# User Manual

## Introduction

This user manual provides step-by-step instructions for using the Jenkins Continuous Integration (CI) system implemented in this project. It explains how to access Jenkins, run jobs, view build results, and manage pipelines.

## Accessing Jenkins

**Steps:**

1. Open a web browser.
2. Enter the Jenkins URL:

```
http://localhost:8080
```

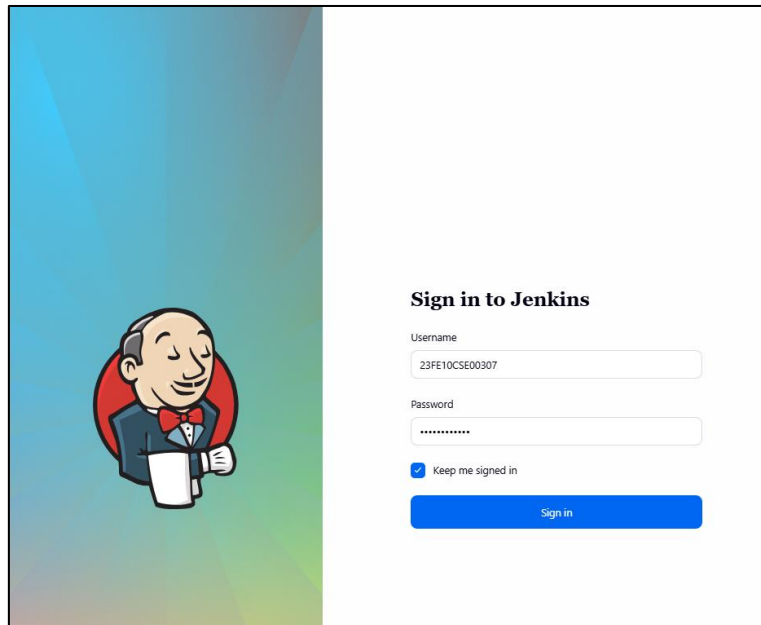3. Log in using the administrator credentials (Enrolment Number as username).



**Figure 1.** *Jenkins login page*

## Dashboard Navigation

After logging in, the Jenkins dashboard is displayed.

**Main features of the dashboard:**

- **New Item:** Create new jobs
- **Build History:** View previous builds
- **Manage Jenkins:** Configure system settings
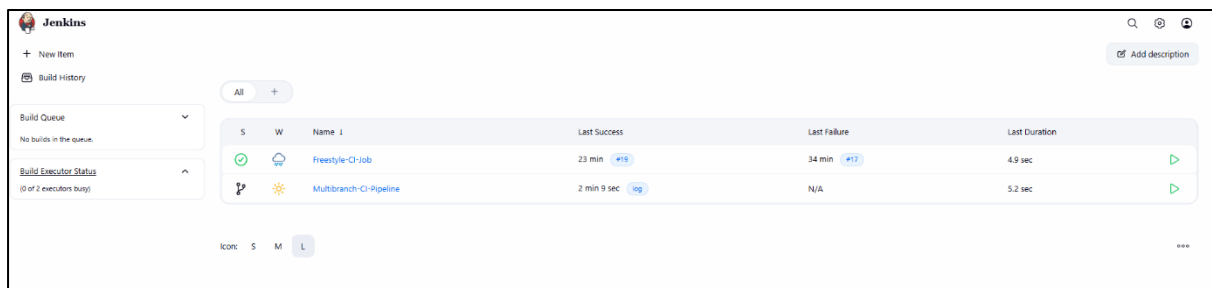- **Job List:** Displays all configured jobs

*Figure 2. Jenkins dashboard with job list*

# Running a Freestyle Job

**Steps:**

1. Click on the Freestyle job name.
2. Click **Build Now**.
3. Jenkins starts executing the job.
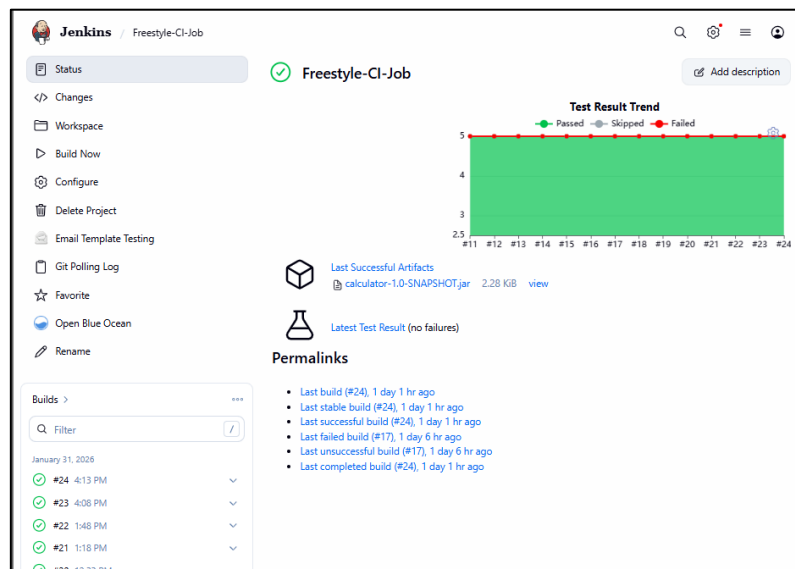4. Click on the build number to view details.



*Figure 3. Freestyle job page with "Build Now" option*

# Viewing Build Console Output

**Steps:**

1. Click on the build number (e.g., #1).
2. Click on **Console Output**.
3. Observe the logs for:
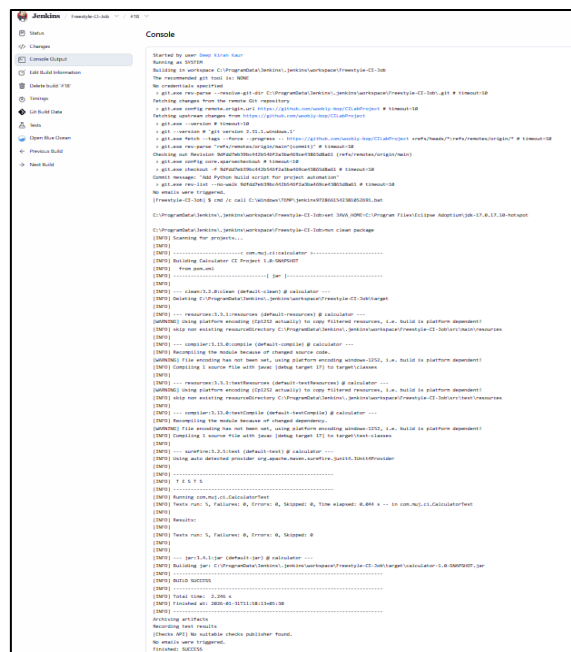   a. Code checkout
   b. Build execution
   c. Test results

**Figure 4.** *Console Output showing successful build*

# Running Multibranch Pipeline Job

**Steps:**

1. Click on the Multibranch Pipeline job.
2. Jenkins automatically displays discovered branches.
3. Click any branch to view its pipeline.
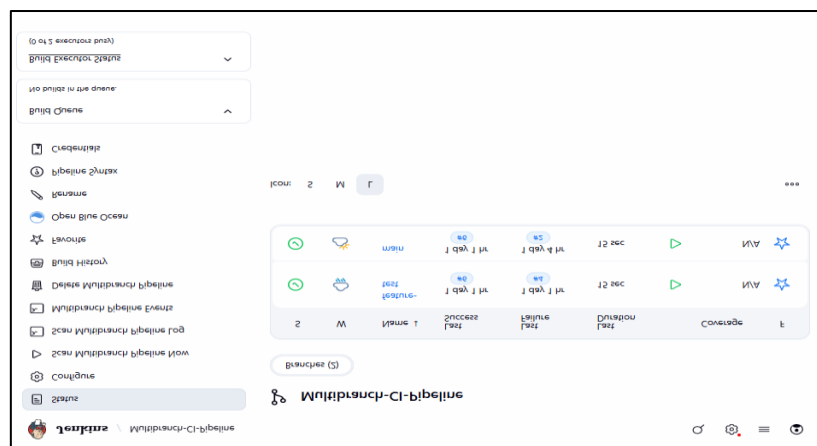4. Click **Build Now** to trigger a pipeline run.



**Figure 5.** *Multibranch Pipeline job showing branches*

# Viewing Pipeline Stages

**Steps:**

1. Click on a pipeline build.
2. View the stage-wise execution (Checkout, Build, Test, Deploy).
3. Click on any stage to view logs.

**Figure 6.***Pipeline stage view (Blue Ocean)*

# Viewing Test Results

**Steps:**

1. Open a completed build.
2. Click on **Test Result**.
3. View passed and failed test cases.



**Figure 7.** *Test Results page*

# Downloading Build Artifacts

**Steps:**

1. Open a completed build.
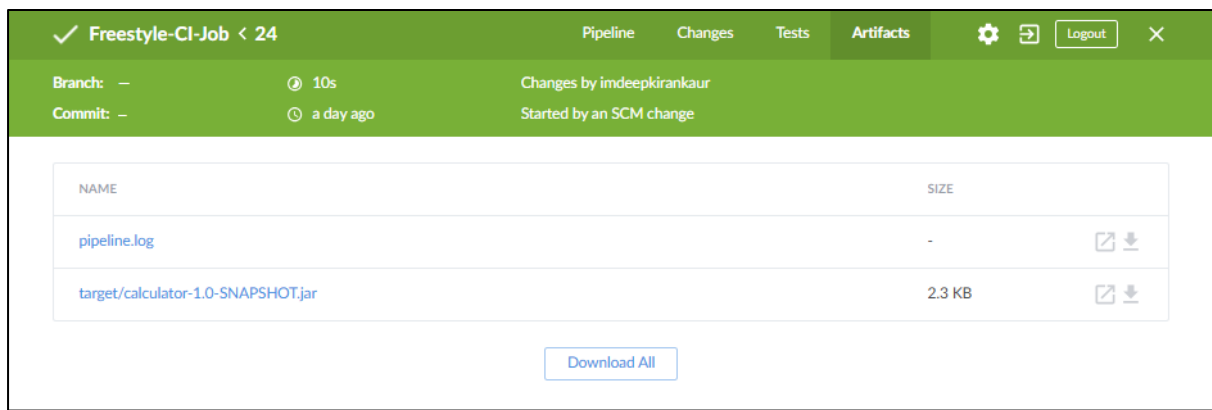2. Click on **Artifacts**.
3. Download generated files.

***Figure 8.*** *Artifacts section*

# Triggering Builds Automatically

Builds can be triggered automatically by:

- Pushing code to GitHub (via webhook)
- Polling SCM schedule
- Branch indexing in Multibranch Pipeline

This ensures Continuous Integration without manual intervention.

# Logging Out

**Steps:**

1. Click on the username at the top-right corner.
2. Click **Log out**.

# Summary

This user manual enables users to effectively operate the Jenkins CI system.
It covers login, job execution, pipeline monitoring, and result analysis.
Using these steps, users can continuously integrate and test their code using Jenkins.