

# **Lab Exercise 4- 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
```

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

Directory: C:\Users\ASUS

Mode                LastWriteTime         Length Name
----                -----          ----- 
d-----        2/2/2026    7:02 PM          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
PS C:\Users\ASUS\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>
```

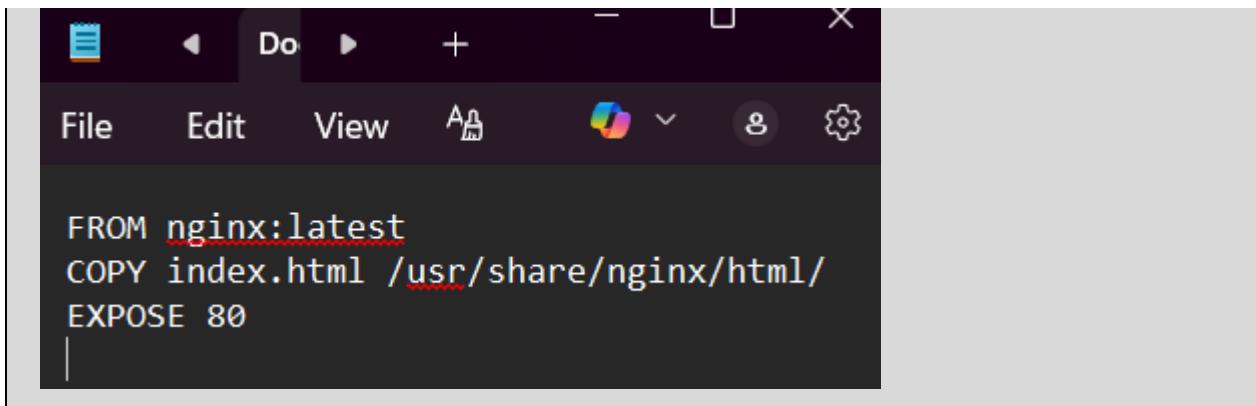
### 3. Step 2: Create a Dockerfile

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\ASUS\nginx-html-app> docker build -t nginx-html-app .
[+] Building 0.6s (7/7) FINISHED                                            docker:desktop-linux
=> [internal] load build definition from Dockerfile                      0.0s
=> => transferring dockerfile: 107B                                         0.0s
=> [internal] load metadata for docker.io/library/nginx:latest           0.1s
=> [internal] load .dockerignore                                         0.0s
=> => transferring context: 2B                                           0.0s
=> [internal] load build context                                         0.0s
=> => transferring context: 31B                                         0.0s
=> [1/2] FROM docker.io/library/nginx:latest@sha256:c881927c4077710a  0.1s
=> => resolve docker.io/library/nginx:latest@sha256:c881927c4077710a  0.0s
=> [2/2] COPY index.html /usr/share/nginx/html/                           0.0s
=> exporting to image                                                 0.2s
=> => exporting layers                                              0.1s
=> => exporting manifest sha256:a9e3ef1bea9a66ece2c695d150605af0ed0  0.0s
=> => exporting config sha256:877d6987a1cf975682bb1bd0181348cab4b43  0.0s
=> => exporting attestation manifest sha256:b72885d65f21246dc295a1a7  0.0s
=> => exporting manifest list sha256:f47870f63bd78817073ebc67448b591  0.0s
=> => naming to docker.io/library/nginx-html-app:latest                0.0s
=> => unpacking to docker.io/library/nginx-html-app:latest              0.0s
PS C:\Users\ASUS\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
```

```
S C:\Users\ASUS\nginx-html-app> docker run -d -p 8006:80 nginx-html-app
cbcef3f90039345d4ca36c6b0d800fd1732c83744b0806fb4706d3db0fcbe2
S C:\Users\ASUS\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
```

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

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

```
PS C:\Users\ASUS\nginx-html-app> docker ps # to see running containers
CONTAINER ID        IMAGE               COMMAND             CREATED            STATUS              PORTS
NAMES
fcbcef3f9003      nginx-html-app     "/docker-entrypoint..."   19 seconds ago    Up 18 seconds    0.0.0.0:8006
->80/tcp, [::]:8006->80/tcp      angry_booth
PS C:\Users\ASUS\nginx-html-app> docker stop fcbcef3f9003
fcbcef3f9003
PS C:\Users\ASUS\nginx-html-app> docker rm fcbcef3f9003
fcbcef3f9003
PS C:\Users\ASUS\nginx-html-app> |
```