NAME: NAGAVENI L G

SRN: PES2UG21CS315

SEC:6F

1a: Minikube running successfully.

2a: Get nodes, pods, services.

```
PS C:\Users\Praka\OneDrive\Documents\6thSEM\CC\PES2UG21CS315_NAGAVENI_LG\Assignmnet-3 Kubernetes> kubectl get nodes
NAME STATUS ROLES AGE VERSION
minikube Ready control-plane 4h38m v1.28.3
PS C:\Users\Praka\OneDrive\Documents\6thSEM\CC\PES2UG21CS315_NAGAVENI_LG\Assignmnet-3 Kubernetes> kubectl get pod
No resources found in default namespace.
PS C:\Users\Praka\OneDrive\Documents\6thSEM\CC\PES2UG21CS315_NAGAVENI_LG\Assignmnet-3 Kubernetes> kubectl get services
NAME TYPE CLUSTER-IP EXTERNAL-IP PORT(S) AGE
kubernetes ClusterIP 10.96.0.1 <none> 443/TCP 2m58s
PS C:\Users\Praka\OneDrive\Documents\6thSEM\CC\PES2UG21CS315_NAGAVENI_LG\Assignmnet-3 Kubernetes>
```

2b: Deployment Created (with SRN)

```
PS C:\Users\Praka\OneDrive\Documents\6thSEM\CC\PES2UG21CS315_NAGAVENI_LG\Assignmnet-3 Kubernetes> kubectl create deployment pes2ug21cs315 --image=nginx deployment.apps/pes2ug21cs315 created
PS C:\Users\Praka\OneDrive\Documents\6thSEM\CC\PES2UG21CS315_NAGAVENI_LG\Assignmnet-3 Kubernetes>
```

2c: Get deployment and pod.

```
PS C:\Users\Praka\OneDrive\Documents\6thSEM\CC\PES2UG21CS315_NAGAVENI_LG\Assignmnet-3 Kubernetes> kubectl get deployment
NAME READY UP-TO-DATE AVAILABLE AGE
pes2ug21cs315 1/1 1 36s
PS C:\Users\Praka\OneDrive\Documents\6thSEM\CC\PES2UG21CS315_NAGAVENI_LG\Assignmnet-3 Kubernetes> kubectl get pod
NAME READY STATUS RESTARTS AGE
pes2ug21cs315-556466cf49-wwwmt 1/1 Running 0 59s
PS C:\Users\Praka\OneDrive\Documents\6thSEM\CC\PES2UG21CS315_NAGAVENI_LG\Assignmnet-3 Kubernetes> |
```

2d: Editing '-image:nginx'

```
app: pes2ug21cs315
spec:
    containers:
    - image: nginx:1.16
    imagePullPolicy: Always
    name: nginx
    resources: {}
    terminationMessagePath: /dev/termination-log
        terminationMessagePolicy: File
    dnsPolicy: ClusterFirst
    restartPolicy: Always
    schedulerName: default-scheduler
    securityContext: {}
```

2e: Showing edited deployment.

```
S C:\Users\Praka\OneDrive\Documents\6thSEM\CC\PES2UG21CS315_NAGAVENI_LG\Assignmnet-3 Kubernetes> <mark>kubec</mark>tl edit deployment pes2ug21cs315
PS C:\Users\Praka\OneDrive\Documents\OthSEM\CC\PES2UG21CS315_NAGAVENI_LG\ASSIgnm
deployment.apps/pes2ug21cs315 edited
PS C:\Users\Praka\OneDrive\Documents\OthSEM\CC\PES2UG21CS315_NAGAVENI_LG\Assignm
```

2f: Deployment rolled back.

```
PS C:\Users\Praka\OneDrive\Documents\6thSEM\CC\PES2UG21CS315_NAGAVENI_LG\Assignmnet-3 Kubernetes> kubectl rollout undo deployment pes2ug21cs315 deployment.apps/pes2ug21cs315 rolled back
PS C:\Users\Praka\OneDrive\Documents\6thSEM\CC\PES2UG21CS315_NAGAVENI_LG\Assignmnet-3 Kubernetes>
```

2g: Changes after rolling back to original.

```
app: peszugzicsaio
spec:
 containers:
  - image: nginx
    imagePullPolicy: Always
   name: nginx
   resources: {}
   terminationMessagePath: /dev/termination-log
   terminationMessagePolicy: File
 dnsPolicy: ClusterFirst
 restartPolicy: Always
 schedulerName: default-scheduler
  securityContext: {}
  terminationGracePeriodSeconds: 30
```

3a: Kubectl logs displayed

3b: Kubectl 'describe pod' command – Screenshot of "events" section.

```
ontainers:
      Container ID:
Image:
Image ID:
                               docker://4c04d7c17f2549b483fa54aabc1a7be2e493d831c8fe81c4441a818506f5b933
                               Port:
Host Port:
State:
                               <none>
                               Tue, 13 Feb 2024 15:29:13 +0530
True
0
         Started:
      Ready:
Restart Count:
       Environment:
                               <none>
 Mounts:
//var/run/secrets/kubernetes.io/serviceaccount from kube-api-access-h7st6 (ro)
Conditions:
   Type
Initialized
Ready
ContainersReady
                               Status
                               True
True
                               True
   PodScheduled
   kube-api-access-h7st6:
                                            Projected (a volume that contains injected data from multiple sources) 3607 kube-root-ca.crt <nil>
      Type:
TokenExpirationSeconds:
ConfigMapName:
ConfigMapOptional:
DownwardAPI:
QOS Class:
                                             true
BestEffort
 Node-Selectors:
                                             <none>
                                            node.kubernetes.io/not-ready:NoExecute op=Exists for 300s
node.kubernetes.io/unreachable:NoExecute op=Exists for 300s
 Tolerations:
 Events:
   Туре
               Reason
                                                                      Message
Normal Scheduled 2m3s default-scheduler Successfully assigned default/pes2ug21cs315-556466cf49-z94sz to minikube
Normal Pulling 2m3s kubelet Pulling image "nginx"
Normal Pulled 106s kubelet Successfully pulled image "nginx" in 16.577s (16.577s including waiting)
Normal Created 106s kubelet Created container nginx
PS C:\Users\Praka\OneDrive\Documents\6thSEM\CC\PES2UG21CS315_NAGAVENI_LG\Assignmnet-3 Kubernetes>
```

3c: Creating mongo deployment

```
PS C:\Users\Praka\OneDrive\Documents\6thSEM\CC\PES2UG21CS315_NAGAVENI_LG\Assignmnet-3 Kubernetes> kubectl create deployment pes2ug21cs315-mongo --image=mongo deployment.apps/pes2ug21cs315-mongo created
PS C:\Users\Praka\OneDrive\Documents\6thSEM\CC\PES2UG21CS315_NAGAVENI_LG\Assignmnet-3 Kubernetes>
```

3d: Deleting both requirements

```
PS C:\Users\Praka\OneDrive\Documents\6thSEM\CC\PES2UG21CS315_NAGAVENI_LG\Assignmnet-3 Kubernetes>
PS C:\Users\Praka\OneDrive\Documents\6thSEM\CC\PES2UG21CS315_NAGAVENI_LG\Assignmnet-3 Kubernetes>
PS C:\Users\Praka\OneDrive\Documents\6thSEM\CC\PES2UG21CS315_NAGAVENI_LG\Assignmnet-3 Kubernetes> kubectl delete deployment pes2ug21cs315
deployment.apps "pes2ug21cs315" deleted
PS C:\Users\Praka\OneDrive\Documents\6thSEM\CC\PES2UG21CS315_NAGAVENI_LG\Assignmnet-3 Kubernetes> kubectl delete deployment pes2ug21cs315-mongo deployment.apps "pes2ug21cs315-mongo" deleted
PS C:\Users\Praka\OneDrive\Documents\6thSEM\CC\PES2UG21CS315_NAGAVENI_LG\Assignmnet-3 Kubernetes> kubectl delete deployment pes2ug21cs315-mongo
```

4a: Kubectl apply command on yaml file.

4b: after changing the replicas to 3 in the file and run the command again.

Kubectl get on yaml file.

```
PS C:\Users\Praka\OneDrive\Documents\6thSEM\CC\PES2UG21CS315_NAGAVENI_LG\Assignmnet-3 Kubernetes> kubectl apply -f nginx-deployment.yaml deployment.apps/nginx-deployment-pes2ug21cs315 configured
PS C:\Users\Praka\OneDrive\Documents\6thSEM\CC\PES2UG21CS315_NAGAVENI_LG\Assignmnet-3 Kubernetes> kubectl get pod NAME
READY STATUS RESTARTS AGE
nginx-deployment-pes2ug21cs315-67856bc4f5-6vf7m 0/1 ContainerCreating 0 15s
nginx-deployment-pes2ug21cs315-67856bc4f5-8lvz9 0/1 ContainerCreating 0 3m
nginx-deployment-pes2ug21cs315-67856bc4f5-w2r2z 0/1 ContainerCreating 0 3m
pes2ug21cs315-mongo-779886bb78-gfhw7 0/1 Terminating 0 7m10s
PS C:\Users\Praka\OneDrive\Documents\6thSEM\CC\PES2UG21CS315_NAGAVENI_LG\Assignmnet-3 Kubernetes> kubectl get deployment
NAME READY UP-TO-DATE AVAILABLE AGE
nginx-deployment-pes2ug21cs315 0/3 3 0 3m14s
PS C:\Users\Praka\OneDrive\Documents\6thSEM\CC\PES2UG21CS315_NAGAVENI_LG\Assignmnet-3 Kubernetes> kubectl get replicaset
NAME DESIRED CURRENT READY AGE
nginx-deployment-pes2ug21cs315-67856bc4f5 3 3 0 3m18s
PS C:\Users\Praka\OneDrive\Documents\6thSEM\CC\PES2UG21CS315_NAGAVENI_LG\Assignmnet-3 Kubernetes> kubectl get replicaset
NAME
nginx-deployment-pes2ug21cs315-67856bc4f5 3 0 3m18s
PS C:\Users\Praka\OneDrive\Documents\6thSEM\CC\PES2UG21CS315_NAGAVENI_LG\Assignmnet-3 Kubernetes> kubectl get replicaset
NAME
nginx-deployment-pes2ug21cs315-67856bc4f5 3 0 3m18s
PS C:\Users\Praka\OneDrive\Documents\6thSEM\CC\PES2UG21CS315_NAGAVENI_LG\Assignmnet-3 Kubernetes> kubectl get replicaset
```

```
status:
  availableReplicas: 3
  conditions:
   lastTransitionTime: "2024-02-13T10:18:43Z"
   lastUpdateTime: "2024-02-13T10:18:43Z"
   message: Deployment has minimum availability.
   reason: MinimumReplicasAvailable
   status: "True'
    type: Available
  - lastTransitionTime: "2024-02-13T10:06:30Z"
   lastUpdateTime: "2024-02-13T10:18:43Z"
   message: ReplicaSet "nginx-deployment-pes2ug21cs315-67856bc4f5" has successfully
     progressed.
   reason: NewReplicaSetAvailable status: "True"
   type: Progressing
 observedGeneration: 2
  readyReplicas: 3
 replicas: 3
 updatedReplicas: 3
```

5a: Delete pod.

6a: Kubectl apply and get command.

6b: kubectl get pod -o wide command.

7a: Kubectl port-forward command .

7b: Display welcome to nginx on web page.



8a: Delete nginx deployments

```
PS C:\Users\Praka\OneDrive\Documents\6thSEM\CC\PES2UG21CS315_NAGAVENI_LG\Assignmnet-3 Kubernetes> kubectl delete deployment nginx-deployment-pes2ug21cs315 deployment.apps "nginx-deployment-pes2ug21cs315" deleted
PS C:\Users\Praka\OneDrive\Documents\6thSEM\CC\PES2UG21CS315_NAGAVENI_LG\Assignmnet-3 Kubernetes> kubectl delete service nginx-service-pes2ug21cs315 service "nginx-service-pes2ug21cs315" deleted
PS C:\Users\Praka\OneDrive\Documents\6thSEM\CC\PES2UG21CS315_NAGAVENI_LG\Assignmnet-3 Kubernetes>
```

8b: Minikube stop – Do this after the 9th Task.

```
PS C:\Users\Praka\OneDrive\Documents\6thSEM\CC\PES2UG21CS315_NAGAVENI_LG\Assignmnet-3 Kubernetes> minikube stop
W0213 19:47:18.664344 7812 main.go:291] Unable to resolve the current Docker CLI context "default": context "default": context not found: open C:\Users\P
raka\.docker\contexts\meta\37a8eeclce19687d132fe29051dca629d164e2c4958ba141d5f4133a33f9688f\meta.json: The system cannot find the path specified.

Stopping node "minikube" ...
Powering off "minikube" via SSH ...
1 node stopped.
SC:\Users\Praka\OneDrive\Documents\6thSEM\CC\PES2UG21CS315_NAGAVENI_LG\Assignmnet-3 Kubernetes>
```

9th task

9a. The command which exposes specifies the type of service (NodePort/LoadBalancer)

```
PS C:\Users\Praka\OneDrive\Documents\6thSEM\CC\PES2UG21CS315_NAGAVENI_LG\Assignmnet-3 Kubernetes> kubectl create deployment nginx-pes2ug21cs315 --image=ngin x deployment.apps/nginx-pes2ug21cs315 created

PS C:\Users\Praka\OneDrive\Documents\6thSEM\CC\PES2UG21CS315_NAGAVENI_LG\Assignmnet-3 Kubernetes> kubectl expose deployment nginx-pes2ug21cs315 --type=NodeP ort --port=80 service/nginx-pes2ug21cs315 exposed
```

9b.kubectl get service command which displays the node port

```
PS C:\Users\Praka\OneDrive\Documents\6thSEM\CC\PES2UG21CS315_NAGAVENI_LG\Assignmnet-3 Kubernetes> kubectl get service nginx-pes2ug21cs315
NAME TYPE CLUSTER-IP EXTERNAL-IP PORT(S) AGE
nginx-pes2ug21cs315 NodePort 10.96.12.221 <none> 80:31711/TCP 22s
```

9c: minikube IP address

9d: the webpage with the IP Address visible.

