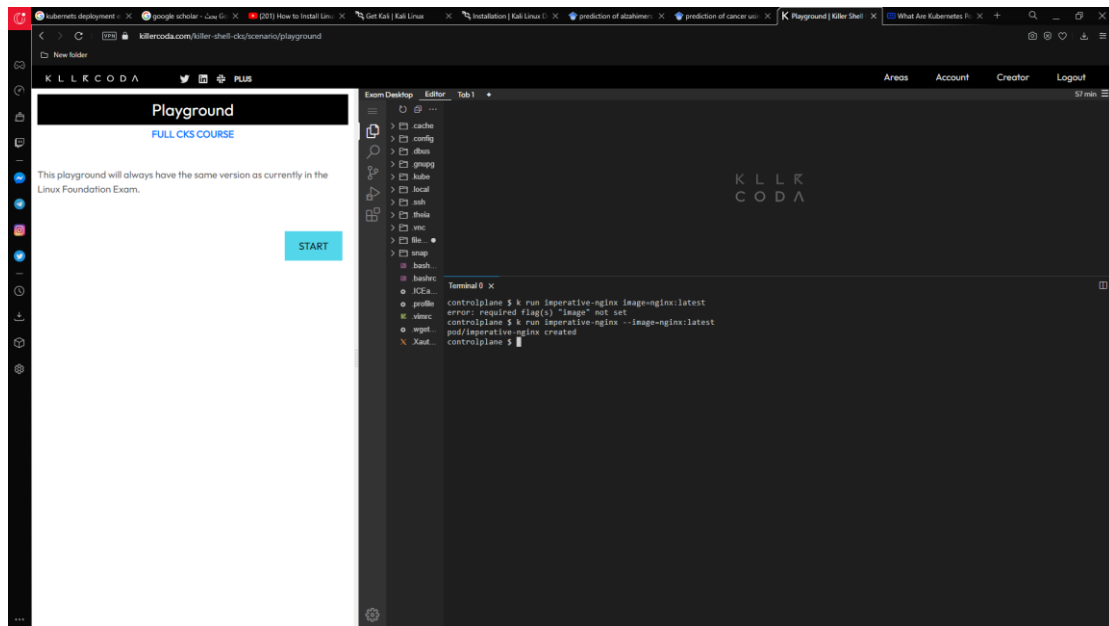
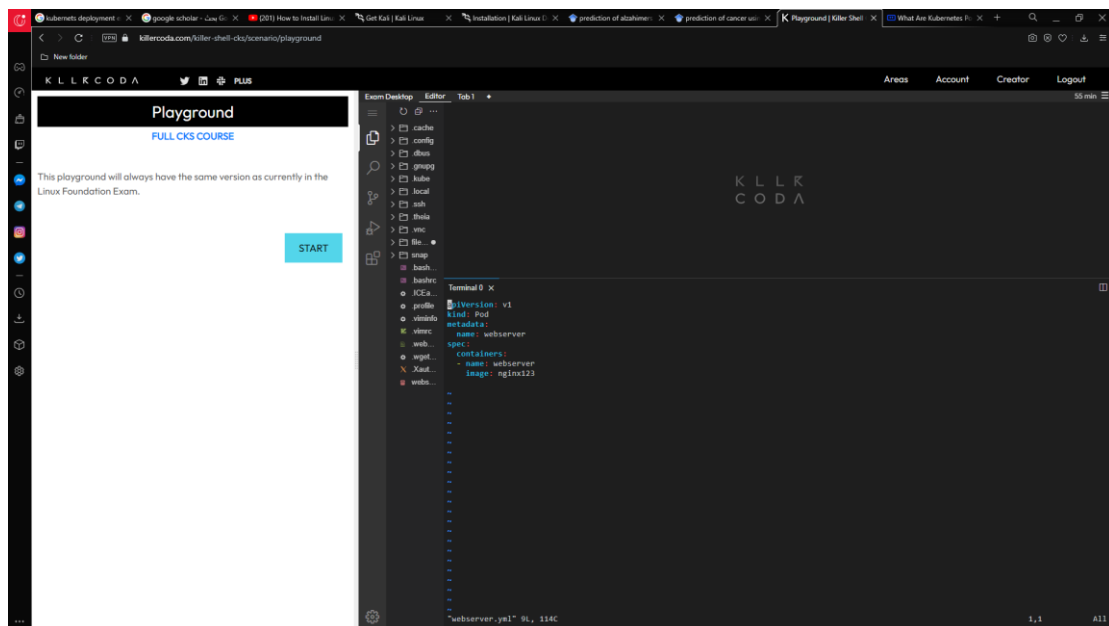


# Lab 1 K8S :

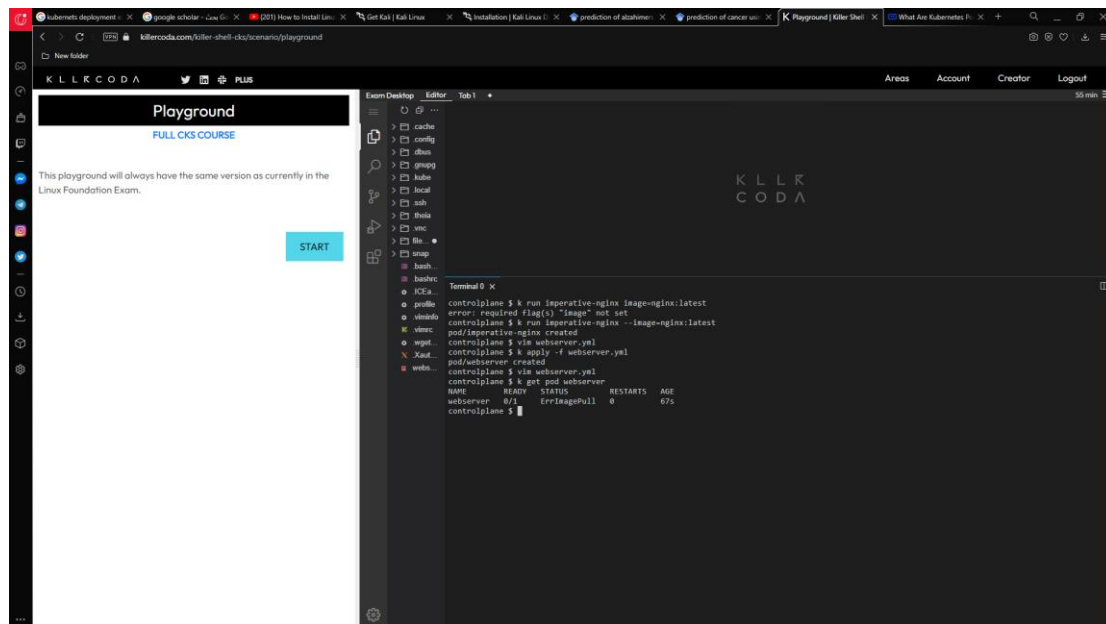
- Create a pod with the name “imperative-nginx” and with the image nginx and latest tag. using Imperative command (not yaml).



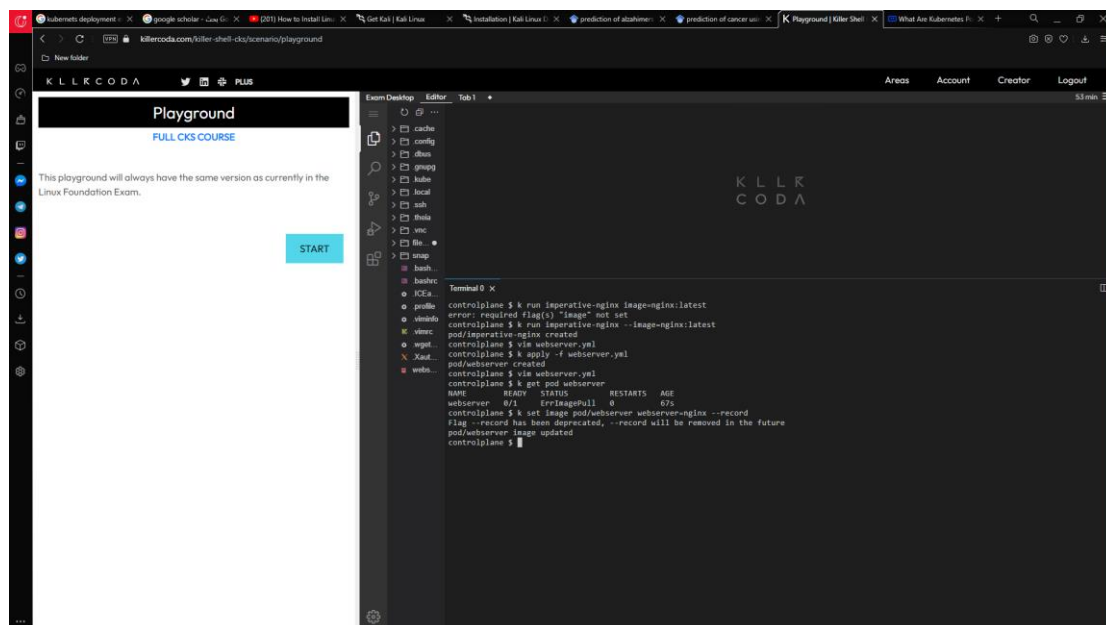
- Create a pod with the name webserver and with the image “nginx123” Use a pod-definition YAML file



- What is the nginx pod status?



- Change the nginx pod image to “nginx” check the status again



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

Ans :

k get pods --all-namespaces

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

Ans :

Ready column indicates how many containers in the pod are running and ready to serve requests

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



```
kube-system      kube-apiserver-controlplane      1/1      Running      2 (130m ago)      28d
kube-system      kube-controller-manager-controlplane  1/1      Running      2 (130m ago)      28d
kube-system      kube-proxy-6sxx9                 1/1      Running      2 (130m ago)      28d
kube-system      kube-proxy-wrqp                  1/1      Running      1 (130m ago)      28d
kube-system      kube-scheduler-controlplane       1/1      Running      2 (130m ago)      28d
local-path-storage  local-path-provisioner-75d55fc779-s7bbc  1/1      Running      2 (130m ago)      28d
controlplane $ k delete pod imperative-nginx
pod "imperative-nginx" deleted
controlplane $
```

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

Ans :

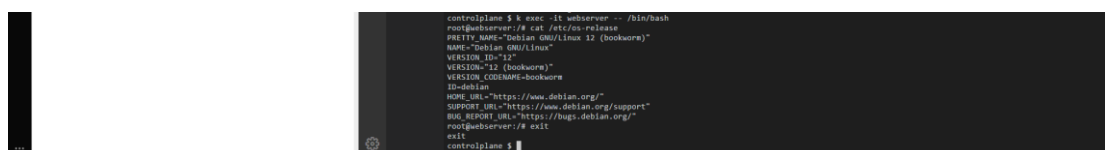
1<sup>st</sup> command : k get pod webserver -o wide

2<sup>nd</sup> command : k describe pod webserver | grep -i node

- Get a shell to the running container i.e ssh into it (figure out the command)

- Run cat /etc/os-release inside the container
- Exit from the shell (/bin/bash) session

Ans :



```
controlplane $ k exec -it webserver -- /bin/bash
root@webserver:/# cat /etc/os-release
PRETTY_NAME="Debian GNU/Linux 12 (bookworm)"
NAME="Debian GNU/Linux"
VERSION_ID="12"
VERSION="12 (bookworm)"
VERSION_CODENAME=bookworm
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
controlplane $
```

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



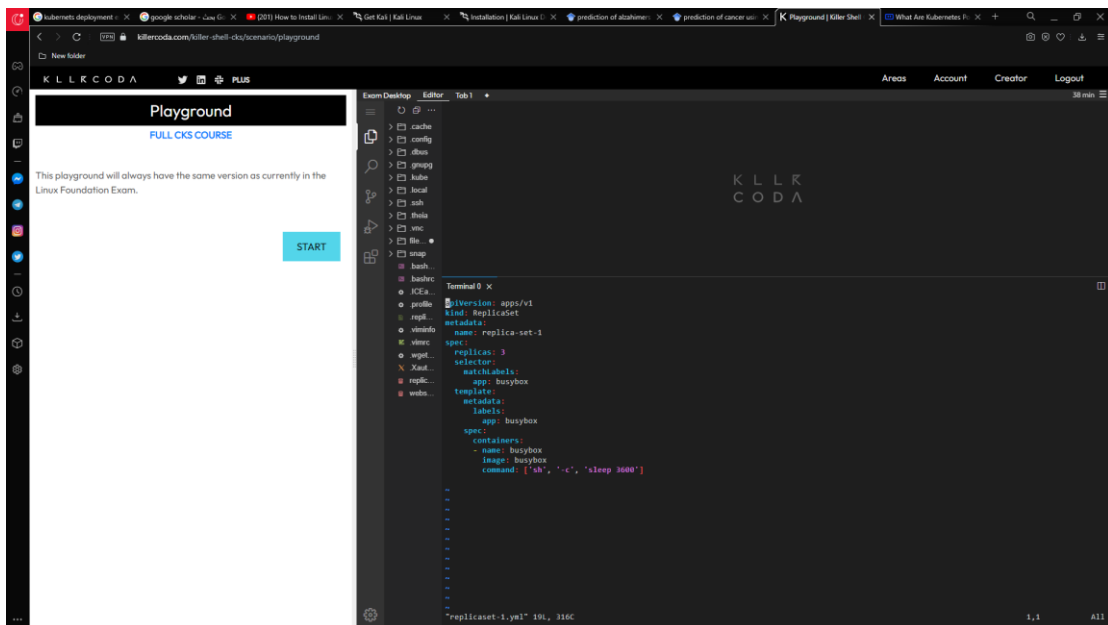
```
exit
controlplane $ k logs webserver
/docker-entrypoint.sh: /docker-entrypoint.d/ is not empty, will attempt to perform configuration
/docker-entrypoint.sh: Looking for shell scripts in /docker-entrypoint.d/
/docker-entrypoint.sh: Launching /docker-entrypoint.d/10-listen-on-ipv6-by-default.sh
10-listen-on-ipv6-by-default.sh: 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: Sourcing /docker-entrypoint.d/15-local-resolvers.envsh
/docker-entrypoint.sh: Launching /docker-entrypoint.d/20-envsubst-on-templates.sh
/docker-entrypoint.sh: Launching /docker-entrypoint.d/30-tune-worker-processes.sh
/docker-entrypoint.sh: Configuration complete; ready for start up
2024/08/23 00:22:39 [notice] 181: using the "poll" event method
2024/08/23 00:22:39 [notice] 181: nginx/1.27.1
2024/08/23 00:22:39 [notice] 181: built by gcc 12.2.0 (Debian 12.2.0-14)
2024/08/23 00:22:39 [notice] 181: OS: Linux 5.4.0-131-generic
2024/08/23 00:22:39 [notice] 181: getrlimit(RLIMIT_NOFILE): 1048576:1048576
2024/08/23 00:22:39 [notice] 181: Start worker processes
2024/08/23 00:22:39 [notice] 181: start worker process 28
controlplane $
```

- How many ReplicaSets exist on the system?



```
2024/08/23 00:22:39 [notice] 181: start worker processes
2024/08/23 00:22:39 [notice] 181: start worker process 28
controlplane $ k get replicasets --all-namespaces
NAME                               DESIRED   CURRENT   READY   AGE
kube-system/calico-kube-controllers-75bd5b75d 1         1         1       20s
kube-system/coredns-5cd6db7ba 2          2         2       20s
kube-system/coredns-7db6d8ff4d 0          0         0       20s
local-path-storage/local-path-provisioner-75655fcf79 1         1         1       20s
controlplane $
```

- create a ReplicaSet with name= replica-set-1 image= busybox replicas= 3



- Scale the ReplicaSet replica-set-1 to 5 PODs



The reason why there is still 5 pods even after the deletion of one of them is replicaSet controller automatically creates a new pod to maintain the desired state of 5 replicas .