

Lab Exercise 21- Building a Docker Image for an HTML App Using Nginx

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Course:- Btech - CSE

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1. Setup

You will need:

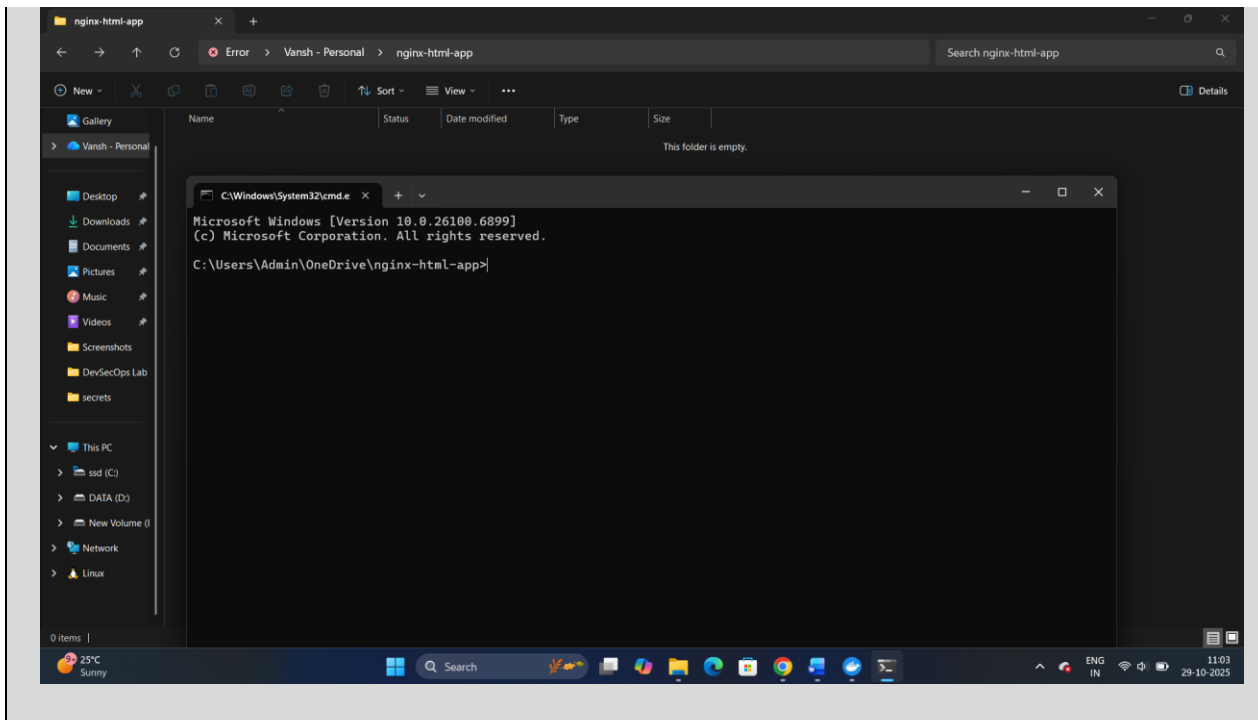
- Docker installed on your machine.
- A simple HTML file for the app.

2. Step 1: Create the HTML File

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

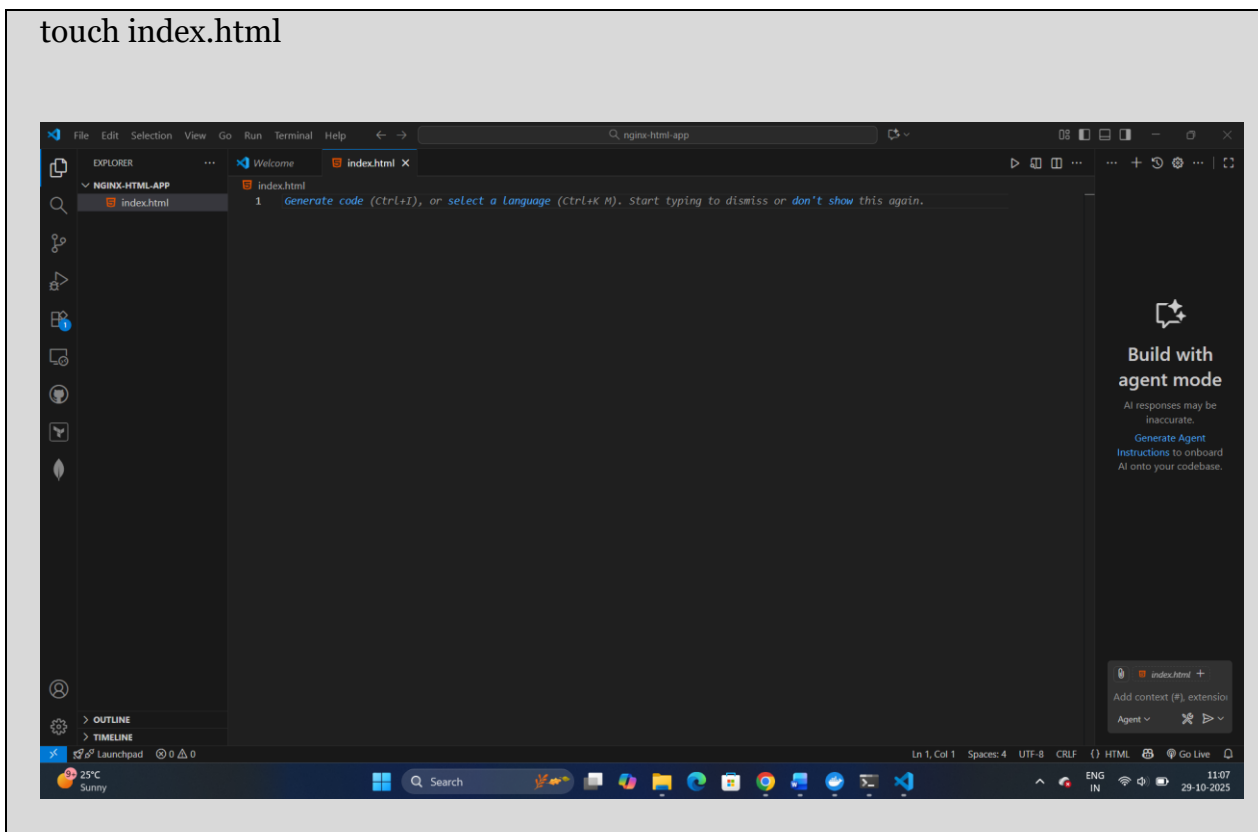
```
mkdir nginx-html-app
```

```
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>

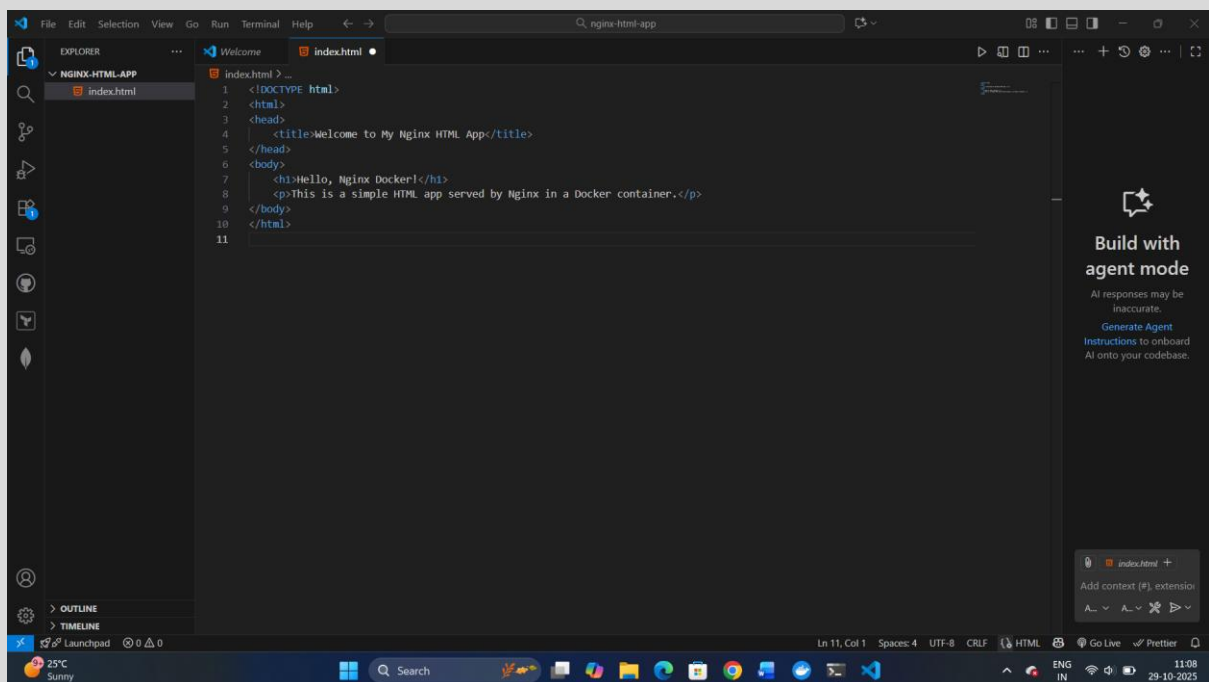
<body>

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

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

</body>

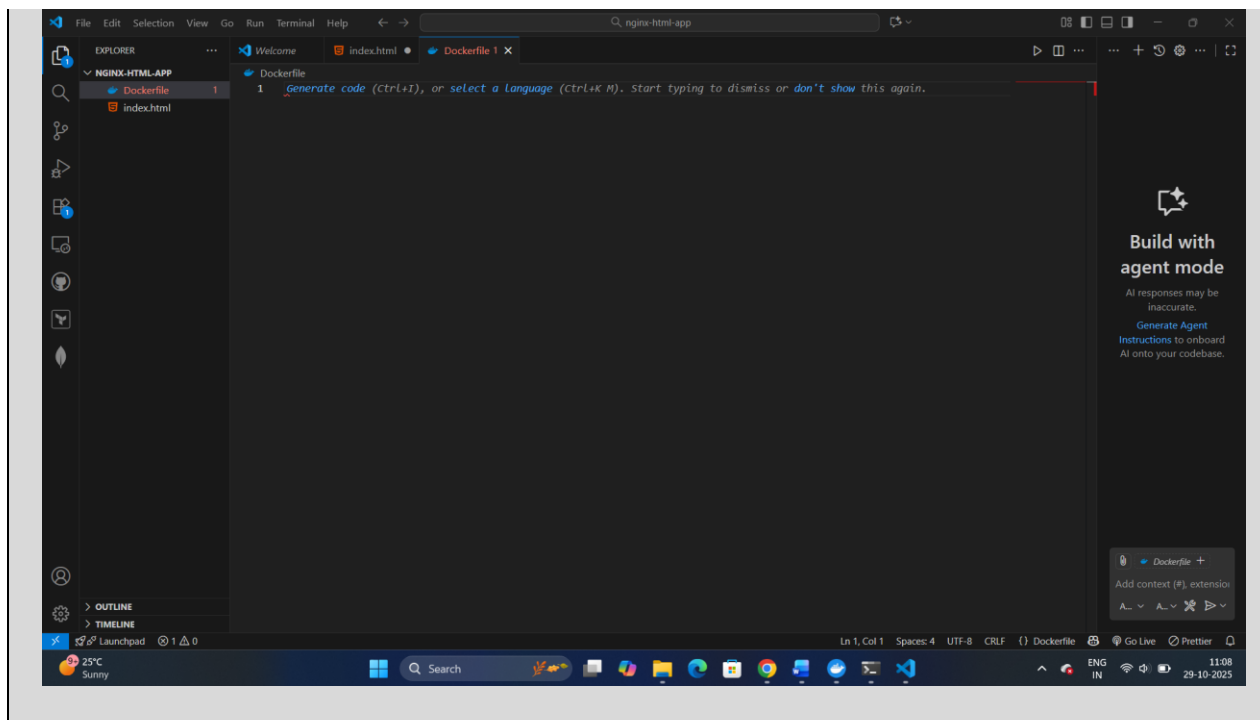
</html>
```



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

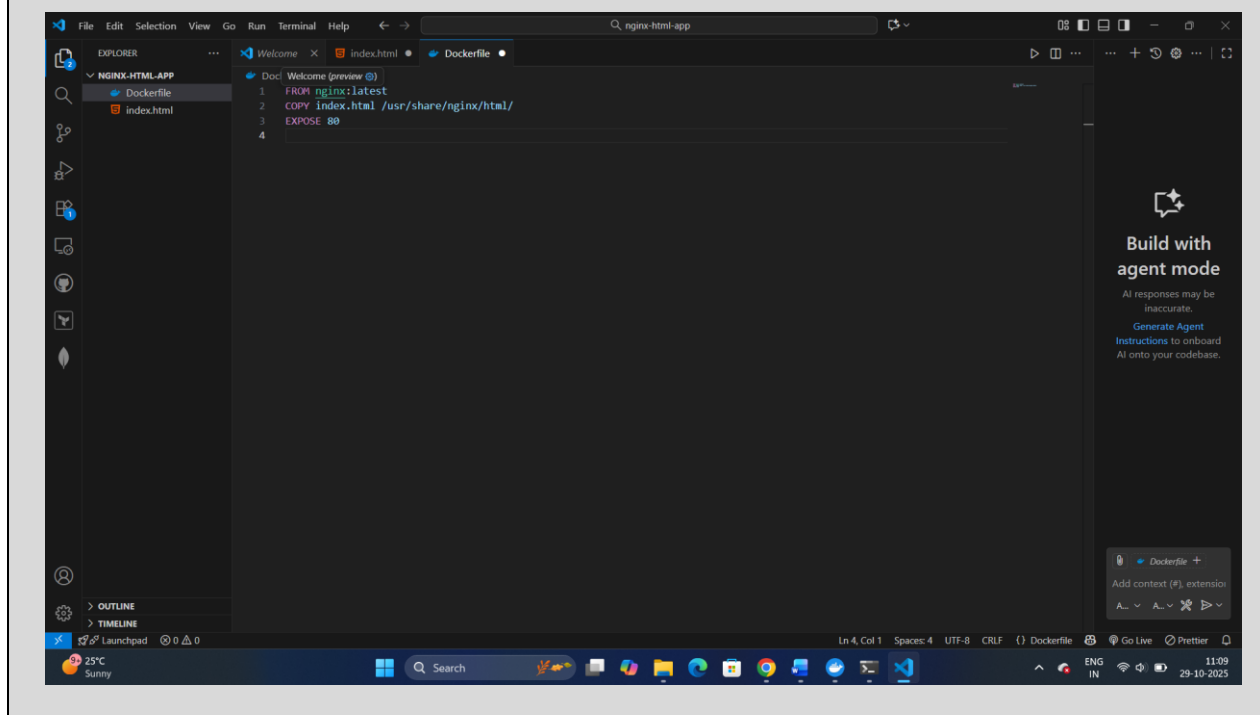


Edit the Dockerfile and add the following content:

FROM nginx:latest

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

EXPOSE 80

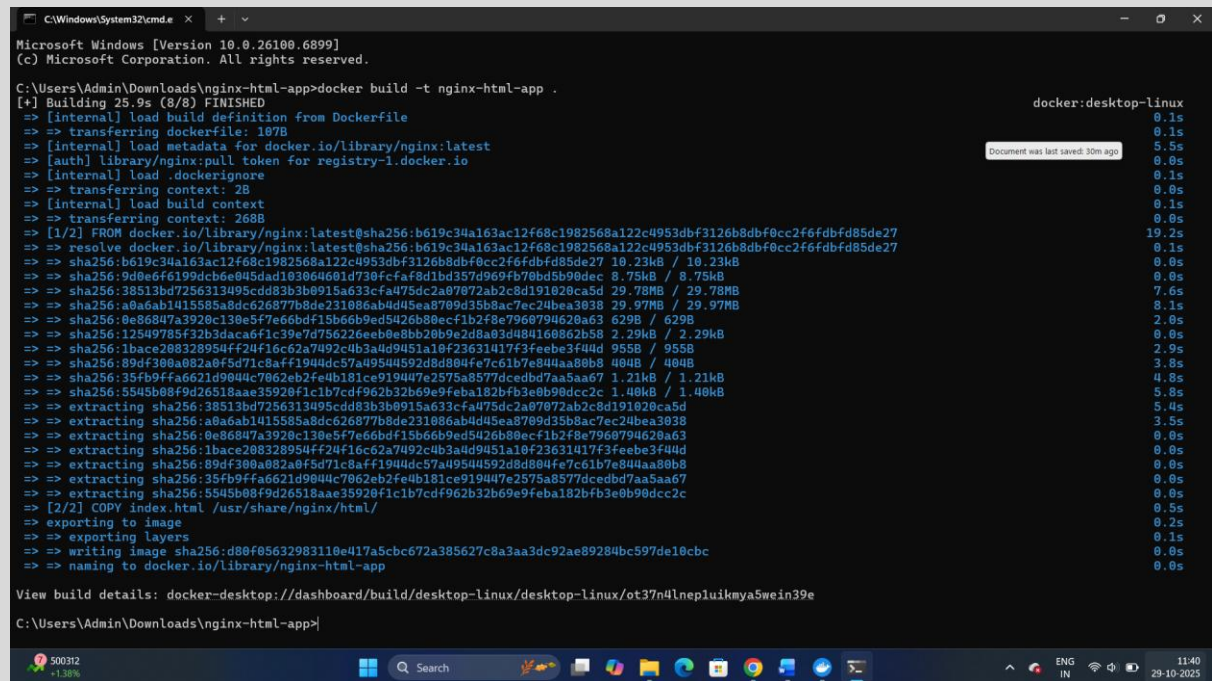


4. Step 3: Build the Docker Image

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 .
```



```
C:\Windows\System32\cmd.exe
Microsoft Windows [Version 10.0.26100.6899]
(c) Microsoft Corporation. All rights reserved.

C:\Users\Admin\Downloads\nginx-html-app>docker build -t nginx-html-app .
[+] Building 25.9s (8/8) FINISHED
=> [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: 268B
=> [1/2] FROM docker.io/library/nginx:latest@sha256:b619c34a163ac12f68c1982568a122c4953dbf3126b8dbf0cc2f6fdbfd85de27
=> => resolve docker.io/library/nginx:latest@sha256:b619c34a163ac12f68c1982568a122c4953dbf3126b8dbf0cc2f6fdbfd85de27
=> => sha256:b619c34a163ac12f68c1982568a122c4953dbf3126b8dbf0cc2f6fdbfd85de27 10.23kB / 10.23kB
=> => sha256:9d0e6f6199dc6e045dad103064601d730fcfa8d1bd357d969fb70bd5b90dec 8.75kB / 8.75kB
=> => sha256:38513bd7256313495cdd83b3b0915a633cfa475dc2a07072ab2c8d191020ca5d 29.78MB / 29.78MB
=> => sha256:a0a6ab141558a8dc626877b8de231086ab4d45ea8709d35b8ac7ec24bea3038 29.97MB / 29.97MB
=> => sha256:0e86847a3920c130e5f7e66bdf15b66b9ed5426b80ecf1b2f8e7960794620a63 629B / 629B
=> => sha256:12549785f32b3daca6f1c39e7d756226eeb0e8bb20b9e2d8a03d48d160862b58 2.29kB / 2.29kB
=> => sha256:1bace288328954ff24f16c62a7492c4b3a4d9451a10f23631417f3feebe3f44d 955B / 955B
=> => sha256:89df300a082a0f5d71c8aff1944dc57a4954592d8d804fe7c61b7e844aa80b8 400B / 400B
=> => sha256:35fb9ffa6621d9044c7062eb2fe4b181ce919447e2575a8577dcedbd7aa5aa67 1.21kB / 1.21kB
=> => sha256:5545b08f9d26518aae35920f1cb7cdf962b32b69e9f8a182bfb3e0b90dccc2c 1.40kB / 1.40kB
=> => extracting sha256:38513bd7256313495cdd83b3b0915a633cfa475dc2a07072ab2c8d191020ca5d
=> => extracting sha256:a0a6ab141558a8dc626877b8de231086ab4d45ea8709d35b8ac7ec24bea3038
=> => extracting sha256:0e86847a3920c130e5f7e66bdf15b66b9ed5426b80ecf1b2f8e7960794620a63
=> => extracting sha256:1bace288328954ff24f16c62a7492c4b3a4d9451a10f23631417f3feebe3f44d
=> => extracting sha256:89df300a082a0f5d71c8aff1944dc57a4954592d8d804fe7c61b7e844aa80b8
=> => extracting sha256:35fb9ffa6621d9044c7062eb2fe4b181ce919447e2575a8577dcedbd7aa5aa67
=> => extracting sha256:5545b08f9d26518aae35920f1cb7cdf962b32b69e9f8a182bfb3e0b90dccc2c
=> [2/2] COPY index.html /usr/share/nginx/html/
=> => exporting image
=> => exporting layers
=> => writing image sha256:d80f05632983110e417a5c6c672a385627c8a3aa3dc92ae89284bc597de10cbc
=> => naming to docker.io/library/nginx-html-app

View build details: docker-desktop://dashboard/build/desktop-linux/desktop-linux/ot37n4lnepluikmya5wein39e

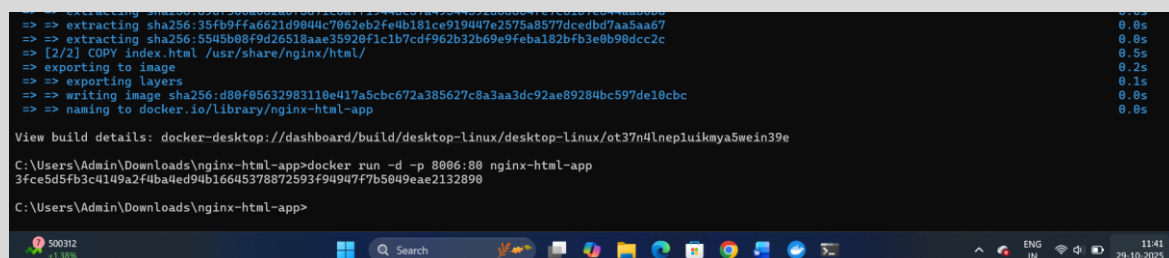
C:\Users\Admin\Downloads\nginx-html-app>
```

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
```



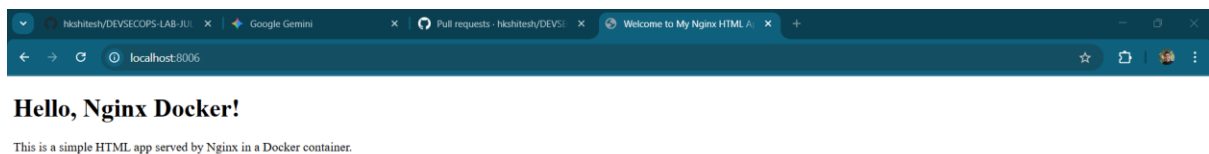
```
C:\Users\Admin\Downloads\nginx-html-app>docker run -d -p 8006:80 nginx-html-app
3fce5d5fb3c4149a2f4ba4ed94b16645378872593f94947f7b5049eae2132890

C:\Users\Admin\Downloads\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!”.



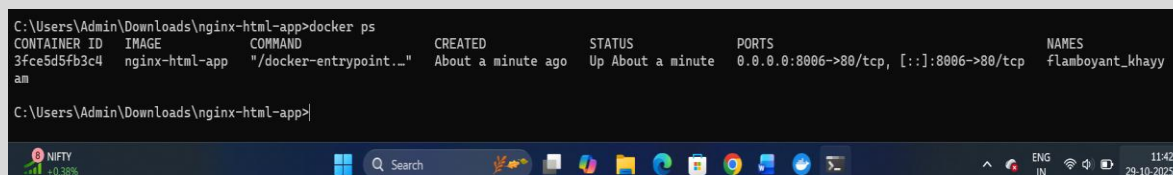
7. Step 6: Stop and Remove the Container

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>
```



Step 7: Tag the local image and push it to DocHub (Done by Self)

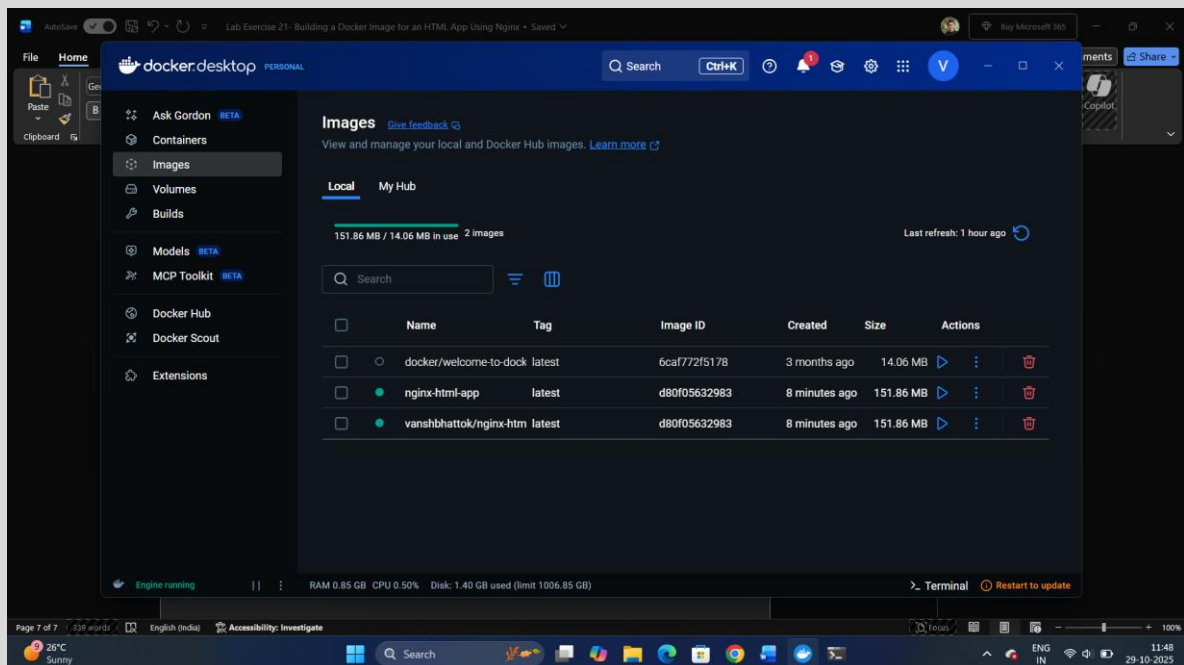
```
C:\Windows\System32\cmd.exe
3fce5d5fb3c4 nginx-html-app "/docker-entrypoint..." About a minute ago Up About a minute 0.0.0.0:8006->80/tcp, [::]:8006->80/tcp flamboyant_khayy
am

C:\Users\Admin\Downloads\nginx-html-app>docker push vanshbhattok/nginx-html-app:latest
The push refers to repository [docker.io/vanshbhattok/nginx-html-app]
An image does not exist locally with the tag: vanshbhattok/nginx-html-app

C:\Users\Admin\Downloads\nginx-html-app>docker images
REPOSITORY          TAG                 IMAGE ID            CREATED             SIZE
nginx-html-app       latest             d80f05632983       4 minutes ago      152MB
docker/welcome-to-docker latest             6caf772f5178       3 months ago       14.1MB

C:\Users\Admin\Downloads\nginx-html-app>docker tag nginx-html-app vanshbhattok/nginx-html-app:latest
C:\Users\Admin\Downloads\nginx-html-app>docker push vanshbhattok/nginx-html-app:latest
The push refers to repository [docker.io/vanshbhattok/nginx-html-app]
8c289a765286: Pushed
984a99e4023d: Mounted from library/nginx
02e74660b2c7: Mounted from library/nginx
4472d7fdefad: Mounted from library/nginx
1909d702c244: Mounted from library/nginx
7ed28343b00e: Mounted from library/nginx
133e431f4bd3: Mounted from library/nginx
d7c97cb6f1fe: Mounted from library/nginx
latest: digest: sha256:35fcb198d1da9176e2f8daab9d19b040cedbcaf10fa75bd19d24e08b7ee3fd81 size: 1985

C:\Users\Admin\Downloads\nginx-html-app>
```



Thank You!