Lab Exercise 21

Building a Docker Image for an HTML App Using Nginx

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1. Setup

You will need:

- **Docker installed on your machine.**
- **A simple HTML file for the app.**

2. Step 1: Create the HTML File

Create a directory for your HTML app and place an index.html file in it.

```
mkdir  nginx-html-app


cd nginx-html-app
```

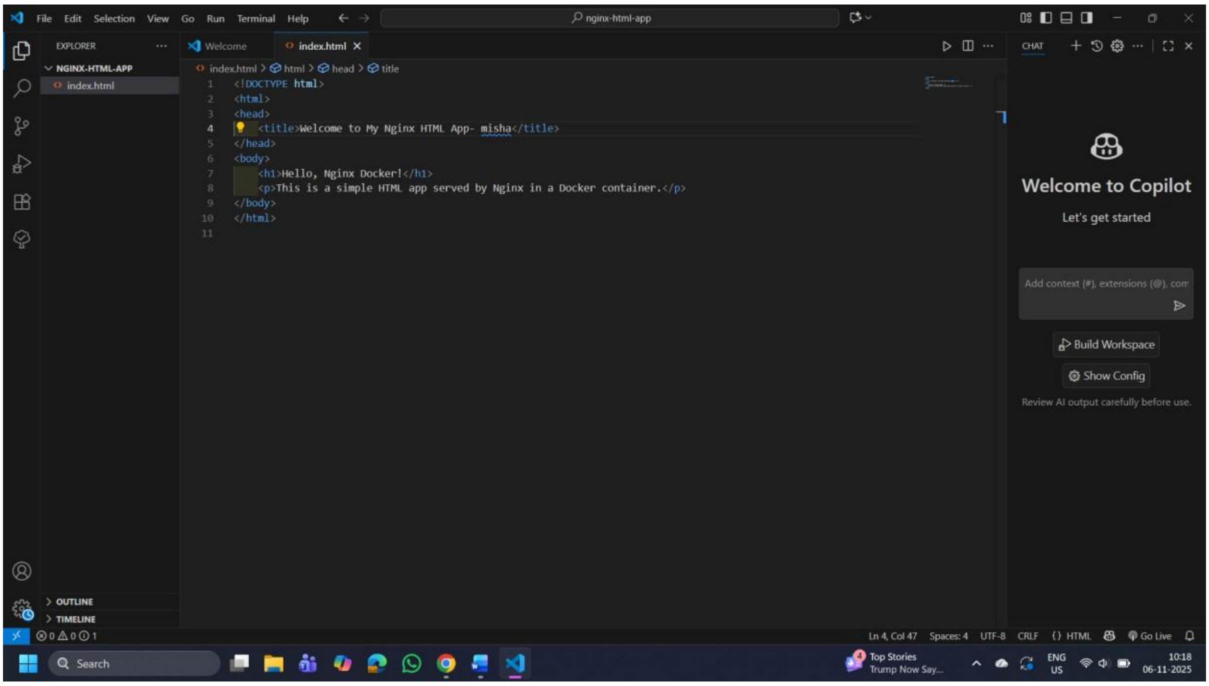
Inside the nginx-html-app directory, create the HTML file.

```
touch index.html
```

Edit the index.html file with the following content (or any custom HTML content you want):

```
<!DOCTYPE html>

<html>
```

```
<head>

  <title>Welcome to My Nginx HTML App</title>

</head>

<body>

  <h1>Hello, Nginx Docker!</h1>

  <p>This is a simple HTML app served by Nginx in a Docker container.</p>

</body>

</html>
```



```
<!DOCTYPE html>
<html>
<head>
    <title>Welcome to My Nginx HTML App- misha</title>
</head>
<body>
    <h1>Hello, Nginx Docker!</h1>
    <p>This is a simple HTML app served by Nginx in a Docker container.</p>
</body>
</html>
```

File Edit Selection View Go Run Terminal Help
nginx-html-app
EXPLORER
NGINX-HTML-APP
index.html
Welcome
index.html
index.html > html > head > title
CHAT
Welcome to Copilot
Let's get started
Add context (#), extensions (@), com
Build Workspace
Show Config
Review AI output carefully before use.
OUTLINE
TIMELINE
Ln 4, Col 47 Spaces: 4 UTF-8 CRLF {} HTML Go Live
Search
Top Stories
Trump Now Say...
ENG US
10:18
06-11-2025

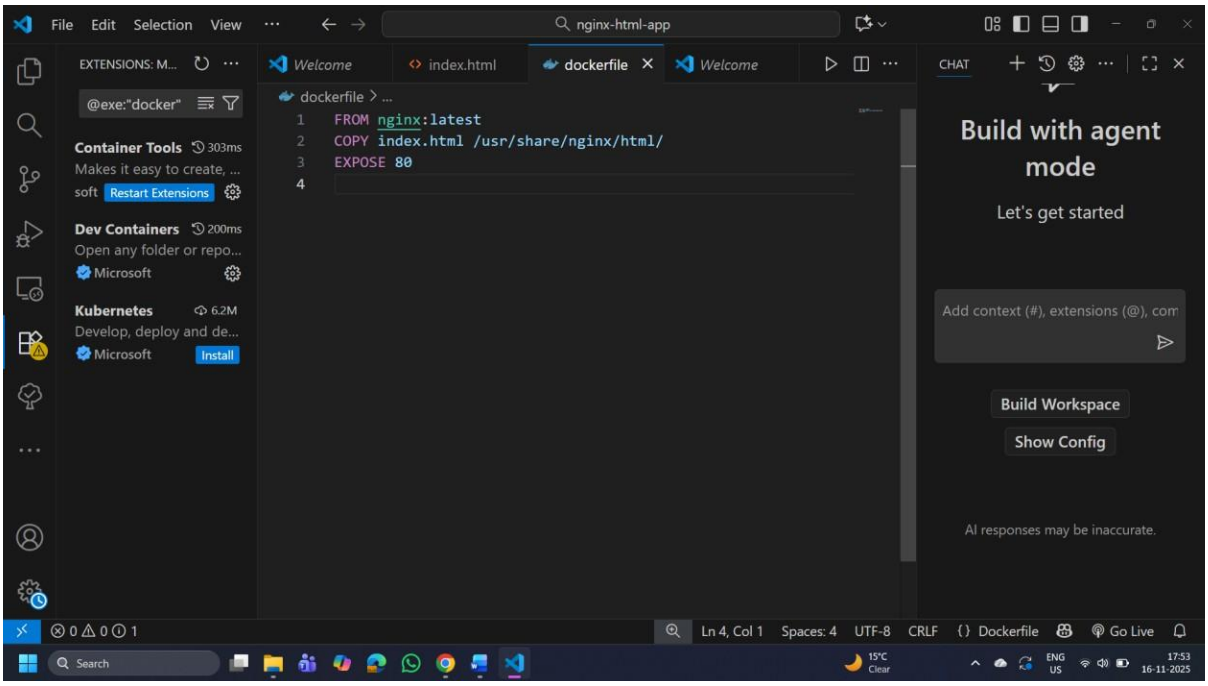
3. **Step 2: Create a Dockerfile**

In the same directory, create a Dockerfile. This file will define how to build the Docker image using Nginx as the base image.

```
touch Dockerfile
```

Edit the Dockerfile and add the following content:

```
FROM nginx:latest

COPY index.html /usr/share/nginx/html/

EXPOSE 80
```



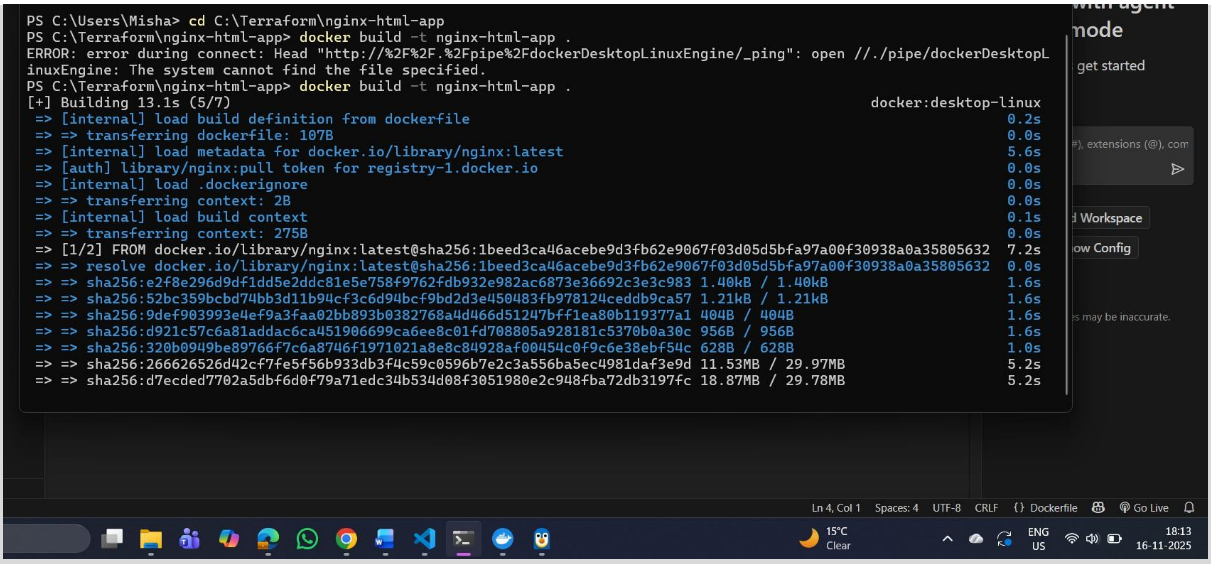
```
FROM nginx:latest
COPY index.html /usr/share/nginx/html/
EXPOSE 80
```

4. **Step 3: Build the Docker Image**

Now that you have the Dockerfile and index.html, it's time to build the Docker image.

Run the following command to build the image, giving it a tag (e.g., nginx-html-app):

```
docker build -t nginx-html-app .
```



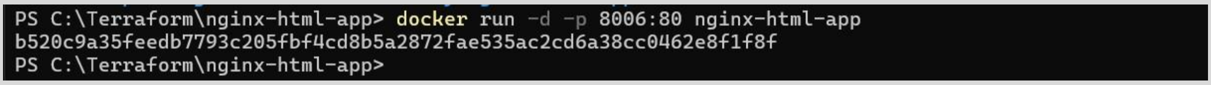
```
PS C:\Users\Misha> cd C:\Terraform\nginx-html-app
PS C:\Terraform\nginx-html-app> docker build -t nginx-html-app .
ERROR: error during connect: Head "http://%2F%2F.%2Fpipe%2FdockerDesktopLinuxEngine/_ping": open //./pipe/dockerDesktopL
inuxEngine: The system cannot find the file specified.
PS C:\Terraform\nginx-html-app> docker build -t nginx-html-app .
[+] Building 13.1s (5/7)                                                                            docker:desktop-linux
 => [internal] load build definition from dockerfile                                                                0.2s
 => => transferring dockerfile: 107B                                                                                0.0s
 => [internal] load metadata for docker.io/library/nginx:latest                                                     5.6s
 => [auth] library/nginx:pull token for registry-1.docker.io                                                        0.0s
 => [internal] load .dockerignore                                                                                   0.0s
 => => transferring context: 2B                                                                                     0.0s
 => [internal] load build context                                                                                   0.1s
 => => transferring context: 275B                                                                                   0.0s
 => [1/2] FROM docker.io/library/nginx:latest@sha256:1beed3ca46acebe9d3fb62e9067f03d05d5bfa97a00f30938a0a35805632  7.2s
 => => resolve docker.io/library/nginx:latest@sha256:1beed3ca46acebe9d3fb62e9067f03d05d5bfa97a00f30938a0a35805632  0.0s
 => => sha256:e2f8e296d9df1dd5e2ddc81e5e758f9762fdb932e982ac6873e36692c3e3c983 1.40kB / 1.40kB                      1.6s
 => => sha256:52bc359bcbd74bb3d11b94cf3c6d94bcf9bd2d3e450483fb978124ceddb9ca57 1.21kB / 1.21kB                      1.6s
 => => sha256:9def903993e4ef9a3faa02bb893b0382768a4d466d51247bff1ea80b119377a1 404B / 404B                          1.6s
 => => sha256:d921c57c6a81addac6ca451906699ca6ee8c01fd708805a928181c5370b0a30c 956B / 956B                          1.6s
 => => sha256:320b0949be89766f7c6a8746f1971021a8e8c84928af00454c0f9c6e38ebf54c 628B / 628B                          1.0s
 => => sha256:266626526d42cf7fe5f56b933db3f4c59c0596b7e2c3a556ba5ec4981daf3e9d 11.53MB / 29.97MB                    5.2s
 => => sha256:d7ecded7702a5dbf6d0f79a71edc34b534d08f3051980e2c948fba72db3197fc 18.87MB / 29.78MB                    5.2s
```

Docker will use the Nginx base image, copy your index.html into the appropriate directory, and build the image.

5. Step 4: Run the Docker Container

After building the image, you can run the container with the following command:

```
docker run -d -p 8006:80 nginx-html-app
```



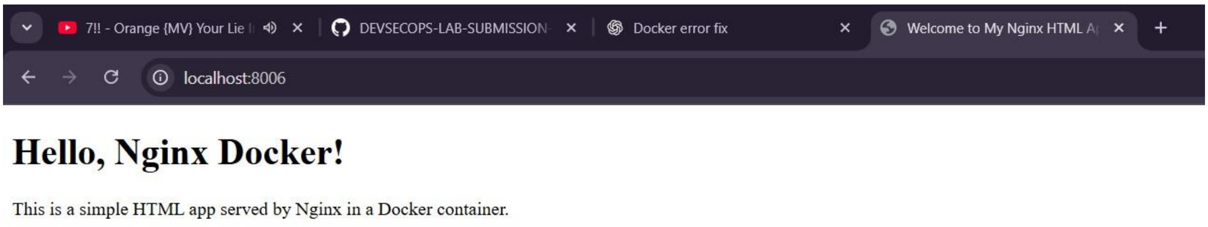
```
PS C:\Terraform\nginx-html-app> docker run -d -p 8006:80 nginx-html-app
b520c9a35feedb7793c205fbf4cd8b5a2872fae535ac2cd6a38cc0462e8f1f8f
PS C:\Terraform\nginx-html-app>
```

This command runs the container in detached mode (-d) and maps port 8006 on your host machine to port 80 inside the container, where Nginx is serving your HTML app.

6. Step 5: Verify

Open a browser and go to http://localhost:8006. You should see your HTML page with the

message “Hello, Nginx Docker!”.



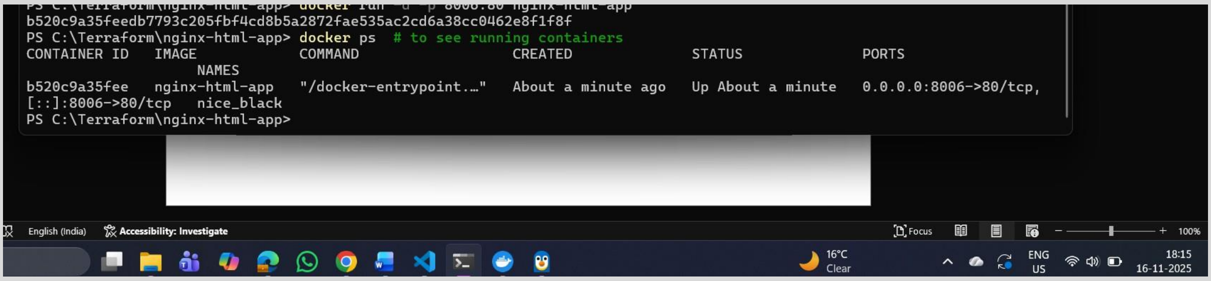
Hello, Nginx Docker!

This is a simple HTML app served by Nginx in a Docker container.

7. Step 6: Stop and Remove the Container

Once you're done, you can stop and remove the container:

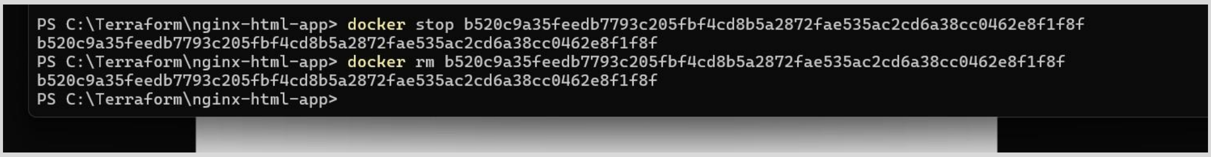
```
docker ps  # to see running containers
```



```
PS C:\Terraform\nginx-html-app> docker run -d -p 8006:80 nginx-html-app
b520c9a35feedb7793c205fbf4cd8b5a2872fae535ac2cd6a38cc0462e8f1f8f
PS C:\Terraform\nginx-html-app> docker ps  # to see running containers
CONTAINER ID   IMAGE            COMMAND                  CREATED              STATUS              PORTS
                    NAMES
b520c9a35fee   nginx-html-app   "/docker-entrypoint.…"   About a minute ago   Up About a minute   0.0.0.0:8006->80/tcp,
[::]:8006->80/tcp   nice_black
PS C:\Terraform\nginx-html-app>
```

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

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



```
PS C:\Terraform\nginx-html-app> docker stop b520c9a35feedb7793c205fbf4cd8b5a2872fae535ac2cd6a38cc0462e8f1f8f
b520c9a35feedb7793c205fbf4cd8b5a2872fae535ac2cd6a38cc0462e8f1f8f
PS C:\Terraform\nginx-html-app> docker rm b520c9a35feedb7793c205fbf4cd8b5a2872fae535ac2cd6a38cc0462e8f1f8f
b520c9a35feedb7793c205fbf4cd8b5a2872fae535ac2cd6a38cc0462e8f1f8f
PS C:\Terraform\nginx-html-app>
```