

1. Deploy your previous assignment flask frontend and express backend in kubernetes cluster locally with minikube.

Commands used history

```
225 sudo snap remove docker
226 # Install Docker via apt
227 sudo apt update
228 sudo apt install -y docker.io
229 # Start & enable Docker
230 sudo systemctl start docker
231 sudo systemctl enable docker
232 # Add user to docker group
233 sudo usermod -aG docker ubuntu
234 newgrp docker
235 docker ps
236 minikube start --driver=docker
237 minikube start --driver=docker --memory=1024 --cpus=1
238 minikube start --driver=docker --memory=1024 --cpus=2 --force
239 lsblk
240 sudo growpart /dev/xvda 1
241 sudo resize2fs /dev/xvda1
242 df -h
243 minikube start --driver=docker --memory=2048 --cpus=2
244 minikube delete
245 minikube start --driver=docker --memory=2048 --cpus=2
246 eval $(minikube docker-env)
247 cd /opt/flask-backend
248 nano Dockerfile
249 ls
250 cat D
251 cat Dockerfile
252 docker build -t flask-backend:1.0 .
253 nano requirements.txt
254 ls
255 docker build -t flask-backend:1.0 .
256 cd /opt/front-end
257 nano Dockerfile
258 docker build -t express-frontend:1.0 .
259 docker images
260 mkdir -p ~/k8s
```

```

243 minikube start --driver=docker --memory=2048 --cpus=2
244 minikube delete
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246 eval $(minikube docker-env)
247 cd /opt/flask-backend
248 nano Dockerfile
249 ls
250 cat D
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252 docker build -t flask-backend:1.0 .
253 nano requirements.txt
254 ls
255 docker build -t flask-backend:1.0 .
256 cd /opt/front-end
257 nano Dockerfile
258 docker build -t express-frontend:1.0 .
259 docker images
260 mkdir -p ~/k8s
261 cd ~/k8s
262 nano flask-deployment.yaml
263 nano flask-service.yaml
264 kubectl apply -f flask-deployment.yaml
265 kubectl apply -f flask-service.yaml
266 kubectl get pods
267 kubectl get svc
268 nano express-deployment.yaml
269 nano express-service.yaml
270 kubectl apply -f express-deployment.yaml
271 kubectl apply -f express-service.yaml
272 kubectl get pods
273 kubectl get svc
274 minikube service express-service --url
275 curl http://192.168.49.2:31945
276 kubectl exec -it $(kubectl get pod -l app=express-frontend -o jsonpath='{.items[0].metadata.name}') -- curl http://flask-service:8000
277 kubectl run curl-test --image=curlimages/curl -it --rm --restart=Never -- curl http://flask-service:8000
278 history

```

OUTPUTS:

```

238 minikube start --driver=docker --memory=1024 --cpus=2 --force
ubuntu@ip-172-31-64-117:~/k8s$ kubectl get pods
NAME                      READY   STATUS    RESTARTS   AGE
express-frontend-6f69f7bfd4-g86pf   1/1     Running   0          7m15s
flask-backend-74d57586cb-m4xr6      1/1     Running   0          9m55s
ubuntu@ip-172-31-64-117:~/k8s$ kubectl get svc
NAME           TYPE      CLUSTER-IP      EXTERNAL-IP      PORT(S)      AGE
express-service   NodePort   10.102.61.226   <none>        3000:31945/TCP   7m31s
flask-service     ClusterIP  10.103.157.129   <none>        8000/TCP      10m
kubernetes       ClusterIP  10.96.0.1       <none>        443/TCP      22m
ubuntu@ip-172-31-64-117:~/k8s$ minikube service express-service --url
http://192.168.49.2:31945
ubuntu@ip-172-31-64-117:~/k8s$ curl http://192.168.49.2:31945
Hello from Express Frontend!ubuntu@ip-172-31-64-117:~/k8s$ █

```