CC LAB - 5

NAME:ARJUN S KANNUR
SEC:B
SRN:PES2UG23CS090

SS1

SS2

SS3

```
pes2ug23cs090@192 ~ % kubectl get pods -w
NAME     READY    STATUS             RESTARTS    AGE
temp     0/1      Pending            0           0s
temp     0/1      Pending            0           0s
temp     0/1      ContainerCreating  0           0s
temp     1/1      Running            0           6s
temp     1/1      Terminating        0           7s
temp     1/1      Terminating        0           8s
temp     0/1      Completed          0           8s
temp     0/1      Completed          0           9s
temp     0/1      Completed          0           9s
```

SS4

```
pes2ug23cs090@192 ~ % kubectl run citizen --image=nginx
pod/citizen created
pes2ug23cs090@192 ~ % kubectl logs citizen
/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
2026/02/20 18:13:08 [notice] 1#1: using the "epoll" event method
2026/02/20 18:13:08 [notice] 1#1: nginx/1.29.5
2026/02/20 18:13:08 [notice] 1#1: built by gcc 14.2.0 (Debian 14.2.0-19)
2026/02/20 18:13:08 [notice] 1#1: OS: Linux 6.10.14-linuxkit
2026/02/20 18:13:08 [notice] 1#1: getrlimit(RLIMIT_NOFILE): 1048576:1048576
2026/02/20 18:13:08 [notice] 1#1: start worker processes
2026/02/20 18:13:08 [notice] 1#1: start worker process 29
2026/02/20 18:13:08 [notice] 1#1: start worker process 30
2026/02/20 18:13:08 [notice] 1#1: start worker process 31
2026/02/20 18:13:08 [notice] 1#1: start worker process 32
2026/02/20 18:13:08 [notice] 1#1: start worker process 33
2026/02/20 18:13:08 [notice] 1#1: start worker process 34
2026/02/20 18:13:08 [notice] 1#1: start worker process 35
2026/02/20 18:13:08 [notice] 1#1: start worker process 36
pes2ug23cs090@192 ~ %
```

SS5

```
pes2ug23cs090@192 ~ % kubectl run broken \
--image=busybox \
--restart=Never \
--command -- sh -c "echo CRASH: something went wrong >&2; exit 1"
pod/broken created
pes2ug23cs090@192 ~ % kubectl logs broken
Error from server (BadRequest): container "broken" in pod "broken" is waiting to start: Containe
rCreating
pes2ug23cs090@192 ~ % kubectl logs broken
CRASH: something went wrong
pes2ug23cs090@192 ~ % |
```

SS6

```
pes2ug23cs090@192 ~ % kubectl create deployment pes2ug23cs090 \
--image=nginx
deployment.apps/pes2ug23cs090 created
pes2ug23cs090@192 ~ % kubectl get deployments
NAME            READY   UP-TO-DATE   AVAILABLE   AGE
pes2ug23cs090   1/1     1            1           9s
pes2ug23cs090@192 ~ % kubectl get pods
NAME                             READY   STATUS    RESTARTS   AGE
broken                           0/1     Error     0          2m42s
citizen                          1/1     Running   0          4m15s
pes2ug23cs090-546f648f7f-qmdzm   1/1     Running   0          16s
pes2ug23cs090@192 ~ % |
```

SS7

```
pes2ug23cs090@192 ~ % kubectl scale deployment pes2ug23cs090 --replicas=5
deployment.apps/pes2ug23cs090 scaled
pes2ug23cs090@192 ~ % kubectl get pods
NAME                             READY   STATUS             RESTARTS   AGE
broken                           0/1     Error              0          5m12s
citizen                          1/1     Running            0          6m45s
pes2ug23cs090-546f648f7f-754g5   0/1     ContainerCreating  0          5s
pes2ug23cs090-546f648f7f-kxbzr   0/1     ContainerCreating  0          5s
pes2ug23cs090-546f648f7f-qmdzm   1/1     Running            0          2m46s
pes2ug23cs090-546f648f7f-r675h   0/1     ContainerCreating  0          5s
pes2ug23cs090-546f648f7f-t47pv   1/1     Running            0          5s
pes2ug23cs090@192 ~ % kubectl scale deployment pes2ug23csxxx --replicas=3
Error from server (NotFound): deployments.apps "pes2ug23csxxx" not found
pes2ug23cs090@192 ~ % kubectl scale deployment pes2ug23cs090 --replicas=3
deployment.apps/pes2ug23cs090 scaled
pes2ug23cs090@192 ~ % kubectl get pods
NAME                             READY   STATUS    RESTARTS   AGE
broken                           0/1     Error     0          6m8s
citizen                          1/1     Running   0          7m41s
pes2ug23cs090-546f648f7f-754g5   1/1     Running   0          61s
pes2ug23cs090-546f648f7f-qmdzm   1/1     Running   0          3m42s
pes2ug23cs090-546f648f7f-r675h   1/1     Running   0          61s
pes2ug23cs090@192 ~ % |
```

SS8

```
pes2ug23cs090@192 ~ % kubectl get rs,po
NAME                                              DESIRED   CURRENT   READY   AGE
replicaset.apps/pes2ug23cs090-546f648f7f          3         3         3       4m45s

NAME                                     READY   STATUS   RESTARTS   AGE
pod/broken                               0/1     Error    0          7m11s
pod/citizen                              1/1     Running  0          8m44s
pod/pes2ug23cs090-546f648f7f-754g5       1/1     Running  0          2m4s
pod/pes2ug23cs090-546f648f7f-qmdzm       1/1     Running  0          4m45s
pod/pes2ug23cs090-546f648f7f-r675h       1/1     Running  0          2m4s
pes2ug23cs090@192 ~ % kubectl set image deployment/pes2ug23cs090 nginx=nginx:1.25
deployment.apps/pes2ug23cs090 image updated
pes2ug23cs090@192 ~ % kubectl get rs,po
NAME                                              DESIRED   CURRENT   READY   AGE
replicaset.apps/pes2ug23cs090-546f648f7f          3         3         3       5m12s
replicaset.apps/pes2ug23cs090-7875d9dd75          1         1         0       12s

NAME                                     READY   STATUS             RESTARTS   AGE
pod/broken                               0/1     Error              0          7m38s
pod/citizen                              1/1     Running            0          9m11s
pod/pes2ug23cs090-546f648f7f-754g5       1/1     Running            0          2m31s
pod/pes2ug23cs090-546f648f7f-qmdzm       1/1     Running            0          5m12s
pod/pes2ug23cs090-546f648f7f-r675h       1/1     Running            0          2m31s
pod/pes2ug23cs090-7875d9dd75-n8l7l       0/1     ContainerCreating  0          12s
pes2ug23cs090@192 ~ %
```

SS9

```
pes2ug23cs090@192 ~ % kubectl rollout undo deployment/pes2ug23cs090
deployment.apps/pes2ug23cs090 rolled back
pes2ug23cs090@192 ~ % kubectl rollout history deployment pes2ug23cs090
deployment.apps/pes2ug23cs090
REVISION  CHANGE-CAUSE
3         <none>
4         <none>

pes2ug23cs090@192 ~ % kubectl rollout history deployment pes2ug23cs090 --revision=2
error: unable to find the specified revision
pes2ug23cs090@192 ~ % kubectl rollout history deployment pes2ug23cs090 --revision=3
deployment.apps/pes2ug23cs090 with revision #3
Pod Template:
  Labels:        app=pes2ug23cs090
        pod-template-hash=546f648f7f
  Containers:
   nginx:
    Image:        nginx
    Port:         <none>
    Host Port:    <none>
    Environment:          <none>
    Mounts:       <none>
  Volumes:        <none>
  Node-Selectors:         <none>
  Tolerations:    <none>

pes2ug23cs090@192 ~ % kubectl rollout history deployment pes2ug23cs090 --revision=4
deployment.apps/pes2ug23cs090 with revision #4
Pod Template:
  Labels:        app=pes2ug23cs090
        pod-template-hash=7875d9dd75
  Containers:
   nginx:
    Image:        nginx:1.25
    Port:         <none>
    Host Port:    <none>
```

SS10

```
pes2ug23cs090@192 PES2UG23CS090 % kubectl rollout restart deployment nginx-pes2ug23cs090
deployment.apps/nginx-pes2ug23cs090 restarted
pes2ug23cs090@192 PES2UG23CS090 % kubectl get pods
NAME                                READY   STATUS    RESTARTS   AGE
nginx-pes2ug23cs090-684f98dc6c-24fsz   1/1     Running   0          6s
nginx-pes2ug23cs090-684f98dc6c-rl78n   1/1     Running   0          5s
nginx-pes2ug23cs090-684f98dc6c-xmnt2   1/1     Running   0          7s
pes2ug23cs090@192 PES2UG23CS090 % kubectl get deployments
NAME                  READY   UP-TO-DATE   AVAILABLE   AGE
nginx-pes2ug23cs090   3/3     3            3           4m22s
pes2ug23cs090@192 PES2UG23CS090 %
```

SS11

```
pes2ug23cs090@192 PES2UG23CS090 % kubectl apply -f pes2ug23cs090-service.yaml
service/pes2ug23cs090-service created
pes2ug23cs090@192 PES2UG23CS090 % kubectl get services
NAME                    TYPE        CLUSTER-IP      EXTERNAL-IP   PORT(S)   AGE
pes2ug23cs090-service   ClusterIP   10.105.86.213   <none>        80/TCP    10s
pes2ug23cs090@192 PES2UG23CS090 % kubectl describe service pes2ug23cs090-service
Name:                   pes2ug23cs090-service
Namespace:              pes2ug23cs090-beta
Labels:                 <none>
Annotations:            <none>
Selector:               app=nginx
Type:                   ClusterIP
IP Family Policy:       SingleStack
IP Families:            IPv4
IP:                     10.105.86.213
IPs:                    10.105.86.213
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>
pes2ug23cs090@192 PES2UG23CS090 % kubectl get endpoints pes2ug23cs090-service
Warning: v1 Endpoints is deprecated in v1.33+; use discovery.k8s.io/v1 EndpointSlice
NAME                    ENDPOINTS                                       AGE
pes2ug23cs090-service   10.244.0.24:80,10.244.0.25:80,10.244.0.26:80    30s
pes2ug23cs090@192 PES2UG23CS090 %
```

SS12

```
pes2ug23cs090@192 PES2UG23CS090 % kubectl delete pod -l app=nginx
pod "nginx-pes2ug23cs090-684f98dc6c-24fsz" deleted from pes2ug23cs090-beta namespace
pod "nginx-pes2ug23cs090-684f98dc6c-rl78n" deleted from pes2ug23cs090-beta namespace
pod "nginx-pes2ug23cs090-684f98dc6c-xmnt2" deleted from pes2ug23cs090-beta namespace
pes2ug23cs090@192 PES2UG23CS090 % kubectl get endpoints pes2ug23cs090-service
Warning: v1 Endpoints is deprecated in v1.33+; use discovery.k8s.io/v1 EndpointSlice
NAME                    ENDPOINTS                                          AGE
pes2ug23cs090-service   10.244.0.27:80,10.244.0.28:80,10.244.0.29:80       99s
pes2ug23cs090@192 PES2UG23CS090 % kubectl describe service pes2ug23cs090-service
Name:                     pes2ug23cs090-service
Namespace:                pes2ug23cs090-beta
Labels:                   <none>
Annotations:              <none>
Selector:                 app=nginx
Type:                     ClusterIP
IP Family Policy:         SingleStack
IP Families:              IPv4
IP:                       10.105.86.213
IPs:                      10.105.86.213
Port:                     <unset>  80/TCP
TargetPort:               80/TCP
Endpoints:                10.244.0.27:80,10.244.0.29:80,10.244.0.28:80
Session Affinity:         None
Internal Traffic Policy:  Cluster
Events:                   <none>
pes2ug23cs090@192 PES2UG23CS090 %
```

SS13

```
pes2ug23cs090@192 PES2UG23CS090 % kubectl port-forward deployment/nginx-pes2ug23cs090 8080:80
Forwarding from 127.0.0.1:8080 -> 80
Forwarding from [::1]:8080 -> 80
```

SS14

localhost:8080

Hello from district PES1UG23CS090-beta running in Kubernetes
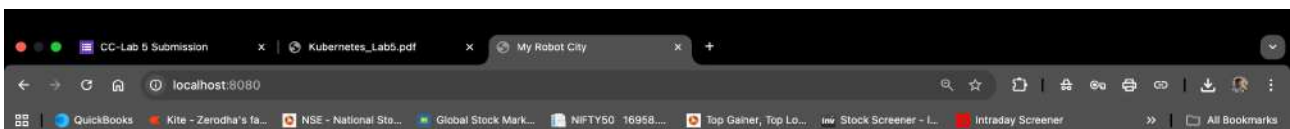
SS15

```
pes2ug23cs090@192 PES2UG23CS090 % kubectl delete namespace pes2ug23cs090-alpha
namespace "pes2ug23cs090-alpha" deleted
pes2ug23cs090@192 PES2UG23CS090 % kubectl delete namespace pes2ug23cs090-beta
namespace "pes2ug23cs090-beta" deleted
pes2ug23cs090@192 PES2UG23CS090 % kubectl get ns
NAME              STATUS   AGE
default           Active   43m
kube-node-lease   Active   43m
kube-public       Active   43m
kube-system       Active   43m
pes2ug23cs090@192 PES2UG23CS090 %
```