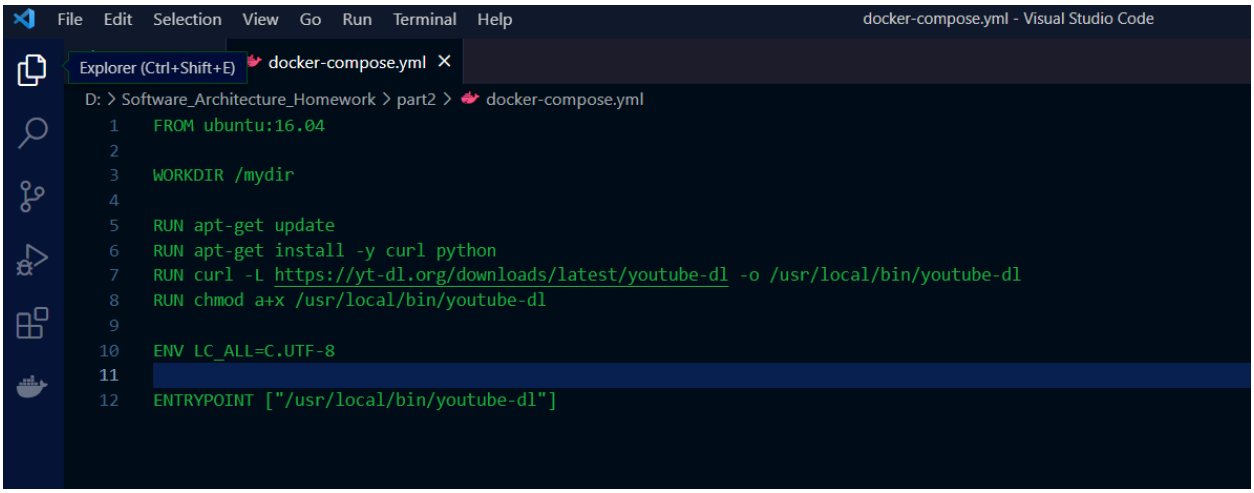
Part2

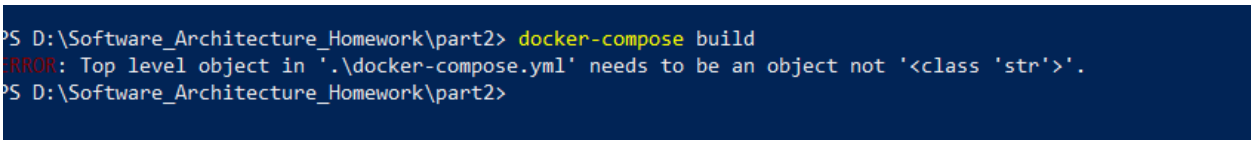
docker-compose

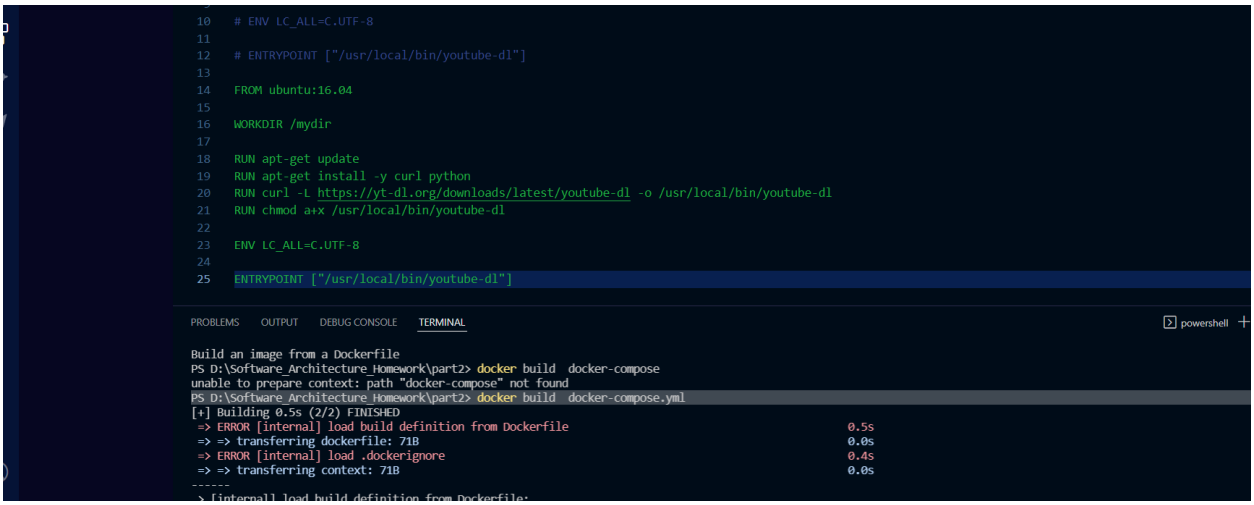
Even with a simple image, we've already been dealing with plenty of command line options in both building, pushing and running the image.

Now we'll switch to a tool called docker-compose to manage these.

docker-compose is designed to simplify running multi-container applications to using a single command.







2.1

Container of devopsdockeruh/first_volume_exercise will create logs into its /usr/app/logs.txt.

Create a docker-compose.yml file that starts devopsdockeruh/first_volume_exercise and saves the logs into your filesystem.

Submit the docker-compose.yml, make sure that it works simply by running docker-compose up

$ docker build .

```
cd@DESKTOP-VCNQ3D1:~$ docker build .
[+] Building 21.6s (5/9)
 => [internal] load build definition from Dockerfile
 => => transferring dockerfile: 355B
 => [internal] load .dockerignore
 => => transferring context: 2B
 => [internal] load metadata for docker.io/library/ubuntu:16.04
 => CACHED [1/6] FROM docker.io/library/ubuntu:16.04
 => [2/6] WORKDIR /mydir
 => [3/6] RUN apt-get update
 => => # Get:1 http://security.ubuntu.com/ubuntu xenial-security InRelease [99.8 kB]
 => => # Get:2 http://archive.ubuntu.com/ubuntu xenial InRelease [247 kB]
 => => # Get:3 http://security.ubuntu.com/ubuntu xenial-security/main amd64 Packages [2051 kB]
 => => # Get:4 http://archive.ubuntu.com/ubuntu xenial-updates InRelease [99.8 kB]
 => => # Get:5 http://archive.ubuntu.com/ubuntu xenial-backports InRelease [97.4 kB]
 => => # Get:6 http://archive.ubuntu.com/ubuntu xenial/main amd64 Packages [1558 kB]
```

$ docker-compose build

```
cd@DESKTOP-VCNQ3D1:~$ docker-compose build
Building youtube-dl-ubuntu
[+] Building 0.3s (10/10) FINISHED
 => [internal] load build definition from Dockerfile
 => => transferring dockerfile: 359B
 => [internal] load .dockerignore
 => => transferring context: 2B
 => [internal] load metadata for docker.io/library/ubuntu:16.04
 => [1/6] FROM docker.io/library/ubuntu:16.04
 => CACHED [2/6] WORKDIR /mydir
 => CACHED [3/6] RUN apt-get update
 => CACHED [4/6] RUN apt-get install -y curl python
 => CACHED [5/6] RUN curl -L https://yt-dl.org/downloads/latest/youtube-dl -o /usr/local/bin/youtube-dl
 => CACHED [6/6] RUN chmod a+x /usr/local/bin/youtube-dl
 => exporting to image
 => => exporting layers
 => => writing image sha256:74b3e7f4d7928a9969f9b0d003ee51e15a6ee03b96dcd455357532f3e3e0092c
 => => naming to docker.io/muradi/ubuntu

Use 'docker scan' to run Snyk tests against images to find vulnerabilities and learn how to fix them
cd@DESKTOP-VCNQ3D1:~$
```

2.2

devopsdockeruh/ports_exercise starts a web service that will answer in port 80

Create a docker-compose.yml and use it to start the service so that you can use it with your browser.

Submit the docker-compose.yml, make sure that it works simply by running docker-compose up

$ docker –compose up

```
cd@DESKTOP-VCNQ3D1:~$ docker-compose up
Creating network "cd_default" with the default driver
Creating cd_youtube-dl-ubuntu_1 ... done
Attaching to cd_youtube-dl-ubuntu_1
youtube-dl-ubuntu_1  | Usage: youtube-dl [OPTIONS] URL [URL...]
youtube-dl-ubuntu_1  |
youtube-dl-ubuntu_1  | youtube-dl: error: You must provide at least one URL.
youtube-dl-ubuntu_1  | Type youtube-dl --help to see a list of all options.
cd_youtube-dl-ubuntu_1 exited with code 2
cd@DESKTOP-VCNQ3D1:~$
```

$ docker –compose up -d

```
cd@DESKTOP-VCNQ3D1:~/whoami$ docker-compose up -d
Creating network "whoami_default" with the default driver
Pulling whoami (jwilder/whoami:)...
latest: Pulling from jwilder/whoami
605ce1bd3f31: Pull complete
6f87ebbce1a4: Pull complete
42dfabe11397: Pull complete
Digest: sha256:c621c699e1becc851a27716df9773fa9a3f6bccb331e6702330057a688fd1d5a
Status: Downloaded newer image for jwilder/whoami:latest
Creating whoami_whoami_1 ... done
cd@DESKTOP-VCNQ3D1:~/whoami$
```

$ curl local host:8000

```
cd@DESKTOP-VCNQ3D1:~/whoami$ curl localhost:8000
I'm 07357ec7ac74
cd@DESKTOP-VCNQ3D1:~/whoami$
```

2.3

A project over at https://github.com/docker-hy/scaling-exercise has a hardly working application. Go ahead and clone it for yourself. The project already includes docker-compose.yml so you can start it by running docker-compose up.

Application should be accessible through http://localhost:3000. However it doesn't work well enough and I've added a load balancer for scaling. Your task is to scale the compute containers so that the button in the application turns green.

This exercise was created with Sasu Mäkinen

git clone clones repositories.

```
cd@DESKTOP-VCNQ3D1:~/whoami$ curl localhost:8000
I'm 07357ec7ac74
cd@DESKTOP-VCNQ3D1:~/whoami$
```

$ docker –compose up –d –scale whoami=3

```
cd@DESKTOP-VCNQ3D1:~$ docker-compose up -d --scale whoami=3
Starting cd_youtube-dl-ubuntu_1 ... done
cd@DESKTOP-VCNQ3D1:~$
```

$ docker-compose port –index 1 whoami 8000

```
cd@DESKTOP-VCNQ3D1:~/whoami$ docker-compose port --index 1 whoami 8000
0.0.0.0:8000
cd@DESKTOP-VCNQ3D1:~/whoami$
```

$ docker-compose push

```
cd@DESKTOP-VCNQ3D1:~$ docker-compose push
Pushing youtube-dl-ubuntu (muradi/ubuntu:latest)...
The push refers to repository [docker.io/muradi/ubuntu]
47bfd7c9e854: Preparing
da5b07022b10: Preparing
bd1060ad6f94: Preparing
fa64e86a3663: Preparing
7e37488761c4: Preparing
1251204ef8fc: Waiting
47ef83afae74: Waiting
df54c846128d: Waiting
be96a3f634de: Waiting
```

$ docker-compose up –scale whoami=3

```
cd@DESKTOP-VCNQ3D1:~$ docker-compose up --scale whoami=3
Starting cd_youtube-dl-ubuntu_1 ... done
Attaching to cd_youtube-dl-ubuntu_1
youtube-dl-ubuntu_1  | Usage: youtube-dl [OPTIONS] URL [URL...]
youtube-dl-ubuntu_1  |
youtube-dl-ubuntu_1  | youtube-dl: error: You must provide at least one URL.
youtube-dl-ubuntu_1  | Type youtube-dl --help to see a list of all options.
cd_youtube-dl-ubuntu_1 exited with code 2
cd@DESKTOP-VCNQ3D1:~$
```