CENTRE ESPECÍFIC
D´EDUCACIÓ A DISTÀNCIA DE
LA COMUNITAT VALENCIANA

UT 11.
DOCKER
Activities

Computer Systems
CFGS DAW

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License

Nomenclature

Throughout this unit different symbols will be used to distinguish important elements within the content. These symbols are:

 Important

 Attention

 Interesting

UT 11. Docker
Solutions

4. Exercise 4

To find the image, search for ibmjava in Dockerhub. Open the official image. Then, in tags tab, search for “11” and it will show you the tags available, one of them with the JDK.

To download the image:

```
docker pull ibmjava:11-jdk
```

To test `javac`:

```
docker run --rm -ti ibmjava:11-jdk
root@23818fa525b1:/# javac
Usage: javac <options> <source files>
...
```

With `--rm` we don’t need to destroy the container, because it will be removed when finished.

5. Exercise 5

A Dockerfile based on Ubuntu could be:

```
FROM ubuntu:latest
# Optional, we haven't seen this; to remove warning messages from apt:
# ENV DEBIAN_FRONTEND=noninteractive
RUN apt update && apt install -y sl
ENTRYPOINT ["/usr/games/sl"]
```

You can also use the `CMD` instruction and/or the shell format.

To build the image:

```
docker build . -t execise-5
```

To launch a container and test it:

```
docker run --rm -ti exercise-5
```

6. Exercise 6

Part 1

The Dockerfile could be:

```
FROM python:3
COPY reverse.py /usr/bin
```

To build the image:

```
docker build . -t exercise-6
```

Part 2

You need to add an `ENTRYPOINT` or `CMD` to your Dockerfile:

```
FROM python:3
COPY reverse.py /usr/bin

# Any of these options would work:
CMD python /usr/bin/reverse.py "Yo, banana boy!"
# CMD ["python","/usr/bin/reverse.py","Yo, banana boy!"]
# ENTRYPOINT python /usr/bin/reverse.py "Yo, banana boy!"
# ENTRYPOINT ["python","/usr/bin/reverse.py","Yo, banana boy!"]
```

To build the image and run a container:

```
docker build . -t exercise-6
docker run --rm exercise-6
```

Part 3

It will work only with `ENTRYPOINT` using the exec notation:

```
FROM python:3
COPY reverse.py /usr/bin

# You can optionally add a CMD for a default phrase. It will be added to the
ENTRYPOINT if no command provided in the command line invocation
CMD ["A default phrase"]

ENTRYPOINT ["python","/usr/bin/reverse.py"]
```

7. Exercise 7

Part 1

Dockerfile:

```
FROM ubuntu
RUN apt update && apt install -y iproute2 iputils-ping net-tools
```

For building it:

```
docker build . --tag ubuntu-net
```

Part 2

You will need to create two networks: one for containers A and B and another one for containers C and D:

```
docker network create AB
docker network create CD
```

Then, create the containers in the corresponding networks (launch each command in a different console to have the four containers running):

```
docker run --rm --name container_a --network AB -ti ubuntu-net
```

```
docker run --rm --name container_b --network AB -ti ubuntu-net
docker run --rm --name container_c --network CD -ti ubuntu-net
docker run --rm --name container_d --network CD -ti ubuntu-net
```

Test the connections. You can find the container's IP running `ip a` from the container, or using `docker inspect` from your host.

When finished, remove the networks with `docker network remove AB CD` or with `docker network prune`.