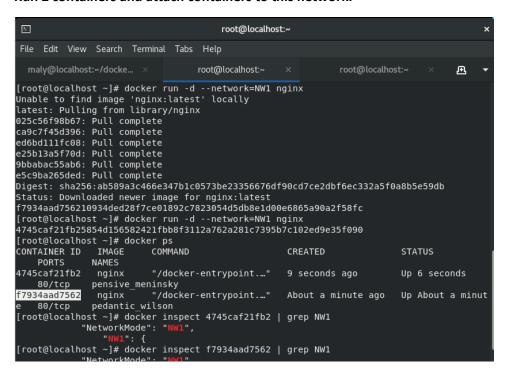
Docker Lab2

1. Problem 1:

Create bridge network with subnet 192.168.0.0/24.

```
root@localhost:~
File Edit View Search Terminal Tabs Help
  maly@localhost:~/docker-labs/lab1/simp...
                                                      root@localhost:~
                                                                                    ₽
[root@localhost ~]# docker network ls
NETWORK ID
               NAME
                          DRIVER
                                    SCOPE
3f6523e9bcc6
               bridge
                          bridge
                                     local
9c824f6d6ee5
               host
                          host
                                     local
22e9d82c0a3b
                          null
                                    local
               none
[root@localhost ~]# docker network create NWl --driver=bridge --<u>subnet=192.168.0.0/2</u>4
2ba37918b6579b5dc42730d5212b0c20a55990bd11a8b59f77ae2ad2693a61d1
[root@localhost ~]# docker network create NW2 --driver=bridge --subnet=10.5.0.0/24
02ce05b049025a802a5e4cd64c4592dfd1a51d2c11e59fa73c19c2f70e2be06a
[root@localhost ~]# docker network ls
NETWORK ID
               NAME
                          DRIVER
                                    SCOPE
2ba37918b657
               NW1
                          bridge
                                     local
02ce05b04902
               NW2
                          bridge
                                     local
3f6523e9bcc6
               bridge
                          bridge
                                     local
9c824f6d6ee5
               host
                          host
                                     local
22e9d82c0a3b
               none
                          null
                                     local
[root@localhost ~]#
```

Run 2 containers and attach containers to this network.



Create another bridge network with subnet 10.5.0.0/24.

```
root@localhost:~
File Edit View Search Terminal Tabs Help
  maly@localhost:~/docker-labs/lab1/simp...
                                                      root@localhost:~
                                                                                   Ð
[root@localhost ~]# docker network ls
                         DRIVER
NETWORK ID
               NAME
                                    SCOPE
3f6523e9bcc6
               bridge
                          bridge
                                    local
9c824f6d6ee5
               host
                          host
                                    local
22e9d82c0a3b
[root@localhost ~]# docker network create NW1 --driver=bridge --subnet=192.168.0.0/24
2ba37918b6579b5dc42730d5212b0c20a55990bd11a8b59f77ae2ad2693a61d1
[root@localhost ~]# docker network create NW2 --driver=bridge --subnet=10.5.0.0/24
02ce05b049025a802a5e4cd64c4592dfd1a51d2c11e59fa73c19c2f70e2be06a
[root@localhost ~]# docker network ls
NETWORK ID
               NAME
                         DRIVER
                                    SCOPE.
2ba37918b657
               NW1
                          bridge
                                    local
02ce05b04902
               NW2
                          bridge
3f6523e9bcc6
               bridge
                          bridge
                                    local
9c824f6d6ee5
               host
                          host
                                    local
22e9d82c0a3b
                                    local
[root@localhost ~]#
```

Run any container and attach it to the new network.

```
[root@localhost ~]# docker run -d --network=NW2 nginx
03ecff3bdb3af184c1e427e7998d8af59b238fca8fa05e611c793daa76da99f0
[root@localhost ~]# docker ps
CONTAINER ID IMAGE
                        COMMAND
                                                 CREATED
                                                                  STATUS
                                                                                 PORTS
   NAMES
03ecff3bdb3a
                        "/docker-entrypoint..."
                                                 9 seconds ago
                                                                  Up 7 seconds
                                                                                 80/tcp
              nginx
   musing lederberg
4745caf21fb2 nginx
                        "/docker-entrypoint..."
                                                 6 minutes ago
                                                                 Up 6 minutes
                                                                                 80/tcp
   pensive meninsky
f7934aad7562 nginx
                        "/docker-entrypoint..."
                                                                  Up 8 minutes
                                                 8 minutes ago
                                                                                 80/tcp
    pedantic_wilson
[root@localhost ~]# docker inspect 03ecff3bdb3a | grep NW2
            "NetworkMode": "NW2",
```

Make sure that the containers at different network can't ping each other

```
E
                                      root@localhost:~
File Edit View Search Terminal Tabs Help
  maly@localhost:~/docke... ×
                                  root@localhost:~
                                                             root@localhost:~
ping: usage error: Destination address required
root@4745caf21fb2:/# ping 10.5.0.2
PING 10.5.0.2 (10.5.0.2) 56(84) bytes of data.
^c
--- 10.5.0.2 ping statistics ---
433 packets transmitted, O received, 100% packet loss, time 434160ms
root@4745caf21fb2:/# ping 192.168.0.2
PING 192.168.0.2 (192.168.0.2) 56(84) bytes of data.
64 bytes from 192.168.0.2: icmp_seq=1 ttl=64 time=0.178 ms
64 bytes from 192.168.0.2: icmp_seq=2 ttl=64 time=0.213 ms
64 bytes from 192.168.0.2: icmp_seq=3 ttl=64 time=0.210 ms
64 bytes from 192.168.0.2: icmp seq=4 ttl=64 time=0.212 ms
64 bytes from 192.168.0.2: icmp seq=5 ttl=64 time=0.372 ms
--- 192.168.0.2 ping statistics ---
5 packets transmitted, 5 received, 0% packet loss, time 3996ms
rtt min/avg/max/mdev = 0.178/0.237/0.372/0.068 ms
root@4745caf21fb2:/# ping 192.168.0.3
PING 192.168.0.3 (192.168.0.3) 56(84) bytes of data.
64 bytes from 192.168.0.3: icmp_seq 1 ttl=64 time=0.053 ms
64 bytes from 192.168.0.3: icmp seq=2 ttl=64 time=0.091 ms
64 bytes from 192.168.0.3: icmp_seq=3 ttl=64 time=0.185 ms
64 bytes from 192.168.0.3: icmp_seq=4 ttl=64 time=0.098 ms
```

2. Problem 2:

Create static html file

Write Dockerfile to build image based on httpd to host the html file and specify the following Copy the html file.

Copy a new configuration file to listen on port 9999 instead of 80

Open the port 9999 in the container

Add environment variable CONTAINER with value docker.

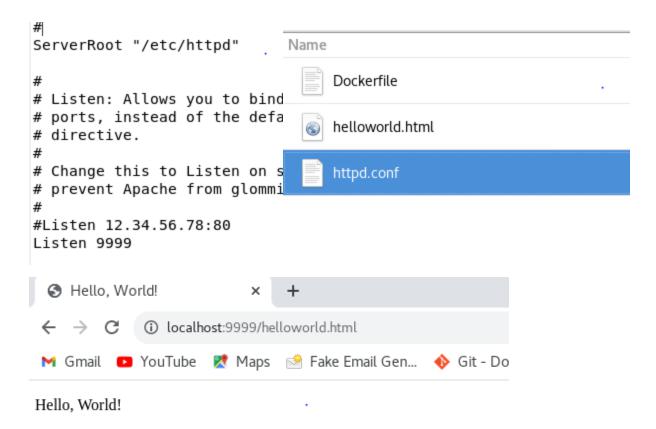
Add startup command to echo the variable

```
Get Started Dockerfile X helloworld.html

home > maly > docker-labs > lab2 > problem2 > Dockerfile > ...

FROM httpd
COPY ./helloworld.html /var/www/html/
COPY ./httpd.conf /etc/httpd/conf/httpd.conf
ENV CONTAINER=docker
EXPOSE 9999
CMD echo $CONTAINER && httpd -D FOREGROUND
```

```
[maly@localhost problem2]$ sudo docker build -t html-image .
[sudo] password for maly:
Sending build context to Docker daemon 15.87kB
Step 1/6 : FROM httpd
 ---> 157dcdf23d6c
Step 2/6 : COPY ./helloworld.html /var/www/html/
---> e0995cd3dddd
Step 3/6 : COPY ./httpd.conf /etc/httpd/conf/httpd.conf
---> c9e3ffc164bb
Step 4/6 : ENV CONTAINER=docker
---> Running in 24cf8aa850dc
Removing intermediate container 24cf8aa850dc
---> 052788a31e7e
Step 5/6 : EXPOSE 9999
---> Running in fe9able32c5c
Removing intermediate container fe9able32c5c
---> 4b1f4216a9bf
Step 6/6 : CMD echo $CONTAINER && httpd -D FOREGROUND
---> Running in 2cc3739aabdd
Removing intermediate container 2cc3739 abdd
---> 031ba11ab3c6
Successfully built 031ballab3c6
Successfully tagged html-image:latest
[maly@localhost problem2]$ sudo docker run -p 9999:9999 html-image
docker
```



3. Problem 3:

Create a docker compose to setup web container (flask app from lab1 if not exist) and nginx, MySQL, the app container depends on nginx and MySQL

Add volume for MySQL dB