

## LAB 3



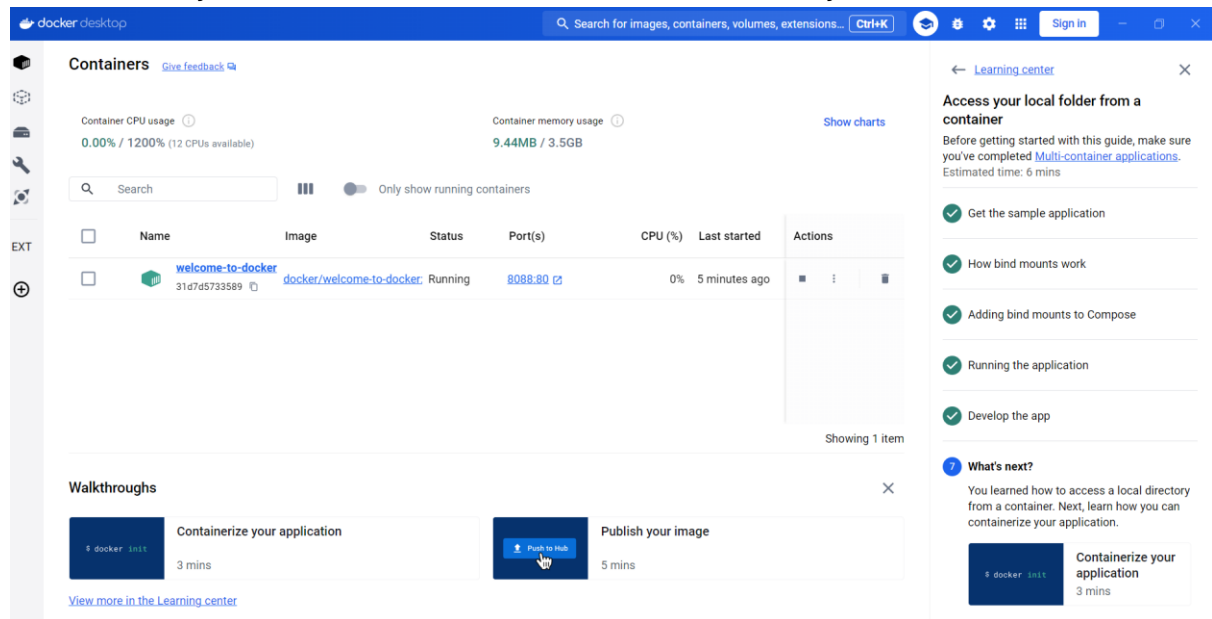
Student: Toluwalase Ibiwoye Supervisor: Lei Shi  
Submission Date: 20/05/2024

# LAB 3

## PART 1

Introduction this is a basic overview of docker familiarising me with the environment and preparing me for the next steps

Familiarised myself with docker and I have installed the necessary environments




```
erono@LAPTOP-9C7IEFAG MINGW64 ~
$ git clone https://github.com/docker/getting-started-app.git
Cloning into 'getting-started-app'...
remote: Enumerating objects: 75, done.
remote: Counting objects: 100% (4/4), done.
remote: Compressing objects: 100% (4/4), done.
remote: Total 75 (delta 0), reused 2 (delta 0), pack-reused 71
Receiving objects: 100% (75/75), 1.81 MiB | 6.73 MiB/s, done.
Resolving deltas: 100% (14/14), done.

erono@LAPTOP-9C7IEFAG MINGW64 ~
$ cd getting-started-app

erono@LAPTOP-9C7IEFAG MINGW64 ~/getting-started-app (main)
$ ls -l
README.md
package.json
spec/
src/
yarn.lock
```

```
erono@LAPTOP-9C7IEFAG MINGW64 ~/getting-started-app (main)
$ ls -l
total 153
-rw-r--r-- 1 erono 197609      0 May 21 18:25 Dockerfile
-rw-r--r-- 1 erono 197609    273 May 21 18:22 README.md
-rw-r--r-- 1 erono 197609    681 May 21 18:22 package.json
-rwxr-xr-x 1 erono 197609      0 May 21 18:22 spec/
```

Dockerfile created

```
 Dockerfile
1  # syntax=docker/dockerfile:1
2
3  FROM node:18-alpine
4  WORKDIR /app
5  COPY . .
6  RUN yarn install --production
7  CMD ["node", "src/index.js"]
8  EXPOSE 3000
```

Contents added to dockerfile

```
eronom@LAPTOP-9C7IEFAG MINGW64 ~/getting-started-app (main)
$ docker build -t getting-started .
#0 building with "default" instance using docker driver

#1 [internal] load build definition from Dockerfile
#1 transferring dockerfile: 188B 0.0s done
#1 DONE 0.1s

#2 resolve image config for docker-image://docker.io/docker/dockerfile:1
#2 DONE 1.8s

#3 docker-image://docker.io/docker/dockerfile:1@sha256:a57df69d0ea827fb7266491f2813635de6f17269be881f696fbfdf2d83dda33e
#3 resolve docker.io/docker/dockerfile:1@sha256:a57df69d0ea827fb7266491f2813635de6f17269be881f696fbfdf2d83dda33e 0.0s done
#3 sha256:a57df69d0ea827fb7266491f2813635de6f17269be881f696fbfdf2d83dda33e 8.40kB / 8.40kB done
#3 sha256:b5f3b260a9678e1d3d2f79420b79147eaba2e25986f47133d73720 482B / 482B done
#3 sha256:68ebc061390d0a7d6e194f9d58309c754a53cb0b4e3b0d8959320f47f4a94a4 1.26kB / 1.26kB done
#3 sha256:96918c57e42509b97f10c074d80672ecdbd3bb7dcd38c1bd95960cf291207416 0B / 11.98MB 0.1s
#3 sha256:96918c57e42509b97f10c074d80672ecdbd3bb7dcd38c1bd95960cf291207416 1.05MB / 11.98MB 0.4s
#3 sha256:96918c57e42509b97f10c074d80672ecdbd3bb7dcd38c1bd95960cf291207416 2.10MB / 11.98MB 0.6s
#3 sha256:96918c57e42509b97f10c074d80672ecdbd3bb7dcd38c1bd95960cf291207416 3.15MB / 11.98MB 0.9s
#3 sha256:96918c57e42509b97f10c074d80672ecdbd3bb7dcd38c1bd95960cf291207416 4.19MB / 11.98MB 1.1s
#3 sha256:96918c57e42509b97f10c074d80672ecdbd3bb7dcd38c1bd95960cf291207416 5.24MB / 11.98MB 1.3s
#3 sha256:96918c57e42509b97f10c074d80672ecdbd3bb7dcd38c1bd95960cf291207416 6.29MB / 11.98MB 1.5s
#3 sha256:96918c57e42509b97f10c074d80672ecdbd3bb7dcd38c1bd95960cf291207416 7.34MB / 11.98MB 2.1s
#3 sha256:96918c57e42509b97f10c074d80672ecdbd3bb7dcd38c1bd95960cf291207416 8.39MB / 11.98MB 2.2s
#3 sha256:96918c57e42509b97f10c074d80672ecdbd3bb7dcd38c1bd95960cf291207416 9.44MB / 11.98MB 2.5s
#3 sha256:96918c57e42509b97f10c074d80672ecdbd3bb7dcd38c1bd95960cf291207416 10.49MB / 11.98MB 2.6s
#3 sha256:96918c57e42509b97f10c074d80672ecdbd3bb7dcd38c1bd95960cf291207416 11.53MB / 11.98MB 2.8s
#3 sha256:96918c57e42509b97f10c074d80672ecdbd3bb7dcd38c1bd95960cf291207416 11.98MB / 11.98MB 2.8s done
#3 extracting sha256:96918c57e42509b97f10c074d80672ecdbd3bb7dcd38c1bd95960cf291207416 0.1s
#3 extracting sha256:96918c57e42509b97f10c074d80672ecdbd3bb7dcd38c1bd95960cf291207416 0.6s done
#3 DONE 3.6s

#4 [internal] load metadata for docker.io/library/node:18-alpine
#4 DONE 1.3s

#5 [internal] load .dockerignore
#5 transferring context: 2B done
#5 DONE 0.0s

#6 [1/4] FROM docker.io/library/node:18-alpine@sha256:4837c2ac8998cf172f5892fb45f229c328e4824c43c8506f8ba9c7996d702430
#6 resolve docker.io/library/node:18-alpine@sha256:4837c2ac8998cf172f5892fb45f229c328e4824c43c8506f8ba9c7996d702430 0.0s done
#6 sha256:41835bef2bacc8b1699df95a9ee9d87ce6851e102317c0a36f5e8d8987280b 7.21kB / 7.21kB done
#6 sha256:4abcf20661432fb2d719aaf90656f55c287f8ca915dc1c92ec14ff61e67fbaf8 0B / 3.41MB 0.1s
#6 sha256:45a0166cf96b2a4f328191f78f73e68e0e340450a962ff6fc34013111c014d26 0B / 39.82MB 0.1s
#6 sha256:832e0dc1fe41d061d47d41e00abfea9dab0c399d69bae854ef1bffe1976c2df0 0B / 1.38MB 0.1s
#6 sha256:4837c2ac8998cf172f5892fb45f229c328e4824c43c8506f8ba9c7996d702430 1.43kB / 1.43kB done
#6 sha256:267ef0e247ce1ace38e92d80c5c0ebb0aa2ce34e8ba28998f8f1acd886451e49 1.16kB / 1.16kB done
#6 sha256:45a0166cf96b2a4f328191f78f73e68e0e340450a962ff6fc34013111c014d26 2.10MB / 39.82MB 0.7s
#6 ...

#7 [internal] load build context
#7 transferring context: 6.57MB 0.9s done
#7 DONE 1.0s

#6 [1/4] FROM docker.io/library/node:18-alpine@sha256:4837c2ac8998cf172f5892fb45f229c328e4824c43c8506f8ba9c7996d702430
#6 sha256:4abcf20661432fb2d719aaf90656f55c287f8ca915dc1c92ec14ff61e67fbaf8 1.05MB / 3.41MB 1.1s
#6 sha256:4abcf20661432fb2d719aaf90656f55c287f8ca915dc1c92ec14ff61e67fbaf8 2.10MB / 3.41MB 1.5s
#6 sha256:45a0166cf96b2a4f328191f78f73e68e0e340450a962ff6fc34013111c014d26 4.19MB / 39.82MB 1.8s
#6 sha256:832e0dc1fe41d061d47d41e00abfea9dab0c399d69bae854ef1bffe1976c2df0 1.05MB / 1.38MB 1.8s
#6 sha256:4abcf20661432fb2d719aaf90656f55c287f8ca915dc1c92ec14ff61e67fbaf8 3.15MB / 3.41MB 2.0s
#6 sha256:832e0dc1fe41d061d47d41e00abfea9dab0c399d69bae854ef1bffe1976c2df0 1.38MB / 1.38MB 1.9s done
#6 sha256:8ae971f79f99381da4a83f2cb63aa502fb847cc81a2f270326753f6289562dfc 0B / 454B 2.0s
#6 sha256:4abcf20661432fb2d719aaf90656f55c287f8ca915dc1c92ec14ff61e67fbaf8 3.41MB / 3.41MB 2.0s done
#6 extracting sha256:4abcf20661432fb2d719aaf90656f55c287f8ca915dc1c92ec14ff61e67fbaf8
#6 sha256:8ae971f79f99381da4a83f2cb63aa502fb847cc81a2f270326753f6289562dfc 454B / 454B 2.1s done
#6 extracting sha256:4abcf20661432fb2d719aaf90656f55c287f8ca915dc1c92ec14ff61e67fbaf8 0.3s done
#6 sha256:45a0166cf96b2a4f328191f78f73e68e0e340450a962ff6fc34013111c014d26 6.29MB / 39.82MB 3.7s
#6 sha256:45a0166cf96b2a4f328191f78f73e68e0e340450a962ff6fc34013111c014d26 8.39MB / 39.82MB 5.1s
#6 sha256:45a0166cf96b2a4f328191f78f73e68e0e340450a962ff6fc34013111c014d26 10.49MB / 39.82MB 5.5s
```

## Building the image

docker desktop

Search for images, containers, volumes, extensions... **Ctrl+K**

**Containers** [Give feedback](#)

Container CPU usage ⓘ  
**0.00%** / 1200% (12 CPUs available)

Container memory usage ⓘ  
**27.52MB** / 3.5GB

Show charts

Only show running containers

	<input type="checkbox"/>	Name	Image	Status	Port(s)	CPU (%)	Last started	Actions
EXT	<input type="checkbox"/>	<div> <b>welcome-to-docker</b></div>	docker/welcome-to-docker	Running	8088:80 <a href="#">↗</a>	0%	28 minutes ago	<div> </div>
<div></div>	<input type="checkbox"/>	<div> <b>stoic_rubin</b></div>	getting-started	Running	3000:3000 <a href="#">↗</a>	0%	2 minutes ago	<div> </div>

Showing 2 items

```

#8 [2/4] WORKDIR /app
#8 DONE 0.2s

#9 [3/4] COPY . .
#9 DONE 0.1s

#10 [4/4] RUN yarn install --production
#10 0.939 yarn install v1.22.19
#10 1.029 [1/4] Resolving packages...
#10 1.244 [2/4] Fetching packages...
#10 11.68 [3/4] Linking dependencies...
#10 12.79 [4/4] Building fresh packages...
#10 14.11 Done in 13.17s.
#10 DONE 14.3s

#11 exporting to image
#11 exporting layers
#11 exporting layers 1.6s done
#11 writing image sha256:80b9e1d805f2e13190564a04ee2cc469d82a7504c1e4d6eaae35af22fa9cc72d done
#11 naming to docker.io/library/getting-started done
#11 DONE 1.6s

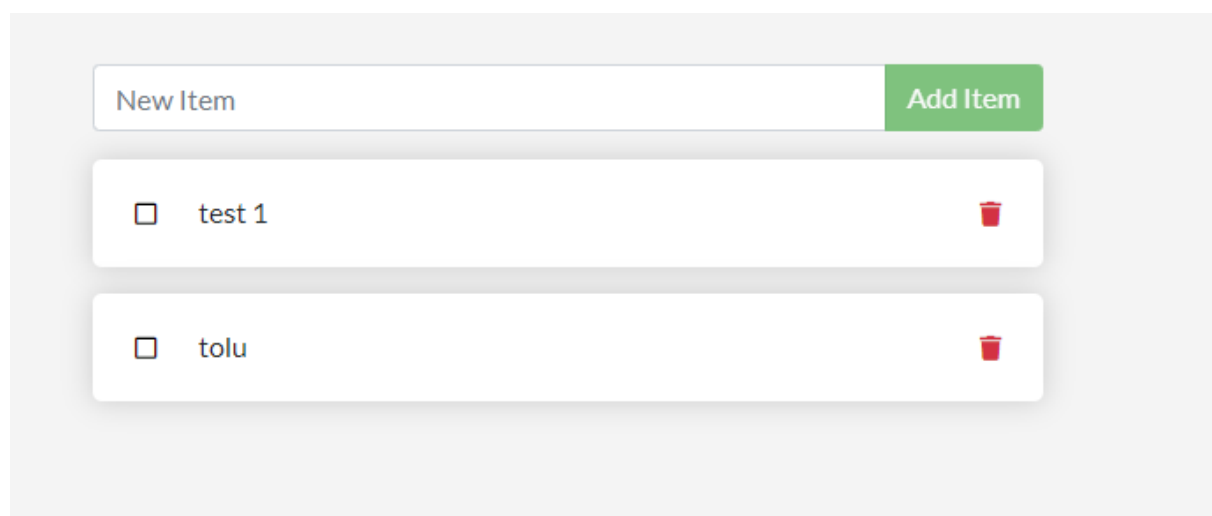
What's Next?
  1. Sign in to your Docker account → docker login
  2. View a summary of image vulnerabilities and recommendations → docker scout quickview

erono@LAPTOP-9C7IEFAG MINGW64 ~/getting-started-app (main)
$ docker run -dp 127.0.0.1:3000:3000 getting-started
e9fb90f5d10c6d07035bb7e28c0d0accbba71f3375c5c70a3b4ed9d12d7b2e74

erono@LAPTOP-9C7IEFAG MINGW64 ~/getting-started-app (main)
$ |

```

Started an app container



Added items to the todo list

```

erono@LAPTOP-9C7IEFAG MINGW64 ~/getting-started-app (main)
$ docker ps
CONTAINER ID   IMAGE          COMMAND                  CREATED        STATUS        PORTS                    NAMES
e9fb90f5d10c   getting-started  "docker-entrypoint.s..."  5 minutes ago  Up 5 minutes  127.0.0.1:3000->3000/tcp  stoic_rubin
31d7d5733589   docker/welcome-to-docker:latest  "/docker-entrypoint..."  30 minutes ago  Up 30 minutes  0.0.0.0:8088->80/tcp      welcome-to-docker

```

Listed all containers

```

<p className="text-center">You have no todo items yet! Add one above!</p>

```

Updated the code

```

erono@LAPTOP-9C7IEFAG MINGW64 ~/getting-started-app (main)
$ docker build -t getting-started .
2024/05/21 18:45:51 http2: server: error reading preface from client ../pipe/docker_engine: file has already been closed
2024/05/21 18:45:51 http2: server: error reading preface from client ../pipe/docker_engine: file has already been closed
#0 building with "default" instance using docker driver

#1 [internal] load build definition from Dockerfile
#1 transferring dockerfile: 188B 0.0s done
#1 DONE 0.0s

#2 resolve image config for docker-image://docker.io/docker/dockerfile:1
#2 DONE 0.9s

#3 docker-image://docker.io/docker/dockerfile:1@sha256:a57df69d0ea827fb7266491f2813635de6f17269be881f696fbfdf2d83dda33e
#3 CACHED

#4 [internal] load metadata for docker.io/library/node:18-alpine
#4 DONE 0.6s

#5 [internal] load .dockerignore
#5 transferring context: 2B done
#5 DONE 0.0s

#6 [1/4] FROM docker.io/library/node:18-alpine@sha256:4837c2ac8998cf172f5892fb45f229c328e4824c43c8506f8ba9c7996d702430
#6 DONE 0.0s

#7 [internal] load build context
#7 transferring context: 10.05kB 0.0s done
#7 DONE 0.1s

#8 [2/4] WORKDIR /app
#8 CACHED

#9 [3/4] COPY . .
#9 DONE 0.1s

#10 [4/4] RUN yarn install --production
#10 0.720 yarn install v1.22.19
#10 0.817 [1/4] Resolving packages...
#10 1.037 [2/4] Fetching packages...
#10 11.50 [3/4] Linking dependencies...
#10 12.74 [4/4] Building fresh packages...

```

## Built updated image

```

erono@LAPTOP-9C7IEFAG MINGW64 ~/getting-started-app (main)
$ docker stop stoic_rubin
stoic_rubin

erono@LAPTOP-9C7IEFAG MINGW64 ~/getting-started-app (main)
$ docker rm stoic_rubin
stoic_rubin

erono@LAPTOP-9C7IEFAG MINGW64 ~/getting-started-app (main)
$ docker ps

```

CONTAINER ID	IMAGE	COMMAND	CREATED	STATUS	PORTS	NAMES
31d7d5733589	docker/welcome-to-docker:latest	"/docker-entrypoint..."	41 minutes ago	Up 41 minutes	0.0.0.0:8088->80/tcp	welcome-to-docker

## Successfully stopped old container

You have no todo items yet! Add one above!

## Updated message

```

erono@LAPTOP-9C7IEFAG MINGW64 ~/getting-started-app (main)
$ export DOCKER_PASSWORD="to1u12345"

erono@LAPTOP-9C7IEFAG MINGW64 ~/getting-started-app (main)
$ echo ${#DOCKER_PASSWORD}
9

erono@LAPTOP-9C7IEFAG MINGW64 ~/getting-started-app (main)
$ echo $DOCKER_PASSWORD | docker login -u $DOCKER_USERNAME --password-stdin
Login Succeeded

erono@LAPTOP-9C7IEFAG MINGW64 ~/getting-started-app (main)
$ ^C

erono@LAPTOP-9C7IEFAG MINGW64 ~/getting-started-app (main)
$ docker tag getting-started toluibiwoye/getting-started

erono@LAPTOP-9C7IEFAG MINGW64 ~/getting-started-app (main)
$ docker push toluibiwoye/getting-started
Using default tag: latest
The push refers to repository [docker.io/toluibiwoye/getting-started]
5fdb75a6e31c: Preparing
ff372c09ada2: Preparing
0354304267d6: Preparing
3fecce352908: Preparing
1da03ac21ec8: Preparing
926b35a05f1d: Preparing
d4fc045c9e3a: Preparing
926b35a05f1d: Waiting
d4fc045c9e3a: Waiting
1da03ac21ec8: Mounted from library/node
3fecce352908: Mounted from library/node
926b35a05f1d: Mounted from library/node
0354304267d6: Pushed
d4fc045c9e3a: Mounted from library/node

```

Pushed tagged image to docker hub

03:54:48

CLOSE SESSION

Instances

+ ADD NEW INSTANCE

192.168.0.13  
model

GIVE FEEDBACK

cp6elloL\_cp6elq8l2o9000dcgjs0

IP  
192.168.0.13

OPEN PORT

Memory

CPU

SSH  
ssh ip172-18-0-49-cp6elloL2o9000dcgjs0@direct.labs.play-w

DELETE

EDITOR

```

=====
WARNING!!!!
This is a sandbox environment. Using personal credentials
is HIGHLY discouraged. Any consequences of doing so are
completely the user's responsibility.
=====
The FWD team.
=====
[local] (local) root@192.168.0.13 ~

```

```

erono@LAPTOP-9C7IEFAG MINGW64 ~/getting-started-app (main)
$ docker ps
CONTAINER ID   IMAGE          COMMAND                  CREATED    STATUS    PORTS    NAMES
b68b252e2798   getting-started  "docker-entrypoint.s..."  52 minutes ago  Up 52 minutes  127.0.0.1:3000->3000/tcp  jolly_mcnulty
31d7d5733589   docker/welcome-to-docker:latest  "/docker-entrypoint..."  2 hours ago  Up 2 hours  0.0.0.0:8088->80/tcp  welcome-to-docker

erono@LAPTOP-9C7IEFAG MINGW64 ~/getting-started-app (main)
$ ^C

erono@LAPTOP-9C7IEFAG MINGW64 ~/getting-started-app (main)
$ docker stop jolly_mcnulty
jolly_mcnulty

erono@LAPTOP-9C7IEFAG MINGW64 ~/getting-started-app (main)
$ docker rm jolly_mcnulty
jolly_mcnulty

erono@LAPTOP-9C7IEFAG MINGW64 ~/getting-started-app (main)
$ docker run -d -p 3000:3000 toluibiwoye/getting-started
25464a5da4353a9dd9ec66b88f1cf89e80ea863f1dc0508797abcb76257d778e

erono@LAPTOP-9C7IEFAG MINGW64 ~/getting-started-app (main)
$ docker ps
CONTAINER ID   IMAGE          COMMAND                  CREATED    STATUS    PORTS    NAMES
25464a5da435   toluibiwoye/getting-started  "docker-entrypoint.s..."  7 seconds ago  Up 6 seconds  0.0.0.0:3000->3000/tcp  eloquent_sinoussi
31d7d5733589   docker/welcome-to-docker:latest  "/docker-entrypoint..."  2 hours ago  Up 2 hours  0.0.0.0:8088->80/tcp  welcome-to-docker

erono@LAPTOP-9C7IEFAG MINGW64 ~/getting-started-app (main)

```

Running the new container

```
erono@LAPTOP-9C7IEFAG MINGW64 ~/getting-started-app (main)
$ winpty docker run -ti --name=mytest alpine
Unable to find image 'alpine:latest' locally
latest: Pulling from library/alpine
4abcf2066143: Already exists
Digest: sha256:c5b1261d6d3e43071626931fc004f70149baeba2c8ec672bd4f27761f8e1ad6b
Status: Downloaded newer image for alpine:latest
/ # echo "hello" > greeting.txt
/ # exit
```

```
erono@LAPTOP-9C7IEFAG MINGW64 ~/getting-started-app (main)
$ winpty docker run -ti --name=mytest alpine
Unable to find image 'alpine:latest' locally
latest: Pulling from library/alpine
4abcf2066143: Already exists
Digest: sha256:c5b1261d6d3e43071626931fc004f70149baeba2c8ec672bd4f27761f8e1ad6b
Status: Downloaded newer image for alpine:latest
/ # echo "hello" > greeting.txt
/ # exit

erono@LAPTOP-9C7IEFAG MINGW64 ~/getting-started-app (main)
$ docker run alpine cat greeting.txt
cat: can't open 'greeting.txt': No such file or directory

erono@LAPTOP-9C7IEFAG MINGW64 ~/getting-started-app (main)
$ AC

erono@LAPTOP-9C7IEFAG MINGW64 ~/getting-started-app (main)
$ AC

erono@LAPTOP-9C7IEFAG MINGW64 ~/getting-started-app (main)
$ docker ps --all
CONTAINER ID        IMAGE               COMMAND             CREATED             STATUS              PORTS              NAMES
e046fc467402       alpine             "cat greeting.txt"  About a minute ago  Exited (1) About a minute ago                elastic_pike
8bab0013cf6a       alpine             "/bin/sh"           2 minutes ago      Exited (0) About a minute ago                mytest
25464a5da435       toluibiwoye/getting-started "docker-entrypoint.s..." 5 minutes ago      Up 5 minutes        0.0.0.0:3000->3000/tcp eloquent_sinoussi
6959428c49d6       toluibiwoye/getting-started "docker-entrypoint.s..." 8 minutes ago      Created
c7dc8782aa1d       toluibiwoye/getting-started "docker-entrypoint.s..." 9 minutes ago      Created
ce54a82eba90       toluibiwoye/getting-started "docker-entrypoint.s..." 11 minutes ago     Created
a4c5c818e7bb       getting-started     "docker-entrypoint.s..." About an hour ago   Created
31d7d5733589       docker/welcome-to-docker:latest "/docker-entrypoint..." 2 hours ago        Up 2 hours          0.0.0.0:8088->80/tcp welcome-to-docker
```

```
erono@LAPTOP-9C7IEFAG MINGW64 ~/getting-started-app (main)
$ docker rm -f $(docker ps --all -q)
e046fc467402
8bab0013cf6a
25464a5da435
6959428c49d6
c7dc8782aa1d
ce54a82eba90
a4c5c818e7bb
31d7d5733589
```

```
erono@LAPTOP-9C7IEFAG MINGW64 ~/getting-started-app (main)
$ docker ps --all
CONTAINER ID    IMAGE    COMMAND    CREATED    STATUS    PORTS    NAMES

erono@LAPTOP-9C7IEFAG MINGW64 ~/getting-started-app (main)
```

Removed all containers

```
erono@LAPTOP-9C7IEFAG MINGW64 ~/getting-started-app (main)
$ docker volume create todo-db
todo-db
```

```
erono@LAPTOP-9C7IEFAG MINGW64 ~/getting-started-app (main)
$ docker run -dp 127.0.0.1:3000:3000 -v todo-db:/etc/todos getting-started
ef79966d207899941e5212d75fa23f4334f11f60ecb9f5fec04eb3019728fc4d
```

Started to do app container



☐ okay

☐ lets

☐ goooooo

Added to the to do list

```

erono@LAPTOP-9C7IEFAG MINGW64 ~/getting-started-app (main)
$ docker ps
CONTAINER ID   IMAGE     COMMAND                  CREATED        STATUS        PORTS                    NAMES
ef79966d2078   getting-started   "docker-entrypoint.s..."  5 minutes ago   Up 5 minutes   127.0.0.1:3000->3000/tcp   tender_morse

erono@LAPTOP-9C7IEFAG MINGW64 ~/getting-started-app (main)
$ docker stop <ef79966d2078>
bash: syntax error near unexpected token `newline'

erono@LAPTOP-9C7IEFAG MINGW64 ~/getting-started-app (main)
$ ^C

erono@LAPTOP-9C7IEFAG MINGW64 ~/getting-started-app (main)
$ docker stop ef79966d2078
ef79966d2078

erono@LAPTOP-9C7IEFAG MINGW64 ~/getting-started-app (main)
$ docker rm ef79966d2078
ef79966d2078

erono@LAPTOP-9C7IEFAG MINGW64 ~/getting-started-app (main)
$ docker run -dp 127.0.0.1:3000:3000 -v todo-db:/etc/todos getting-started
98228f7d742bccbc226779ae76617049456caa8d898c3798a351828d12728ece








erono@LAPTOP-9C7IEFAG MINGW64 ~/getting-started-app (main)
$ docker ps
CONTAINER ID   IMAGE     COMMAND                  CREATED        STATUS        PORTS                    NAMES
98228f7d742b   getting-started   "docker-entrypoint.s..."  11 seconds ago   Up 10 seconds   127.0.0.1:3000->3000/tcp   wonderful_chatelet
  
```

Persisting data, stopped and removed the old container to start a new one

```

root@ff1efd7a54a1:/# pwd
/
root@ff1efd7a54a1:/# ls
bin boot dev etc home lib lib64 media mnt opt proc root run sbin src srv sys temp usr var
root@ff1efd7a54a1:/# cd src
root@ff1efd7a54a1:/src# ls
Dockerfile README.md package.json spec src yarn.lock
root@ff1efd7a54a1:/src# touch myfile.txt
root@ff1efd7a54a1:/src# ls
Dockerfile README.md myfile.txt package.json spec src yarn.lock
root@ff1efd7a54a1:/src#
  
```

Created new file myfile.txt

Name	Date modified	Type	Size
 spec	21/05/2024 18:22	File folder	
 src	21/05/2024 18:22	File folder	
 Dockerfile	21/05/2024 18:33	File	1 KB
 package	21/05/2024 18:22	JSON Source File	1 KB
 README	21/05/2024 18:22	Markdown Source ...	1 KB
 yarn.lock	21/05/2024 18:22	LOCK File	148 KB
 myfile	21/05/2024 20:14	Text Document	0 KB

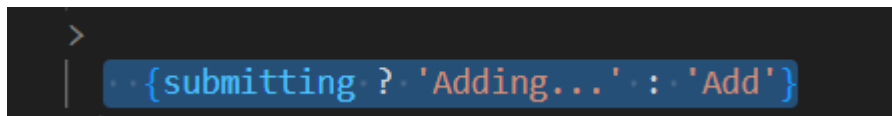
In directory and has now been deleted.

```
root@ff1efd7a54a1:/src# ls
Dockerfile README.md myfile.txt package.json spec src yarn.lock
root@ff1efd7a54a1:/src# ls
Dockerfile README.md package.json spec src yarn.lock
root@ff1efd7a54a1:/src# |
```

```
C:\Users\erono>cd C:\Users\erono\getting-started-app
C:\Users\erono\getting-started-app>docker run -dp 127.0.0.1:3000:3000 -w /app --mount type=bind,src="C:\Users\erono\getting-started-app",target=/app node:18
-alpine sh -c "apk add --no-cache yarn && yarn install && yarn run dev"
78579ab02379293451148686f1f3000948850c1363a931c7ae31461f909b8bba
C:\Users\erono\getting-started-app>docker ps
CONTAINER ID   IMAGE          COMMAND                  CREATED        STATUS        PORTS                               NAMES
78579ab02379   node:18-alpine "docker-entrypoint.s..." 15 seconds ago Up 12 seconds 127.0.0.1:3000->3000/tcp          relaxed_mcclintock
```

```
operable program or batch file.
C:\Users\erono\getting-started-app> docker logs -f 78579ab02379
fetch https://dl-cdn.alpinelinux.org/alpine/v3.19/main/x86_64/APKINDEX.tar.gz
fetch https://dl-cdn.alpinelinux.org/alpine/v3.19/community/x86_64/APKINDEX.tar.gz
(1/10) Installing ca-certificates (20240226-r0)
(2/10) Installing ada-libc (2.7.4-r0)
(3/10) Installing libbase64 (0.5.0-r0)
(4/10) Installing brotli-libs (1.1.0-r1)
(5/10) Installing c-ares (1.27.0-r0)
(6/10) Installing icu-data-en (74.1-r0)
Executing icu-data-en-74.1-r0.post-install
*
* If you need ICU with non-English locales and legacy charset support, install
* package icu-data-full.
*
(7/10) Installing icu-libs (74.1-r0)
(8/10) Installing nghttp2-libs (1.58.0-r0)
(9/10) Installing nodejs (20.12.1-r0)
(10/10) Installing yarn (1.22.19-r0)
Executing busybox-1.36.1-r15.trigger
Executing ca-certificates-20240226-r0.trigger
OK: 66 MiB in 27 packages
yarn install v1.22.19
[1/4] Resolving packages...
[2/4] Fetching packages...
[3/4] Linking dependencies...
[4/4] Building fresh packages...
Done in 96.58s.
yarn run v1.22.19
$ nodemon -L src/index.js
[nodemon] 2.0.20
[nodemon] to restart at any time, enter `rs`
[nodemon] watching path(s): *.*
[nodemon] watching extensions: js,mjs,json
[nodemon] starting `node src/index.js`
Using sqlite database at /etc/todos/todo.db
Listening on port 3000
```

Running app in a development container



Make changes to the code

Add Item

You have no todo items yet! Add one above!

Old

Add

You have no todo items yet! Add one above!

Changed from add item to add

```
Learn more at https://docs.docker.com/go/develop/

C:\Users\erono\getting-started-app>docker run -d --network todo-app --network-alias mysql -v todo-mysql-data:/var/lib/mysql -e MYSQL_ROOT_PASSWORD=secret -e
MYSQL_DATABASE=todos mysql:8.0
Unable to find image 'mysql:8.0' locally
8.0: Pulling from library/mysql
fcbdc4090331: Pull complete
a845363d0003: Pull complete
e8058c6f9bdd: Pull complete
2ec357e5ab0c: Pull complete
5afc31382f34: Pull complete
7e6fb392497b: Pull complete
9287ae8ee890: Pull complete
faa49449b97e: Pull complete
ddd0836d7ff3: Pull complete
c25cb9740165: Pull complete
8d992d069e2b: Pull complete
Digest: sha256:aba83ec239df64820f61f0436b30c17922cf3cc183878ad4e479950bbdd448e
Status: Downloaded newer image for mysql:8.0
63c8cccbcd6e58083097fb21c4ed98e1c43ec3587b9547999fa8f0afa2b98f93

C:\Users\erono\getting-started-app>docker ps
CONTAINER ID   IMAGE          COMMAND                  CREATED        STATUS        PORTS                               NAMES
63c8cccbcd6e   mysql:8.0     "docker-entrypoint.s..." 2 minutes ago  Up 2 minutes  3306/tcp, 33060/tcp               relaxed_antonnelli
987dfff58a91b   node:18-alpine "docker-entrypoint.s..." 7 minutes ago  Up 7 minutes  127.0.0.1:3000->3000/tcp          hopeful_spence

C:\Users\erono\getting-started-app>docker exec -it 63c8cccbcd6e mysql -u root -p
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 8
Server version: 8.0.37 MySQL Community Server - GPL

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owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql>
```

Started a mysql container

```
mysql> SHOW DATABASES;
+-----+
| Database |
+-----+
| information_schema |
| mysql |
| performance_schema |
| sys |
| todos |
+-----+
5 rows in set (0.18 sec)

mysql> exit
Bye
```

Mysql databases

```
C:\Users\erono\getting-started-app>docker run -it --network todo-app nicolaka/netshoot
Unable to find image 'nicolaka/netshoot:latest' locally
latest: Pulling from nicolaka/netshoot
4abcf2066143: Already exists
f72249ed6705: Pull complete
d21093198226: Pull complete
ff793c57efef: Pull complete
b8cdfec6d24e: Pull complete
b6621d484422: Pull complete
452eb7889eb5: Pull complete
4f4fb700ef54: Pull complete
89065cf5c037: Pull complete
a4b421d4901a: Pull complete
d5c3ad7ea15a: Pull complete
ab073295bbd0: Pull complete
737c1bf9f2ef: Pull complete
097ac21093f8: Pull complete
59e353e0ee74: Pull complete
Digest: sha256:a20c2531bf35436ed3766cd6cfe89d352b050ccc4d7005ce6400adf97503da1b
Status: Downloaded newer image for nicolaka/netshoot:latest
      dP      dP      dP
      88      88      88
88d888b. .d8888b. d8888P .d8888b. 88d888b. .d8888b. .d8888b. d8888P
88' `88 88oooo8 88 Y8oooo. 88' `88 88' `88 88' `88 88
88 88 88. ... 88 88 88 88 88. .88 88. .88 88
dP dP `88888P' dP `88888P' dP dP `88888P' `88888P' dP

Welcome to Netshoot! (github.com/nicolaka/netshoot)
Version: 0.13
```

Loaded nikola netshoot container

```
98216e81c622 ~ dig mysql
```

```
; <> DiG 9.18.25 <> mysql
;; global options: +cmd
;; Got answer:
;; ->>HEADER<- opcode: QUERY, status: NOERROR, id: 64382
;; flags: qr rd ra; QUERY: 1, ANSWER: 1, AUTHORITY: 0, ADDITIONAL: 0

;; QUESTION SECTION:
;mysql.                IN      A

;; ANSWER SECTION:
mysql.                  600     IN      A      172.18.0.3

;; Query time: 30 msec
;; SERVER: 127.0.0.11#53(127.0.0.11) (UDP)
;; WHEN: Tue May 21 20:49:55 UTC 2024
;; MSG SIZE rcvd: 44
```

Digging a command

```
PS C:\Users\erono\getting-started-app> docker run -dp 127.0.0.1:3000:3000 `
>>     -w /app -v "$(pwd):/app" `
>>     --network todo-app `
>>     -e MYSQL_HOST=mysql `
>>     -e MYSQL_USER=root `
>>     -e MYSQL_PASSWORD=secret `
>>     -e MYSQL_DB=todos `
>>     node:18-alpine `
>>     sh -c "yarn install && yarn run dev"
84a9eee4501b8adb76bcc2a4e8eeb6e1909a20be444dc03e8c6bc72c4bd018d5
PS C:\Users\erono\getting-started-app> docker logs -f 84a9eee4501b
yarn install v1.22.19
[1/4] Resolving packages...
success Already up-to-date.
Done in 1.23s.
yarn run v1.22.19
$ nodemon -L src/index.js
[nodemon] 2.0.20
[nodemon] to restart at any time, enter `rs`
[nodemon] watching path(s): *.*
[nodemon] watching extensions: js,mjs,json
[nodemon] starting `node src/index.js`
Waiting for mysql:3306.
Connected!
Connected to mysql db at host mysql
Listening on port 3000
```

Checked container logs

```
PS C:\Users\erono\getting-started-app> docker ps
CONTAINER ID   IMAGE          COMMAND                  CREATED        STATUS        PORTS                    NAMES
84a9eee4501b   node:18-alpine "docker-entrypoint.s..." 4 minutes ago  Up 3 minutes  127.0.0.1:3000->3000/tcp  peaceful_shirley
98216e81c622   nicolaka/netshoot "zsh"                 16 hours ago  Up 16 hours    3306/tcp, 33060/tcp      mystifying_zhukovsky
63c8cccbcd6e   mysql:8.0     "docker-entrypoint.s..." 16 hours ago  Up 16 hours    3306/tcp, 33060/tcp      relaxed_antonelli
PS C:\Users\erono\getting-started-app> docker exec -it 63c8cccbcd6e mysql -u root -p
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 11
Server version: 8.0.37 MySQL Community Server - GPL

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affiliates. Other names may be trademarks of their respective
owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> USE todos;
Reading table information for completion of table and column names
You can turn off this feature to get a quicker startup with -A

Database changed
mysql> SELECT * FROM todo_items;
+-----+-----+-----+
| id          | name          | completed |
+-----+-----+-----+
| c9da3729-11f1-49a2-ac87-4863180f0a79 | okay          | 0         |
| fc77dc6d-1ee9-49a4-887b-795e8b5dec31 | lets go       | 0         |
+-----+-----+-----+
2 rows in set (0.00 sec)

mysql> |
```

Checked to dos database using mysql

```
Welcome  {} package.json  Dockerfile U  JS app.js M  ! composed.yaml U X  Welcor
composed.yaml
1  services:
2    app:
3      image: node:18-alpine
4      command: sh -c "yarn install && yarn run dev"
5      ports:
6        - 127.0.0.1:3000:3000
7      working_dir: /app
8      volumes:
9        - ./:/app
10     environment:
11       MYSQL_HOST: mysql
12       MYSQL_USER: root
13       MYSQL_PASSWORD: secret
14       MYSQL_DB: todos
15
16     mysql:
17       image: mysql:8.0
18       volumes:
19         - todo-mysql-data:/var/lib/mysql
20       environment:
21         MYSQL_ROOT_PASSWORD: secret
22         MYSQL_DATABASE: todos
23
24     volumes:
25       todo-mysql-data:
26
```

Created compose.yaml file

```

PS C:\Users\erono\getting-started-app> docker compose up -d
[*] Running 4/4
  ✓Network getting-started-app_default Created 0.1s
  ✓Volume "getting-started-app_todo-mysql-data" Created 0.0s
  ✓Container getting-started-app-app-1 Started 1.5s
  ✓Container getting-started-app-mysql-1 Started 1.5s
PS C:\Users\erono\getting-started-app> docker compose logs -f
app-1 | yarn install v1.22.19
app-1 | [1/4] Resolving packages...
app-1 | success Already up-to-date.
app-1 | Done in 0.72s.
app-1 | yarn run v1.22.19
app-1 | $ nodemon -L src/index.js
app-1 | [nodemon] 2.0.20
app-1 | [nodemon] to restart at any time, enter `rs`
app-1 | [nodemon] watching path(s): *.*
app-1 | [nodemon] watching extensions: js,mjs,json
app-1 | [nodemon] starting 'node src/index.js'
app-1 | Waiting for mysql:3306.....
app-1 | Connected!
app-1 | Connected to mysql db at host mysql
app-1 | Listening on port 3000
mysql-1 | 2024-05-22 12:57:00+00:00 [Note] [Entrypoint]: Entrypoint script for MySQL Server 8.0.37-1.el9 started.
mysql-1 | 2024-05-22 12:57:01+00:00 [Note] [Entrypoint]: Switching to dedicated user 'mysql'
mysql-1 | 2024-05-22 12:57:01+00:00 [Note] [Entrypoint]: Entrypoint script for MySQL Server 8.0.37-1.el9 started.
mysql-1 | 2024-05-22 12:57:01+00:00 [Note] [Entrypoint]: Initializing database files
mysql-1 | 2024-05-22T12:57:01.613297Z 0 [Warning] [MY-011068] [Server] The syntax '--skip-host-cache' is deprecated and will be removed in a future release
mysql-1 | . Please use SET GLOBAL host_cache_size=0 instead.
mysql-1 | 2024-05-22T12:57:01.615512Z 0 [System] [MY-013169] [Server] /usr/sbin/mysqld (mysqld 8.0.37) initializing of server in progress as process 80
mysql-1 | 2024-05-22T12:57:01.658022Z 1 [System] [MY-013576] [InnoDB] InnoDB initialization has started.
mysql-1 | 2024-05-22T12:57:02.928892Z 1 [System] [MY-013577] [InnoDB] InnoDB initialization has ended.
mysql-1 | 2024-05-22T12:57:05.609767Z 6 [Warning] [MY-010453] [Server] root@localhost is created with an empty password ! Please consider switching off the
mysql-1 | --initialize-insecure option.
mysql-1 | 2024-05-22 12:57:09+00:00 [Note] [Entrypoint]: Database files initialized
mysql-1 | 2024-05-22 12:57:09+00:00 [Note] [Entrypoint]: Starting temporary server
mysql-1 | 2024-05-22T12:57:10.064767Z 0 [Warning] [MY-011068] [Server] The syntax '--skip-host-cache' is deprecated and will be removed in a future release
mysql-1 | . Please use SET GLOBAL host_cache_size=0 instead.
mysql-1 | 2024-05-22T12:57:10.066933Z 0 [System] [MY-010116] [Server] /usr/sbin/mysqld (mysqld 8.0.37) starting as process 124
mysql-1 | 2024-05-22T12:57:10.087718Z 1 [System] [MY-013576] [InnoDB] InnoDB initialization has started.
mysql-1 | 2024-05-22T12:57:10.321443Z 1 [System] [MY-013577] [InnoDB] InnoDB initialization has ended.
mysql-1 | 2024-05-22T12:57:10.676882Z 0 [Warning] [MY-010068] [Server] CA certificate ca.pem is self signed.

```

started application stack using docker compose and then I checked the logs

```

canceled
PS C:\Users\erono\getting-started-app> docker ps
CONTAINER ID   IMAGE      COMMAND                  CREATED        STATUS        PORTS                               NAMES
8dd84f27f825   node:18-alpine "docker-entrypoint.s..." 2 minutes ago Up 2 minutes   127.0.0.1:3000->3000/tcp   getting-started-app-app-1
4f2aa3535456   mysql:8.0   "docker-entrypoint.s..." 2 minutes ago Up 2 minutes   3306/tcp, 33060/tcp       getting-started-app-mysql-1
PS C:\Users\erono\getting-started-app> docker exec -it 4f2aa3535456 mysql -u root -p
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 10
Server version: 8.0.37 MySQL Community Server - GPL

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affiliates. Other names may be trademarks of their respective
owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> USE todos;
Reading table information for completion of table and column names
You can turn off this feature to get a quicker startup with -A

Database changed
mysql> SHOW TABLES;
+-----+
| Tables_in_todos |
+-----+
| todo_items      |
+-----+
1 row in set (0.00 sec)

mysql> SELECT * FROM todo_items;
+-----+-----+-----+
| id          | name          | completed |
+-----+-----+-----+
| 68cfa6c6-2da5-4d94-91dd-02456ae0febe | docker compose | 0         |
| 13e11ale-4958-4bde-b0b7-755d03e6c371 | is done       | 0         |
+-----+-----+-----+
2 rows in set (0.00 sec)

```

Checked todos

```
PS C:\Users\erono> cd C:\Users\erono\getting-started-app
PS C:\Users\erono\getting-started-app> docker compose down
[+] Running 3/3
  ✓ Container getting-started-app-mysql-1    Removed
  ✓ Container getting-started-app-app-1      Removed
  ✓ Network getting-started-app_default      Removed
PS C:\Users\erono\getting-started-app> |
```

Tore down application stack