

CC - Sem 6

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SS1:

```
adma@Adithyas-MacBook-Air ~ % minikube start
🌟 minikube v1.38.0 on Darwin 15.7.1 (arm64)
  Automatically selected the docker driver
  Starting v1.39.0, minikube will default to "containerd" container runtime. See #21973 for more info.
  🚧 Using Docker Desktop driver with root privileges
  Starting "minikube" primary control-plane node in "minikube" cluster
  Pulling base image v0.0.49 ...
  Downloading Kubernetes v1.35.0 preload ...
    > preloaded-images-k8s-v18-v1...: 243.03 MiB / 243.03 MiB 100.00% 2.03 Mi
    > gcr.io/k8s-minikube/kicbase...: 478.49 MiB / 478.49 MiB 100.00% 2.64 Mi
  Creating docker container (CPUs=2, Memory=4000MB) ...
  Preparing Kubernetes v1.35.0 on Docker 29.2.0 ...
  Configuring bridge CNI (Container Networking Interface) ...
  Verifying Kubernetes components...
    • Using image gcr.io/k8s-minikube/storage-provisioner:v5
  ⚡ Enabled addons: default-storageclass, storage-provisioner
  🎉 Done! kubectl is now configured to use "minikube" cluster and "default" namespace by default
[adma@Adithyas-MacBook-Air ~ % kubectl create namespace pes2ug23cs028-alpha
namespace/pes2ug23cs028-alpha created
namespace/pes2ug23cs028-beta created
```

```
adma@Adithyas-MacBook-Air ~ % kubectl get namespaces
```

NAME	STATUS	AGE
default	Active	5m23s
kube-node-lease	Active	5m23s
kube-public	Active	5m23s
kube-system	Active	5m23s
pes2ug23cs028-alpha	Active	2m29s
pes2ug23cs028-beta	Active	2m29s

```
adma@Adithyas-MacBook-Air ~ %
```

SS2:

```
[adma@Adithyas-MacBook-Air ~ % kubectl config set-context --current --namespace=pes2ug23cs028-alpha
Context "minikube" modified.
adma@Adithyas-MacBook-Air ~ % kubectl run citizen \
--image=nginx \
--restart=Never
pod/citizen created
[adma@Adithyas-MacBook-Air ~ % kubectl get pods
NAME      READY   STATUS    RESTARTS   AGE
citizen   0/1     ContainerCreating   0          4s
[adma@Adithyas-MacBook-Air ~ % kubectl get pods
NAME      READY   STATUS    RESTARTS   AGE
citizen   1/1     Running   0          20s
[adma@Adithyas-MacBook-Air ~ % kubectl describe pod citizen
Name:           citizen
Namespace:      pes2ug23cs028-alpha
Priority:       0
Service Account: default
Node:           minikube/192.168.49.2
Start Time:     Tue, 10 Feb 2026 14:48:08 +0530
Labels:         run=citizen
Annotations:    <none>
Status:         Running
IP:            10.244.0.6
IPs:
  IP: 10.244.0.6
Containers:
  citizen:
    Container ID: docker://26bdecbaed1ceddba5dbdc8fb896321d9c7a5495ac4a75cb3224eb986bb2ed88
    Image:          nginx
    Image ID:      docker-pullable://nginx@sha256:341bf0f3ce6c5277d6002cf6e1fb0319fa4252add24ab6a0e262e0056d313208
    Port:          <none>
    Host Port:    <none>
    State:         Running
      Started:    Tue, 10 Feb 2026 14:48:12 +0530
    Ready:         True
    Restart Count: 0
    Environment:   <none>
    Mounts:
      /var/run/secrets/kubernetes.io/serviceaccount from kube-api-access-c6qtp (ro)
Conditions:
  Type        Status
  PodReadyToStartContainers  True
  Initialized  True
  Ready        True
  ContainersReady  True
  PodScheduled  True
Volumes:
  kube-api-access-c6qtp:
    Type:          Projected (a volume that contains injected data from multiple sources)
    TokenExpirationSeconds: 3607
    ConfigMapName:   kube-root-ca.crt
    Optional:       false
    DownwardAPI:    true
  QoS Class:      BestEffort
  Node-Selectors:  <none>
  Tolerations:    node.kubernetes.io/not-ready:NoExecute op=Exists for 300s
                  node.kubernetes.io/unreachable:NoExecute op=Exists for 300s
Events:
  Type      Reason     Age   From           Message
  ----      ----     --   --            --
  Normal    Scheduled  52s   default-scheduler  Successfully assigned pes2ug23cs028-alpha/citizen to minikube
  Normal    Pulling    51s   kubelet        spec.containers{citizen}: Pulling image "nginx"
  Normal    Pulled    48s   kubelet        spec.containers{citizen}: Successfully pulled image "nginx" in 3.731s (3
  .731s including waiting). Image size: 180544671 bytes.
  Normal    Created    48s   kubelet        spec.containers{citizen}: Container created
  Normal    Started    47s   kubelet        spec.containers{citizen}: Container started
adma@Adithyas-MacBook-Air ~ %
```

SS3:

```
[adma@Adithyas-MacBook-Air ~ % 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	0/1	Terminating	0	0s
temp	0/1	Terminating	0	1s
temp	0/1	ContainerStatusUnknown	0	2s
temp	0/1	ContainerStatusUnknown	0	2s
temp	0/1	ContainerStatusUnknown	0	2s

SS4:

```
[adma@Adithyas-MacBook-Air ~ % 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
2026/02/10 09:22:54 [notice] 1#1: using the "epoll" event method
2026/02/10 09:22:54 [notice] 1#1: nginx/1.29.5
2026/02/10 09:22:54 [notice] 1#1: built by gcc 14.2.0 (Debian 14.2.0-19)
2026/02/10 09:22:54 [notice] 1#1: OS: Linux 6.12.65-linuxkit
2026/02/10 09:22:54 [notice] 1#1: getrlimit(RLIMIT_NOFILE): 1048576:1048576
2026/02/10 09:22:54 [notice] 1#1: start worker processes
2026/02/10 09:22:54 [notice] 1#1: start worker process 29
2026/02/10 09:22:54 [notice] 1#1: start worker process 30
2026/02/10 09:22:54 [notice] 1#1: start worker process 31
2026/02/10 09:22:54 [notice] 1#1: start worker process 32
2026/02/10 09:22:54 [notice] 1#1: start worker process 33
2026/02/10 09:22:54 [notice] 1#1: start worker process 34
2026/02/10 09:22:54 [notice] 1#1: start worker process 35
2026/02/10 09:22:54 [notice] 1#1: start worker process 36
adma@Adithyas-MacBook-Air ~ %
```

SS5:

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

SS6:

```

adma@Adithyas-MacBook-Air ~ % kubectl get deployments -n pes2ug23cs028-alpha
kubectl get pods -n pes2ug23cs028-alpha
NAME           READY   UP-TO-DATE   AVAILABLE   AGE
pes2ug23cs028  1/1     1            1           27s
NAME           READY   STATUS      RESTARTS   AGE
broken         0/1     Error       0          2m56s
citizen        1/1     Running    0          4m28s
[pes2ug23cs028-7d8c596f48-6195x  1/1     Running    0          27s

```

SS7:

```

adma@Adithyas-MacBook-Air ~ % kubectl scale deployment pes2ug23cs028 --replicas=5
deployment.apps/pes2ug23cs028 scaled
adma@Adithyas-MacBook-Air ~ % kubectl get pods
NAME           READY   STATUS      RESTARTS   AGE
broken         0/1     Error       0          3m30s
citizen        1/1     Running    0          5m2s
pes2ug23cs028-7d8c596f48-6195x  1/1     Running    0          61s
pes2ug23cs028-7d8c596f48-7pfcb  0/1     ContainerCreating 0          6s
pes2ug23cs028-7d8c596f48-dlr2z  0/1     ContainerCreating 0          6s
pes2ug23cs028-7d8c596f48-mtjx7  1/1     Running    0          6s
pes2ug23cs028-7d8c596f48-mz5zc  0/1     ContainerCreating 0          6s
adma@Adithyas-MacBook-Air ~ % kubectl get pods
NAME           READY   STATUS      RESTARTS   AGE
broken         0/1     Error       0          3m44s
citizen        1/1     Running    0          5m16s
pes2ug23cs028-7d8c596f48-6195x  1/1     Running    0          75s
pes2ug23cs028-7d8c596f48-7pfcb  1/1     Running    0          20s
pes2ug23cs028-7d8c596f48-dlr2z  1/1     Running    0          20s
pes2ug23cs028-7d8c596f48-mtjx7  1/1     Running    0          20s
pes2ug23cs028-7d8c596f48-mz5zc  1/1     Running    0          20s
adma@Adithyas-MacBook-Air ~ % kubectl scale deployment pes2ug23cs028 --replicas=3
kubectl get pods
deployment.apps/pes2ug23cs028 scaled
NAME           READY   STATUS      RESTARTS   AGE
broken         0/1     Error       0          4m48s
citizen        1/1     Running    0          6m20s
pes2ug23cs028-7d8c596f48-6195x  1/1     Running    0          2m19s
pes2ug23cs028-7d8c596f48-7pfcb  1/1     Running    0          84s
pes2ug23cs028-7d8c596f48-dlr2z  1/1     Terminating 0          84s
pes2ug23cs028-7d8c596f48-mtjx7  1/1     Running    0          84s
pes2ug23cs028-7d8c596f48-mz5zc  1/1     Terminating 0          84s
adma@Adithyas-MacBook-Air ~ % kubectl get pods
NAME           READY   STATUS      RESTARTS   AGE
broken         0/1     Error       0          5m
citizen        1/1     Running    0          6m32s
pes2ug23cs028-7d8c596f48-6195x  1/1     Running    0          2m31s
pes2ug23cs028-7d8c596f48-7pfcb  1/1     Running    0          96s
pes2ug23cs028-7d8c596f48-mtjx7  1/1     Running    0          96s
adma@Adithyas-MacBook-Air ~ %

```

SS8:

```
[adma@Adithyas-MacBook-Air ~ % kubectl get rs,po
NAME                                DESIRED   CURRENT   READY   AGE
replicaset.apps/pes2ug23cs028-7d8c596f48   3         3         3      13m

NAME          READY   STATUS    RESTARTS   AGE
pod/broken    0/1     Error     0          16m
pod/citizen   1/1     Running   0          17m
pod/pes2ug23cs028-7d8c596f48-6195x  1/1     Running   0          13m
pod/pes2ug23cs028-7d8c596f48-7pfcb  1/1     Running   0          12m
pod/pes2ug23cs028-7d8c596f48-mtjx7  1/1     Running   0          12m
adma@Adithyas-MacBook-Air ~ % kubectl set image deployment/pes1ug23csxxx \
nginx=nginx:1.25
[kubectl get rs,po
Error from server (NotFound): deployments.apps "pes1ug23csxxx" not found
NAME                                DESIRED   CURRENT   READY   AGE
replicaset.apps/pes2ug23cs028-7d8c596f48   3         3         3      14m

NAME          READY   STATUS    RESTARTS   AGE
pod/broken    0/1     Error     0          16m
pod/citizen   1/1     Running   0          18m
pod/pes2ug23cs028-7d8c596f48-6195x  1/1     Running   0          14m
pod/pes2ug23cs028-7d8c596f48-7pfcb  1/1     Running   0          13m
pod/pes2ug23cs028-7d8c596f48-mtjx7  1/1     Running   0          13m
adma@Adithyas-MacBook-Air ~ % ]
```

SS9:

```
[adma@Adithyas-MacBook-Air ~ % kubectl rollout undo deployment/pes2ug23cs028
deployment.apps/pes2ug23cs028 rolled back
[adma@Adithyas-MacBook-Air ~ % kubectl rollout history deployment pes2ug23cs028
deployment.apps/pes2ug23cs028
REVISION  CHANGE-CAUSE
2          <none>
3          <none>

[adma@Adithyas-MacBook-Air ~ % kubectl rollout history deployment pes1ug23csxxx --revision=2
Error from server (NotFound): deployments.apps "pes1ug23csxxx" not found
Error from server (NotFound): deployments.apps "-revision=2" not found
[adma@Adithyas-MacBook-Air ~ % kubectl rollout history deployment pes2ug23cs028 --revision=2
deployment.apps/pes2ug23cs028
REVISION  CHANGE-CAUSE
2          <none>
3          <none>

Error from server (NotFound): deployments.apps "-revision=2" not found
[adma@Adithyas-MacBook-Air ~ % kubectl rollout history deployment pes2ug23cs028 --revision=2
deployment.apps/pes2ug23cs028
REVISION  CHANGE-CAUSE
2          <none>
3          <none>

Error from server (NotFound): deployments.apps "--revision=2" not found
[adma@Adithyas-MacBook-Air ~ % kubectl rollout history deployment pes2ug23cs028 --revision=2
deployment.apps/pes2ug23cs028 with revision #2
Pod Template:
  Labels:      app=pes2ug23cs028
                pod-template-hash=74466898bb
  Containers:
    nginx:
      Image:      nginx:1.25
      Port:       <none>
      Host Port:  <none>
      Environment: <none>
      Mounts:     <none>
      Volumes:    <none>
      Node-Selectors: <none>
      Tolerations: <none>

[adma@Adithyas-MacBook-Air ~ % kubectl rollout history deployment pes2ug23cs028 --revision=3
deployment.apps/pes2ug23cs028 with revision #3
Pod Template:
  Labels:      app=pes2ug23cs028
                pod-template-hash=7d8c596f48
  Containers:
    nginx:
      Image:      nginx
      Port:       <none>
      Host Port:  <none>
      Environment: <none>
      Mounts:     <none>
      Volumes:    <none>
      Node-Selectors: <none>
      Tolerations: <none>

adma@Adithyas-MacBook-Air ~ %
```

SS10:

```
[adma@Adithyas-MacBook-Air PES2UG23CS028 % vim nginx-pes2ug23cs028.yaml
[adma@Adithyas-MacBook-Air PES2UG23CS028 % kubectl apply -f nginx-pes2ug23cs028.yaml -n pes2ug23cs028-beta
deployment.apps/pes2ug23cs028-nginx created
[adma@Adithyas-MacBook-Air PES2UG23CS028 % kubectl config set-context --current --namespace=pes2ug23cs028-beta
error: you cannot specify both a context name and --current
[adma@Adithyas-MacBook-Air PES2UG23CS028 % kubectl config set-context --current --namespace=pes2ug23cs028-beta
error: you cannot specify both a context name and --current
[adma@Adithyas-MacBook-Air PES2UG23CS028 % kubectl config set-context --current --namespace=pes2ug23cs028-beta
Context "minikube" modified.
[adma@Adithyas-MacBook-Air PES2UG23CS028 % kubectl get deployment
No resources found in amespace=pes2ug23cs028-beta namespace.
[adma@Adithyas-MacBook-Air PES2UG23CS028 % kubectl config set-context --current --namespace=pes2ug23cs028-beta
Context "minikube" modified.
[adma@Adithyas-MacBook-Air PES2UG23CS028 % kubectl get deployment
NAME          READY   UP-TO-DATE   AVAILABLE   AGE
pes2ug23cs028-nginx   1/1     1           1          5m55s
adma@Adithyas-MacBook-Air PES2UG23CS028 % ]
```

SS11:

```
not start any token
[adma@Adithyas-MacBook-Air PES2UG23CS028 % vim pes2ug23cs028-service.yaml
[adma@Adithyas-MacBook-Air PES2UG23CS028 % kubectl apply -f pes2ug23cs028-service.yaml
service/pes2ug23cs028-service created
[adma@Adithyas-MacBook-Air PES2UG23CS028 % kubectl get services
kubectl describe service pes2ug23cs028-service
kubectl get endpoints pes2ug23cs028-service
NAME              TYPE            CLUSTER-IP      EXTERNAL-IP    PORT(S)        AGE
pes2ug23cs028-service   ClusterIP    10.96.167.28   <none>        80/TCP       38s
Name:                  pes2ug23cs028-service
Namespace:             pes2ug23cs028-beta
Labels:                <none>
Annotations:           <none>
Selector:              app=pes2ug23cs028-nginx
Type:                  ClusterIP
IP Family Policy:     SingleStack
IP Families:          IPv4
IP:                   10.96.167.28
IPs:                  10.96.167.28
Port:                 <unset>  80/TCP
TargetPort:            80/TCP
Endpoints:             10.244.0.17:80
Session Affinity:     None
Internal Traffic Policy: Cluster
Events:                <none>
Warning: v1 Endpoints is deprecated in v1.33+; use discovery.k8s.io/v1 EndpointSlice
NAME            ENDPOINTS      AGE
pes2ug23cs028-service  10.244.0.17:80  38s
adma@Adithyas-MacBook-Air PES2UG23CS028 % ]
```

SS12:

```
[adma@Adithyas-MacBook-Air PES2UG23CS028 % kubectl delete pod -l app=pes2ug23cs028-nginx
pod "pes2ug23cs028-nginx-668cc5b45f-9167v" deleted from pes2ug23cs028-beta namespace
[adma@Adithyas-MacBook-Air PES2UG23CS028 % kubectl get endpoints pes2ug23cs028-service
kubectl describe service pes2ug23cs028-service
Warning: v1 Endpoints is deprecated in v1.33+; use discovery.k8s.io/v1 EndpointSlice
NAME           ENDPOINTS   AGE
pes2ug23cs028-service  10.244.0.18:80  3m50s
Name:          pes2ug23cs028-service
Namespace:    pes2ug23cs028-beta
Labels:        <none>
Annotations:  <none>
Selector:     app=pes2ug23cs028-nginx
Type:         ClusterIP
IP Family Policy: SingleStack
IP Families:  IPv4
IP:            10.96.167.28
IPs:           10.96.167.28
Port:          <unset>  80/TCP
TargetPort:    80/TCP
Endpoints:    10.244.0.18:80
Session Affinity: None
Internal Traffic Policy: Cluster
Events:        <none>
adma@Adithyas-MacBook-Air PES2UG23CS028 %
```

SS13:



**Hello from district PES2UG23CS028-beta running in
Kubernetes**

SS14:

```
[adma@Adithyas-MacBook-Air html % kubectl delete namespace pes2ug23cs028-alpha
kubectl delete namespace pes2ug23cs028-beta
namespace "pes2ug23cs028-alpha" deleted
namespace "pes2ug23cs028-beta" deleted
[adma@Adithyas-MacBook-Air html % kubectl get ns
NAME      STATUS  AGE
default   Active  75m
kube-node-lease  Active  75m
kube-public  Active  75m
kube-system  Active  75m
adma@Adithyas-MacBook-Air html %
```