

The image shows a VS Code editor window with a dark theme. The Explorer sidebar on the left shows a file tree for 'VARSH [SSH: 192.168.117.128]' with a subdirectory 'varsh' containing a file 'varsh'. The main editor area has two tabs: 'Dockerfile' (active) and 'index.html'. The 'Dockerfile' tab contains the following content:

```
1 FROM node:18-alpine
2
3 WORKDIR /app
4
5 COPY package*.json ./
6
7 RUN npm install
8
9 COPY . .
10
11 EXPOSE 3000
12
13
```

Below the editor, the 'TERMINAL' tab is active, showing the following commands and output:

```
varsh@ubs2404vm:~$ git clone https://github.com/jagadeeshkanna97/docker_sample.git
Cloning into 'docker_sample'...
remote: Enumerating objects: 7, done.
remote: Counting objects: 100% (7/7), done.
remote: Compressing objects: 100% (5/5), done.
remote: Total 7 (delta 0), reused 7 (delta 0), pack-reused 0 (from 0)
Receiving objects: 100% (7/7), done.
varsh@ubs2404vm:~$ ls
docker_sample
varsh@ubs2404vm:~$ cd newdock/
bash: cd: newdock/: No such file or directory
varsh@ubs2404vm:~$ cd docker_sample
ls
app.js package.json README.md
varsh@ubs2404vm:~/docker_sample$ touch Dockerfile
varsh@ubs2404vm:~/docker_sample$ docker build -t docker-sample-app .
[+] Building 61.2s (10/10) FINISHED docker:default
=> [internal] load build definition from Dockerfile 0.0s
=> => transferring dockerfile: 158B 0.0s
=> [internal] load metadata for docker.io/li 6.9s
```

← → ↻ ⚠ Not secure 192.168.117.128:3000

Hello from Docker!

PROBLEMS

OUTPUT

TERMINAL

PORTS

```

varsh@ubs2404vm:~/docker_sample$ docker ps
ermined_engelbart
• varsh@ubs2404vm:~/docker_sample$ docker pull nginx
Using default tag: latest
latest: Pulling from library/nginx
Digest: sha256:341bf0f3ce6c5277d6002cf6e1fb0319fa4252add24ab6a0e262e0056d313208
Status: Image is up to date for nginx:latest
docker.io/library/nginx:latest
• varsh@ubs2404vm:~/docker_sample$ docker run -d -p 8080:80 nginx
5d2a4b0b161e3ff76b2946874ca7c3e7c083d85e40ad3a69f8cc58264adc5f97

```

←

→

↺

⚠ Not secure

192.168.117.128:8080

## Welcome to nginx!

If you see this page, the nginx web server is successfully installed and working. Further configuration is required.

For online documentation and support please refer to [nginx.org](https://nginx.org).  
Commercial support is available at [nginx.com](https://nginx.com).

*Thank you for using nginx.*

```

• varsh@ubs2404vm:~/docker_sample$ mkdir mynginx
• varsh@ubs2404vm:~/docker_sample$ cd mynginx
• varsh@ubs2404vm:~/docker_sample/mynginx$ nano index.html
• varsh@ubs2404vm:~/docker_sample/mynginx$ docker run -d -p 8080:80 \
-v $(pwd)/index.html:/usr/share/nginx/html/index.html \
nginx
9f993f1a69b5f7e7488c1c6f02b862b89bfb175fc4d9aa8136b85126ff62babc
docker: Error response from daemon: failed to set up container networking: driver failed programming external connectivity on endpoint hopef
ul_keldysh (bebdd56b8d311234da4149d4d5a6eb126b5eac59fe6366d61e075de9333780d6): Bind for 0.0.0.0:8080 failed: port is already allocated

Run 'docker run --help' for more information
• varsh@ubs2404vm:~/docker_sample/mynginx$ docker run -d -p 7070:80 -v $(pwd)/index.html:/usr/share/nginx/html/index.html nginx
5be4b5f077f25424c050528978b2aaab9570ad9d1a4b2309097823ac6b0338a3
• varsh@ubs2404vm:~/docker_sample/mynginx$

```

```

TX packets 12  bytes 1360 (1.3 KB)
TX errors 0  dropped 0  overruns 0  carrier 0  collisions 0

varsh@ubs2404vm:~$ docker ps

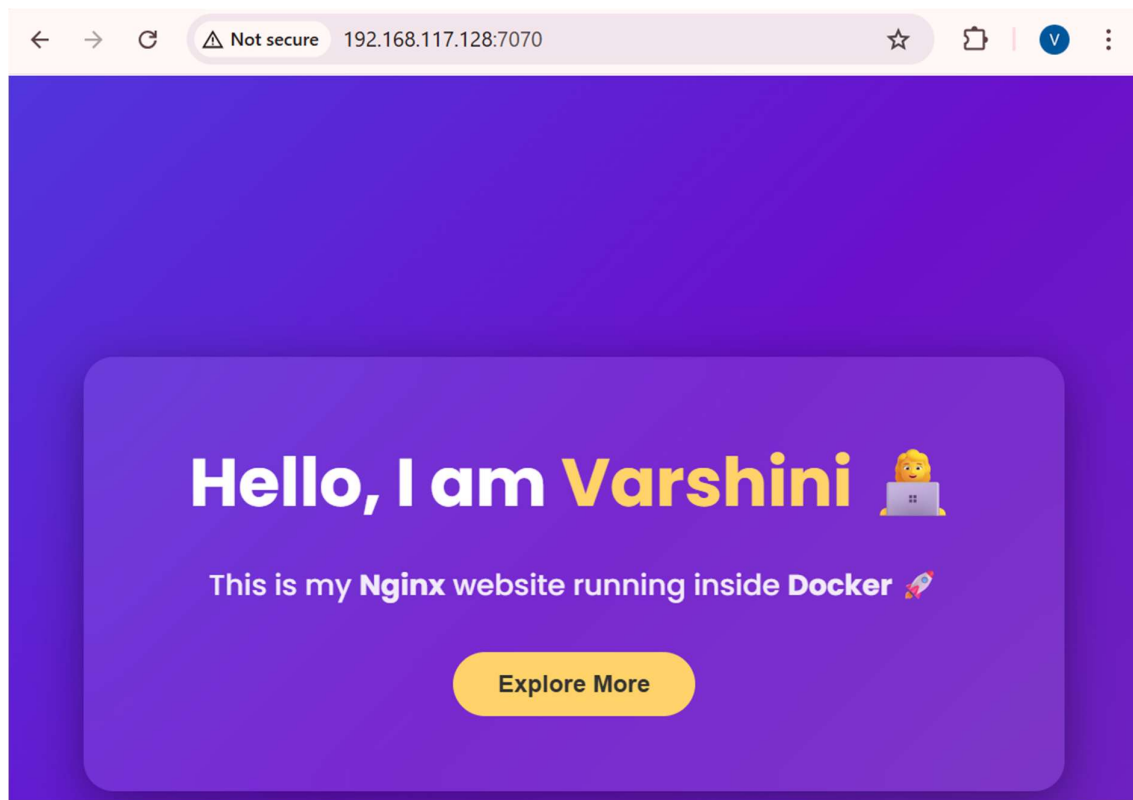
```

CONTAINER ID	IMAGE	COMMAND	CREATED	STATUS	PORTS
5be4b5f077f2	nginx	"docker-entrypoint..."	Less than a second ago	Up Less than a second	0.0.0.0:7070->80/tcp, [::]:7070->80/tcp
ous_almeida	nginx	"docker-entrypoint..."	Less than a second ago	Up Less than a second	0.0.0.0:8080->80/tcp, [::]:8080->80/tcp
g_carson	docker-sample-app	"docker-entrypoint.s..."	Less than a second ago	Up Less than a second	0.0.0.0:3000->3000/tcp, [::]:3000->3000/tcp

```

varsh@ubs2404vm:~$

```



```
varsh@ubs2404vm:~$ docker images
```

IMAGE	ID	DISK USAGE	CONTENT SIZE	EXTRA
docker-sample-app:latest	162512dd297a	196MB	47.3MB	U
hello-world:latest	05813aedc15f	25.9kB	9.52kB	U
nginx:latest	341bf0f3ce6c	240MB	65.8MB	U
ubuntu:latest	cd1dba651b30	119MB	31.7MB	U

```
varsh@ubs2404vm:~$ _
```

To install Ubuntu Server in VMware, configure SSH, install Docker, integrate GitHub using SSH authentication, build Docker images, and deploy containerized applications.

## REQUIREMENTS

- Windows System
- VMware Workstation Player
- Ubuntu Server ISO
- Internet Connection
- GitHub Account
- VS Code

## VMWARE SETUP

1. Install VMware Workstation Player.
2. Create a new Virtual Machine.
3. Allocate 4GB RAM and 20GB Disk.
4. Select NAT Network.
5. Install Ubuntu Server and login.

## UBUNTU INITIAL CONFIGURATION

```
sudo apt update
sudo apt upgrade -y
ip a
```

```
sudo apt install openssh-server -y
sudo systemctl start ssh
sudo systemctl enable ssh
sudo ufw allow ssh
sudo ufw reload
```

## SSH CONNECTION

```
ssh username@VM_IP
hostname
```

## DOCKER INSTALLATION

```
sudo apt install ca-certificates curl -y
sudo install -m 0755 -d /etc/apt/keyrings
sudo curl -fsSL https://download.docker.com/linux/ubuntu/gpg -o /etc/apt/keyrings/docker.asc
sudo chmod a+r /etc/apt/keyrings/docker.asc
sudo apt update
sudo apt install docker-ce docker-ce-cli containerd.io docker-buildx-plugin docker-compose-plugin -y
sudo systemctl start docker
sudo systemctl enable docker
sudo usermod -aG docker $USER
newgrp docker
docker --version
docker ps
```

## DOCKER PRACTICAL EXECUTION

```
git clone https://github.com/jagadeeshkanna97/docker_sample.git
cd docker_sample
touch Dockerfile
docker build -t docker-sample-app .
docker run -d -p 3000:3000 docker-sample-app
docker pull nginx
docker run -d -p 8080:80 nginx
```

Custom Nginx:

```
mkdir mynginx
cd mynginx
nano index.html
docker run -d -p 7070:80 -v $(pwd)/index.html:/usr/share/nginx/html/index.html nginx
```

## GIT & GITHUB CONFIGURATION

```
git --version
git config --global user.name "VARSHINI1805"
git config --global user.email "varshinisureshkumar224@gmail.com"
git config --list
ssh-keygen -t ed25519 -C "varshinisureshkumar224@gmail.com"
cat ~/.ssh/id_ed25519.pub
ssh -T git@github.com
```

## BRANCH MANAGEMENT

```
git clone git@github.com:VARSHINI1805/devops.git
cd devops
git branch
git checkout -b day3
touch day3.txt
git add .
git commit -m "Added day3 file"
git push -u origin day3
```

## MERGE PROCESS

```
git checkout main
git pull origin main
git merge day3
git push
```

## ADD DOCKER PROJECT TO REPOSITORY

```
cp -r ~/docker_sample .
rm -rf docker_sample/.git
git add .
git commit -m "Added docker_sample project"
git push
```

varsh@ubs2404vm:~\$ history

- 1 hostname
- 2 ssh varsh@192.168.117.128
- 3 ifconfig
- 4 docker ps
- 5 git clone https://github.com/jagadeeshkanna97/docker\_sample.git
- 6 ls
- 7 cd newdock/
- 8 cd docker\_sample
- 9 ls
- 10 touch Dockerfile
- 11 docker build -t docker-sample-app .
- 12 docker ps
- 13 docker stop <container\_id>
- 14 docker ps
- 15 docker run -d -p 3000:3000 docker-sample-app
- 16 docker ps
- 17 docker pull nginx
- 18 docker run -d -p 8080:80 nginx
- 19 mkdir mynginx
- 20 cd mynginx
- 21 nano index.html
- 22 docker run -d -p 8080:80 -v \$(pwd)/index.html:/usr/share/nginx/html/index.html nginx
- 23 docker run -d -p 7070:80 -v \$(pwd)/index.html:/usr/share/nginx/html/index.html nginx
- 24 git --version
- 25 history

varsh@ubs2404vm:~/devops\$ history

- 1 hostname
- 2 ssh varsh@192.168.117.128
- 3 ifconfig
- 4 docker ps
- 5 git clone https://github.com/jagadeeshkanna97/docker\_sample.git
- 6 ls
- 7 cd newdock/
- 8 cd docker\_sample
- 9 ls
- 10 touch Dockerfile
- 11 docker build -t docker-sample-app .
- 12 docker ps
- 13 docker stop <container\_id>
- 14 docker ps
- 15 docker run -d -p 3000:3000 docker-sample-app
- 16 docker ps
- 17 docker pull nginx
- 18 docker run -d -p 8080:80 nginx
- 19 mkdir mynginx
- 20 cd mynginx
- 21 nano index.html
- 22 docker run -d -p 8080:80 -v \$(pwd)/index.html:/usr/share/nginx/html/index.html nginx
- 23 docker run -d -p 7070:80 -v \$(pwd)/index.html:/usr/share/nginx/html/index.html nginx
- 24 git --version
- 25 history
- 26 git config --global user.name "VARSHINI1805"
- 27 git config --global user.email "varshinisureshkumar224@gmail.com"
- 28 git config --list
- 29 ssh-keygen -t ed25519 -C "varshinisureshkumar224@gmail.com"
- 30 cat ~/.ssh/id\_ed25519.pub
- 31 ssh -T git@github.com

```
32 git clone git@github.com:VARSHINI1805/devops.git
33 cd devops
34 ls
35 ls -a
36 git branch
37 git checkout -b day3
38 git branch
39 touch day3.txt
40 nano day3.txt
41 history
42 git add .
43 git status
44 git pull origin main
45 git push
46 git push -u origin day3
47 git checkout main
48 git pull origin main
49 git merge day3
50 git push
51 cd ~/devops
52 cp -r ~/docker_sample .
53 ls
54 git status
55 git add .
56 rm -rf docker_sample/.git
57 git add .
58 git status
59 git commit -m "Added docker_sample project"
60 git push
61 history
```