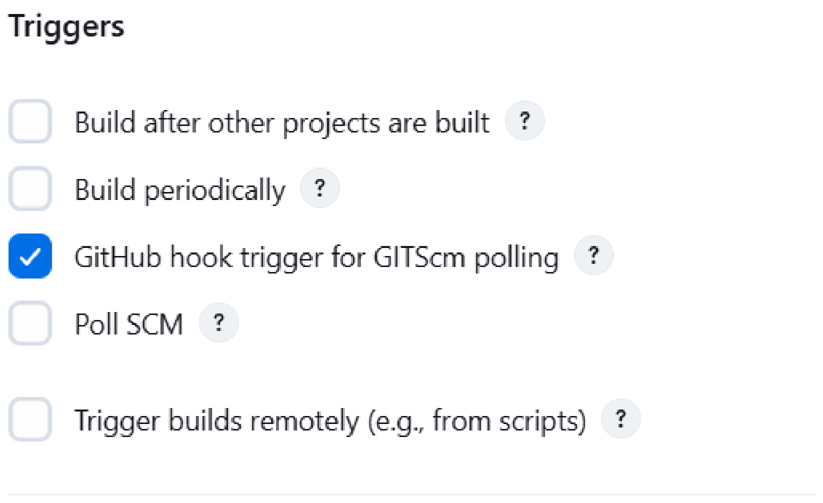
Introduction:

This guide explores configuring and managing CI/CD pipelines using Jenkins and Docker. It covers key components like triggers, pipelines, Dockerfiles, and deployment scripts to help enhance your workflow and optimize project implementation.

Triggers:

GitHub hook trigger for GITScm polling: This option triggers a build when a commit is pushed to GitHub.

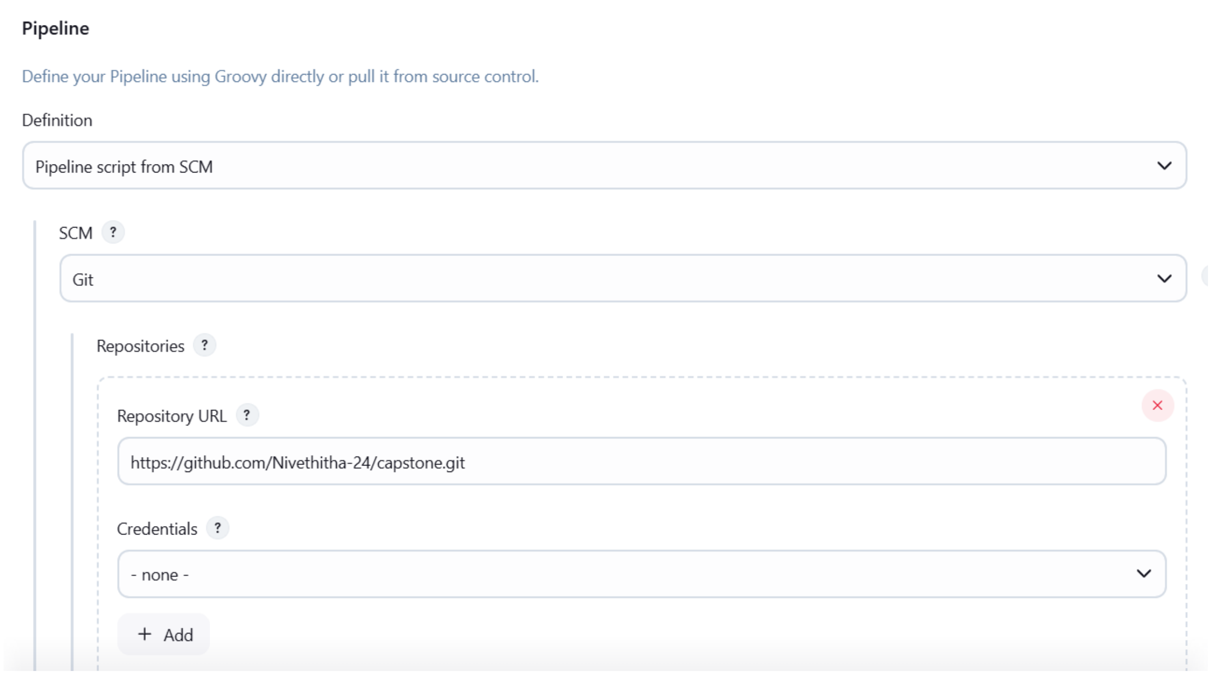


Triggers

- [ ] Build after other projects are built ?
- [ ] Build periodically ?
- [✓] GitHub hook trigger for GITScm polling ?
- [ ] Poll SCM ?
- [ ] Trigger builds remotely (e.g., from scripts) ?

Pipeline:

- Defines the pipeline using Groovy or by pulling it from source control.
- **Definition**: Uses a Pipeline script from SCM (Source Control Management).
- **SCM**: Specifies Git as the source code repository.
- **Repository URL**: Points to your GitHub repository.
- **Branches to build**: Targets the 'main' branch for building.
- **Script Path**: Points to the Jenkinsfile located in the root directory of the repository.
- **Additional Behaviours**: Settings related to repository handling and build process.



Pipeline

Define your Pipeline using Groovy directly or pull it from source control.

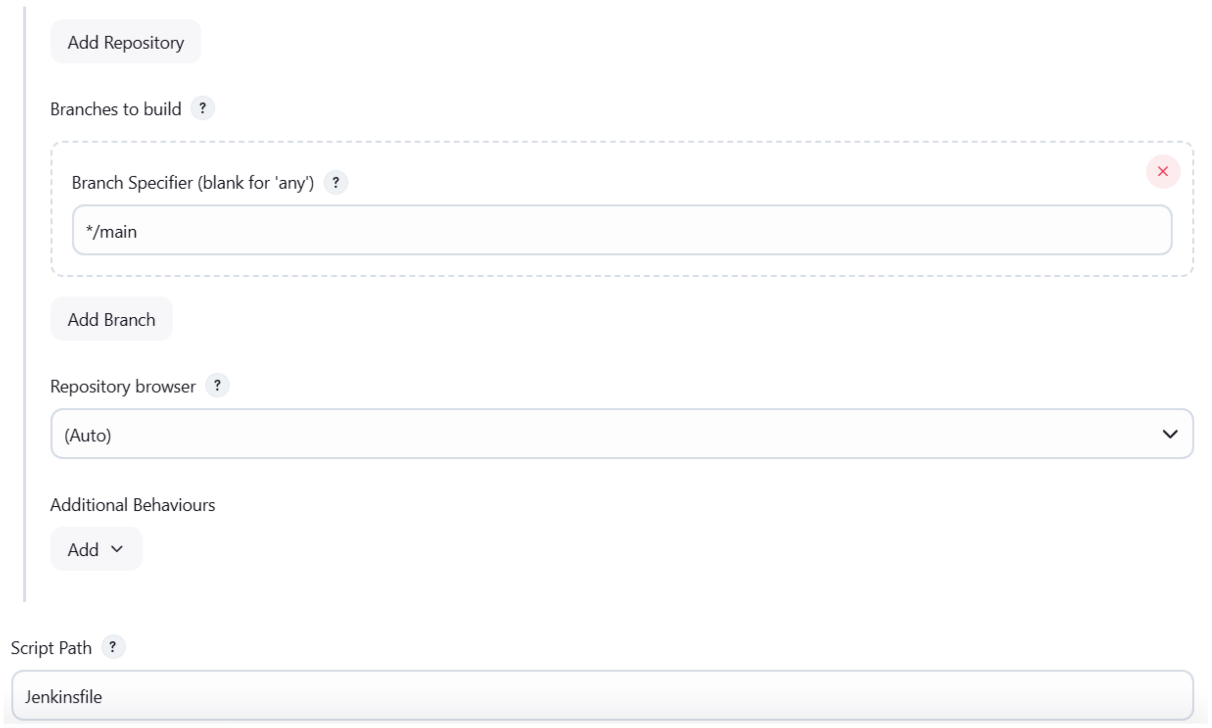
Definition: Pipeline script from SCM

SCM: Git

Repositories

Repository URL: https://github.com/Nivethitha-24/capstone.git

Credentials: - none -



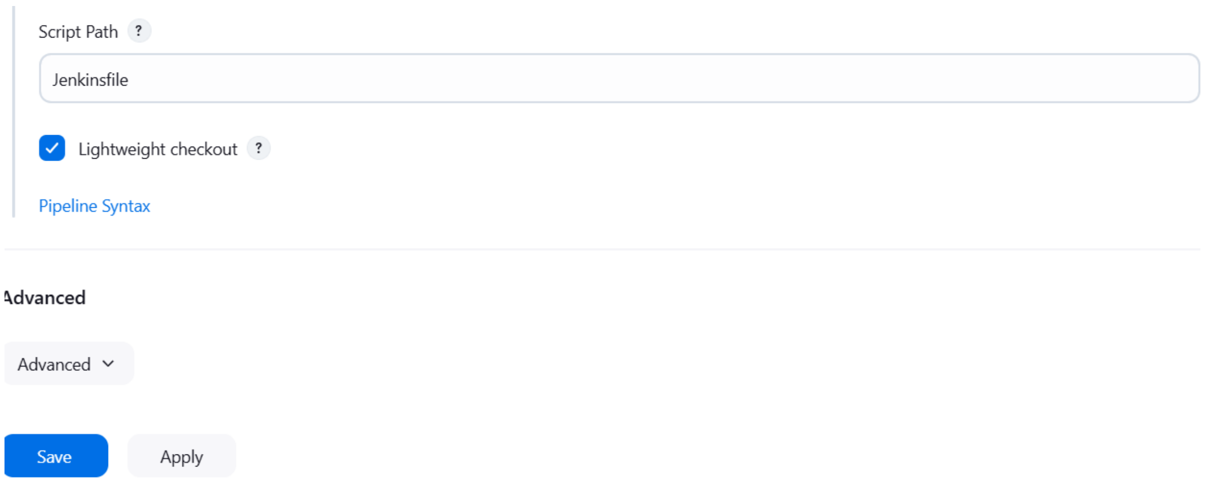
Branches to build

Branch Specifier (blank for 'any'): */main

Repository browser: (Auto)

Additional Behaviours

Script Path: Jenkinsfile



Script Path ?

Jenkinsfile

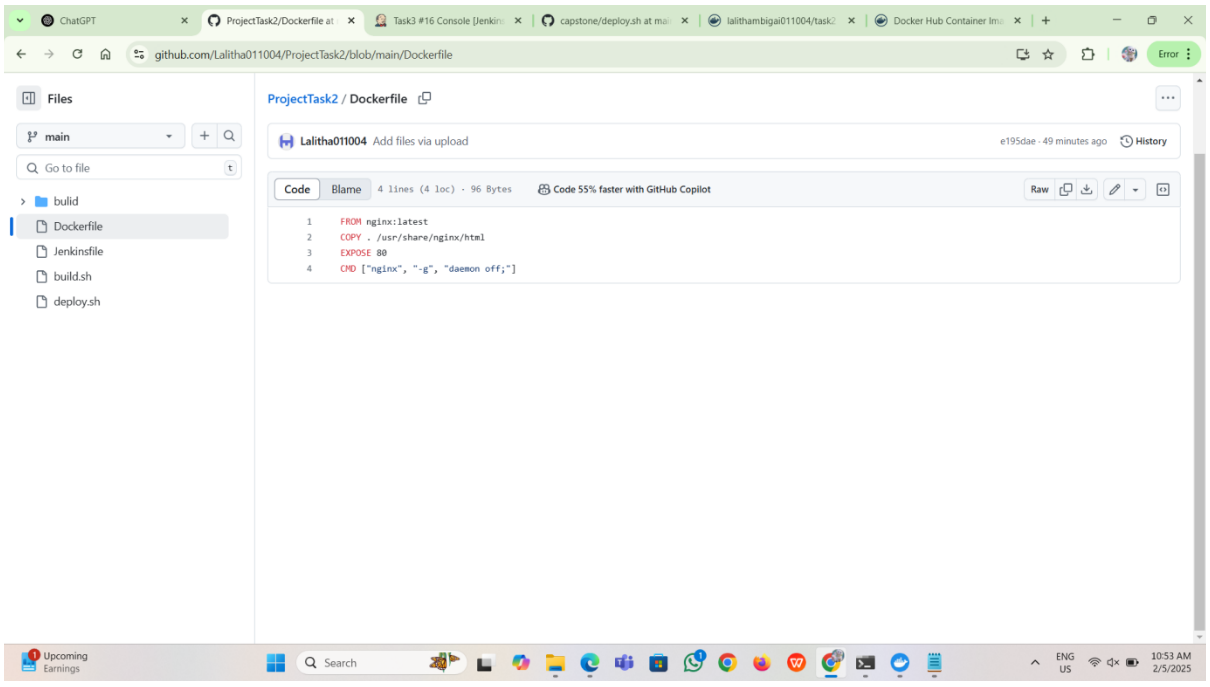
☑ Lightweight checkout ?

Pipeline Syntax

Advanced

Dockerfile:

- Defines the Docker container configuration for Nginx.
- Steps include copying built files, exposing port 80, and running Nginx in the foreground.



github.com/Lalitha011004/ProjectTask2/blob/main/Dockerfile

ProjectTask2 / Dockerfile

Lalitha011004 Add files via upload e195dae · 49 minutes ago

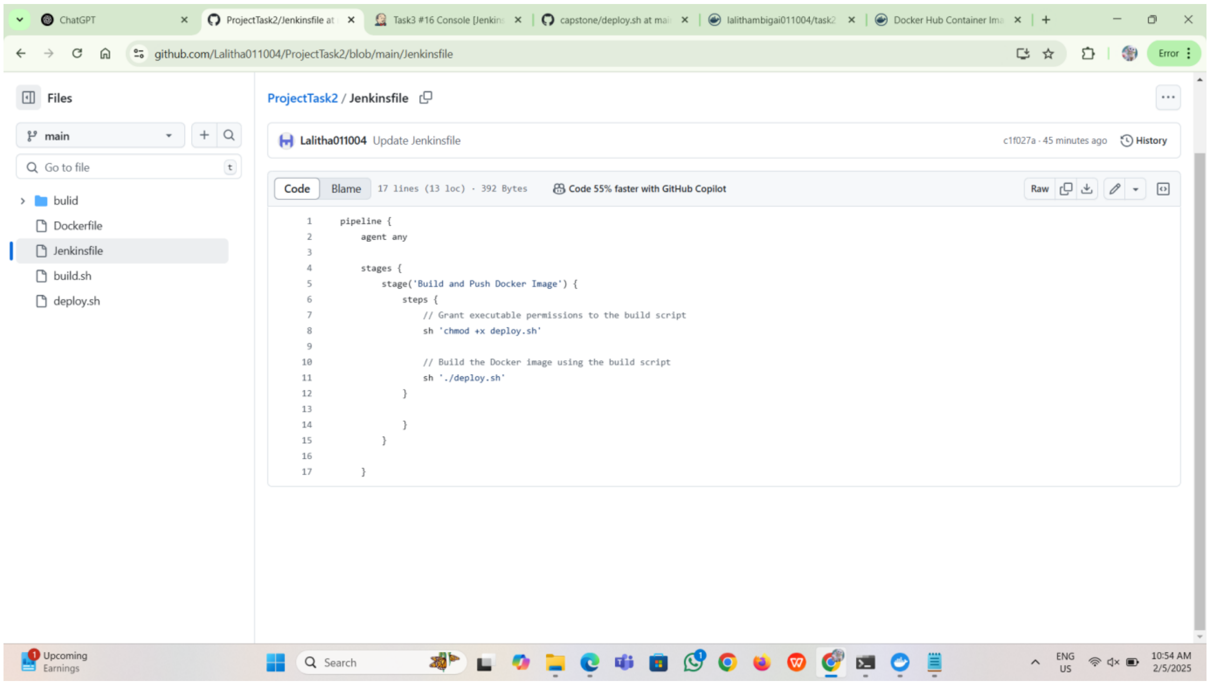
4 lines (4 loc) · 96 Bytes

```
FROM nginx:latest
COPY . /usr/share/nginx/html
EXPOSE 80
CMD ["nginx", "-g", "daemon off;"]
```

⍰

Jenkinsfile:

- Defines the Jenkins pipeline stages.
- **Build and Push Docker Image** stage: Grants permissions, builds the Docker image, and deploys it.
- Contains script commands for building and pushing the Docker image.


github.com/Lalitha011004/ProjectTask2/blob/main/Jenkinsfile

ProjectTask2 / Jenkinsfile

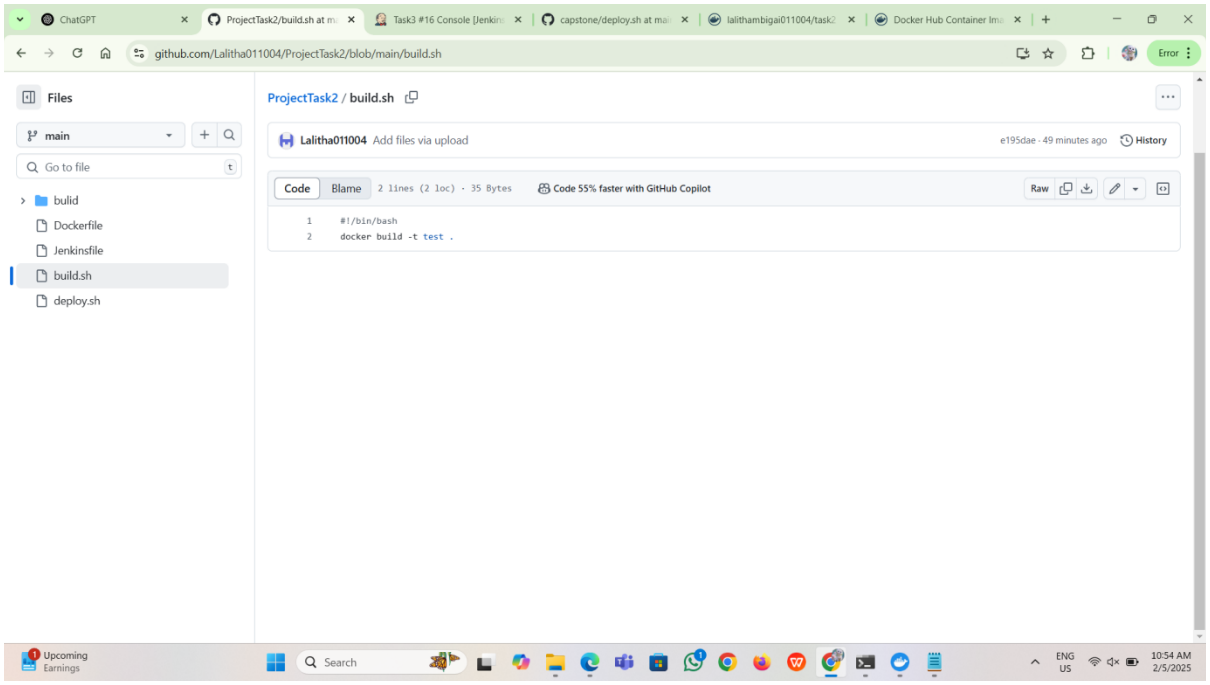
Lalitha011004 Update Jenkinsfile · c1f027a · 45 minutes ago

17 lines (13 loc) · 392 Bytes

```
pipeline {
    agent any

    stages {
        stage('Build and Push Docker Image') {
            steps {
                // Grant executable permissions to the build script
                sh 'chmod +x deploy.sh'

                // Build the Docker image using the build script
                sh './deploy.sh'
            }

            }
        }

    }
```

Build.sh:

- Script to build and run the Docker container locally.
- Builds the Docker image and runs the container.


github.com/Lalitha011004/ProjectTask2/blob/main/build.sh

ProjectTask2 / build.sh

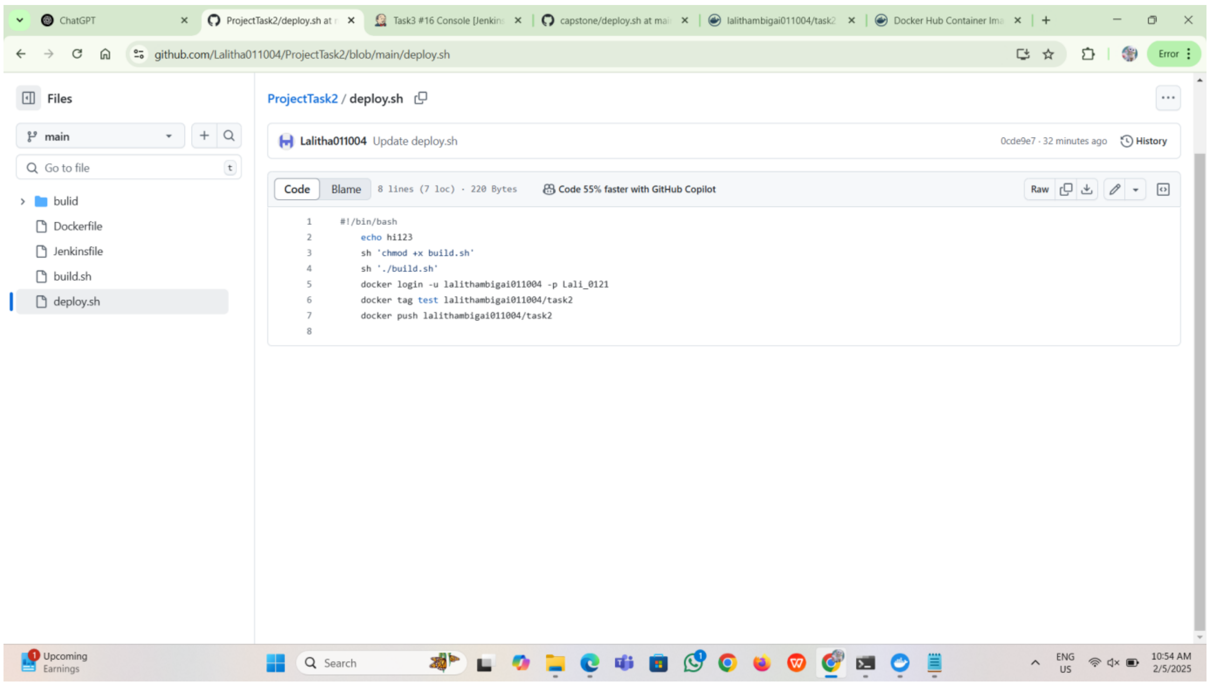
Lalitha011004 Add files via upload · e195dae · 49 minutes ago

2 lines (2 loc) · 35 Bytes

```
#!/bin/bash
docker build -t test .
```

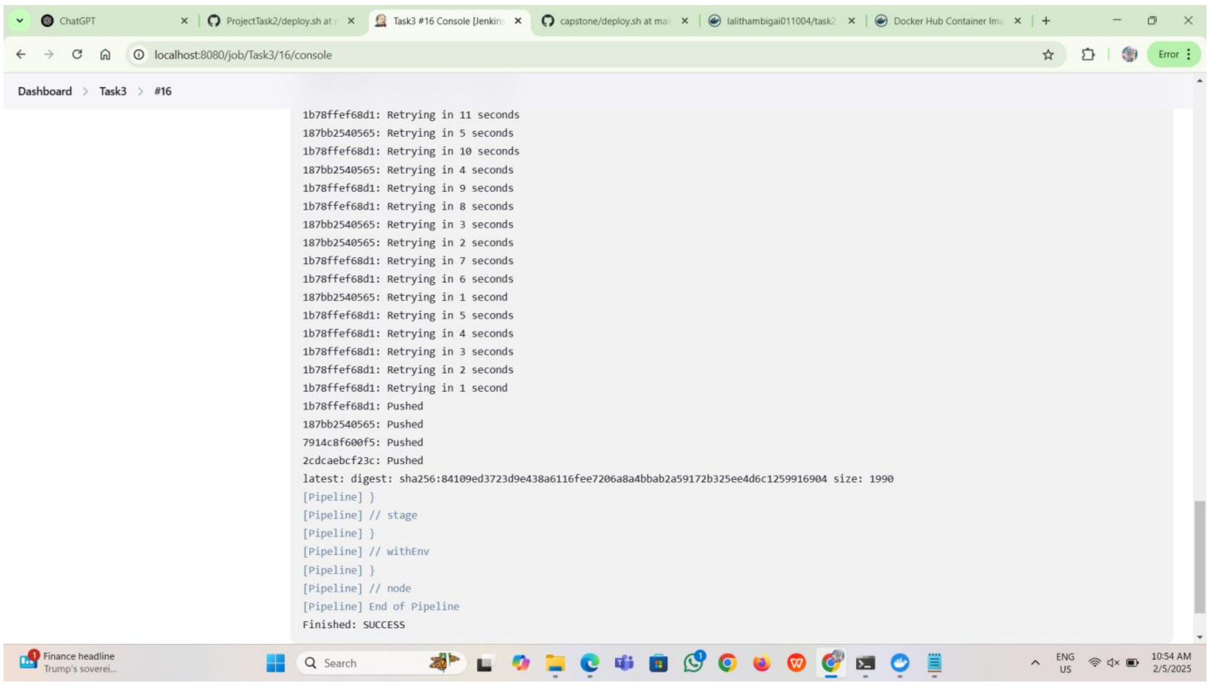
Deploy.sh:

- Script to automate deployment tasks.
- Includes login, tagging, and pushing the Docker image to a repository.


github.com/Lalitha011004/ProjectTask2/blob/main/deploy.sh
Files
main
Go to file
bulid
Dockerfile
Jenkinsfile
build.sh
deploy.sh
ProjectTask2 / deploy.sh
Lalitha011004 Update deploy.sh
0cde9e7 · 32 minutes ago
History
Code
Blame
8 lines (7 loc) · 220 Bytes
Code 55% faster with GitHub Copilot
Raw

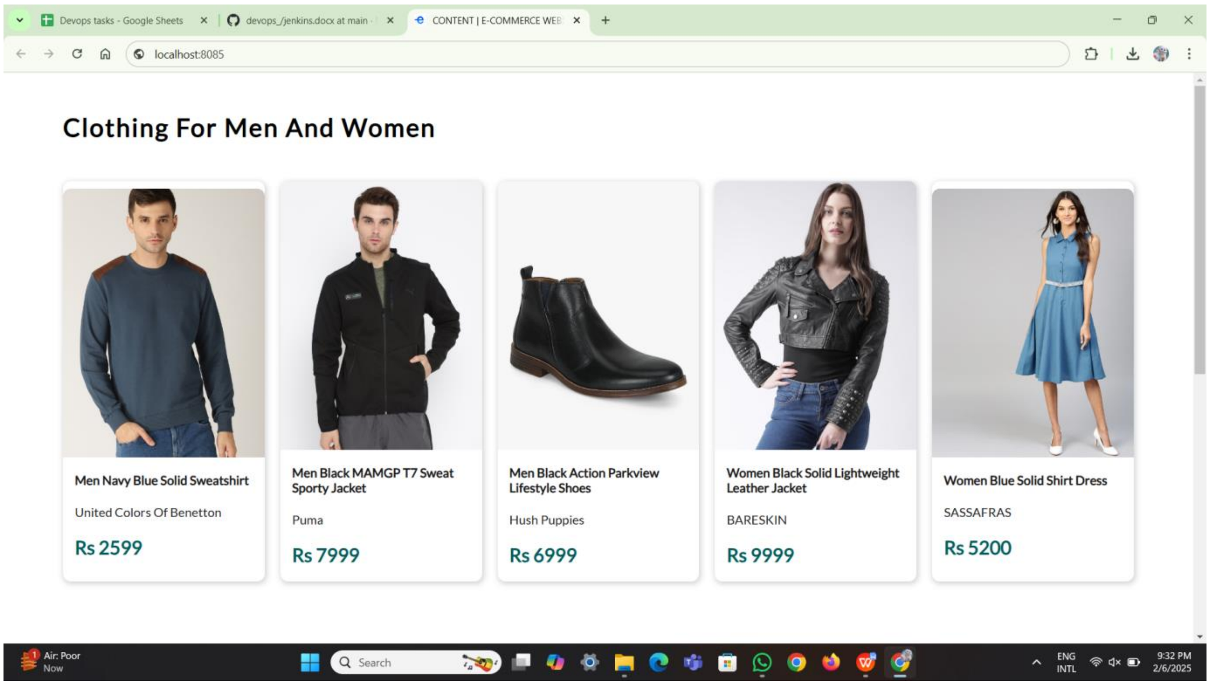
```
#!/bin/bash
    echo hi123
    sh 'chmod +x build.sh'
    sh './build.sh'
    docker login -u lalithambigai011004 -p Lali_0121
    docker tag test lalithambigai011004/task2
    docker push lalithambigai011004/task2
```

OUTPUT



ChatGPT
ProjectTask2/deploy.sh at
Task3 #16 Console [Jenkins]
capstone/deploy.sh at mai
lalithambigai011004/task2
Docker Hub Container Ima
localhost:8080/job/Task3/16/console
Dashboard > Task3 > #16

```
1b78ffef68d1: Retrying in 11 seconds
187bb2540565: Retrying in 5 seconds
1b78ffef68d1: Retrying in 10 seconds
187bb2540565: Retrying in 4 seconds
1b78ffef68d1: Retrying in 9 seconds
1b78ffef68d1: Retrying in 8 seconds
187bb2540565: Retrying in 3 seconds
187bb2540565: Retrying in 2 seconds
1b78ffef68d1: Retrying in 7 seconds
1b78ffef68d1: Retrying in 6 seconds
187bb2540565: Retrying in 1 second
1b78ffef68d1: Retrying in 5 seconds
1b78ffef68d1: Retrying in 4 seconds
1b78ffef68d1: Retrying in 3 seconds
1b78ffef68d1: Retrying in 2 seconds
1b78ffef68d1: Retrying in 1 second
1b78ffef68d1: Pushed
187bb2540565: Pushed
7914c8f600f5: Pushed
2cdcaebcf23c: Pushed
latest: digest: sha256:84109ed3723d9e438a6116fee7206a8a4bbab2a59172b325ee4d6c1259916904 size: 1990
[Pipeline] }
[Pipeline] // stage
[Pipeline] }
[Pipeline] // withEnv
[Pipeline] }
[Pipeline] // node
[Pipeline] End of Pipeline
Finished: SUCCESS
```



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Conclusion:

By understanding and using CI/CD pipelines with Jenkins and Docker, you can revolutionize your development workflow. This guide has equipped you with the knowledge to implement efficient CI/CD strategies, leading to higher productivity and better-quality software.