

Lab 10: Docker and docker compose

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Q1. What user are you logged in as by default?

- Firstly, we need to run the command: `$ docker run -it ubuntu:xenial /bin/bash`

We get the following output after running that command

```
parth@GL62M-7RDX:~/Desktop/lab_10$ sudo docker run -it ubuntu:xenial /bin/bash
[sudo] password for parth:
Unable to find image 'ubuntu:xenial' locally
xenial: Pulling from library/ubuntu
58690f9b18fc: Pull complete
b51569e7c507: Pull complete
da8ef40b9eca: Pull complete
fb15d46c38dc: Pull complete
Digest: sha256:0f71fa8d4d2d4292c3c617fda2b36f6dabe5c8b6e34c3dc5b0d17d4e704bd39c
Status: Downloaded newer image for ubuntu:xenial
root@3d320f73b328:/#
```

I am logged in as a **root** user

Q2. If you start and then exit an interactive container, and then use the `docker run -it ubuntu:xenial /bin/bash` command again, is it the same container? How can you tell?

- After rerunning the commands it will create 2 containers and we can check them by using the `$ docker ps -a` command

```
parth@GL62M-7RDX:~/Desktop/lab_10$ sudo docker ps -a
```

CONTAINER ID	IMAGE	COMMAND	CREATED	STATUS	PORTS	NAMES
50d4adc2cc10	ubuntu:xenial	"/bin/bash"	19 seconds ago	Exited (0) 14 seconds ago		suspicious_lewin
3d320f73b328	ubuntu:xenial	"/bin/bash"	About an hour ago	Exited (0) About a minute ago		gracious_pasteur
910f654b155d	hadoop-standalone	"/bin/sh -c /hadoop/..."	5 weeks ago	Exited (0) 5 weeks ago		recurring_gauss
8e7a424570d2	9196442828/hello:1.0	"python app.py"	5 weeks ago	Exited (0) 5 weeks ago		hardcore_lumiere
09d868a93343	9196442828/hello:1.0	"python app.py"	5 weeks ago	Exited (0) 5 weeks ago		friendly_swartz
7126c10696d9	9196442828/hello:1.0	"python app.py"	5 weeks ago	Exited (255) 5 weeks ago	80/tcp	angry_liskov
e6b422b6ef81	9196442828/hello:1.0	"python app.py"	5 weeks ago	Exited (255) 5 weeks ago	80/tcp	musling_elbakyan
11c133d94c83	9196442828/hello:1.0	"python app.py"	5 weeks ago	Exited (0) 5 weeks ago		dreamy_germain
2d820c6c7098	9196442828/hello:1.0	"python app.py"	5 weeks ago	Exited (0) 5 weeks ago		competent_payne
6f473eb5a325	d9f1be06ed5b	"python app.py"	5 weeks ago	Exited (0) 5 weeks ago		musling_cray
feb2283c3df2	d9f1be06ed5b	"python app.py"	5 weeks ago	Exited (0) 5 weeks ago		jolly_montalcini
9ec4519b0850	d9f1be06ed5b	"python app.py"	5 weeks ago	Exited (0) 5 weeks ago		competent_lehmann
f62a6ace87fd	d9f1be06ed5b	"python app.py"	5 weeks ago	Exited (0) 5 weeks ago		blissful_bohr

- This happens because the `docker run` command first creates a writable container layer over the specified image. Later on it starts the container.

Q3. Run the image you just built. Since we specified the default CMD, you can just do `docker run -it mypython:latest`. What do you observe?

- After building the image, I get the following output

```
parth@GL62M-7RDX: ~/Desktop/lab_10$ sudo docker build -t mypython:latest .
[sudo] password for parth:
Sending build context to Docker daemon 1.521MB
Step 1/3 : FROM ubuntu:bionic
bionic: Pulling from library/ubuntu
284055322776: Pull complete
Digest: sha256:0fed5db9fb72089c7bbca47694e10593cebed9b1fb9edf5b79dbbaccdd7d6
Status: Downloaded newer image for ubuntu:bionic
--> 5a214d77f5d7
Step 2/3 : RUN apt-get update && apt-get install -y python3.6 --no-install-recommends
--> Running in d6202db17f3
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/restricted amd64 Packages [13.5 kB]
Get:6 http://archive.ubuntu.com/ubuntu bionic/main amd64 Packages [1344 kB]
Get:7 http://archive.ubuntu.com/ubuntu bionic/universe amd64 Packages [11.3 MB]
Get:8 http://security.ubuntu.com/ubuntu bionic-security/restricted amd64 Packages [691 kB]
Get:9 http://archive.ubuntu.com/ubuntu bionic/multiverse amd64 Packages [186 kB]
Get:10 http://archive.ubuntu.com/ubuntu bionic-updates/universe amd64 Packages [2227 kB]
Get:11 http://archive.ubuntu.com/ubuntu bionic-updates/main amd64 Packages [2898 kB]
Get:12 http://archive.ubuntu.com/ubuntu bionic-updates/multiverse amd64 Packages [34.4 kB]
Get:13 http://archive.ubuntu.com/ubuntu bionic-updates/restricted amd64 Packages [725 kB]
Get:14 http://archive.ubuntu.com/ubuntu bionic-backports/universe amd64 Packages [11.4 kB]
Get:15 http://archive.ubuntu.com/ubuntu bionic-backports/main amd64 Packages [11.3 kB]
Get:16 http://security.ubuntu.com/ubuntu bionic-security/main amd64 Packages [2461 kB]
Get:17 http://security.ubuntu.com/ubuntu bionic-security/universe amd64 Packages [1440 kB]
Get:18 http://security.ubuntu.com/ubuntu bionic-security/multiverse amd64 Packages [26.8 kB]
Fetched 23.9 MB in 3s (7718 kB/s)
Reading package lists...
Reading package lists...
Building dependency tree...
Reading state information...
The following additional packages will be installed:
  libexpat1 libmpdec2 libpython3.6-minimal libpython3.6-stdlib libreadline7
  libsqlite3-0 libssl1.1 mime-support python3.6-minimal readline-common
Suggested packages:
  python3.6-venv python3.6-doc binutils binfmt-support readline-doc
Recommended packages:
  file xz-utils
The following NEW packages will be installed:
  libexpat1 libmpdec2 libpython3.6-minimal libpython3.6-stdlib libreadline7
  libsqlite3-0 libssl1.1 mime-support python3.6 python3.6-minimal
  readline-common
0 upgraded, 11 newly installed, 0 to remove and 0 not upgraded.
Need to get 6230 kB of archives.
After this operation, 28.0 MB of additional disk space will be used.
Get:1 http://archive.ubuntu.com/ubuntu bionic-updates/main amd64 libssl1.1 amd64 1.1.1-1ubuntu2.1-18.04.13 [1302 kB]
Get:2 http://archive.ubuntu.com/ubuntu bionic-updates/main amd64 libpython3.6-minimal amd64 3.6.9-1-18.04ubuntu1.4 [534 kB]
Get:3 http://archive.ubuntu.com/ubuntu bionic-updates/main amd64 libexpat1 amd64 2.2.5-3ubuntu0.2 [80.5 kB]
Get:4 http://archive.ubuntu.com/ubuntu bionic-updates/main amd64 python3.6-minimal amd64 3.6.9-1-18.04ubuntu1.4 [1610 kB]
Get:5 http://archive.ubuntu.com/ubuntu bionic/main amd64 libmpdec2 amd64 2.4.2-1ubuntu1 [64.1 kB]
Get:6 http://archive.ubuntu.com/ubuntu bionic/main amd64 mime-support all 3.60ubuntu1 [30.1 kB]
Get:7 http://archive.ubuntu.com/ubuntu bionic/main amd64 readline-common all 7.0-3 [52.9 kB]
Get:8 http://archive.ubuntu.com/ubuntu bionic/main amd64 libreadline7 amd64 7.0-3 [124 kB]
```

- I can see a python console after running the given command

```
parth@GL62M-7RDX: ~/Desktop/lab_10$ sudo docker run -it mypython:latest
Python 3.6.9 (default, Jan 26 2021, 15:33:00)
[GCC 8.4.0] on linux
Type "help", "copyright", "credits" or "license" for more information.
>>> 
```

Q4. Write and build a Dockerfile by deploying python or any other application (e.g. web server and you can find it in github as example). **Submit your Dockerfile with this lab?**

- I've deployed a simple flask application

Using commands:

`$ docker build -t myapp:flask .`

```
$ docker run -d -p 5000:5000 myapp:flask
```

```

parth@GL62M-7RDX: ~/Desktop/lab_10_Q_2
[sudo] password for parth:
Sending build context to Docker daemon 3.072KB
Step 1/6 : FROM ubuntu:bionic
----> 5a214d77f5d7
Step 2/6 : RUN apt-get update && apt-get install -y python3.6 --no-install-recommends
----> Using cache
----> 8ab7ce57dcd6
Step 3/6 : RUN apt-get install -y python-pip;pip install Flask;export FLASK_APP=hello
----> Running in debbf5992bd
Reading package lists...
Building dependency tree...
Reading state information...
The following additional packages will be installed:
  binutils binutils-common binutils-x86-64-linux-gnu build-essential
  ca-certificates cpp cpp-7 dbus dirmngr dpkg-dev fakeroot g++ g++-7 gcc gcc-7
  gcc-7-base glibc 2.31-0ubuntu2.3 gnupg gnupg-l10n gnupg-utils gpg gpg-agent
  gpg-wks-client gpg-wks-server gpgconf gpgsm libalgoritm-diff-perl
  libalgoritm-diff-xs-perl libalgoritm-merge-perl libapparmor1 libasan4
  libasani-8-heimdal libassuan0 libatomic1 libbinutils libc-dev-bin libc6-dev
  libc6-i386 libckitres libdbus-1-3 libdpkg-perl libexpat1-dev libfakeroot
  libfile-rcfml-comp-perl libgcc-7-dev libgdbm-compat4 libgdbm5
  libgirepository1.0-1 libgl1.0-0 libgl1.0-0-data libgomp1
  libgssapi3-heimdal libhcrypto4-heimdal libheif-base1-heimdal
  libheimdal4-heimdal libhs59-5-heimdal libicu56 libidn11 libitm1
  libkbs2-26-heimdal libksba8 libldap-2.4-2 libldap-common
  liblocale-gettext-perl liblsan0 libmpc3 libmpfr6 libmpx2 libnpt0
  libperl5.28 libpython-all-dev libpython-dev libpython-stdlib libpython2.7
  libpython2.7-dev libpython2.7-minimal libpython2.7-stdlib libquadmath0
  libroken18-heimdal libssl2-2 libssl2-modules libssl2-modules-db
  libstdc++-7-dev libtsan0 libubsan0 libwind0-heimdal libx11-6-dev
  make manpages manpages-dev netbase openssl patch perl perl-modules-5.26
  p11-kit python python-all python-all-dev python-asyncio
  python-cffi-backend python-crypto python-cryptography python-dbus python-dev
  python-enun41 python-glib python-ldna python-lpaddress python-keyring
  python-keyrings-alt python-minimal python-pip-whl python-pkg-resources
  python-secretstorage python-setuptools python-six python-wheel python-xdg
  python2.7 python2.7-dev python2.7-minimal shared-mime-info xdg-user-dirs
  xz-utils
Suggested packages:
  binutils-doc cpp-doc gcc-7-locales default-dbus-session-bus
  | dbus-session-bus dbus-user-session libpam-systemd p11-kit-gnome3 tor
  | dbus-keyring g++-multilib g++-multilib gcc-7-doc libstdc++-7-dbg
  gcc-multilib autoconf automake libtool flex bison gdb gcc-doc gcc-7-multilib
  libgcc1-dbg libgomp1-dbg libitm1-dbg libatomic1-dbg libasan4-dbg
  liblsan0-dbg libtsan0-dbg libubsan0-dbg libckitres-dbg libmpx2-dbg
  libquadmath0-dbg python3-doc xloadimage xloadncore glibc-doc git bzr gdbm-libs
  libssl2-modules-gssapi-mit | libssl2-modules-gssapi-heimdal
  libssl2-modules-ldap libssl2-modules-otp libssl2-modules-sql
  libstdc++-7-dev make-doc man-browser ed diffutils-doc perl-doc
  python-readline-gnu-perl | libterm-readline-perl-perl p11-kit-doc
  python-doc python-tk python-crypto-doc python-cryptography-doc
  python-cryptography-vectors python-dbus-dbg python-dbus-doc
  python-enun41 python-glib python-gtk3 python-keyring libk5swell-bin
  glibc-doc glibc-keyring libglib2.0 python-fs python-gdata python-keyczar
  python-secretstorage-doc python-setuptools-doc python2.7-doc binfmt-support
The following NEW packages will be installed:
parth@GL62M-7RDX: ~/Desktop/lab_10_Q_2

Setting up g++-7 (7.5.0-3ubuntu1~18.04) ...
Setting up libdpkg-perl (1.19.0-3ubuntu2.3) ...
Setting up gcc (4:7.4.0-1ubuntu2) ...
Setting up python-keyrings-alt (3.0.1) ...
Setting up libalgoritm-merge-perl (0.04-3) ...
Setting up dpkg-dev (1.19.0-3ubuntu2) ...
Setting up libalgoritm-diff-xs-perl (0.04-5) ...
Setting up python-all-dev (2.7.15-rc1-1) ...
Setting up libldap-2.4-2-amd64 (2.4-45-dfsg-1ubuntu1.10) ...
Setting up python-cryptography (2.1.4-1ubuntu1.4) ...
Setting up g++ (4:7.4.0-1ubuntu2) ...
update-alternatives: using /usr/bin/g++ to provide /usr/bin/c++ (c++) in auto mode
update-alternatives: warning: skip creation of /usr/share/man/man1/g++.1.gz because associated file /usr/share/man/man1/g++.1.gz (of link group c++) doesn't exist
Setting up python-secretstorage (2.3.1-2) ...
Setting up python-keyring (18.6.0-3) ...
Setting up build-essential (12.4ubuntu1) ...
Setting up gpg-wks-client (2.2.4-1ubuntu1.4) ...
Setting up gnupg (2.2.4-1ubuntu1.4) ...
Processing triggers for mime-support (3.6ubuntu1) ...
Processing triggers for libc-bin (2.27-3ubuntu1.4) ...
Processing triggers for ca-certificates (20210119-18.04.2) ...
Updating certificates in /etc/ssl/certs...
0 added, 0 removed, done.
Running hooks in /etc/ca-certificates/update.d...
done.
Collecting Flask
  Downloading https://files.pythonhosted.org/packages/8b/d9/994208daa354f68fd9a34a8baeb26fda84e7af1e35bdae02b667e/Flask-1.1.4-py2.py3-none-any.whl (94kB)
  Collecting itsdangerous<2.0,=>0.24 (from Flask)
  Downloading https://files.pythonhosted.org/packages/76/ae/44b03b253d0fadc317f32c24d100b3b35c232980740a4c953c7b89fa9e/itsdangerous-1.1.0-py2.py3-none-any.whl
  Collecting click<8.0,=>7.1.2 (from Flask)
  Downloading https://files.pythonhosted.org/packages/d2/3d/fa/7d0b3bf75c4f8d338c2fd15c8d33fddad23a9b5e7eb6c5de26b430e/click-7.1.2-py2.py3-none-any.whl (82kB)
  Collecting Werkzeug<2.0,=>1.5 (from Flask)
  Downloading https://files.pythonhosted.org/packages/cc/94/5f7079ae00b6863ef8fda38721e9d3a872a21e5bace59759b318f71d62e/Werkzeug-1.0.1-py2.py3-none-any.whl (298kB)
  Collecting Jinja2<3.0,=>2.10.1 (from Flask)
  Downloading https://files.pythonhosted.org/packages/7c/c2/1eeec8c95dc9b1aeb64f5783a9e07a286de4219b72b46d7f35/31nj2a2-2.11.3-py2.py3-none-any.whl (125kB)
  Collecting MarkupSafe<0.23 (from Jinja2<3.0,=>2.10.1->Flask)
  Downloading https://files.pythonhosted.org/packages/6b/40/3adbf7c24a80128135edeb20329eb22d5de2a0ecf73d1db28b565da11/MarkupSafe-1.1.1-cp27-cp27mu-nanylinux_x86_64.whl
  Installing collected packages: itsdangerous, click, Werkzeug, MarkupSafe, Jinja2, Flask
  Successfully installed Flask-1.1.4 Jinja2-2.11.3 MarkupSafe-1.1.1 Werkzeug-1.0.1 click-7.1.2 itsdangerous-1.1.0
Removing intermediate container debbf5992bd
----> 1f4af8b5c1d
Step 4/6 : COPY . /app
----> 01ed096deffc
Step 5/6 : WORKDIR /app
----> Running in f575c21fd2a
Removing intermediate container f575c21fd2a
----> 4ffca93cbe5
Step 6/6 : CMD ["python", "hello.py"]
----> Running in 10008f99b33d
Removing intermediate container 10008f99b33d
----> a54222f1e143
Successfully built a54222f1e143
Successfully tagged myapp:flask
parth@GL62M-7RDX: ~/Desktop/lab_10_Q_2 sudo docker run -d -p 5000:5000 myapp:flask
76f9b92c356dd4d0b181356de49c1b66749d1083c3684111228
parth@GL62M-7RDX: ~/Desktop/lab_10_Q_2

```

The docker file will be attached with the report

Q5. Paste the output of your docker images command after questions 1 and 2.

- Running the command: `$ docker images`

```
parth@GL62M-7RDX:~/Desktop/lab_10/Q_2$ sudo docker images
```

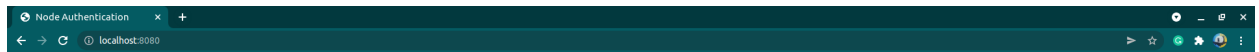
REPOSITORY	TAG	IMAGE ID	CREATED	SIZE
myapp	flask	a54222ffe143	4 minutes ago	469MB
mypython	latest	55816dae35e0	14 minutes ago	132MB
jupyter/all-spark-notebook	latest	0245f58cc2c3	2 weeks ago	4.26GB
<none>	<none>	8f3c0aab5424	5 weeks ago	1.61GB
hadoop-standalone	latest	4f5c89d750d8	5 weeks ago	1.61GB
hadoop-base	latest	f4732d207486	5 weeks ago	1.61GB
9196442828/hello	1.0	d9f1be06ed5b	5 weeks ago	159MB
ubuntu	latest	ba6accedd29	7 weeks ago	72.8MB
ubuntu	bionic	5a214d77f5d7	2 months ago	63.1MB
hello-world	latest	feb5d9fea6a5	2 months ago	13.3kB
ubuntu	xenial	b6f507652425	3 months ago	135MB
python	2.7-slim	eeb27ee6b893	19 months ago	148MB
username/repo	<none>	c7f5ee4d4030	4 years ago	182MB

Q6. Paste your Dockerfile for the Node.js web application

- Using following commands to create Node.js project and run docker container
`$ git clone git@github.com:hagaik/easy-node-authentication {Clone github repo}`
`$ docker build -t myapp:nodejs . {Build}`
`$ docker run -d -p 8080:8080 myapp:nodejs {Run}`

```
parth@GL62M-7RDX:~/Desktop/lab_10/Q_3$ sudo docker build -t myapp:nodejs .
Sending build context to Docker daemon 166.9kB
Step 1/6 : FROM node:8
8: Pulling from library/node
146bda88618: Pull complete
99358cc2ace: Pull complete
db0efb8e686: Pull complete
e705a4c4fd31: Pull complete
c877b722db6f: Pull complete
445c28ec214: Pull complete
db0efb8e686: Pull complete
1c151cd1b3ea: Pull complete
fbd993995f40: Pull complete
Digest: sha256:40b1f740e988d03eb21a6cdef108a976108a287a74167ab593fc953aac34df
Status: Downloaded newer image for node:8
--> 8eadf3757f4
Step 2/6 : RUN apt-get update && apt-get install -y nodejs && apt-get install -y build-essential
--> Running in 72a497b75ca1
Get:1 http://security.debian.org/debian-security stretch/updates InRelease [53.0 kB]
Ign:2 http://deb.debian.org/debian stretch InRelease
Get:3 http://deb.debian.org/debian stretch-updates InRelease [93.6 kB]
Get:4 http://deb.debian.org/debian stretch Release [118 kB]
Get:5 http://security.debian.org/debian-security stretch/updates/main amd64 Packages [749 kB]
Get:6 http://deb.debian.org/debian stretch Release.gpg [3177 B]
Get:7 http://deb.debian.org/debian stretch/main amd64 Packages [7080 kB]
Fetched 8097 kB in 2s (3682 kB/s)
Reading package lists...
Reading package lists...
Building dependency tree...
Reading state information...
The following additional packages will be installed:
  libuv1
The following NEW packages will be installed:
  libuv1 nodejs
0 upgraded, 2 newly installed, 0 to remove and 143 not upgraded.
Need to get 3524 kB of archives.
After this operation, 14.5 MB of additional disk space will be used.
Get:1 http://deb.debian.org/debian stretch/main amd64 libuv1 amd64 1.9.1-3 [84.4 kB]
Get:2 http://deb.debian.org/debian stretch/main amd64 nodejs amd64 4.8.2-dfsg-1 [3440 kB]
debconf: delaying package configuration, since apt-utils is not installed
Fetched 3524 kB in 0s (4554 kB/s)
Selecting previously unselected package libuv1:amd64.
(Reading database ... 29962 files and directories currently installed.)
Preparing to unpack .../libuv1_1.9.1-3_amd64.deb ...
Unpacking libuv1:amd64 (1.9.1-3) ...
Selecting previously unselected package nodejs.
Preparing to unpack .../nodejs_4.8.2-dfsg-1_amd64.deb ...
Unpacking nodejs (4.8.2-dfsg-1) ...
Setting up libuv1:amd64 (1.9.1-3) ...
Processing triggers for libc-bin (2.24-11+deb9u4) ...
Setting up nodejs (4.8.2-dfsg-1) ...
update-alternatives: using /usr/bin/nodejs to provide /usr/bin/js (js) in auto mode
Reading package lists...
Building dependency tree...
Reading state information...
The following NEW packages will be installed:
  build-essential
```

```
parth@GL62M-7RDX: ~/Desktop/lab_10/Q_3
(Reading database ... 29962 files and directories currently installed.)
Preparing to unpack .../libuv1_1.9.1-3_and64.deb ...
Unpacking libuv1:amd64 (1.9.1-3) ...
Selecting previously unselected package nodejs.
Preparing to unpack .../nodejs_4.8.2-dfsg-1_and64.deb ...
Unpacking nodejs (4.8.2-dfsg-1) ...
Setting up libuv1:amd64 (1.9.1-3) ...
Processing triggers for libc-bin (2.24-11+deb9u4) ...
Setting up nodejs (4.8.2-dfsg-1) ...
update-alternatives: using /usr/bin/nodejs to provide /usr/bin/js (js) in auto mode
Reading package lists...
Building dependency tree...
Reading state information...
The following NEW packages will be installed:
  build-essential
0 upgraded, 1 newly installed, 0 to remove and 143 not upgraded.
Need to get 7346 B of archives.
After this operation, 20.5 kB of additional disk space will be used.
Get:1 http://deb.debian.org/debian stretch/main amd64 build-essential amd64 12.3 [7346 B]
debconf: delaying package configuration, since apt-utils is not installed
Fetched 7346 B in 0s (25.7 kB/s)
Selecting previously unselected package build-essential.
(Reading database ... 30029 files and directories currently installed.)
Preparing to unpack .../build-essential_12.3_and64.deb ...
Unpacking build-essential (12.3) ...
Setting up build-essential (12.3) ...
Removing intermediate container 75a497b75ca1
--> 2f36426794ed
Step 3/6 : COPY ./easy-node-authentication /app
--> dfcac0d08e35
Step 4/6 : WORKDIR /app
--> Running in 96e292c0bd44
Removing intermediate container 96e292c0bd44
--> 2df9b4a0f0ef
Step 5/6 : RUN npm install
--> Running in 33081f097f76
npm WARN deprecated bcrypt-nodejs@0.0.3: bcrypt-nodejs is no longer actively maintained. Please use bcrypt or bcryptjs. See https://github.com/kelektiv/node.bcrypt.js/wiki/bcrypt-vs-brypt.js to learn more about these two options
npm WARN deprecated bson@1.0.9: Fixed a critical issue with BSON serialization documented in CVE-2019-2391, see https://bit.ly/2KcpXdo for more details
npm notice created a lockfile as package-lock.json. You should commit this file.
npm WARN node-authentication@ No repository field.
npm WARN node-authentication@ No license field.
added 101 packages from 70 contributors and audited 101 packages in 5.801s
found 16 vulnerabilities (3 low, 4 moderate, 7 high, 2 critical)
  run 'npm audit fix' to fix them, or 'npm audit' for details
Removing intermediate container 33081f097f76
--> 67b5bf22280a
Step 6/6 : CMD ["node", "server.js"]
--> Running in fd4d09464590
Removing intermediate container fd4d09464590
--> 33adec99261e
Successfully built 33adec99261e
Successfully tagged myapp:nodejs
parth@GL62M-7RDX:~/Desktop/lab_10/Q_3$ sudo docker run -d -p 8080:8080 myapp:nodejs
c7c7703fc972fa32473e2ad5ef9fe10a1db4b76cfa493cc2e63c0989a2a6a27
parth@GL62M-7RDX:~/Desktop/lab_10/Q_3$
```



The Dockerfile will be submitted with the report

Q7. Paste your docker-compose.yml file

- Using the following commands to build and start docker-compose

\$ *docker-compose build*

\$ *docker-compose up*

```
parth@GL62M-TRDX: ~/Desktop/lab_10/Q_3
parth@GL62M-TRDX:~/Desktop/lab_10/Q_3$ sudo docker-compose build
mongodb uses an image, skipping
Building web
Sending build context to Docker daemon 166.9kB
Step 1/6 : FROM node:8
----> 8e6adf3757f4
Step 2/6 : RUN apt-get update && apt-get install -y nodejs && apt-get install -y build-essential
----> Using cache
----> 2f96d2679aed
Step 3/6 : COPY ./easy-node-authentication /app
----> Using cache
----> dfcac0d00835
Step 4/6 : WORKDIR /app
----> Using cache
----> 2df9b4a4e0f0
Step 5/6 : RUN npm install
----> Using cache
----> 67b58f22280a
Step 6/6 : CMD ["node", "server.js"]
----> Using cache
----> 33adec99261e
Successfully built 33adec99261e
Successfully tagged myapp:nodejs
parth@GL62M-TRDX:~/Desktop/lab_10/Q_3$ sudo docker-compose up
WARNING: The Docker Engine you're using is running in swarm mode.

Compose does not use swarm mode to deploy services to multiple nodes in a swarm. All containers will be scheduled on the current node.
To deploy your application across the swarm, use 'docker stack deploy'.

q_3_mongodb_1 is up-to-date
Starting q_3_web_1 ... done
Attaching to q_3_mongodb_1, q_3_web_1
q_3_mongodb_1 | about to fork child process, waiting until server is ready for connections.
q_3_mongodb_1 | Forked process: 30
q_3_mongodb_1 | [{"t":{"$date":"2021-12-06T17:58:36.763+00:00"},"s":"I", "c":"CONTROL", "id":20698, "ctx":"","msg":"***** SERVER RESTARTED *****"}]
q_3_mongodb_1 | [{"t":{"$date":"2021-12-06T17:58:36.765+00:00"},"s":"I", "c":"NETWORK", "id":4915701, "ctx":"","msg":"Initialized wire specification", "attr":{"spec":{"incomingExternalClient":{"minWireVersion":0,"maxWireVersion":13},"incomingInternalClient":{"minWireVersion":0,"maxWireVersion":13},"isInternalClient":true}}}]
q_3_mongodb_1 | [{"t":{"$date":"2021-12-06T17:58:36.766+00:00"},"s":"I", "c":"CONTROL", "id":23285, "ctx":"main", "msg":"Automatically disabling TLS 1.0, to force-enable TLS 1.0 specify --sslDisabledProtocols 'no
q_3_mongodb_1 | ne'"}]
q_3_mongodb_1 | [{"t":{"$date":"2021-12-06T17:58:36.768+00:00"},"s":"W", "c":"ASIO", "id":22601, "ctx":"main", "msg":"No TransportLayer configured during NetworkInterface startup"}]
q_3_mongodb_1 | [{"t":{"$date":"2021-12-06T17:58:36.769+00:00"},"s":"I", "c":"NETWORK", "id":4648601, "ctx":"main", "msg":"Implicit TCP FastOpen unavailable. If TCP FastOpen is required, set tcpFastOpenServer, tcpF
q_3_mongodb_1 | astOpenClient, and tcpFastOpenQueueSize."}]
q_3_mongodb_1 | [{"t":{"$date":"2021-12-06T17:58:36.770+00:00"},"s":"W", "c":"ASIO", "id":22601, "ctx":"main", "msg":"No TransportLayer configured during NetworkInterface startup"}]
q_3_mongodb_1 | [{"t":{"$date":"2021-12-06T17:58:36.770+00:00"},"s":"I", "c":"REPL", "id":5123008, "ctx":"main", "msg":"Successfully registered PrimaryOnlyService", "attr":{"service":"TenantMigrationDonorService
q_3_mongodb_1 | ", "ns":"config.tenantMigrationDonors"}}]
q_3_mongodb_1 | [{"t":{"$date":"2021-12-06T17:58:36.770+00:00"},"s":"I", "c":"REPL", "id":5123008, "ctx":"main", "msg":"Successfully registered PrimaryOnlyService", "attr":{"service":"TenantMigrationRecipientServ
q_3_mongodb_1 | ice", "ns":"config.tenantMigrationRecipients"}}]
q_3_mongodb_1 | [{"t":{"$date":"2021-12-06T17:58:36.770+00:00"},"s":"I", "c":"CONTROL", "id":5045603, "ctx":"main", "msg":"Multi threading initialized"}]
q_3_mongodb_1 | [{"t":{"$date":"2021-12-06T17:58:36.771+00:00"},"s":"I", "c":"CONTROL", "id":4615011, "ctx":"","msg":"MongoDB starting", "attr":{"pid":30, "port":27017, "dbPath":"/data/db", "architecture
q_3_mongodb_1 | ":64-bit", "host":"b70d5d4e3ca1"}}]
q_3_mongodb_1 | [{"t":{"$date":"2021-12-06T17:58:36.771+00:00"},"s":"I", "c":"CONTROL", "id":23403, "ctx":"","msg":"Build Info", "attr":{"buildInfo":{"version":"5.0.4", "gitVersion":"62a04ede3cc9a334e
q_3_mongodb_1 | 8bc82160714df71c7d3a29e", "opensslVersion":"OpenSSL 1.1.1f 31 Mar 2020", "modules":[], "allocator":"tcmalloc", "environment":{"distmod":"ubuntu2004", "distarch":"x86_64", "target_arch":"x86_64"}}}}]
q_3_mongodb_1 | [{"t":{"$date":"2021-12-06T17:58:36.771+00:00"},"s":"I", "c":"CONTROL", "id":51765, "ctx":"","msg":"Operating System", "attr":{"os":{"name":"ubuntu", "version":"20.04"}}}]
q_3_mongodb_1 | [{"t":{"$date":"2021-12-06T17:58:36.771+00:00"},"s":"I", "c":"CONTROL", "id":21951, "ctx":"","msg":"Options set by command line", "attr":{"options":{"net":{"bindip":"127.0.0.1", "port"
q_3_mongodb_1 | :27017, "tls":{"mode":"disabled"}, "processManagement":{"fork":true, "pidfilePath":"/tmp/docker-entrypoint-temp-mongodb.pid"}, "systemLog":{"destination":"file", "logAppend":true, "path":"/proc/1/fd/1"}}}}}]
```