

## 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>

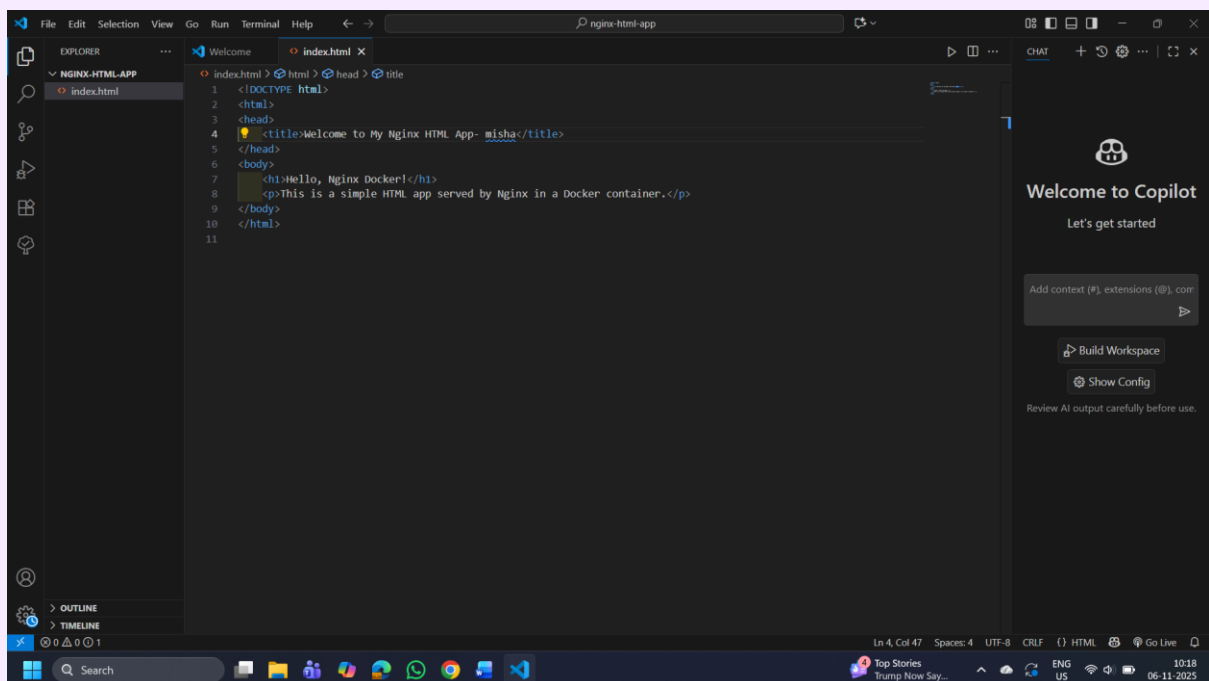
<body>

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

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

</body>

</html>
```



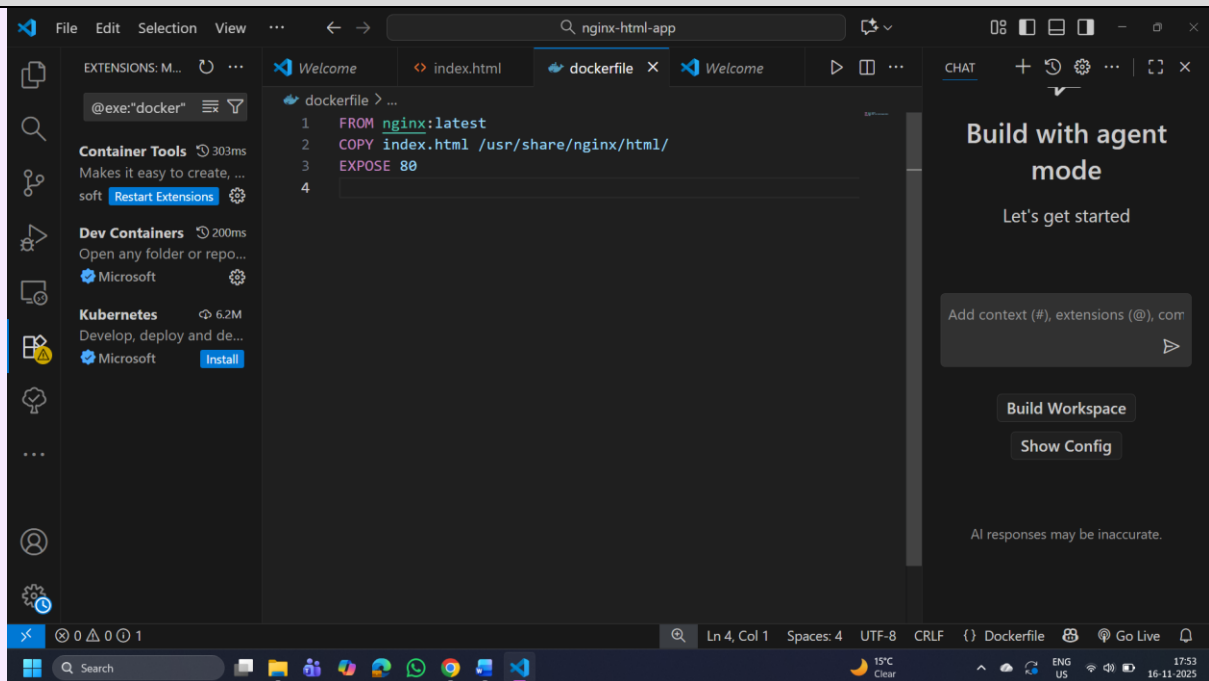
### 3. Step 2: Create a Dockerfile

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
```



#### 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\Wisha> 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/dockerDesktopLinuxEngine: The system cannot find the file specified.
PS C:\Terraform\nginx-html-app> docker build -t nginx-html-app .
[+] Building 13.1s (5/7)
=> [internal] load build definition from dockerfile
=> => transferring dockerfile: 107B
=> [internal] load metadata for docker.io/library/nginx:latest
=> [auth] library/nginx:pull token for registry-1.docker.io
=> [internal] load .dockerignore
=> => transferring context: 2B
=> [internal] load build context
=> => transferring context: 275B
=> [1/2] FROM docker.io/library/nginx:latest@sha256:1beed3ca46acebe9d3fb62e9067f03d05d5bfa97a00f30938a0a35805632
=> => resolve docker.io/library/nginx:latest@sha256:1beed3ca46acebe9d3fb62e9067f03d05d5bfa97a00f30938a0a35805632
=> => sha256:e2f8e296d9df1dd5e2ddc81e5e758f9762fdb932e982ac6873e36692c3e3c983 1.40kB / 1.40kB
=> => sha256:52bc359bcbdb74bb3d11b94cf3c6d94bcf9bd2d3e450483fb978124ceddb9ca57 1.21kB / 1.21kB
=> => sha256:9def903993e4ef9a3faa02bb893b0382768a4d466d51247bfff1ea80b119377a1 404B / 404B
=> => sha256:d921c57c6a81addac6ca451906699ca6ee8c01fd708805a928181c5370b0a30c 956B / 956B
=> => sha256:320b0949be89766f7c6a8746f1971021a8e8c84928af00454c0f9c6e38ebf54c 628B / 628B
=> => sha256:266626526d42cf7fe5f56b933db3f4c59c0596b7e2c3a556ba5ec4981daf3e9d 11.53MB / 29.97MB
=> => sha256:d7ecd7702a5dbf6d0f79a71edc34b534d08f3051980e2c948fba72db3197fc 18.87MB / 29.78MB
```

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:

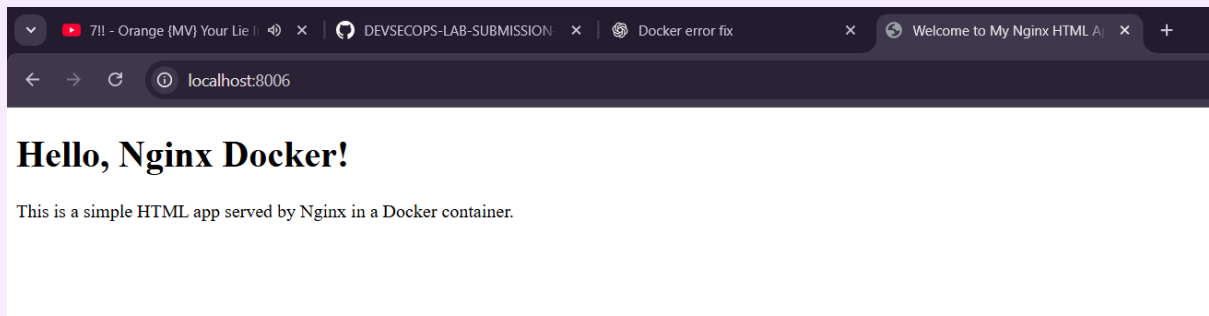
```
docker run -d -p 8006:80 nginx-html-app
```

```
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!”.



## 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 ps
CONTAINER ID   IMAGE          COMMAND                  CREATED        STATUS        PORTS
b520c9a35fee   nginx-html-app "/docker-entrypoint..." About a minute 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>
```