

Trabajo Práctico 2

Materia: Ingeniería de Software 3

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Ejercicio 1:


```
❏ ~ sudo pacman -S docker
[sudo] password for vietto:
resolving dependencies...
looking for conflicting packages...
```

```
❏ ~ sudo systemctl start docker.service
❏ ~ sudo docker version
Client:
 Version:           20.10.17
 API version:       1.41
 Go version:        go1.18.3
 Git commit:        100c70180f
 Built:             Sat Jun 11 23:27:28 2022
 OS/Arch:           linux/amd64
 Context:           default
 Experimental:      true

Server:
 Engine:
  Version:          20.10.17
  API version:      1.41 (minimum version 1.12)
  Go version:       go1.18.3
  Git commit:       a89b84221c
  Built:            Sat Jun 11 23:27:14 2022
  OS/Arch:          linux/amd64
  Experimental:     false
 containerd:
  Version:          v1.6.8
  GitCommit:        9cd3357b7fd7218e4aec3eae239db1f68a5a6ec6.m
 runc:
  Version:          1.1.3
  GitCommit:
 docker-init:
  Version:          0.19.0
  GitCommit:        de40ad0
```


Ejercicio 2:

Ya tenia cuenta registrada

 dockerhub

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Welcome to Docker

Download the desktop application


Download for Windows

Also available for [Mac](#) and [Linux](#)




Create a Repository

Push container images to a repository on Docker Hub.



Docker Hub Basics






Watch the guide on how to create and push your first image into a Docker Hub repository.



Language-Specific Guides

Learn how to containerize language-specific applications using Docker.

Access the world's largest library of container images



Ejercicio 3:

```
❏ ~ sudo docker pull busybox
[sudo] password for vietto:
Using default tag: latest
latest: Pulling from library/busybox
50783e0dfb64: Pull complete
Digest: sha256:ef320ff10026a50cf5f0213d35537ce0041ac1d96e9b7800bafd8bc9eff6c693
Status: Downloaded newer image for busybox:latest
docker.io/library/busybox:latest
```

```
❏ ~ sudo docker images
REPOSITORY    TAG       IMAGE ID       CREATED        SIZE
busybox       latest    7a80323521cc   2 weeks ago   1.24MB
```

Ejercicio 4:

```
sudo docker run busybox
```

Busybox es una caja de herramientas, por lo tanto no se obtuvo ningún resultado porque no se le está indicando ninguna instrucción o comando a la imagen para que muestre algo o realice una acción.

```
sudo docker run busybox echo "Hola Mundo"
[sudo] password for vietto:
Hola Mundo
```

```
sudo docker ps
```

CONTAINER ID	IMAGE	COMMAND	CREATED	STATUS	PORTS	NAMES
--------------	-------	---------	---------	--------	-------	-------

```
sudo docker ps -a
```

CONTAINER ID	IMAGE	COMMAND	CREATED	STATUS	PORTS	NAMES
d3d887fab1f1	busybox	"echo 'Hola Mundo'"	54 seconds ago	Exited (0) 53 seconds ago		loving_albattani
e53a46d71137	busybox	"sh"	9 minutes ago	Exited (0) 9 minutes ago		lucid_newton

ps significa "Estado del proceso" (**Process Status**), por lo que docker ps básicamente muestra todos los procesos de Docker en ejecución activa. docker ps enumera todos los contenedores que están en funcionamiento. El parametro -a significa todos los contenedores (tanto detenidos como en ejecución).

Ejercicio 5:

```
sudo docker run -it busybox sh
```

```
/ # ps
PID   USER     TIME   COMMAND
    1   root      0:00   sh
    7   root      0:00   ps
/ # uptime
18:10:29 up 5:48,  0 users,  load average: 0.56, 0.60, 0.63
/ # free
              total        used        free      shared  buff/cache   available
Mem:      20224468       3343812      11138824       2648684       5741832      13861072
Swap:              0              0              0
/ # ls -l /
total 36
drwxr-xr-x  2 root    root      12288 Jul 29 01:32 bin
drwxr-xr-x  5 root    root        360 Aug 18 18:10 dev
drwxr-xr-x  1 root    root      4096 Aug 18 18:10 etc
drwxr-xr-x  2 nobody  nobody    4096 Jul 29 01:32 home
dr-xr-xr-x 347 root    root         0 Aug 18 18:10 proc
drwx----- 1 root    root      4096 Aug 18 18:10 root
dr-xr-xr-x 13 root    root         0 Aug 18 18:10 sys
drwxrwxrwt  2 root    root      4096 Jul 29 01:32 tmp
drwxr-xr-x  3 root    root      4096 Jul 29 01:32 usr
drwxr-xr-x  4 root    root      4096 Jul 29 01:32 var
/ # exit
```

Ejercicio 6:

```
❏ ~ sudo docker ps -a
CONTAINER ID   IMAGE     COMMAND                  CREATED        STATUS              PORTS          NAMES
07fccae8e18   busybox   "sh"                    2 minutes ago Exited (0) About a minute ago
d3d887fab1f1   busybox   "echo 'Hola Mundo'"    7 minutes ago Exited (0) 7 minutes ago
e53a46d71137   busybox   "sh"                    16 minutes ago Exited (0) 16 minutes ago

❏ ~ sudo docker rm wizardly_burnell
[sudo] password for vietto:
wizardly_burnell

❏ ~ sudo docker ps -a
CONTAINER ID   IMAGE     COMMAND                  CREATED        STATUS              PORTS          NAMES
d3d887fab1f1   busybox   "echo 'Hola Mundo'"    12 minutes ago Exited (0) 12 minutes ago
e53a46d71137   busybox   "sh"                    21 minutes ago Exited (0) 21 minutes ago
```

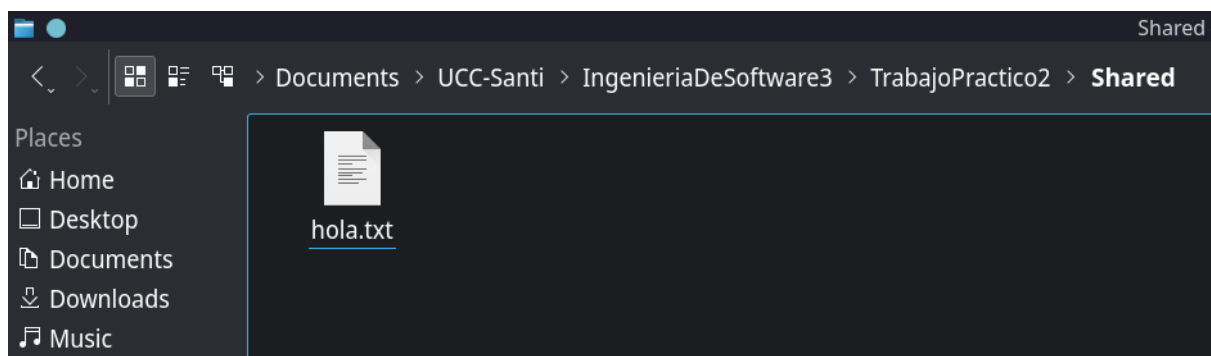
```
❏ ~ sudo docker container prune
WARNING! This will remove all stopped containers.
Are you sure you want to continue? [y/N] y
Deleted Containers:
d3d887fab1f174b43de5f54df89a42461c3678751712beb7cc3b22ab30fdaa29
e53a46d71137c6b77c046ff1dbbccc69d87f50643019a008212c9e007e3e01ce

Total reclaimed space: 0B

❏ ~ sudo docker ps -a
CONTAINER ID   IMAGE     COMMAND                  CREATED        STATUS              PORTS          NAMES
```

Ejercicio 7:

```
❏ ~ sudo docker ps -a
CONTAINER ID   IMAGE     COMMAND                  CREATED        STATUS              PORTS          NAMES
❏ ~ sudo docker run -it -v /home/vietto/Documents/UCC-Santi/IngenieriaDeSoftware3/TrabajoPractico2/Shared:/var/escritorio busybox /bin/sh
[sudo] password for vietto:
/ # ls -l /var/escritorio
total 0
/ # touch /var/escritorio/hola.txt
/ # exit
```



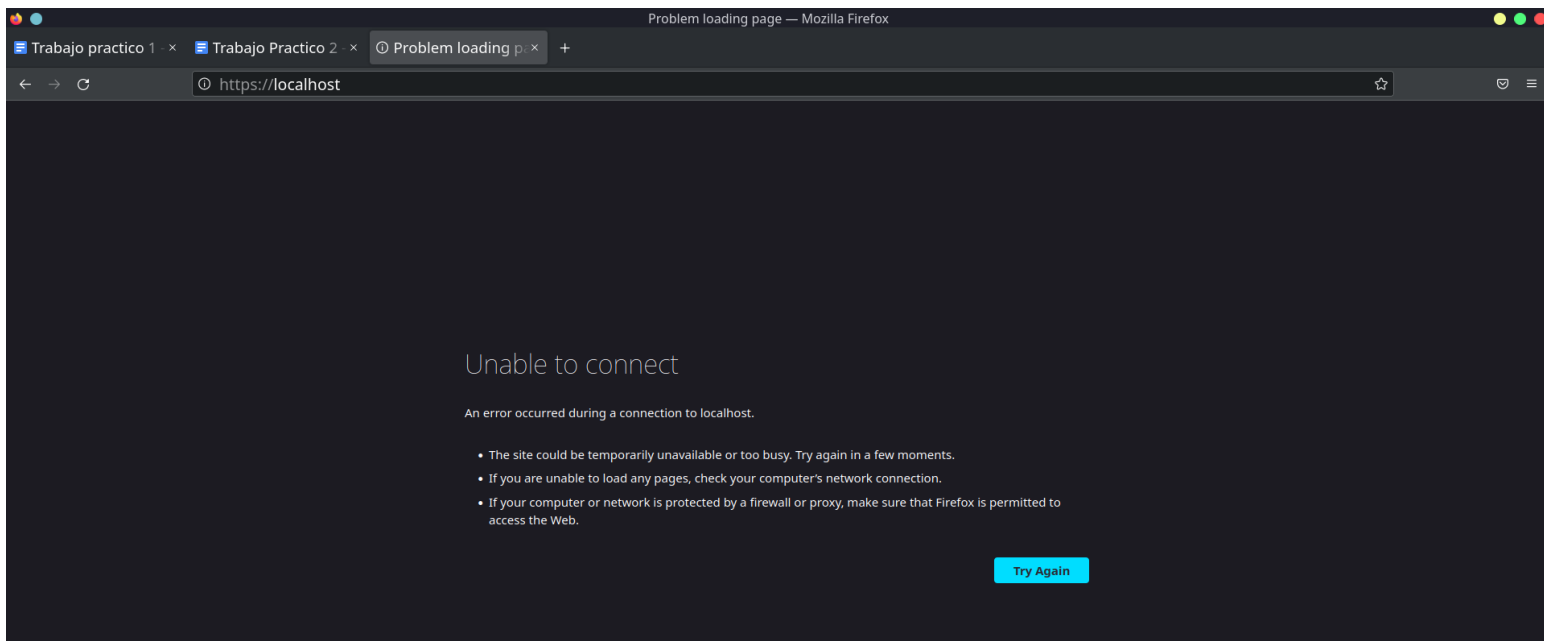
Ejercicio 8:

Exponemos un puerto local que se comuniquen con un puerto remoto. Cuando alguien ponga en el navegador el puerto 80, va a acceder al puerto interno.

```

[~] ~$ sudo docker run -d daviey/nyan-cat-web
[sudo] password for vietto:
Unable to find image 'daviey/nyan-cat-web:latest' locally
latest: Pulling from daviey/nyan-cat-web
b7f33cc0b48e: Pull complete
5f9b58fd6dd4: Pull complete
1adeef8edfca: Pull complete
cc8a2986b124: Pull complete
7220539c61d6: Pull complete
Digest: sha256:57ac8fd383ada137e22a2894e92f74287f4566be0ae21ca97828b34a93a646c6
Status: Downloaded newer image for daviey/nyan-cat-web:latest
0d871ae252cd81e30d2f4c38397e63f24b09f9dfa7570724cb0d5ba1e7d10593
[~] ~$ sudo docker ps
CONTAINER ID   IMAGE          COMMAND                  CREATED        STATUS        PORTS                    NAMES
0d871ae252cd   daviey/nyan-cat-web  "nginx -g 'daemon of..." 50 seconds ago Up 49 seconds  80/tcp, 443/tcp          suspicious_kapitsa

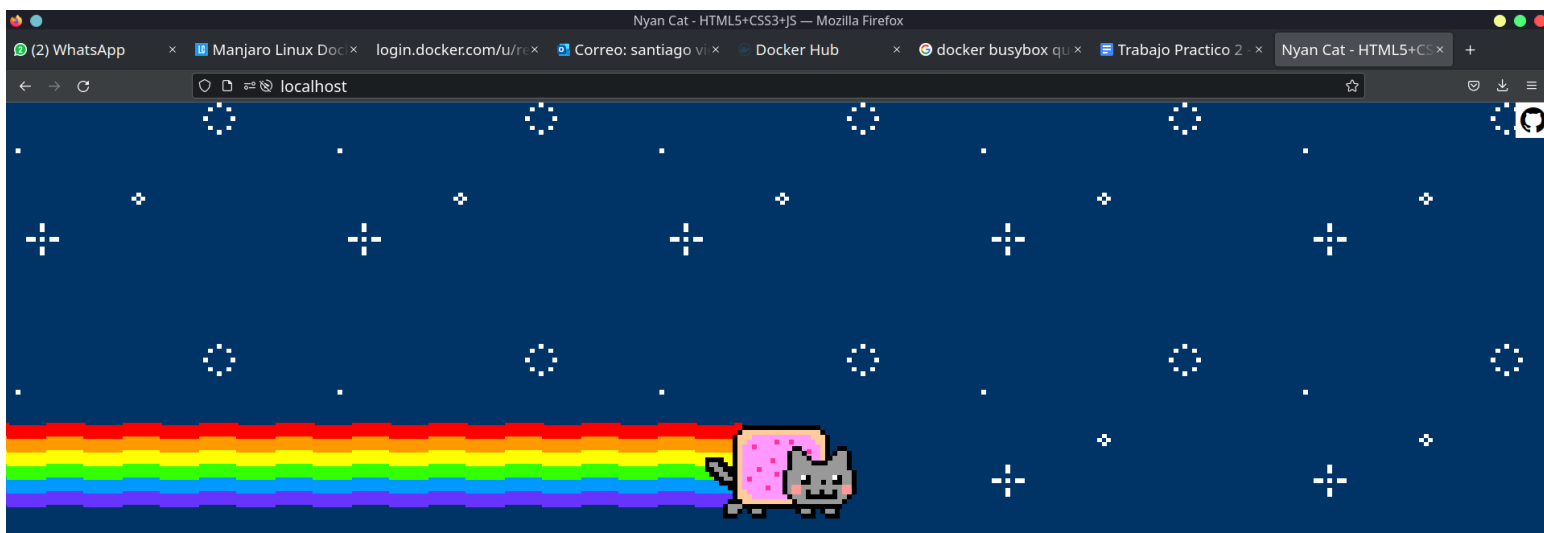
```



```

[~] ~$ sudo docker kill suspicious_kapitsa
suspicious_kapitsa
[~] ~$ sudo docker run -d -p 80:80 daviey/nyan-cat-web
f19198434757cc8fef10e6ec57dbec95abc6f7501e204f60f3e99fc2991bb0
[~] ~$ sudo docker ps
CONTAINER ID   IMAGE          COMMAND                  CREATED        STATUS        PORTS                    NAMES
f19198434757   daviey/nyan-cat-web  "nginx -g 'daemon of..." 2 minutes ago Up 2 minutes  0.0.0.0:80->80/tcp, :::80->80/tcp, 443/tcp  quizzical_curie
[~] ~$ sudo docker kill quizzical_curie
quizzical_curie
[~] ~$ sudo docker rm quizzical_curie
quizzical_curie
[~] ~$ sudo docker ps
CONTAINER ID   IMAGE          COMMAND                  CREATED        STATUS        PORTS                    NAMES
da9e52f2718a75296789f0a4c8529c763f7e78201d1e7d5a7e2195405bcc6e81  daviey/nyan-cat-web  "nginx -g 'daemon of..." 2 minutes ago Up 2 minutes  0.0.0.0:80->80/tcp, :::80->80/tcp, 443/tcp  suspicious_kapitsa

```



Ejercicio 9:

```
mkdir $HOME/.postgres
```

```
sudo docker run --name my-postgres -e POSTGRES_PASSWORD=12345 -v $HOME/.postgres:/var/lib/postgresql/data -p 5432:5432 -d postgres:9.4
7f0cc5ea4e3de77c49653751f95bcd6a5d1180a07f2b82f11c71242802c0c79
sudo docker exec -it my-postgres /bin/bash
root@7f0cc5ea4e3d:/# psql -h localhost -U postgres
psql (9.4.26)
Type "help" for help.
```

```
postgres=# \l
               List of databases
  Name      | Owner   | Encoding | Collate | Ctype   | Access privileges
-----+-----+-----+-----+-----+-----
 postgres   | postgres | UTF8      | en_US.utf8 | en_US.utf8 | 
 template0  | postgres | UTF8      | en_US.utf8 | en_US.utf8 | =c/postgres
+
 postgres=CtC/postgres
 template1  | postgres | UTF8      | en_US.utf8 | en_US.utf8 | =c/postgres
+
 postgres=CtC/postgres
(3 rows)

postgres=# create database test;
CREATE DATABASE
postgres=# \connect test
You are now connected to database "test" as user "postgres".
test=# create table tabla_a (mensaje varchar(50));
CREATE TABLE
test=# insert into tabla_a (mensaje) values('Hola Mundo!');
INSERT 0 1
test=# select * from tabla_a;
      mensaje
-----
 Hola Mundo!
(1 row)

test=# \q
root@7f0cc5ea4e3d:/# exit
exit
```

```
sudo pacman -S dbeaver
[sudo] password for vietto:
resolving dependencies...
looking for conflicting packages...

Packages (1) dbeaver-22.1.3-1
```

Con la ejecución de los comandos docker run y docker exec en este ejercicio, a todo esto lo ejecutamos dentro del contenedor como si fuera una máquina virtual. Levantamos la imagen pero accedemos a la imagen local en ese entorno.

