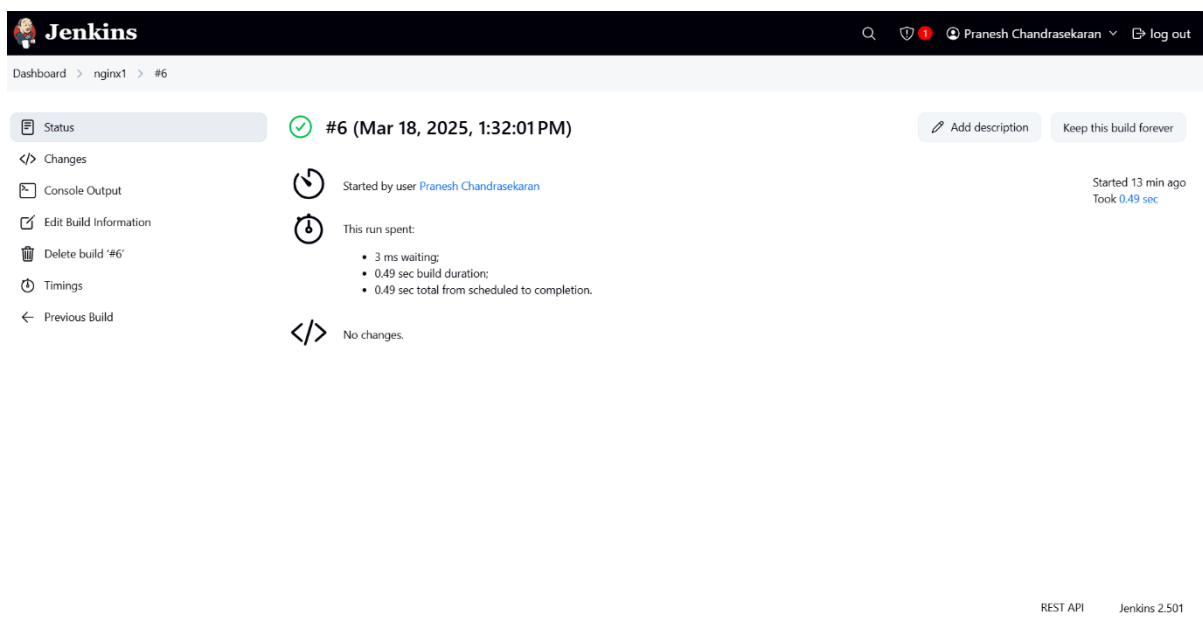


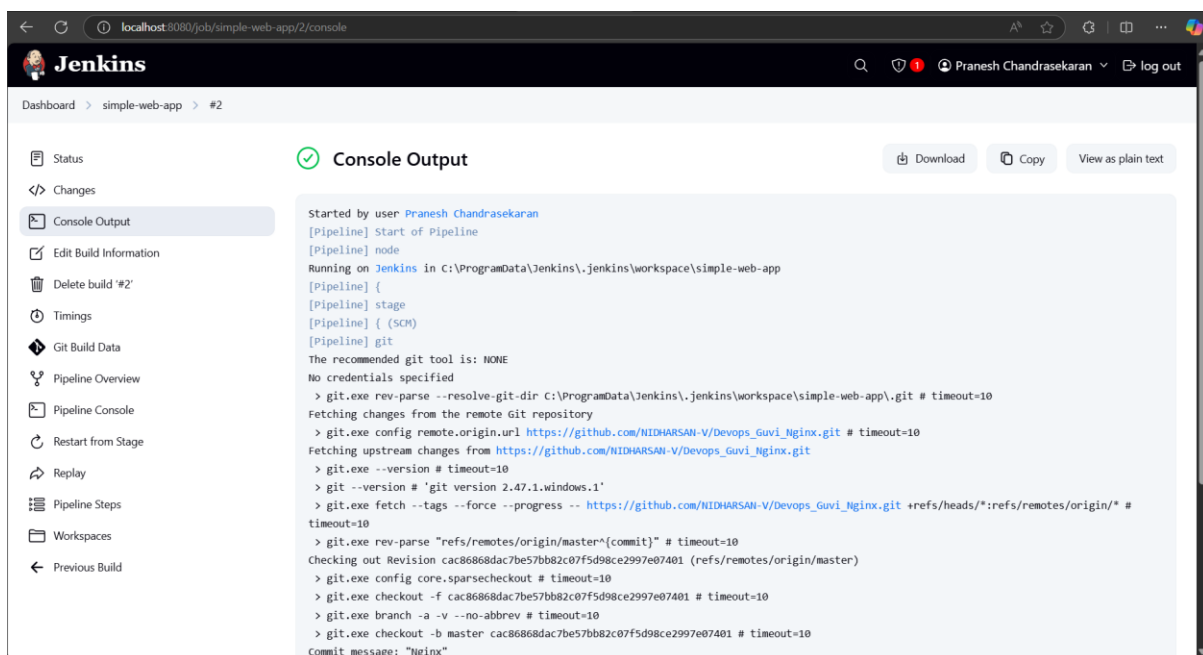
DevOps Day-2

Learned about Jenkins in windows used to create docker image and push to a docker container using functions.

Output of building a simple freestyle project:



The screenshot shows the Jenkins web interface for a job named 'nginx1' at build #6. The status is 'Success' (green checkmark). The build was started by user 'Pranesh Chandrasekaran' on March 18, 2025, at 1:32:01 PM. The console output shows the build process, including a 3 ms wait, a 0.49 sec build duration, and a total time of 0.49 sec from scheduled to completion. The build has no changes. The interface includes a sidebar with links to Status, Changes, Console Output, Edit Build Information, Delete build '#6', Timings, and Previous Build. The top right shows the user 'Pranesh Chandrasekaran' and a 'log out' button. The bottom right shows 'REST API' and 'Jenkins 2.501'.




The screenshot shows the Jenkins web interface for a job named 'simple-web-app' at build #2. The console output is displayed, showing the build process. The output starts with 'Started by user Pranesh Chandrasekaran' and '[Pipeline] Start of Pipeline'. It then shows the pipeline configuration, including a 'node' section and a 'stage' section. The stage is labeled '[Pipeline] { (SCM) }'. The console output shows the following commands and their output:

```
> git.exe rev-parse --resolve-git-dir C:\ProgramData\Jenkins\jenkins\workspace\simple-web-app\.git # timeout=10
Fetching changes from the remote Git repository
> git.exe config remote.origin.url https://github.com/NIDHARSAN-V/Devops_Guvi_Nginx.git # timeout=10
Fetching upstream changes from https://github.com/NIDHARSAN-V/Devops_Guvi_Nginx.git
> git.exe --version # timeout=10
> git --version # 'git version 2.47.1.windows.1'
> git.exe fetch --tags --force --progress -- https://github.com/NIDHARSAN-V/Devops_Guvi_Nginx.git +refs/heads/*:refs/remotes/origin/* # timeout=10
> git.exe rev-parse "refs/remotes/origin/master^{commit}" # timeout=10
Checking out Revision cac8688dac7be57bb82c07f5d98ce2997e07401 (refs/remotes/origin/master)
> git.exe config core.sparsecheckout # timeout=10
> git.exe checkout -f cac8688dac7be57bb82c07f5d98ce2997e07401 # timeout=10
> git.exe branch -a -v --no-abbrev # timeout=10
> git.exe checkout -b master cac8688dac7be57bb82c07f5d98ce2997e07401 # timeout=10
Commit message: "Nginx"
```

Script ?

```
5 stage('SCM') {
6     steps {
7         git branch: 'main', url: 'https://github.com/PraneshC2005/DevOps_simple-web-app.git'
8     }
9 }
10 stage('Build') {
11     steps {
12         bat 'mvn clean install'
13     }
14 }
15 stage('build to images') {
16     steps {
17         script {
18             bat "docker build -t praneshc/webapplication ."
19         }
20     }
21 }
```

☒ Use Groovy Sandbox ?

 **Jenkins**

Pranesh Chandrasekaran

log out

Dashboard > simple-web-app > #7

Status

Changes

Console Output

Edit Build Information

Delete build '#7'

Timings

Git Build Data

Pipeline Overview

Pipeline Console

Restart from Stage

Replay

Pipeline Steps

Workspaces

Previous Build

✓ Console Output

Download

Copy

View as plain text

Started by user Pranesh Chandrasekaran

[Pipeline] Start of Pipeline

[Pipeline] node

Running on Jenkins in C:\ProgramData\Jenkins\jenkins\workspace\simple-web-app

[Pipeline] {

[Pipeline] stage

[Pipeline] { (SCM)

[Pipeline] git

The recommended git tool is: NONE

No credentials specified

> git.exe rev-parse --resolve-git-dir C:\ProgramData\Jenkins\jenkins\workspace\simple-web-app\.git # timeout=10

Fetching changes from the remote Git repository

> git.exe config remote.origin.url https://github.com/PraneshC2005/DevOps_simple-web-app.git # timeout=10

Fetching upstream changes from https://github.com/PraneshC2005/DevOps_simple-web-app.git

> git.exe --version # timeout=10

> git --version # 'git version 2.47.1.windows.1'

> git.exe fetch --tags --force --progress -- https://github.com/PraneshC2005/DevOps_simple-web-app.git +refs/heads/*:refs/remotes/origin/* # timeout=10

> git.exe rev-parse "refs/remotes/origin/main^{commit}" # timeout=10

Checking out Revision 51808a2b1b30b6dcfa81ee3d814f0b7b829114d4 (refs/remotes/origin/main)


> git.exe config core.sparsecheckout # timeout=10

> git.exe checkout -f 51808a2b1b30b6dcfa81ee3d814f0b7b829114d4 # timeout=10

> git.exe branch -a -v --no-abbrev # timeout=10

> git.exe branch -D main # timeout=10

> git.exe checkout -b main 51808a2b1b30b6dcfa81ee3d814f0b7b829114d4 # timeout=10

 **Jenkins**

Pranesh Chandrasekaran

log out

Dashboard > simple-web-app > #6

Status

Changes

Console Output

Edit Build Information

Delete build '#6'

Timings

Git Build Data

Pipeline Overview

Pipeline Console

Restart from Stage

Replay

Pipeline Steps

Workspaces

Previous Build

✓ Console Output

Download

Copy

View as plain text

Started by user Pranesh Chandrasekaran

[Pipeline] Start of Pipeline

[Pipeline] node

Running on Jenkins in C:\ProgramData\Jenkins\jenkins\workspace\simple-web-app

[Pipeline] {

[Pipeline] stage

[Pipeline] { (SCM)

[Pipeline] git

The recommended git tool is: NONE

No credentials specified

> git.exe rev-parse --resolve-git-dir C:\ProgramData\Jenkins\jenkins\workspace\simple-web-app\.git # timeout=10

Fetching changes from the remote Git repository

> git.exe config remote.origin.url https://github.com/PraneshC2005/DevOps_simple-web-app.git # timeout=10

Fetching upstream changes from https://github.com/PraneshC2005/DevOps_simple-web-app.git

> git.exe --version # timeout=10

> git --version # 'git version 2.47.1.windows.1'

> git.exe fetch --tags --force --progress -- https://github.com/PraneshC2005/DevOps_simple-web-app.git +refs/heads/*:refs/remotes/origin/* # timeout=10

> git.exe rev-parse "refs/remotes/origin/main^{commit}" # timeout=10

Checking out Revision 51808a2b1b30b6dcfa81ee3d814f0b7b829114d4 (refs/remotes/origin/main)

> git.exe config core.sparsecheckout # timeout=10

> git.exe checkout -f 51808a2b1b30b6dcfa81ee3d814f0b7b829114d4 # timeout=10

> git.exe branch -a -v --no-abbrev # timeout=10

> git.exe checkout -b main 51808a2b1b30b6dcfa81ee3d814f0b7b829114d4 # timeout=10

Commit message: "first commit"

Dashboard > simpletomapp > Configuration

Configure

General

Triggers

Pipeline

Advanced

https://github.com/PraneshC2005/DevOps_simple-web-app.git

Credentials

praneshc2005

+ Add

Advanced

Add Repository

Branches to build

Branch Specifier (blank for 'any')

*/main

Add Branch

Repository browser

(Auto)

Additional Behaviours

Add

Script Path

Jenkinsfile

Save Apply

Jenkins

Dashboard > simpletomapp > #6

Status

Changes

Console Output

Edit Build Information

Delete build '#6'

Timings

Git Build Data

Pipeline Overview

Pipeline Console

Replay

Pipeline Steps

Workspaces

Previous Build

Console Output

Download Copy View as plain text

Started by user Pranesh Chandrasekaran

Obtained Jenkinsfile from git https://github.com/PraneshC2005/DevOps_simple-web-app.git

[Pipeline] Start of Pipeline

[Pipeline] node

Running on Jenkins in /var/lib/jenkins/workspace/simpletomapp

[Pipeline] {

[Pipeline] stage

[Pipeline] { (Declarative: Checkout SCM)

[Pipeline] checkout

Selected Git installation does not exist. Using Default

The recommended git tool is: NONE

using credential cred-2

> git rev-parse --resolve-git-dir /var/lib/jenkins/workspace/simpletomapp/.git # timeout=10

Fetching changes from the remote Git repository

> git config remote.origin.url https://github.com/PraneshC2005/DevOps_simple-web-app.git # timeout=10

Fetching upstream changes from https://github.com/PraneshC2005/DevOps_simple-web-app.git

> git --version # timeout=10

> git --version # 'git version 2.43.0'

using GIT_ASKPASS to set credentials

> git fetch --tags --force --progress -- https://github.com/PraneshC2005/DevOps_simple-web-app.git +refs/heads/*:refs/remotes/origin/* # timeout=10

> git rev-parse refs/remotes/origin/main^{commit} # timeout=10

Checking out Revision 4872bec4d8db9d776de40de5cdfc22cf21a082f5 (refs/remotes/origin/main)

> git config core.sparsecheckout # timeout=10

> git checkout -f 4872bec4d8db9d776de40de5cdfc22cf21a082f5 # timeout=10

Commit message: "Update Jenkinsfile"

> git rev-list --no-walk 4872bec4d8db9d776de40de5cdfc22cf21a082f5 # timeout=10

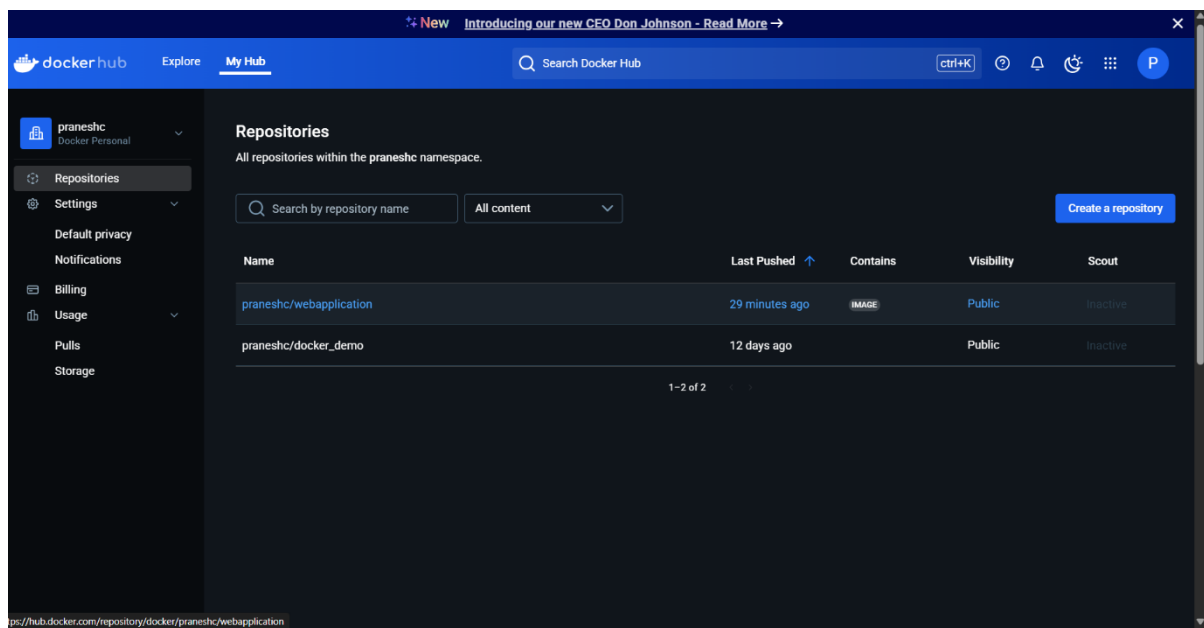
[Pipeline] }

[Pipeline] // stage

[Pipeline] }

[Pipeline] withEnv

Pushed to Docker Hub:



Executed this project using the Jenkins File:

```
pipeline {
    agent any

    stages {
        stage('SCM') {
            steps {
                git branch: 'main', url:
'https://github.com/PraneshC2005/DevOps_simple-web-app.git'
            }
        }

        stage('Build') {
            steps{
```

```

        bat 'mvn clean install'
    }
}
stage('build to images') {
    steps {
        script{
            bat "docker build -t praneshc/webapplication ."
        }
    }
}
stage('docker push hub') {
    steps {
        script{
            withDockerRegistry(credentialsId: 'docker_cred', url:
'https://index.docker.io/v1/') {
                bat 'docker push praneshc/webapplication'
            }
        }
    }
}
}
}

```

Docker is a platform that provides virtual containers on which an application can be deployed independent of the underlying OS of the server. Further the container can be created from a replica called

docker image which contains all the dependencies and can run on any OS that has docker engine, with similar results.

BASIC DOCKER COMMANDS

Display docker images available in our machine

```
$ docker images
```

Download docker image.

```
$ docker pull <image-name / image-id>
```

Run docker image.

```
$ docker run <image-name / image-id>
```

Delete docker image.

```
$ docker rmi <image-name / image-id>
```

Display all running docker containers.

```
$ docker ps
```

Display all running and stopped containers.

```
$ docker ps -a
```

Delete docker container.

```
$ docker rm <container-id>
```

Delete docker image forcefully.

```
$ docker rmi -f <image-id>
```

Stop Docker container.

```
$ docker stop <container-id>
```

JENKINS

Jenkins is an open-source automation tool written in Java programming language that allows continuous integration. Jenkins offers a straightforward way to set up a continuous integration or continuous delivery environment for

almost any combination of languages and source code repositories using pipelines, as well as automating other routine development tasks.

The following are the main or most popular Jenkins use cases:

- Continuous Integration: With Jenkins pipelines, we can achieve CI for both applications and infrastructure as code.
- Continuous Delivery: You can set up well-defined and automated application delivery workflows with Jenkins pipelines.

Jenkins achieves CI (Continuous Integration) and CD (Continuous Deployment) with the help of plugins. Plugins are used to allow the integration of various DevOps stages. If you want to integrate a particular tool, you must install the plugins for that tool.