**Deep Chavan**

**T11-15**

# LAB ASSIGNMENT 5

**AIM:** To build a Java program using Jenkins.

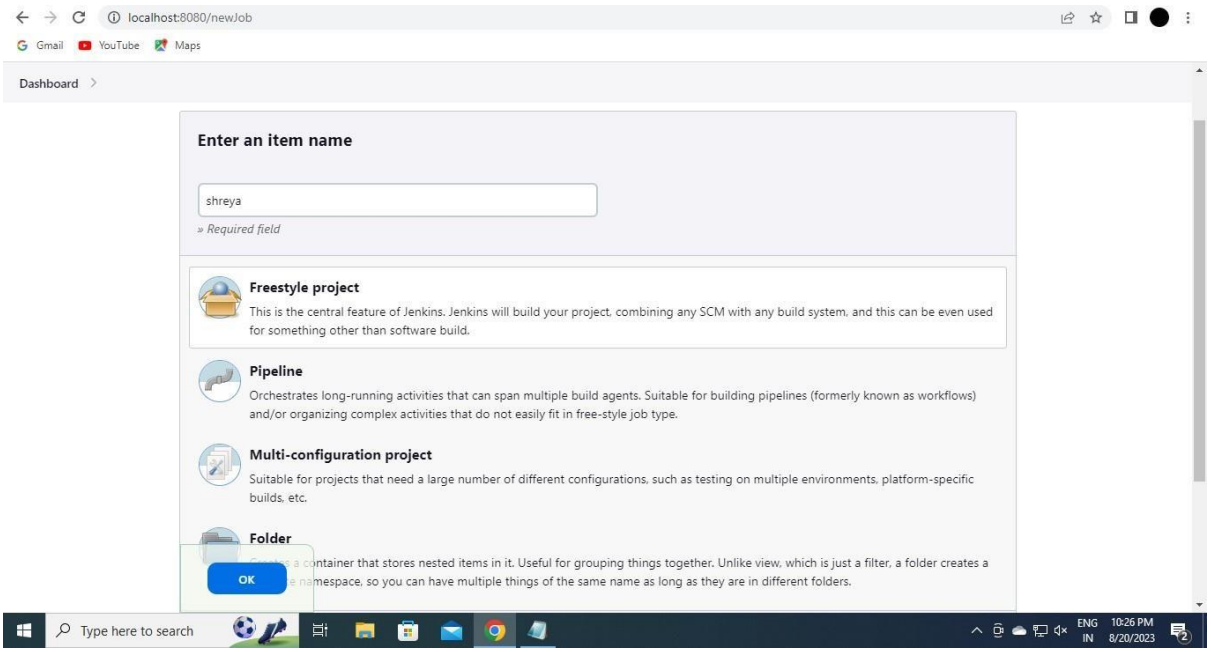
**LAB OUTCOME:**
LO1, LO3 Mapped.

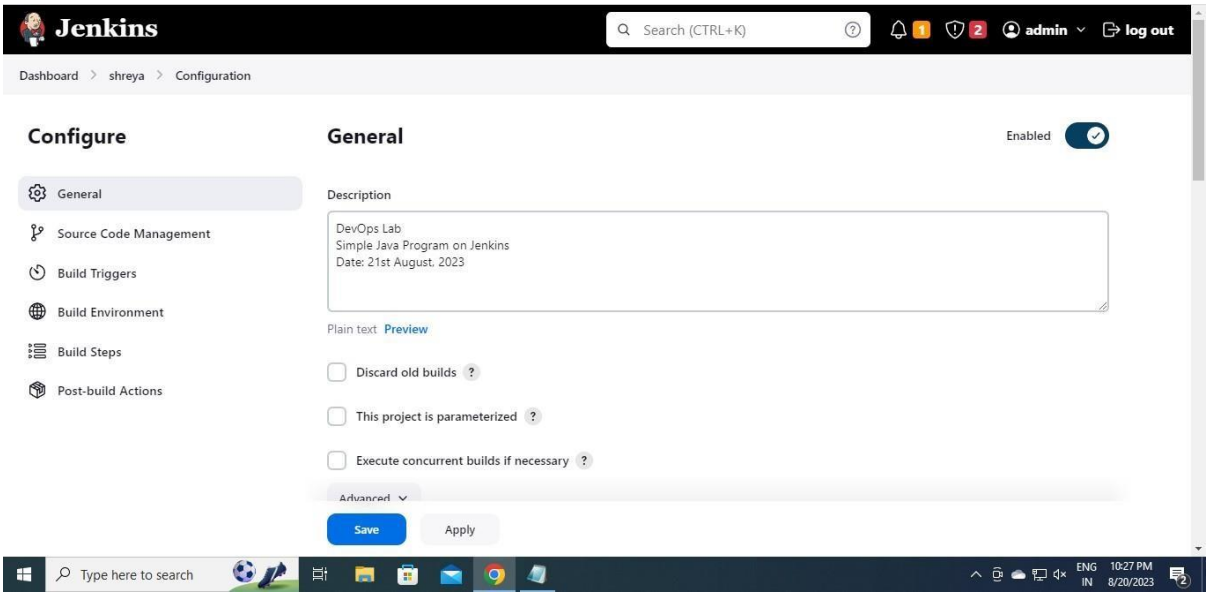
**THEORY:**
Building programs using Jenkins involves automating the development workflow, particularly for Java applications. Through Jenkins, developers create a structured process that automatically manages tasks such as code compilation, testing, and potential deployment.

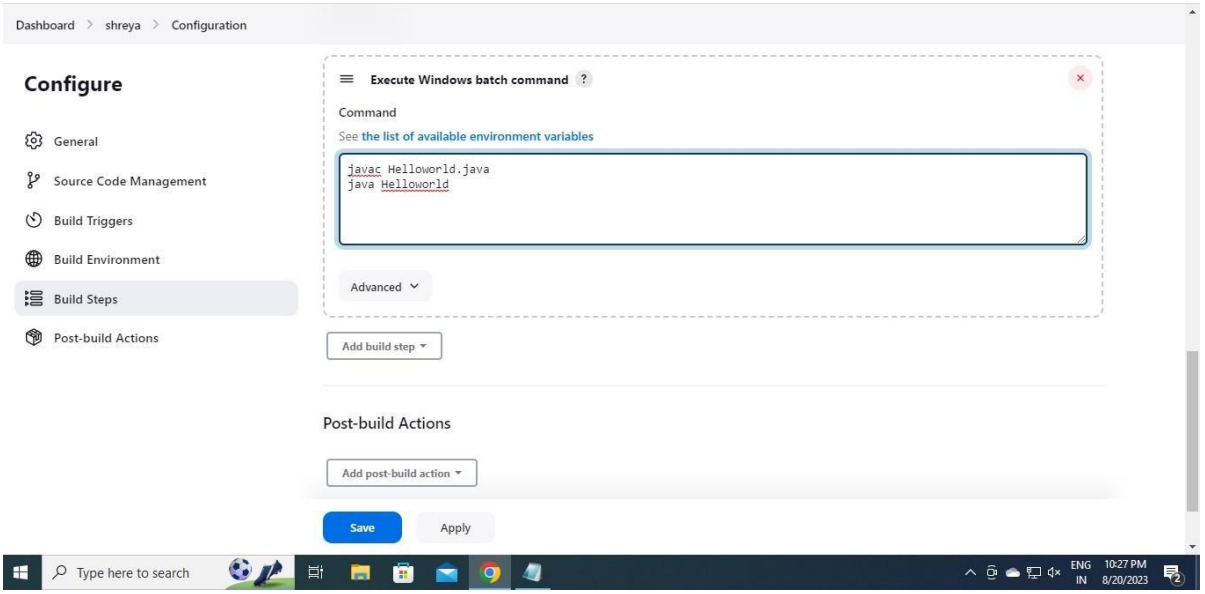
When a Jenkins job is established, it constructs a framework that guides the progression of software development activities. Jenkins can be configured to monitor version control repositories, subsequently triggering a build each time code changes are committed. This preemptive identification of errors during automated builds aids in identifying and addressing issues before they propagate further within the development cycle.

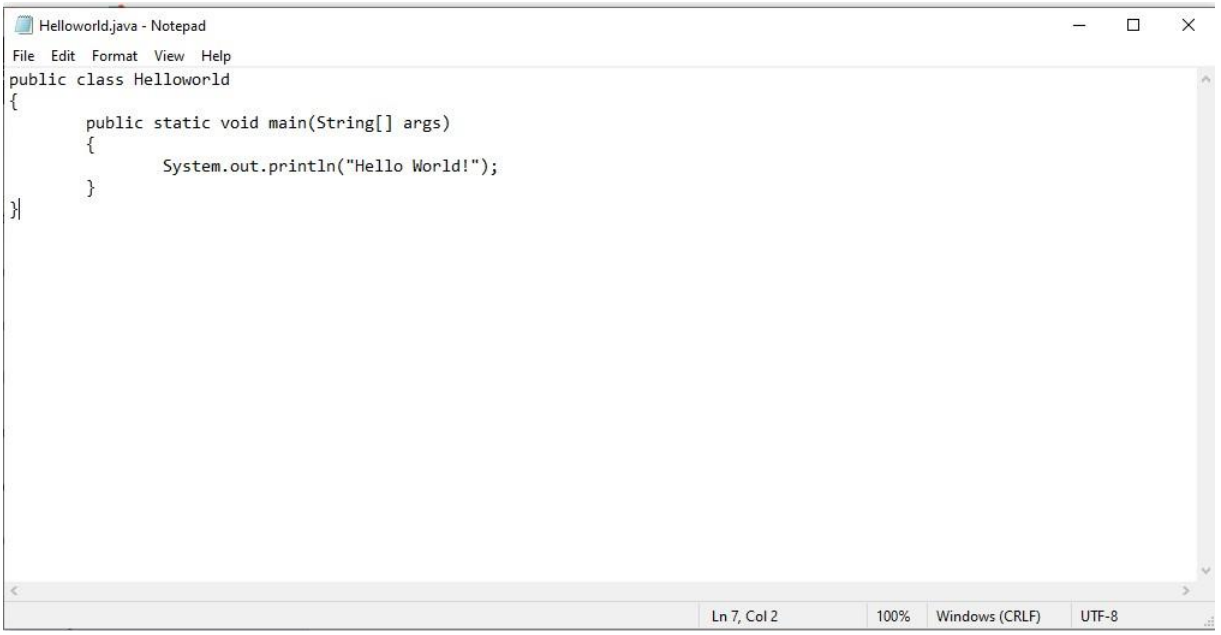
**Steps to build Java Programs using Jenkins:**

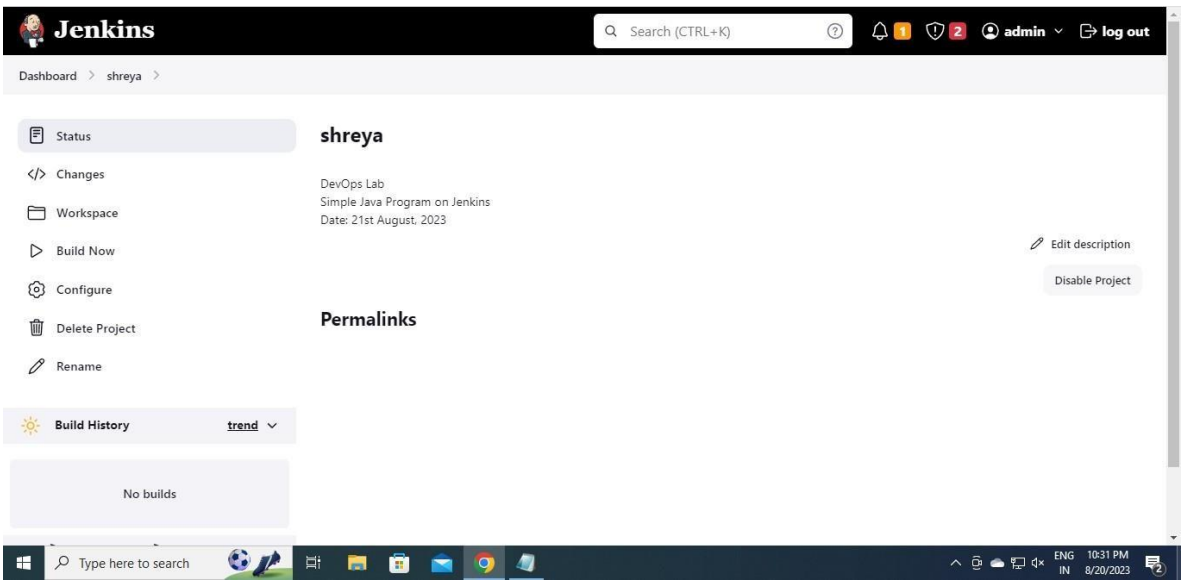
1. Install Jenkins: Install Jenkins on the system.
2. Create Job: Make a new job in Jenkins.
3. Setup Code: Configure version control (e.g., Git) for your job.
4. Build Steps: Add steps to compile your Java program, e.g., use "Execute shell" with javac.
5. Post-Build: Optionally, add post-build actions like archiving artefacts.
6. Save and Build: Save the job and trigger a build.
7. Check Results: Review build results, including console output and test reports.
8. Test Steps: If applicable, add test steps using tools like JUnit.
9. Automate: Set up auto-build triggers for continuous integration.

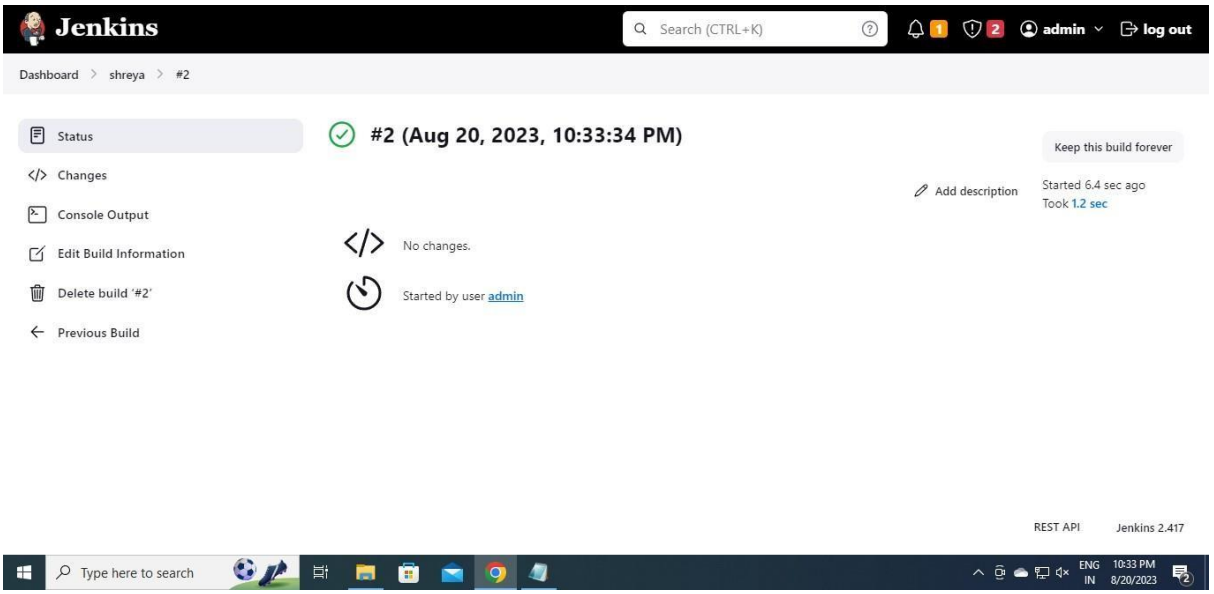

localhost:8080/newJob
Gmail
YouTube
Maps
Dashboard
Enter an item name
shreya
» Required field
Freestyle project
This is the central feature of Jenkins. Jenkins will build your project, combining any SCM with any build system, and this can be even used for something other than software build.
Pipeline
Orchestrates long-running activities that can span multiple build agents. Suitable for building pipelines (formerly known as workflows) and/or organizing complex activities that do not easily fit in free-style job type.
Multi-configuration project
Suitable for projects that need a large number of different configurations, such as testing on multiple environments, platform-specific builds, etc.
Folder
OK
Type here to search
ENG
IN
10:26 PM
8/20/2023

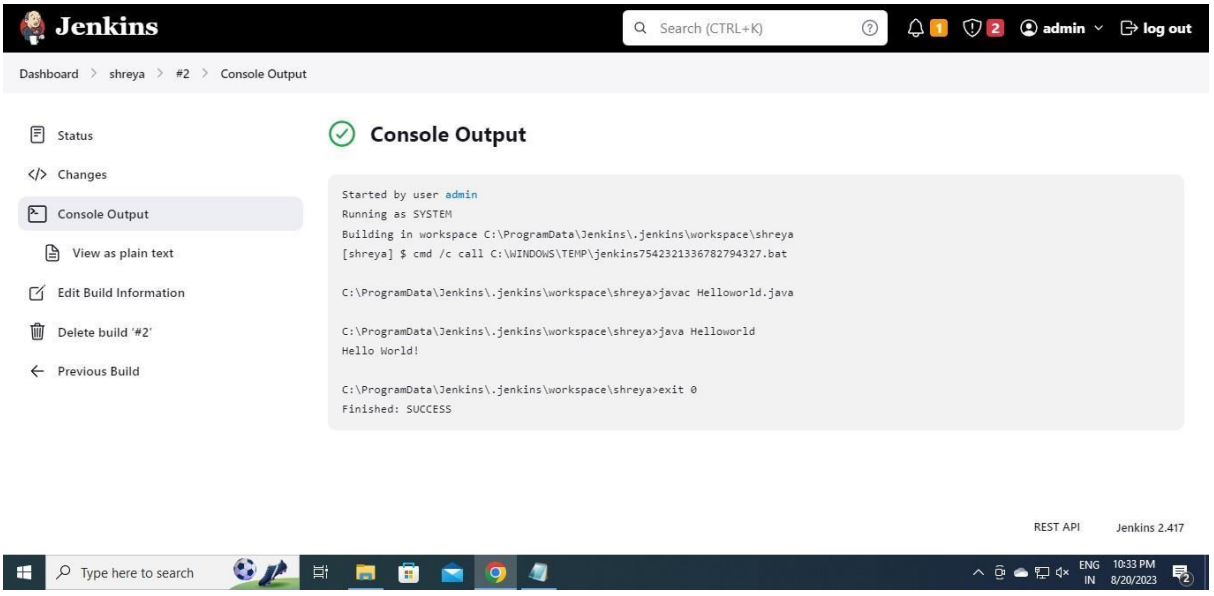

Jenkins
Search (CTRL+K)
admin
log out
Dashboard
shreya
Configuration
Configure
General
Source Code Management
Build Triggers
Build Environment
Build Steps
Post-build Actions
General
Enabled
Description
DevOps Lab
Simple Java Program on Jenkins
Date: 21st August, 2023
Plain text
Preview
Discard old builds
This project is parameterized
Execute concurrent builds if necessary
Advanced
Save
Apply
Type here to search
ENG
IN
10:27 PM
8/20/2023

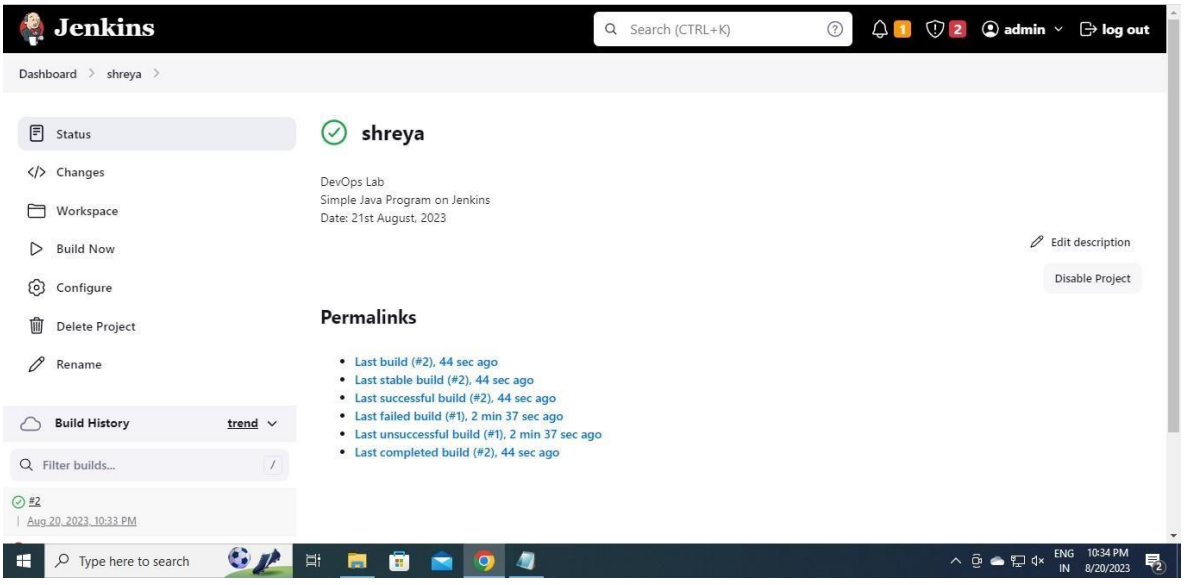

Dashboard > shreya > Configuration
Configure
General
Source Code Management
Build Triggers
Build Environment
Build Steps
Post-build Actions
Execute Windows batch command
Command
See the list of available environment variables
javac Helloworld.java
java Helloworld
Advanced
Add build step
Post-build Actions
Add post-build action
Save
Apply
Type here to search
ENG IN 10:27 PM 8/20/2023

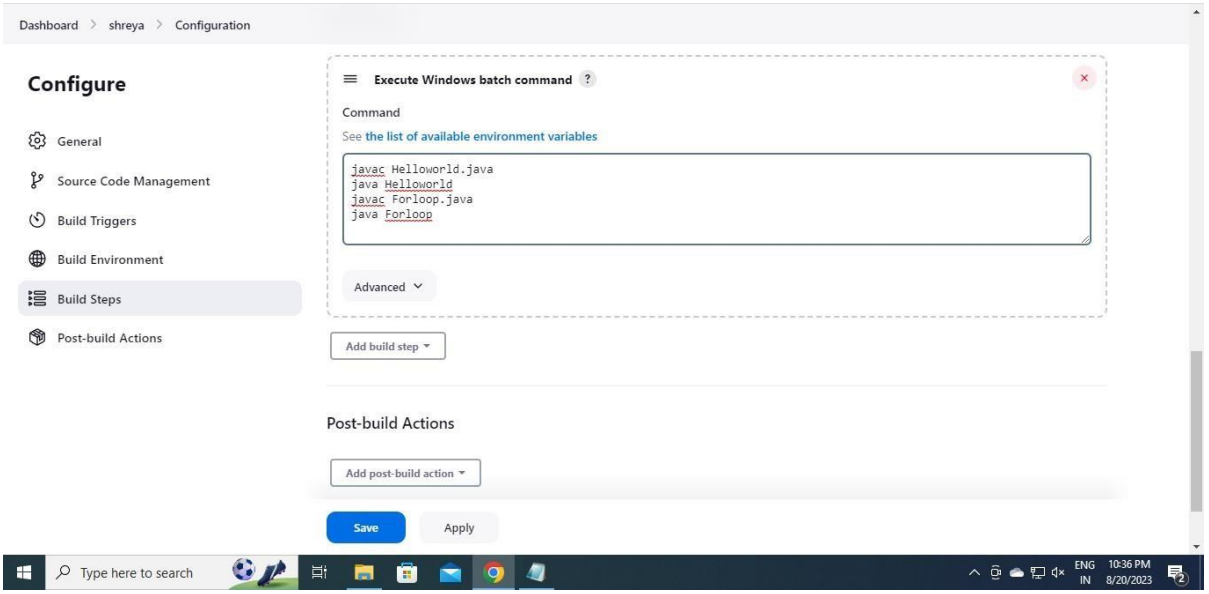

Helloworld.java - Notepad
File Edit Format View Help
public class Helloworld
{
public static void main(String[] args)
{
System.out.println("Hello World!");
}
}
Ln 7, Col 2
100%
Windows (CRLF)
UTF-8

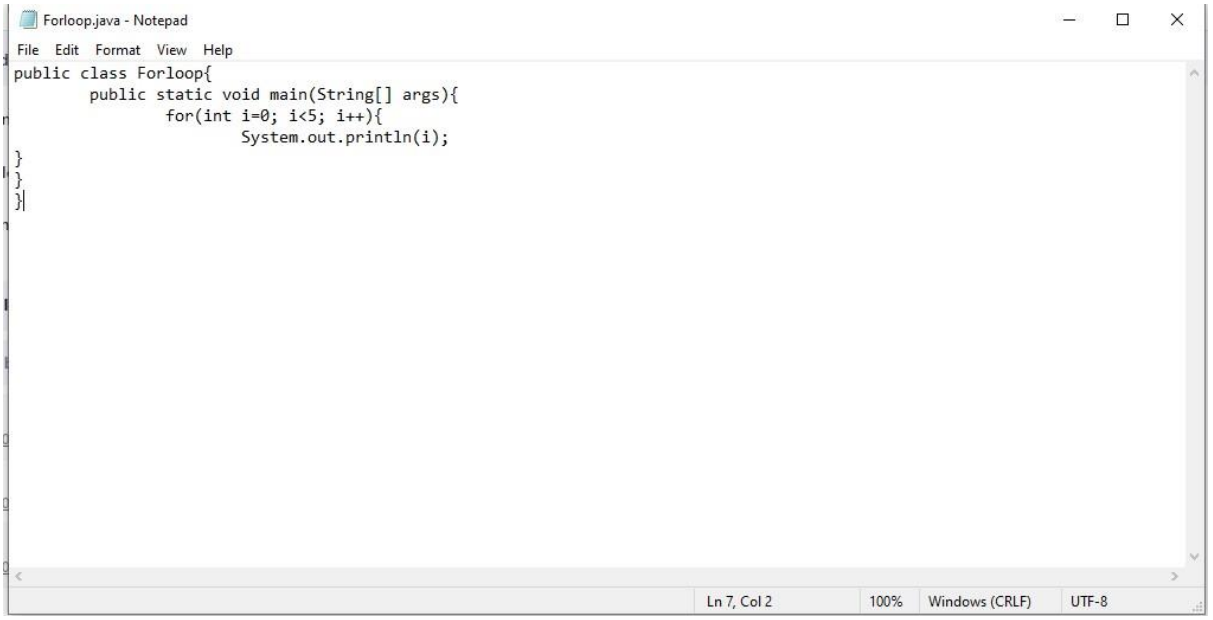

Jenkins
Search (CTRL+K)
admin
log out
Dashboard > shreya >
Status
Changes
Workspace
Build Now
Configure
Delete Project
Rename
Build History
trend
No builds
shreya
DevOps Lab
Simple Java Program on Jenkins
Date: 21st August, 2023
Edit description
Disable Project
Permalinks
Type here to search
ENG IN 10:31 PM 8/20/2023

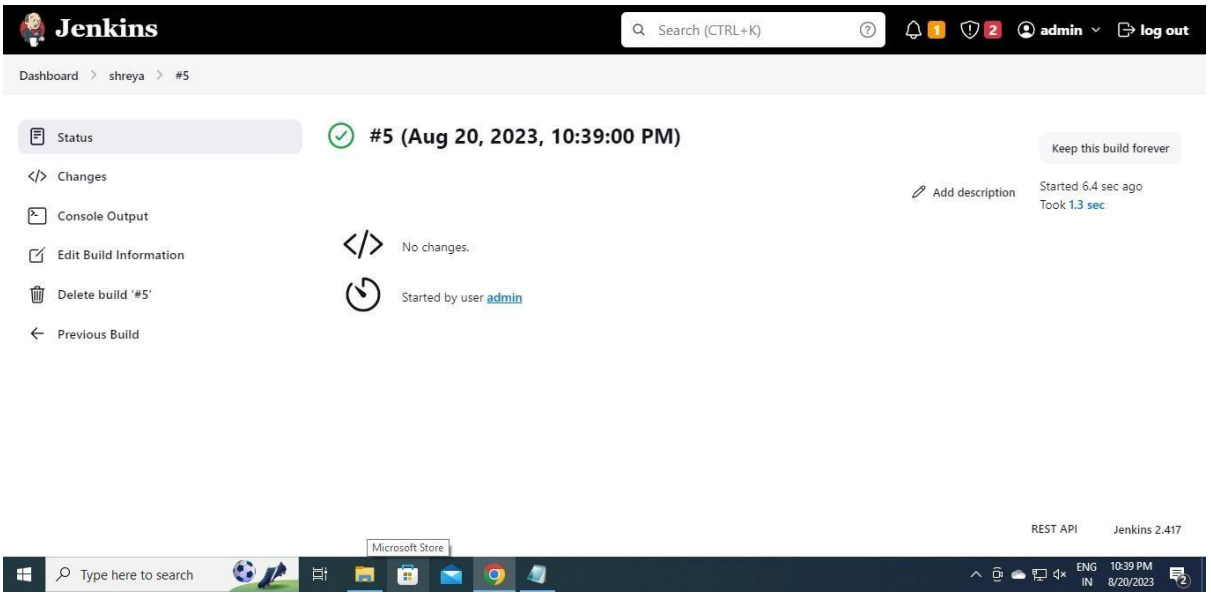

Jenkins
Search (CTRL+K)
admin
log out
Dashboard > shreya > #2
Status
Changes
Console Output
Edit Build Information
Delete build '#2'
Previous Build
#2 (Aug 20, 2023, 10:33:34 PM)
Keep this build forever
Add description
Started 6.4 sec ago
Took 1.2 sec
No changes.
Started by user admin
REST API
Jenkins 2.417
Type here to search
ENG
IN
10:33 PM
8/20/2023

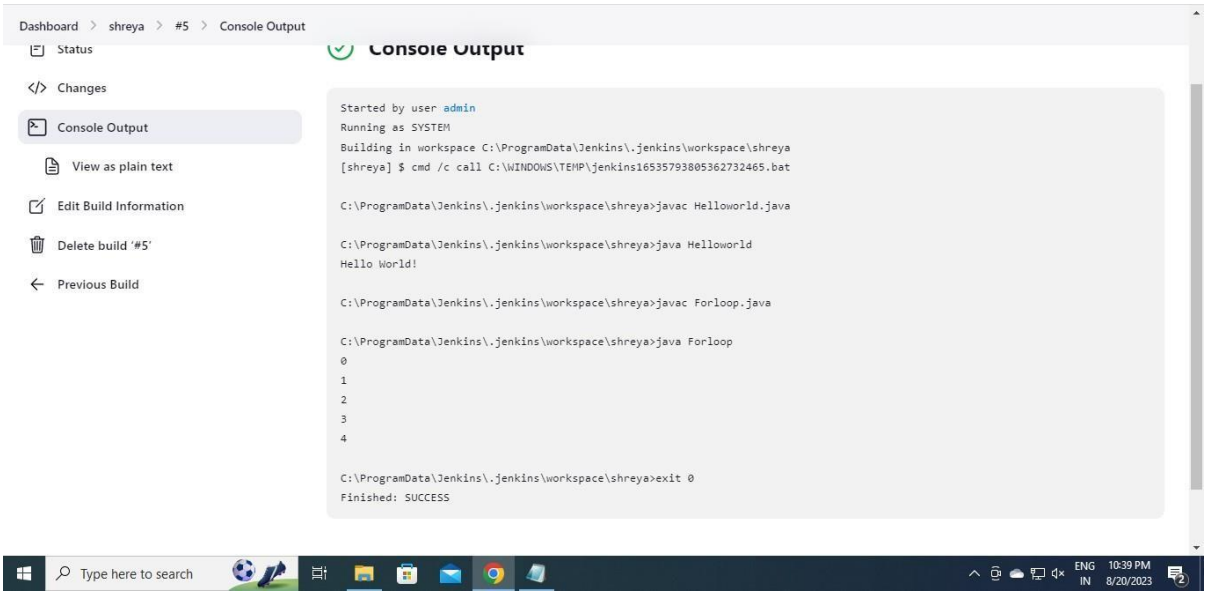

Jenkins
Search (CTRL+K)
admin
log out
Dashboard > shreya > #2 > Console Output
Status
Changes
Console Output
View as plain text
Edit Build Information
Delete build '#2'
Previous Build
Console Output
Started by user admin
Running as SYSTEM
Building in workspace C:\ProgramData\Jenkins\.jenkins\workspace\shreya
[shreya] $ cmd /c call C:\WINDOWS\TEMP\jenkins7542321336782794327.bat
C:\ProgramData\Jenkins\.jenkins\workspace\shreya>javac Helloworld.java
C:\ProgramData\Jenkins\.jenkins\workspace\shreya>java Helloworld
Hello World!
C:\ProgramData\Jenkins\.jenkins\workspace\shreya>exit 0
Finished: SUCCESS
REST API
Jenkins 2.417
Type here to search
ENG
IN
10:33 PM
8/20/2023

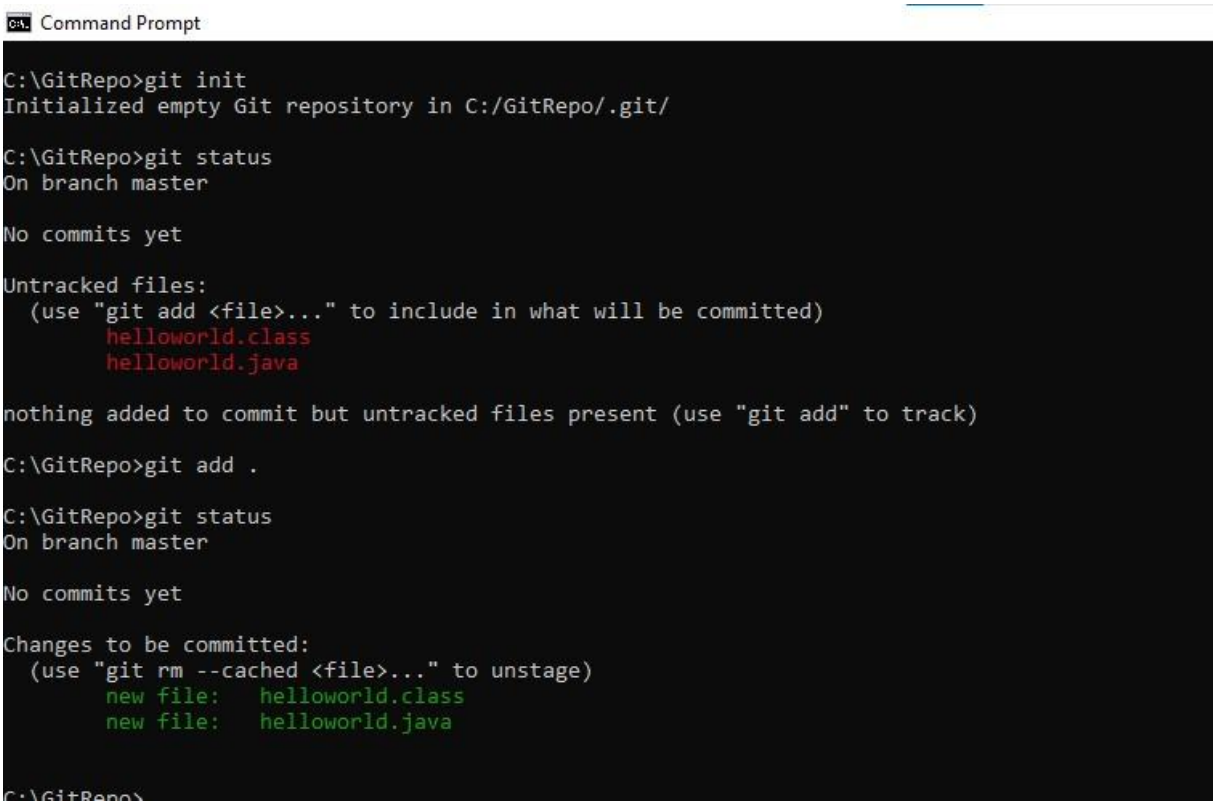

Jenkins
Search (CTRL+K)
admin
log out
Dashboard > shreya >
Status
Changes
Workspace
Build Now
Configure
Delete Project
Rename
Build History
trend
Filter builds...
#2
Aug 20, 2023, 10:33 PM
shreya
DevOps Lab
Simple Java Program on Jenkins
Date: 21st August, 2023
Edit description
Disable Project
Permalinks
Last build (#2), 44 sec ago
Last stable build (#2), 44 sec ago
Last successful build (#2), 44 sec ago
Last failed build (#1), 2 min 37 sec ago
Last unsuccessful build (#1), 2 min 37 sec ago
Last completed build (#2), 44 sec ago
Type here to search
ENG
IN
10:34 PM
8/20/2023


Dashboard > shreya > Configuration
Configure
General
Source Code Management
Build Triggers
Build Environment
Build Steps
Post-build Actions
Execute Windows batch command
Command
See the list of available environment variables
javac Helloworld.java
java Helloworld
javac Forloop.java
java Forloop
Advanced
Add build step
Post-build Actions
Add post-build action
Save
Apply
Type here to search
ENG IN 10:36 PM 8/20/2023


Forloop.java - Notepad
File Edit Format View Help
public class Forloop{
public static void main(String[] args){
for(int i=0; i<5; i++){
System.out.println(i);
}
}
}
Ln 7, Col 2
100%
Windows (CRLF)
UTF-8


Jenkins
Search (CTRL+K)
admin
log out
Dashboard > shreya > #5
Status
Changes
Console Output
Edit Build Information
Delete build '#5'
Previous Build
#5 (Aug 20, 2023, 10:39:00 PM)
Keep this build forever
Add description
Started 6.4 sec ago
Took 1.3 sec
No changes.
Started by user admin
REST API
Jenkins 2.417
Microsoft Store
Type here to search
ENG IN 10:39 PM 8/20/2023




**CONCLUSION**:

Hence, through this assignment, I have successfully built a Hello World and a program with for loops in Java using Jenkins.