

## **LAB ASSIGNMENT 5**

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

**LAB OUTCOME:**

LO1, LO3 Mapped.

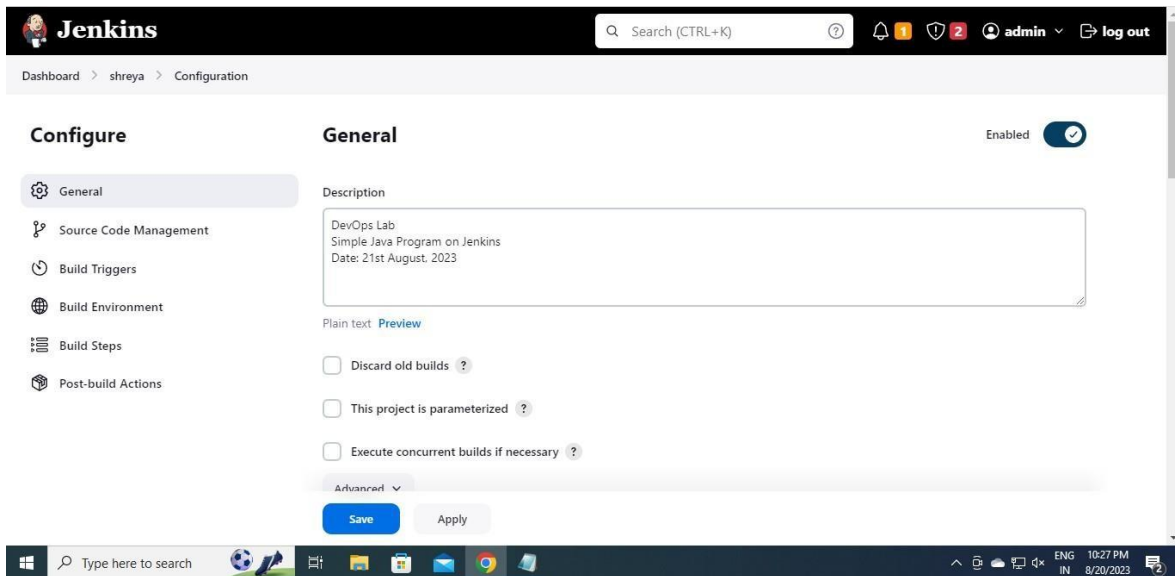
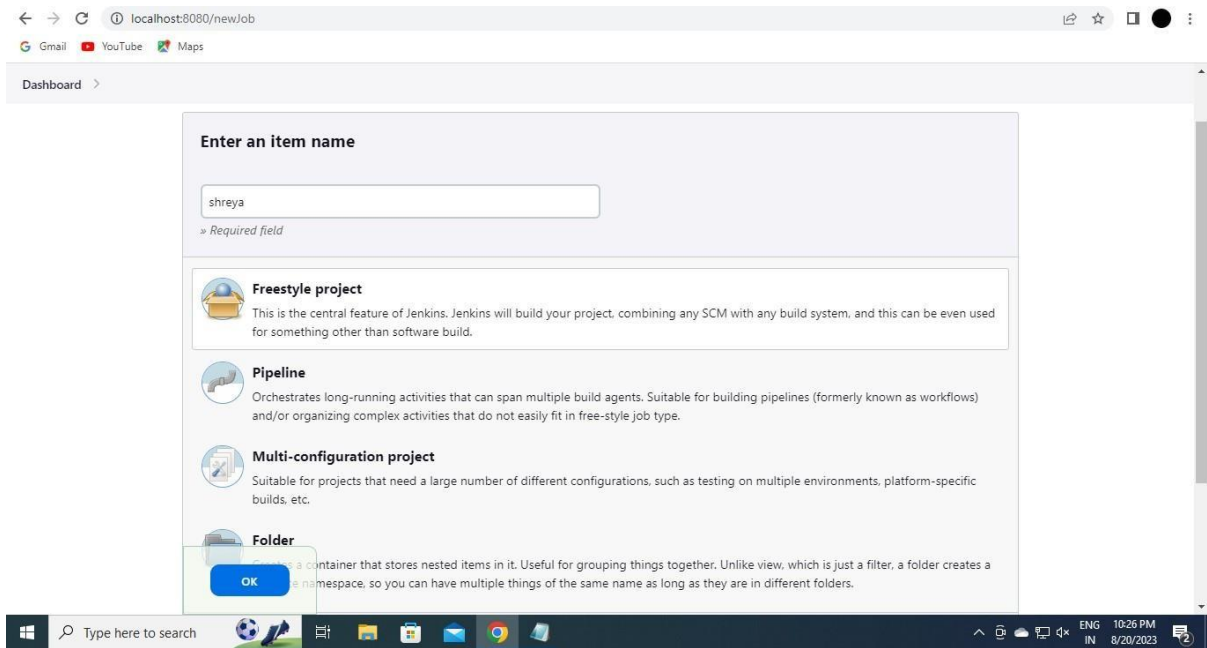
**THEORY:**

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.



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

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

Jenkins

Search (CTRL+K)

1

2

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)

No changes.

Started by user [admin](#)

Keep this build forever

Add description

Started 6.4 sec ago  
Took 1.2 sec

REST APIJenkins 2.417

Jenkins

Search (CTRL+K)

1

2

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 APIJenkins 2.417

Jenkins

Search (CTRL+K)

1

2

admin

log out

Dashboard > shreya >

Status

Changes

Workspace

Build Now

Configure

Delete Project

Rename

Build History

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

Filter builds...

#2  
Aug 20, 2023, 10:33 PM

Type here to search

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

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)

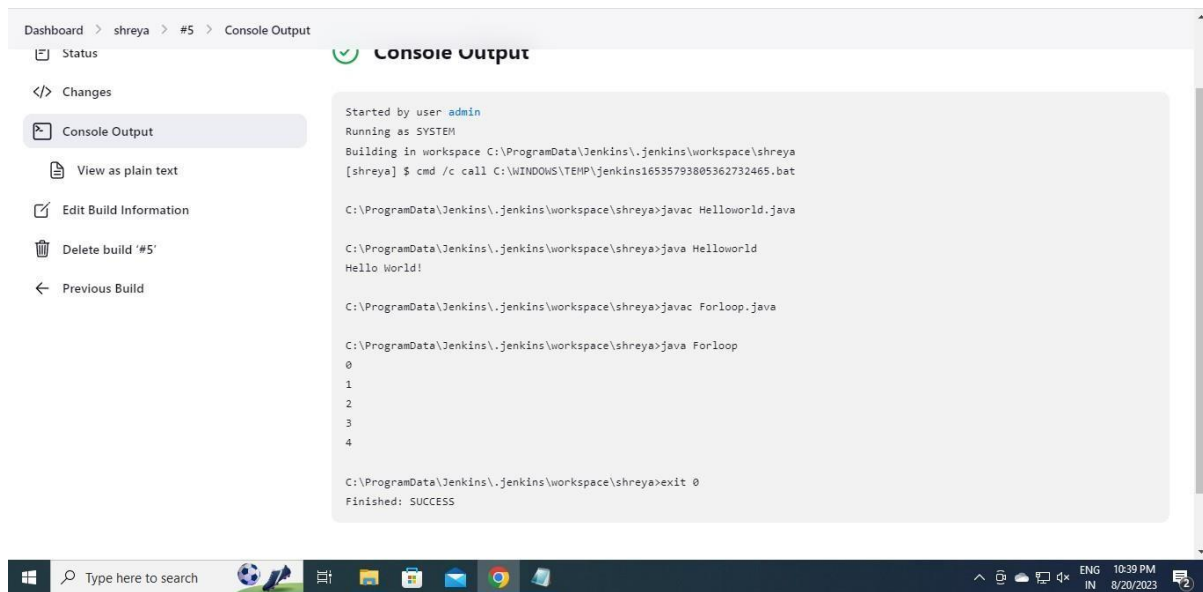
Keep this build forever

Add description Started 6.4 sec ago Took 1.3 sec

No changes.

Started by user [admin](#)

REST API Jenkins 2.417



```
C:\GitRepo>git init
Initialized empty Git repository in C:/GitRepo/.git/

C:\GitRepo>git status
On branch master

No commits yet

Untracked files:
  (use "git add <file>..." to include in what will be committed)
        helloworld.class
        helloworld.java

nothing added to commit but untracked files present (use "git add" to track)

C:\GitRepo>git add .

C:\GitRepo>git status
On branch master

No commits yet

Changes to be committed:
  (use "git rm --cached <file>..." to unstage)
        new file:   helloworld.class
        new file:   helloworld.java

C:\GitRepo>
```

## CONCLUSION:

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