

Assignment 4.1

Browse to:

`tasks/4_microservices_development/day_1_microservices/docker_compose_example`

Next you will:

- Start the system using docker-compose so that it runs in background,
- Visit <http://127.0.0.1/> to see WordPress installation panel,
- See the system logs
- Add a PHPMysqlAdmin service from <https://hub.docker.com/r/phpmyadmin/phpmyadmin/> so that you can manage the raw database contents.

In the beginning, we start system using docker compose run the following .yml file

```
1 services:
2   db:
3     image: mariadb:10.6.4-focal
4     command: '--default-authentication-plugin=mysql_native_password'
5     volumes:
6       - db_data:/var/lib/mysql
7     restart: always
8     environment:
9       - MYSQL_ROOT_PASSWORD=somewordpress
10      - MYSQL_DATABASE=wordpress
11      - MYSQL_USER=wordpress
12      - MYSQL_PASSWORD=wordpress
13     expose:
14       - 3306
15   wordpress:
16     image: wordpress:latest
17     volumes:
18       - wp_data:/var/www/html
19     ports:
20       - 80:80
21     restart: always
22     environment:
23       - WORDPRESS_DB_HOST=db
24       - WORDPRESS_DB_USER=wordpress
25       - WORDPRESS_DB_PASSWORD=wordpress
26       - WORDPRESS_DB_NAME=wordpress
27   volumes:
28     db_data:
29     wp_data:
```

After that, we use following command to start the server
docker compose up

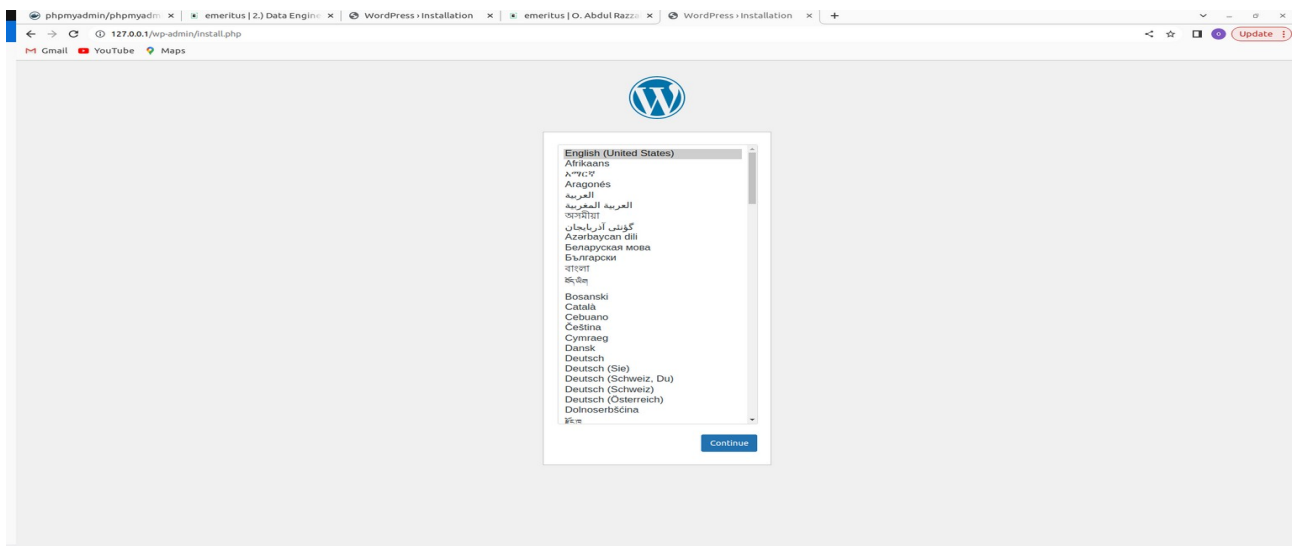
Name: Rahima Siddiqui (2303.KHI.DEG.030)
Peer Name: Osama Abdul Razzak (2303.KHI.DEG.029)

```
(base) osamaabdulrazzak@kali-MS-7035: ~/Desktop/day_1_microservices/docker_compose_example$ docker compose up
WARN[0000] Found orphan containers ([docker_compose_example-phpmyadmin-1]) for this project. If you removed or renamed this service in your compose file, you can run this command with the --remove-orphan
s flag to clean it up.
[+] Building 0s
✔ Network docker_compose_example_default Created 0.05s
✔ Container docker_compose_example-wordpress-1 Created 0.15s
✔ Container docker_compose_example-db-1 Created 0.15s
Attaching to docker_compose_example-db-1, docker_compose_example-wordpress-1
docker_compose_example-db-1 | 2023-05-05 04:37:10+00:00 [Note] [Entrypoint]: Entrypoint script for MariaDB Server 1:10.6.4+maria-focal started.
docker_compose_example-wordpress-1 | AH00558: apache2: could not reliably determine the server's fully qualified domain name, using 172.23.0.3. Set the 'ServerName' directive globally to suppress this m
essage
docker_compose_example-wordpress-1 | AH00558: apache2: could not reliably determine the server's fully qualified domain name, using 172.23.0.3. Set the 'ServerName' directive globally to suppress this m
essage
docker_compose_example-wordpress-1 | [Fri May 05 04:37:10.800046 2023] [mpm_prefork:notice] [pid 1] AH00163: Apache/2.4.56 (Debian) PHP/8.0.28 configured -- resuming normal operations
docker_compose_example-wordpress-1 | [Fri May 05 04:37:10.800096 2023] [core:notice] [pid 1] AH00094: Command line: 'apache2 -D FOREGROUND'
docker_compose_example-db-1 | 2023-05-05 04:37:10+00:00 [Note] [Entrypoint]: Switching to dedicated user 'mysql'
docker_compose_example-db-1 | 2023-05-05 4:37:11 0 [Note] mysqld (server 10.6.4+mariaDB-1:10.6.4+maria-focal) starting as process 1 ...
docker_compose_example-db-1 | 2023-05-05 4:37:11 0 [Note] InnoDB: Compressed tables use zlib 1.2.11
docker_compose_example-db-1 | 2023-05-05 4:37:11 0 [Note] InnoDB: Number of pools: 1
docker_compose_example-db-1 | 2023-05-05 4:37:11 0 [Note] InnoDB: Using crc32 + pclmulqdq instructions
docker_compose_example-db-1 | 2023-05-05 4:37:11 0 [Note] InnoDB: Using Linux native AIO
docker_compose_example-db-1 | 2023-05-05 4:37:11 0 [Note] InnoDB: Initializing buffer pool, total size = 134217728, chunk size = 134217728
docker_compose_example-db-1 | 2023-05-05 4:37:11 0 [Note] InnoDB: Completed initialization of buffer pool
docker_compose_example-db-1 | 2023-05-05 4:37:11 0 [Note] InnoDB: 128 rollback segments are active.
docker_compose_example-db-1 | 2023-05-05 4:37:11 0 [Note] InnoDB: Creating shared tablespace for temporary tables
docker_compose_example-db-1 | 2023-05-05 4:37:11 0 [Warning] 'default-authentication-plugin' is MySQL 5.6 / 5.7 compatible option. To be implemented in later versions.
docker_compose_example-db-1 | 2023-05-05 4:37:11 0 [Note] InnoDB: File './ibtmp1' size is now 12 MB.
docker_compose_example-db-1 | 2023-05-05 4:37:11 0 [Note] InnoDB: Setting file './ibtmp1' size to 12 MB. Physically writing the file full; Please wait ...
docker_compose_example-db-1 | 2023-05-05 4:37:11 0 [Note] InnoDB: 10.6.4 started; log sequence number 42269; transaction id 14
docker_compose_example-db-1 | 2023-05-05 4:37:11 0 [Note] InnoDB: Loading buffer pool(s) from /var/lib/mysql/ib_buffer_pool
docker_compose_example-db-1 | 2023-05-05 4:37:11 0 [Note] Plugin 'FEEDBACK' is disabled.
docker_compose_example-db-1 | 2023-05-05 4:37:11 0 [Warning] Buffer pool(s) load completed at 230505 4:37:11
docker_compose_example-db-1 | 2023-05-05 4:37:11 0 [Warning] You need to use --log-bin to make --expire-logs-days or --binlog-expire-logs-seconds work.
docker_compose_example-db-1 | 2023-05-05 4:37:11 0 [Note] Server socket created on IP: '0.0.0.0'
docker_compose_example-db-1 | 2023-05-05 4:37:11 0 [Note] Server socket created on IP: '::'
docker_compose_example-db-1 | 2023-05-05 4:37:11 0 [Warning] 'proxies_priv' entry '%*/root@093c0b15c4d38' ignored in --skip-name-resolve mode.
docker_compose_example-db-1 | 2023-05-05 4:37:11 0 [Note] mysqld: ready for connections.
Version: '10.6.4-MariaDB-1:10.6.4+maria-focal' socket: '/run/mysqld/mysqld.sock' port: 3306 mariadb.org binary distribution
```

for running the server in background, we type the following command
docker compose up -d

```
(base) osamaabdulrazzak@kali-MS-7035: ~/Desktop/day_1_microservices/docker_compose_example$ docker compose up -d
WARN[0000] Found orphan containers ([docker_compose_example-phpmyadmin-1]) for this project. If you removed or renamed this service in your compose file, you can run this command with the --remove-orphan
s flag to clean it up.
[+] Building 0s
✔ Container docker_compose_example-db-1 Started 0.36s
✔ Container docker_compose_example-wordpress-1 Started 0.48s
```

then we visit the local host <http://127.0.0.1> to see word press installation and by default it was running on 80 port



After that, we down system, using **docker compose down** and add php image to .yaml file

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Peer Name: Osama Abdul Razzak (2303.KHI.DEG.029)

```
Open  docker-compose.yml
~/Desktop/day_1_microservices/docker_compose_example

1 services:
2   db:
3     image: mariadb:10.6.4-focal
4     command: '--default-authentication-plugin=mysql_native_password'
5     volumes:
6       - db_data:/var/lib/mysql
7     restart: always
8     environment:
9       - MYSQL_ROOT_PASSWORD=somewordpress
10      - MYSQL_DATABASE=wordpress
11      - MYSQL_USER=wordpress
12      - MYSQL_PASSWORD=wordpress
13     expose:
14       - 3306
15   wordpress:
16     image: wordpress:latest
17     volumes:
18       - wp_data:/var/www/html
19     ports:
20       - 80:80
21     restart: always
22     environment:
23       - WORDPRESS_DB_HOST=db
24       - WORDPRESS_DB_USER=wordpress
25       - WORDPRESS_DB_PASSWORD=wordpress
26       - WORDPRESS_DB_NAME=wordpress
27   phpmyadmin:
28     image: phpmyadmin
29     restart: always
30     ports:
31       - 8080:80
32     environment:
33       - PMA_ARBITRARY=1
34 volumes:
35   db_data:
36   wp_data:
```

the again we start the server

```
(base) osamaabulrazzak@all-MS-7D35:~/Desktop/day_1_microservices/docker_compose_example$ docker compose up
[+] Running 4/4
✔ Network docker_compose_example_default Created
✔ Container docker_compose_example-phpmyadmin-1 Created
✔ Container docker_compose_example-db-1 Created
✔ Container docker_compose_example-wordpress-1 Created
Attaching to docker_compose_example-db-1, docker_compose_example-phpmyadmin-1, docker_compose_example-wordpress-1
docker_compose_example-db-1 | 2023-05-05 04:53:27+00:00 [Note] [Entrypoint]: Entrypoint script for MariaDB Server 1:10.6.4+maria-focal started.
docker_compose_example-phpmyadmin-1 | AH00558: apache2: Could not reliably determine the server's fully qualified domain name, using 172.24.0.3. Set the
message
docker_compose_example-phpmyadmin-1 | AH00558: apache2: Could not reliably determine the server's fully qualified domain name, using 172.24.0.3. Set the
message
docker_compose_example-wordpress-1 | AH00558: apache2: Could not reliably determine the server's fully qualified domain name, using 172.24.0.4. Set the
message
docker_compose_example-db-1 | 2023-05-05 04:53:27+00:00 [Note] [Entrypoint]: Switching to dedicated user 'mysql'
docker_compose_example-phpmyadmin-1 | [Fri May 05 04:53:27.973408 2023] [mpm_prefork:notice] [pid 1] AH00163: Apache/2.4.56 (Debian) PHP/8.1.18 configure
docker_compose_example-phpmyadmin-1 | [Fri May 05 04:53:27.973454 2023] [core:notice] [pid 1] AH00094: Command line: 'apache2 -D FOREGROUND'
docker_compose_example-wordpress-1 | AH00558: apache2: Could not reliably determine the server's fully qualified domain name, using 172.24.0.4. Set the
message
docker_compose_example-db-1 | 2023-05-05 04:53:27+00:00 [Note] [Entrypoint]: Entrypoint script for MariaDB Server 1:10.6.4+maria-focal started.
docker_compose_example-wordpress-1 | [Fri May 05 04:53:28.006463 2023] [mpm_prefork:notice] [pid 1] AH00163: Apache/2.4.56 (Debian) PHP/8.0.28 configure
docker_compose_example-wordpress-1 | [Fri May 05 04:53:28.006522 2023] [core:notice] [pid 1] AH00094: Command line: 'apache2 -D FOREGROUND'
docker_compose_example-db-1 | 2023-05-05 4:53:28 0 [Note] mysqld (server 10.6.4-MariaDB-1:10.6.4+maria-focal) starting as process 1 ...
docker_compose_example-db-1 | 2023-05-05 4:53:28 0 [Note] InnoDB: Compressed tables use zlib 1.2.11
docker_compose_example-db-1 | 2023-05-05 4:53:28 0 [Note] InnoDB: Number of pools: 1
docker_compose_example-db-1 | 2023-05-05 4:53:28 0 [Note] InnoDB: Using crc32 + pclmulqdq instructions
docker_compose_example-db-1 | 2023-05-05 4:53:28 0 [Note] mysqld: O_TMPFILE is not supported on /tmp (disabling future attempts)
docker_compose_example-db-1 | 2023-05-05 4:53:28 0 [Note] InnoDB: Using Linux native AIO
docker_compose_example-db-1 | 2023-05-05 4:53:28 0 [Note] InnoDB: Initializing buffer pool, total size = 134217728, chunk size = 134217728
docker_compose_example-db-1 | 2023-05-05 4:53:28 0 [Note] InnoDB: Completed initialization of buffer pool
docker_compose_example-db-1 | 2023-05-05 4:53:28 0 [Note] InnoDB: 128 rollback segments are active.
docker_compose_example-db-1 | 2023-05-05 4:53:28 0 [Note] InnoDB: Creating shared tablespace for temporary tables
docker_compose_example-db-1 | 2023-05-05 4:53:28 0 [Note] InnoDB: Setting file './ibtmp1' size to 12 MB. Physically writing the file full; Pleas
docker_compose_example-db-1 | 2023-05-05 4:53:28 0 [Note] InnoDB: File './ibtmp1' size is now 12 MB.
docker_compose_example-db-1 | 2023-05-05 4:53:28 0 [Note] InnoDB: 10.6.4 started; log sequence number 42293; transaction id 14
docker_compose_example-db-1 | 2023-05-05 4:53:28 0 [Note] InnoDB: Loading buffer pool(s) from /var/lib/mysql/ib_buffer_pool
docker_compose_example-db-1 | 2023-05-05 4:53:28 0 [Note] Plugin 'FEEDBACK' is disabled.
docker_compose_example-db-1 | 2023-05-05 4:53:28 0 [Warning] 'default-authentication-plugin' is MySQL 5.6 / 5.7 compatible option. To be impleme
docker_compose_example-db-1 | 2023-05-05 4:53:28 0 [Note] InnoDB: Buffer pool(s) load completed at 230505 4:53:28
docker_compose_example-db-1 | 2023-05-05 4:53:28 0 [Warning] You need to use --log-bin to make --expire-logs-days or --binlog-expire-logs-second
docker_compose_example-db-1 | 2023-05-05 4:53:28 0 [Note] Server socket created on IP: '::'.
docker_compose_example-db-1 | 2023-05-05 4:53:28 0 [Warning] 'proxies_priv' entry '% root@93c6b15c4d38' ignored in --skip-name-resolve mode.
docker_compose_example-db-1 | 2023-05-05 4:53:28 0 [Note] mysqld: ready for connections.
docker_compose_example-db-1 | Version: '10.6.4-MariaDB-1:10.6.4+maria-focal' socket: '/run/mysqld/mysqld.sock' port: 3306 mariadb.org binary d
```

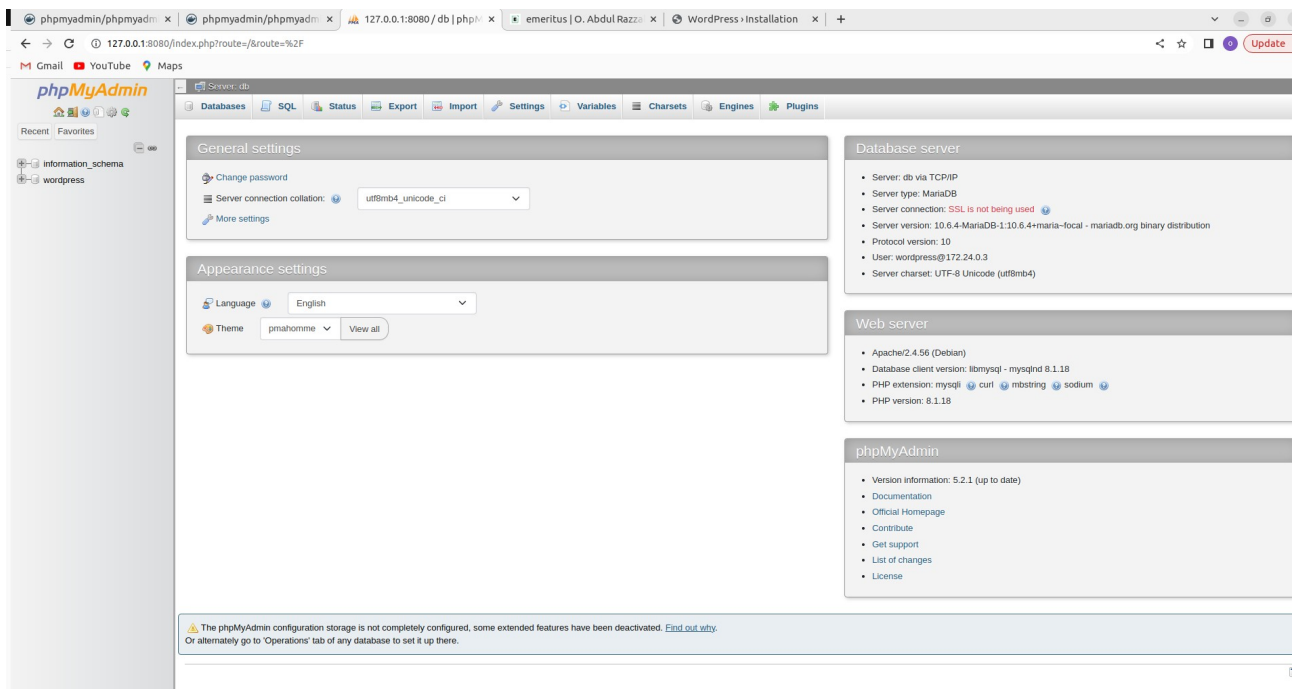
Name: Rahima Siddiqui (2303.KHI.DEG.030)
Peer Name: Osama Abdul Razzak (2303.KHI.DEG.029)

```
osamaabdulezzak@ali-MS-7035: ~/Desktop/day_1_microservices/docker_compose_example$ docker compose up -d
[+] Running 3/3
 ✓ Container docker_compose_example-wordpress-1 Started 0.45s
 ✓ Container docker_compose_example-db-1 Started 0.35s
 ✓ Container docker_compose_example-phpmyadmin-1 Started 0.45s
osamaabdulezzak@ali-MS-7035: ~/Desktop/day_1_microservices/docker_compose_example$
```

then we visit local host: <http://127.0.0.1:8080/> and it was running on 8080 port



and also login by using credential which was mention in .yaml file



Also check the container and images ,which was currently active by using following docker ps

Name: Rahima Siddiqui (2303.KHI.DEG.030)
Peer Name: Osama Abdul Razzak (2303.KHI.DEG.029)

```
(base) osamaabdulrazzak@all-MS-7D35: ~/Desktop/day_1_microservices/docker_compose_example$ docker ps
CONTAINER ID   IMAGE                                COMMAND                  CREATED        STATUS        PORTS                               NAMES
8deb480d4404   wordpress:latest                   "docker-entrypoint.s..." 6 minutes ago  Up 3 minutes  0.0.0.0:80->80/tcp                 docker_compose_example-wordpress-1
189ab9eeac0b   phpmyadmin                        "/docker-entrypoint...." 6 minutes ago  Up 3 minutes  0.0.0.0:8080->80/tcp              docker_compose_example-phpmyadmin-1
f14754b538de   mariadb:10.6.4-focal              "docker-entrypoint.s..." 6 minutes ago  Up 3 minutes  3306/tcp                          docker_compose_example-db-1
(base) osamaabdulrazzak@all-MS-7D35: ~/Desktop/day_1_microservices/docker_compose_example$
```

also we enter in container and check working directory in container

```
(base) osamaabdulrazzak@all-MS-7D35: ~/Desktop/day_1_microservices/docker_compose_example$ docker exec -it 8deb480d4404 bash
root@8deb480d4404:/var/www/html# ls
index.php  readme.html  wp-admtn  wp-comments-post.php  wp-config-sample.php  wp-content  wp-includes  wp-load.php  wp-mail.php  wp-signup.php  xnlrpc.php
license.txt  wp-activate.php  wp-blog-header.php  wp-config-docker.php  wp-config.php  wp-cron.php  wp-links-opml.php  wp-login.php  wp-settings.php  wp-trackback.php
root@8deb480d4404:/var/www/html# exit
exit
```

and for your reference, we also provide log file