DevOps with Docker part 1

Exercise 1: Getting start

I used the command "docker pull nginx" to download the image, then ran the following "docker run -d nginx" command three time to get three different containers . The command "docker ps" was used to the running containers. The first two containers were stopped and the list of the containers was printed.

Exercise 1.2: Cleanup

```
(base) abdoulaye@kone-thinkpad-t450s:~$ docker ps -a
CONTAINER ID   IMAGE     COMMAND              CREATED            STATUS                     PORTS      NAMES
6f87a15eaee3   nginx     "/docker-entrypoint.…"   About a minute ago   Exited (0) 10 seconds ago              wonderful_tu
8aaca1ef53a8   nginx     "/docker-entrypoint.…"   About a minute ago   Exited (0) 10 seconds ago              gracious_faraday
851cfd8d4fb8   nginx     "/docker-entrypoint.…"   About a minute ago   Up About a minute          80/tcp     recursing_booth
(base) abdoulaye@kone-thinkpad-t450s:~$ docker stop 85
85
(base) abdoulaye@kone-thinkpad-t450s:~$ docker ps -a
CONTAINER ID   IMAGE     COMMAND              CREATED            STATUS                     PORTS      NAMES
6f87a15eaee3   nginx     "/docker-entrypoint.…"   4 minutes ago      Exited (0) 3 minutes ago               wonderful_tu
8aaca1ef53a8   nginx     "/docker-entrypoint.…"   4 minutes ago      Exited (0) 3 minutes ago               gracious_faraday
851cfd8d4fb8   nginx     "/docker-entrypoint.…"   4 minutes ago      Exited (0) 3 seconds ago               recursing_booth
(base) abdoulaye@kone-thinkpad-t450s:~$ docker system prune
WARNING! This will remove:
  - all stopped containers
  - all networks not used by at least one container
  - all dangling images
  - all dangling build cache

Are you sure you want to continue? [y/N] y
Deleted Containers:
6f87a15eaee3558246c7697a81b3fdc7919e861b7970487bf36ca35f8d543f9f
8aaca1ef53a8fe30dc011bf549b0d9548c64d7ef50b48b6b43754e83024a14ae
851cfd8d4fb8da731526f75be907cee23315e990c1bab950c3b1689a13829562

Total reclaimed space: 3.279kB
(base) abdoulaye@kone-thinkpad-t450s:~$ docker ps -a
CONTAINER ID   IMAGE     COMMAND    CREATED    STATUS     PORTS      NAMES
(base) abdoulaye@kone-thinkpad-t450s:~$ docker images
REPOSITORY      TAG        IMAGE ID       CREATED       SIZE
nginx           latest     4f380adfc10f   3 days ago    133MB
(base) abdoulaye@kone-thinkpad-t450s:~$ docker rmi nginx:latest
Untagged: nginx:latest
Untagged: nginx@sha256:47ae43cdfc7064d28800bc42e79a429540c7c80168e8c8952778c0d5af1c09db
Deleted: sha256:4f380adfc10f4cd34f775ae57a17d2835385efd5251d6dfe0f246b0018fb0399
Deleted: sha256:2855bbcefcf95050e64049447e99e77efa2bff32374e586982d69be4612467ce
Deleted: sha256:bad169ad8b30eab551acbb8cd8fbdcd824528189e3dd0cc52dd88a37bbf121cd
Deleted: sha256:36d83ebf5fec7ae1be4c431f0945f2dbe6828ecdc936c604daa48f17c0b50ed7
Deleted: sha256:b4c9a251dc81d52dd1cca9b4c69ca9e4db602a9a7974019f212846577f739699
Deleted: sha256:038ca5b801cea48e9f40f6ffb4cda61a2fe0b6b0f378a7434a0d39d2575a4082
Deleted: sha256:764055ebc9a7a290b64d17cf9ea550f1099c202d83795aa967428ebdf335c9f7
(base) abdoulaye@kone-thinkpad-t450s:~$ docker ps -a
CONTAINER ID   IMAGE     COMMAND    CREATED    STATUS     PORTS      NAMES
(base) abdoulaye@kone-thinkpad-t450s:~$ docker images
REPOSITORY      TAG        IMAGE ID    CREATED    SIZE
(base) abdoulaye@kone-thinkpad-t450s:~$
```

Exercise 1.3: Secret message

```
File  Edit  View  Search  Terminal  Help
(base) abdoulaye@kone-thinkpad-t450s:~$ docker run -d devopsdockeruh/simple-web-service:ubuntu
Unable to find image 'devopsdockeruh/simple-web-service:ubuntu' locally
ubuntu: Pulling from devopsdockeruh/simple-web-service
5d3b2c2d21bb: Pull complete
3fc2062ea667: Pull complete
75adf526d75b: Pull complete
965d4bbb586a: Pull complete
4f4fb700ef54: Pull complete
Digest: sha256:d44e1dce398732e18c7c2bad9416a072f719af33498302b02929d4c112e88d2a
Status: Downloaded newer image for devopsdockeruh/simple-web-service:ubuntu
0ce5d32ddb81cf2169f82646d80a1b215bfc93baccad577db12419ea70cc466d
(base) abdoulaye@kone-thinkpad-t450s:~$ docker ps
CONTAINER ID   IMAGE                                     COMMAND               CREATED         STATUS          PORTS      NAMES
0ce5d32ddb81   devopsdockeruh/simple-web-service:ubuntu  "/usr/src/app/server"   11 seconds ago   Up 10 seconds              busy_bassi
(base) abdoulaye@kone-thinkpad-t450s:~$ docker exec -it busy_bassi bash
root@0ce5d32ddb81:/usr/src/app# tail -f ./text.log
2021-06-26 22:46:56 +0000 UTC
2021-06-26 22:46:58 +0000 UTC
Secret message is: 'You can find the source code here: https://github.com/docker-hy'
2021-06-26 22:47:00 +0000 UTC
2021-06-26 22:47:02 +0000 UTC
2021-06-26 22:47:04 +0000 UTC
2021-06-26 22:47:06 +0000 UTC
2021-06-26 22:47:08 +0000 UTC
Secret message is: 'You can find the source code here: https://github.com/docker-hy'
2021-06-26 22:47:10 +0000 UTC
2021-06-26 22:47:12 +0000 UTC
2021-06-26 22:47:14 +0000 UTC
2021-06-26 22:47:16 +0000 UTC
2021-06-26 22:47:18 +0000 UTC
Secret message is: 'You can find the source code here: https://github.com/docker-hy'
2021-06-26 22:47:20 +0000 UTC
2021-06-26 22:47:22 +0000 UTC
2021-06-26 22:47:24 +0000 UTC
^C
root@0ce5d32ddb81:/usr/src/app# exit
exit
(base) abdoulaye@kone-thinkpad-t450s:~$
```

The secret message is: "You can find the source code here: https://github.com/docker-hy"

Exercise 4: Missing dependencies

The command is : **docker run --rm -it --name looper ubuntu:18.04 sh -c 'apt-get update; apt-get install curl; echo "Input website:"; read website; echo "Searching.."; sleep 1; curl http://$website;'**

Exercise 5: Sizes of images

Pull both images and compare the image sizes.

"devopsdockeruh/simple-web-service:ubuntu" image (83MB) is bigger than
"devopsdockeruh/simple-web-service:alpine" image (15.7MB).

```
File  Edit  View  Search  Terminal  Help
(base) abdoulaye@kone-thinkpad-t450s:~$ docker pull devopsdockeruh/simple-web-service:ubuntu
ubuntu: Pulling from devopsdockeruh/simple-web-service
5d3b2c2d21bb: Pull complete
3fc2062ea667: Pull complete
75adf526d75b: Pull complete
965d4bbb586a: Pull complete
4f4fb700ef54: Pull complete
Digest: sha256:d44e1dce398732e18c7c2bad9416a072f719af33498302b02929d4c112e88d2a
Status: Downloaded newer image for devopsdockeruh/simple-web-service:ubuntu
docker.io/devopsdockeruh/simple-web-service:ubuntu
(base) abdoulaye@kone-thinkpad-t450s:~$ docker pull devopsdockeruh/simple-web-service:alpine
alpine: Pulling from devopsdockeruh/simple-web-service
ba3557a56b15: Pull complete
1dace236434b: Pull complete
4f4fb700ef54: Pull complete
Digest: sha256:dd4d367476f86b7d7579d3379fe446ae5dfce25480903fb0966fc2e5257e0543
Status: Downloaded newer image for devopsdockeruh/simple-web-service:alpine
docker.io/devopsdockeruh/simple-web-service:alpine
(base) abdoulaye@kone-thinkpad-t450s:~$ docker images
REPOSITORY                            TAG       IMAGE ID       CREATED        SIZE
ubuntu                                18.04     7d0d8fa37224   10 days ago    63.1MB
devopsdockeruh/simple-web-service     ubuntu    4e3362e907d5   3 months ago   83MB
devopsdockeruh/simple-web-service     alpine    fd312adc88e0   3 months ago   15.7MB
(base) abdoulaye@kone-thinkpad-t450s:~$
```

Go inside the alpine container and make sure the secret message functionality is the same.

```
File  Edit  View  Search  Terminal  Help
(base) abdoulaye@kone-thinkpad-t450s:~$ docker run -d devopsdockeruh/simple-web-service:alpine
60be5b10a53b581ae416daf1263708242ff8094ca1b312a2f48ad47ad46a12d9
(base) abdoulaye@kone-thinkpad-t450s:~$ docker ps
CONTAINER ID   IMAGE                                        COMMAND               CREATED         STATUS          PORTS     NAMES
60be5b10a53b   devopsdockeruh/simple-web-service:alpine     "/usr/src/app/server" 13 seconds ago  Up 12 seconds             reverent_joliot
(base) abdoulaye@kone-thinkpad-t450s:~$ docker exec -it reverent_joliot sh
/usr/src/app # ls -a
.         ..          server     text.log
/usr/src/app # tail -f ./text.log
Secret message is: 'You can find the source code here: https://github.com/docker-hy'
2021-06-28 22:51:27 +0000 UTC
2021-06-28 22:51:29 +0000 UTC
2021-06-28 22:51:31 +0000 UTC
2021-06-28 22:51:33 +0000 UTC
2021-06-28 22:51:35 +0000 UTC
Secret message is: 'You can find the source code here: https://github.com/docker-hy'
2021-06-28 22:51:37 +0000 UTC
2021-06-28 22:51:39 +0000 UTC
2021-06-28 22:51:41 +0000 UTC
2021-06-28 22:51:43 +0000 UTC
^C
/usr/src/app # exit
(base) abdoulaye@kone-thinkpad-t450s:~$
```

According to the figure above the secret message is the same.

Exercise 6: Hello Docker Hub

Input that will get the application to answer a "secret message" is "basics"

```
File  Edit  View  Search  Terminal  Tabs  Help
                                    abdoulaye@kone-thinkpad-t450s: ~
FROM node:alpine
This is the readme, use input "basics" to complete this exercise.
```

The secret message is: "This is the secret message"

```
File  Edit  View  Search  Terminal  Tabs  Help
                           abdoulaye@kone-thinkpad-t450s: ~                           ×
(base) abdoulaye@kone-thinkpad-t450s:~$ docker run -it devopsdockeruh/pull_exercise
Unable to find image 'devopsdockeruh/pull_exercise:latest' locally
latest: Pulling from devopsdockeruh/pull_exercise
8e402f1a9c57: Pull complete
5e2195587d10: Pull complete
6f595b2fc66d: Pull complete
165f32bf4e94: Pull complete
67c4f504c224: Pull complete
Digest: sha256:7c0635934049afb9ca0481fb6a58b16100f990a0d62c8665b9cfb5c9ada8a99f
Status: Downloaded newer image for devopsdockeruh/pull_exercise:latest
Give me the password: basics
You found the correct password. Secret message is:
"This is the secret message"

(base) abdoulaye@kone-thinkpad-t450s:~$
```

Command(s) given to get the secret message as my answer are: CMD ["node", "index.js"]

```
                           abdoulaye@kone-thinkpad-t450s: ~
FROM node:alpine

WORKDIR /usr/app
COPY . .

CMD ["node", "index.js"]

~
```

Exercise 7: Two lines Dockerfile

The command used is: CMD ["server"]

```
(base) abdoulaye@kone-thinkpad-t450s:~/TwoLineDockerfile$ docker build . -t web-server
Sending build context to Docker daemon  2.048kB
Step 1/2 : FROM devopsdockeruh/simple-web-service:alpine
alpine: Pulling from devopsdockeruh/simple-web-service
ba3557a56b15: Pull complete
1dace236434b: Pull complete
4f4fb700ef54: Pull complete
Digest: sha256:dd4d367476f86b7d7579d3379fe446ae5dfce25480903fb0966fc2e5257e0543
Status: Downloaded newer image for devopsdockeruh/simple-web-service:alpine
 ---> fd312adc88e0
Step 2/2 : CMD ["server"]
 ---> Running in 8316c91d4539
Removing intermediate container 8316c91d4539
 ---> 74eba3e633f8
Successfully built 74eba3e633f8
Successfully tagged web-server:latest
(base) abdoulaye@kone-thinkpad-t450s:~/TwoLineDockerfile$ docker images
REPOSITORY                             TAG       IMAGE ID       CREATED         SIZE
web-server                             latest    74eba3e633f8   7 seconds ago   15.7MB
devopsdockeruh/simple-web-service      alpine    fd312adc88e0   3 months ago    15.7MB
(base) abdoulaye@kone-thinkpad-t450s:~/TwoLineDockerfile$ docker run web-server
[GIN-debug] [WARNING] Creating an Engine instance with the Logger and Recovery middleware already attached.

[GIN-debug] [WARNING] Running in "debug" mode. Switch to "release" mode in production.
 - using env:   export GIN_MODE=release
 - using code:  gin.SetMode(gin.ReleaseMode)

[GIN-debug] GET    /*path                    --> server.Start.func1 (3 handlers)
[GIN-debug] Listening and serving HTTP on :8080
```

Dockerfile

```
Open ▾                                          *dockerfile
                                               ~/TwoLineDockerfile

FROM devopsdockeruh/simple-web-service:alpine

CMD ["server"]
```

Exercise 8: Image for script

```
curler.sh                                                              ×

echo "Input website:"; read website; echo "Searching.."; sleep 1; curl http://$website;
```

```
File  Edit  View  Search  Terminal  Help
(base) abdoulaye@kone-thinkpad-t450s:~$ cd ImageForScript/
(base) abdoulaye@kone-thinkpad-t450s:~/ImageForScript$ gedit curler.sh
(base) abdoulaye@kone-thinkpad-t450s:~/ImageForScript$ ls
curler.sh
(base) abdoulaye@kone-thinkpad-t450s:~/ImageForScript$ chmod +x curler.sh
(base) abdoulaye@kone-thinkpad-t450s:~/ImageForScript$ ./curler.sh
Input website:
helsinki.fi
Searching..
<!DOCTYPE HTML PUBLIC "-//IETF//DTD HTML 2.0//EN">
<html><head>
<title>301 Moved Permanently</title>
</head><body>
<h1>Moved Permanently</h1>
<p>The document has moved <a href="https://www.helsinki.fi/">here</a>.</p>
</body></html>
(base) abdoulaye@kone-thinkpad-t450s:~/ImageForScript$ █
```

Creating a script and running it before using dockerfile.

```
Open ▾   🄰                                          Dockerfile
                                                    ~/ImageForScript
FROM ubuntu:18.04

COPY curler.sh .

RUN  apt-get update; apt-get install -y curl;|

CMD ./curler.sh
```

```
(base) abdoulaye@kone-thinkpad-t450s:~/ImageForScript$ gedit Dockerfile
(base) abdoulaye@kone-thinkpad-t450s:~/ImageForScript$ docker build . -t curler
Sending build context to Docker daemon  3.072kB
Step 1/4 : FROM ubuntu:18.04
18.04: Pulling from library/ubuntu
25fa05cd42bd: Pull complete
Digest: sha256:139b3846cee2e63de9ced83cee7023a2d95763ee2573e5b0ab6dea9dfbd4db8f
Status: Downloaded newer image for ubuntu:18.04
 ---> 7d0d8fa37224
Step 2/4 : COPY curler.sh .
 ---> 3617019a1d3a
Step 3/4 : RUN  apt-get update; apt-get install -y curl;
 ---> Running in a0834a8e0c67
Get:1 http://archive.ubuntu.com/ubuntu bionic InRelease [242 kB]
Get:2 http://security.ubuntu.com/ubuntu bionic-security InRelease [88.7 kB]
Get:3 http://archive.ubuntu.com/ubuntu bionic-updates InRelease [88.7 kB]
Get:4 http://archive.ubuntu.com/ubuntu bionic-backports InRelease [74.6 kB]
Get:5 http://archive.ubuntu.com/ubuntu bionic/multiverse amd64 Packages [186 kB]
Get:6 http://archive.ubuntu.com/ubuntu bionic/main amd64 Packages [1344 kB]
```

```
Removing intermediate container a0834a8e0c67
 ---> 12e5c7c25f4b
Step 4/4 : CMD ./curler.sh
 ---> Running in ce5a904c2c1a
Removing intermediate container ce5a904c2c1a
 ---> e128bcf6445c
Successfully built e128bcf6445c
Successfully tagged curler:latest
(base) abdoulaye@kone-thinkpad-t450s:~/ImageForScript$ docker run -it curler
Input website:
helsinki.fi
Searching..
<!DOCTYPE HTML PUBLIC "-//IETF//DTD HTML 2.0//EN">
<html><head>
<title>301 Moved Permanently</title>
</head><body>
<h1>Moved Permanently</h1>
<p>The document has moved <a href="https://www.helsinki.fi/">here</a>.</p>
</body></html>
(base) abdoulaye@kone-thinkpad-t450s:~/ImageForScript$ █
```
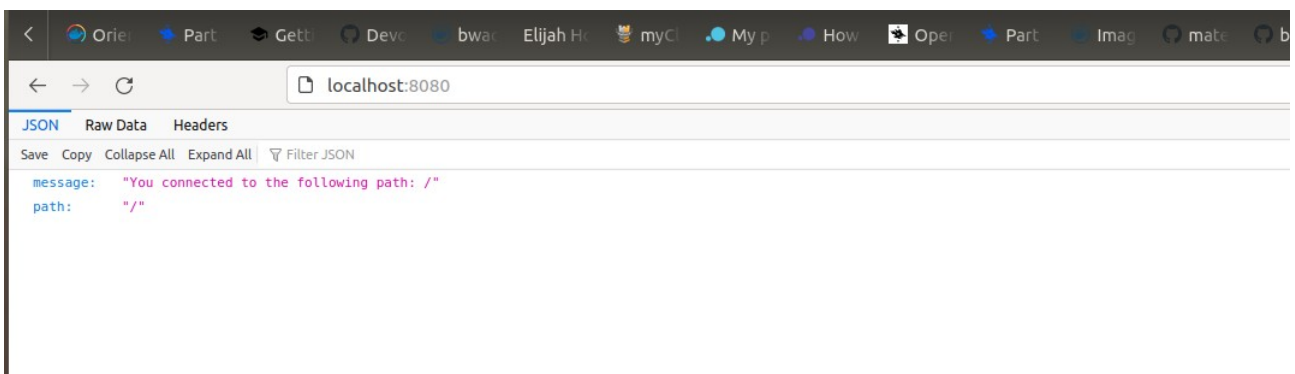
Dockerfile file and docker image were created and the command "docker run -it culer" was used to run the container.

Exercise 9: Volumes

Exercise 10: Ports open

Exercise 11: Spring

Open ▼

```
FROM openjdk:11

WORKDIR /src/usr/app/

COPY . .

RUN ./mvnw package

CMD ["java", "-jar", "./target/docker-example-1.1.3.jar"]

EXPOSE 8080
```

```
(base) abdoulaye@kone-thinkpad-t450s:~$ mkdir Spring
(base) abdoulaye@kone-thinkpad-t450s:~$ cd Spring/
(base) abdoulaye@kone-thinkpad-t450s:~/Spring$ git clone https://github.com/docker-hy/material-applications.git
Cloning into 'material-applications'...
remote: Enumerating objects: 526, done.
remote: Counting objects: 100% (526/526), done.
remote: Compressing objects: 100% (333/333), done.
remote: Total 526 (delta 169), reused 477 (delta 122), pack-reused 0
Receiving objects: 100% (526/526), 486.75 KiB | 2.91 MiB/s, done.
Resolving deltas: 100% (169/169), done.
(base) abdoulaye@kone-thinkpad-t450s:~/Spring$ ls
material-applications
(base) abdoulaye@kone-thinkpad-t450s:~/Spring$ cd material-applications/spring-example-project/
(base) abdoulaye@kone-thinkpad-t450s:~/Spring/material-applications/spring-example-project$ ls -a
.  ..  .gitignore  .mvn  mvnw  mvnw.cmd  pom.xml  README.md  src
(base) abdoulaye@kone-thinkpad-t450s:~/Spring/material-applications/spring-example-project$ gedit Dockerfile
(base) abdoulaye@kone-thinkpad-t450s:~/Spring/material-applications/spring-example-project$
```

```
(base) abdoulaye@kone-thinkpad-t450s:~/Spring/material-applications/spring-example-project$ docker build . -t spring
Sending build context to Docker daemon  44.54kB
Step 1/6 : FROM openjdk:11
11: Pulling from library/openjdk
```

```
[INFO] Replacing main artifact with repackaged archive
[INFO] ------------------------------------------------------------------------
[INFO] BUILD SUCCESS
[INFO] ------------------------------------------------------------------------
[INFO] Total time:  43.891 s
[INFO] Finished at: 2021-07-19T22:27:04Z
[INFO] ------------------------------------------------------------------------
Removing intermediate container 2cb2477bc37e
 ---> b4952fbf619f
Step 5/6 : CMD ["java", "-jar", "./target/docker-example-1.1.3.jar"]
 ---> Running in e51cfddb37be
Removing intermediate container e51cfddb37be
 ---> 775b79589c21
Step 6/6 : EXPOSE 8080
 ---> Running in c185358b5a5d
Removing intermediate container c185358b5a5d
 ---> 911d8565f2c2
Successfully built 911d8565f2c2
Successfully tagged spring:latest
(base) abdoulaye@kone-thinkpad-t450s:~/Spring/material-applications/spring-example-project$
```

```
(base) abdoulaye@kone-thinkpad-t450s:~/Spring/material-applications/spring-example-project$ docker run -p 8080:8080 spring

  /\\ ___ _ _ _ __\\\\
 ( ( )\___ | '_ | '_| | '_ \/ _` | \ \ \ \
  \\/  ___)| |_)| | | | | || (_| |  ) ) ) )
   '  |____| .__|_| |_|_| |_\__, | / / / /
 =========|_|==============|___/=/_/_/_/
 :: Spring Boot ::        (v2.1.3.RELEASE)

2021-07-19 22:31:04.292  INFO 1 --- [           main] c.d.dockerexample.DemoApplication        : Starting DemoApplication v1.1.3 on 93e5148d9df0 with PID 1 (/src/usr/app/target/docker-example-1.1.3.jar st
arted by root in /src/usr/app)
2021-07-19 22:31:04.298  INFO 1 --- [           main] c.d.dockerexample.DemoApplication        : No active profile set, falling back to default profiles: default
2021-07-19 22:31:06.321  INFO 1 --- [           main] o.s.b.w.embedded.tomcat.TomcatWebServer  : Tomcat initialized with port(s): 8080 (http)
2021-07-19 22:31:06.386  INFO 1 --- [           main] o.apache.catalina.core.StandardService   : Starting service [Tomcat]
2021-07-19 22:31:06.387  INFO 1 --- [           main] org.apache.catalina.core.StandardEngine  : Starting Servlet engine: [Apache Tomcat/9.0.16]
2021-07-19 22:31:06.410  INFO 1 --- [           main] o.a.catalina.core.AprLifecycleListener   : The APR based Apache Tomcat Native library which allows optimal performance in production environments was
```


localhost:8080/press

Press here

Success

Exercise 12: Hello, frontend

abdoulaye@kone-thinkpad-t450s: ~/FrontEnd/material-applications/example-frontend

File Edit View Search Terminal Help
```
(base) abdoulaye@kone-thinkpad-t450s:~$ mkdir FrontEnd
(base) abdoulaye@kone-thinkpad-t450s:~$ cd FrontEnd/
(base) abdoulaye@kone-thinkpad-t450s:~/FrontEnd$ git clone https://github.com/docker-hy/material-applications.git
Cloning into 'material-applications'...
remote: Enumerating objects: 526, done.
remote: Counting objects: 100% (526/526), done.
remote: Compressing objects: 100% (333/333), done.
remote: Total 526 (delta 169), reused 477 (delta 122), pack-reused 0
Receiving objects: 100% (526/526), 486.75 KiB | 2.18 MiB/s, done.
Resolving deltas: 100% (169/169), done.
(base) abdoulaye@kone-thinkpad-t450s:~/FrontEnd$ ls
material-applications
(base) abdoulaye@kone-thinkpad-t450s:~/FrontEnd$ cd material-applications/example-frontend/
(base) abdoulaye@kone-thinkpad-t450s:~/FrontEnd/material-applications/example-frontend$ ls
package.json  package-lock.json  public  README.md  src
(base) abdoulaye@kone-thinkpad-t450s:~/FrontEnd/material-applications/example-frontend$ gedit Dockerfile
```



```
(base) abdoulaye@kone-thinkpad-t450s:~/FrontEnd/material-applications/example-frontend$ docker build . -t frontend
Sending build context to Docker daemon   729.1kB
Step 1/9 : FROM ubuntu:18.04
 ---> 7d0d8fa37224
Step 2/9 : WORKDIR /usr/src/app
 ---> Running in edede94b2aa3
Removing intermediate container edede94b2aa3
 ---> da13552c18db
Step 3/9 : COPY . .
 ---> 543787ce7a88
Step 4/9 : RUN apt-get update && apt-get install curl -y
```
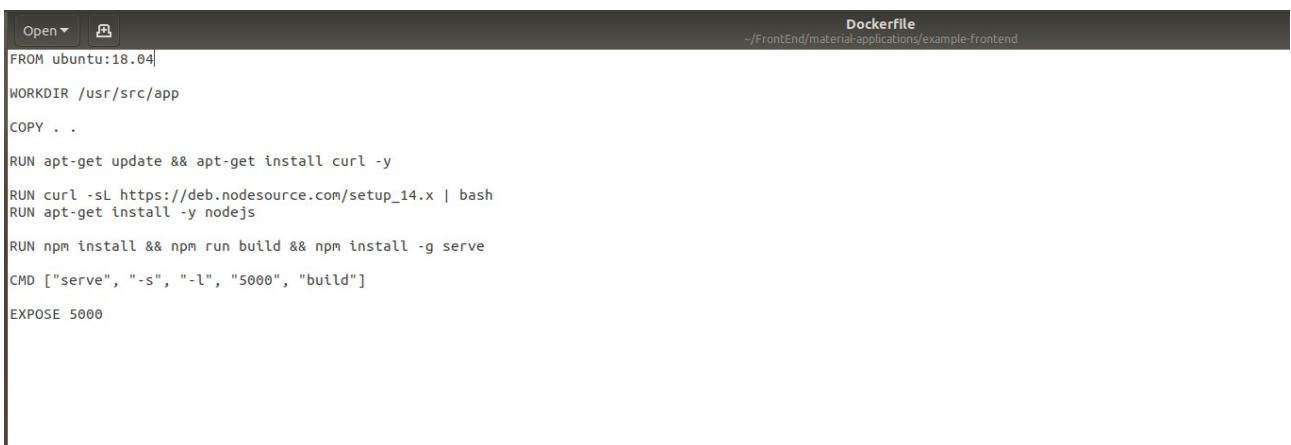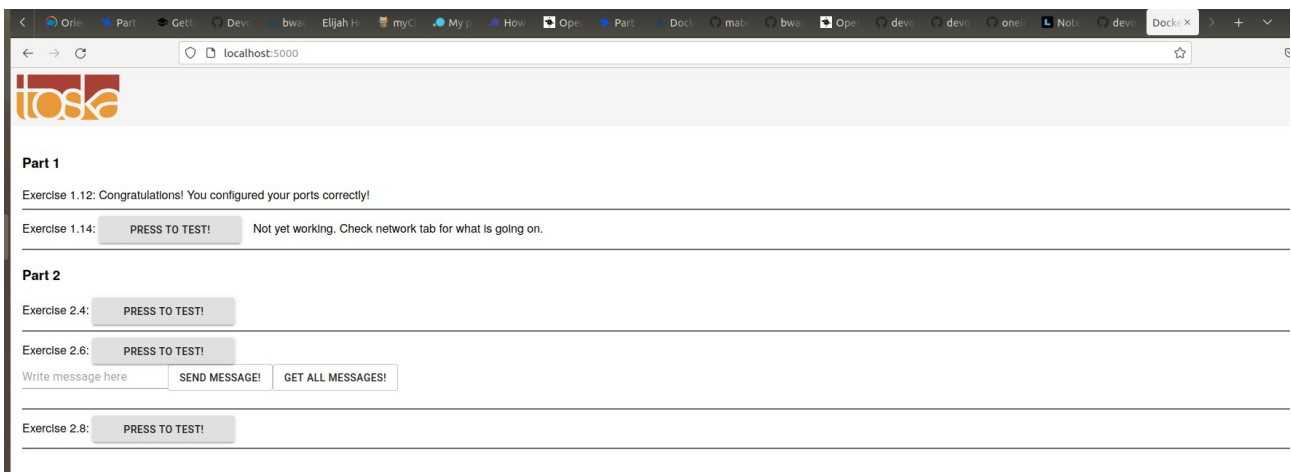
```
/usr/bin/serve -> /usr/lib/node_modules/serve/bin/serve.js
+ serve@12.0.0
added 88 packages from 42 contributors in 5.508s
Removing intermediate container 714d302c6940
 ---> 1e02072c79ad
Step 8/9 : CMD ["serve", "-s", "-l", "5000", "build"]
 ---> Running in 108146aa7037
Removing intermediate container 108146aa7037
 ---> 8af381b9a910
Step 9/9 : EXPOSE 5000
 ---> Running in 5868306a3f97
Removing intermediate container 5868306a3f97
 ---> 08646f73eba3
Successfully built 08646f73eba3
Successfully tagged frontend:latest
(base) abdoulaye@kone-thinkpad-t450s:~/FrontEnd/material-applications/example-frontend$
```

```
Successfully tagged frontend:latest
(base) abdoulaye@kone-thinkpad-t450s:~/FrontEnd/material-applications/example-frontend$ docker run -d -p 5000:5000 frontend
dd7d1a5f01669adfd00618f940945a88eb1ad11e56e54a75d4200f9cb0d2d184
(base) abdoulaye@kone-thinkpad-t450s:~/FrontEnd/material-applications/example-frontend$
```
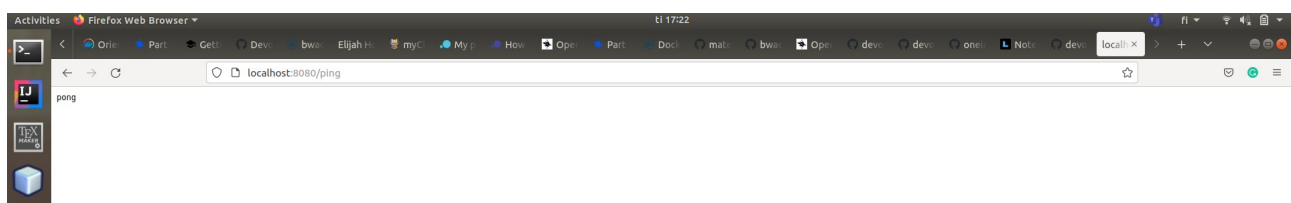

Part 1

Exercise 1.12: Congratulations! You configured your ports correctly!

Exercise 1.14: PRESS TO TEST!   Not yet working. Check network tab for what is going on.

Part 2

Exercise 2.4: PRESS TO TEST!

Exercise 2.6: PRESS TO TEST!

Write message here   SEND MESSAGE!   GET ALL MESSAGES!

Exercise 2.8: PRESS TO TEST!

Dockerfile
~/FrontEnd/material-applications/example-frontend

```
FROM ubuntu:18.04

WORKDIR /usr/src/app

COPY . .

RUN apt-get update && apt-get install curl -y

RUN curl -sL https://deb.nodesource.com/setup_14.x | bash
RUN apt-get install -y nodejs

RUN npm install && npm run build && npm install -g serve

CMD ["serve", "-s", "-l", "5000", "build"]

EXPOSE 5000
```

Exercise 13: Hello, backend

Dockerfile
~/BackEnd/material-applications/example-backend

```
FROM ubuntu:18.04

WORKDIR /usr/src/app

COPY . .

RUN apt-get update && apt-get install curl gcc -y
RUN rm -rf /usr/local/go
RUN curl -L -O -# https://golang.org/dl/go1.16.3.linux-amd64.tar.gz
RUN tar -xzvf go1.16.3.linux-amd64.tar.gz -C /usr/local/

ENV PATH=$PATH:/usr/local/go/bin

RUN go version
RUN go build
RUN go test ./...

CMD ./server

EXPOSE 8080
```

Exercise 14: Environment

```
(base) abdoulaye@kone-thinkpad-t450s:~/BackEnd$ cd material-applications/example-backend/
(base) abdoulaye@kone-thinkpad-t450s:~/BackEnd/material-applications/example-backend$ docker build . -t backend
Sending build context to Docker daemon   42.5kB
Step 1/14 : FROM ubuntu:18.04
 ---> 7d0d8fa37224
Step 2/14 : WORKDIR /usr/src/app
 ---> Using cache
```

```
Removing intermediate container a83287b9e6c0
 ---> a6f8c09986f9
Step 12/14 : RUN go test ./...
 ---> Running in ea373d7c053e
ok      server  0.007s
?       server/cache    [no test files]
ok      server/common   0.007s
?       server/controller       [no test files]
?       server/pgconnection     [no test files]
?       server/router   [no test files]
Removing intermediate container ea373d7c053e
 ---> 93adb4810e25
Step 13/14 : CMD ./server
 ---> Running in 9e3c07c77872
Removing intermediate container 9e3c07c77872
 ---> 4f4a2d0e7c28
Step 14/14 : EXPOSE 8080
 ---> Running in 54b4fccb9d44
Removing intermediate container 54b4fccb9d44
 ---> ecadef996da0
Successfully built ecadef996da0
Successfully tagged backend:latest
(base) abdoulaye@kone-thinkpad-t450s:~/BackEnd/material-applications/example-backend$
```

```
(base) abdoulaye@kone-thinkpad-t450s:~/BackEnd/material-applications/example-backend$ docker run -d -p 8080:8080 backend
aa47414d7be1243a29cfea503786b66ef253615d52aadacd178e032b9df851bf
(base) abdoulaye@kone-thinkpad-t450s:~/BackEnd/material-applications/example-backend$
```

```
Open ▾

FROM ubuntu:18.04

WORKDIR /usr/src/app

COPY . .

RUN apt-get update && apt-get install curl gcc -y
RUN rm -rf /usr/local/go
RUN curl -L -O -# https://golang.org/dl/go1.16.3.linux-amd64.tar.gz
RUN tar -xzvf go1.16.3.linux-amd64.tar.gz -C /usr/local/

ENV PATH=$PATH:/usr/local/go/bin
ENV REQUEST_ORIGIN http://localhost:5000

RUN go version
RUN go build
RUN go test ./...

CMD ./server

EXPOSE 8080
```

Backend dockerfile.

```
(base) abdoulaye@kone-thinkpad-t450s:~$ cd F
Firefox_Dev_Ex/  Frontend/        FrontEnd/        FULLSTACK/
(base) abdoulaye@kone-thinkpad-t450s:~$ cd FrontEnd/
(base) abdoulaye@kone-thinkpad-t450s:~/FrontEnd$ cd material-applications/example-frontend/
(base) abdoulaye@kone-thinkpad-t450s:~/FrontEnd/material-applications/example-frontend$ docker build . -t frontend
Sending build context to Docker daemon  729.1kB
Step 1/10 : FROM ubuntu:18.04
 ---> 7d0d8fa37224
Step 2/10 : WORKDIR /usr/src/app
 ---> Using cache
 ---> da13552c18db
Step 3/10 : COPY . .
 ---> Using cache
 ---> 543787ce7a88
Step 4/10 : ENV REACT_APP_BACKEND_URL=http://localhost:8080/
 ---> Running in e650a67cb1ae
Removing intermediate container e650a67cb1ae
 ---> 0dbba2af97ea
```

```
Find out more about deployment here:

  https://cra.link/deployment

/usr/bin/serve -> /usr/lib/node_modules/serve/bin/serve.js
+ serve@12.0.0
added 88 packages from 42 contributors in 3.879s
Removing intermediate container 298cae4c2e8d
 ---> 76b3ecfd1ac1
Step 9/10 : CMD ["serve", "-s", "-l", "5000", "build"]
 ---> Running in 5e58d3e8c440
Removing intermediate container 5e58d3e8c440
 ---> 1d7329acab49
Step 10/10 : EXPOSE 5000
 ---> Running in 959378cc9a2c
Removing intermediate container 959378cc9a2c
 ---> a9baebb93cf9
Successfully built a9baebb93cf9
Successfully tagged frontend:latest
(base) abdoulaye@kone-thinkpad-t450s:~/FrontEnd/material-applications/example-frontend$
```
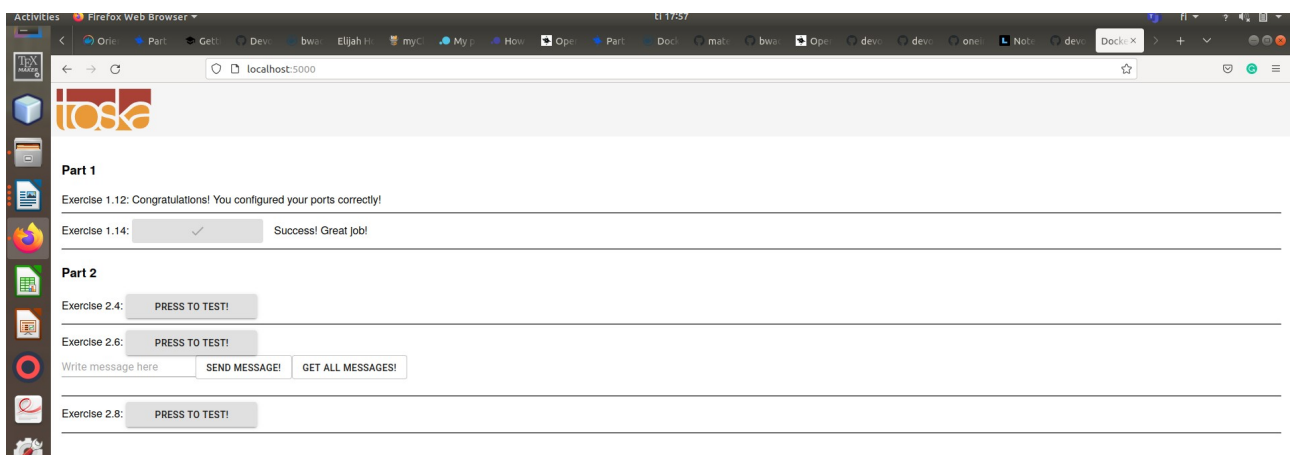
```
 ---> a9baebb93cf9
Successfully built a9baebb93cf9
Successfully tagged frontend:latest
(base) abdoulaye@kone-thinkpad-t450s:~/FrontEnd/material-applications/example-frontend$ docker run -d -p 5000:5000 frontend
56692cd0765d3e27a72937941ed565f28390735463e008bdd7aec0cd7914878b
(base) abdoulaye@kone-thinkpad-t450s:~/FrontEnd/material-applications/example-frontend$
```

```
FROM ubuntu:18.04

WORKDIR /usr/src/app

COPY . .
ENV REACT_APP_BACKEND_URL=http://localhost:8080/

RUN apt-get update && apt-get install curl -y

RUN curl -sL https://deb.nodesource.com/setup_14.x | bash
RUN apt-get install -y nodejs

RUN npm install && npm run build && npm install -g serve

CMD ["serve", "-s", "-l", "5000", "build"]

EXPOSE 5000 |
```

Frontend dockerfile.

Exercise 15: Homework

https://hub.docker.com/repository/docker/bwadjass/lokki-server

https://github.com/bwadjass/lokki-server#readme

```
                                    dockerfile

FROM ubuntu:18.04

WORKDIR /usr/src/app

COPY . .

RUN apt-get update && apt-get install curl -y

RUN curl -sL https://deb.nodesource.com/setup_14.x | bash
RUN apt-get install -y nodejs

RUN apt-get update && apt-get install redis-server
RUN nano /etc/redis/redis.conf
ENV supervised=systemd

RUN npm install && npm run build && npm install -g server

RUN node lokki-server.js

RUN NODE_ENV=production node lokki-server.js

CMD ["NODE_ENV=production", "node", "lokki-server.js"]
```