CC LAB 5

NAME: AVANEE UPADHYAYA

SRN: PES2UG23CS108

SECTION: B

SS1:

```
avanee@Avanee:~$ kubectl get nodes
NAME       STATUS   ROLES           AGE    VERSION
minikube   Ready    control-plane   28m    v1.35.0
avanee@Avanee:~$ kubectl create namespace pes2ug23cs108-alpha
kubectl create namespace pes2ug23cs108-beta
namespace/pes2ug23cs108-alpha created
namespace/pes2ug23cs108-beta created
avanee@Avanee:~$ kubectl get namespaces
NAME                  STATUS   AGE
default               Active   28m
kube-node-lease       Active   28m
kube-public           Active   28m
kube-system           Active   28m
pes2ug23cs108-alpha   Active   6s
pes2ug23cs108-beta    Active   6s
avanee@Avanee:~$
```

SS2:

```
avanee@Avanee:~$ kubectl run citizen --image=nginx --restart=Never --image-pull-policy=Never
pod/citizen created
avanee@Avanee:~$ kubectl get pods
NAME      READY   STATUS    RESTARTS   AGE
citizen   1/1     Running   0          4s
avanee@Avanee:~$ kubectl describe pod citizen
Name:            citizen
Namespace:       pes2ug23cs108-alpha
Priority:        0
Service Account: default
Node:            minikube/192.168.49.2
Start Time:      Thu, 19 Feb 2026 15:50:55 +0000
Labels:          run=citizen
Annotations:     <none>
Status:          Running
IP:              10.244.0.7
IPs:
  IP:  10.244.0.7
Containers:
  citizen:
    Container ID:   docker://d529d9e2851b682e18b4edb61e08d41c196a3eb7ea91675cfcfaf89927136fcc
    Image:          nginx
    Image ID:       docker://sha256:5cdef4ac3335f68428701c14c5f12992f5e3669ce8ab7309257d263eb7a856b1
    Port:           <none>
    Host Port:      <none>
    State:          Running
      Started:      Thu, 19 Feb 2026 15:50:55 +0000
    Ready:          True
    Restart Count:  0
    Environment:    <none>
    Mounts:
      /var/run/secrets/kubernetes.io/serviceaccount from kube-api-access-9hxnl (ro)
Conditions:
  Type                        Status
  PodReadyToStartContainers   True
  Initialized                 True
  Ready                       True
  ContainersReady             True
  PodScheduled                True
Volumes:
  kube-api-access-9hxnl:
    Type:                    Projected (a volume that contains injected data from multiple sources)
    TokenExpirationSeconds:  3607
    ConfigMapName:           kube-root-ca.crt
```

SS3:

```
avanee@Avanee:~$ kubectl get pods -w
NAME        READY   STATUS            RESTARTS   AGE
citizen     1/1     Running           0          73s
temp        0/1     Pending           0          0s
temp        0/1     Pending           0          0s
temp        0/1     ContainerCreating 0          0s
temp        1/1     Running           0          1s
temp        1/1     Terminating       0          10s
temp        1/1     Terminating       0          10s
temp        0/1     Completed         0          11s
temp        0/1     Completed         0          12s
temp        0/1     Completed         0          12s
temp        0/1     Completed         0          12s
```

SS4:

```
[1]+  Stopped                 kubectl get pods -w
avanee@Avanee:~$ kubectl logs citizen -n pes2ug23cs108-alpha
/docker-entrypoint.sh: /docker-entrypoint.d/ is not empty, will attempt to perform configuration
/docker-entrypoint.sh: Looking for shell scripts in /docker-entrypoint.d/
/docker-entrypoint.sh: Launching /docker-entrypoint.d/10-listen-on-ipv6-by-default.sh
10-listen-on-ipv6-by-default.sh: info: Getting the checksum of /etc/nginx/conf.d/default.conf
10-listen-on-ipv6-by-default.sh: info: Enabled listen on IPv6 in /etc/nginx/conf.d/default.conf
/docker-entrypoint.sh: Sourcing /docker-entrypoint.d/15-local-resolvers.envsh
/docker-entrypoint.sh: Launching /docker-entrypoint.d/20-envsubst-on-templates.sh
/docker-entrypoint.sh: Launching /docker-entrypoint.d/30-tune-worker-processes.sh
/docker-entrypoint.sh: Configuration complete; ready for start up
2026/02/19 15:50:55 [notice] 1#1: using the "epoll" event method
2026/02/19 15:50:55 [notice] 1#1: nginx/1.29.5
2026/02/19 15:50:55 [notice] 1#1: built by gcc 14.2.0 (Debian 14.2.0-19)
2026/02/19 15:50:55 [notice] 1#1: OS: Linux 6.6.87.2-microsoft-standard-WSL2
2026/02/19 15:50:55 [notice] 1#1: getrlimit(RLIMIT_NOFILE): 1048576:1048576
2026/02/19 15:50:55 [notice] 1#1: start worker processes
2026/02/19 15:50:55 [notice] 1#1: start worker process 29
2026/02/19 15:50:55 [notice] 1#1: start worker process 30
2026/02/19 15:50:55 [notice] 1#1: start worker process 31
2026/02/19 15:50:55 [notice] 1#1: start worker process 32
2026/02/19 15:50:55 [notice] 1#1: start worker process 33
2026/02/19 15:50:55 [notice] 1#1: start worker process 34
2026/02/19 15:50:55 [notice] 1#1: start worker process 35
2026/02/19 15:50:55 [notice] 1#1: start worker process 36
2026/02/19 15:50:55 [notice] 1#1: start worker process 37
2026/02/19 15:50:55 [notice] 1#1: start worker process 38
2026/02/19 15:50:55 [notice] 1#1: start worker process 39
2026/02/19 15:50:55 [notice] 1#1: start worker process 40
2026/02/19 15:50:55 [notice] 1#1: start worker process 41
2026/02/19 15:50:55 [notice] 1#1: start worker process 42
2026/02/19 15:50:55 [notice] 1#1: start worker process 43
2026/02/19 15:50:55 [notice] 1#1: start worker process 44
avanee@Avanee:~$
```

SS5:

```
2020/01/17 15:07:03 [notice] 1#1: start worker process 41
avanee@Avanee:~$ kubectl run broken \
--image=busybox \
--image-pull-policy=Never \
--restart=Never \
--command -- sh -c "echo 'CRASH: something went wrong' >&2; sleep 10; exit 1" \
-n pes2ug23cs108-alpha
pod/broken created
avanee@Avanee:~$ kubectl logs broken -n pes2ug23cs108-alpha
CRASH: something went wrong
avanee@Avanee:~$ |
```

SS6:

```
avanee@Avanee:~$ kubectl create deployment pes2ug23cs108 \
--image=nginx \
-n pes2ug23cs108-alpha
deployment.apps/pes2ug23cs108 created
avanee@Avanee:~$ kubectl get deployments -n pes2ug23cs108-alpha
NAME            READY   UP-TO-DATE   AVAILABLE   AGE
pes2ug23cs108   1/1     1            1           6s
avanee@Avanee:~$ kubectl get pods -n pes2ug23cs108-alpha
NAME                            READY   STATUS    RESTARTS   AGE
citizen                         1/1     Running   0          5m53s
pes2ug23cs108-7b4cb77bc7-bqpcx  1/1     Running   0          12s
avanee@Avanee:~$ |
```

SS7:

```
avanee@Avanee:~$ kubectl scale deployment pes2ug23cs108 \
--replicas=5 \
-n pes2ug23cs108-alpha
deployment.apps/pes2ug23cs108 scaled
avanee@Avanee:~$ kubectl get pods -n pes2ug23cs108-alpha
NAME                            READY   STATUS             RESTARTS   AGE
citizen                         1/1     Running            0          6m55s
pes2ug23cs108-7b4cb77bc7-7b6vv  0/1     ContainerCreating  0          5s
pes2ug23cs108-7b4cb77bc7-7xrnz  1/1     Running            0          5s
pes2ug23cs108-7b4cb77bc7-bqpcx  1/1     Running            0          74s
pes2ug23cs108-7b4cb77bc7-flghj  1/1     Running            0          5s
pes2ug23cs108-7b4cb77bc7-z299g  0/1     ContainerCreating  0          5s
avanee@Avanee:~$ kubectl get pods -n pes2ug23cs108-alpha
NAME                            READY   STATUS    RESTARTS   AGE
citizen                         1/1     Running   0          7m37s
pes2ug23cs108-7b4cb77bc7-7b6vv  1/1     Running   0          47s
pes2ug23cs108-7b4cb77bc7-7xrnz  1/1     Running   0          47s
pes2ug23cs108-7b4cb77bc7-bqpcx  1/1     Running   0          116s
pes2ug23cs108-7b4cb77bc7-flghj  1/1     Running   0          47s
pes2ug23cs108-7b4cb77bc7-z299g  1/1     Running   0          47s
avanee@Avanee:~$ kubectl scale deployment pes2ug23cs108 --replicas=3
deployment.apps/pes2ug23cs108 scaled
avanee@Avanee:~$ kubectl get pods
NAME                            READY   STATUS    RESTARTS   AGE
citizen                         1/1     Running   0          9m49s
pes2ug23cs108-7b4cb77bc7-7xrnz  1/1     Running   0          2m59s
pes2ug23cs108-7b4cb77bc7-bqpcx  1/1     Running   0          4m8s
pes2ug23cs108-7b4cb77bc7-z299g  1/1     Running   0          2m59s
avanee@Avanee:~$ |
```

SS8:

```
pes2ug23cs108-7b4cb77bc7-z299g   1/1      Running   0        2m09s
avanee@Avanee:~$ kubectl get rs,po
NAME                                         DESIRED   CURRENT   READY   AGE
replicaset.apps/pes2ug23cs108-7b4cb77bc7     3         3         3       7m55s

NAME                                         READY    STATUS    RESTARTS   AGE
pod/citizen                                  1/1      Running   0          13m
pod/pes2ug23cs108-7b4cb77bc7-7xrnz           1/1      Running   0          6m46s
pod/pes2ug23cs108-7b4cb77bc7-bqpcx           1/1      Running   0          7m55s
pod/pes2ug23cs108-7b4cb77bc7-z299g           1/1      Running   0          6m46s
avanee@Avanee:~$ kubectl set image deployment/pes2ug23cs108 nginx=nginx:1.25
deployment.apps/pes2ug23cs108 image updated
avanee@Avanee:~$ kubectl get rs,po
NAME                                         DESIRED   CURRENT   READY   AGE
replicaset.apps/pes2ug23cs108-5567849649     3         3         3       22s
replicaset.apps/pes2ug23cs108-7b4cb77bc7     0         0         0       8m35s

NAME                                         READY    STATUS    RESTARTS   AGE
pod/citizen                                  1/1      Running   0          14m
pod/pes2ug23cs108-5567849649-2dvxk           1/1      Running   0          15s
pod/pes2ug23cs108-5567849649-9wkqf           1/1      Running   0          21s
pod/pes2ug23cs108-5567849649-wcdwl           1/1      Running   0          12s
avanee@Avanee:~$
```

SS9:

```
avanee@Avanee:~$ kubectl rollout undo deployment/pes2ug23cs108
deployment.apps/pes2ug23cs108 rolled back
avanee@Avanee:~$ kubectl get rs,po
NAME                                         DESIRED   CURRENT   READY   AGE
replicaset.apps/pes2ug23cs108-5567849649     2         2         2       79s
replicaset.apps/pes2ug23cs108-7b4cb77bc7     2         2         1       9m32s

NAME                                         READY    STATUS             RESTARTS   AGE
pod/citizen                                  1/1      Running            0          15m
pod/pes2ug23cs108-5567849649-2dvxk           1/1      Running            0          72s
pod/pes2ug23cs108-5567849649-9wkqf           1/1      Running            0          78s
pod/pes2ug23cs108-7b4cb77bc7-6cb9r           1/1      Running            0          5s
pod/pes2ug23cs108-7b4cb77bc7-blt78           0/1      ContainerCreating  0          2s
avanee@Avanee:~$ kubectl get rs,po
NAME                                         DESIRED   CURRENT   READY   AGE
replicaset.apps/pes2ug23cs108-5567849649     0         0         0       2m14s
replicaset.apps/pes2ug23cs108-7b4cb77bc7     3         3         3       10m

NAME                                         READY    STATUS    RESTARTS   AGE
pod/citizen                                  1/1      Running   0          16m
pod/pes2ug23cs108-7b4cb77bc7-56tlr           1/1      Running   0          54s
pod/pes2ug23cs108-7b4cb77bc7-6cb9r           1/1      Running   0          60s
pod/pes2ug23cs108-7b4cb77bc7-blt78           1/1      Running   0          57s
avanee@Avanee:~$
```

```
avanee@Avanee:~$ kubectl rollout history deployment pes2ug23cs108
deployment.apps/pes2ug23cs108
REVISION   CHANGE-CAUSE
2          <none>
3          <none>

avanee@Avanee:~$ kubectl rollout history deployment pes2ug23cs108 --revision=1
error: unable to find the specified revision
avanee@Avanee:~$ kubectl rollout history deployment pes2ug23cs108 --revision=2
deployment.apps/pes2ug23cs108 with revision #2
Pod Template:
  Labels:        app=pes2ug23cs108
        pod-template-hash=5567849649
  Containers:
   nginx:
    Image:        nginx:1.25
    Port:         <none>
    Host Port:    <none>
    Environment:        <none>
    Mounts:       <none>
  Volumes:        <none>
  Node-Selectors:        <none>
  Tolerations:   <none>

avanee@Avanee:~$ kubectl rollout history deployment pes2ug23cs108 --revision=3
deployment.apps/pes2ug23cs108 with revision #3
Pod Template:
  Labels:        app=pes2ug23cs108
        pod-template-hash=7b4cb77bc7
  Containers:
   nginx:
    Image:        nginx
    Port:         <none>
    Host Port:    <none>
    Environment:        <none>
    Mounts:       <none>
  Volumes:        <none>
  Node-Selectors:        <none>
  Tolerations:   <none>

avanee@Avanee:~$ |
```

SS10:

```
avanee@Avanee:~/PES2UG23CS108$ kubectl apply -f nginx-pes2ug23cs108.yaml -n pes2ug23cs108-beta
deployment.apps/nginx-pes2ug23cs108 created
avanee@Avanee:~/PES2UG23CS108$ kubectl config set-context --current --namespace=pes2ug23cs108-beta
Context "minikube" modified.
avanee@Avanee:~/PES2UG23CS108$ kubectl get deployments
NAME                    READY   UP-TO-DATE   AVAILABLE   AGE
nginx-pes2ug23cs108     3/3     3            3           16s
avanee@Avanee:~/PES2UG23CS108$ |
```

SS11:

```
nginx-pes2ug23cs108   3/3   3               16s
avanee@Avanee:~/PES2UG23CS108$ nano pes2ug23cs108-service.yaml
avanee@Avanee:~/PES2UG23CS108$ kubectl apply -f pes2ug23cs108-service.yaml
service/pes2ug23cs108-service created
avanee@Avanee:~/PES2UG23CS108$ kubectl get services
NAME                    TYPE            CLUSTER-IP      EXTERNAL-IP   PORT(S)   AGE
pes2ug23cs108-service   ClusterIP   10.107.91.5   <none>        80/TCP    5s
avanee@Avanee:~/PES2UG23CS108$ kubectl describe service pes2ug23cs108-service
Name:                     pes2ug23cs108-service
Namespace:                pes2ug23cs108-beta
Labels:                   <none>
Annotations:              <none>
Selector:                 app=nginx
Type:                     ClusterIP
IP Family Policy:         SingleStack
IP Families:              IPv4
IP:                       10.107.91.5
IPs:                      10.107.91.5
Port:                     <unset>  80/TCP
TargetPort:               80/TCP
Endpoints:                10.244.0.23:80,10.244.0.21:80,10.244.0.22:80
Session Affinity:         None
Internal Traffic Policy:  Cluster
Events:                   <none>
avanee@Avanee:~/PES2UG23CS108$ kubectl get endpoints pes2ug23cs108-service
Warning: v1 Endpoints is deprecated in v1.33+; use discovery.k8s.io/v1 EndpointSlice
NAME                    ENDPOINTS                                     AGE
pes2ug23cs108-service   10.244.0.21:80,10.244.0.22:80,10.244.0.23:80   15s
avanee@Avanee:~/PES2UG23CS108$ |
```

SS12:

```
avanee@Avanee:~/PES2UG23CS108$ kubectl delete pod -l app=nginx
pod "nginx-pes2ug23cs108-6d7f5489f9-jfwr2" deleted from pes2ug23cs108-beta namespace
pod "nginx-pes2ug23cs108-6d7f5489f9-svrb4" deleted from pes2ug23cs108-beta namespace
pod "nginx-pes2ug23cs108-6d7f5489f9-vvd4t" deleted from pes2ug23cs108-beta namespace
avanee@Avanee:~/PES2UG23CS108$ kubectl get endpoints pes2ug23cs108-service
Warning: v1 Endpoints is deprecated in v1.33+; use discovery.k8s.io/v1 EndpointSlice
NAME                    ENDPOINTS                                     AGE
pes2ug23cs108-service   10.244.0.24:80,10.244.0.25:80,10.244.0.26:80   3m5s
avanee@Avanee:~/PES2UG23CS108$ kubectl describe service pes2ug23cs108-service
Name:                     pes2ug23cs108-service
Namespace:                pes2ug23cs108-beta
Labels:                   <none>
Annotations:              <none>
Selector:                 app=nginx
Type:                     ClusterIP
IP Family Policy:         SingleStack
IP Families:              IPv4
IP:                       10.107.91.5
IPs:                      10.107.91.5
Port:                     <unset>  80/TCP
TargetPort:               80/TCP
Endpoints:                10.244.0.26:80,10.244.0.25:80,10.244.0.24:80
Session Affinity:         None
Internal Traffic Policy:  Cluster
Events:                   <none>
avanee@Avanee:~/PES2UG23CS108$ |
```
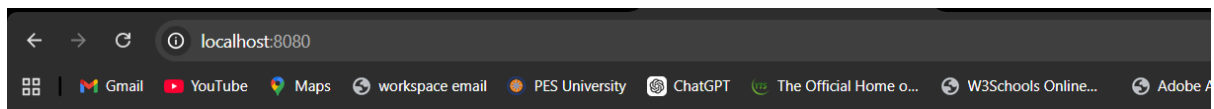
SS13:

```
avanee@Avanee:~/PES2UG23CS108$ kubectl port-forward deployment/nginx-pes2ug23cs108 8080:80
Forwarding from 127.0.0.1:8080 -> 80
Forwarding from [::1]:8080 -> 80
Handling connection for 8080
Handling connection for 8080
|
```

SS14:

Hello from district PES2UG23CS108-beta running in Kubernetes

SS15:


```
^Cavanee@Avanee:~/PES2UG23CS108kubectl delete namespace pes2ug23cs108-alphaha
kubectl delete namespace pes2ug23cs108-beta
namespace "pes2ug23cs108-alpha" deleted
namespace "pes2ug23cs108-beta" deleted
avanee@Avanee:~/PES2UG23CS108$ kubectl get namespaces
NAME                STATUS    AGE
default             Active    66m
kube-node-lease     Active    66m
kube-public         Active    66m
kube-system         Active    66m
avanee@Avanee:~/PES2UG23CS108$
```