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
```

```
atrayee@LAPTOP-33DJGK42:~$ mkdir nginx-html-app
atrayee@LAPTOP-33DJGK42:~$ cd nginx-html-app
```

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

```
touch index.html
```

```
atrayee@LAPTOP-33DJGK42:~/nginx-html-app$ touch index.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
```

```
  GNU nano 6.2                                                  Dockerfile
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.

```
atrayee@LAPTOP-33DJGK42:~/nginx-html-app$ docker build -t nginx-html-app .
DEPRECATED: The legacy builder is deprecated and will be removed in a future release.
            Install the buildx component to build images with BuildKit:
            https://docs.docker.com/go/buildx/

Sending build context to Docker daemon  3.072kB
Step 1/3 : FROM nginx:latest
latest: Pulling from library/nginx
a480a496ba95: Pull complete
f3ace1b8ce45: Pull complete
11d6fdd0e8a7: Pull complete
f1091da6fd5c: Pull complete
40eea07b53d8: Pull complete
6476794e50f4: Pull complete
70850b3ec6b2: Pull complete
Digest: sha256:28402db69fec7c17e179ea87882667f1e054391138f77ffaf0c3eb388efc3ffb
Status: Downloaded newer image for nginx:latest
 ---> 3b25b682ea82
Step 2/3 : COPY index.html /usr/share/nginx/html/
 ---> 051594ce3a33
Step 3/3 : EXPOSE 80
 ---> Running in 678ef2be39c7
Removing intermediate container 678ef2be39c7
 ---> 1ab5a2ed08bc
Successfully built 1ab5a2ed08bc
Successfully tagged nginx-html-app:latest
```

5. Step 4: Run the Docker Container

After building the image, you can run the container with the following command:

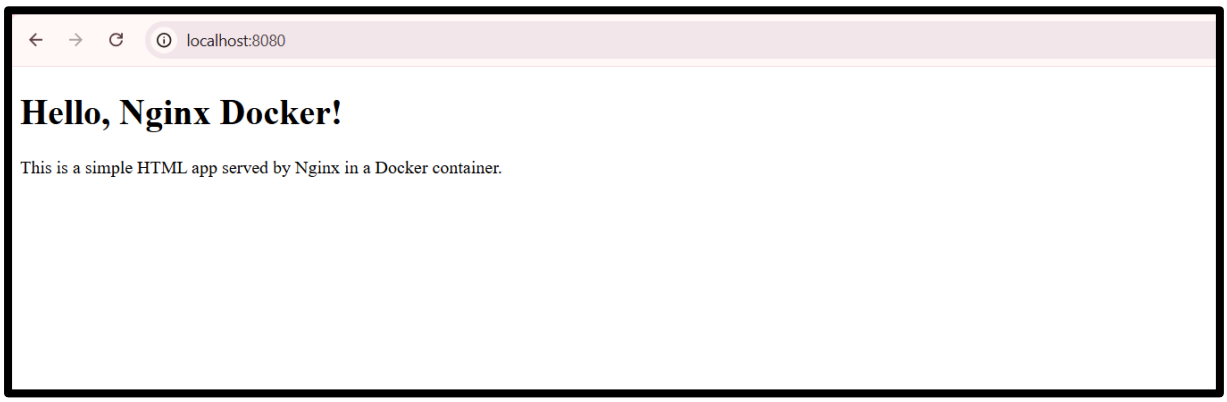
```
docker run -d -p 8080:80 nginx-html-app
```

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.

```
atrayee@LAPTOP-33DJGK42:~/nginx-html-app$ docker run -d -p 8080:80 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!”.



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>
```

```
atrayee@LAPTOP-33DJGK42:~/nginx-html-app$ docker stop ffcf1c0ef317
ffcf1c0ef317
atrayee@LAPTOP-33DJGK42:~/nginx-html-app$ docker rm ffcf1c0ef317
ffcf1c0ef317
atrayee@LAPTOP-33DJGK42:~/nginx-html-app$
```