DEVOPS TASK 4

STEP 1: Check whether kubernetes and docker are installed in my WSL ubuntu

- Kubectl version --client
- minikube version
- docker --version

STEP 2: Start minkube by **minikube start –driver=docker**

STEP 3: The above command won't work if we are root user so switch to normal user by using **exit** command.

STEP 4: Create a deployment named `webapp` using the `nginx` image.

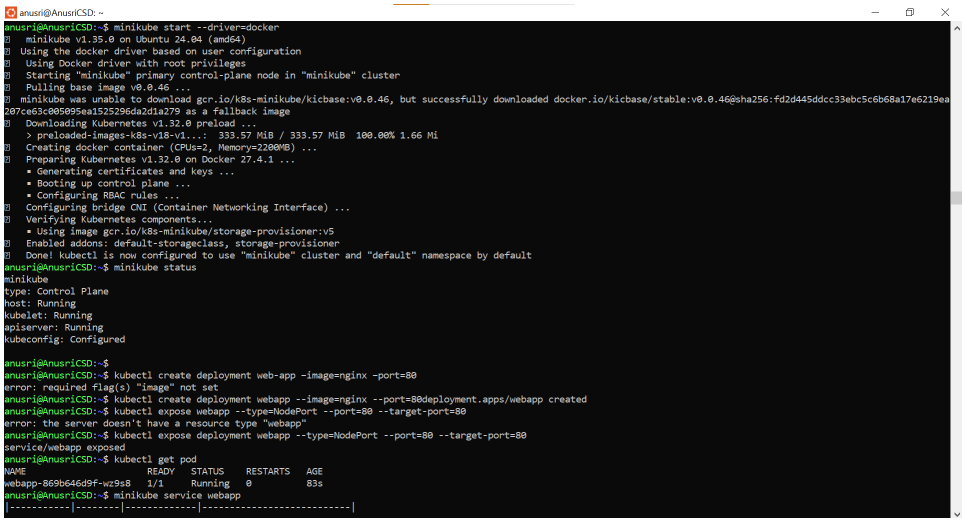
```
kubectl create deployment webapp --image=nginx --port=80
```

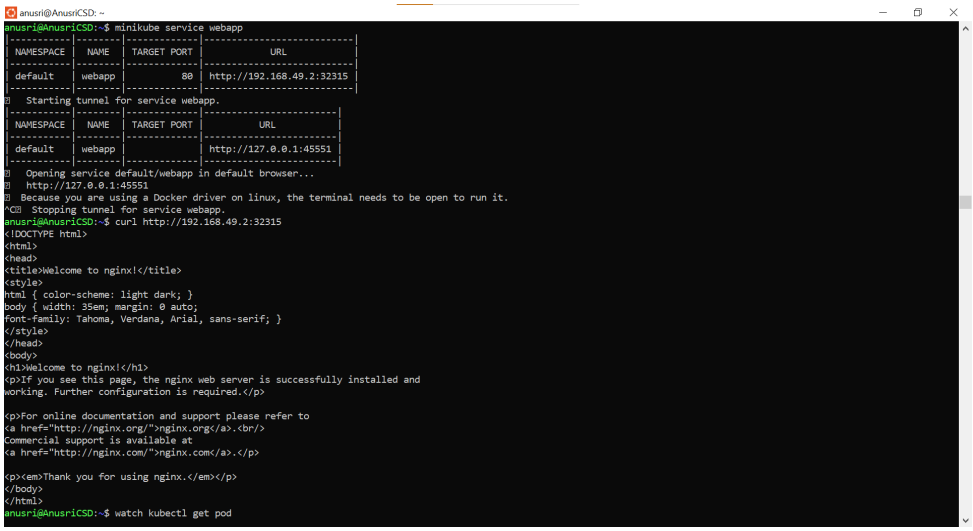
STEP 5: Exposes the deployment as a Kubernetes service

```
kubectl expose deployment webapp --type=NodePort --port=80 --target-port=80
```

STEP 6: Execute the following commands

Commands	Meaning
`kubectl get pod`	Lists running pods
`kubectl get svc`	Lists services and their ports
`minikube service webapp`	Opens service in browser
`Curl http://<minikube-ip>:<NodePort>`	Tests if the service is accessible
`watch kubectl get pod`	Monitors pods in real-time
`watch kubectl logs <pod-name>`	Monitors logs in real-time


anusri@AnusriCSD: ~
anusri@AnusriCSD:~$ minikube start --driver=docker
minikube v1.35.0 on Ubuntu 24.04 (amd64)
Using the docker driver based on user configuration
Using Docker driver with root privileges
Starting "minikube" primary control-plane node in "minikube" cluster
Pulling base image v0.0.46 ...
minikube was unable to download gcr.io/k8s-minikube/kicbase:v0.0.46, but successfully downloaded docker.io/kicbase/stable:v0.0.46@sha256:fd2d445ddcc33ebc5c6b68a17e6219ea207ce63c005095ea1525296da2d1a279 as a fallback image
Downloading Kubernetes v1.32.0 preload ...
> preloaded-images-k8s-v18-v1...: 333.57 MiB / 333.57 MiB 100.00% 1.66 Mi
Creating docker container (CPUs=2, Memory=2200MB) ...
Preparing Kubernetes v1.32.0 on Docker 27.4.1 ...
▪ Generating certificates and keys ...
▪ Booting up control plane ...
▪ Configuring RBAC rules ...
Configuring bridge CNI (Container Networking Interface) ...
Verifying Kubernetes components...
▪ Using image gcr.io/k8s-minikube/storage-provisioner:v5
Enabled addons: default-storageclass, storage-provisioner
Done! kubectl is now configured to use "minikube" cluster and "default" namespace by default
anusri@AnusriCSD:~$ minikube status
minikube
type: Control Plane
host: Running
kubelet: Running
apiserver: Running
kubeconfig: Configured
anusri@AnusriCSD:~$
anusri@AnusriCSD:~$ kubectl create deployment web-app -image=nginx -port=80
error: required flag(s) "image" not set
anusri@AnusriCSD:~$ kubectl create deployment webapp --image=nginx --port=80deployment.apps/webapp created
anusri@AnusriCSD:~$ kubectl expose webapp --type=NodePort --port=80 --target-port=80
error: the server doesn't have a resource type "webapp"
anusri@AnusriCSD:~$ kubectl expose deployment webapp --type=NodePort --port=80 --target-port=80
service/webapp exposed
anusri@AnusriCSD:~$ kubectl get pod
NAME READY STATUS RESTARTS AGE
webapp-869b646d9f-wz9s8 1/1 Running 0 83s
anusri@AnusriCSD:~$ minikube service webapp


anusri@AnusriCSD: ~
anusri@AnusriCSD:~$ minikube service webapp
NAMESPACE NAME TARGET PORT URL
default webapp 80 http://192.168.49.2:32315
Starting tunnel for service webapp.
NAMESPACE NAME TARGET PORT URL
default webapp http://127.0.0.1:45551
Opening service default/webapp in default browser...
http://127.0.0.1:45551
Because you are using a Docker driver on linux, the terminal needs to be open to run it.
^C Stopping tunnel for service webapp.
anusri@AnusriCSD:~$ curl http://192.168.49.2:32315
<!DOCTYPE html>
<html>
<head>
<title>Welcome to nginx!</title>
<style>
html { color-scheme: light dark; }
body { width: 35em; margin: 0 auto;
font-family: Tahoma, Verdana, Arial, sans-serif; }
</style>
</head>
<body>
<h1>Welcome to nginx!</h1>
If you see this page, the nginx web server is successfully installed and
working. Further configuration is required.
For online documentation and support please refer to
nginx.org.
Commercial support is available at
nginx.com.
Thank you for using nginx.
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anusri@AnusriCSD:~$ watch kubectl get pod


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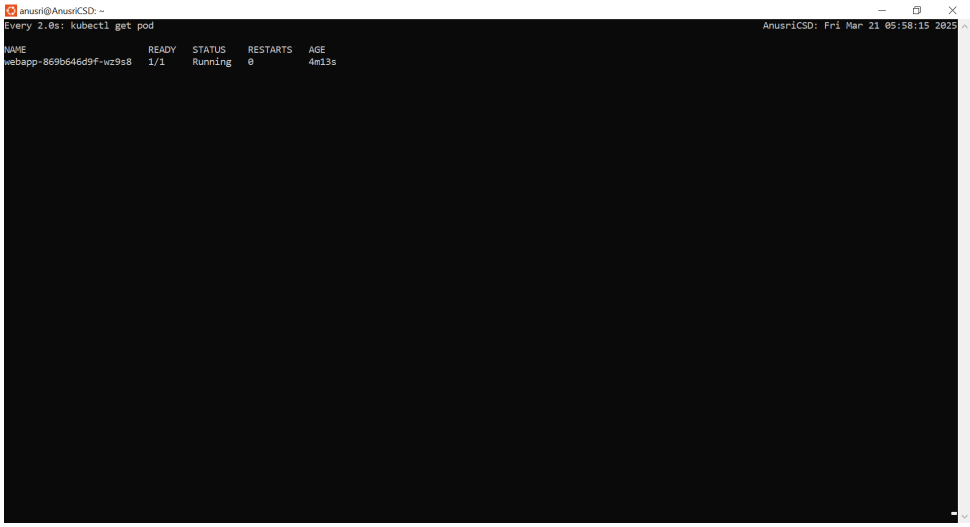
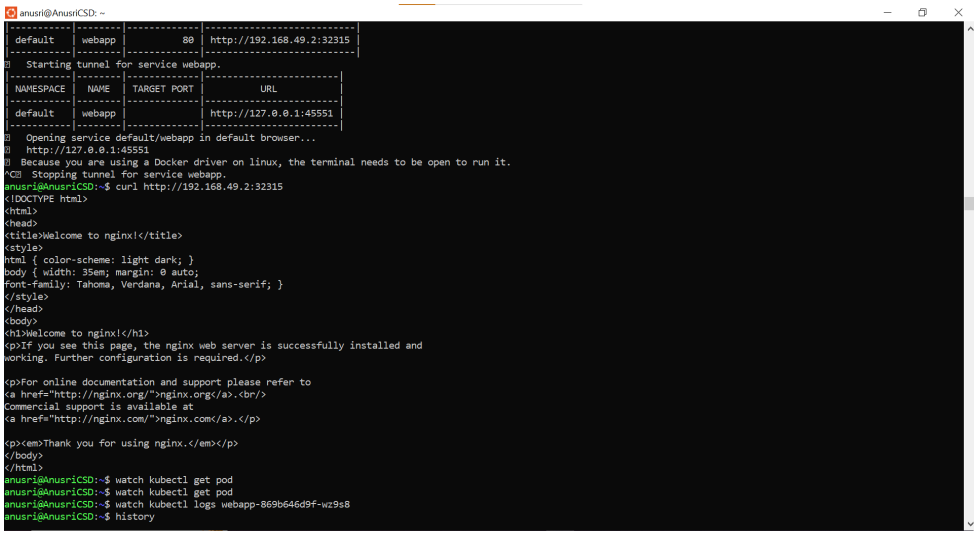

anusri@AnusriCSD: ~
Every 2.0s: kubectl get pod
AnusriCSD: Fri Mar 21 05:58:15 2025
NAME READY STATUS RESTARTS AGE
webapp-869b646d9f-wz9s8 1/1 Running 0 4m13s


anusri@AnusriCSD: ~
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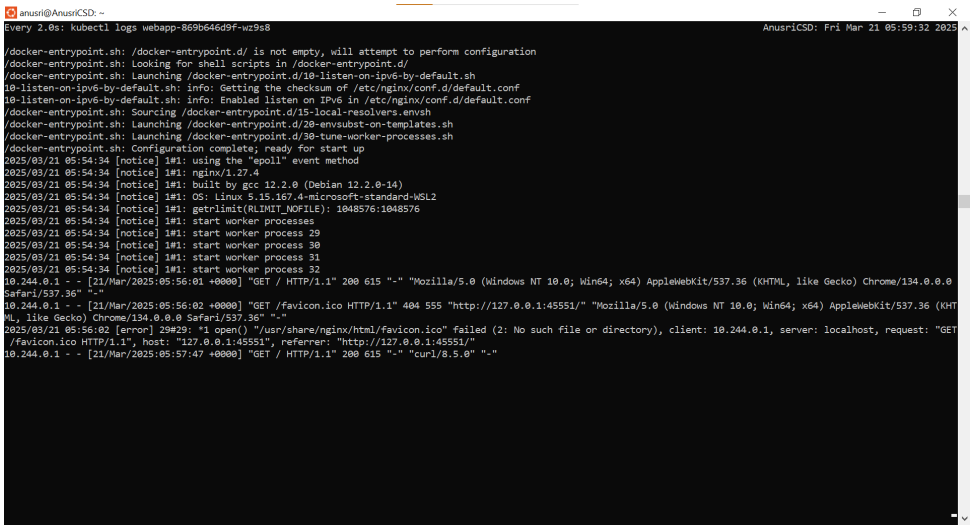
anusri@AnusriCSD:~$ watch kubectl get pod
anusri@AnusriCSD:~$ watch kubectl logs webapp-869b646d9f-wz9s8
anusri@AnusriCSD:~$ history


anusri@AnusriCSD: ~
Every 2.0s: kubectl logs webapp-869b646d9f-wz9s8
AnusriCSD: Fri Mar 21 05:59:32 2025
/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
2025/03/21 05:54:34 [notice] 1#1: using the "epoll" event method
2025/03/21 05:54:34 [notice] 1#1: nginx/1.27.4
2025/03/21 05:54:34 [notice] 1#1: built by gcc 12.2.0 (Debian 12.2.0-14)
2025/03/21 05:54:34 [notice] 1#1: OS: Linux 5.15.167.4-microsoft-standard-WSL2
2025/03/21 05:54:34 [notice] 1#1: getrlimit(RLIMIT_NOFILE): 1048576:1048576
2025/03/21 05:54:34 [notice] 1#1: start worker processes
2025/03/21 05:54:34 [notice] 1#1: start worker process 29
2025/03/21 05:54:34 [notice] 1#1: start worker process 30
2025/03/21 05:54:34 [notice] 1#1: start worker process 31
2025/03/21 05:54:34 [notice] 1#1: start worker process 32
10.244.0.1 - - [21/Mar/2025:05:56:01 +0000] "GET / HTTP/1.1" 200 615 "-" "Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/134.0.0.0 Safari/537.36" "-"
10.244.0.1 - - [21/Mar/2025:05:56:02 +0000] "GET /favicon.ico HTTP/1.1" 404 555 "http://127.0.0.1:45551/" "Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/134.0.0.0 Safari/537.36" "-"
2025/03/21 05:56:02 [error] 29#29: *1 open() "/usr/share/nginx/html/favicon.ico" failed (2: No such file or directory), client: 10.244.0.1, server: localhost, request: "GET /favicon.ico HTTP/1.1", host: "127.0.0.1:45551", referrer: "http://127.0.0.1:45551/"
10.244.0.1 - - [21/Mar/2025:05:57:47 +0000] "GET / HTTP/1.1" 200 615 "-" "curl/8.5.0" "-"

History of Executed Commands: