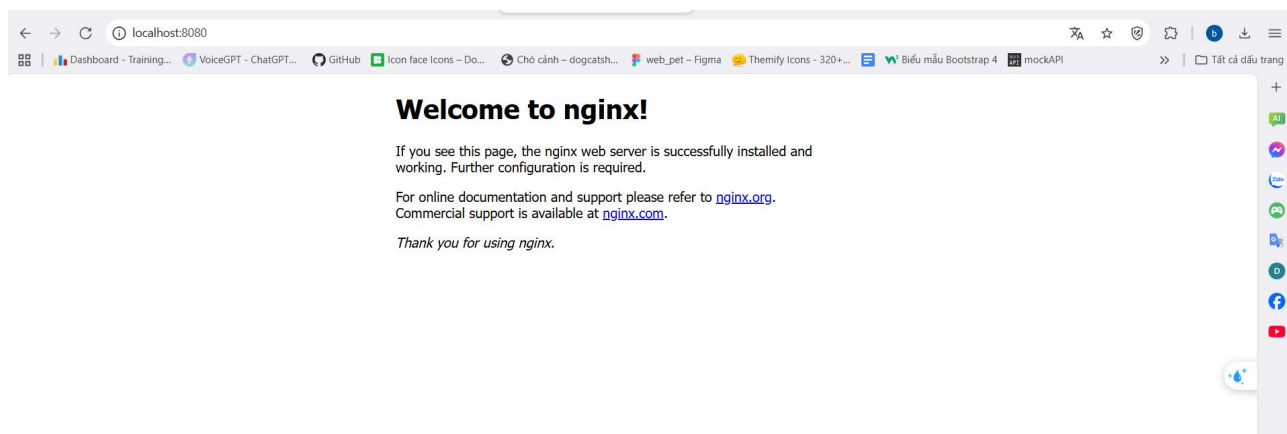


## Bài 1: Chạy một container đơn giản với Docker Compose

Tạo một container chạy Nginx bằng Docker Compose.

Map cổng 8080 của máy host với cổng 80 của container.

```
C:\Users\PCBD\nginx-docker-compose>docker-compose up
time="2025-04-05T10:00:43+07:00" level=warning msg="C:\\Users\\PCBD\\nginx-docker-compose\\docker-compose.yml: the attribute `version` is obsolete, it will be ignored, please remove it to avoid potential confusion"
[+] Running 8/8
  ✔ nginx Pulled                                         41.5s
    ✔ c22eb46e871a Pull complete                       0.8s
    ✔ 97f5c0f51d43 Pull complete                       2.7s
    ✔ 5eaa34f5b9c2 Pull complete                       36.2s
    ✔ 6e909acdb790 Pull complete                       28.9s
    ✔ 373fe654e984 Pull complete                       2.7s
    ✔ 417c4bccf534 Pull complete                       2.7s
    ✔ e7e0ca015e55 Pull complete                       36.3s
[+] Running 2/2
  ✔ Network nginx-docker-compose_default               0.1s
  ✔ Container nginx-docker-compose-nginx-1             0.4s
Attaching to nginx-1
nginx-1 | /docker-entrypoint.sh: /docker-entrypoint.d/ is not empty, will attempt to perform configuration
nginx-1 | /docker-entrypoint.sh: Looking for shell scripts in /docker-entrypoint.d/
nginx-1 | /docker-entrypoint.sh: Launching /docker-entrypoint.d/10-listen-on-ipv6-by-default.sh
nginx-1 | 10-listen-on-ipv6-by-default.sh: info: Getting the checksum of /etc/nginx/conf.d/default.conf
nginx-1 | 10-listen-on-ipv6-by-default.sh: info: Enabled listen on IPv6 in /etc/nginx/conf.d/default.conf
nginx-1 | /docker-entrypoint.sh: Sourcing /docker-entrypoint.d/15-local-resolvers.envsh
nginx-1 | /docker-entrypoint.sh: Launching /docker-entrypoint.d/20-envsubst-on-templates.sh
nginx-1 | /docker-entrypoint.sh: Launching /docker-entrypoint.d/30-tune-worker-processes.sh
nginx-1 | /docker-entrypoint.sh: Configuration complete; ready for start up
nginx-1 | 2025/04/05 03:01:26 [notice] 1#1: using the "epoll" event method
nginx-1 | 2025/04/05 03:01:26 [notice] 1#1: nginx/1.27.4
nginx-1 | 2025/04/05 03:01:26 [notice] 1#1: built by gcc 12.2.0 (Debian 12.2.0-14)
nginx-1 | 2025/04/05 03:01:26 [notice] 1#1: OS: Linux 5.15.167.4-microsoft-standard-WSL2
nginx-1 | 2025/04/05 03:01:26 [notice] 1#1: getrlimit(RLIMIT_NOFILE): 1048576:1048576
nginx-1 | 2025/04/05 03:01:26 [notice] 1#1: start worker processes
nginx-1 | 2025/04/05 03:01:26 [notice] 1#1: start worker process 29
nginx-1 | 2025/04/05 03:01:26 [notice] 1#1: start worker process 30
nginx-1 | 2025/04/05 03:01:26 [notice] 1#1: start worker process 31
nginx-1 | 2025/04/05 03:01:26 [notice] 1#1: start worker process 32
nginx-1 | 2025/04/05 03:01:26 [notice] 1#1: start worker process 33
nginx-1 | 2025/04/05 03:01:26 [notice] 1#1: start worker process 34
```



## Bài 2: Chạy MySQL với Docker Compose

**Yêu cầu:**

**Tạo một container chạy MySQL phiên bản 8.0.**

**Đặt username là user, password là password và database là mydb**

## Bước 1: tạo container kết nối được với MySQL

```
D:\Docker\mysql-docker>docker ps
CONTAINER ID   IMAGE     COMMAND                  CREATED        STATUS        PORTS                               NAMES
bac40c16545d   mysql:8.0  "docker-entrypoint.s..." 7 minutes ago  Up 7 minutes  0.0.0.0:3306->3306/tcp, 33060/tcp  mysql_container

D:\Docker\mysql-docker>docker exec -it mysql_container mysql -u user -p
Enter password:
ERROR 1045 (28000): Access denied for user 'user'@'localhost' (using password: YES)

D:\Docker\mysql-docker>docker exec -it mysql_container mysql -u user -p
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 13
Server version: 8.0.41 MySQL Community Server - GPL

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owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.
```

## Bước 2: show thông tin trong databases mydb

```
cmd Select C:\Windows\System32\cmd.exe - docker exec -it mysql_container mysql -u user -p
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near 'SHOW DATABASES' at line 2
mysql> SHOW DATABASES;
+-----+
| Database |
+-----+
| information_schema |
| mydb         |
| performance_schema |
+-----+
3 rows in set (0.01 sec)

mysql> USE mydb;
Database changed
mysql> SHOW TABLES;
Empty set (0.00 sec)

mysql> SHOW TABLES;
+-----+
| Tables_in_mydb |
+-----+
| users           |
+-----+
1 row in set (0.01 sec)

mysql>
```

## Bước 3: thoát khỏi mySQL

```
mysql> exit;
Bye

D:\Docker\mysql-docker>
```

## Bài 3: Kết nối MySQL với PHPMyAdmin

### Yêu cầu:

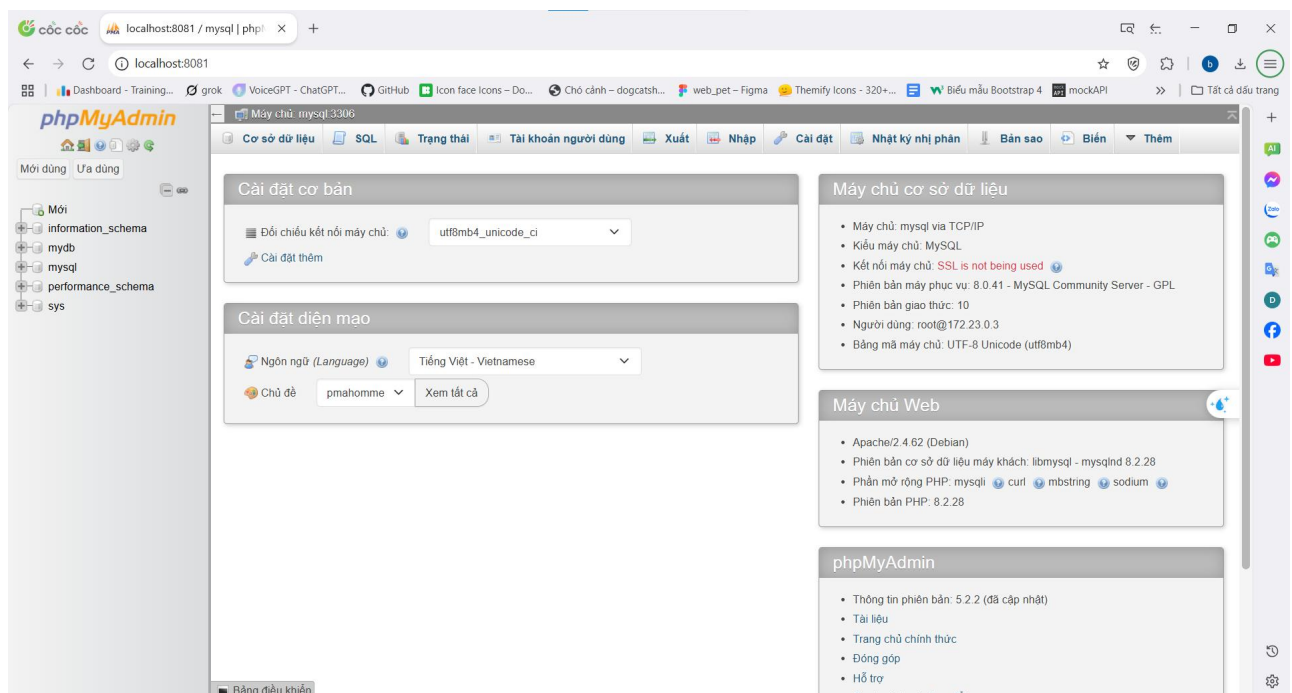
**Chạy MySQL và PHPMyAdmin với Docker Compose.**

**PHPMyAdmin chạy trên cổng 8081.**

## Bước 1: Tạo thư mục mysql-phpmyadmin-docker chứa file docker-compose.yml chạy lệnh như hình

```
Select C:\Windows\System32\cmd.exe
D:\Docker\mysql-phpmyadmin-docker>docker-compose up -d
time="2025-04-10T21:31:08+07:00" level=warning msg="D:\\Docker\\mysql-phpmyadmin-docker\\docker-compose.yml: the attribute `version` is obsolete, it will be ignored, please remove it to avoid potential confusion"
[+] Running 7/7
  phpmyadmin Pulled                                12.9s
  1e261b5dd8a7 Pull complete                        0.5s
  6ce11269eade Pull complete                       8.6s
  08aef288cb07 Pull complete                       1.3s
  33b3ac5aac18 Pull complete                       1.4s
  20a7c3c7c95c Pull complete                       1.4s
  6dcab0a85130 Pull complete                       3.1s
[+] Running 2/4
  Network mysql-phpmyadmin-docker_default Created 0.1s
  Volume "mysql-phpmyadmin-docker_mysql_data" Created 0.0s
  - Container phpmyadmin_container Creating 0.1s
  - Container mysql_container Creating 0.1s
Error response from daemon: Conflict. The container name "/mysql_container" is already in use by container "8d3ee95538a0adec62aa63b4072243113424bcd386045b295a11bfff5bc45cea3". You have to remove (or rename) that container to be able to reuse that name.
[+] Running 2/2 phpmyadmin-docker>docker ps
  Container mysql_container Started 0.5s
  Container phpmyadmin_container Started 0.6s
D:\Docker\mysql-phpmyadmin-docker>docker rm mysql_container
D:\Docker\mysql-phpmyadmin-docker>docker ps
CONTAINER ID   IMAGE               COMMAND                  CREATED        STATUS        PORTS                               NAMES
d73348de46ad  phpmyadmin:latest  "/docker-entrypoint.s..." 20 seconds ago Up 19 seconds 0.0.0.0:8081->80/tcp          phpmyadmin_container-
10T21:31:56+07:00" level=warning msg="D:\\Docker\\mysql-phpmyadmin-docker\\docker-compose.yml: the attribute `version` is
b1cb3551a052   mysql:8.0          "docker-entrypoint.s..." 20 seconds ago Up 19 seconds 0.0.0.0:3306->3306/tcp, 33060/tcp mysql_container
D:\Docker\mysql-phpmyadmin-docker>
```

## Bước 2: Truy cập PHPMyAdmin theo cổng localhost:8081



## Bước 3:

```
D:\Docker\mysql-phpmyadmin-docker>docker exec -it mysql_container mysql -u root -p
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 82
Server version: 8.0.41 MySQL Community Server - GPL

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affiliates. Other names may be trademarks of their respective
owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> show databases;
+-----+
| Database |
+-----+
| information_schema |
| mydb      |
| mysql     |
| performance_schema |
| sys       |
+-----+
5 rows in set (0.00 sec)

mysql>
```

```
mysql> exit;
Bye

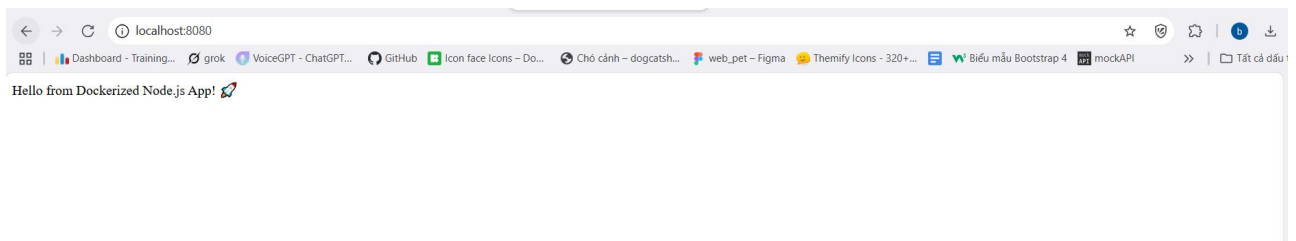
D:\Docker\mysql-phpmyadmin-docker>
```

## **Bài 4: Chạy ứng dụng Node.js với Docker Compose**

**Chạy một ứng dụng Node.js đơn giản với Express.**



```
D:\node-docker>docker-compose up -d
time="2025-04-05T10:51:29+07:00" level=warning msg="D:\\node-docker\\docker-compose.yml: the attribute `version` is obsolete, it will be ignored, please remove it to avoid potential confusion"
Compose now can delegate build to bake for better performances
Just set COMPOSE_BAKE=true
[+] Building 15.4s (12/12) FINISHED
=> [app internal] load build definition from Dockerfile                                docker:desktop-linux 0.1s
=> => transferring dockerfile: 422B                                                  0.0s
=> [app internal] load metadata for docker.io/library/node:18-alpine                3.7s
=> [app auth] library/node:pull token for registry-1.docker.io                     0.0s
=> [app internal] load .dockerignore                                                0.0s
=> => transferring context: 43B                                                       0.0s
=> [app 1/5] FROM docker.io/library/node:18-alpine@sha256:8d6421d663b4c28fd3ebc498332f249011d118945588d0a35cb9bc 5.2s
=> => resolve docker.io/library/node:18-alpine@sha256:8d6421d663b4c28fd3ebc498332f249011d118945588d0a35cb9bc4b8c 0.0s
=> => sha256:1e5a4c89cee5c0826c540ab06d4b6b491c96eda01837f430bd47f0d26702d6e3 1.26MB / 1.26MB 0.8s
=> => sha256:25ff2da83641908f65c3a74d80409d6b1b62ccfaab220b9ea70b80df5a2e0549 446B / 446B 0.3s
=> => sha256:dd71dde834b5c203d162902e6b8994cb2309ae049a0eabc4efea161b2b5a3d0e 40.01MB / 40.01MB 4.0s
=> => sha256:f18232174bc91741fdf3da96d85011092101a032a93a388b79e99e69c2d5c870 3.64MB / 3.64MB 1.8s
=> => extracting sha256:f18232174bc91741fdf3da96d85011092101a032a93a388b79e99e69c2d5c870 0.1s
=> => extracting sha256:dd71dde834b5c203d162902e6b8994cb2309ae049a0eabc4efea161b2b5a3d0e 1.0s
=> => extracting sha256:1e5a4c89cee5c0826c540ab06d4b6b491c96eda01837f430bd47f0d26702d6e3 0.0s
=> => extracting sha256:25ff2da83641908f65c3a74d80409d6b1b62ccfaab220b9ea70b80df5a2e0549 0.0s
=> [app internal] load build context                                              0.0s
=> => transferring context: 1.35kB                                                  0.0s
=> [app 2/5] WORKDIR /app                                                         0.2s
=> [app 3/5] COPY package.json .                                                 0.0s
=> [app 4/5] RUN npm install                                                       5.1s
=> [app 5/5] COPY . .                                                            0.1s
```



## Bài 5: Chạy Redis với Docker Compose

**Yêu cầu: Chạy một container Redis trên cổng 6379.**

```
D:\redis-docker>echo. > docker-compose.yml

D:\redis-docker>docker-compose up -d
time="2025-04-05T10:58:41+07:00" level=warning msg="D:\\redis-docker\\docker-compose.yml: the attribute `version` is obsolete, it will be ignored, please remove it to avoid potential confusion"
[+] Running 8/8
  8 redis Pulled
    b138a3179b82 Pull complete 7.0s
    513666b05c81 Pull complete 1.0s
    764e7fbfdb05 Pull complete 0.4s
    d9b98f603d6b Pull complete 1.3s
    df4660a56a60 Pull complete 1.1s
    2884ccae34c1 Pull complete 1.1s
    4f4fb700ef54 Pull complete 2.8s
[+] Running 3/3
  3 Network redis-docker_default Created 0.0s
  3 Volume "redis-docker_redis_data" Created 0.0s
  3 Container my-redis Started 0.7s

D:\redis-docker>docker ps
CONTAINER ID   IMAGE          COMMAND                  CREATED        STATUS        PORTS                               NAMES
ca5d52a18fce  redis:latest  "docker-entrypoint.s..." 15 seconds ago Up 13 seconds 0.0.0.0:6379->6379/tcp            my-redis
```

```
D:\redis-docker>docker exec -it my-redis redis-cli
127.0.0.1:6379> PING
PONG
127.0.0.1:6379>
```

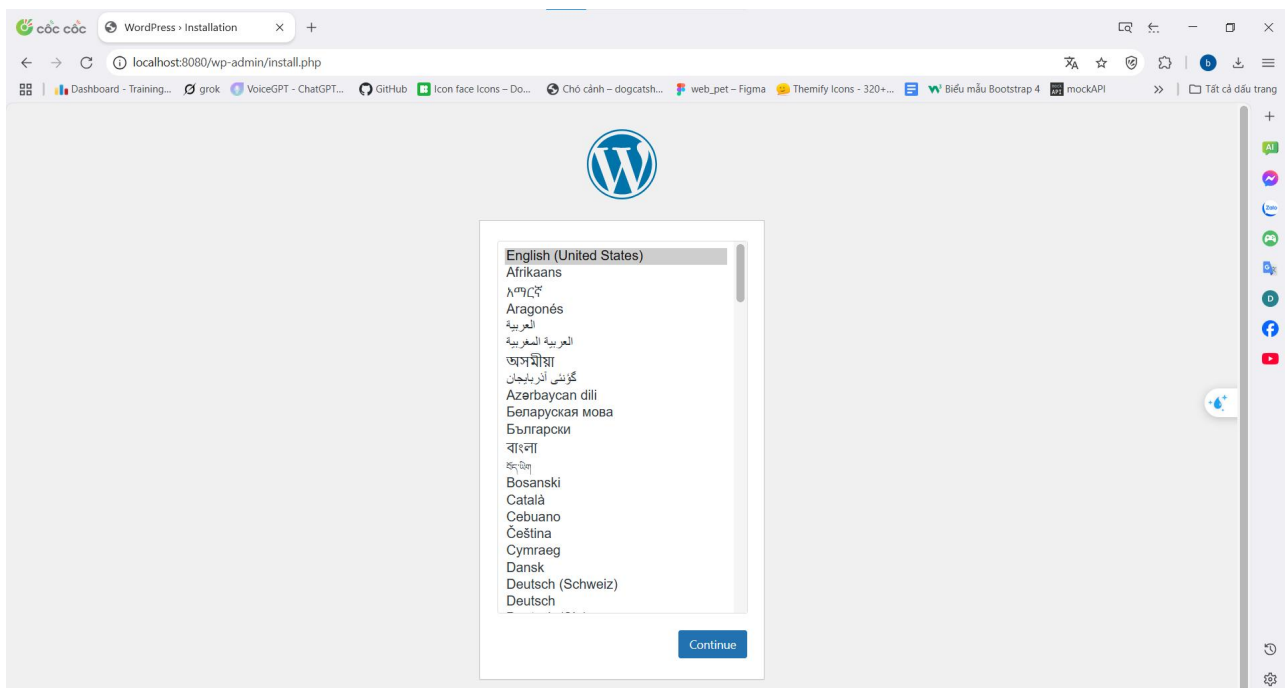
## Bài 6: Chạy WordPress với MySQL

**Yêu cầu: Chạy WordPress với MySQL bằng Docker Compose.**

```
C:\Windows\System32\cmd.exe
Microsoft Windows [Version 10.0.19045.5608]
(c) Microsoft Corporation. All rights reserved.

D:\Docker\docker_wordPress>docker-compose up -d
time="2025-04-10T20:38:38+07:00" level=warning msg="D:\\Docker\\docker_wordPress\\docker-compose.yml: the attribute `version` is obsolete, it will be ignored, please remove it to avoid potential confusion"
[+] Running 5/5
  Network docker_wordpress_default          Created           0.0s
  Volume "docker_wordpress_wordpress_data"   Created           0.0s
  Volume "docker_wordpress_db_data"          Created           0.0s
  Container mysql_container                  Started           0.4s
  Container wordpress_container              Started           0.5s

D:\Docker\docker_wordPress>
```



## Bài 7: Chạy MongoDB với Docker Compose

**Yêu cầu: Chạy MongoDB và Mongo Express để quản lý.**

```
D:\redis-docker>echo. > docker-compose.yml

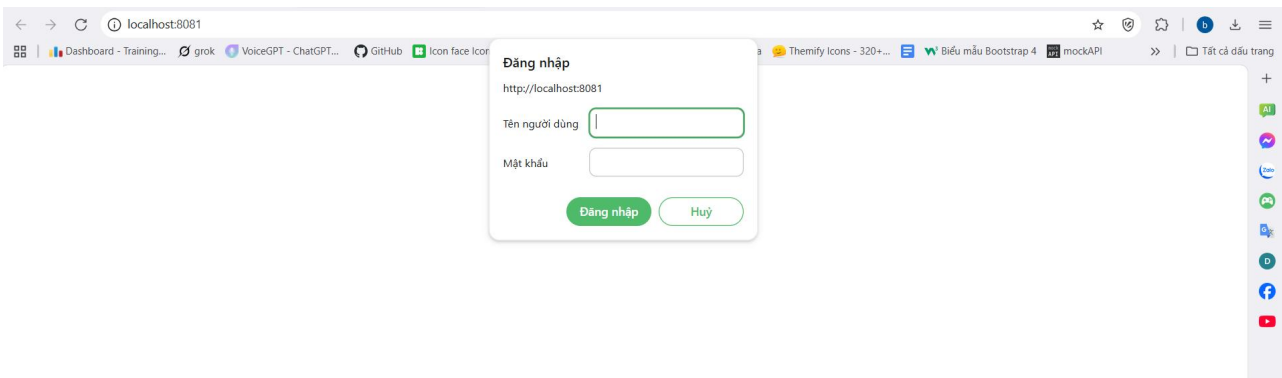
D:\redis-docker>docker-compose up -d
time="2025-04-05T10:58:41+07:00" level=warning msg="D:\\redis-docker\\docker-compose.yml: the attribute `version` is obsolete, it will be ignored, please remove it to avoid potential confusion"
[+] Running 8/8
  8 redis Pulled
    b138a3179b82 Pull complete
    513666b05c81 Pull complete
    764e7fbfdb05 Pull complete
    d9b98f603d6b Pull complete
    df4660a56a60 Pull complete
    2884ccae34c1 Pull complete
    4f4fb700ef54 Pull complete
[+] Running 3/3
  3 Network redis-docker_default Created
  3 Volume "redis-docker_redis_data" Created
  3 Container my-redis Started

D:\redis-docker>docker ps
CONTAINER ID   IMAGE          COMMAND                  CREATED        STATUS        PORTS                               NAMES
ca5d52a18fce   redis:latest   "docker-entrypoint.s..." 15 seconds ago Up 13 seconds 0.0.0.0:6379->6379/tcp            my-redis

D:\redis-docker>docker exec -it my-redis redis-cli
127.0.0.1:6379> PING
PONG
127.0.0.1:6379>
D:\redis-docker>clear
```

```
D:\redis-docker>cd \

[+] Running 18/18 Docker
  18 mongo Pulled
    d11968535d8a Pull complete
    5fa69bd3db1e Pull complete
    4fc65ca4253f Pull complete
    dacd77ad2ef6 Pull complete
    c711ee204b1d Pull complete
    5a7813e071bf Pull complete
    cf12757b6444 Pull complete
    20cfb5e922d1 Pull complete
  18 mongo-express Pulled
    45b24ec126f9 Pull complete
    7e9a007eb24b Pull complete
    d8305ae32c95 Pull complete
    5189255e31c8 Pull complete
    9f7f59574f7d Pull complete
    0bf3571b6cd7 Pull complete
    88f4f8a6bc8d Pull complete
    619be1103602 Pull complete
[+] Running 4/4
  4 Network mongo-docker_default Created
  4 Volume "mongo-docker_mongo_data" Created
  4 Container my-mongo Started
  4 Container my-mongo-express Started
```



```
D:\mongo-docker>docker ps
CONTAINER ID   IMAGE          COMMAND                  CREATED        STATUS        PORTS                               NAMES
7fde0e47b534   mongo-express  "/sbin/tini -- /dock..." 12 seconds ago Up 12 seconds 0.0.0.0:8081->8081/tcp            my-mongo-express
e85fb47963f2   mongo:latest   "docker-entrypoint.s..." 13 seconds ago Up 12 seconds 0.0.0.0:27017->27017/tcp            my-mongo
```



```

D:\mongo-docker>docker exec -it my-mongo mongosh -u admin -p password
Current Mongosh Log ID: 67f0ac8068c0871cc86b140a
Connecting to:      mongodb://<credentials>@127.0.0.1:27017/?directConnection=true&serverSelectionTimeoutMS=2000&appName=mongosh+2.4.2
Using MongoDB:      8.0.6
Using Mongosh:       2.4.2

For mongosh info see: https://www.mongodb.com/docs/mongosh-shell/

To help improve our products, anonymous usage data is collected and sent to MongoDB periodically (https://www.mongodb.com/legal/privacy-policy).
You can opt-out by running the disableTelemetry() command.

-----
The server generated these startup warnings when booting
2025-04-05T04:05:15.262+00:00: Using the XFS filesystem is strongly recommended with the WiredTiger storage engine. See http://dochub.mongodb.org/core/prodnotes-filesystem
2025-04-05T04:05:15.964+00:00: For customers running the current memory allocator, we suggest changing the contents of the following sysfsFile
2025-04-05T04:05:15.964+00:00: We suggest setting the contents of sysfsFile to 0.
2025-04-05T04:05:15.964+00:00: vm.max_map_count is too low
2025-04-05T04:05:15.964+00:00: We suggest setting swappiness to 0 or 1, as swapping can cause performance problems.
-----

test> show dbs;
admin    100.00 KiB
config   12.00 KiB
local    72.00 KiB
test>








```

## Bài 8: Kết nối nhiều dịch vụ với Docker Compose

**Yêu cầu: Chạy Node.js kết nối với MySQL.**

### Bước 1: Tạo các tệp cần thiết

New Volume (D:) > Docker > node-mysql-docker ▼ ↺

Name	Date modified	Type	Size
 node_modules	10/04/2025 10:12 PM	File folder	
 db.js	10/04/2025 10:14 PM	JavaScript Source ...	1 KB
 docker-compose.yml	10/04/2025 10:15 PM	Yaml Source File	1 KB
 Dockerfile	10/04/2025 10:14 PM	File	1 KB
 package.json	10/04/2025 10:12 PM	JSON Source File	1 KB
 package-lock.json	10/04/2025 10:12 PM	JSON Source File	33 KB
 server.js	10/04/2025 10:13 PM	JavaScript Source ...	1 KB

### Bước 2: Chạy lệnh



```
C:\Windows\System32\cmd.exe

D:\Docker\node-mysql-docker>docker-compose up --build -d
Compose now can delegate build to bake for better performances
Just set COMPOSE_BAKE=true
[+] Building 11.4s (12/12) FINISHED                                docker:desktop-linux
=> [nodejs internal] load build definition from Dockerfile          0.0s
=> => transferring dockerfile: 453B                                0.0s
=> [nodejs internal] load metadata for docker.io/library/node:18    2.6s
=> [nodejs auth] library/node:pull token for registry-1.docker.io  0.0s
=> [nodejs internal] load .dockerignore                             0.0s
=> => transferring context: 2B                                       0.0s
=> [nodejs internal] load build context                             0.2s
=> => transferring context: 3.53MB                                    0.2s
=> [nodejs 1/5] FROM docker.io/library/node:18@sha256:df9fa4e0e39c9b97e30240b5bb1d99bdb861573a82002b2c52ac7d6b8d 0.1s
=> => resolve docker.io/library/node:18@sha256:df9fa4e0e39c9b97e30240b5bb1d99bdb861573a82002b2c52ac7d6b8d6d773e 0.1s
=> CACHED [nodejs 2/5] WORKDIR /app                                0.0s
=> [nodejs 3/5] COPY package.json ./                                0.0s
=> [nodejs 4/5] RUN npm install                                     5.7s
=> [nodejs 5/5] COPY . .                                           0.2s
=> [nodejs] exporting to image                                     1.2s
=> => exporting layers                                              0.5s
=> => exporting manifest sha256:57279adfeeebe73c0c1ee1974606eaff18208a36c9a75fe09b89a4ada3786fe1 0.0s
=> => exporting config sha256:4a9e4e673d2541fb793e8b8c95173a965f1c73c5b328e4092a77b811b93345d6 0.0s
=> => exporting attestation manifest sha256:a46478c5a2e37c69e374e9388df5306cf15212bc172a4ba9815d240049abec8a 0.0s
=> => exporting manifest list sha256:f3ccf6c1386a5217227d30d7b0d05eb8e1301487daf087a81263838f6f5eb48b 0.0s
=> => naming to docker.io/library/node-mysql-docker-nodejs:latest 0.0s
=> => unpacking to docker.io/library/node-mysql-docker-nodejs:latest 0.5s
=> [nodejs] resolving provenance for metadata file                 0.0s
[+] Running 5/5
  nodejs                               Built                                0.0s
  Network node-mysql-docker_app_network Created                          0.0s
  Volume "node-mysql-docker_mysql_data" Created                         0.0s
  Container mysql-db                   Started                           0.5s
  Container nodejs-app                 Started                           0.6s

D:\Docker\node-mysql-docker>docker ps
CONTAINER ID   IMAGE                                COMMAND                  CREATED        STATUS        PORTS
62803cdb9c4a   node-mysql-docker-nodejs           "docker-entrypoint.s..." 10 seconds ago Up 9 seconds  0.0.0.0:3000->3000/tcp
b0437fca3cf8   nodejs-app                          "docker-entrypoint.s..." 10 seconds ago Up 9 seconds  0.0.0.0:3306->3306/tcp
mysql-db
mysql:8.0
p, 33060/tcp
```

```
D:\Docker\node-mysql-docker>docker logs nodejs-app
Server is running on port 3000
MySQL connection error: Error: connect ECONNREFUSED 172.24.0.2:3306
    at TCPConnectWrap.afterConnect [as oncomplete] (node:net:1555:16) {
  errno: -111,
  code: 'ECONNREFUSED',
  syscall: 'connect',
  address: '172.24.0.2',
  port: 3306,
  fatal: true
}
```

## Kết quả chạy trên port 3000



## Bài 9: Chạy ứng dụng Python Flask với Docker Compose

**Yêu cầu:** Chạy ứng dụng Flask đơn giản với Docker Compose.

### Bước 1: Tạo các tệp cần thiết

New Volume (D:) > Docker > flask-docker >					Search flask-do
Name	Date modified	Type	Size		
app	10/04/2025 10:31 PM	File folder			
docker-compose.yml	10/04/2025 10:33 PM	Yaml Source File	1 KB		
Dockerfile	10/04/2025 10:32 PM	File	1 KB		

New Volume (D:) > Docker > flask-docker > app					Search app
Name	Date modified	Type	Size		
app.py	10/04/2025 10:35 PM	Python File	1 KB		
requirements.txt	10/04/2025 10:31 PM	Text Document	1 KB		

### Bước 2: chạy lệnh

```
D:\Docker\flask-docker>docker-compose up --build -d
time="2025-04-10T22:36:37+07:00" level=warning msg="D:\\Docker\\flask-docker\\docker-compose.yml: the attribute `version` is obsolete, it will be ignored, please remove it to avoid potential confusion"
Compose now can delegate build to bake for better performances
Just set COMPOSE_BAKE=true
[+] Building 14.4s (8/10)
=> [flask-app internal] load build definition from Dockerfile
=> transferring dockerfile: 425B
[+] Building 16.2s (12/12) FINISHED
=> [flask-app internal] load build definition from Dockerfile
=> transferring dockerfile: 425B
=> [flask-app internal] load metadata for docker.io/library/python:3.9
=> [flask-app auth] library/python:pull token for registry-1.docker.io
=> [flask-app internal] load .dockerignore
=> transferring context: 2B
=> [flask-app 1/5] FROM docker.io/library/python:3.9@sha256:a847112640804ed2d03bb774d46bb1619bd37862fb2b7e48eebe
=> resolve docker.io/library/python:3.9@sha256:a847112640804ed2d03bb774d46bb1619bd37862fb2b7e48eebe425a168c15
=> sha256:b25c426204f45b8436d684dea65578794f4f7b8f1148dd89aaa85ef1393212ea 19.85MB / 19.85MB
=> sha256:cc381eaa3a998eda575c9d732b81eece7d103a1c7114a4a21bca12086db769f0 249B / 249B
=> sha256:5893f2eb5418ad35eb72d79548d6a2689599e97b3ea3ab0efa6babc3c261d537 6.16MB / 6.16MB
=> extracting sha256:5893f2eb5418ad35eb72d79548d6a2689599e97b3ea3ab0efa6babc3c261d537
=> extracting sha256:b25c426204f45b8436d684dea65578794f4f7b8f1148dd89aaa85ef1393212ea
=> extracting sha256:cc381eaa3a998eda575c9d732b81eece7d103a1c7114a4a21bca12086db769f0
=> [flask-app internal] load build context
=> transferring context: 313B
=> [flask-app 2/5] WORKDIR /app
=> [flask-app 3/5] COPY app/requirements.txt .
=> [flask-app 4/5] RUN pip install -r requirements.txt
=> [flask-app 5/5] COPY app/ .
=> [flask-app] exporting to image
=> exporting layers
=> exporting manifest sha256:97159c7b663e68bd8874f13a252051534483bf7a4b0255dff7f82ce819b21ef
=> exporting config sha256:ab29b6203815eb01eafe6d38cca74eafebcb11f2ebffcbf63db7fbcf1bb606
=> exporting attestation manifest sha256:450a30a0ed9665da4d47db7e37169834bc96083d271b986872cf5ad06ba8cd9b
=> exporting manifest list sha256:9c4ac64cf6837ae5ee7f28edd9c4788f603f7de0e79b26fa5a75cd5a0adb0c1e
=> naming to docker.io/library/flask-docker-flask-app:latest
=> unpacking to docker.io/library/flask-docker-flask-app:latest
=> [flask-app] resolving provenance for metadata file
[+] Running 3/3
  flask-app Built 0.0s
  Network flask-docker_flask_network Created 0.0s
  Container flask-container Started 0.5s

D:\Docker\flask-docker>docker ps
CONTAINER ID   IMAGE          COMMAND                  CREATED        STATUS        PORTS                    NAMES
3b873e89edce   flask-docker-flask-app   "python app.py"         2 seconds ago Up 2 seconds   0.0.0.0:5000->5000/tcp   flask-container
```

```
D:\Docker\flask-docker>docker logs flask-container
* Serving Flask app 'app'
* Debug mode: off
WARNING: This is a development server. Do not use it in a production deployment. Use a production WSGI server instead.
* Running on all addresses (0.0.0.0)
* Running on http://127.0.0.1:5000
* Running on http://172.25.0.2:5000
Press CTRL+C to quit

D:\Docker\flask-docker>
```

## Kết quả

