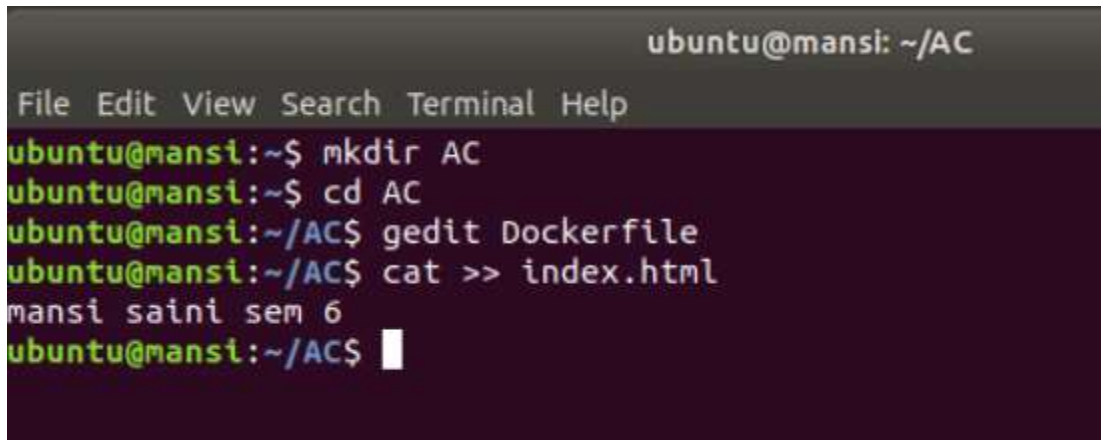# Experiment- 4 (Dockerfile)

Aim: Creating a docker image and pushing it into Docker hub

Step:1 Firstly, create one folder and inside that create a html file.

Step:2 Create Dockerfile in that folder where we have index.html file with this content.

Step: 3 Now, we will create image with the docker build command and the syntax of this will be :-

docker build –t <usernameofdockerhub>/<image name> .

```
ubuntu@mansi:~/AC$ sudo docker build -t mansi1709/mynginx .
Sending build context to Docker daemon  3.072kB
Step 1/6 : FROM ubuntu
 ---> f63181f19b2f
Step 2/6 : RUN apt-get update
 ---> Running in cf8a2f6afedc
Get:1 http://security.ubuntu.com/ubuntu focal-security InRelease [109 kB]
Get:2 http://archive.ubuntu.com/ubuntu focal InRelease [265 kB]
Get:3 http://archive.ubuntu.com/ubuntu focal-updates InRelease [114 kB]
Get:4 http://archive.ubuntu.com/ubuntu focal-backports InRelease [101 kB]
Get:5 http://security.ubuntu.com/ubuntu focal-security/universe amd64 Packages [664 kB]
Get:6 http://security.ubuntu.com/ubuntu focal-security/main amd64 Packages [612 kB]
Get:7 http://security.ubuntu.com/ubuntu focal-security/multiverse amd64 Packages [13.3 kB]
Get:8 http://security.ubuntu.com/ubuntu focal-security/restricted amd64 Packages [165 kB]
Get:9 http://archive.ubuntu.com/ubuntu focal/multiverse amd64 Packages [177 kB]
Get:10 http://archive.ubuntu.com/ubuntu focal/universe amd64 Packages [11.3 MB]
Get:11 http://archive.ubuntu.com/ubuntu focal/restricted amd64 Packages [33.4 kB]
```

```
Reading package lists...
Removing intermediate container cf8a2f6afedc
 ---> a21ba0199807
Step 3/6 : RUN apt-get install nginx -y
 ---> Running in 5c4eb259e725
Reading package lists...
Building dependency tree...
Reading state information...
The following additional packages will be installed:
  fontconfig-config fonts-dejavu-core iproute2 libatm1 libbsd0 libcap2
  libcap2-bin libelf1 libexpat1 libfontconfig1 libfreetype6 libgd3 libicu66
  libjbig0 libjpeg-turbo8 libjpeg8 libmnl0 libnginx-mod-http-image-filter
  libnginx-mod-http-xslt-filter libnginx-mod-mail libnginx-mod-stream
  libpam-cap libpng16-16 libssl1.1 libtiff5 libwebp6 libx11-6 libx11-data
  libxau6 libxcb1 libxdmcp6 libxml2 libxpm4 libxslt1.1 libxtables12
  nginx-common nginx-core tzdata ucf
Suggested packages:
  iproute2-doc libgd-tools fcgiwrap nginx-doc ssl-cert
The following NEW packages will be installed:
  fontconfig-config fonts-dejavu-core iproute2 libatm1 libbsd0 libcap2
```

```
Processing triggers for libc-bin (2.31-0ubuntu9.1) ...
Removing intermediate container 0831ae976849
 ---> c32b977a3304
Step 4/7 : RUN echo "daemon off;" >> /etc/nginx/nginx.conf
 ---> Running in a4c51d535955
Removing intermediate container a4c51d535955
 ---> 4d1696516a2d
Step 5/7 : COPY index.html /var/www/html/
 ---> 663e0930f83d
Step 6/7 : EXPOSE 80
 ---> Running in 9b7ab0f0cac2
Removing intermediate container 9b7ab0f0cac2
 ---> a404fa6aedb7
Step 7/7 : CMD ["nginx"]
 ---> Running in be762caa77f3
Removing intermediate container be762caa77f3
 ---> f1c7003e13b9
Successfully built f1c7003e13b9
Successfully tagged mansi1709/mynginx:latest
ubuntu@mansi:~/AC$
```

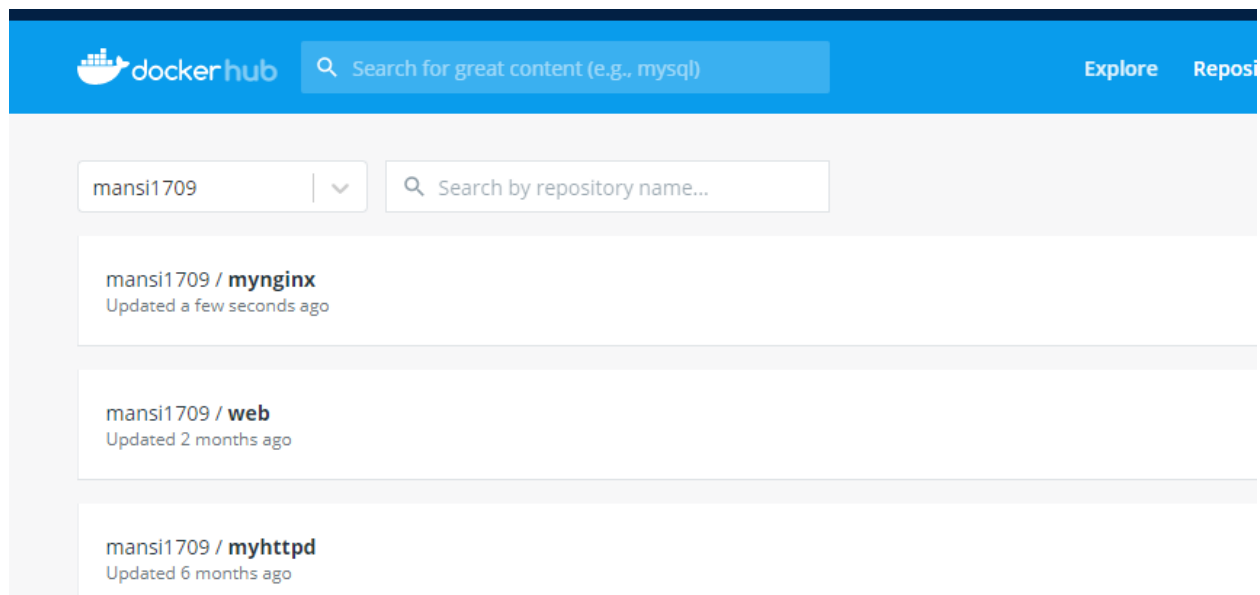**Step:4** Now, we will login to the docker hub

```
ubuntu@mansi:~$ sudo docker login
Login with your Docker ID to push and pull images from Docker Hub. If you don't
have a Docker ID, head over to https://hub.docker.com to create one.
Username: mansi1709
Password:
WARNING! Your password will be stored unencrypted in /home/ubuntu/.docker/config
.json.
Configure a credential helper to remove this warning. See
https://docs.docker.com/engine/reference/commandline/login/#credentials-store

Login Succeeded
ubuntu@mansi:~$
```

Step:5 Created image will be pushed to docker hub with this command.

```
ubuntu@mansi:~$ sudo docker push mansi1709/mynginx
Using default tag: latest
The push refers to repository [docker.io/mansi1709/mynginx]
cad02789c0e4: Pushed
2cf94ed2b86e: Pushed
c729bf880ee4: Pushed
7dad3b0c2223: Pushed
02473afd360b: Mounted from library/ubuntu
dbf2c0f42a39: Pushed
9f32931c9d28: Mounted from library/ubuntu
latest: digest: sha256:ef902290e3f38967cacbd782ad57f2d0ffb2a75853cee2e6fa1f98cc1
0508c6e size: 1781
ubuntu@mansi:~$
```

The image can be seen in docker hub also:-

dockerhub   Search for great content (e.g., mysql)   Explore   Reposi

mansi1709 | v   Search by repository name...

mansi1709 / **mynginx**
Updated a few seconds ago

mansi1709 / **web**
Updated 2 months ago

mansi1709 / **myhttpd**
Updated 6 months ago

Step: 6 Now, we will remove image locally with the docker image rm <image name> command.

```
ubuntu@mansi:~$ sudo docker image rm mansi1709/mynginx
Untagged: mansi1709/mynginx:latest
Untagged: mansi1709/mynginx@sha256:ef902290e3f38967cacbd782ad57f2d0ffb2a75853cee
2e6fa1f98cc10508c6e
Deleted: sha256:f1c7003e13b9d5ec8872bf49ff34e90f51b8026095ec0a123f1e4f7fbe000157
Deleted: sha256:a404fa6aedb74bcb3feee5416f0dee54b3db0ea0a8a5f37fd317742176ddc898
Deleted: sha256:663e0930f83d48cfc5398bb7ecd2da11eb1f5cd12aa0d5a12976bf9a082ac4ac
Deleted: sha256:5949944c8f0d72c5af02316a4ff5b85d7356c150327ef78ee5e84069a7c105ae
Deleted: sha256:4d1696516a2d668f9067f674b8c196c77d7be513194355ecbc5801d5c8a29c62
Deleted: sha256:c917f7a8f6c820e1c020d1f65bf8016ca337310cc29452f31f602286ed3a28a2
Deleted: sha256:c32b977a33041272a0f27e85f2d3c6cc6dabd24774570f32c75cb864413b310f
Deleted: sha256:b723f6431c0056f633451f746b3b38e4e00542472c60a6284d274dcf1a23f5d6
Deleted: sha256:6da3092a6cc1d5a080fa34ad6fbfc9bab328d18d70673684b79a61ad59b186b6
Deleted: sha256:9ef0f249445ab1c50604dcac6c0048ab7b1316be8ae0b4a95802bcfd29780974
ubuntu@mansi:~$
```

Step:7 Pulling created image from docker hub and launching the container

```
ubuntu@mansi:~$ sudo docker run -dit -P --name os1 mansi1709/mynginx
Unable to find image 'mansi1709/mynginx:latest' locally
latest: Pulling from mansi1709/mynginx
83ee3a23efb7: Already exists
db98fc6f11f0: Already exists
f611acd52c6c: Already exists
c38bee41380f: Pull complete
cc3eb3444b50: Pull complete
d1abb26b5ea7: Pull complete
f1daa2d25fa2: Pull complete
Digest: sha256:ef902290e3f38967cacbd782ad57f2d0ffb2a75853cee2e6fa1f98cc10508c6e
Status: Downloaded newer image for mansi1709/mynginx:latest
620fc25c7eae9afc83eb84f5a55c86d0f209ae7514e3c15dcfbb7a6d79cca4c3
ubuntu@mansi:~$
```

Step:8 We can see at which port of our machine, nginx server having 80 port has been translated

```
ubuntu@mansi:~$ sudo docker ps
CONTAINER ID   IMAGE              COMMAND    CREATED         STATUS          PO
RTS                NAMES
620fc25c7eae   mansi1709/mynginx  "nginx"    40 seconds ago  Up 34 seconds   0.
0.0.0:49155->80/tcp   os1
ubuntu@mansi:~$
```

Step:9 Now, finally we can see the content written in index.html file from the newly launched container.