Docker Commands

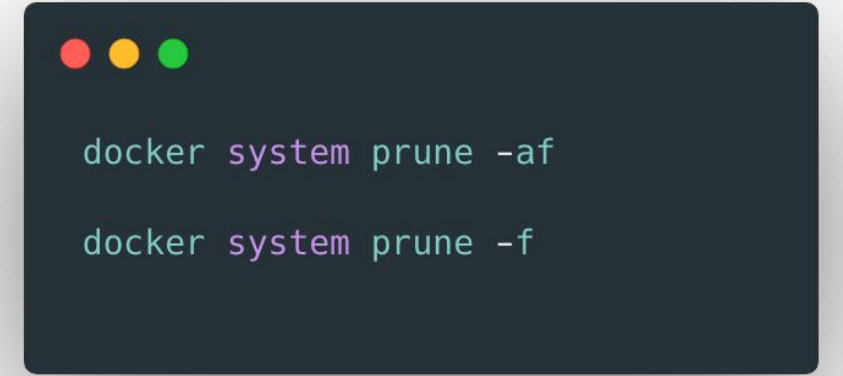
Docker Terminologies

Term	Docker	Similar Java term
Dockerfile (no extensions)	Human readable instructions for the app to run (dependencies + run time)	.java (Human readable instructions for the app behavior)
Build	Creating snapshot from Dockerfile	build / compile / package
Image	Lightweight VM (Snapshot)	.class / .jar
Tag	Image version	jar version

Container	Instance of image /
	Running lightweight VM /
	We can create multiple containers from an image
		instances / objects.
		Person p1 = new Person();
		Person p2 = new Person();

DockerHub	Image Registry	Maven Registry

Docker System Prune



```
docker system prune -af

docker system prune -f
```

Docker Commands

Command	Description
docker images	To show the list of images you have in your machine
docker run [image-name]	To create a container of the image. Something like ***Person p1 = new Person();***
docker pull [image-name]	To pull the image from Dockerhub
docker rmi [image-name]	Delete image

Docker Commands

Command	Description
docker ps	To show the list of running containers
docker ps -a	To show all the containers including the exited ones

Docker Commands

Command	Description
docker run [image] [command]	To pass the command to be executed inside the container (it depends on the image.)

Docker Run Options

Command	Description
docker run -it ubuntu	To start container interactive mode ● -i → std-input ● -t → std-output / attach terminal
docker run –name=[some-name] ubuntu	To assign a name for your

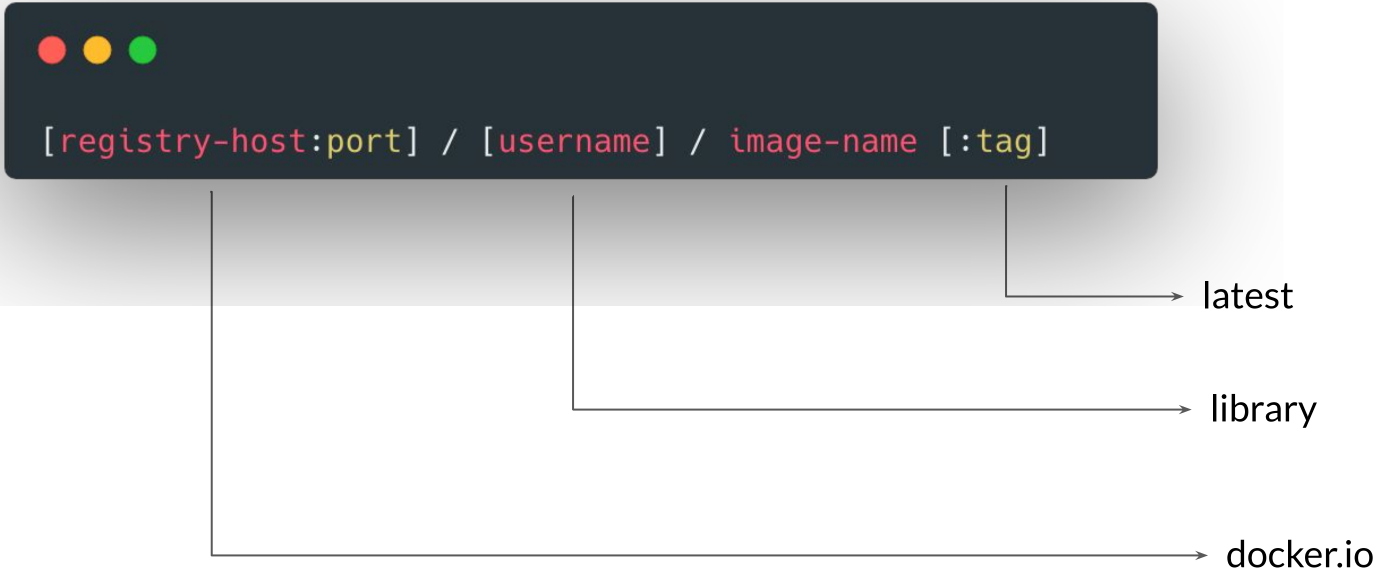
Docker Start / Stop

Command	Description
docker start [container-name]	To start a container
docker stop [container-name]	To stop running container (might take some time)
docker kill [container-name]	To kill running container at once
docker rm [container-name]	To remove container

Docker Exec

Command	Description
docker exec [container-name] [command]	To start a command on **a running container** ● run → creates new container & executes the command ● exec → does the similar thing on a running container

Docker Image Name Format



```
[registry-host:port] / [username] / image-name [:tag]
```

latest

library

docker.io

Docker Port Mapping

Command	Description
docker run -p host-port:container-port nginx	To map the host port to a container port
docker run -p host-port-1:container-port-1 -p host-port-2:container-port-2 [image-name]	To map multiple ports for a container

Docker Run Detached

Command	Description
docker run -d nginx	To run the docker container in detached mode

Access Container Logs

Command	Description
docker logs [container-name] **docker logs [container-id]**	To access the container terminal output

Docker Volume Mapping

Command	Description
docker run -v /host-path:/container-path image	To map specific directory to a container directory. (use absolute paths)
docker run **-v /Users/vins/temp1:/a/b/c** **-v /Users/vins/temp2:/a/b/d** **[image-name]**	To map multiple host paths to container paths
[Windows Users] **docker run -v d:/vins/temp:/a/b/c/d image**	

Docker Volume Mapping

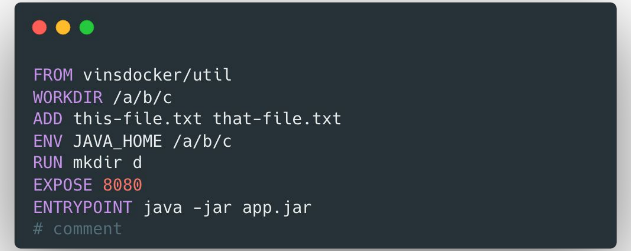
Command	Description
docker run -v /host-path:/container-path:ro [image-name]	To share file system in ***read-only*** mode
docker run -v /host-path/some.txt:/container-path/some.txt [image-name]	To share a single file

Docker Network

Command	Description
docker network create dummy	Creates a custom network called ‘dummy’
docker network ls	To list all the networks
docker run - -name=nginx - -network=dummy nginx	Creates nginx container and places in the dummy network

Dockerfile Commands

Command	Description
FROM [image]	The base image for your docker image. Any image should extend another image
ADD [host-dir] [container-dir] **COPY** [host-dir] [container-dir]	Adds files from your host directory to the image ADD is more or less like COPY. ADD can also accept url
RUN [command]	command to execute during the image build process. Useful to install any software or create directories etc
ENV [key] [value]	Sets an environment variable
WORKDIR [path]	Creates a workspace / default working directory. If we ignore root directory **/** would be used.
EXPOSE [port]	Exposes port
CMD [command to execute when container starts] **ENTRYPOINT** [command to execute when container starts]	The command to be executed / process to be started when the container is created.

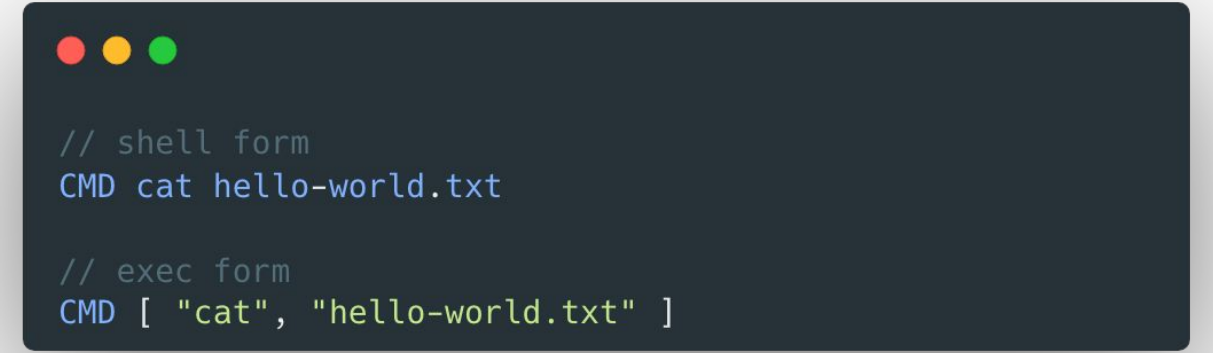


```
FROM vinsdocker/util
WORKDIR /a/b/c
ADD this-file.txt that-file.txt
ENV JAVA_HOME /a/b/c
RUN mkdir d
EXPOSE 8080
ENTRYPOINT java -jar app.jar
# comment
```

Docker Network

Command	Description
docker login - -username [username] - -password [password]	Creates a custom network called ‘dummy’
docker logout	To list all the networks
docker build -t vinsdocker/util [dir]	To build docker image with your image name ***vinsdocker/util*** is the image name
docker tag util vinsdocker/util:v3.5	To create tag / alias for the docker images
docker push [image-name]	To push docker images

Shell Form vs Exec Form



```
// shell form
CMD cat hello-world.txt

// exec form
CMD [ "cat", "hello-world.txt" ]
```

Docker Compose Commands

Command	Description
docker-compose up **docker-compose -f a/b/c/file.yaml up**	Spins up all the containers with custom bridge network
docker-compose down **docker-compose -f a/b/c/file.yaml down**	Brings the app down, removes containers and networks
docker-compose ps	To check service status
docker-compose logs [service-name]	Check the service logs for debugging

Docker Compose Commands

Command	Description
docker-compose up [service-name-1] [service-name-2]	To bring only certain services up
docker-compose - -profile=app up **docker-compose - -profile=app down**	To create containers based on the compose profiles
docker-compose up - -build	will build the docker image and then bring everything up

Nginx - location directive

location / {
…
}
	all the path which starts with /	http://vinsguru.com/a/b/c
		http://vinsguru.com/api/
		http://vinsguru.com/1/2/3

location = / {
…
}
	path is exactly = /	http://vinsguru.com/ (will work)
		http://vinsguru.com/a/b/c (will NOT work)

location /api {
…
}
	path should start with /api	http://vinsguru.com/api/b/c (will work)
		http://vinsguru.com/a/b/c (will NOT work)

location ~ /api[0-9] {
…
}
	path should start with /api + number (regex case-sensitive)	http://vinsguru.com/api2/b/c