Class Assignment / Homework II

Go through Chapter 3 and Chapter 4 in the Docker Book, and do the exercises one by one.

Chapter 3

Listing 3.1: Checking that the docker binary works

```
$ sudo docker info
```

same action:

use only COPY

:

COPY

ADD

·files were

CHECK

```
ubuntu $ docker info
Client:
 Version:    24.0.5
 Context:    default
 Debug Mode: false

Server:
 Containers: 0
  Running: 0
  Paused: 0
  Stopped: 0
 Images: 0
 Server Version: 24.0.5
 Storage Driver: overlay2
  Backing Filesystem: extfs
  Supports d_type: true
  Using metacopy: false
  Native Overlay Diff: true
  userxattr: false
 Logging Driver: json-file
 Cgroup Driver: systemd
 Cgroup Version: 1
 Plugins:
  Volume: local
  Network: bridge host ipvlan macvlan null overlay
  Log: awslogs fluentd gcplogs gelf journald json-file local logentries splunk syslog
 Swarm: inactive
 Runtimes: io.containerd.runc.v2 runc
 Default Runtime: runc
 Init Binary: docker-init
 containerd version:
 runc version:
 init version:
 Security Options:
  apparmor
  seccomp
   Profile: builtin
 Kernel Version: 5.4.0-131-generic
 Operating System: Ubuntu 20.04.5 LTS
 OSType: linux
```

Listing 3.3: The docker run command

```
$ sudo docker run -i -t ubuntu /bin/bash
```

```
ubuntu $
ubuntu $ docker run -i -t ubuntu /bin/bash
Unable to find image 'ubuntu:latest' locally
latest: Pulling from library/ubuntu
bccd10f490ab: Pull complete
Digest: sha256:77906da86b60585ce12215807090eb327e7386c8fafb5402369e421f44eff17e
Status: Downloaded newer image for ubuntu:latest
root@ce1e4b572bbc:/#
```

CHECK

Listing 3.5: Checking the container's hostname

```
root@f7cbdac22a02:/# hostname
f7cbdac22a02
```

CHECK

```
Status: Downloaded newer image for ubuntu:latest
root@ce1e4b572bbc:/#
root@ce1e4b572bbc:/# hostname
ce1e4b572bbc
root@ce1e4b572bbc:/#
```

Listing 3.6: Checking the container's /etc/hosts

```
root@f7cbdac22a02:/# cat /etc/hosts
```

```
ce1e4b572bbc
root@ce1e4b572bbc:/# cat /etc/hosts
127.0.0.1       localhost
::1     localhost ip6-localhost ip6-loopback
fe00::0 ip6-localnet
ff00::0 ip6-mcastprefix
ff02::1 ip6-allnodes
ff02::2 ip6-allrouters
172.17.0.2      ce1e4b572bbc
root@ce1e4b572bbc:/#
```

CHECK

Listing 3.7: Checking the container's interfaces

```
root@f7cbdac22a02:/# hostname -I
172.17.0.4
```

```
root@ce1e4b572bbc:/#
root@ce1e4b572bbc:/# hostname -I
172.17.0.2
root@ce1e4b572bbc:/#
```

Listing 3.8: Checking container's processes

```
root@f7cbdac22a02:/#  ps -aux
```

CHECK

```
172.17.0.2
root@ce1e4b572bbc:/# ps -aux
USER         PID %CPU %MEM    VSZ    RSS TTY      STAT START    TIME COMMAND
root           1  0.0  0.1   4620   3736 pts/0    Ss   09:35    0:00 /bin/bash
root          12  0.0  0.0   7056   1568 pts/0    R+   09:40    0:00 ps -aux
root@ce1e4b572bbc:/#
```

Listing 3.9: Installing a package in our first container

```
root@f7cbdac22a02:/# apt-get update; apt-get install vim
```

CHECK

```
root@ce1e4b572bbc:/#
root@ce1e4b572bbc:/#  apt-get update; apt-get install vim
Get:1 http://archive.ubuntu.com/ubuntu jammy InRelease [270 kB]
Get:2 http://security.ubuntu.com/ubuntu jammy-security InRelease [110 kB]
Get:3 http://security.ubuntu.com/ubuntu jammy-security/multiverse amd64 Packages [44.6 kB]
Get:4 http://archive.ubuntu.com/ubuntu jammy-updates InRelease [119 kB]
Get:5 http://security.ubuntu.com/ubuntu jammy-security/restricted amd64 Packages [1960 kB]
Get:6 http://archive.ubuntu.com/ubuntu jammy-backports InRelease [109 kB]
Get:7 http://archive.ubuntu.com/ubuntu jammy/restricted amd64 Packages [164 kB]
```

Listing 3.10: Listing Docker containers

```
CONTAINER ID IMAGE    COMMAND     CREATED  STATUS PORTS NAMES
1cd57c2cdf7f ubuntu   "/bin/bash" A minute Exited       gray_cat
```

```
root@ce1e4b572bbc:/# exit
exit
ubuntu $ docker ps -a
CONTAINER ID    IMAGE      COMMAND       CREATED        STATUS                    PORTS      NAMES
ce1e4b572bbc    ubuntu     "/bin/bash"   8 minutes ago  Exited (127) 4 seconds ago           distracted_galileo
ubuntu $
```

Listing 3.11: Naming a container

```
$ sudo docker run --name bob_the_container -i -t ubuntu /bin/bash
root@aa3f365f0f4e:/# exit
```

```
ubuntu $
ubuntu $ docker run --name container_211151 -i -t ubuntu /bin/bash
root@35cc1dd62eca:/# docker ps -a
bash: docker: command not found
root@35cc1dd62eca:/# exit
exit
ubuntu $ docker ps -a
CONTAINER ID    IMAGE      COMMAND       CREATED         STATUS                    PORTS      NAMES
35cc1dd62eca    ubuntu     "/bin/bash"   27 seconds ago  Exited (127) 6 seconds ago           container_211151
ce1e4b572bbc    ubuntu     "/bin/bash"   11 minutes ago  Exited (127) 3 minutes ago           distracted_galileo
ubuntu $
```

Listing 3.12: Starting a stopped container

```
$ sudo docker start bob_the_container
```

```
ubuntu $ docker ps
CONTAINER ID    IMAGE      COMMAND    CREATED    STATUS     PORTS      NAMES
ubuntu $ docker start container_211151
container_211151
ubuntu $ docker ps
CONTAINER ID    IMAGE      COMMAND       CREATED        STATUS       PORTS      NAMES
35cc1dd62eca    ubuntu     "/bin/bash"   2 minutes ago  Up 6 seconds            container_211151
ubuntu $
```

Listing 3.14: Attaching to a running container

```
$ sudo docker attach bob_the_container
```

```
CONTAINER ID    IMAGE     COMMAND       CREATED         STATUS         PORTS      NAMES
35cc1dd62eca    ubuntu    "/bin/bash"   2 minutes ago   Up 6 seconds              container_211151
ubuntu $ docker attach container_211151
root@35cc1dd62eca:/#
```

Listing 3.17: Creating a long running container

```
$ sudo docker run --name daemon_dave -d ubuntu /bin/sh -c "while
    true; do echo hello world; sleep 1; done"
1333bb1a66af402138485fe44a335b382c09a887aa9f95cb9725e309ce5b7db3
```

```
ubuntu $ sudo docker run --name daemon_dave -d ubuntu /bin/sh -c "while
> true; do echo hello world; sleep 1; done"
a2efe396102a5cad65dad2c2f0eb28f1e3a8d3d0e79db2f84dcbb801e453da33
ubuntu $ sudo docker run --name daemon_211151 -d ubuntu /bin/sh -c "while true; do echo hello world; sleep 1; done"
9d1233783cdfbae1169bafb975f2c2d82d46c205b2eab934d698928b42eada3b
ubuntu $ docker ps
CONTAINER ID    IMAGE     COMMAND                  CREATED         STATUS         PORTS      NAMES
9d1233783cdf    ubuntu    "/bin/sh -c 'while t..."  39 seconds ago  Up 38 seconds             daemon_211151
a2efe396102a    ubuntu    "/bin/sh -c 'while\nt..." 46 seconds ago  Up 46 seconds             daemon_dave
ubuntu $
```

Listing 3.19: Fetching the logs of our daemonized container

```
$ sudo docker logs daemon_dave
hello world
hello world
```

```
ubuntu $ docker ps
CONTAINER ID    IMAGE     COMMAND                  CREATED         STATUS         PORTS      NAMES
9d1233783cdf    ubuntu    "/bin/sh -c 'while t..."  39 seconds ago  Up 38 seconds             daemon_211151
a2efe396102a    ubuntu    "/bin/sh -c 'while\nt..." 46 seconds ago  Up 46 seconds             daemon_dave
ubuntu $ docker logs daemon_211151
hello world
hello world
hello world
hello world
hello world
hello world
hello world
```

Listing 3.20: Tailing the logs of our daemonized container

```
$ sudo docker logs -f daemon_dave
hello world
hello world
```

```
ubuntu $ sudo docker logs -f daemon_211151
hello world
hello world
hello world
hello world
```

Listing 3.21: Tailing the logs of our daemonized container

```
$ sudo docker logs -ft daemon_dave
2016-08-02T03:31:16.743679596Z hello world
2016-08-02T03:31:17.744769494Z hello world
2016-08-02T03:31:18.745786252Z hello world
2016-08-02T03:31:19.746839926Z hello world
. . .
```

```
ubuntu $ docker logs -ft daemon_211151
2024-03-15T09:52:58.319521960Z hello world
2024-03-15T09:52:59.320329785Z hello world
2024-03-15T09:53:00.320893267Z hello world
2024-03-15T09:53:01.321517962Z hello world
2024-03-15T09:53:02.323791981Z hello world
```

Listing 3.25: The docker stats command

```
$ sudo docker stats daemon_dave daemon_dwayne
```

```
2024-03-15T10:00:02.718174111Z hello world
2024-03-15T10:00:03.718794814Z hello world
CONTAINER ID   NAME            CPU %    MEM USAGE / LIMIT   MEM %   NET I/O      BLOCK I/O   PIDS
9d1233783cdf   daemon_211151   0.06%    808KiB / 1.937GiB   0.04%   17.1kB / 0B  0B / 0B     2
^C
```

Listing 3.26: Running a background task inside a container

```
$ sudo docker exec -d daemon_dave touch /etc/new_config_file
```

Listing 3.27: Running an interactive command inside a container

```
$ sudo docker exec -t -i daemon_dave /bin/bash
```

```
ubuntu $ docker exec -d daemon_dave touch /etc/new_config_file
ubuntu $  docker exec -t -i daemon_dave /bin/bash
root@a2efe396102a:/# exit
exit
```

Listing 3.28: Stopping the running Docker container

```
$ sudo docker stop daemon_dave
```

```
exit
ubuntu $  docker stop daemon_211151
```

Listing 3.36: Deleting a container

```
$ sudo docker rm 80430f8d0921
80430f8d0921
```

```
ubuntu $ docker rm daemon_211151
daemon_211151
ubuntu $
```

Listing 3.32: Inspecting a container

```
$ sudo docker inspect daemon_alice
[{
    "ID": "
```

```
ubuntu $ docker inspect daemon_211151
[
    {
        "Id": "9d1233783cdfbae1169bafb975f2c2d82d46c205b2eab934d698928b42eada3b",
        "Created": "2024-03-15T09:52:57.945741165Z",
        "Path": "/bin/sh",
        "Args": [
            "-c",
            "while true; do echo hello world; sleep 1; done"
        ],
        "State": {
            "Status": "exited",
            "Running": false,
            "Paused": false,
            "Restarting": false,
            "OOMKilled": false,
            "Dead": false,
            "Pid": 0,
            "ExitCode": 137,
            "Error": "",
            "StartedAt": "2024-03-15T09:52:58.321294806Z",
            "FinishedAt": "2024-03-15T10:03:55.475654587Z"
        },
        "Image": "sha256:ca2b0f26964cf2e80ba3e084d5983dab293fdb87485dc6445f3f7bbfc89d7459",
        "ResolvConfPath": "/var/lib/docker/containers/9d1233783cdfbae1169bafb975f2c2d82d46c205b2eab934d69
        "HostnamePath": "/var/lib/docker/containers/9d1233783cdfbae1169bafb975f2c2d82d46c205b2eab934d6989
        "HostsPath": "/var/lib/docker/containers/9d1233783cdfbae1169bafb975f2c2d82d46c205b2eab934d698928b
        "LogPath": "/var/lib/docker/containers/9d1233783cdfbae1169bafb975f2c2d82d46c205b2eab934d698928b42
2d82d46c205b2eab934d698928b42eada3b-json.log",
        "Name": "/daemon_211151",
        "RestartCount": 0,
        "Driver": "overlay2",
        "Platform": "linux",
        "MountLabel": "",
        "ProcessLabel": "",
        "AppArmorProfile": "docker-default",
        "ExecIDs": null,
        "HostConfig": {
            "Binds": null,
```

Chapter 4

Listing 4.1: Revisiting running a basic Docker container

```
$ sudo docker run -i -t --name another_container_mum ubuntu \
/bin/bash
root@b415b317ac75:/#
```

```
ubuntu $ docker run -i -t --name bojan211151_1 ubuntu \ /bin/bash
Unable to find image 'ubuntu:latest' locally
latest: Pulling from library/ubuntu
bccd10f490ab: Pull complete
Digest: sha256:77906da86b60585ce12215807090eb327e7386c8fafb5402369e421f44eff17e
Status: Downloaded newer image for ubuntu:latest
```

Listing 4.2: Listing Docker images

```
$ sudo docker images
REPOSITORY TAG     IMAGE ID    CREATED     VIRTUAL SIZE
ubuntu     latest  c4ff7513909d 6 days ago  225.4 MB
```

```
ubuntu $ docker images
REPOSITORY    TAG       IMAGE ID       CREATED       SIZE
ubuntu        latest    ca2b0f26964c   2 weeks ago   77.9MB
```

Listing 4.3: Pulling the Ubuntu 18.04 image

```
$ sudo docker pull ubuntu:18.04
18.04: Pulling from library/ubuntu
```

```
ubuntu $ docker pull ubuntu:18.04
18.04: Pulling from library/ubuntu
7c457f213c76: Pull complete
Digest: sha256:152dc042452c496007f07ca9127571cb9c29697f42acbfad72324b2bb2e43c98
Status: Downloaded newer image for ubuntu:18.04
docker.io/library/ubuntu:18.04
```

Listing 4.4: Listing the ubuntu Docker images

```
$ sudo docker images
REPOSITORY TAG     IMAGE ID     CREATED       VIRTUAL SIZE
ubuntu     latest  5506de2b643b 3 weeks ago   199.3 MB
ubuntu     18.04   0b310e6bf058 5 months ago  127.9 MB
```

```
ubuntu $ docker images
REPOSITORY    TAG       IMAGE ID       CREATED        SIZE
ubuntu        latest    ca2b0f26964c   2 weeks ago    77.9MB
ubuntu        18.04     f9a80a55f492   9 months ago   63.2MB
```

Listing 4.5: Running a tagged Docker image

```
$ sudo docker run -t -i --name new_container ubuntu:18.04 /bin/
    bash
root@79e36bff89b4:/#
```

Listing 4.6: Docker run and the default latest tag

```
$ sudo docker run -t -i --name next_container ubuntu /bin/bash
root@23a42cee91c3:/#
```

```
ubuntu $ docker run -t -i --name bojan211151_2 ubuntu:18.04 /bin/bash
root@55106603569e:/# exit
exit
ubuntu $ docker run -t -i --name bojan211151_3 ubuntu /bin/bash
root@750bc139ae38:/# exit
exit
```

Listing 4.7: Pulling the fedora image

```
$ sudo docker pull fedora:21
21: Pulling from library/fedora
```

```
ubuntu $ docker pull fedora:21
21: Pulling from library/fedora
fced6e4a4c06: Pull complete
Digest: sha256:a268e5e12257c7770eb44c24041baf5e728fba2eed1a84f007b81845ded0a485
Status: Downloaded newer image for fedora:21
docker.io/library/fedora:21
```

Listing 4.8: Viewing the fedora image

```
$ sudo docker images fedora
REPOSITORY TAG    IMAGE ID    CREATED     VIRTUAL SIZE
fedora     21     7d3f07f8de5f 6 weeks ago 374.1 MB
```

```
ubuntu $ docker images fedora
REPOSITORY      TAG          IMAGE ID        CREATED        SIZE
fedora          21           ba6369d667d1    7 years ago    241MB
ubuntu $ docker pull fedora:20
```

Listing 4.9: Pulling a tagged fedora image

```
$ sudo docker pull fedora:20
```

```
ubuntu $ docker pull fedora:20
20: Pulling from library/fedora
4abd98c7489c: Pull complete
Digest: sha256:5d5a02b873d298da9bca4b84440c5cd698b0832560c850d92cf389cef58bc549
Status: Downloaded newer image for fedora:20
docker.io/library/fedora:20
```

Listing 4.10: Searching for images

```
$ sudo docker search puppet
```

```
ubuntu $ docker search puppet
NAME                                     DESCRIPTION                             STARS   OFFICIAL   AUTOMATED
itisfoundation/puppeteer                                                         2
machines/puppeteer                                                              0
droidwiki/puppetserver                                                          0
voxpupuli/puppet_webhook                 Sinatra-based web api server for executing p…  1
voxpupuli/puppetboard                    Web frontend for PuppetDB               0
ncsa/puppet-enc                          Puppet External Node Classifier         0
voxpupuli/puppet-catalog-diff-viewer     A viewer for the puppet-catalog-diff tool  0
codeception/codeceptjs                   CodeceptJS with webdriverIO, Puppeteer, Prot…  11            [OK]
femtopixel/google-lighthouse-puppeteer   Google Lighthouse + Puppeteer - Docker Image  4
ukwa/webrender-puppeteer                 Web page rendering utility based on Google's…  0            [OK]
voxpupuli/container-puppetserver         Container image for Puppetserver        1
```

Listing 4.11: Pulling down the jamtur01/puppetmaster image

```
$ sudo docker pull jamtur01/puppetmaster
```

```
ubuntu $  docker pull jamtur01/puppetmaster
Using default tag: latest
latest: Pulling from jamtur01/puppetmaster
Image docker.io/jamtur01/puppetmaster:latest uses outdated schema1 manifest format. Please upgrade to a schema2 image for b
tibility. More information at https://docs.docker.com/registry/spec/deprecated-schema-v1/
a3ed95caeb02: Pull complete
6e71c809542e: Pull complete
d196a7609355: Pull complete
08f6dff5acea: Pull complete
ce65532003d0: Pull complete
d1f76d0972bd: Pull complete
c9ed023cc2c9: Pull complete
Digest: sha256:2eedcf4cbe50f7052b420b2b125969873872d76ce36752f04f5160160acd1258
Status: Downloaded newer image for jamtur01/puppetmaster:latest
docker.io/jamtur01/puppetmaster:latest
```

Listing 4.12: Creating a Docker container from the puppetmaster image

```
$ sudo docker run -i -t jamtur01/puppetmaster /bin/bash
root@4655dee672d3:/# facter
```

```
ubuntu $  docker run -i -t jamtur01/puppetmaster /bin/bash
root@6d9b450ccf80:/# facter
architecture => amd64
augeasversion => 1.2.0
blockdevice_vda_size => 21474836480
blockdevice_vda_vendor => 0x1af4
blockdevices => vda
facterversion => 1.7.5
filesystems => btrfs,ext2,ext3,ext4,squashfs,vfat
hardwareisa => x86_64
hardwaremodel => x86_64
hostname => 6d9b450ccf80
id => root
interfaces => eth0,lo
ipaddress => 172.17.0.2
ipaddress_eth0 => 172.17.0.2
ipaddress_lo => 127.0.0.1
```

dckr_pat_3SfBteXdo30rScxKXcKwsSeLvLM

Listing 4.13: Logging into the Docker Hub

```
$ sudo docker login
Login with your Docker ID to push and pull images from Docker Hub
    . If you don't have a Docker ID, head over to https://hub.
    docker.com to create one.
```

```
ubuntu $ docker login -u bojan211151
Password:
WARNING! Your password will be stored unencrypted in /root/.docker/config.json.
Configure a credential helper to remove this warning. See
https://docs.docker.com/engine/reference/commandline/login/#credentials-store

Login Succeeded
```

Listing 4.14: Creating a custom container to modify

```
$ sudo docker run -i -t ubuntu /bin/bash
root@4aab3ce3cb76:/#
```

```
ubuntu $ docker run -i -t ubuntu /bin/bash
Unable to find image 'ubuntu:latest' locally
latest: Pulling from library/ubuntu
bccd10f490ab: Pull complete
Digest: sha256:77906da86b60585ce12215807090eb327e7386c8fafb5402369e421f44eff17e
Status: Downloaded newer image for ubuntu:latest
```

Listing 4.15: Adding the Apache package

```
root@4aab3ce3cb76:/# apt-get -yqq update
. . .
root@4aab3ce3cb76:/# apt-get -y install apache2
. . .
```

```
root@f2db8d18d370:/# apt-get -yqq update
root@f2db8d18d370:/# apt-get -y install apache2
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  apache2-bin apache2-data apache2-utils bzip2 ca-certificates file libapr1 libaprutil1 libaprutil1-dbd-sqlite3 libaprutil1-ldap
  libcurl4 libexpat1 libgdbm-compat4 libgdbm6 libicu70 libjansson4 libldap-2.5-0 libldap-common liblua5.3-0 libmagic-mgc libmagi
  libnghttp2-14 libperl5.34 libpsl5 librtmp1 libsasl2-2 libsasl2-modules libsasl2-modules-db libsqlite3-0 libssh-4 libxml2 mail
  media-types mime-support netbase openssl perl perl-modules-5.34 publicsuffix ssl-cert xz-utils
Suggested packages:
  apache2-doc apache2-suexec-pristine | apache2-suexec-custom www-browser ufw bzip2-doc gdbm-l10n libsasl2-modules-gssapi-mit
  | libsasl2-modules-gssapi-heimdal libsasl2-modules-ldap libsasl2-modules-otp libsasl2-modules-sql perl-doc libterm-readline-g
  | libterm-readline-perl-perl make libtap-harness-archive-perl
```

Listing 4.16: Committing the custom container

```
$ sudo docker commit 4aab3ce3cb76 jamtur01/apache2
8ce0ea7a1528
```

```
ubuntu $ docker ps -l -q
f2db8d18d370
ubuntu $ docker commit f2db8d18d370 bojan211151/apache2
sha256:8db5804dd7e4c264baec927bd0f4de3c784dfaf46aaa2b9197820040a9b923a9
ubuntu $
```

Listing 4.17: Reviewing our new image

```
$ sudo docker images jamtur01/apache2
. . .
jamtur01/apache2   latest   8ce0ea7a1528   13 seconds ago   90.63 MB
```

```
ubuntu $ sudo docker images bojan211151/apache2
REPOSITORY            TAG       IMAGE ID       CREATED          SIZE
bojan211151/apache2   latest    8db5804dd7e4   45 seconds ago   235MB
ubuntu $
```

Listing 4.18: Committing another custom container

```
$ sudo docker commit -m "A new custom image" -a "James Turnbull"
    \
4aab3ce3cb76 jamtur01/apache2:webserver
f99ebb6fed1f559258840505a0f5d5b6173177623946815366f3e3acff01adef
```

Listing 4.19: Inspecting our committed image

```
$ sudo docker inspect jamtur01/apache2:webserver
[{
    "Architecture": "amd64",
    "Author": "James Turnbull",
    "Comment": "A new custom image",
    . . .
}]
```

```
ubuntu $
ubuntu $ docker commit -m "A new custom image" -a "Bojan Ristov" \f2db8d18d370 bojan211151/apache2:webserver
sha256:c529f0aaf7a2e554aca878e738db42d64294b4746321702001f3265c9835b564
ubuntu $ docker inspect bojan211151/apache2:webserver
[
    {
        "Id": "sha256:c529f0aaf7a2e554aca878e738db42d64294b4746321702001f3265c9835b564",
        "RepoTags": [
            "bojan211151/apache2:webserver"
        ],
        "RepoDigests": [],
        "Parent": "sha256:ca2b0f26964cf2e80ba3e084d5983dab293fdb87485dc6445f3f7bbfc89d7459",
        "Comment": "A new custom image",
        "Created": "2024-03-15T17:29:51.853326581Z",
        "Container": "f2db8d18d370c13a4d93ac0773d0c7488fedabf456cc5400d8a103af85890e71",
        "ContainerConfig": {
            "Hostname": "f2db8d18d370",
            "Domainname": "",
            "User": "",
            "AttachStdin": true,
            "AttachStdout": true,
            "AttachStderr": true,
            "Tty": true,
            "OpenStdin": true,
            "StdinOnce": true,
            "Env": [
                "PATH=/usr/local/sbin:/usr/local/bin:/usr/sbin:/usr/bin:/sbin:/bin"
            ],
            "Cmd": [
                "/bin/bash"
            ],
```

Listing 4.20: Running a container from our committed image

```
$ sudo docker run -t -i jamtur01/apache2:webserver /bin/bash
root@9c2d3a843b9e:/# service apache2 status
 * apache2 is not running
```

```
ubuntu $ docker run -t -i bojan211151/apache2:webserver /bin/bash
root@6e6f25ec4b36:/# service apache2 status
 * apache2 is not running
root@6e6f25ec4b36:/# mkdir static_web
```

Listing 4.21: Creating a sample repository

```
$ mkdir static_web
$ cd static_web
$ touch Dockerfile
```

```
ubuntu $ mkdir static_web_211151
ubuntu $ cd static_web_211151
ubuntu $ touch Dockerfile
ubuntu $ nano Dockerfile
ubuntu $ exec
ubuntu $ cd static_web_211151
```

Listing 4.22: Our first Dockerfile

```
# Version: 0.0.1
FROM ubuntu:18.04
LABEL maintainer="james@example.com"
RUN apt-get update; apt-get install -y nginx
RUN echo 'Hi, I am in your container' \
    >/var/www/html/index.html
EXPOSE 80
```

```
GNU nano 4.8                                                     Dock
# Version: 0.0.1
FROM ubuntu:18.04
LABEL maintainer="james@example.com"
RUN apt-get update; apt-get install -y nginx
RUN echo 'Hi, I am in your container' \
>/var/www/html/index.html
EXPOSE 80
```

Listing 4.24: Running the Dockerfile

```
$ cd static_web
$ sudo docker build -t="jamtur01/static_web" .
Sending build context to Docker daemon  2.56 kB
Sending build context to Docker daemon
```

```
RUN: command not found
ubuntu $ nano Dockerfile
ubuntu $ docker build -t="bojan211151/static_web_211151:v1" .
DEPRECATED: The legacy builder is deprecated and will be removed in a future release.
            Install the buildx component to build images with BuildKit:
            https://docs.docker.com/go/buildx/

Sending build context to Docker daemon  2.048kB
Step 1/5 : FROM ubuntu:18.04
18.04: Pulling from library/ubuntu
7c457f213c76: Pull complete
Digest: sha256:152dc042452c496007f07ca9127571cb9c29697f42acbfad72324b2bb2e43c98
Status: Downloaded newer image for ubuntu:18.04
 ---> f9a80a55f492
Step 2/5 : LABEL maintainer="james@example.com"
 ---> Running in a48a894fd9d6
Removing intermediate container a48a894fd9d6
 ---> 62053cf4ffb5
Step 3/5 : RUN apt-get update; apt-get install -y nginx
 ---> Running in ac4ad30eebce
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://security.ubuntu.com/ubuntu bionic-security/multiverse amd64 Packages [23.8 kB]
Get:4 http://archive.ubuntu.com/ubuntu bionic-updates InRelease [88.7 kB]
```

Listing 4.33: Listing our new Docker image

```
$ sudo docker images jamtur01/static_web
REPOSITORY          TAG     ID          CREATED         SIZE
jamtur01/static_web latest  22d47c8cb6e5  24 seconds ago  12.29 kB
     (virtual 326 MB)
```

```
ubuntu $ docker images bojan211151/static_web_211151
REPOSITORY                       TAG     IMAGE ID        CREATED         SIZE
bojan211151/static_web_211151    v1      8478c948961f    27 minutes ago  169MB
ubuntu $
```

Listing 4.34: Using the docker history command

```
$ sudo docker history 22d47c8cb6e5
IMAGE          CREATED      CREATED BY
                                        SIZE
```

```
ubuntu $ docker history 8478c948961f
IMAGE          CREATED       CREATED BY                                    SIZE     COMMENT
8478c948961f   5 minutes ago  /bin/sh -c #(nop)  EXPOSE 80                 0B
604ad8c36b49   5 minutes ago  /bin/sh -c echo 'Hi, I am in your container'…  27B
72cf13c2128f   5 minutes ago  /bin/sh -c apt-get update; apt-get install -…  106MB
62053cf4ffb5   5 minutes ago  /bin/sh -c #(nop)  LABEL maintainer=james@ex…  0B
f9a80a55f492   9 months ago   /bin/sh -c #(nop)  CMD ["/bin/bash"]         0B
<missing>      9 months ago   /bin/sh -c #(nop) ADD file:3c74e7e08cbf9a876…  63.2MB
<missing>      9 months ago   /bin/sh -c #(nop)  LABEL org.opencontainers.…  0B
<missing>      9 months ago   /bin/sh -c #(nop)  LABEL org.opencontainers.…  0B
<missing>      9 months ago   /bin/sh -c #(nop)  ARG LAUNCHPAD_BUILD_ARCH  0B
<missing>      9 months ago   /bin/sh -c #(nop)  ARG RELEASE               0B
```

Listing 4.36: Viewing the Docker port mapping

```
$ sudo docker ps -l
CONTAINER ID  IMAGE                     ... PORTS
                        NAMES
6751b94bb5c0  jamtur01/static_web:latest ... 0.0.0.0:49154->80/
    tcp  static_web
```

```
ubuntu $ docker ps -l
CONTAINER ID  IMAGE                        COMMAND      CREATED        STATUS                  PORTS    NAMES
6e6f25ec4b36  bojan211151/apache2:webserver "/bin/bash"  40 minutes ago Exited (0) 35 minutes ago        trusting_yalow
ubuntu $
```

Изработил:

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