Docker

(*) If code works on local, it can run anywhere with Docker

1] `docker-compose-up` : makes application up & running by downloading all dependency.

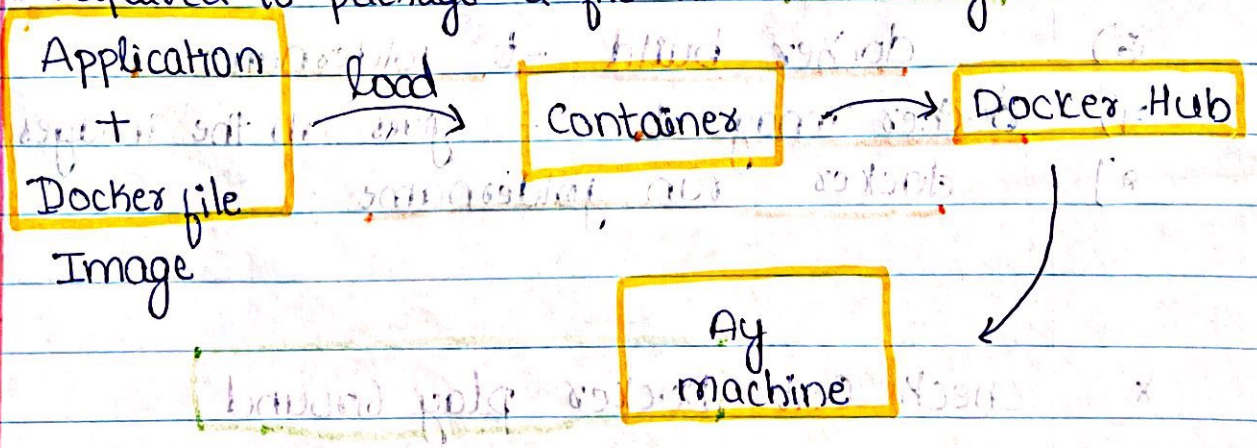
2] `docker:-Compose down --rmi all` :: removes application with all its dependency.

(*) Docker Uses a Client Server architecture.

3] `docker Version`

* **Workflow**

dockerfile is a plain txt file, that contain information required to package a file into an image.



4] mkdir foldername

5] cd foldername

* **Adding a docker file.**

▶ fileName : **Dockerfile**

FROM image (eg node, python etc)

Eg: FROM node : alpine

COPY . /app

CMD node /app/app.js

Or

WORKDIR /app

CMD node app.js

* **Terminal**

6] docker build -t foldername .

7] Docker image ls - gives all the images.

8] docker run foldername

* Check Out **Docker play Ground**

* Docker play Ground

alt + Enter → maximize your screen

9] `docker pull dockerhub/folder`

10] docker images or docker image ls

11] Run `docker run dockerhub/folder`

* Docker play Ground is "slow"

12] Docker pull container

or

docker run container // If the image is not present. docker will pull the image locally first & then run the container.

13] docker ps : list of running container.

14] docker ps -a : list of all container.

15] To start Container in interactive mode

`docker run -it container`

* Package Manager :

- npm
- pip

etc

Docker With python

1] docker Version

or

docker -V

Dockerfile:

① FROM python : 3

② ADD main.py (file.py) .

③ RUN pip install requests beautifulsoup4

④ CMD ["python", "./file.py"]

Docker Image

⑤ docker build -t python-imbd (foldername) .

⑥ Start Container:

docker run python-imbd

If there is user input then :

* docker run -t -i python-imbd

-t = sudo terminal

-i = Interactive

Docker Hub
Business Analyst

1) docker images
   or
   docker image ls

2) docker login :
   [It might ask for username & pw of docker hub]

3) docker tag image:version repositoryName/image

// repository must be in smaller case & should be gibbo96

docker images → check for recently created image

4] docker push image

5] docker image rm [option] image = remove image.

6] docker pull image

* Creating Virtual Env on mac

① python3 -m venv venv
② . ./venv/bin/activate

Create Web app using FastAPI python:

- Once done:
  go inside folder to navigate to app.py

- cd app
- python main.py

go back to root directory
cd..

- Save Every requirement in a txt file.

pip freeze > requirements.txt

- Docker File

```
FROM python:3.
WORKDIR /fastapi-app

COPY requirements.txt .

RUN pip install -r requirements.txt

COPY ./folder(localmachine) ./folder(contai)

CMD ["python","./app/main.py"]
```

```
docker build -t python-fastapi .
```

↳ build image with this name.

docker run :

So inorder for docker container to run. We got to specify "port" & "host" in main() function.

Eg:
```
if __name__ == "__main__":
    uvicorn.run(app, port=8000, host="0.0.0.0")
```

then

```
docker run -p 8000:8000 python-fastapi
```

local : container