010. Docker

Docker Basic (website)

- List containers + stoped containers

  ```
  docker ps -a
  ```

- Remove all containers

  ```
  docker container rm -f $(docker container ls -aq)
  ```

- List docker images

  ```
  docker image ls
  ```

- Remove only one image

  ```
  docker image rm IMAGE_ID
  ```

- Remove all images

  ```
  docker image rm -f $(docker image ls -q)
  ```

- Access docker container shell

  ```
  docker exec -it <mycontainer> bash
  ```

  ```
  docker exec -it <mycontainer> sh
  ```

- Access docker container shell with ROOT user

  ```
  docker exec -it -u root <mycontainer> sh
  ```

  ```
  docker exec -it -u root <mycontainer> bash
  ```

Docker Compose

- Start the application

  ```
  docker compose up
  ```

- Run at the background

  ```
  docker compose up -d
  ```

- Run from a different compose file

  ```
  docker compose -f FILE_PATH up
  ```

- Stop application

  ```
  docker compose down
  ```

Compose Samples

Wordpress

```
version: '3.3'

services:
   db:
     image: mariadb:10.5.8
     volumes:
       - db_data:/var/lib/mysql
     ports:
       - "33060:3306"
     restart: always
     environment:
       MYSQL_ROOT_PASSWORD: root
       MYSQL_DATABASE: wordpress
       MYSQL_USER: wordpress
       MYSQL_PASSWORD: wordpress

   wordpress:
     depends_on:
       - db
     image: wordpress:latest
     volumes:
       - $HOME/src/bodevi_web:/var/www/html
     ports:
       - "8000:80"
     restart: always
     environment:
       WORDPRESS_DB_HOST: db:3306
       WORDPRESS_DB_USER: wordpress
       WORDPRESS_DB_PASSWORD: wordpress
       WORDPRESS_DB_NAME: wordpress
volumes:
    db_data: {}
```

MongoDB

```
 # Use root/example as user/password credentials
version: '3.1'

services:

  mongo:
    image: mongo
    restart: always
    environment:
      MONGO_INITDB_ROOT_USERNAME: root
      MONGO_INITDB_ROOT_PASSWORD: example
    ports:
    - 27017:27017

  mongo-express:
    image: mongo-express
    restart: always
    ports:
      - 8081:8081
    environment:
      ME_CONFIG_MONGODB_ADMINUSERNAME: root
      ME_CONFIG_MONGODB_ADMINPASSWORD: example
      ME_CONFIG_MONGODB_URL: mongodb://root:example@mongo:27017/
```

Frontend + Backend + Database

This case, you need to create a project with 2 folders

- frontend
- backend

Each of them need to have a “Dockerfiler”

```
version: "3.8"
services:
    web:
        build: ./frontend
        ports:
            - 3000:3000
    api:
        build: ./backend
        ports:
            - 3001:3001
        environment:
            - DB_URL=mongodb://db/DATABASE
    db:
        image: mongo:4.0-xenial
        ports:
            - 27017:27017
        volumes:
            - db_vol:/data/db
volumes:
    db_vol:
```

Dockerfile

Node project

```
FROM node:19-alpine3.15

RUN addgroup app && adduser -S -G app app
USER app

WORKDIR /app
COPY package*.json ./
RUN npm install
COPY . .

EXPOSE 3001

CMD ["npm", "start"]
```

- Create a build image

  `docker build -t [USERNAME]/[APPNAME]:[VERSION] .`

  `docker build -t chaiben/demoapp:1.0 .`

- Run

  `docker run -p 3001:3001 [IMAGEID]`

- Run with a volume

  `docker run --mount source=shared-stuff, target=/stuff`

More details

Learn Docker in 7 Easy Steps - Full Beginner's Tutorial
A complete introduction to Docker. Learn how to Dockerize a Node.js and run manage multiple containers with Docker Comp...
https://www.youtube.com/watch?v=gAkwW2tuIqE

GitHub - fireship-io/docker-nodejs-basic-demo: A simple demo running Node.js on Docker
A simple demo running Node.js on Docker. Contribute to fireship-io/docker-nodejs-basic-demo development by creating an...
https://github.com/fireship-io/docker-nodejs-basic-demo

Docker Compose Tutorial
Learn all about Docker Compose so you can orchestrate your services with confidence! - Get the complete Docker course (z...
https://www.youtube.com/watch?v=HG6yIjZapSA

Presentaciones de Google: inicio de sesión
"Accede a Presentaciones de Google con una cuenta de Google personal o una cuenta de Google Workspace (para uso corp...
https://docs.google.com/presentation/d/1O64Ec0uLEJiNhhBrtfDgsqU3K04oV9ebhNgsFZwVYgg/edit#slide=id.p