EE 6254 : DEVOPS ENGINEERING

ASSIGNMENT 02

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REG NO.	: EG/2020/4247
SEMESTER	: 06
DATE	: 22/04/2024

1. Figure out and write the required codes to dockerize your application

   - Selected a application.
   - Wrote Dockerfile and docker-compose.yml to containerize the application.
   - Manually tested the Dockerization process to ensure functionality.

The Dockerfile:

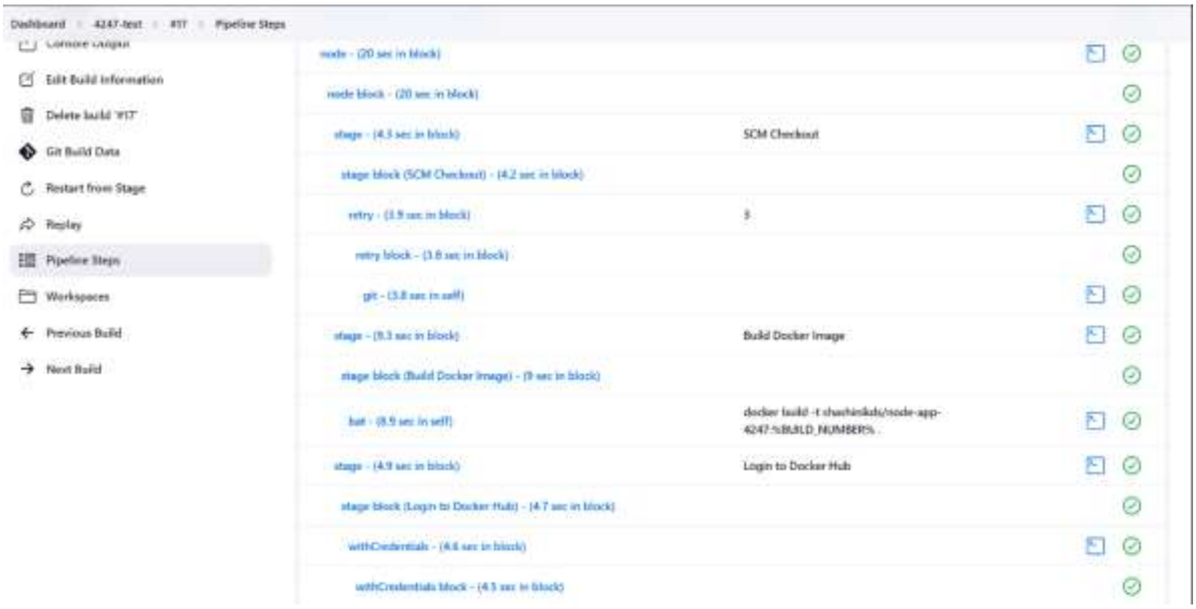
```
# Use the latest version of the Node.js image as the base image
FROM node:latest

# Set the working directory inside the container to /usr/src/app
WORKDIR /usr/src/app

# Copy the contents of the local "nodeapp" directory to the root directory of the container
COPY nodeapp/* /

# Run the npm install command to install the dependencies specified in package.json
RUN npm install

# Expose port 3000 to allow incoming connections to the container
EXPOSE 3000

# Start the application by running the "npm start" command
CMD [ "npm", "start" ]
```

2. Put your codes to the remote repository

- Created a GitLab repository

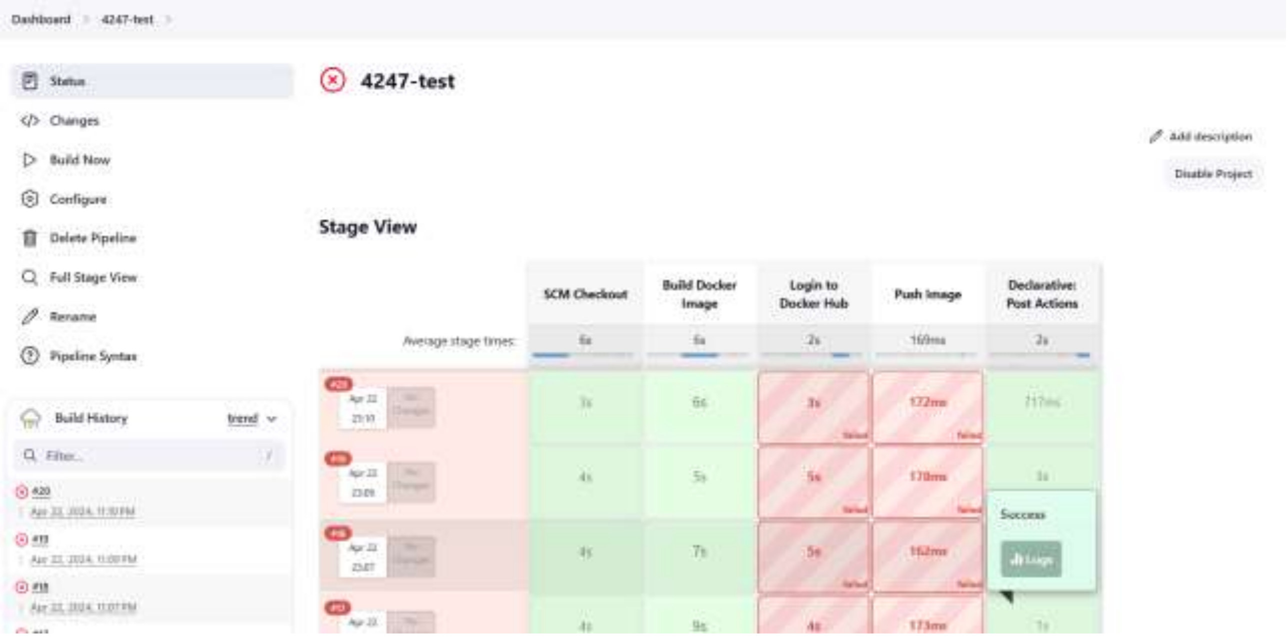
  The GitHub Link: https://github.com/ShashiniUK/EG_2020_4247_Devops

- Pushed the application code, Dockerfile, docker-compose.yml, and Jenkins pipeline script to the repository.



Dashboard > 4247-test > #17 > Pipeline Steps

node - (20 sec in block)		✓
node block - (20 sec in block)		✓
stage - (4.3 sec in block)	SCM Checkout	✓
stage block (SCM Checkout) - (4.2 sec in block)		✓
retry - (3.9 sec in block)	3	✓
retry block - (3.8 sec in block)		✓
git - (3.8 sec in self)		✓
stage - (9.3 sec in block)	Build Docker Image	✓
stage block (Build Docker Image) - (9 sec in block)		✓
bat - (8.9 sec in self)	docker build -t shashinikds/node-app-4247:%BUILD_NUMBER% .	✓
stage - (4.9 sec in block)	Login to Docker Hub	✓
stage block (Login to Docker Hub) - (4.7 sec in block)		✓
withCredentials - (4.6 sec in block)		✓
withCredentials block - (4.5 sec in block)		✓



Dashboard > 4247-test >

4247-test

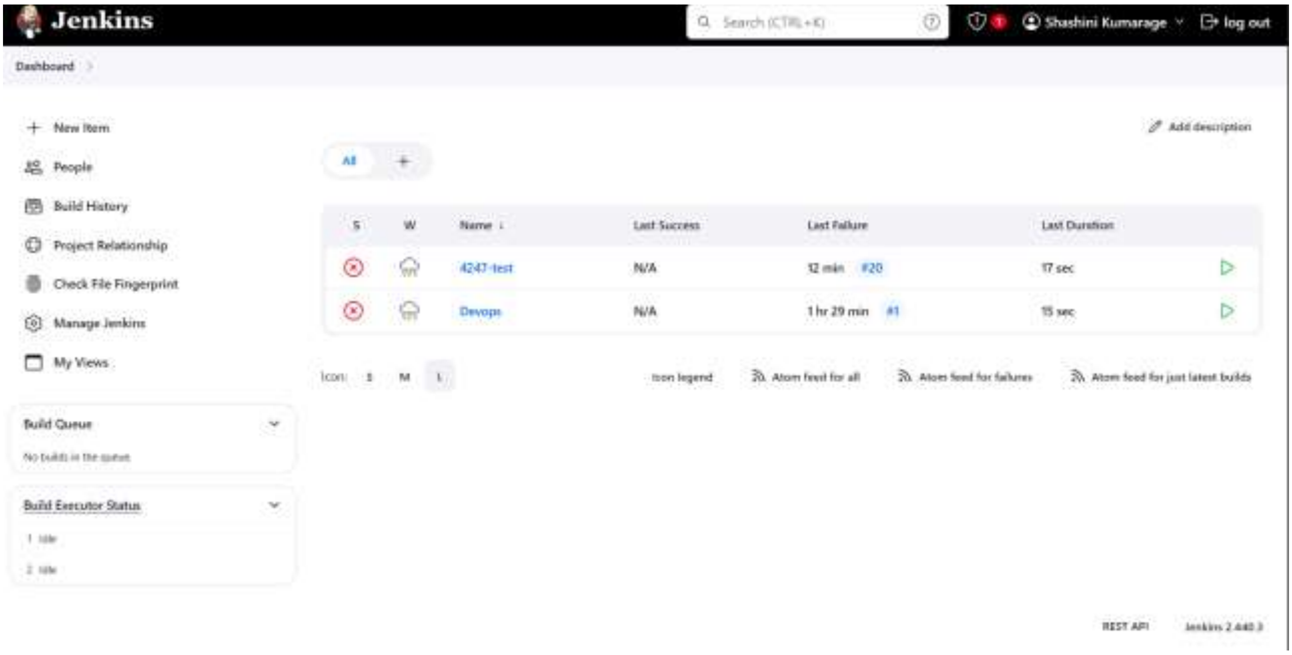
#20 Apr 22, 2024, 11:10 PM

#19 Apr 22, 2024, 11:09 PM

#18 Apr 22, 2024, 11:07 PM

Stage View

	SCM Checkout	Build Docker Image	Login to Docker Hub	Push Image	Declarative: Post Actions
Average stage times:	6s	6s	2s	169ms	2s
#20 Apr 22 23:10 No Changes	3s	6s	3s failed	172ms failed	717ms
#19 Apr 22 23:09 No Changes	4s	5s	5s failed	170ms failed	1s
#18 Apr 22 23:07 No Changes	4s	7s	5s failed	162ms failed	Success Logs
#17 Apr 22 No Changes	4s	9s	4s	173ms	1s



Jenkins

Search (CTRL+K)

Shashini Kumarage

log out

Dashboard

- New Item
- People
- Build History
- Project Relationship
- Check File Fingerprint
- Manage Jenkins
- My Views

Add description

All +

S	W	Name ↓	Last Success	Last Failure	Last Duration	
⊗		4247-test	N/A	12 min #20	17 sec	▷
⊗		Devops	N/A	1 hr 29 min #1	15 sec	▷

Icon: S M L

Icon legend

Atom feed for all

Atom feed for failures

Atom feed for just latest builds

Build Queue

No builds in the queue.

Build Executor Status

1 Idle

2 Idle

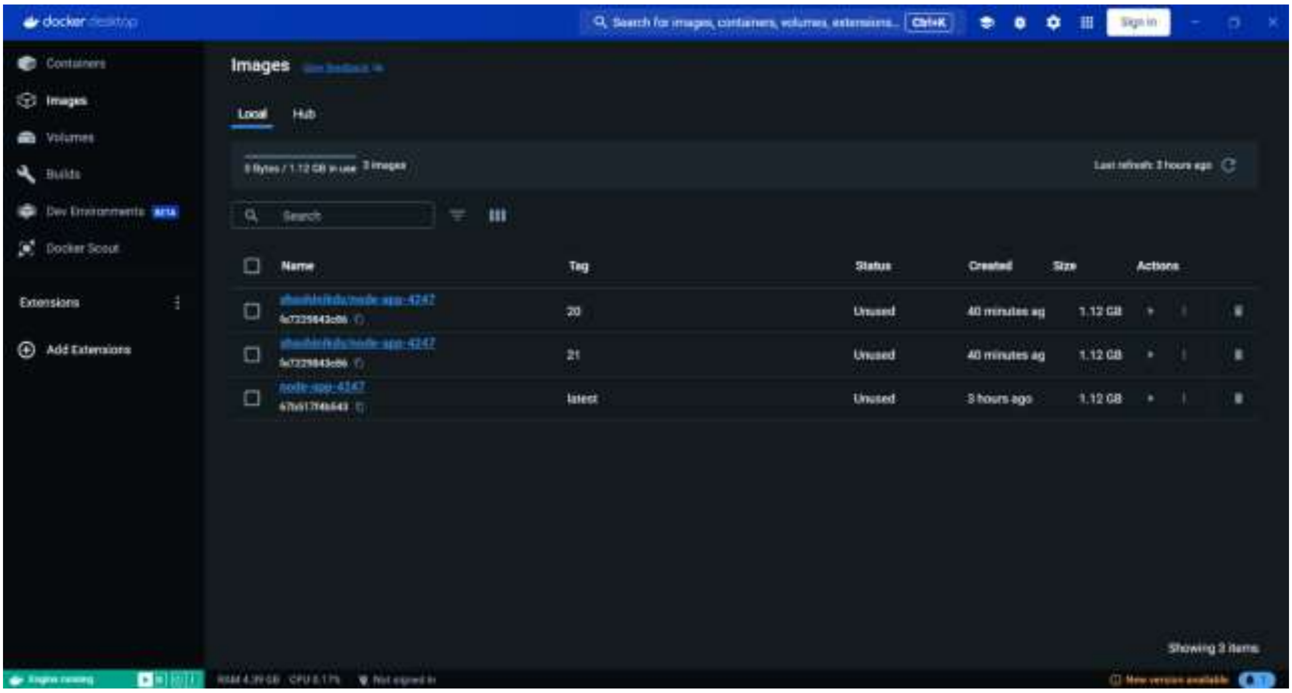
REST API

Jenkins 2.440.3

3. Write a pipeline to automate the dockerize process using groovy. Groovy code also should be kept inside the repository

```
pipeline {
  agent any


  stages {
    stage('SCM Checkout') {
      steps {
        retry(3) {
git branch: 'main', url: 'https://github.com/ShashiniUK/EG_2020_4247_Devops'
        }
      }
    }
    stage('Build Docker Image') {
      steps {
bat 'docker build -t shashinikds/node-app-4247:%BUILD_NUMBER% .'
      }
    }
    stage('Login to Docker Hub') {
      steps {
withCredentials([string(credentialsId: 'testdockerass', variable: 'testDockerPass_4247')]) {
bat'docker login -u shashinikds -p ${testDockerPass_4247}'
  // some block
}
withCredentials([string(credentialsId: 'Devops4247', variable: 'test-dockerhub4247')]) {
bat'docker login -u shashinikds -p ${test-dockerhub4247}'

        }

      }
    }
    stage('Push Image') {
      steps {
bat 'docker push adomicarts/node-app-4247:%BUILD_NUMBER%'
      }
    }
  }
  post {
    always {
      bat 'docker logout'
    }
  }
}
```

Docker



0 Bytes / 1.12 GB in use 3 images

Last refresh: 3 hours ago

□	Name	Tag	Status	Created	Size	Actions
□	shashinkdu/node-app-4247 fe7229843c86	20	Unused	40 minutes ag	1.12 GB	
□	shashinkdu/node-app-4247 fe7229843c86	21	Unused	40 minutes ag	1.12 GB	
□	node-app-4247 67b617f4b643	latest	Unused	3 hours ago	1.12 GB	

Showing 3 items