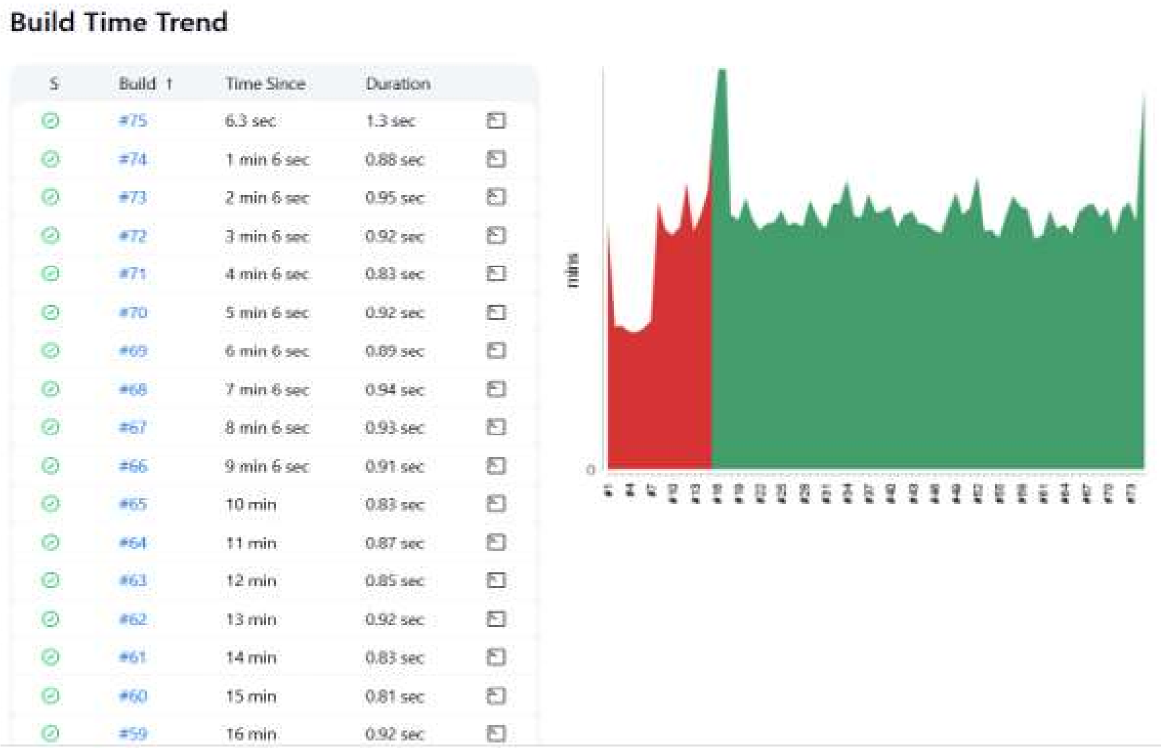
Vutukuri Rathna Sekhar Reddy

Theme Light

Today

- #123 4:43 PM
- #122 4:43 PM
- #121 4:43 PM

localhost:8080/manage

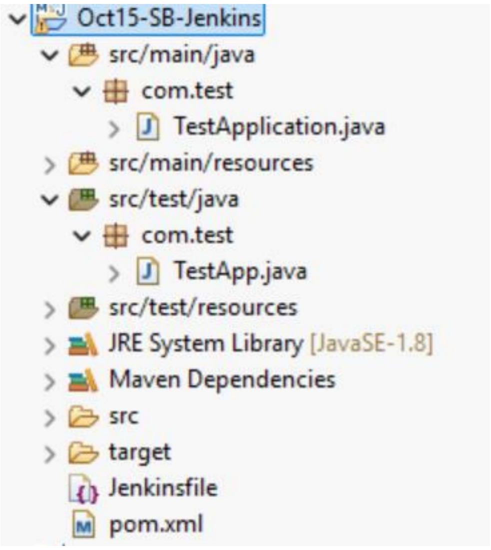


Build Time Trend

S	Build ↑	Time Since	Duration
✓	#75	6.3 sec	1.3 sec
✓	#74	1 min 6 sec	0.88 sec
✓	#73	2 min 6 sec	0.95 sec
✓	#72	3 min 6 sec	0.92 sec
✓	#71	4 min 6 sec	0.83 sec
✓	#70	5 min 6 sec	0.92 sec
✓	#69	6 min 6 sec	0.89 sec
✓	#68	7 min 6 sec	0.94 sec
✓	#67	8 min 6 sec	0.93 sec
✓	#66	9 min 6 sec	0.91 sec
✓	#65	10 min	0.83 sec
✓	#64	11 min	0.87 sec
✓	#63	12 min	0.85 sec
✓	#62	13 min	0.92 sec
✓	#61	14 min	0.83 sec
✓	#60	15 min	0.81 sec
✓	#59	16 min	0.92 sec

Solution:

> Project Structure



```
Oct15-SB-Jenkins
  src/main/java
    com.test
      TestApplication.java
  src/main/resources
  src/test/java
    com.test
      TestApp.java
  src/test/resources
  JRE System Library [JavaSE-1.8]
  Maven Dependencies
  src
  target
  Jenkinsfile
  pom.xml
```

Pom.xml

```xml
<project xmlns="http://maven.apache.org/POM/4.0.0"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://maven.apache.org/POM/4.0.0
https://maven.apache.org/xsd/maven-4.0.0.xsd">
<modelVersion>4.0.0</modelVersion>
<groupId>com.tes</groupId>
<artifactId>Oct15-SB-Jenkins</artifactId>
<version>0.0.1-SNAPSHOT</version>
<name>Oct15-SB-Jenkins</name>
<properties>
<maven.compiler.source>1.8</maven.compiler.source>
<maven.compiler.target>1.8</maven.compiler.target>
</properties>
<dependencies>
<!-- JUnit for unit testing -->
<dependency>
<groupId>junit</groupId>
<artifactId>junit</artifactId>
<version>4.13.2</version>
<scope>test</scope>
</dependency>
</dependencies>
</project>
```

- **src/main/java**

TestApplication.java

```java
package com.test;

public class TestApplication {
public static void main(String[] args) {

System.out.println("Hello from my App");
}
public int add(int a, int b) {
return a+b;
}



}
```

- **Src/test/java**

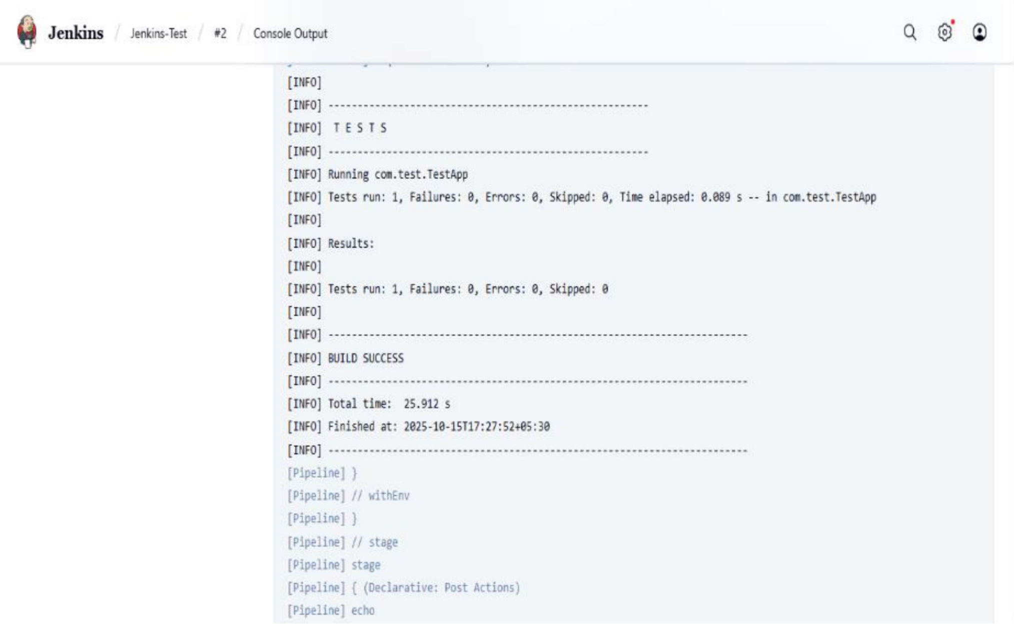
TestApp

```
package com.test;

import org.junit.Assert;
import org.junit.Test;

public class TestApp {
@Test
public void testAdd() {
 TestApplication app = new TestApplication();
Assert.assertEquals(5, app.add(2, 3));
}
}
```

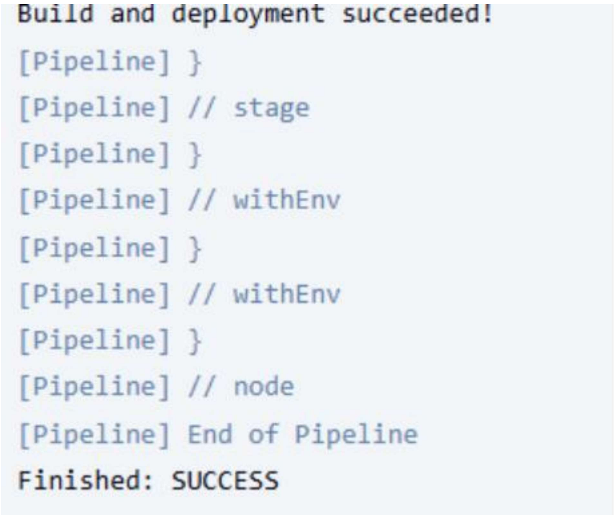
Jenkinsfile

```
pipeline {
agent any

tools {
maven 'maven' // Configure in Jenkins Global Tool Configuration
jdk 'java home' // Configure in Jenkins Global Tool Configuration
}

stages {
stage('Checkout') {
steps {
git branch: 'main', url: ' https://github.com/Rathnasekharreddy9/Daily_Tasks
}
}

stage('Build') {
steps {
bat 'cd 15-10-2025/Oct15-SB-Jenkins && mvn clean compile'
}
}

stage('Test') {
steps {
bat 'cd 15-10-2025/Oct15-SB-Jenkins && mvn test'
}
}

}

post {
success {
echo 'Build and deployment succeeded!'
}
failure {
echo 'Build or deployment failed!'
}
}
}
```

Output:



```
[INFO]
[INFO] -------------------------------------------------------
[INFO]  T E S T S
[INFO] -------------------------------------------------------
[INFO] Running com.test.TestApp
[INFO] Tests run: 1, Failures: 0, Errors: 0, Skipped: 0, Time elapsed: 0.089 s -- in com.test.TestApp
[INFO]
[INFO] Results:
[INFO]
[INFO] Tests run: 1, Failures: 0, Errors: 0, Skipped: 0
[INFO]
[INFO] ------------------------------------------------------------------------
[INFO] BUILD SUCCESS
[INFO] ------------------------------------------------------------------------
[INFO] Total time:  25.912 s
[INFO] Finished at: 2025-10-15T17:27:52+05:30
[INFO] ------------------------------------------------------------------------
[Pipeline] }
[Pipeline] // withEnv
[Pipeline] }
[Pipeline] // stage
[Pipeline] stage
[Pipeline] { (Declarative: Post Actions)
[Pipeline] echo
```



```
Build and deployment succeeded!
[Pipeline] }
[Pipeline] // stage
[Pipeline] }
[Pipeline] // withEnv
[Pipeline] }
[Pipeline] // withEnv
[Pipeline] }
[Pipeline] // node
[Pipeline] End of Pipeline
Finished: SUCCESS
```