

## **Software Testing**

**EPAM**

### **Individual Practical task report**

Module continuous integration with Jenkins  
Practical task

**Bachelor of Technology**

**Computer Science and Engineering**

**(Software Testing )**

**LOVELY PROFESSIONAL UNIVERSITY**

**PHAGWARA, PUNJAB**



01/05/2023

**SUBMITTED BY**

Name of the student: Manjeet Sharma

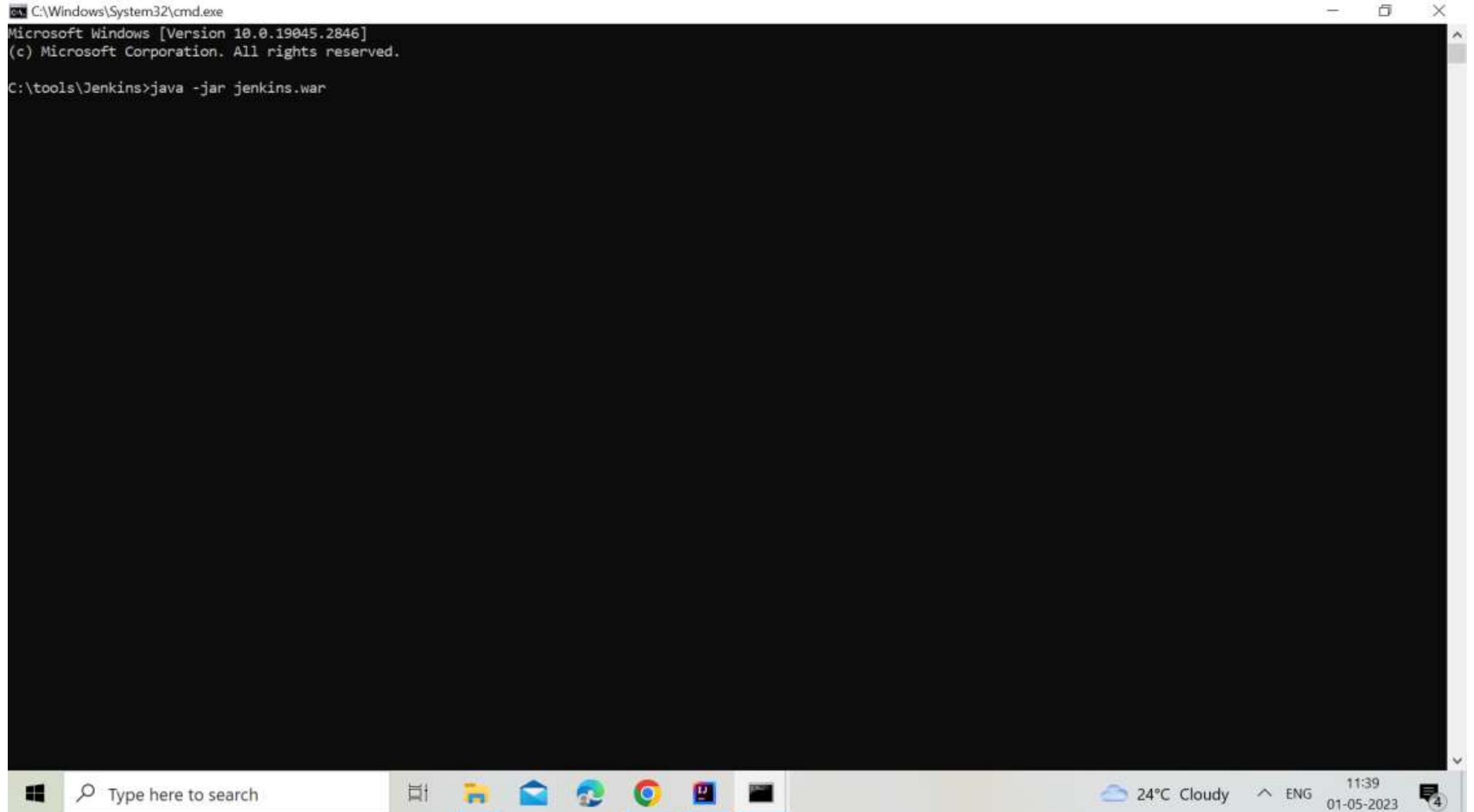
Registration Number: 11904954

Roll no. : .48

**SUBMITTED TO**

Name of the assistant professor: **Sakshi**

## Step 1 : Start Jenkin With Command java -jar jenkins.war



A screenshot of a Windows Command Prompt window. The title bar at the top reads "C:\Windows\System32\cmd.exe". The window content shows the following text:

```
Microsoft Windows [Version 10.0.19045.2846]  
(c) Microsoft Corporation. All rights reserved.  
  
C:\tools\Jenkins>java -jar jenkins.war
```

The command prompt is currently empty, waiting for further input. The Windows taskbar is visible at the bottom, showing the Start button, a search bar with the text "Type here to search", and several application icons including File Explorer, Mail, Edge, Chrome, and VS Code. The system tray on the right shows the weather as "24°C Cloudy", the language as "ENG", and the date and time as "11:39 01-05-2023".

## Step 2 : Start Jenkin Running

```
C:\Windows\System32\cmd.exe - java -jar jenkins.war --enable-future-java
Microsoft Windows [Version 10.0.19045.2846]
(c) Microsoft Corporation. All rights reserved.


C:\tools\Jenkins>java -jar jenkins.war
Running with Java 19 from C:\Program Files\Java\jdk-19, which is not yet fully supported.
Run the command again with the --enable-future-java flag to enable preview support for future Java versions.
Supported Java versions are: [11, 17]
See https://jenkins.io/redirect/java-support/ for more information.

C:\tools\Jenkins>java -jar jenkins.war --enable-future-java
Running with Java 19 from C:\Program Files\Java\jdk-19, which is not fully supported. Continuing because --enable-future-java is set. Supported Java versions are: [11, 17].
See https://jenkins.io/redirect/java-support/ for more information.
Running from: C:\tools\Jenkins\jenkins.war
webroot: C:\Users\Manjeet Sharma\.jenkins\war
2023-05-01 06:10:16.170+0000 [id=1] INFO winstone.Logger#logInternal: Beginning extraction from war file
2023-05-01 06:10:16.314+0000 [id=1] WARNING o.e.j.s.handler.ContextHandler#setContextPath: Empty contextPath
2023-05-01 06:10:16.386+0000 [id=1] INFO org.eclipse.jetty.server.Server#doStart: jetty-10.0.13; built: 2022-12-07T20:13:20.134Z; git: 1c2636ea05c0ca8de1ffd6ca7f3a98ac084c766d; jvm 19.0.2+7-44
```

## Step 3 :      Jenkin Login With Credential

New Tab x Sign in [Jenkins] x +

localhost:8080/login?from=%2F



**Welcome to Jenkins!**

admin

.....

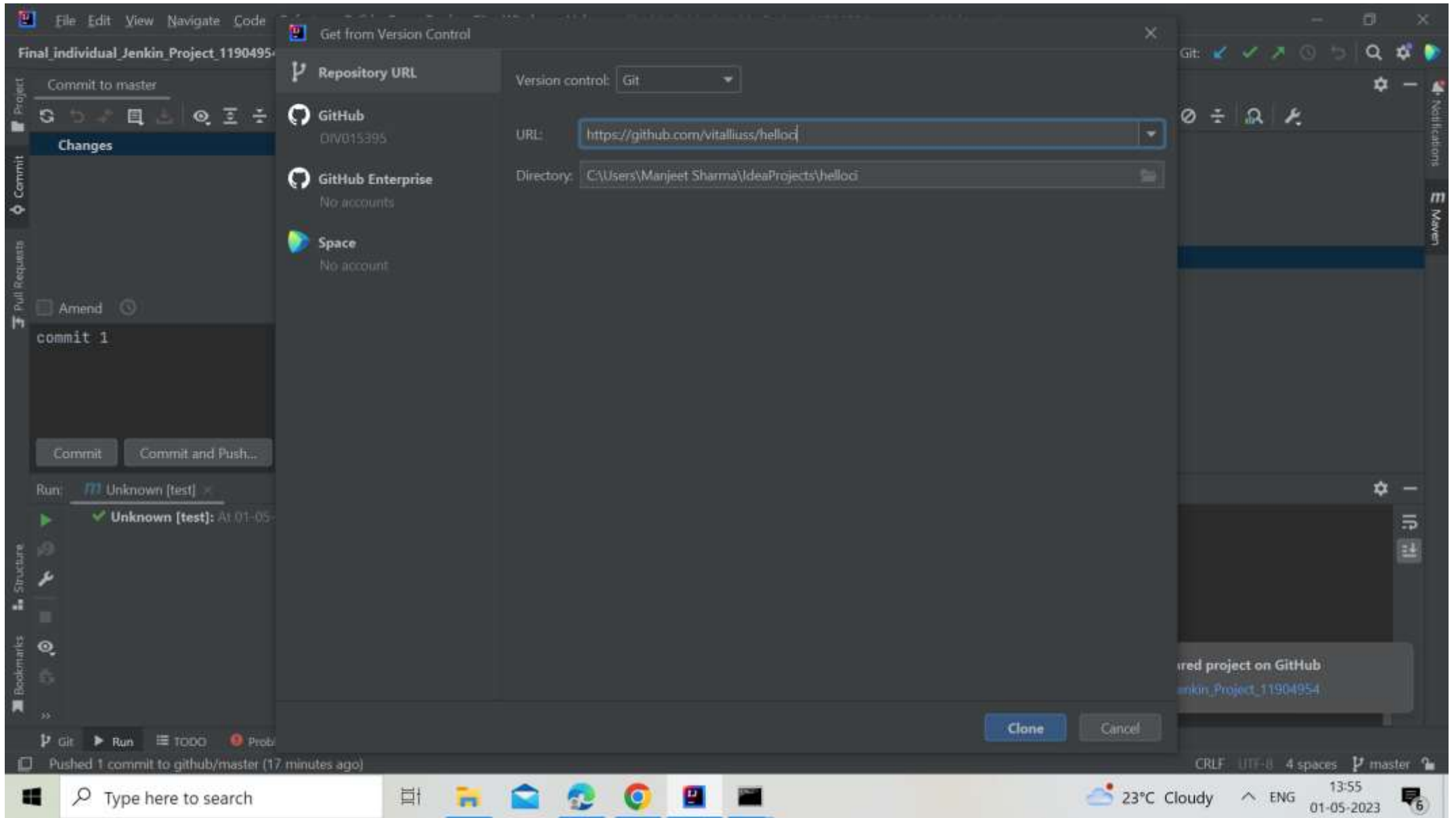
☐ Keep me signed in

**Sign in**

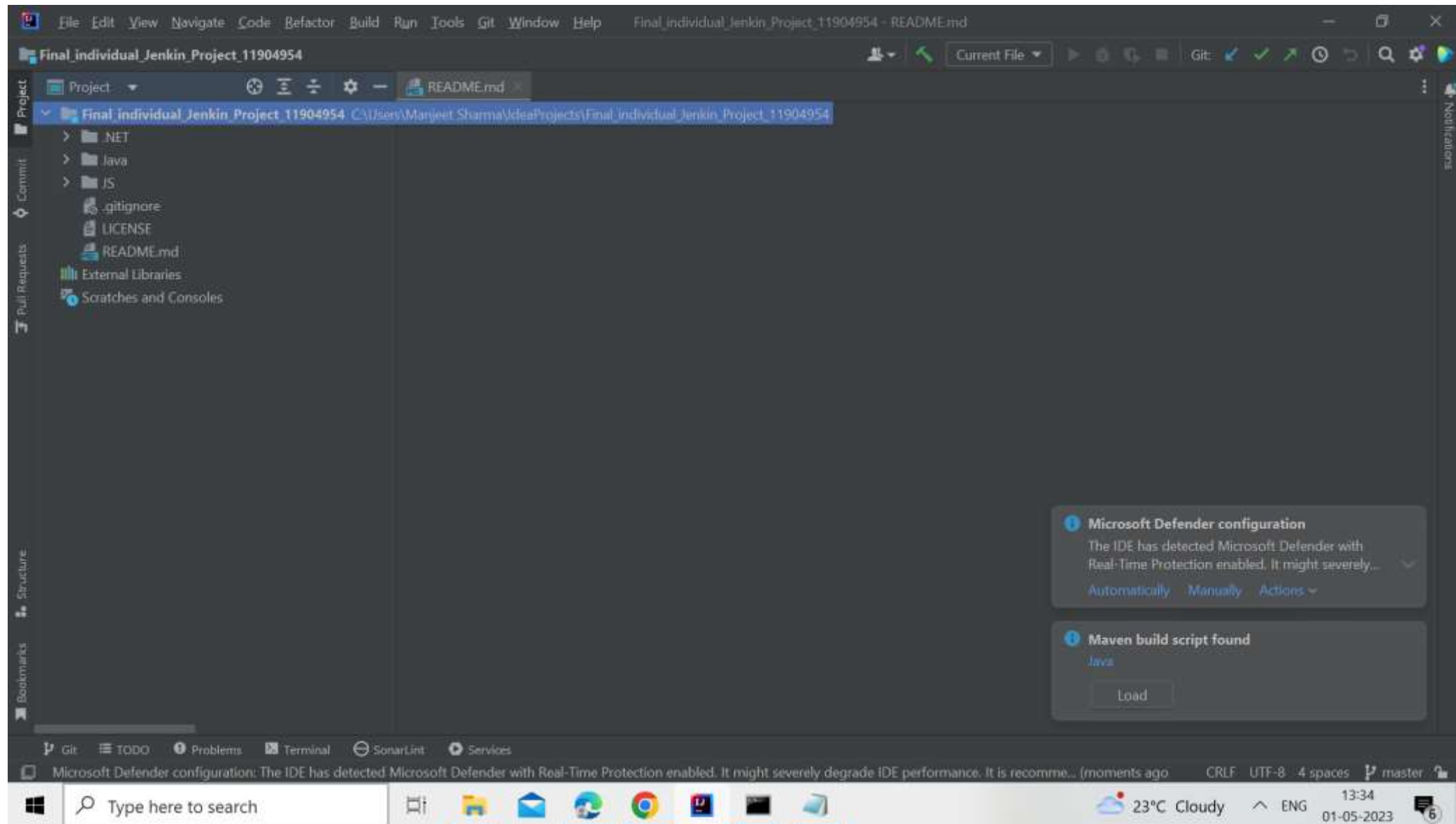
Type here to search

24°C Cloudy ENG 11:42 01-05-2023

## Step 4 : Clone of Repository



## Step 5 : Clone of Repository Completely



## Step 6 : Perform MVN Lifecycle

The screenshot displays an IDE interface for a Maven project. The main editor shows the `pom.xml` file with the following content:

```
<?xml version="1.0" encoding="UTF-8"?>
<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 http://maven.apache.org/xsd/maven-4.0.0.xsd">
  <modelVersion>4.0.0</modelVersion>
  <groupId>groupId</groupId>
  <artifactId>Final_individual_Jenkin_Project_11904954</artifactId>
  <version>1.0-SNAPSHOT</version>
</project>
```

The left sidebar shows the project structure with folders like `.NET`, `Java`, `JS`, and `src`, along with files like `.gitignore`, `LICENSE`, `pom.xml`, and `README.md`.

The right sidebar shows the Maven lifecycle with the following options:

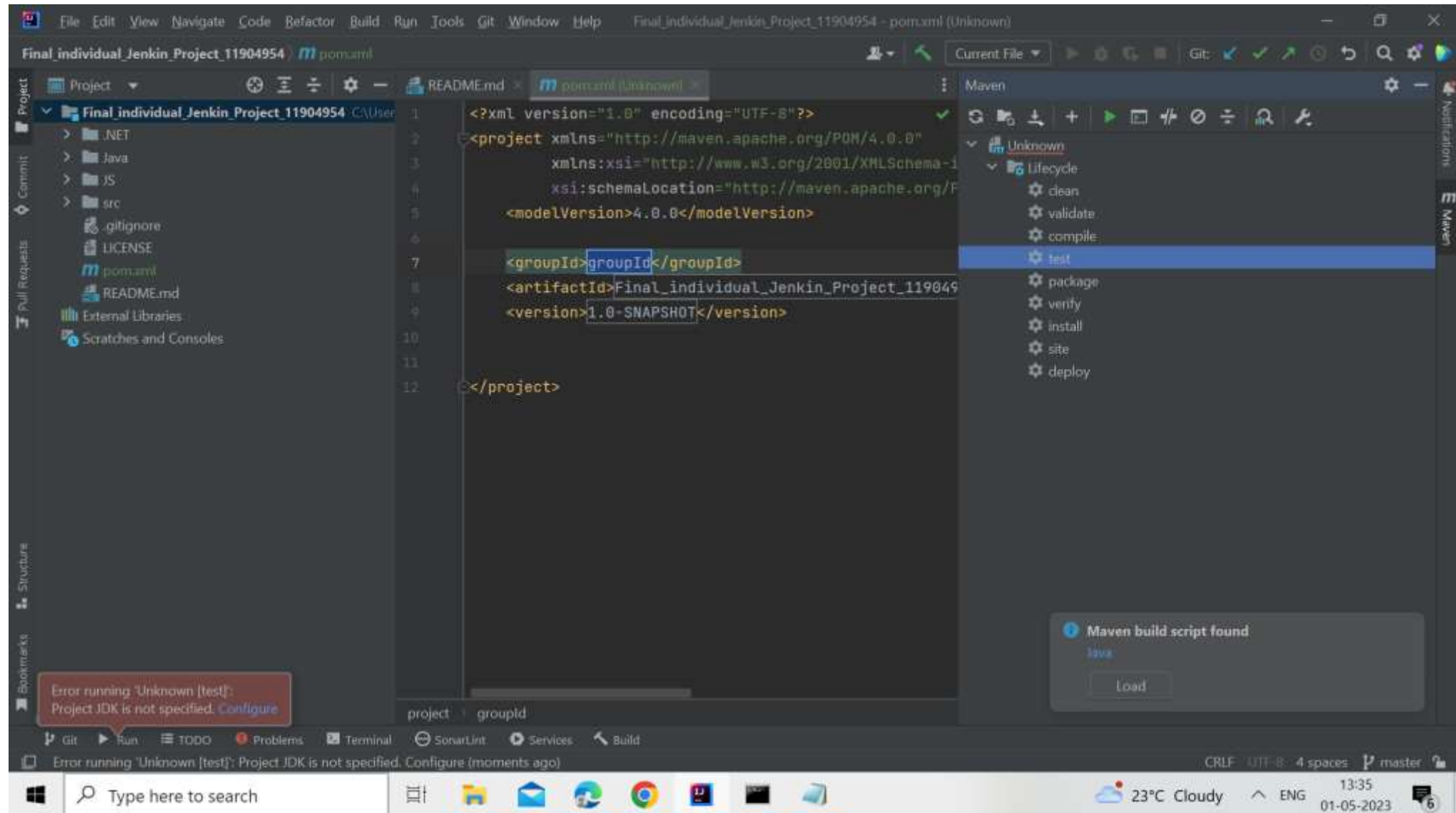
- clean
- validate
- compile
- test
- package
- verify
- install
- site
- deploy

A notification at the bottom right states: "Maven build script found" with a "Load" button.

The bottom status bar shows the current configuration: CRLF, UTF-8, 4 spaces, master branch.



## Step 7 : Click MVN Test Lifecycle





## Step 8 : Build Success

The screenshot displays the IntelliJ IDEA IDE interface. The top menu bar includes File, Edit, View, Navigate, Code, Refactor, Build, Run, Tools, Git, Window, and Help. The title bar shows 'Final\_individual\_Jenkin\_Project\_11904954 - pom.xml (Unknown)'. The main editor area shows the 'pom.xml' file with the following content:

```
1 <?xml version="1.0" encoding="UTF-8"?>
2 <project xmlns="http://maven.apache.org/POM/4.0.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
3         xsi:schemaLocation="http://maven.apache.org/POM/4.0.0 http://maven.apache.org/xsd/maven-4.0.0.xsd">
4     <modelVersion>4.0.0</modelVersion>
5     <groupId>com.example</groupId>
6     <artifactId>test</artifactId>
7     <version>1.0-SNAPSHOT</version>
8     <packaging>jar</packaging>
9     <name>test</name>
10    <description>A sample Maven project</description>
11    <properties>
12        <java.version>1.8</java.version>
13    </properties>
14    <dependencies>
15        <dependency>
16            <groupId>junit</groupId>
17            <artifactId>junit</artifactId>
18            <version>4.12</version>
19            <scope>test</scope>
20        </dependency>
21    </dependencies>
22    <build>
23        <plugins>
24            <plugin>
25                <groupId>org.apache.maven.plugins</groupId>
26                <artifactId>maven-jar-plugin</artifactId>
27                <version>3.2.0</version>
28            </plugin>
29        </plugins>
30    </build>
31</project>
```

The Maven tool window on the right shows the 'Lifecycle' tab with the following goals: clean, validate, compile, test, package, verify, install, site, and deploy. The 'test' goal is currently selected.

The Run window at the bottom shows the execution of the 'test' goal. The output is as follows:

```
Run: Unknown [test]
✓ Unknown [test]: At 01-05-2023 13:36 2 sec, 130 ms
[INFO] BUILD SUCCESS
[INFO] -----
[INFO] Total time: 0.808 s
[INFO] Finished at: 2023-05-01T13:36:03+05:30
[INFO] -----
Process finished with exit code 0
```

The status bar at the bottom indicates the file encoding is UTF-8, the line ending is CRLF, and the current branch is master. The Windows taskbar at the very bottom shows the search bar and several application icons.

## Step 9 : Push URL of Clone In Jenkin Configuration

Dashboard > Project Jenkin\_Epam\_Project\_Last\_Module > Configuration

### Configure

- General
- Source Code Management**
- Build Triggers
- Build Environment
- Build Steps
- Post-build Actions

#### Source Code Management

☐ None

☒ Git ?

##### Repositories ?

Repository URL ?

`https://github.com/DIV015395/Final_individual_Jenkin_Project_11904954.git`

Credentials ?

- none -

Add

Advanced

Add Repository

Branches to build ?

Save Apply

## Step 10 :      Jenkins Configuration

Dashboard > Project Jenkin\_Epam\_Project\_Last\_Module > Configuration

### Configure

- General
- Source Code Management**
- Build Triggers
- Build Environment
- Build Steps
- Post-build Actions

Advanced ▾

Add Repository

Branches to build ?

Branch Specifier (blank for 'any') ?

\*/master

Add Branch

Repository browser ?

(Auto) ▾

Additional Behaviours

Add ▾

Save Apply

## Step 11 :      Jenkins Configuration Build Trigger 5 Minute

Dashboard > Project Jenkin\_Epam\_Project\_Last\_Module > Configuration

### Configure

- General
- Source Code Management
- Build Triggers**
- Build Environment
- Build Steps
- Post-build Actions

☐ Trigger builds remotely (e.g., from scripts) ?

☐ Build after other projects are built ?

☒ Build periodically ?

Schedule ?

```
* / 5 * * * *
```

⚠ Spread load evenly by using 'H/5 \* \* \* \*' rather than '\* / 5 \* \* \* \*'

Would last have run at Monday, 1 May, 2023 at 1:35:39 pm India Standard Time; would next run at Monday, 1 May, 2023 at 1:40:39 pm India Standard Time.

☐ GitHub hook trigger for GITScm polling ?

☐ Poll SCM ?

### Build Environment

☐ Delete workspace before build starts

☐ Use secret text(s) or file(s) ?

Save

Apply

## Step 12 :      Jenkins Configuration

Dashboard > Project Jenkin\_Epam\_Project\_Last\_Module > Configuration

### Configure

- General
- Source Code Management
- Build Triggers
- Build Environment**
- Build Steps
- Post-build Actions

#### Build Environment

- ☐ Delete workspace before build starts
- ☐ Use secret text(s) or file(s) ?
- ☐ Add timestamps to the Console Output
- ☐ Inspect build log for published build scans
- ☐ Terminate a build if it's stuck
- ☐ With Ant ?

#### Build Steps

≡

Invoke top-level Maven targets ?

×

Maven Version

Maven

Goals

Save

Apply

## Step 13 :      Jenkins Configuration Maven clean test

Dashboard > Project Jenkin\_Epam\_Project\_Last\_Module > Configuration

### Build Steps

### Configure

- General
- Source Code Management
- Build Triggers
- Build Environment
- Build Steps**
- Post-build Actions

Invoke top-level Maven targets ?

Maven Version

Maven

Goals

clean test

Advanced

Add build step

### Post-build Actions

Add post-build action

Save Apply

## Step 14 :      Jenkin Build Now Successfully

The screenshot displays the Jenkins web interface. At the top, the Jenkins logo is on the left, and a search bar with the text 'Search (CTRL+K)' is on the right. To the right of the search bar, the user 'admin' is logged in, with a 'log out' button. Below the header, a breadcrumb trail shows 'Dashboard > Project Jenkin\_Epam\_Project\_Last\_Module >'. The main content area is titled 'Project Project Jenkin\_Epam\_Project\_Last\_Module'. On the left sidebar, there are several buttons: 'Status', 'Changes', 'Workspace', 'Build Now' (highlighted), 'Configure', 'Delete Project', 'Rename', and 'Test Results Analyzer'. On the right side of the main area, there are buttons for 'Add description' and 'Disable Project'. Below the project title, there is a section titled 'Permalinks' with a list of build links: 'Last build (#45), 28 sec ago', 'Last stable build (#45), 28 sec ago', 'Last successful build (#45), 28 sec ago', 'Last failed build (#42), 10 min ago', 'Last unsuccessful build (#42), 10 min ago', and 'Last completed build (#45), 28 sec ago'. At the bottom, there is a 'Build History' section with a 'trend' dropdown and a search bar 'Filter builds...'. The build history table shows three builds: #46 (May 1, 2023 1:40 PM), #45 (May 1, 2023 1:40 PM), and #44 (May 1, 2023 1:35 PM). A vertical scrollbar is visible on the right side of the build history table. The browser address bar at the bottom shows 'localhost:8080/job/Project\_Jenkin\_Epam\_Project\_Last\_Module/build?delay=0...'.

**Jenkins**

Search (CTRL+K) admin log out

Dashboard > Project Jenkin\_Epam\_Project\_Last\_Module >

**Project Project Jenkin\_Epam\_Project\_Last\_Module**

Status

Changes

Workspace

**Build Now**

Configure

Delete Project

Rename

Test Results Analyzer

Add description

Disable Project

**Permalinks**

- Last build (#45), 28 sec ago
- Last stable build (#45), 28 sec ago
- Last successful build (#45), 28 sec ago
- Last failed build (#42), 10 min ago
- Last unsuccessful build (#42), 10 min ago
- Last completed build (#45), 28 sec ago

**Build History** trend

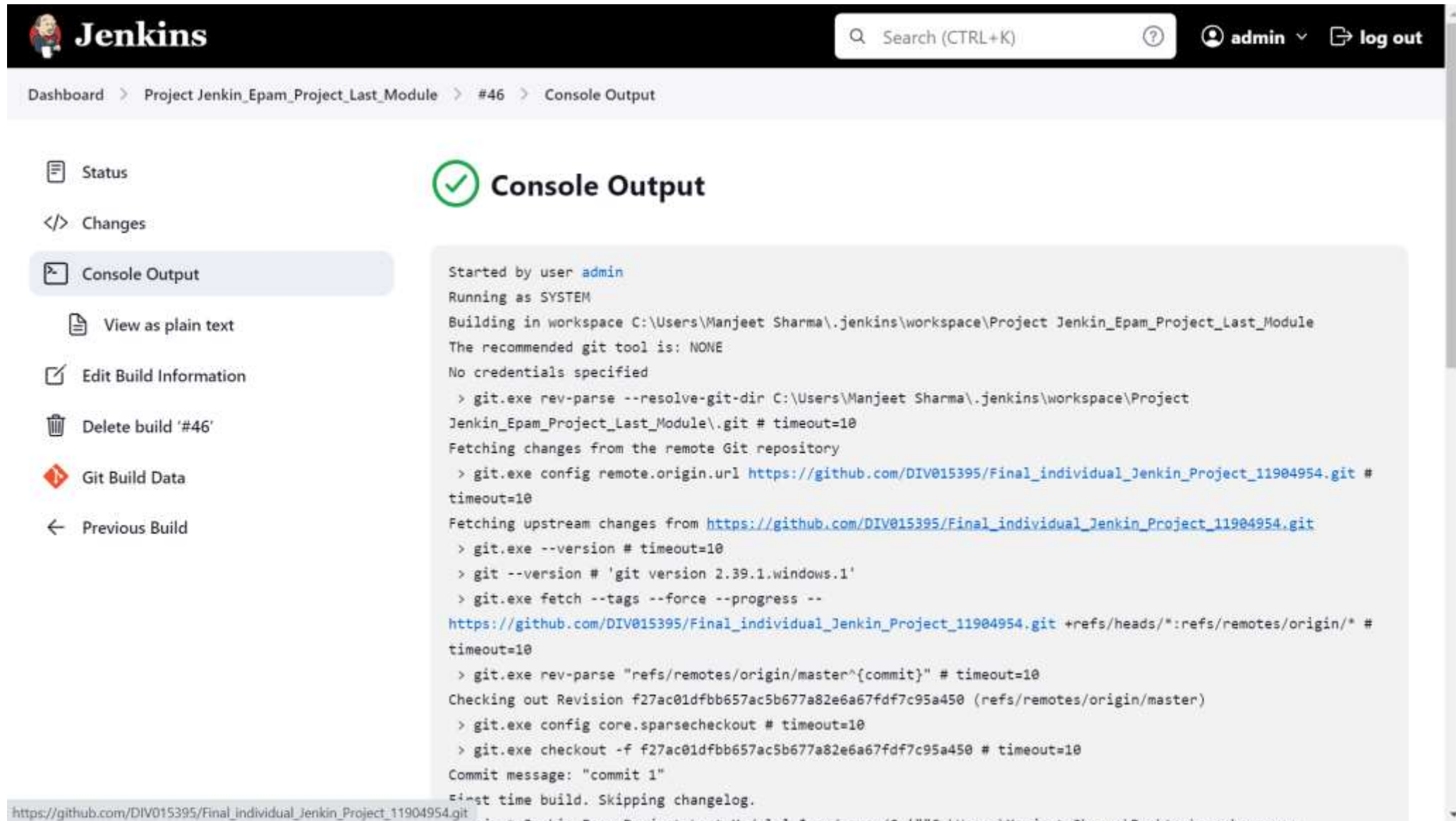
Filter builds...

#46	May 1, 2023 1:40 PM
#45	May 1, 2023 1:40 PM
#44	May 1, 2023 1:35 PM

localhost:8080/job/Project\_Jenkin\_Epam\_Project\_Last\_Module/build?delay=0...



## Step 15 : Jenkins Console Output



The screenshot shows the Jenkins web interface. At the top is the Jenkins logo and a search bar. Below the header is a breadcrumb trail: Dashboard > Project Jenkin\_Epam\_Project\_Last\_Module > #46 > Console Output. On the left sidebar, there are links for Status, Changes, Console Output (which is highlighted), View as plain text, Edit Build Information, Delete build '#46', Git Build Data, and Previous Build. The main area displays the console output for build #46, which is a successful build. The output text is as follows:

```
Started by user admin
Running as SYSTEM
Building in workspace C:\Users\Manjeet Sharma\.jenkins\workspace\Project Jenkin_Epam_Project_Last_Module
The recommended git tool is: NONE
No credentials specified
> git.exe rev-parse --resolve-git-dir C:\Users\Manjeet Sharma\.jenkins\workspace\Project
Jenkin_Epam_Project_Last_Module\.git # timeout=10
Fetching changes from the remote Git repository
> git.exe config remote.origin.url https://github.com/DIV015395/Final_individual_Jenkin_Project_11904954.git #
timeout=10
Fetching upstream changes from https://github.com/DIV015395/Final_individual_Jenkin_Project_11904954.git
> git.exe --version # timeout=10
> git --version # 'git version 2.39.1.windows.1'
> git.exe fetch --tags --force --progress --
https://github.com/DIV015395/Final_individual_Jenkin_Project_11904954.git +refs/heads/*:refs/remotes/origin/* #
timeout=10
> git.exe rev-parse "refs/remotes/origin/master^{commit}" # timeout=10
Checking out Revision f27ac01dfbb657ac5b677a82e6a67fdf7c95a450 (refs/remotes/origin/master)
> git.exe config core.sparsecheckout # timeout=10
> git.exe checkout -f f27ac01dfbb657ac5b677a82e6a67fdf7c95a450 # timeout=10
Commit message: "commit 1"
First time build. Skipping changelog.
```

## Step 16 :      Jenkins Console Output

Dashboard > Project Jenkin\_Epam\_Project\_Last\_Module > #46 > Console Output

```
> git --version # 'git version 2.39.1.windows.1'
> git.exe fetch --tags --force --progress --
https://github.com/DIV015395/Final_individual_Jenkin_Project_11904954.git +refs/heads/*:refs/remotes/origin/* #
timeout=10
> git.exe rev-parse "refs/remotes/origin/master^{commit}" # timeout=10
Checking out Revision f27ac01dfbb657ac5b677a82e6a67fdf7c95a450 (refs/remotes/origin/master)
> git.exe config core.sparsecheckout # timeout=10
> git.exe checkout -f f27ac01dfbb657ac5b677a82e6a67fdf7c95a450 # timeout=10
Commit message: "commit 1"
First time build. Skipping changelog.
[Project Jenkin_Epam_Project_Last_Module] $ cmd.exe /C ""C:\Users\Manjeet Sharma\Desktop\apache-maven-
3.9.1\bin\mvn.cmd"" clean test && exit %%ERRORLEVEL%%"
[INFO] Scanning for projects...
[INFO]
[INFO] -----< groupId:Final_individual_Jenkin_Project_11904954 >-----
[INFO] Building Final_individual_Jenkin_Project_11904954 1.0-SNAPSHOT
[INFO]    from pom.xml
[INFO] -----[ jar ]-----
[INFO]
[INFO] --- clean:3.2.0:clean (default-clean) @ Final_individual_Jenkin_Project_11904954 ---
[INFO]
[INFO] --- resources:3.3.0:resources (default-resources) @ Final_individual_Jenkin_Project_11904954 ---
[WARNING] Using platform encoding (UTF-8 actually) to copy filtered resources, i.e. build is platform dependent!
[INFO] skip non existing resourceDirectory C:\Users\Manjeet Sharma\.jenkins\workspace\Project
Jenkin_Epam_Project_Last_Module\src\main\resources
[INFO]
[INFO] --- compiler:3.10.1:compile (default-compile) @ Final_individual_Jenkin_Project_11904954 ---
[INFO] No sources to compile
[INFO]
[INFO] --- resources:3.3.0:testResources (default-testResources) @ Final_individual_Jenkin_Project_11904954 ---
```

## Step 17 :      Jenkins Console Output

Dashboard > Project Jenkin\_Epam\_Project\_Last\_Module > #46 > Console Output

```
[INFO]
[INFO] -----< groupId:Final_individual_Jenkin_Project_11904954 >-----
[INFO] Building Final_individual_Jenkin_Project_11904954 1.0-SNAPSHOT
[INFO]    from pom.xml
[INFO] -----[ jar ]-----
[INFO]
[INFO] --- clean:3.2.0:clean (default-clean) @ Final_individual_Jenkin_Project_11904954 ---
[INFO]
[INFO] --- resources:3.3.0:resources (default-resources) @ Final_individual_Jenkin_Project_11904954 ---
[WARNING] Using platform encoding (UTF-8 actually) to copy filtered resources, i.e. build is platform dependent!
[INFO] skip non existing resourceDirectory C:\Users\Manjeet Sharma\.jenkins\workspace\Project
Jenkin_Epam_Project_Last_Module\src\main\resources
[INFO]
[INFO] --- compiler:3.10.1:compile (default-compile) @ Final_individual_Jenkin_Project_11904954 ---
[INFO] No sources to compile
[INFO]
[INFO] --- resources:3.3.0:testResources (default-testResources) @ Final_individual_Jenkin_Project_11904954 ---
[WARNING] Using platform encoding (UTF-8 actually) to copy filtered resources, i.e. build is platform dependent!
[INFO] skip non existing resourceDirectory C:\Users\Manjeet Sharma\.jenkins\workspace\Project
Jenkin_Epam_Project_Last_Module\src\test\resources
[INFO]
[INFO] --- compiler:3.10.1:testCompile (default-testCompile) @ Final_individual_Jenkin_Project_11904954 ---
[INFO] No sources to compile
[INFO]
[INFO] --- surefire:3.0.0:test (default-test) @ Final_individual_Jenkin_Project_11904954 ---
[INFO] No tests to run.
[INFO] -----
[INFO] BUILD SUCCESS
[INFO] -----
[INFO] Total time:  1.046 s
[INFO] Finished at: 2023-05-01T13:40:37+05:30
```

## Step 18 :      Jenkin Console Output

Dashboard > Project Jenkin\_Epam\_Project\_Last\_Module > #46 > Console Output

```
[INFO] --- resources:3.3.0:resources (default-resources) @ Final_individual_Jenkin_Project_11904954 ---  
[WARNING] Using platform encoding (UTF-8 actually) to copy filtered resources, i.e. build is platform dependent!  
[INFO] skip non existing resourceDirectory C:\Users\Manjeet Sharma\.jenkins\workspace\Project  
Jenkin_Epam_Project_Last_Module\src\main\resources  
[INFO]  
[INFO] --- compiler:3.10.1:compile (default-compile) @ Final_individual_Jenkin_Project_11904954 ---  
[INFO] No sources to compile  
[INFO]  
[INFO] --- resources:3.3.0:testResources (default-testResources) @ Final_individual_Jenkin_Project_11904954 ---  
[WARNING] Using platform encoding (UTF-8 actually) to copy filtered resources, i.e. build is platform dependent!  
[INFO] skip non existing resourceDirectory C:\Users\Manjeet Sharma\.jenkins\workspace\Project  
Jenkin_Epam_Project_Last_Module\src\test\resources  
[INFO]  
[INFO] --- compiler:3.10.1:testCompile (default-testCompile) @ Final_individual_Jenkin_Project_11904954 ---  
[INFO] No sources to compile  
[INFO]  
[INFO] --- surefire:3.0.0:test (default-test) @ Final_individual_Jenkin_Project_11904954 ---  
[INFO] No tests to run.  
[INFO] -----  
[INFO] BUILD SUCCESS  
[INFO] -----  
[INFO] Total time: 1.046 s  
[INFO] Finished at: 2023-05-01T13:40:37+05:30  
[INFO] -----  
Finished: SUCCESS
```