what is Docker !:

Docker is like a shipping system for apps. It packages your app and everything it needs (code, libraries,

tools) into a small, portable box call -ed a container. You can run this box anywhere - your computer, a server, or the cloud.

Docker Architecture :-

→ Docker Engine (The core Engine).

This is the main software that runs on your systems and manages containers. It has 3 parts.

(a). Docker client (You):-

what you interacts with using commands like

docker build, docker run, docker stop

- You tell Docker what to do, and it sends your instructions to the Docker Engine.

Date

b.) Docker Daemon. (The worker).

- It's a background service that actually does the work.

- It listens to your commands and builds, runs or stops containers.

c.) Docker Images. (Blueprints).

- An image is like a recipe or blueprint for your app.
- It contains your app's code, tools and settings.

- Example : An image of a Java app includes Java + your code.

d.) Docker Containers (Running App).

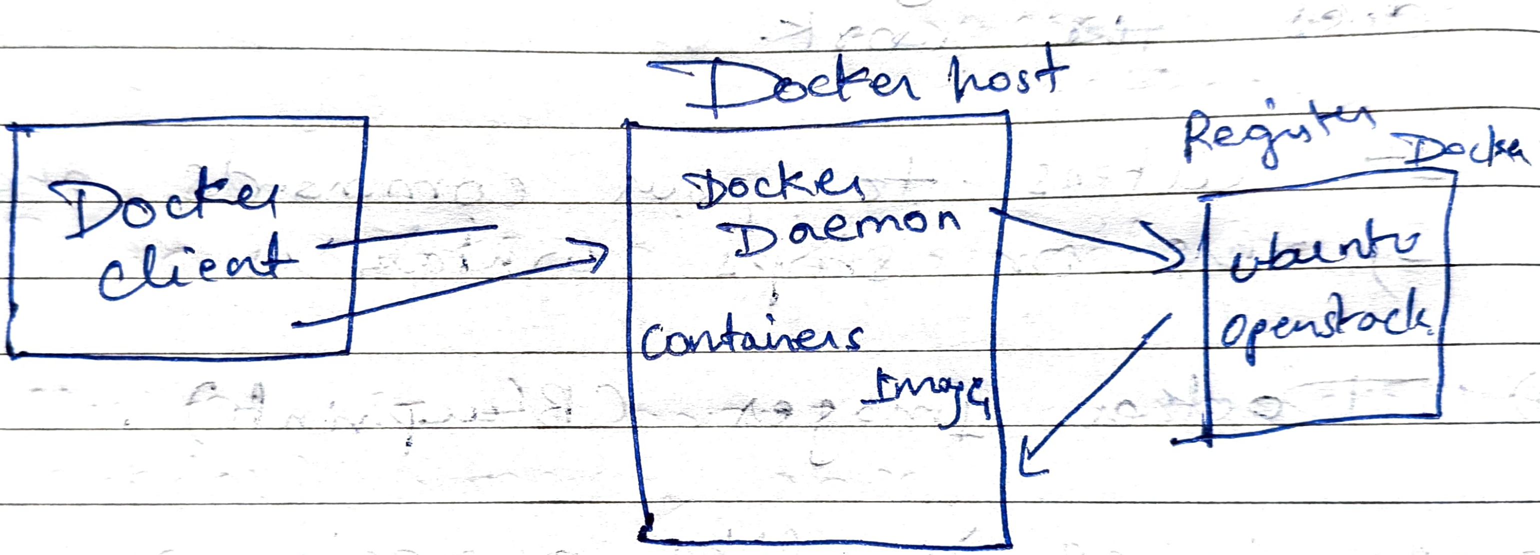
- A container is a running instance of an image.

- Think of it as a box that runs your ~~runs~~ app, isolated from everything else.

e.) Docker Hub (App Store for Containers).

- It's an online library of ready-made Docker images.

You can download images like openjdk, nginx.



Docker

Docker io → Docker Engine
Docker Demon
Docker CLI
Docker Client

~~Sudo~~ apt-~~get~~

sudo apt-get update ← update ho jayega

~~docker.io~~

Sudo apt-get install docker.io
↳ To install docker.io.

sudo systemctl status docker

docker ps → To view containers.

whoami → current user

current user
sudo usermod -aG docker $USER
↓ user modify.
↳ i have do add ubuntu in that group

docker ps ÷

newgrp docker. refresh.

=>

---

who ami

```
docker ps
docker images.
docker login.
docker pull "Hello_world"
docker images
docker run Hello_world
docker pull mysql.
docker images
```

~~docker run -e mysql~~

```
docker run -e MYSQL_ROOT_PASSWORD=
root mysql
```

```
docker ps <-> docker stop
```

Vs

```
docker run -d -e MYSQL_ROOT_PASSWO
RD = root mysql
```

```
ls
mkdir projects
ls
cd projects/
ls
git clone
ls
cd simple-java-docker.
ls .
rm -v Docker.
vim Dockerfile.
FROM openjdk:17-jdk-alpine

WORKDIR /app

COPY . .          or COPY src/Main.java /app/
                                   Main.java.

RUN javac src/Main.java
```

```
CMD [ "java", "Main" ]
```

```
# pull a base images which ~~at~~ gives all
required tools and libraries

# create a folder where the app code
will be stored

# Copy the source code from ~~to~~ your
HOST machine to your container.

# compile the application code.

# run the application.
```

```
~~docker~~
cat Dockerfile

Docker build -t java-app .
                              ↳ content.
~~Do~~ docker images

docker run java-app.

⇒ vim src/Main.java

⇒ docker run java-app

⇒ docker build -t java-app .      → update.
```