Day-4

Minikube start:

```
    kubelet: 73.81 MiB / 73.81 MiB [-----] 100.00% 102.54 KiB p/s 12m
    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: storage-provisioner, default-storageclass
    Done! kubectl is now configured to use "minikube" cluster and "default" namespace by default
```

Kubectl nodes:

```
"~/kubernetes$ kubectl get nodes
TUS ROLES AGE VERSION
dy control-plane 31s v1.32.0
"~/kubernetes$ |
```

To Build docker in Backend

```
DEPRECATED: The legacy builder is deprecated and will be removed in a future release.
Install the buildx component to build images with BuildKit:
             https://docs.docker.com/go/buildx/
Sending build context to Docker daemon 5.12kB
Step 1/6 : FROM python:3.9
  --> 859d4a0f1fd8
Step 2/6 : WORKDIR /app
   -> Using cache
 ---> ae27c81ec929
tep 3/6 : COPY requirements.txt .
 ---> Using cache
 ---> 9f03d572763d
Step 4/6 : RUN pip install -r requirements.txt
  --> Using cache
 ---> 18b868f8c6c4
tep 5/6 : COPY . .
 ---> Using cache
 ---> d85a885ee39d
tep 6/6 : CMD ["python", "app.py"]
 ---> Using cache
---> d0cff2fe7bb0
Successfully built d0cff2fe7bb0
```

Minikube for backend:

~/kubernetes/backend\$ minikube image load backend:latest

To Build Docker in Frontend:

```
DEPRECATED: The legacy builder is deprecated and will be removed in a future release.

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Step 5/6: COPY .

---> Using cache

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Step 6/6: CMD ["python", "app.py"]

---> Using cache
```

Minikube for frontend:

/kubernetes/frontend\$ minikube image load frontend:latest

To create a Deployment file for Kubernetes for frontend, Backend, service.yaml,

```
kubernetes/backend$ cd ...
/kubernetes$ cd k8s/
·/kubernetes/k8s$ kubectl apply -f backend-deployment.yaml --validate=false
/backend created
/kubernetes/k8s$ kubectl apply -f frontend-deployment.yaml --validate=false
/frontend created
·/kubernetes/k8s$ kubectl apply -f service.yaml --validate=false
-service created
d-service created
·/kubernetes/k8s$ kubectl apply -f configmap.yaml --validate=false
nd-config created
/kubernetes/k8s$ kubectl get pods
           READY
                   STATUS
                             RESTARTS
                                         AGE
           1/1
1/1
79-8rdzg
                   Running
                                         63s
                             0
46-5txnb
                   Running
                             0
                                         545
·/kubernetes/k8s$ kubectl get svc
    TYPE
                CLUSTER-IP
                                 EXTERNAL-IP
                                               PORT(S)
                                                                 AGE
   ClusterIP
                10.110.154.68
                                 <none>
                                               5000/TCP
                                                                 87s
                                               3000:32434/TCP
   NodePort
                10.98.250.114
                                 <none>
                                                                 87s
   ClusterIP
                10.96.0.1
                                 <none>
                                               443/TCP
                                                                 12m
/kubernetes/k8s$ minikube service frontend-service --url
1:42597
are using a Docker driver on linux, the terminal needs to be open to run it.
```

Create an pods and svc

```
/kubernetes/k8s$ kubectl get pods
            READY
                               RESTARTS
                     STATUS
                                           AGE
579-8rdzg
            1/1
                     Running
                               0
                                           63s
c46-5txnb
            1/1
                     Running
                               0
                                           54s
~/kubernetes/k8s$ kubectl get svc
     TYPE
                 CLUSTER-IP
                                   EXTERNAL-IP
                                                  PORT(S)
                                                                    AGE
     ClusterIP
                 10.110.154.68
                                   <none>
                                                  5000/TCP
                                                                    87s
ce
     NodePort
                 10.98.250.114
                                   <none>
                                                  3000:32434/TCP
                                                                    87s
     ClusterIP
                 10.96.0.1
                                                  443/TCP
                                   <none>
                                                                    12m
```

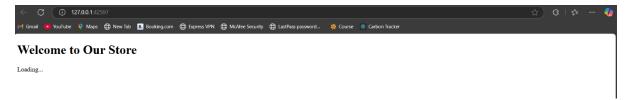
We can see the Output by using Curl command

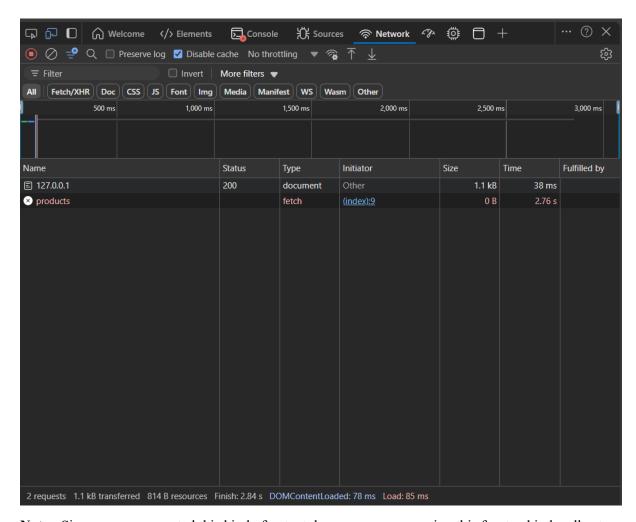
```
/ # apk add curl
fetch https://dl-cdn.alpinelinux.org/alpine/v3.21/main/x86_64/APKINDEX.tar.gz
fetch https://dl-cdn.alpinelinux.org/alpine/v3.21/community/x86_64/APKINDEX.tar.gz
(1/9) Installing brotli-libs (1.1.0-r2)
(2/9) Installing c-ares (1.34.3-r0)
(3/9) Installing libunistring (1.2-r0)
(4/9) Installing libidn2 (2.3.7-r0)
(5/9) Installing nghttp2-libs (1.64.0-r0)
(6/9) Installing libidn5 (0.21.5-r3)
(7/9) Installing libps (0.21.5-r3)
(7/9) Installing uibps (1.5.6-r2)
(8/9) Installing curl (8.12.1-r1)
Executing busybox-1.37.0-r12.trigger
OK: 12 MiB in 24 packages
/ # curl http://backend-service:5000/products
[{"id":1,"name":"Smartphone","price":299.99},{"id":2,"name":"Laptop","price":799.99},{"id":3,"name":"Headphone 5","price":49.99},{"id":4,"name":"Tablet","price":199.99}]
/ # exit
```

To run the frontend

```
~/kubernetes/k8s$ minikube service frontend-service --url
1:42597
. are using a Docker driver on linux, the terminal needs to be open to run it.
```

Output





Note: Since, we are expected this kind of output, because we are running this frontend in localhost.