Lab Exercise 4- Building a Docker Image for an HTML App Using Nginx

1. Setup

You will need:

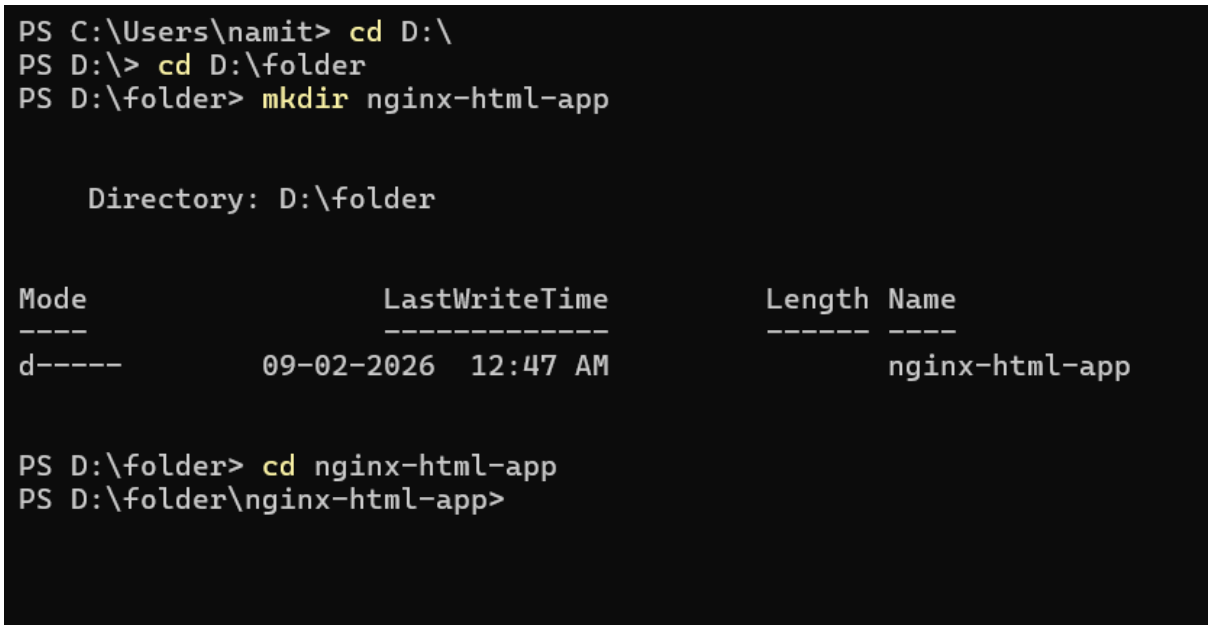
- Docker installed on your machine.
- A simple HTML file for the app.

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
```



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

```
touch index.html
```

```
PS D:\folder\nginx-html-app> New-Item index.html


    Directory: D:\folder\nginx-html-app


Mode                 LastWriteTime         Length Name
----                 -------------         ------ ----
-a----        09-02-2026  12:50 AM              0 index.html


PS D:\folder\nginx-html-app>
```

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>
```

```
PS D:\folder\nginx-html-app> notepad index.html
PS D:\folder\nginx-html-app>
```

```
File    Edit    View

<!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 D:\folder\nginx-html-app> New-Item Dockerfile


    Directory: D:\folder\nginx-html-app


Mode                 LastWriteTime         Length Name
----                 -------------         ------ ----
-a----         09-02-2026  12:53 AM              0 Dockerfile


PS D:\folder\nginx-html-app>
```

Edit the Dockerfile and add the following content:

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

```
PS D:\folder\nginx-html-app> notepad Dockerfile
PS D:\folder\nginx-html-app>
```

File Edit View

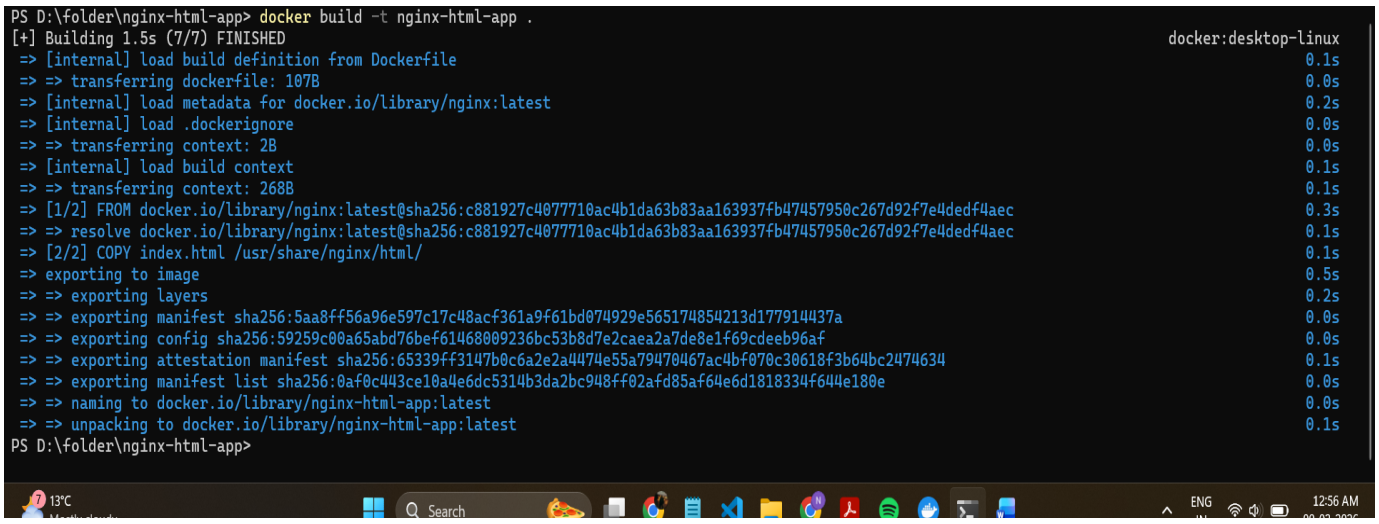
```
FROM nginx:latest
COPY index.html /usr/share/nginx/html/
EXPOSE 80
```

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 .
```

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:

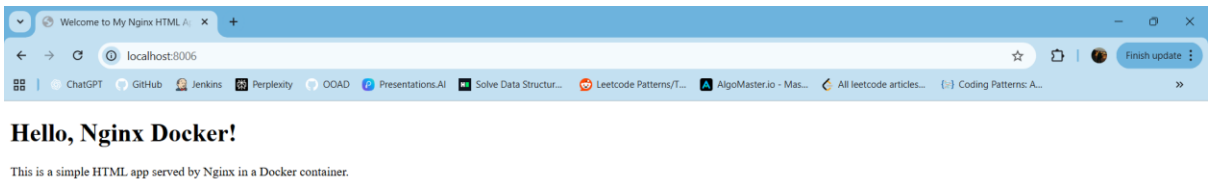
```
docker run -d -p 8006:80 nginx-html-app
```

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.

```
PS D:\folder\nginx-html-app> docker run -d -p 8006:80 nginx-html-app
0f09c55db0c76d2d2a1e73906afa49c4453f66bf2dc72a1bb4f887bee3b8f924
PS D:\folder\nginx-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

docker stop <container-id>

docker rm <container-id>
```

```
PS D:\folder\nginx-html-app> docker ps  # to see running containers
CONTAINER ID   IMAGE          COMMAND                  CREATED         STATUS         PORTS                                       NAMES
0f09c55db0c7   nginx-html-app   "/docker-entrypoint.…"   9 minutes ago   Up 9 minutes   0.0.0.0:8006->80/tcp, [::]:8006->80/tcp   quirky_feynman
PS D:\folder\nginx-html-app> docker stop 0f09c55db0c7
0f09c55db0c7
```

```
PS D:\folder\nginx-html-app> docker rm 0f09c55db0c7
0f09c55db0c7
PS D:\folder\nginx-html-app>
```