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

1. Setup

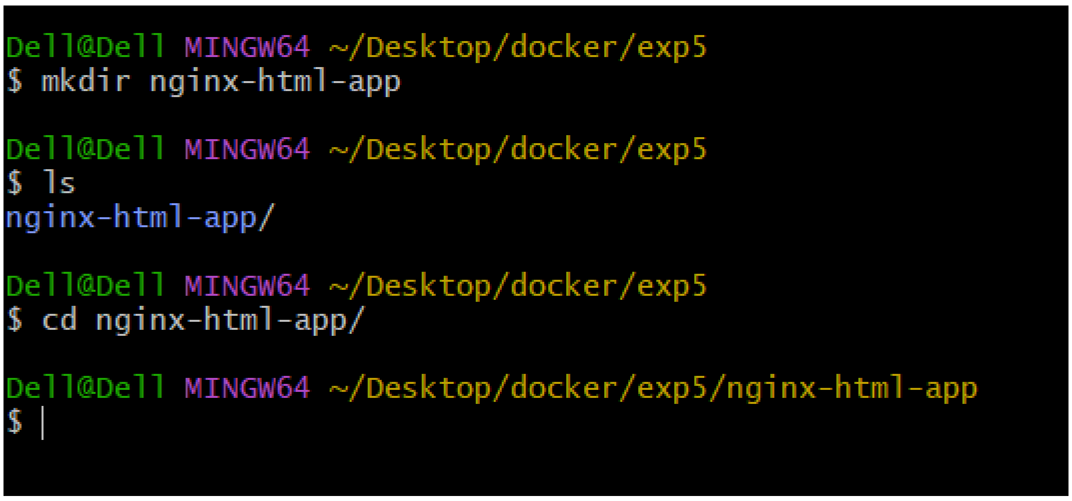
You will need:

- 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.

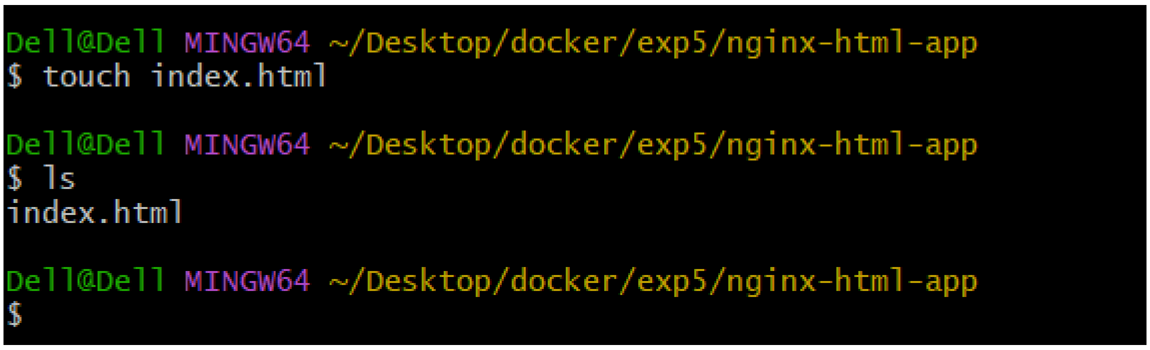
```
mkdir nginx-html-app

cd nginx-html-app
```



```
Dell@Dell MINGW64 ~/Desktop/docker/exp5
$ mkdir nginx-html-app

Dell@Dell MINGW64 ~/Desktop/docker/exp5
$ ls
nginx-html-app/

Dell@Dell MINGW64 ~/Desktop/docker/exp5
$ cd nginx-html-app/

Dell@Dell MINGW64 ~/Desktop/docker/exp5/nginx-html-app
$ |
```

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

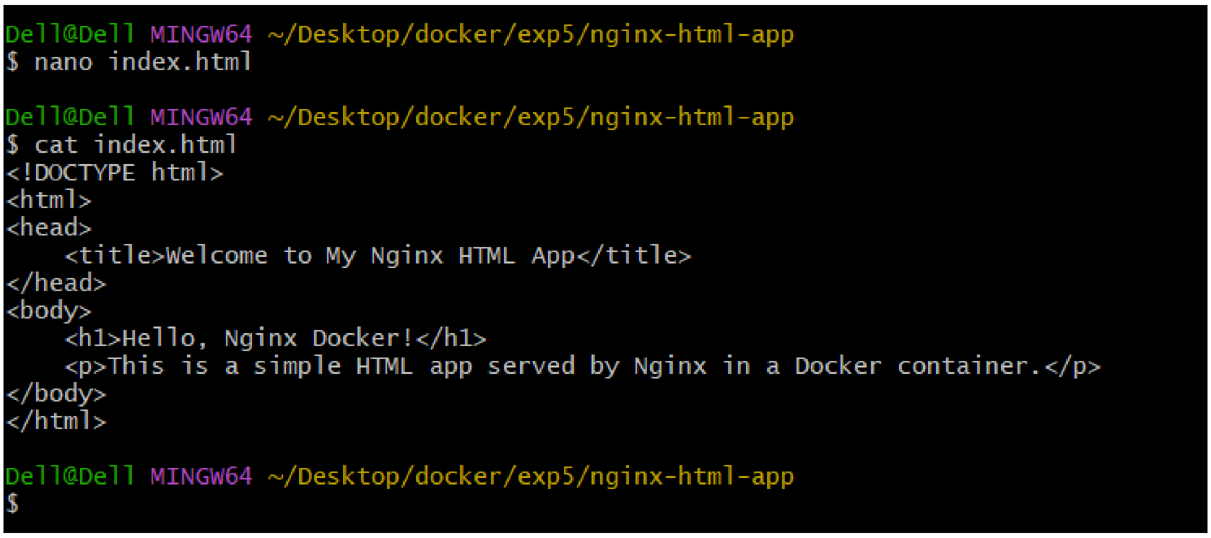
```
touch index.html
```



```
Dell@Dell MINGW64 ~/Desktop/docker/exp5/nginx-html-app
$ touch index.html

Dell@Dell MINGW64 ~/Desktop/docker/exp5/nginx-html-app
$ ls
index.html

Dell@Dell MINGW64 ~/Desktop/docker/exp5/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>
```



```
Dell@Dell MINGW64 ~/Desktop/docker/exp5/nginx-html-app
$ nano index.html

Dell@Dell MINGW64 ~/Desktop/docker/exp5/nginx-html-app
$ cat index.html
<!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>

Dell@Dell MINGW64 ~/Desktop/docker/exp5/nginx-html-app
$
```

3. Step 2: Create a Dockerfile

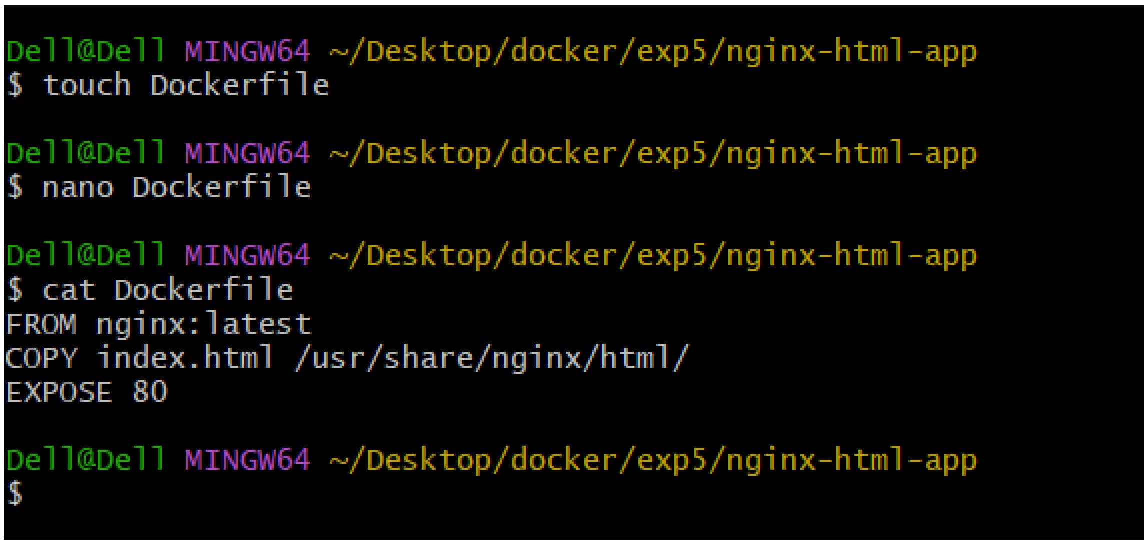
In the same directory, create a Dockerfile. This file will define how to build the Docker image using Nginx as the base image.

```
touch Dockerfile
```

Edit the Dockerfile and add the following content:

```
FROM nginx:latest
```

```
COPY index.html /usr/share/nginx/html/
EXPOSE 80
```

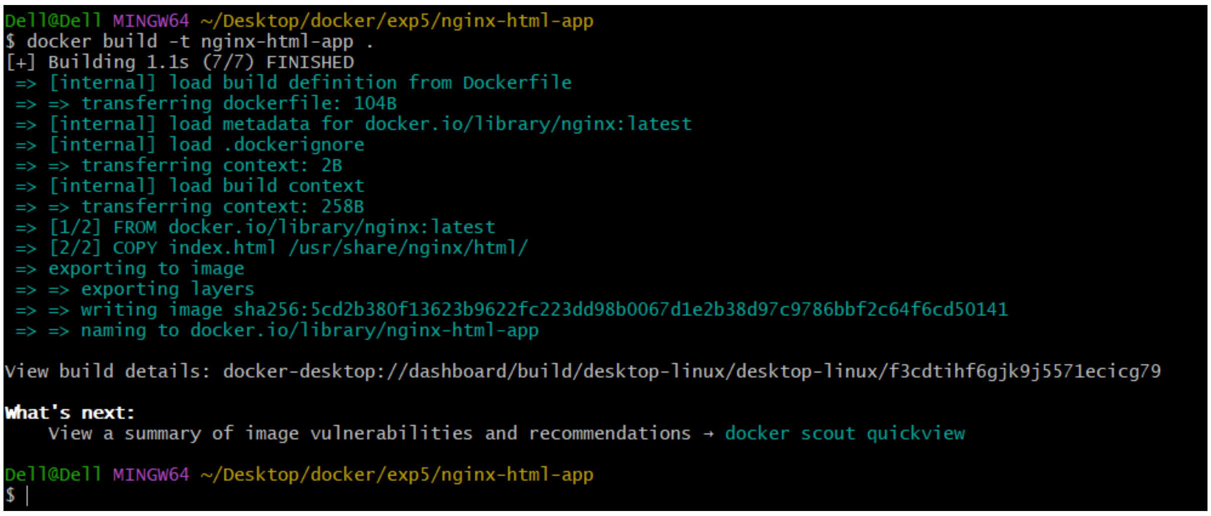


```
Dell@Dell MINGW64 ~/Desktop/docker/exp5/nginx-html-app
$ touch Dockerfile

Dell@Dell MINGW64 ~/Desktop/docker/exp5/nginx-html-app
$ nano Dockerfile

Dell@Dell MINGW64 ~/Desktop/docker/exp5/nginx-html-app
$ cat Dockerfile
FROM nginx:latest
COPY index.html /usr/share/nginx/html/
EXPOSE 80

Dell@Dell MINGW64 ~/Desktop/docker/exp5/nginx-html-app
$
```

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 .
```



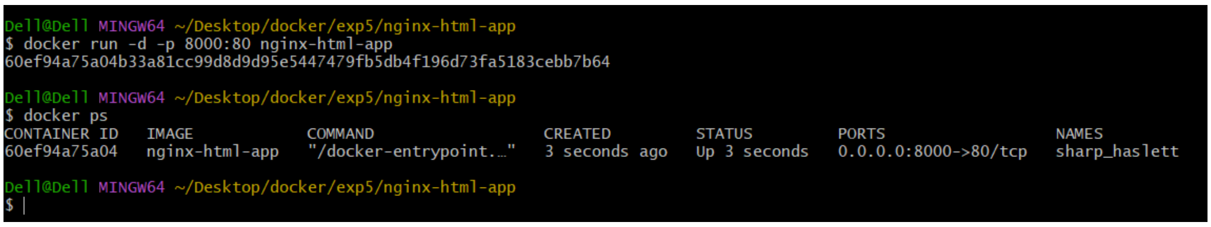
```
Dell@Dell MINGW64 ~/Desktop/docker/exp5/nginx-html-app
$ docker build -t nginx-html-app .
[+] Building 1.1s (7/7) FINISHED
 => [internal] load build definition from Dockerfile
 => => transferring dockerfile: 104B
 => [internal] load metadata for docker.io/library/nginx:latest
 => [internal] load .dockerignore
 => => transferring context: 2B
 => [internal] load build context
 => => transferring context: 258B
 => [1/2] FROM docker.io/library/nginx:latest
 => [2/2] COPY index.html /usr/share/nginx/html/
 => exporting to image
 => => exporting layers
 => => writing image sha256:5cd2b380f13623b9622fc223dd98b0067d1e2b38d97c9786bbf2c64f6cd50141
 => => naming to docker.io/library/nginx-html-app

View build details: docker-desktop://dashboard/build/desktop-linux/desktop-linux/f3cdtihf6gjk9j5571ecicg79

What's next:
    View a summary of image vulnerabilities and recommendations → docker scout quickview

Dell@Dell MINGW64 ~/Desktop/docker/exp5/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 8000:80 nginx-html-app
```

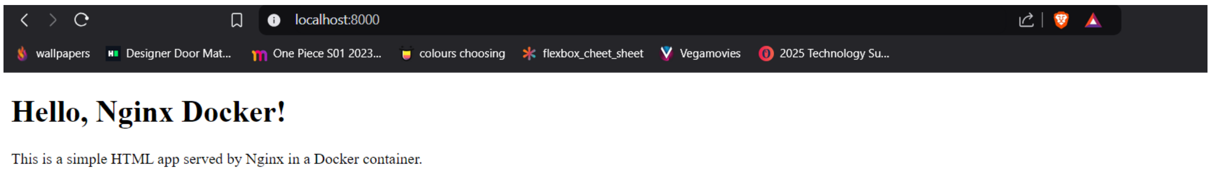


```
Dell@Dell MINGW64 ~/Desktop/docker/exp5/nginx-html-app
$ docker run -d -p 8000:80 nginx-html-app
60ef94a75a04b33a81cc99d8d9d95e5447479fb5db4f196d73fa5183cebb7b64

Dell@Dell MINGW64 ~/Desktop/docker/exp5/nginx-html-app
$ docker ps
CONTAINER ID   IMAGE            COMMAND                  CREATED         STATUS         PORTS                  NAMES
60ef94a75a04   nginx-html-app   "/docker-entrypoint.…"   3 seconds ago   Up 3 seconds   0.0.0.0:8000->80/tcp   sharp_haslett

Dell@Dell MINGW64 ~/Desktop/docker/exp5/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.

6. Step 5: Verify

Open a browser and go to http://localhost:8000. You should see your HTML page with the message “Hello, Nginx Docker!”.

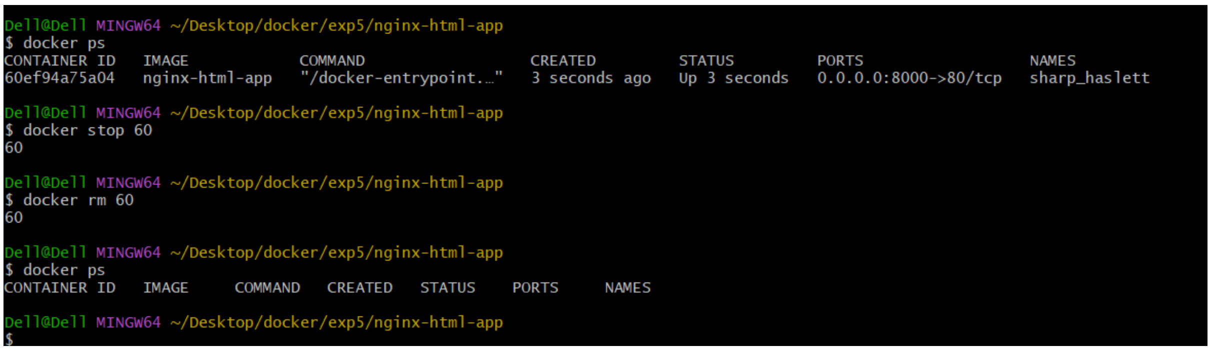


Hello, Nginx Docker!

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:



```
Dell@Dell MINGW64 ~/Desktop/docker/exp5/nginx-html-app
$ docker ps
CONTAINER ID   IMAGE            COMMAND                  CREATED         STATUS         PORTS                  NAMES
60ef94a75a04   nginx-html-app   "/docker-entrypoint.…"   3 seconds ago   Up 3 seconds   0.0.0.0:8000->80/tcp   sharp_haslett

Dell@Dell MINGW64 ~/Desktop/docker/exp5/nginx-html-app
$ docker stop 60
60

Dell@Dell MINGW64 ~/Desktop/docker/exp5/nginx-html-app
$ docker rm 60
60

Dell@Dell MINGW64 ~/Desktop/docker/exp5/nginx-html-app
$ docker ps
CONTAINER ID   IMAGE     COMMAND   CREATED   STATUS    PORTS     NAMES

Dell@Dell MINGW64 ~/Desktop/docker/exp5/nginx-html-app
$
```

```
docker ps  # to see running containers

docker stop <container-id>

docker rm <container-id>
```