CC LAB 5
SNEHA VERMA
PES1UG23AM309
13/2/26

```
PES1UG23AM309@h:~$ kubectl get nodes
NAME         STATUS    ROLES             AGE       VERSION
minikube     Ready     control-plane     5m30s     v1.35.0
PES1UG23AM309@h:~$ kubectl create namespace pes1ug23am309-alpha
namespace/pes1ug23am309-alpha created
PES1UG23AM309@h:~$ kubectl create namespace pes1ug23am309-beta
namespace/pes1ug23am309-beta created
PES1UG23AM309@h:~$ kubectl get namespaces
NAME                      STATUS    AGE
default                   Active    6m3s
kube-node-lease           Active    6m2s
kube-public               Active    6m3s
kube-system               Active    6m3s
pes1ug23am309-alpha       Active    13s
pes1ug23am309-beta        Active    7s
PES1UG23AM309@h:~$ kubectl config set-context --current --namesp
ace=pes1ug23am309-alpha
Context "minikube" modified.
```

```
PES1UG23AM309@h:~$ kubectl get pods
NAME        READY    STATUS     RESTARTS    AGE
citizen     1/1      Running    0           60s
PES1UG23AM309@h:~$ kubectl describe pod citizen
Name:              citizen
Namespace:         pes1ug23am309-alpha
Priority:          0
Service Account:   default
Node:              minikube/192.168.49.2
Start Time:        Fri, 13 Feb 2026 09:34:32 +0000
Labels:            run=citizen
Annotations:       <none>
Status:            Running
IP:                10.244.0.4
IPs:
  IP:  10.244.0.4
Containers:
  citizen:
    Container ID:   docker://b4852b2c1b30218e68a425a41df0049d9976433b821ac398e4a3a297066864ee
    Image:          nginx
    Image ID:       docker-pullable://nginx@sha256:341bf0f3ce6c5277d6002cf6e1fb0319fa4252add24ab6a0e262e0056d313208
    Port:           <none>
    Host Port:      <none>
    State:          Running
      Started:      Fri, 13 Feb 2026 09:34:56 +0000
    Ready:          True
    Restart Count:  0
    Environment:    <none>
    Mounts:
      /var/run/secrets/kubernetes.io/serviceaccount from kube-api-access-d9x76 (ro)
Conditions:
  Type                      Status
  PodReadyToStartContainers True
  Initialized               True
  Ready                     True
  ContainersReady           True
  PodScheduled              True
Volumes:
  kube-api-access-d9x76:
```

```
PES1UG23AM309@h:~$ kubectl run temp --image=nginx
pod/temp created
PES1UG23AM309@h:~$ kubectl delete pod temp
pod "temp" deleted
PES1UG23AM309@h:~$
```

```
  Normal  Pulling     70s   kubelet                Pulling image "nginx"
  Normal  Pulled      48s   kubelet                Successfully pulled image "ng
inx" in 23.787s (23.787s including waiting). Image size: 160850673 bytes.
  Normal  Created     48s   kubelet                Container created
  Normal  Started     48s   kubelet                Container started
PES1UG23AM309@h:~$ kubectl get pods -w
NAME       READY    STATUS            RESTARTS      AGE
citizen    1/1      Running           0             11m
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                     8s
temp       1/1      Terminating       0                     8s
temp       0/1      Completed         0                     9s
temp       0/1      Completed         0                     11s
temp       0/1      Completed         0                     11s
```

```
s.sh
/docker-entrypoint.sh: Launching /docker-entrypoint.d/30-tune-worker-processe
s.sh
/docker-entrypoint.sh: Configuration complete; ready for start up
2026/02/13 09:34:57 [notice] 1#1: using the "epoll" event method
2026/02/13 09:34:57 [notice] 1#1: nginx/1.29.5
2026/02/13 09:34:57 [notice] 1#1: built by gcc 14.2.0 (Debian 14.2.0-19)
2026/02/13 09:34:57 [notice] 1#1: OS: Linux 6.6.87.2-microsoft-standard-WSL2
2026/02/13 09:34:57 [notice] 1#1: getrlimit(RLIMIT_NOFILE): 1048576:1048576
2026/02/13 09:34:57 [notice] 1#1: start worker processes
2026/02/13 09:34:57 [notice] 1#1: start worker process 29
2026/02/13 09:34:57 [notice] 1#1: start worker process 30
2026/02/13 09:34:57 [notice] 1#1: start worker process 31
2026/02/13 09:34:57 [notice] 1#1: start worker process 32
2026/02/13 09:34:57 [notice] 1#1: start worker process 33
2026/02/13 09:34:57 [notice] 1#1: start worker process 34
2026/02/13 09:34:57 [notice] 1#1: start worker process 35
2026/02/13 09:34:57 [notice] 1#1: start worker process 36
2026/02/13 09:34:57 [notice] 1#1: start worker process 37
2026/02/13 09:34:57 [notice] 1#1: start worker process 38
2026/02/13 09:34:57 [notice] 1#1: start worker process 39
2026/02/13 09:34:57 [notice] 1#1: start worker process 40
PES1UG23AM309@h:~$
```

```
PES1UG23AM309@h:~$ kubectl run broken \
 --image=busybox \
 --restart=Never \
 --command -- sh -c "echo 'CRASH: something went wrong' >&2; exit 1"
pod/broken created
PES1UG23AM309@h:~$ kubectl logs broken
Error from server (BadRequest): container "broken" in pod "broken" is waiting
 to start: ContainerCreating
PES1UG23AM309@h:~$ kubectl logs broken
CRASH: something went wrong
PES1UG23AM309@h:~$
```

```
PES1UG23AM309@h:~$ kubectl create deployment pes1ug23am309 --image=nginx
deployment.apps/pes1ug23am309 created
PES1UG23AM309@h:~$ kubectl get deployments
NAME            READY   UP-TO-DATE   AVAILABLE   AGE
pes1ug23am309   1/1     1            1           8s
PES1UG23AM309@h:~$ kubectl get pods
NAME                             READY   STATUS    RESTARTS   AGE
broken                           0/1     Error     0          119s
citizen                          1/1     Running   0          21m
pes1ug23am309-56c7bdd7b7-tr9h2   1/1     Running   0          15s
PES1UG23AM309@h:~$
```

```
PES1UG23AM309@h:~$ kubectl get deployments
NAME            READY   UP-TO-DATE   AVAILABLE   AGE
pes1ug23am309   1/1     1            1           8s
PES1UG23AM309@h:~$ kubectl get pods
NAME                             READY   STATUS    RESTARTS   AGE
broken                           0/1     Error     0          119s
citizen                          1/1     Running   0          21m
pes1ug23am309-56c7bdd7b7-tr9h2   1/1     Running   0          15s
PES1UG23AM309@h:~$ kubectl scale deployment pes1ug23am309 --replicas=5
deployment.apps/pes1ug23am309 scaled
PES1UG23AM309@h:~$ kubectl get pods
NAME                             READY   STATUS             RESTARTS   AGE
broken                           0/1     Error              0          3m2s
citizen                          1/1     Running            0          22m
pes1ug23am309-56c7bdd7b7-4zmwf   1/1     Running            0          6s
pes1ug23am309-56c7bdd7b7-f88gh   0/1     ContainerCreating  0          6s
pes1ug23am309-56c7bdd7b7-pcqmd   0/1     ContainerCreating  0          6s
pes1ug23am309-56c7bdd7b7-t5ff8   0/1     ContainerCreating  0          6s
pes1ug23am309-56c7bdd7b7-tr9h2   1/1     Running            0          78s
PES1UG23AM309@h:~$ kubectl scale deployment pes1ug23am309 --replicas=3
deployment.apps/pes1ug23am309 scaled
PES1UG23AM309@h:~$ kubectl get pods
NAME                             READY   STATUS    RESTARTS   AGE
broken                           0/1     Error     0          3m31s
citizen                          1/1     Running   0          22m
pes1ug23am309-56c7bdd7b7-4zmwf   1/1     Running   0          35s
pes1ug23am309-56c7bdd7b7-pcqmd   1/1     Running   0          35s
pes1ug23am309-56c7bdd7b7-tr9h2   1/1     Running   0          107s
PES1UG23AM309@h:~$
```

```
PES1UG23AM309@h:~$ kubectl get rs,po
NAME                                        DESIRED   CURRENT   READY   AGE
replicaset.apps/pes1ug23am309-56c7bdd7b7    3         3         3       2m49s

NAME                                 READY   STATUS    RESTARTS   AGE
pod/broken                           0/1     Error     0          4m33s
pod/citizen                          1/1     Running   0          23m
pod/pes1ug23am309-56c7bdd7b7-4zmwf   1/1     Running   0          97s
pod/pes1ug23am309-56c7bdd7b7-pcqmd   1/1     Running   0          97s
pod/pes1ug23am309-56c7bdd7b7-tr9h2   1/1     Running   0          2m49s
PES1UG23AM309@h:~$ kubectl set image deployment/pes1ug23am309 nginx=nginx:1.2
5
deployment.apps/pes1ug23am309 image updated
PES1UG23AM309@h:~$ kubectl get rs,po
NAME                                        DESIRED   CURRENT   READY   AGE
replicaset.apps/pes1ug23am309-56c7bdd7b7    0         0         0       5h42m
replicaset.apps/pes1ug23am309-67c6cfd88c    3         3         3       5h39m

NAME                                 READY   STATUS    RESTARTS   AGE
pod/broken                           0/1     Error     0          5h44m
pod/citizen                          1/1     Running   0          6h3m
pod/pes1ug23am309-67c6cfd88c-5hmsd   1/1     Running   0          5h38m
pod/pes1ug23am309-67c6cfd88c-9qrz5   1/1     Running   0          5h39m
pod/pes1ug23am309-67c6cfd88c-ms48h   1/1     Running   0          5h39m
PES1UG23AM309@h:~$
```

```
PES1UG23AM309@h:~$ kubectl rollout undo deployment pes1ug23am309
deployment.apps/pes1ug23am309 rolled back
PES1UG23AM309@h:~$ kubectl get rs
NAME                         DESIRED   CURRENT   READY   AGE
pes1ug23am309-56c7bdd7b7     2         2         1       5h44m
pes1ug23am309-67c6cfd88c     2         2         2       5h40m
PES1UG23AM309@h:~$ kubectl rollout undo deployment pes1ug23am309
deployment.apps/pes1ug23am309 rolled back
PES1UG23AM309@h:~$
```

```
PES1UG23AM309@h:~$ cd PES1UG23AM309
PES1UG23AM309@h:~/PES1UG23AM309$ mkdir html
PES1UG23AM309@h:~/PES1UG23AM309$ nano html/index.html
PES1UG23AM309@h:~/PES1UG23AM309$ nano Dockerfile
PES1UG23AM309@h:~/PES1UG23AM309$ eval $(minikube docker-env)
PES1UG23AM309@h:~/PES1UG23AM309$ docker build -t pes1ug23am309-nginx:1.0 .
failed to fetch metadata: fork/exec /usr/local/lib/docker/cli-plugins/docker-buildx: no such file
or directory

DEPRECATED: The legacy builder is deprecated and will be removed in a future release.
            Install the buildx component to build images with BuildKit:
            https://docs.docker.com/go/buildx/

Sending build context to Docker daemon  414.2kB
Step 1/2 : FROM nginx:alpine
alpine: Pulling from library/nginx
589002ba0eae: Pulling fs layer
bca5d04786e1: Pulling fs layer
3e2c181db1b0: Pulling fs layer
6b7b6c7061b7: Pulling fs layer
399d0898a94e: Pulling fs layer
955a8478f9ac: Pulling fs layer
6d397a54a185: Pulling fs layer
5e7756927bef: Pulling fs layer
6b7b6c7061b7: Waiting
399d0898a94e: Waiting
955a8478f9ac: Waiting
6d397a54a185: Waiting
5e7756927bef: Waiting
3e2c181db1b0: Verifying Checksum
3e2c181db1b0: Download complete
bca5d04786e1: Download complete
589002ba0eae: Verifying Checksum
589002ba0eae: Download complete
6b7b6c7061b7: Verifying Checksum
6b7b6c7061b7: Download complete
589002ba0eae: Pull complete
399d0898a94e: Verifying Checksum
399d0898a94e: Download complete
955a8478f9ac: Download complete
```
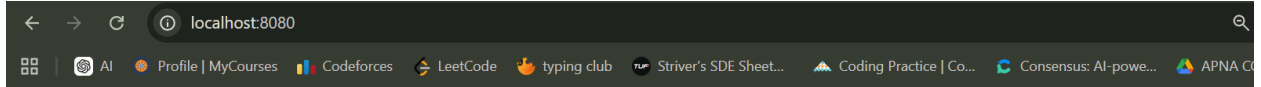
```
PES1UG23AM309@h:~/PES1UG23AM309$ nano nginx-pes1ug23am309.yaml
PES1UG23AM309@h:~/PES1UG23AM309$ kubectl apply -f nginx-pes1ug23am309.yaml -n pes1ug23am309-beta
deployment.apps/nginx-pes1ug23am309 created
PES1UG23AM309@h:~/PES1UG23AM309$ kubectl config set-context --current --namespace=pes1ug23am309-be
ta
Context "minikube" modified.
PES1UG23AM309@h:~/PES1UG23AM309$ kubectl get deployments
NAME                   READY   UP-TO-DATE   AVAILABLE   AGE
nginx-pes1ug23am309    3/3     3            3           20s
PES1UG23AM309@h:~/PES1UG23AM309$ kubectl get pods
NAME                                    READY   STATUS    RESTARTS   AGE
nginx-pes1ug23am309-7c87cbd689-6wc88    1/1     Running   0          26s
nginx-pes1ug23am309-7c87cbd689-hpk9d    1/1     Running   0          26s
nginx-pes1ug23am309-7c87cbd689-txldr    1/1     Running   0          26s
PES1UG23AM309@h:~/PES1UG23AM309$
```

```
PES1UG23AM309@h:~/PES1UG23AM309$ nano pes1ug23am309-service.yaml
PES1UG23AM309@h:~/PES1UG23AM309$ kubectl apply -f pes1ug23am309-service.yaml
service/pes1ug23am309-service created
PES1UG23AM309@h:~/PES1UG23AM309$ kubectl get services
NAME                    TYPE        CLUSTER-IP       EXTERNAL-IP    PORT(S)    AGE
pes1ug23am309-service   ClusterIP   10.102.88.134    <none>         80/TCP     7s
PES1UG23AM309@h:~/PES1UG23AM309$ kubectl get endpoints pes1ug23am309-service
Warning: v1 Endpoints is deprecated in v1.33+; use discovery.k8s.io/v1 EndpointSlice
NAME                    ENDPOINTS                                          AGE
pes1ug23am309-service   10.244.0.21:80,10.244.0.22:80,10.244.0.23:80       21s
PES1UG23AM309@h:~/PES1UG23AM309$ |
```

localhost:8080

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Hello from district PES1UG23AM309-beta running in Kubernetes