

Create 2 bridge network, "network1" with subnet 192.168.0.0/24 & "network2" with subnet 10.5.0.0/24

```
younis@younis-HP-ProBook-450-G2: ~/Sprints_Tasks/DOCKE...
younis@younis-HP-ProBook-450-G2:~/Sprints_Tasks/DOCKER01/Task03$ sudo docker net
work create --driver bridge --subnet 192.168.0.0/24 network1
[sudo] password for younis:
40fe5111804cc3940382f98c5891aac8fc743a8118c209f3a4d920973fafed29
younis@younis-HP-ProBook-450-G2:~/Sprints_Tasks/DOCKER01/Task03$ sudo docker net
work create --driver bridge --subnet 10.5.0.0/24 network2
bea42e077738af60edf7c39a6662aab0557a71092428a20a05475bb9f2576f62
younis@younis-HP-ProBook-450-G2:~/Sprints_Tasks/DOCKER01/Task03$ sudo docker net
work ls
NETWORK ID          NAME                DRIVER              SCOPE
7f0a6394be82        bridge              bridge              local
60e5f246b011        host                host                local
40fe5111804c        network1            bridge              local
bea42e077738        network2            bridge              local
5d13d1c90920        none                null                local
younis@younis-HP-ProBook-450-G2:~/Sprints_Tasks/DOCKER01/Task03$
```

Run 2 containers "container1", "container2" and attach them to network1.  
& Run container "container3" and attach it to network2

```
younis@younis-HP-ProBook-450-G2: ~/Sprints_Tasks/DOCKER01/Task03
younis@younis-HP-ProBook-450-G2:~/Sprints_Tasks/DOCKER01/Task03$ sudo docker run -d --name container1 --network network1 nginx
a0cd68a1d7cf28919b564419c41380786de6fd34d26f99aeb90f543e6463d9e9
younis@younis-HP-ProBook-450-G2:~/Sprints_Tasks/DOCKER01/Task03$ sudo docker run -d --name container2 --network network1 nginx
ef87aec4ad874ef39d02b09b8829316c070a573321514241384053f9b2e07e95
younis@younis-HP-ProBook-450-G2:~/Sprints_Tasks/DOCKER01/Task03$ sudo docker run -d --name container3 --network network2 nginx
9aa9691d64c9b8ecfd73edf74c7975e1204f683270e62b114899ed8b9b82c075
younis@younis-HP-ProBook-450-G2:~/Sprints_Tasks/DOCKER01/Task03$ sudo docker ps
CONTAINER ID   IMAGE     COMMAND                  CREATED      STATUS        PORTS      NAMES
9aa9691d64c9   nginx     "/docker-entrypoint..." 14 seconds ago Up 12 seconds 80/tcp     container3
ef87aec4ad87   nginx     "/docker-entrypoint..." 26 seconds ago Up 24 seconds 80/tcp     container2
a0cd68a1d7cf   nginx     "/docker-entrypoint..." 40 seconds ago Up 38 seconds 80/tcp     container1
younis@younis-HP-ProBook-450-G2:~/Sprints_Tasks/DOCKER01/Task03$ sudo docker inspect container1 | grep network
    "NetworkMode": "network1",
    "network1": {
younis@younis-HP-ProBook-450-G2:~/Sprints_Tasks/DOCKER01/Task03$ sudo docker inspect container2 | grep network
    "NetworkMode": "network1",
    "network1": {
younis@younis-HP-ProBook-450-G2:~/Sprints_Tasks/DOCKER01/Task03$ sudo docker inspect container3 | grep network
    "NetworkMode": "network2",
    "network2": {
younis@younis-HP-ProBook-450-G2:~/Sprints_Tasks/DOCKER01/Task03$
```

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

```
younis@younis-HP-ProBook-450-G2: ~/Sprints_Tasks/DOCKE...
younis@younis-HP-ProBook-450-G2:~/Sprints_Tasks/DOCKER01/Task03$ sudo docker inspect container1 | grep IPAddress
      "SecondaryIPAddresses": null,
      "IPAddress": "",
      "IPAddress": "192.168.0.2",
younis@younis-HP-ProBook-450-G2:~/Sprints_Tasks/DOCKER01/Task03$ sudo docker inspect container2 | grep IPAddress
      "SecondaryIPAddresses": null,
      "IPAddress": "",
      "IPAddress": "192.168.0.3",
younis@younis-HP-ProBook-450-G2:~/Sprints_Tasks/DOCKER01/Task03$ sudo docker inspect container3 | grep IPAddress
      "SecondaryIPAddresses": null,
      "IPAddress": "",
      "IPAddress": "10.5.0.2",
younis@younis-HP-ProBook-450-G2:~/Sprints_Tasks/DOCKER01/Task03$ sudo docker exec container1 curl 10.5.0.2:80
  % Total    % Received % Xferd  Average Speed   Time    Time     Time  Current
                                 Dload  Upload   Total   Spent    Left   Speed
younis@younis-HP-ProBook-450-G2:~/Sprints_Tasks/DOCKER01/Task03$ sudo docker exec container1 curl 192.168.0.3:80
  % Total    % Received % Xferd  Average Speed   Time    Time     Time  Current
                                 Dload  Upload   Total   Spent    Left   Speed
```

```
younis@younis-HP-ProBook-450-G2: ~/Sprints_Tasks/DOCKE...
younis@younis-HP-ProBook-450-G2:~/Sprints_Tasks/DOCKER01/Task03$ sudo docker exec container1 curl 192.168.0.3:80
  % Total    % Received % Xferd  Average Speed   Time    Time     Time  Current
                                 Dload  Upload   Total   Spent    Left   Speed
100   615  100   615    0     0  600k      0 --:--:-- --:--:-- --:--:--  600k
<!DOCTYPE html>
<html>
<head>
<title>Welcome to nginx!</title>
<style>
html { color-scheme: light dark; }
body { width: 35em; margin: 0 auto;
font-family: Tahoma, Verdana, Arial, sans-serif; }
</style>
</head>
<body>
<h1>Welcome to nginx!</h1>
<p>If you see this page, the nginx web server is successfully installed and
working. Further configuration is required.</p>

<p>For online documentation and support please refer to
<a href="http://nginx.org/">nginx.org</a>.<br>
Commercial support is available at
<a href="http://nginx.com/">nginx.com</a>.</p>
```

## Create static html file --> index.html

## Dockerfile --> Dockerfile

## httpd file --> Httpd

```
younis@younis-HP-ProBook-450-G2: ~/Sprints_Tasks/DOCKER01/Task03
[+] Building 95.7s (8/8) FINISHED
=> [internal] load build definition from Dockerfile                                0.3s
=> => transferring dockerfile: 232B                                              0.0s
=> [internal] load .dockerignore                                                  0.4s
=> => transferring context: 2B                                                  0.0s
=> [internal] load metadata for docker.io/library/httpd:2.4                    7.7s
=> [1/3] FROM docker.io/library/httpd:2.4@sha256:1bb3f7669a85713906e6955      82.2s
=> => resolve docker.io/library/httpd:2.4@sha256:1bb3f7669a85713906e6955      0.8s
=> => sha256:d1b31555feeabe3afd7ba301ca285429176a76aff16 1.37kB / 1.37kB      0.0s
=> => sha256:d1676199e60591c70e38ddfd2c6c3fc51452fafee 9.29kB / 9.29kB       0.0s
=> => sha256:1bb3f7669a85713906e695599d29c58ab40d4e64099 1.86kB / 1.86kB     0.0s
=> => sha256:abaf8619eb1c96b5bda436caa32f832076cd92d6277e0fa 178B / 178B    1.7s
=> => sha256:e3fe37d0c2ad420bd2a30bb0ac9f84b92ead7c790a 1.72MB / 1.72MB     4.1s
=> => sha256:52a1e37affe549886bc5f97b08a3fe1b19d41da3 23.97MB / 23.97MB    78.6s
=> => extracting sha256:abaf8619eb1c96b5bda436caa32f832076cd92d6277e0fa8      0.0s
=> => sha256:49d8a68fd903c4c5786f34b8510d9cc221f6229ba9921f5 299B / 299B    3.4s
=> => extracting sha256:e3fe37d0c2ad420bd2a30bb0ac9f84b92ead7c790a914db      0.1s
=> => extracting sha256:52a1e37affe549886bc5f97b08a3fe1b19d41da3d3e3284e     0.6s
=> => extracting sha256:49d8a68fd903c4c5786f34b8510d9cc221f6229ba9921f52      0.0s
=> [internal] load build context                                                0.7s
=> => transferring context: 1.07kB                                              0.0s
=> [2/3] COPY index.html /usr/local/apache2/htdocs/                          2.5s
=> [3/3] COPY httpd.conf /usr/local/apache2/conf/                             1.1s
=> exporting to image                                                         0.8s
=> => exporting layers                                                         0.7s
=> => writing image sha256:6b9f21873a4a7059f3372344740d3f0ff75e93fbaea90      0.0s
=> => naming to docker.io/library/apache-image                                0.1s
younis@younis-HP-ProBook-450-G2:~/Sprints_Tasks/DOCKER01/Task03$ sudo docker images
REPOSITORY          TAG         IMAGE ID      CREATED        SIZE
apache-image        latest      6b9f21873a4a 17 seconds ago 145MB
nginx               latest      f9c14fe76d50 6 days ago     143MB
younis@younis-HP-ProBook-450-G2:~/Sprints_Tasks/DOCKER01/Task03$ sudo docker run -d --name my-container -p 9999:9999 apache-image
8bba54b79d2b2d12840ebb8bc4173eb92c688575bc5741e1eb2df9fe6cc8872c
younis@younis-HP-ProBook-450-G2:~/Sprints_Tasks/DOCKER01/Task03$ sudo docker ps -a
CONTAINER ID   IMAGE      COMMAND                  CREATED        STATUS        PORTS
NAMES
8bba54b79d2b   apache-image  "sh -c 'echo $CONTAI..." 14 seconds ago  Up 12 seconds  80/tcp, 0.0.0.0:9999->9999/tcp, :::9999->9999
younis@younis-HP-ProBook-450-G2:~/Sprints_Tasks/DOCKER01/Task03$ sudo docker run -d --name my-container -p 9999:9999 apache-image
8bba54b79d2b2d12840ebb8bc4173eb92c688575bc5741e1eb2df9fe6cc8872c
younis@younis-HP-ProBook-450-G2:~/Sprints_Tasks/DOCKER01/Task03$ sudo docker ps -a
CONTAINER ID   IMAGE      COMMAND                  CREATED        STATUS        PORTS
NAMES
8bba54b79d2b   apache-image  "sh -c 'echo $CONTAI..." 14 seconds ago  Up 12 seconds  80/tcp, 0.0.0.0:9999->9999/tcp, :::9999->9999
7tcp my-container
9aa9691d64c9   nginx      "/docker-entrypoint..." 21 minutes ago  Up 21 minutes  80/tcp
container3
ef87aec4ad87   nginx      "/docker-entrypoint..." 21 minutes ago  Up 21 minutes  80/tcp
container2
a0cd68a1d7cf   nginx      "/docker-entrypoint..." 22 minutes ago  Up 22 minutes  80/tcp
container1
b0c48a8285f2   fe7edaf8a8dc "/docker-entrypoint..." 6 days ago     Exited (0) 6 days ago
web
0aecbc159ecd   3b418d7b466a "sleep 1000"           6 days ago     Exited (0) 6 days ago
youthful_bohr
3887bcdbe457   fe7edaf8a8dc "/docker-entrypoint..." 6 days ago     Exited (0) 6 days ago
epic_kare
4b3504346eb6   fe7edaf8a8dc "/docker-entrypoint..." 6 days ago     Exited (0) 6 days ago
sharp_proskuriakova
0b13ac0caf1a   0ec8ab59a35f "docker-entrypoint.s..." 6 days ago     Exited (0) 6 days ago
upbeat_ardinghell
ce8e6d756724   9c7a54a9a43c "/hello"               6 days ago     Exited (0) 6 days ago
sweet_dhawan
796d70e7a7b3   d0677d8f6c79 "/docker-entrypoint..." 12 days ago    Exited (0) 10 days ago
sharp_merkle
ff9a57e3e326   d0677d8f6c79 "/docker-entrypoint..." 12 days ago    Created
mystifying_rubln
d106ded31ef1   d0677d8f6c79 "/docker-entrypoint..." 12 days ago    Created
heuristic_mccarthy
9a155d3a989e   d0677d8f6c79 "/docker-entrypoint..." 12 days ago    Exited (0) 10 days ago
jovial_cartwright
3fa3b2077bb3   d0677d8f6c79 "/docker-entrypoint..." 12 days ago    Exited (0) 10 days ago
eloquent_hoover
d9ee780a2977   9c7a54a9a43c "/hello"               13 days ago    Exited (0) 13 days ago
frosty_leavitt
younis@younis-HP-ProBook-450-G2:~/Sprints_Tasks/DOCKER01/Task03$
```



welcome in my page

Create a docker compose to up mysql container and <https://github.com/sabreensalama/dockerize-node-app-task> which depend on mysqldb. Add volume for mysqldb

Dockerfile --> Dockerfile

docker-compose.yml --> docker-compose.yml

```
younis@younis-HP-ProBook-450-G2: ~/Sprints_Tasks/DOCKER01/Task03/Problem03/dockerize-node-app-task$ sudo docker-compose up
Creating network "dockerize-node-app-task_default" with the default driver
Pulling database (mysql:latest)...
latest: Pulling from library/mysql
90e2fb2facff: Pulling fs layer
ba60eb20fd5f: Pulling fs layer
4f509402d469: Downloading [>]
=====]ba60eb20fd5f: Downloading [=====]ba60eb20fd5f: Download complete
4f509402d469: Downloading [=====>]90e2fb2facff: Pull complete
ba60eb20fd5f: Pull complete
4f509402d469: Pull complete
496c2cfa6815: Pull complete
8ec1dfa9522c: Pull complete
6dec7ba896f8: Pull complete
dc9ff75362b0: Pull complete
73e4682f9014: Pull complete
9ffdeecd6fb6: Pull complete
a4346ccfb53f: Pull complete
434c13bc32de: Pull complete
Digest: sha256:d6164ff4855b9b3f2c7748c6ec564ccff841f79a7023db0f9293143481a44b6e
Status: Downloaded newer image for mysql:latest
Building node-app
[+] Building 66.9s (4/9)
=> [internal] load build definition from Dockerfile 5.5s
=> => transferring dockerfile: 178B 0.3s
=> [internal] load .dockerignore 5.6s
=> => transferring context: 2B 0.0s
=> [internal] load metadata for docker.io/library/node:16 4.0s
=> [1/5] FROM docker.io/library/node:16@sha256:2ed6bba040f90005db9785927689c0d9a9442ca2cf9a59dc52297d684285c094 57.1s
=> => resolve docker.io/library/node:16@sha256:2ed6bba040f90005db9785927689c0d9a9442ca2cf9a59dc52297d684285c094 0.6s
[+] Building 406.7s (5/9)
=> [internal] load build definition from Dockerfile 5.5s
=> => transferring dockerfile: 178B 0.3s
=> [internal] load .dockerignore 5.6s
=> => transferring context: 2B 0.0s
=> [internal] load metadata for docker.io/library/node:16 4.0s
```

```
younis@younis-HP-ProBook-450-G2: ~/Sprints_Tasks/DOCKER01/Task03/Problem03/dockerize-node-app-task
=> => extracting sha256:51e0d706266f768c6ed028e990dbb063fc43f6028827fe0 7.1s
=> => extracting sha256:f38700a2e11ea7634ce0423f6925765a846b14a257049bd 0.0s
=> => extracting sha256:b84b1175afa361fdad62b061091e2ecc814e392d6f6ff5 1.4s
=> => extracting sha256:f36686a8f4d2b7672e5237c070a8597edb8c810453697e6 0.1s
=> => extracting sha256:0a7d41d447ced0a929004550aa60d7d905e6dadc8570d7f 0.0s
=> [internal] load build context 0.8s
=> => transferring context: 32.92kB 0.1s
=> [2/5] WORKDIR ./dockerize-node-app-task 8.5s
=> [3/5] COPY package.json ./ 1.3s
=> [4/5] RUN npm install 10.9s
=> [5/5] COPY . . 1.4s
=> exporting to image 1.5s
=> => exporting layers 1.3s
=> => writing image sha256:9b46896378f2cebb0f55d054aabe86ab0d978ed26880 0.0s
=> => naming to docker.io/library/dockerize-node-app-task_node-app 0.1s
WARNING: Image for service node-app was built because it did not already exist. To rebuild this image you must use 'docker-compose build' or '
docker-compose up --build'.
Creating dockerize-node-app-task_node-app_1 ... done
Creating dockerize-node-app-task_database_1 ... done
Attaching to dockerize-node-app-task_node-app_1, dockerize-node-app-task_database_1
node-app_1 | Running on http://0.0.0.0:8080
database_1 | 2023-05-31 00:35:55+00:00 [Note] [Entrypoint]: Entrypoint script for MySQL Server 8.0.33-1.el8 started.
database_1 | 2023-05-31 00:35:58+00:00 [Note] [Entrypoint]: Switching to dedicated user 'mysql'
database_1 | 2023-05-31 00:35:58+00:00 [Note] [Entrypoint]: Entrypoint script for MySQL Server 8.0.33-1.el8 started.
database_1 | 2023-05-31 00:35:58+00:00 [Note] [Entrypoint]: Initializing database files
database_1 | 2023-05-31T00:35:58.615943Z 0 [Warning] [MY-011068] [Server] The syntax '--skip-host-cache' is deprecated and will be removed in
a future release. Please use SET GLOBAL host_cache_size=0 instead.
database_1 | 2023-05-31T00:35:58.635139Z 0 [System] [MY-013169] [Server] /usr/sbin/mysqld (mysqld 8.0.33) initializing of server in progress
as process 80
database_1 | 2023-05-31T00:35:58.636914Z 0 [ERROR] [MY-010457] [Server] --initialize specified but the data directory has files in it. Aborti
ng.
database_1 | 2023-05-31T00:35:58.636921Z 0 [ERROR] [MY-013236] [Server] The designated data directory /var/lib/mysql/ is unusable. You can re
move all files that the server added to it.
database_1 | 2023-05-31T00:35:58.636974Z 0 [ERROR] [MY-010119] [Server] Aborting
database_1 | 2023-05-31T00:35:58.637166Z 0 [System] [MY-010910] [Server] /usr/sbin/mysqld: Shutdown complete (mysqld 8.0.33) MySQL Community
Server - GPL.
dockerize-node-app-task_database_1 exited with code 1
```



# Use docker compose to deploy ghost platform (image: ghost:1-alpine), Use mysql database instead of sqlite

```
younis@younis-HP-ProBook-450-G2: ~/Sprints_Tasks/DOCKER01/Task03/Problem04
[sudo] password for younis:
Creating network "problem04_default" with the default driver
Pulling ghost (ghost:1-alpine)...
1-alpine: Pulling from library/ghost
aad63a933944: Downloading [>] 28.75kB/2.803MBlling fs layer
aad63a933944: Downloading [==>] 58.9kB/2.803MBwnloading [>]
aad63a933944: Downloading [==>] 90.91kB/2.803MBwnloading [==>]
aad63a933944: Pull complete
Digest: sha256:0a9957f8831db9fe6a87fe95217053939601fdcd1db047cb8b106f0ec4b7506b
Status: Downloaded newer image for ghost:1-alpine
Pulling db (mysql:5.7)...
5.7: Pulling from library/mysql
e83e8f2e82cc: Pull complete
0f23deb01b84: Pull complete
f5bda3b184ea: Pull complete
ed17edbc6604: Pull complete
33a94a6acfa7: Pull complete
f153bd2953e4: Pull complete
ab532edfb813: Pull complete
c76bdfef4f3d0: Pull complete
8a7ffe2f2551: Pull complete
857ada4fbbcc: Pull complete
b7c508404c3c: Pull complete
Digest: sha256:f57eef421000aaf8332a91ab0b6c96b3c83ed2a981c29e6528b21ce10197cd16
Status: Downloaded newer image for mysql:5.7
Creating problem04_ghost_1 ... done
Creating problem04_db_1 ... done
Attaching to problem04_ghost_1, problem04_db_1
```

CONTAINER ID	IMAGE	NAMES	COMMAND	CREATED	STATUS	PORTS
05f00861478e	ghost:1-alpine	problem04_ghost_1	"docker-entrypoint.s..."	3 minutes ago	Exited (1) 3 minutes ago	
0c2a460ea176	mysql:5.7	problem04_db_1	"docker-entrypoint.s..."	3 minutes ago	Exited (0) 12 seconds ago	