

Lab Exercise 5- Building a Docker Image for an HTML App Using Nginx

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
```

```
PS C:\Users\Asus> mkdir nginx-html-app

Directory: C:\Users\Asus

Mode                LastWriteTime         Length Name
----                -
d-----          11-11-2024    02:17          nginx-html-app

PS C:\Users\Asus> cd nginx-html-app
PS C:\Users\Asus\nginx-html-app> |
```

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

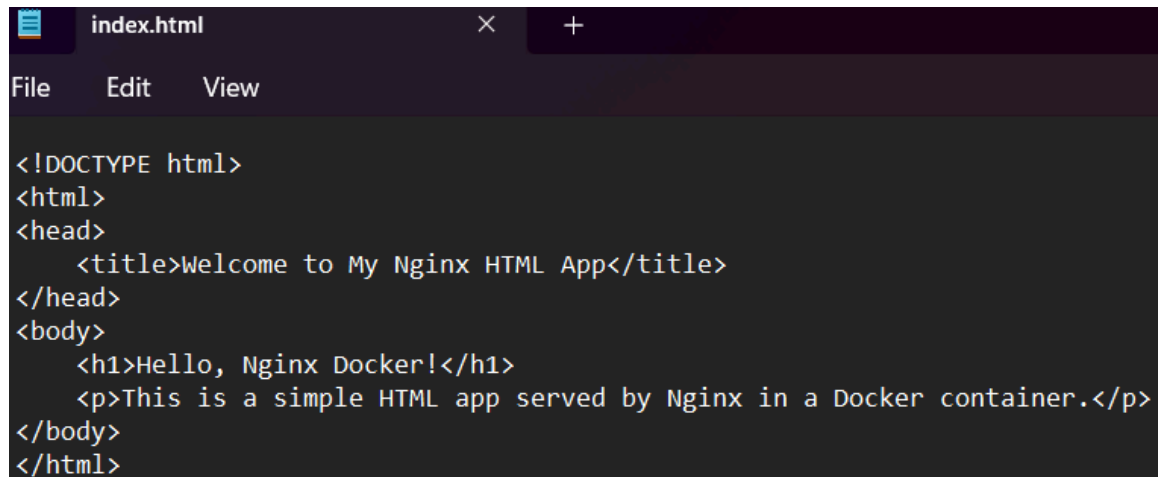
```
touch index.html
```

```
PS C:\Users\Asus\nginx-html-app> 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>
```

A screenshot of a code editor window titled 'index.html'. The editor has a dark theme and shows the following HTML code:

```
<!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

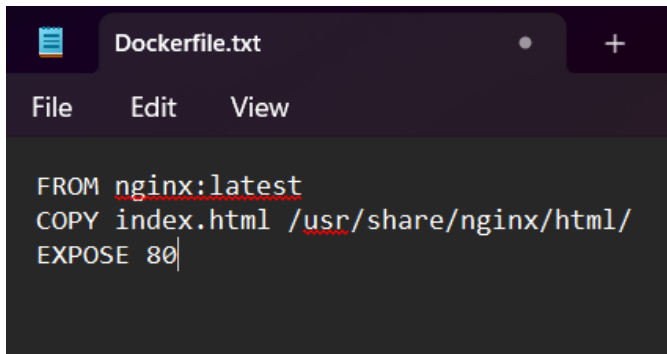
In the same directory, create a Dockerfile. This file will define how to build the Docker image using Nginx as the base image.

```
touch Dockerfile
```

```
PS C:\Users\Asus\nginx-html-app> touch Dockerfile
```

Edit the Dockerfile and add the following content:

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



```
Dockerfile.txt
File Edit View

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\Asus\nnginx-html-app> docker build -t nginx-html-app
[+] Building 0.6s (7/7) FINISHED
=> [internal] load build definition from Dockerfile
=> => transferring dockerfile: 105B
=> [internal] load metadata for docker.io/library/nginx:latest
=> [internal] load .dockerignore
=> => transferring context: 2B
=> [1/2] FROM docker.io/library/nginx:latest
=> [internal] load build context
=> => transferring context: 266B
=> [2/2] COPY index.html /usr/share/nginx/html/
=> exporting to image
=> => exporting layers
=> => writing image sha256:3d41d56bae15dbf5016bf817f6d92a26bda1
=> => naming to docker.io/library/nginx-html-app
```

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:

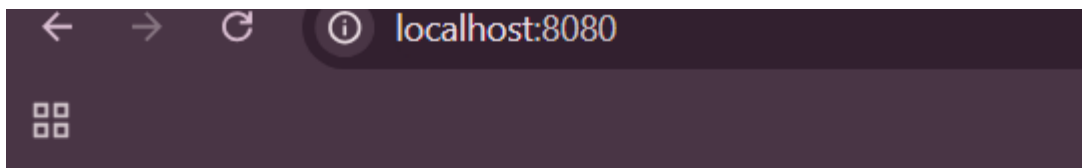
```
docker run -d -p 8080:80 nginx-html-app
```

This command runs the container in detached mode (-d) and maps port 8080 on your host machine to port 80 inside the container, where Nginx is serving your HTML app.

```
PS C:\Users\Asus\nginx-html-app> docker run -d -p 8080:80 nginx-html-app 8afdfca1f058254895421da89aa22833a6f66f74037c9d030b756d634f90daf7
PS C:\Users\Asus\nginx-html-app> |
```

6. Step 5: Verify

Open a browser and go to <http://localhost:8080>. 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:

```
PS C:\Users\Asus\nginx-html-app> docker ps
CONTAINER ID   IMAGE          COMMAND
8afdfca1f058   nginx-html-app "/docker-entrypoint..."
PS C:\Users\Asus\nginx-html-app> docker stop 8afdfca1f058
8afdfca1f058
PS C:\Users\Asus\nginx-html-app> docker rm 8afdfca1f058
8afdfca1f058
PS C:\Users\Asus\nginx-html-app> |
```

docker ps # to see running containers

docker stop <container-id>

docker rm <container-id>