```
#List local Images
docker images

#Log in to a remote registry
docker login -u user

#Start container in background
docker run -d nginx

#Run a container
docker run -d -it -p 80:80 -v /nfs:/var/www/html registry.redhat.io/rhel8/httpd-24

#Assign it a hostname
docker run --hostname anibrain nginx

#Assign it a dns entry
docker run --add-host HOSTNAME:IP IMAGE

#Copy a file from a container to the host
docker cp containername:/indez.html indez.html

#Copy a file from the host to a container
docker cp indez.html containername:/indez.html

#Pull an image from a remote registry
docker pull registry.redhat.io/rhel8/httpd-24

#Push an image from a remote registry
docker tag 27941809078c vvgadhave/ubuntu:firsttry #need to tag your image first
docker push vvgadhave/ubuntu:firsttry #then you can push the image

#List the running containers
docker ps

#List the running containers # no difference between ls and ps
docker container ls

#List the running and non running containers
docker container ls -a

#Execute a command in a running container
docker exec -it containerid /bin/bash

#Execute a command by root in a running container
docker exec -u 0 -it a34b5708919d /bin/bash

#Display the logs of a container
docker logs containerid

#Save an image
docker save -o imagename > /path/test.tar

#Load an image
docker load -i /path/test.tar

#Start an existing container
docker start containerid
```

#Stop an existing container
docker stop containerid

#Restart an existing container
docker restart containerid

#Remove a container
docker rm containerid

#Remove a container image
docker rmi containerimages

#Docker version
docker version

#Log out
docker logout

#Create a new image based on the current state of a running container
docker commit containerid newImage:tag

#Restart an existing container
docker restart containerid

#Wait on one or more containers to stop
docker wait container1 [container2…]

#Stop a running container gracefully
docker stop containerid

#Kill a running container
docker kill containerid

#Remove a container (use -f if the container is running)
docker rm [-f] containerid

#Display a live stream of a container’s resource usage
docker stats containerid

#Return metadata (in JSON) about a running container
docker inspect containerid

#Processors running on Docker
docker top container-id

#Delete volume forcefully
docker volume prune

#Remove all stopped containers
docker container prune

#Build docker images
docker build -t yourusername/repository-name .

#Specify the docker file if having other name
docker build -f dockerfile.dev .

#Show all modified files 1n container
docker diff containerid

#Show mapped ports of a container
docker port containerid

#Search an image in official repository
docker search nginx

URL: https://dockerlabs.collabnix.com/docker/cheatsheet/

################ Docker File ######################

FROM ubuntu:18.04   #Add base image
LABEL name vaibhav #Add name labels to container
LABEL email vvgadhave@gmail.com   #Add email label
ENV NAME vaibhav   #Add enviroment variables
ENV PASS Passwd@123#   #Add enviroment variables
RUN pwd > /home/test.txt # (/) Run command
WORKDIR /tmp   # Change working directory, default may be /
RUN pwd > /home/test.txt #(/tmp) output after changing working directory
USER vaibhavg # Switch user from root to vaibhavg
COPY test.txt /tmp/ #Copy local test.txt file from local to container /tmp/
ADD test.txt.tar /tmp #Extract contents from test.txt.tar in /tmp
CMD ["python"] #Run any specific command in container
CMD ["/bin/bash"] # If having multiple CMD in docker file then last CMD will execute when container is up
ENTRYPOINT ["test.sh"] # Executes as soon as the container is up

##################Docker compose file###################

```
version: '2.2'
services:
  node01:
    image: docker.elastic.co/elasticsearch/elasticsearch:7.11.1
    container_name: node01
    environment:
      - node.name=node01
      - cluster.name=es-cluster-7
      - discovery.type=single-node
      - "ES_JAVA_OPTS=-Xms128m -Xmx128m"
    ulimits:
      memlock:
        soft: -1
        hard: -1
    volumes:
      - es-data01:/usr/share/elasticsearch/data
    ports:
      - 9200:9200
    networks:
      - es-network

  kibana:
    image: docker.elastic.co/kibana/kibana:7.11.1
    environment:
      ELASTICSEARCH_HOSTS: http://node01:9200
    ports:
```

```
      - 5601:5601
    networks:
      - es-network
    depends_on:
      - node01
    restart: always     #(no = never restart | always = if container stops for nay reason | on-failure = only restart if stops by any error code | unless-stopped = always restart wnless we forcefully stop it )

  heartbeat:
    image: docker.elastic.co/beats/heartbeat:7.11.1
    environment:
      ELASTICSEARCH_HOSTS: http://node01:9200
    volumes:
      - /home/vaibhavg/kibana/heartbeat.yml:/usr/share/heartbeat/heartbeat.yml:ro
    networks:
      - es-network
    depends_on:
      - node01

volumes:
  es-data01:
    driver: local

networks:
  es-network:
    driver: bridge

#################### JFYI ######################

# Install ssh server in container
RUN apt install openssh-server -y
EXPOSE 22
CMD ["/usr/sbin/sshd", "-D"]

############### Docker-Machine ####################

#URL for docker-machine
https://docker-docs.netlify.app/machine/install-machine/

#Check Version
docker-machine version

#List docker machines
docker-machine ls

#Create docker machines
docker-machine create --driver virtualbox machine1

#You need to tell Docker to talk to the new machine. You can do this with the docker-machine env command.
docker-machine env machine1

#Connect your shell to the new machine.
eval "$(docker-machine env machine1)"

#Start a Docker machine
docker-machine start machine1
```

#Stop a Docker machine
docker-machine stop machine1

#Restart a Docker machine
docker-machine restart machine1

#Configuration for a Docker machine
docker-machine config machine1

#Inspect a Docker machine
docker-machine inspect machine1

#Get ip of a Docker machine
docker-machine ip machine1

#Kill a Docker machine
docker-machine kill machine1

#regenerated certificates for a Docker machine
docker-machine regenerate-certs machine1

#ssh a Docker machine
docker-machine ssh machine1

#Status a Docker machine
docker-machine status machine1

#upgrade a Docker machine
docker-machine upgrade machine1

#Stop a Docker machine
docker-machine url machine1

Docker Swarm #####Docker always recommends to promote manager as 1,3,5,7.. (as odd no)
#To create a new docker swarm leader
docker swarm init

#To chek the list of nodes connected to docker swarm
docker node ls

#To get the docker initialise link again to join worker
docker swarm join-token worker

#To get the docker initialise link again to join mananger
docker swarm join-token manager

#To exit from docker swarm manager (Run this comand on worker)
docker swarm leave

#To remove any worker from group (Run this command on manager)
docker node rm worker2

#To inspect worker information
docker node inspect worker1

#To promote docker worker to manager
docker node promote worker1 worker2

#To demote docker worker to manager
docker node demote worker1 worker2

#To create a service
docker service create -d alpine ping 8.8.8.8

#To create a service with replicas
docker service create -d --replicas 4 alpine ping 8.8.8.8

#To check the running serices.
docker service ls

#To check where the serices are running
docker service ps ajdlkjdlii211

#To scale docker conatainers
docker service scale asdekjjkajdf=4 dasdewdqw=4

#To run the serice globally
docker service create --mode global alpine ping 8.8.8.8

#To run container on manager only
docker service create --constraint="node.role==manager" alpine ping 8.8.8.8

#To run container on any particular worker only
docker service create --constraint="node.role==worker" alpine ping 8.8.8.8

#To add any label to any worker (Labels are required because you can run containers on any particular workers by this)
docker node update --label-add="ssd=true" worker1

#TO remove any label from worker
docker node update --label-rm ssd node2

#To run any service on particular worker by using labels
docker service create --constraint="node.labels.ssd==true" --replicas=3 -d alpine ping 8.8.8.8

#To pause any running worker node
docker node update --availability=pause worker2

#To unpause any running worker node
docker node update --availability=active worker2

#To move all containers from running worker node to other automatically
docker node update --availability=drain worker2

#To run compose-file as stack deploy
docker stack deploy --compose-file docker-compose.yml Demo

#To remove stack
docker stack rm Demo

#List no of stacks
docker stack ls

#To check on which machines stacks are running
docker stack ps Demo.