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GitHub link: https://github.com/yanchenglee98/OTOT-A2-A3

Instructions (instructions denoted with a (number) are essential setup steps):

1) (1) create cluster: kind create cluster --name kind-1 --config k8s/kind/cluster-config.yaml
2) (2) load local image into k8 cluster: kind load docker-image yanchenglee/taska1 --name=kind-1
3) (3) at root folder OTOT-A2-A3, run this command to apply the deployment manifest: kubectl apply -f ./demo/a2/deployment.yaml
4) check if deployment is running fine with this command: kubectl get deployment/a2 --watch
5) check on status of pods: kubectl get po -lapp=a2 --watch
6) (4) create ingress controller by applying this manifest set: kubectl apply -f https://raw.githubusercontent.com/kubernetes/ingress-nginx/main/deploy/static/provider/kind/deploy.yaml
7) (5) create a service for deployment to allow ingress to expose a service: kubectl apply -f ./demo/a2/service.yaml
8) check that ingress controller is ready before applying ingress object: kubectl -n ingress-nginx get deploy
9) (6) create an ingress object: kubectl apply -f ./demo/a2/ingress.yaml
10) access the website at: http://localhost/app/

Screenshots:

Pods

```
C:\Users\yanch\Downloads\cs3219\OTOT-A2-A3>kubectl get po -lapp=a2 --watch
NAME                  READY   STATUS    RESTARTS   AGE
a2-6759ff47f4-bpcvj   1/1     Running   0          50m
```

Nodes

```
C:\Users\yanch\Downloads\cs3219\OTOT-A2-A3>kubectl get nodes -L ingress-ready
NAME                  STATUS   ROLES           AGE   VERSION   INGRESS-READY
kind-1-control-plane  Ready    control-plane   54m   v1.25.0
kind-1-worker         Ready    <none>          54m   v1.25.0   true
kind-1-worker2        Ready    <none>          54m   v1.25.0
kind-1-worker3        Ready    <none>          54m   v1.25.0
```

Ingress controller

```
C:\Users\yanch\Downloads\cs3219\OTOT-A2-A3>kubectl -n ingress-nginx get deploy
NAME                       READY   UP-TO-DATE   AVAILABLE   AGE
ingress-nginx-controller   1/1     1            1           51m
```

Deployment

```
C:\Users\yanch\Downloads\cs3219\OTOT-A2-A3>kubectl get deployment/a2
NAME   READY   UP-TO-DATE   AVAILABLE   AGE
a2     1/1     1            1           51m
```

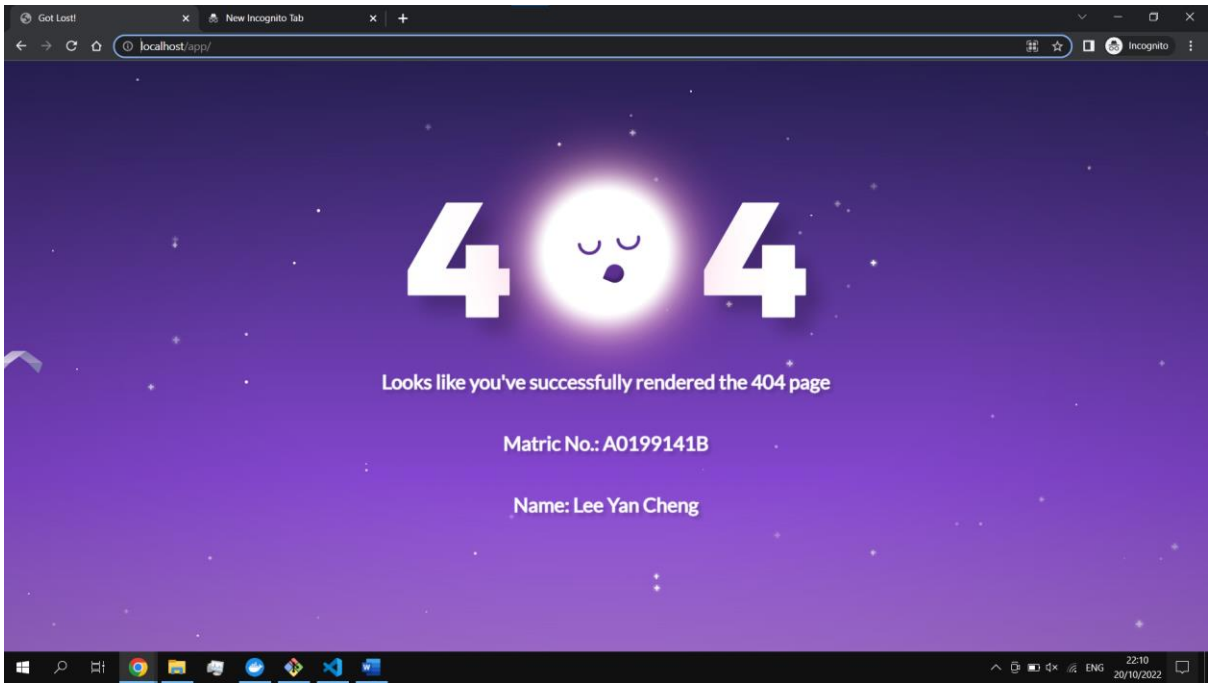
Service

```
C:\Users\yanch\Downloads\cs3219\OTOT-A2-A3>kubectl get service
NAME         TYPE        CLUSTER-IP     EXTERNAL-IP   PORT(S)    AGE
a2           ClusterIP   10.96.108.32   <none>        3000/TCP   52m
kubernetes   ClusterIP   10.96.0.1      <none>        443/TCP    56m
```

Ingress

```
C:\Users\yanch\Downloads\cs3219\OTOT-A2-A3>kubectl get ingress
NAME   CLASS    HOSTS   ADDRESS     PORTS   AGE
a2     <none>   *       localhost   80      51m
```

Webpage




Video demo link:
https://drive.google.com/file/d/1LI9efI9_peSOteEwQRwC1cssJ45FLNnK/view?usp=sharing

Demo does not show scaling as it takes a while to scale