

Exercise 4: Pipeline Job - End-to-End CI/CD for a React Application

1. Objective: Implement a CI/CD pipeline for a React web application.

2. Steps:

o Create a Pipeline Job.

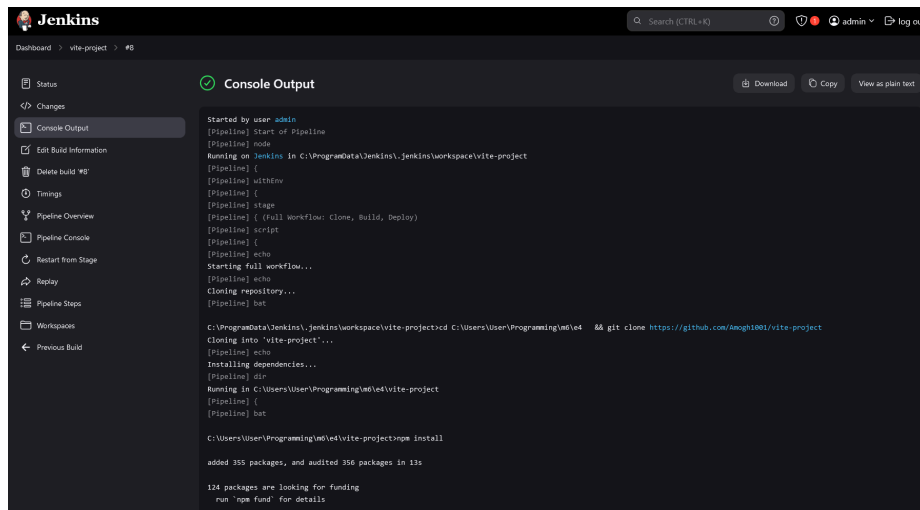
o Write a Jenkinsfile to:

- Clone the React project from GitHub.
- Install dependencies (npm install).
- Run tests (npm test).
- Build the project (npm run build).
- Deploy the application by copying the build folder to a deployment directory.

o Add stages for:

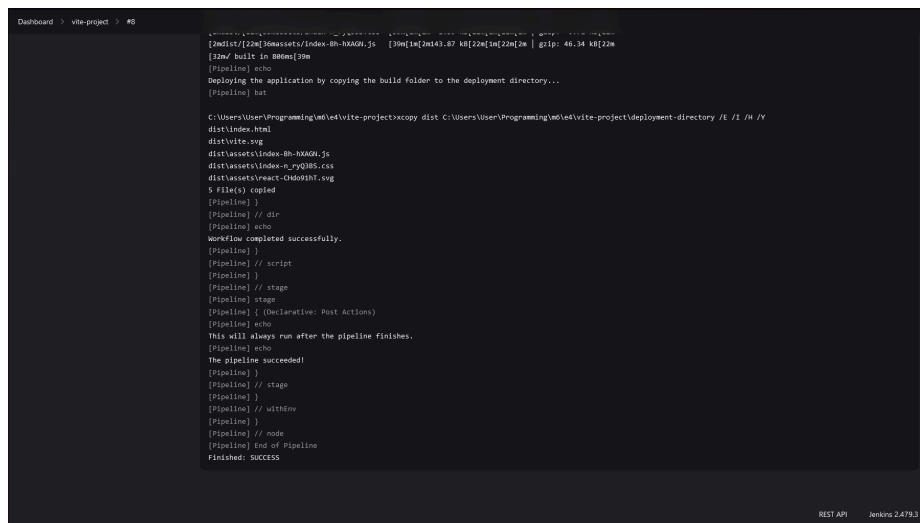
- Linting using ESLint.
- Post-deployment testing using curl to verify the app is running.

3. Task: Run the pipeline and validate each stage's output.



The screenshot shows the Jenkins web interface with the 'Console Output' tab selected for a job named 'vite-project'. The output log shows the pipeline starting at 10:43:07 AM. It includes the cloning of the repository from GitHub, the installation of 355 dependencies, and the start of the 'full workflow' which includes 'Clone, Build, Deploy' stages. The log also shows the directory structure and the execution of 'npm install'.

```
Started by user admin
[Pipeline] Start of Pipeline
[Pipeline] node
Running on Jenkins in C:\ProgramData\Jenkins\workspace\vite-project
[Pipeline] {
[Pipeline] withEnv
[Pipeline] {
[Pipeline] stage
[Pipeline] { (full workflow: Clone, Build, Deploy)
[Pipeline] script
[Pipeline] {
[Pipeline] echo
Starting full workflow...
[Pipeline] echo
Cloning repository...
[Pipeline] bat
C:\ProgramData\Jenkins\workspace\vite-project>cd C:\Users\User\Programming\ml\ed && git clone https://github.com/Aamgh1901/vite-project
Cloning into 'vite-project'...
[Pipeline] echo
Installing dependencies...
[Pipeline] dir
Running in C:\Users\User\Programming\ml\ed\vite-project
[Pipeline] {
[Pipeline] bat
C:\Users\User\Programming\ml\ed\vite-project>npm install
added 355 packages, and audited 356 packages in 13s
124 packages are looking for funding
run 'npm fund' for details
```



The screenshot continues the Jenkins console output, showing the deployment of the application. It details the copying of the build folder to the deployment directory, the listing of files in the deployment directory, and the successful completion of the workflow. The log concludes with a 'Finished: SUCCESS' message.

```
[2nd]st[22m]6assets/index-BH-BAAZH.js [30m]1m[2m]43.87 KB[22m]1m[22m]2m | gzip: 46.34 KB[22m
[32m] built in 880ms[39m
[Pipeline] echo
Deploying the application by copying the build folder to the deployment directory...
[Pipeline] bat
C:\Users\User\Programming\ml\ed\vite-project>copy dist C:\Users\User\Programming\ml\ed\vite-project\deployment-directory /Y /X /R /Y
dist\index.html
dist\vite.svg
dist\assets\index-BH-BAAZH.js
dist\assets\index-BH-BAAZH.css
dist\assets\react-CHd092Ht.svg
5 file(s) copied
[Pipeline] }
[Pipeline] // dir
[Pipeline] echo
Workflow completed successfully.
[Pipeline] }
[Pipeline] // script
[Pipeline] }
[Pipeline] // stage
[Pipeline] stage
[Pipeline] { (Declarative: Post Actions)
[Pipeline] echo
This will always run after the pipeline finishes.
[Pipeline] echo
The pipeline succeeded!
[Pipeline] }
[Pipeline] // stage
[Pipeline] }
[Pipeline] // withEnv
[Pipeline] }
[Pipeline] // node
[Pipeline] End of Pipeline
Finished: SUCCESS
```

```

1 pipeline {
2   agent any
3   environment {
4     WORKSPACE = "C:\\Users\\User\\Programming\\m6\\e4"
5     REPO_URL = "https://github.com/Amogh1001/vite-project"
6     CLONE_DIR = "${WORKSPACE}\\vite-project"
7     DEPLOY_DIR = "${WORKSPACE}\\vite-project\\deployment-directory"
8   }
9   stages {
10    stage('Full Workflow: Clone, Build, Deploy') {
11      steps {
12        script {
13          echo "Starting full workflow..."
14
15          // Clone the repository
16          echo "Cloning repository..."
17          bat "cd ${WORKSPACE} && git clone ${REPO_URL}"
18

```

```

33          echo "Workflow completed successfully."
34        }
35      }
36    }
37  }
38  post {
39    always {
40      echo 'This will always run after the pipeline finishes.'
41    }
42    success {
43      echo 'The pipeline succeeded!'
44    }
45    failure {
46      echo 'The pipeline failed.'
47    }
48  }
49 }
50

```