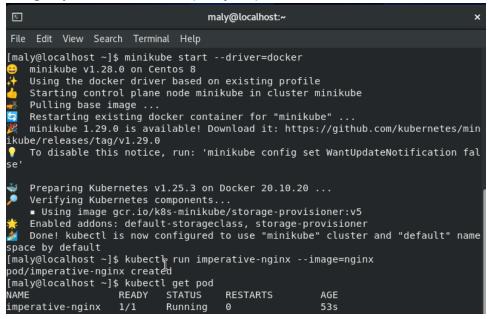
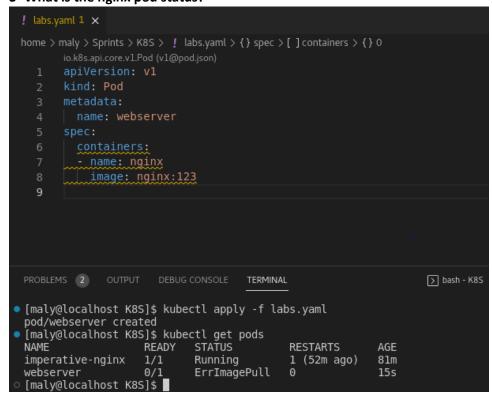
# LAB1

1- Create a pod with the name "imperative-nginx" and with the image nginx and latest tag. using Imperative command (not yaml).



- 2- Create a pod with the name webserver and with the image "nginx123" Use a pod-definition YAML file.
- 3- What is the nginx pod status?



```
! labs.yaml 1 ×
       name: webserver
        - name: nginx
        image: nginx:123
PROBLEMS (2) OUTPUT DEBUG CONSOLE TERMINAL
                                                                       Normal
           Scheduled 4m6s
                                                 default-scheduler Successfully assigned defa
ult/webserver to minikube
                                                                      Pulling image "nginx:123"
Failed to pull image "ngin
  Normal Pulling
                        2m33s (x4 over 4m5s)
                                                 kubelet
  Warning Failed
                         2m31s (x4 over 4m3s)
                                                 kubelet
x:123": rpc error: code = Unknown desc = Error response from daemon: manifest for nginx:1
23 not found: manifest unknown: manifest unknown
  Warning Failed
Warning Failed
                        2m31s (x4 over 4m3s)
                                                 kubelet
                                                                       Error: ErrImagePull
                                                                      Error: ImagePullBackOff
Back-off pulling image "ng
                         2m17s (x6 over 4m3s)
                                                 kubelet
  Normal
            BackOff
                        2m6s (x7 over 4m3s)
                                                 kubelet
[maly@localhost K8S]$
```

4- Change the nginx pod image to "nginx" check the status again

```
home > maly > Sprints > K8S > ! labs.yaml > {} spec > [ ] containers > {} 0 > ™ image
       io.k8s.api.core.v1.Pod (v1@pod.json)
       apiVersion: v1
       kind: Pod
         name: webserver
         containers:
  8
                                                      B
PROBLEMS 2
                                       TERMINAL
                                                                      > p
[maly@localhost K8S]$ kubectl apply -f labs.yaml
pod/webserver configured
[maly@localhost K8S]$ kubectl get pods
                     READY
                              STATUS
                                         RESTARTS
                                                        AGE
imperative-nginx
                     1/1
                              Running
                                         1 (57m ago)
                                                        86m
                     1/1
webserver
                              Running
                                                        5m36s
 [maly@localhost K8S]$
```

5- How many pods are running in the system? Type the command to show this

```
[maly@localhost K8S]$ kubectl get pods
NAME
                    READY
                             STATUS
                                        RESTARTS
                                                        AGE
imperative-nginx
                     1/1
                             Running
                                        1 (57m ago)
                                                       86m
                     1/1
                                        0
                                                       5m36s
webserver
                             Running
tand [and [av [em]
```

6- What does READY column in the output of get pods command indicate?

it shows how many containers in a pod are considered ready

7- Delete first pod named imperative-nginx you just created. Type the command to do this

```
    [maly@localhost K8S]$ kubectl delete pod imperative-nginx pod "imperative-nginx" deleted
    [maly@localhost K8S]$ kubectl get pods NAME READY STATUS RESTARTS AGE webserver 1/1 Running 0 14m
    [maly@localhost K8S]$ ■
```

8- Which node is pod named webserver running on (list two commands to do this)

```
[maly@localhost K8S]$ kubectl get pod -o wide
           READY
                  STATUS
                             RESTARTS AGE
                                                                      NOMINATED NODE
EADINESS GATES
           1/1
                   Running
                                        16m 172.17.0.2
webserver
                                                          minikube
                                                                      <none>
none>
[maly@localhost K8S]$ kubectl describe pod webserver
                 webserver
Namespace:
                 default
Service Account: default
                 minikube/192.168.49.2
Node:
Start Time:
                 Fri, 03 Feb 2023 02:35:46 +0200
```

- 9- Get a shell to the running container i.e ssh into it (figure out the command)
- 10- Run cat /etc/os-release inside the container
- 11- Exit from the shell (/bin/bash) session

```
[maly@localhost K8S] kubectl exec -it webserver -- /bin/bash
root@webserver:/# cat /etc/os-release
PRETTY_NAME="Debian GNU/Linux 11 (bullseye)"
NAME="Debian GNU/Linux"
VERSION_ID="11"
VERSION="11 (bullseye)"
VERSION_CODENAME=bullseye
ID=debian
HOME_URL="https://www.debian.org/"
SUPPORT_URL="https://www.debian.org/support"
BUG_REPORT_URL="https://bugs.debian.org/"
root@webserver:/# exit
exit
```

#### 12- Get logs of pod, what are logs and what they are used for?

```
[maly@localhost K8S]$ kubectl logs webserver
/docker-entrypoint.sh: /docker-entrypoint.d/ is not empty, will attempt to perform config
uration
/docker-entrypoint.sh: Looking for shell scripts in /docker-entrypoint.d/
/docker-entrypoint.sh: Launching /docker-entrypoint.d/10-listen-on-ipv6-by-default.sh
10-listen-on-ipv6-by-default.sh: info: Getting the checksum of /etc/nginx/conf.d/default.
conf
10-listen-on-ipv6-by-default.sh: info: Enabled listen on IPv6 in /etc/nginx/conf.d/default.
conf
/docker-entrypoint.sh: Launching /docker-entrypoint.d/20-envsubst-on-templates.sh
/docker-entrypoint.sh: Lonching /docker-entrypoint.d/30-tune-worker-processes.sh
/docker-entrypoint.sh: Configuration complete; ready for start up
2023/02/03 00:41:18 [notice] 1#1: using the "epoll" event method
2023/02/03 00:41:18 [notice] 1#1: nginx/1.23.3
2023/02/03 00:41:18 [notice] 1#1: built by gcc 10.2.1 20210110 (Debian 10.2.1-6)
2023/02/03 00:41:18 [notice] 1#1: Stinux 4.18.0-408.el8.x86_64
2023/02/03 00:41:18 [notice] 1#1: start worker processes
2023/02/03 00:41:18 [notice] 1#1: start worker processes
2023/02/03 00:41:18 [notice] 1#1: start worker process 29
2023/02/03 00:41:18 [notice] 1#1: start worker process 30
```

### 13- How many ReplicaSets exist on the system?

```
> [maly@localhost K8S]$ kubectl ged rs
No resources found in default namespace.
```

## 14- create a ReplicaSet withname= replica-set-1 image= busybox replicas= 3

```
! labs.yaml x
home > maly > Sprints > K8S > ! labs.yaml > {} spec > {} template > {} spec > {} 0

1     apiVersion: apps/v1
2     kind: ReplicaSet
3     metadata:
4     name: replica-set-1
5     labels:
6     app: lab
7     tier: replica-set-1
8     spec:
9     # modify replicas according to your case
10     replicas: 3
11     selector:
12     matchLabels:
13     l tier: replica-set-1
14     template:
15     metadata:
16     labels:
17     l tier: replica-set-1
18     spec:
19     containers:
20     - name: busybox
21     | image: busybox
22     tty: true
```

```
PROBLEMS
          OUTPUT
                                 TERMINAL
[maly@localhost K8S]$ kubectl get pods
            READY
                    STATUS
                               RESTARTS
                                               AGE
webserver
            1/1
                    Running
                               2 (3m8s ago)
                                               17h
[maly@localhost K8S]$ kubectl apply -f labs.yaml
replicaset.apps/replica-set-1 created
[maly@localhost K8S]$ kubectl get rs
NAME
                DESIRED
                           CURRENT
                                     READY
                                              AGE
replica-set-1
                3
                           3
                                              11s
[maly@localhost K8S]$ kubectl get pods
                       READY
                               STATUS
                                         RESTARTS
                                                          AGE
                                                          72s
replica-set-1-g9mgc
                       1/1
                               Running
                                         0
replica-set-1-jksd2
                       1/1
                                         0
                                                          72s
                               Running
replica-set-1-nxhtm
                       1/1
                                         0
                                                          72s
                               Running
                                                          17h
webserver
                               Running
                                          2 (4m48s ago)
```

#### 15- Scale the ReplicaSet replica-set-1 to 5 PODs.

#### 16- How many PODs are READY in the replica-set-1? 5

```
[maly@localhost K8S]$ kubectl scale --replicas=5 rs/replica-set-1
replicaset.apps/replica-set-1 scaled
[maly@localhost K8S]$ kubectl get pods
                      READY
                                                          AGE
NAME
                               STATUS
                                         RESTARTS
replica-set-1-b5ht9
                       1/1
                               Running
                                                          9s
                                         0
                      1/1
                                         0
                                                          5m13s
replica-set-1-g9mgc
                               Running
replica-set-1-jksd2
                                         0
                                                          5m13s
                       1/1
                               Running
replica-set-1-nxhtm
                       1/1
                               Running
                                         0
                                                          5m13s
replica-set-1-qv4wb
                       1/1
                               Running
                                         0
                                                          9s
                                         2 (8m49s ago)
webserver
                       1/1
                               Running
                                                          17h
[maly@localhost K8S]$ kubectl get rs
NAME
                DESIRED
                           CURRENT
                                     READY
                                             AGE
replica-set-1
                           5
                                     5
                                             5m24s
[maly@localhost K8S]$
```

# 17- Delete any one of the 5 PODs then check How many PODs exist now? Why are there still 5 PODs, even after you deleted one?

NAME	READY	STATUS	RESTARTS	AGE
replica-set-1-b5ht9	1/1	Running	0	9s
replica-set-1-g9mgc	1/1	Running	0	5m13s
replica-set-1-jksd2	1/1	Running	0	5m13s
replica-set-1-nxhtm	1/1	Running	0	5m13s
replica-set-1-qv4wb	1/1	Running	0	9s
webserver	1/1	Running	2 (8m49s ago)	17h
[maly@localhost K8S]\$	kubectl	get rs		•
NAME DESIR	ed curi	RENT REA	DY AGE	
	5		5m24s	
[maly@localhost K8S]\$			d replica-set-:	1-b5ht9
pod "replica-set-1-b5ht9" deleted				
[maly@localhost K8S]\$	kubectl	get pods		
NAME	READY	STATUS	RESTARTS	AGE
replica-set-1-g9mgc			0	9m28s
replica-set-1-jksd2		Running	0	9m28s
replica-set-1-nxhtm		Running	0	9m28s
replica-set-1-qv4wb	1/1	Running	0	4m24s
replica-set-1-zb4rh	1/1	Running	0	46s
webserver	<u>1</u> /1	Running	2 (13m ago)	17h
[maly@localhost K8S]\$				