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Github Repo

# Task A2.1

## Deploy a local k8s cluster

1. Creating a local k8s cluster named `kind-1`
    1. `kind create cluster --name kind-1 --config ./kind/cluster-config.yaml`

```
|============================|
|  Creating cluster kind-1   |
|============================|
Creating cluster "kind-1" ...
 ✓ Ensuring node image (kindest/node:v1.25.0) 🖼
 ✓ Preparing nodes 📦 📦 📦 📦
 ✓ Writing configuration 📜
 ✓ Starting control-plane 🕹️
 ✓ Installing CNI 🔌
 ✓ Installing StorageClass 💾
 ✓ Joining worker nodes 🚜
Set kubectl context to "kind-kind-1"
You can now use your cluster with:

kubectl cluster-info --context kind-kind-1

Thanks for using kind! 😊
```

2. Verify k8s cluster
    1. `kubectl cluster-info`

```
|============================|
|     View cluster info      |
|============================|
Kubernetes control plane is running at https://127.0.0.1:36993
CoreDNS is running at https://127.0.0.1:36993/api/v1/namespaces/kube-system/services/kube-dns:dns/proxy

To further debug and diagnose cluster problems, use 'kubectl cluster-info dump'.
```

# Task A2.2

## Deploy Docker image to Kubernetes as a Deployment with 3 replicas exposed by a Service object

1. Applying Deployment Manifest
    1. `kubectl apply -f ./manifests/deployment.yaml`
2. Viewing Deployment
    1. `kubectl get deploy`

```
|============================|
|     Viewing Deployment     |
|============================|
NAME      READY   UP-TO-DATE   AVAILABLE   AGE
backend   3/3     3            3           5s
```

3. Applying Service Manifest
    1. `kubectl apply -f ./manifests/service.yaml`

4. Viewing Service
    1. `kubectl get svc`

```
|=========================|
|     Viewing Service     |
|=========================|
NAME         TYPE        CLUSTER-IP      EXTERNAL-IP   PORT(S)    AGE
backend      ClusterIP   10.96.193.248   <none>        8080/TCP   5s
kubernetes   ClusterIP   10.96.0.1       <none>        443/TCP    114s
```

# Task A2.3

## Running the Nginx reverse proxy

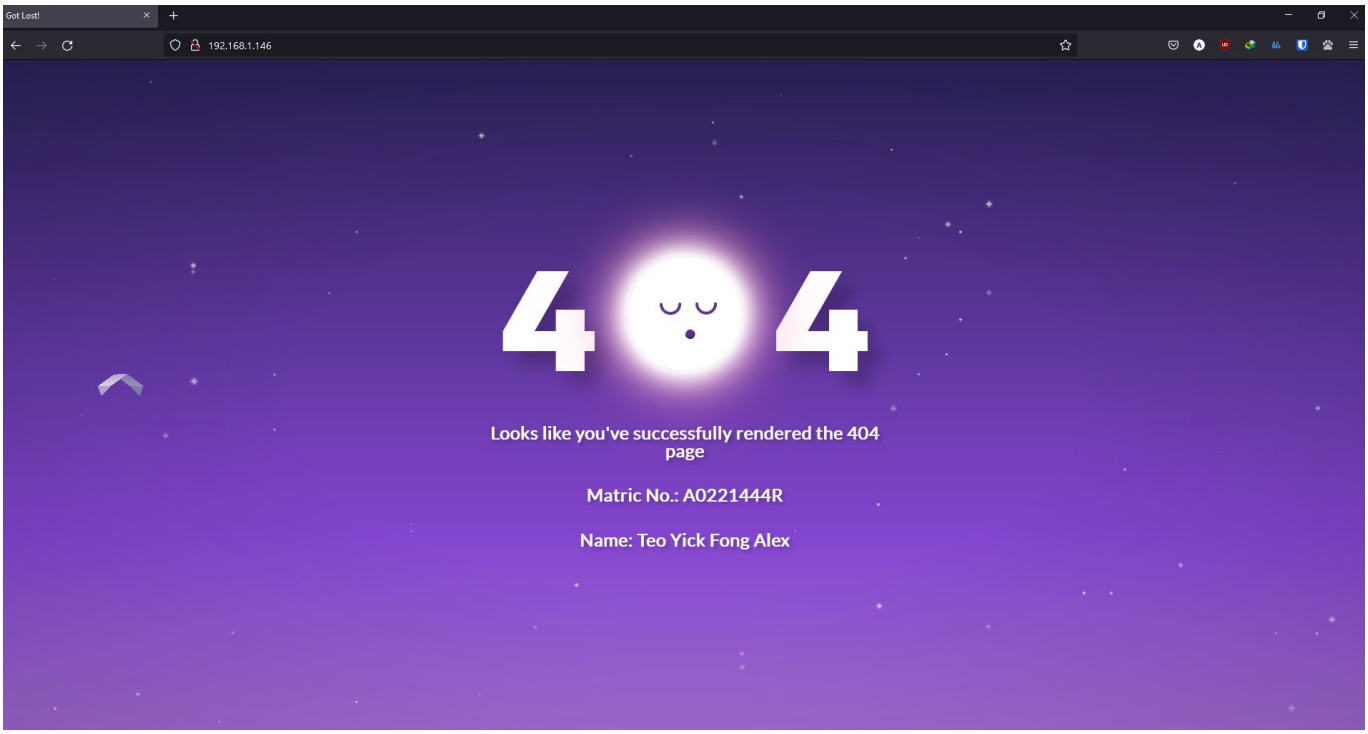
1. Creating Ingress-Controller
    1. `kubectl apply -f https://raw.githubusercontent.com/kubernetes/ingress-nginx/main/deploy/static/provider/kind/deploy.yaml`
2. Viewing Ingress-Controller
    1. `kubectl -n ingress-nginx get deploy`

```
|=================================|
|     Viewing Ingress-Controller  |
|=================================|
NAME                       READY   UP-TO-DATE   AVAILABLE   AGE
ingress-nginx-controller   1/1     1            1           30s
```

3. Applying Ingress Manifest
    1. `kubectl apply -f ./manifests/ingress.yaml`
4. Viewing Ingress
    1. `kubectl get ingress`

```
|=========================|
|     Viewing Ingress     |
|=========================|
NAME      CLASS    HOSTS   ADDRESS   PORTS   AGE
backend   <none>   *                 80      5s
```

# Deployed Site


Got Lost!
192.168.1.146
404
Looks like you've successfully rendered the 404 page
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