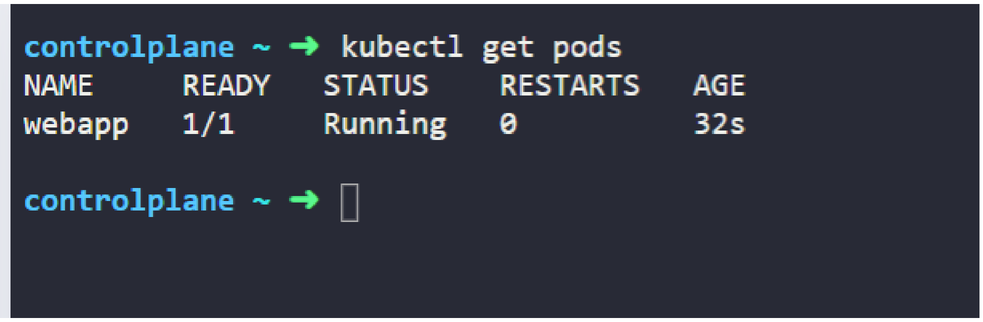
--------------------------------------Deployment labs ------------------

Q1) We have deployed a POD. Inspect the POD and wait for it to start running.

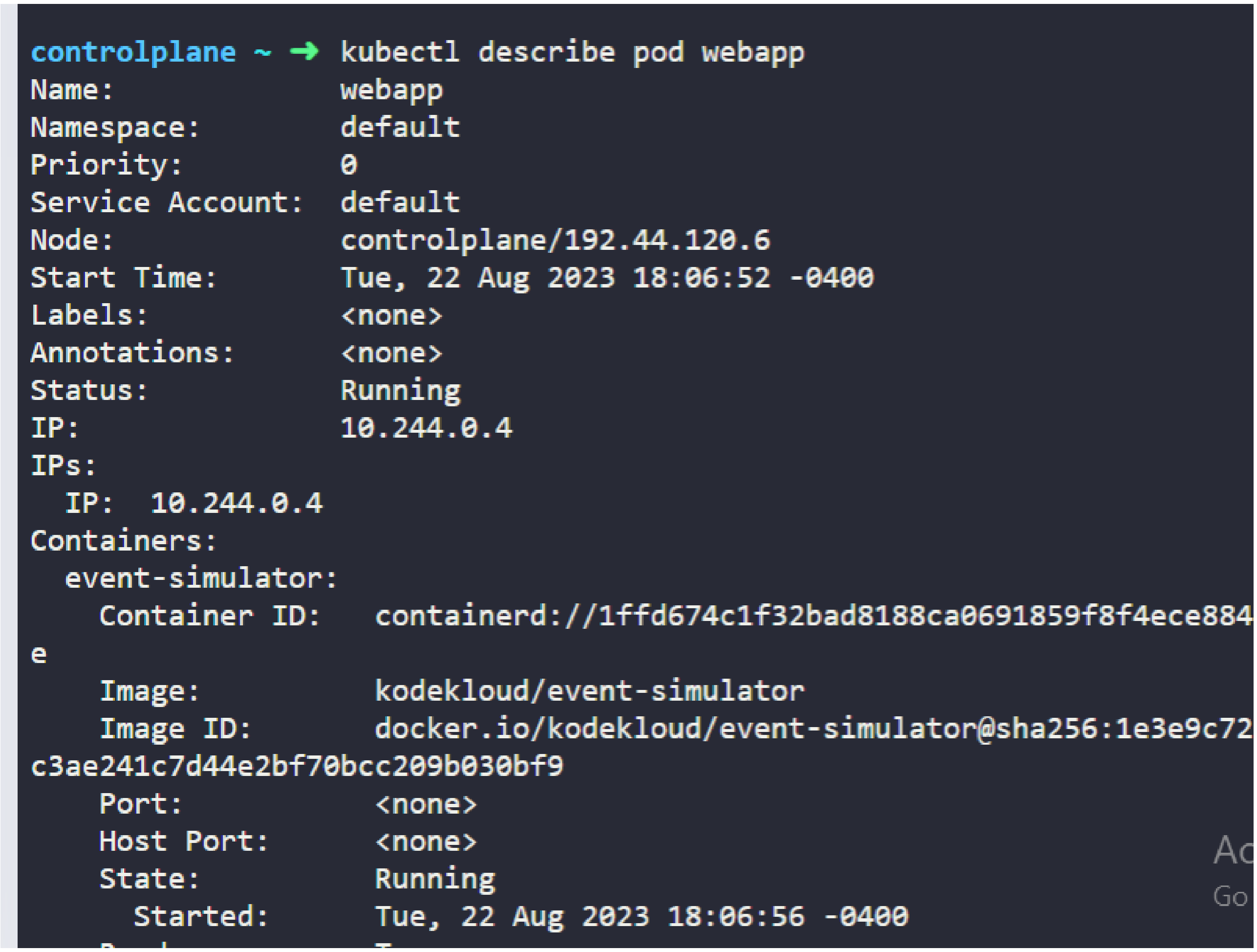
$kubectl get pods -------------> list pods on default name space



```
controlplane ~ ➜  kubectl get pods
NAME     READY   STATUS    RESTARTS   AGE
webapp   1/1     Running   0          32s

controlplane ~ ➜  
```

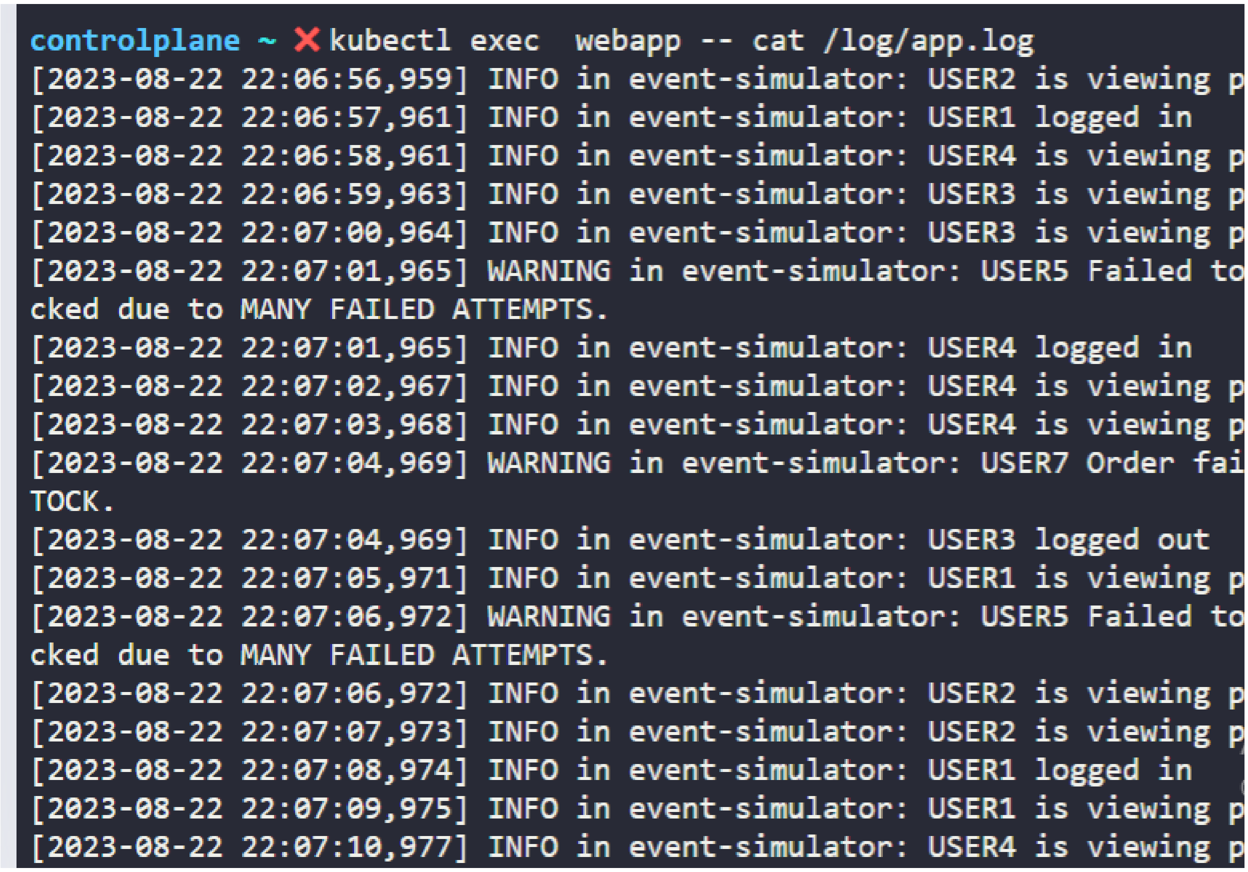
$kubectl describe pod pod_name ---------------> get detailed information about pod



```
controlplane ~ ➜  kubectl describe pod webapp
Name:             webapp
Namespace:        default
Priority:         0
Service Account:  default
Node:             controlplane/192.44.120.6
Start Time:       Tue, 22 Aug 2023 18:06:52 -0400
Labels:           <none>
Annotations:      <none>
Status:           Running
IP:               10.244.0.4
IPs:
  IP:  10.244.0.4
Containers:
  event-simulator:
    Container ID:   containerd://1ffd674c1f32bad8188ca0691859f8f4ece884
e
    Image:          kodekloud/event-simulator
    Image ID:       docker.io/kodekloud/event-simulator@sha256:1e3e9c72
c3ae241c7d44e2bf70bcc209b030bf9
    Port:           <none>
    Host Port:      <none>
    State:          Running
      Started:      Tue, 22 Aug 2023 18:06:56 -0400
```

Q2) The application stores logs at location /log/app.log. View the logs.

$ kubectl exec pod_name --command



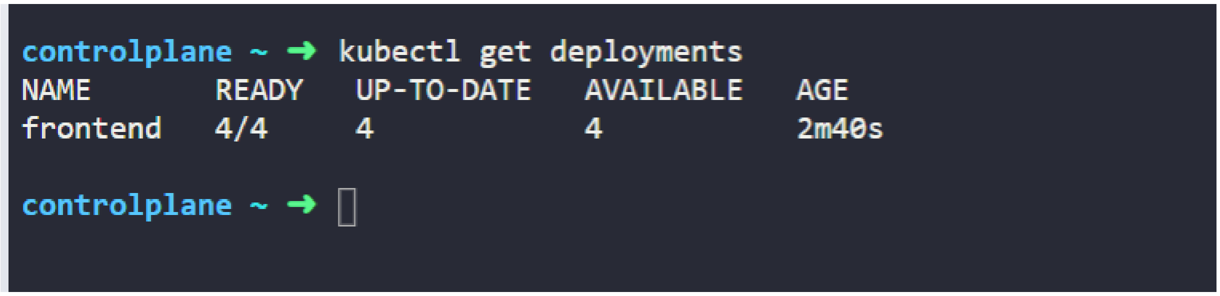
```
controlplane ~ ✗ kubectl exec  webapp -- cat /log/app.log
[2023-08-22 22:06:56,959] INFO in event-simulator: USER2 is viewing p
[2023-08-22 22:06:57,961] INFO in event-simulator: USER1 logged in
[2023-08-22 22:06:58,961] INFO in event-simulator: USER4 is viewing p
[2023-08-22 22:06:59,963] INFO in event-simulator: USER3 is viewing p
[2023-08-22 22:07:00,964] INFO in event-simulator: USER3 is viewing p
[2023-08-22 22:07:01,965] WARNING in event-simulator: USER5 Failed to
cked due to MANY FAILED ATTEMPTS.
[2023-08-22 22:07:01,965] INFO in event-simulator: USER4 logged in
[2023-08-22 22:07:02,967] INFO in event-simulator: USER4 is viewing p
[2023-08-22 22:07:03,968] INFO in event-simulator: USER4 is viewing p
[2023-08-22 22:07:04,969] WARNING in event-simulator: USER7 Order fai
TOCK.
[2023-08-22 22:07:04,969] INFO in event-simulator: USER3 logged out
[2023-08-22 22:07:05,971] INFO in event-simulator: USER1 is viewing p
[2023-08-22 22:07:06,972] WARNING in event-simulator: USER5 Failed to
cked due to MANY FAILED ATTEMPTS.
[2023-08-22 22:07:06,972] INFO in event-simulator: USER2 is viewing p
[2023-08-22 22:07:07,973] INFO in event-simulator: USER2 is viewing p
[2023-08-22 22:07:08,974] INFO in event-simulator: USER1 logged in
[2023-08-22 22:07:09,975] INFO in event-simulator: USER1 is viewing p
[2023-08-22 22:07:10,977] INFO in event-simulator: USER4 is viewing p
```

Q3) If the POD was to get deleted now, would you be able to view these logs.

No --> beacuse /log/app.log not mounted on host.

Q4) Inspect the deployment and identify the number of PODs deployed by it ?

```
$kubectl get deployments
```

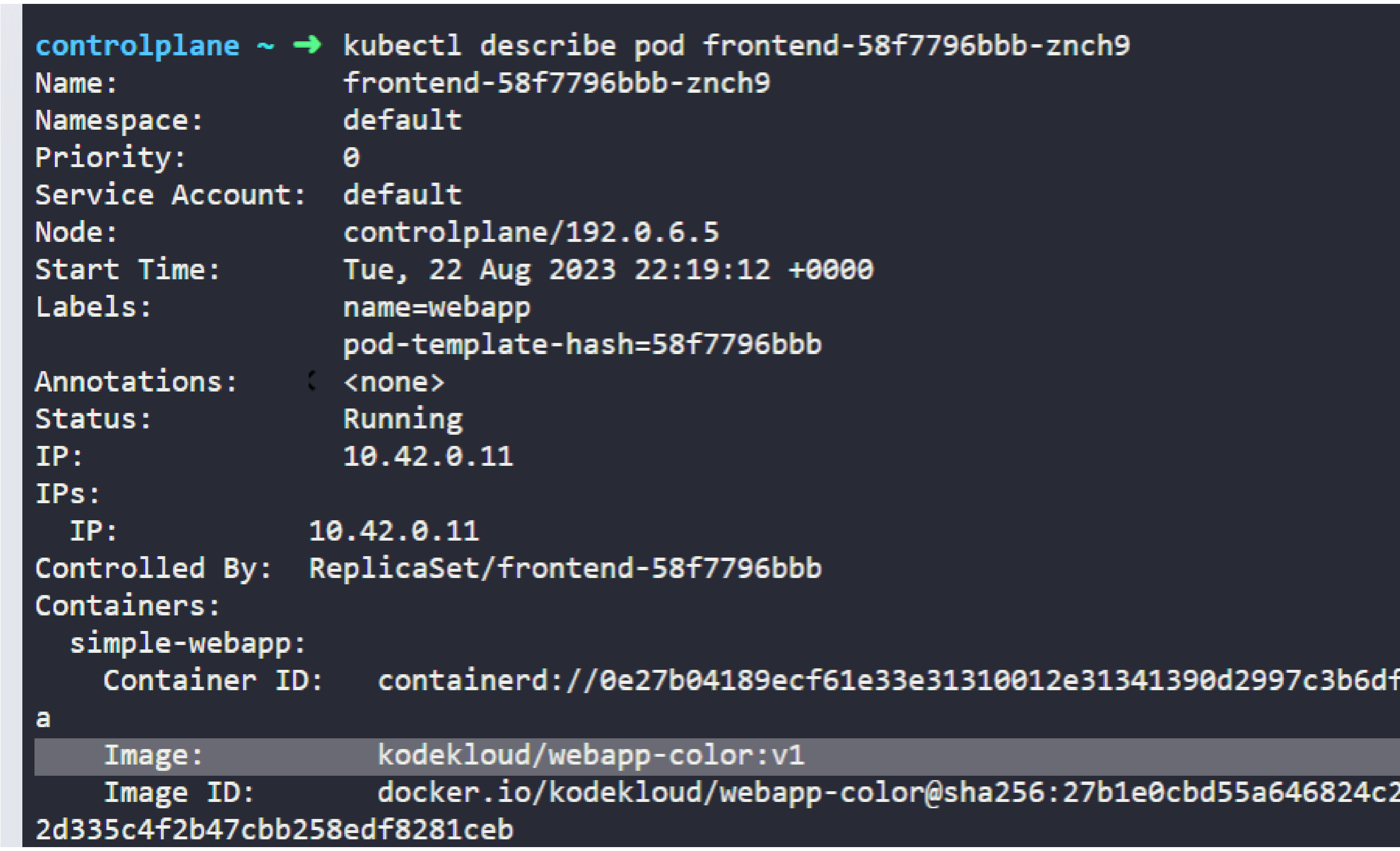


```
controlplane ~ ➜ kubectl get deployments
NAME       READY   UP-TO-DATE   AVAILABLE   AGE
frontend   4/4     4            4           2m40s

controlplane ~ ➜
```

Q5) What container image is used to deploy the applications?

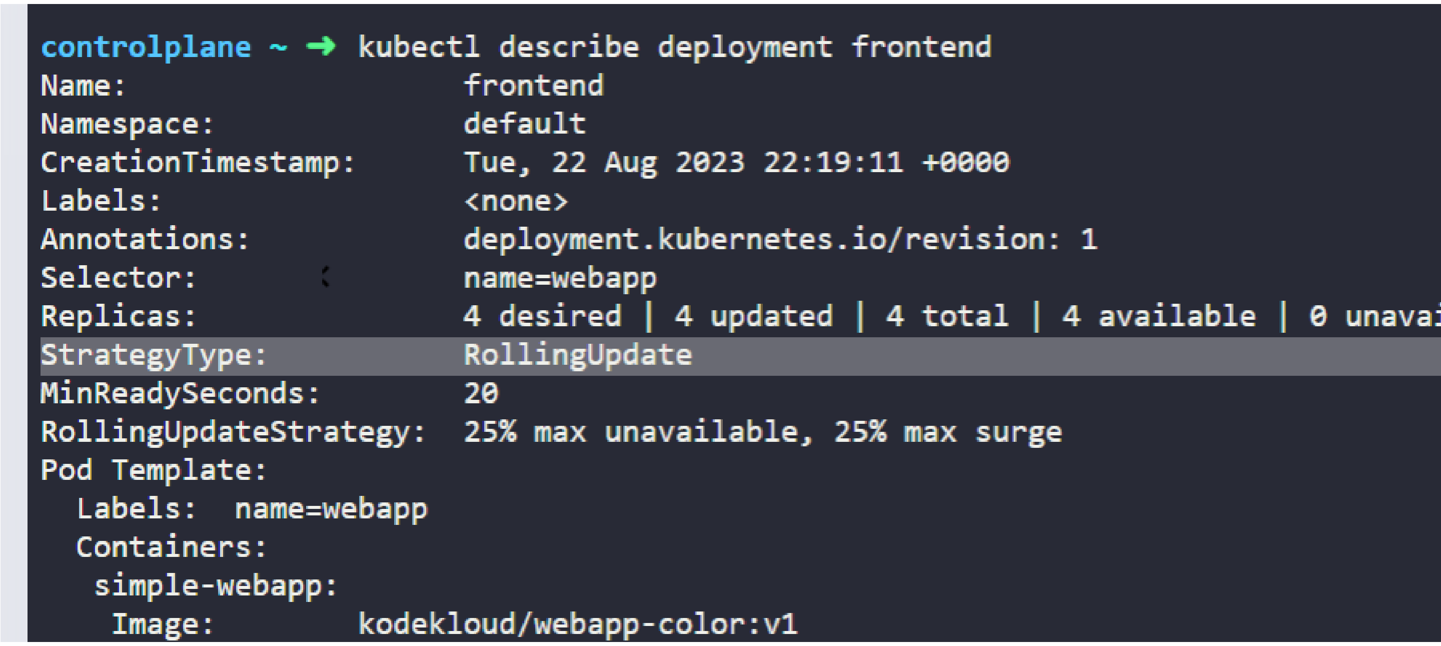
$kubectl describe deployment deployent_name



```
controlplane ~ ➜  kubectl describe pod frontend-58f7796bbb-znch9
Name:                 frontend-58f7796bbb-znch9
Namespace:            default
Priority:             0
Service Account:      default
Node:                 controlplane/192.0.6.5
Start Time:           Tue, 22 Aug 2023 22:19:12 +0000
Labels:               name=webapp
                      pod-template-hash=58f7796bbb
Annotations:          <none>
Status:               Running
IP:                   10.42.0.11
IPs:
  IP:               10.42.0.11
Controlled By:      ReplicaSet/frontend-58f7796bbb
Containers:
  simple-webapp:
    Container ID:   containerd://0e27b04189ecf61e33e31310012e31341390d2997c3b6df
a
    Image:            kodekloud/webapp-color:v1
    Image ID:         docker.io/kodekloud/webapp-color@sha256:27b1e0cbd55a646824c2
2d335c4f2b47cbb258edf8281ceb
```

Q6) Inspect the deployment and identify the current strategy

$ kubectl describe deployment deployment_name



```
controlplane ~ ➜ kubectl describe deployment frontend
Name:                   frontend
Namespace:              default
CreationTimestamp:      Tue, 22 Aug 2023 22:19:11 +0000
Labels:                 <none>
Annotations:            deployment.kubernetes.io/revision: 1
Selector:               name=webapp
Replicas:               4 desired | 4 updated | 4 total | 4 available | 0 unavai
StrategyType:           RollingUpdate
MinReadySeconds:        20
RollingUpdateStrategy:  25% max unavailable, 25% max surge
Pod Template:
  Labels:  name=webapp
  Containers:
   simple-webapp:
    Image:        kodekloud/webapp-color:v1
```

Q7) If you were to upgrade the application now what would happen?

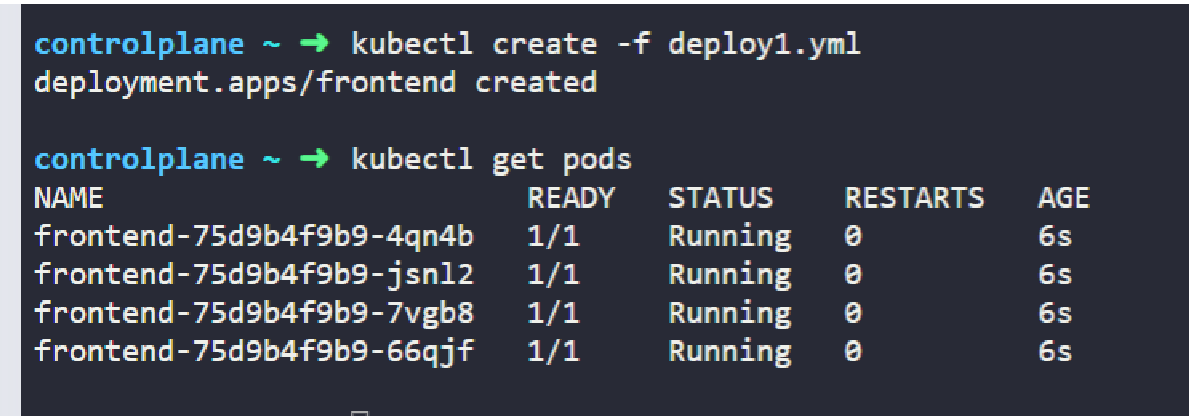
pods are upgraded few at a time. --------> beacuse strategy is roll update

Q8) Up to how many PODs can be down for upgrade at a time?

1 -------------------------> because the strategy deployment is rolling update.

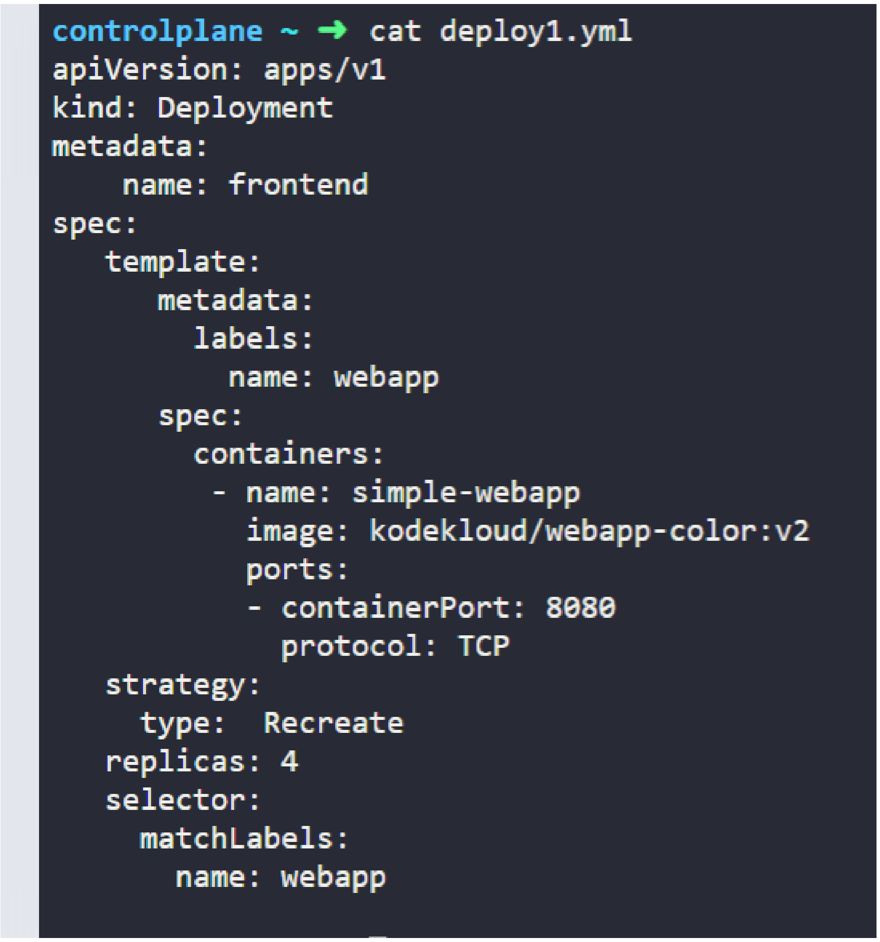
Q9) create Deployment ?

$ kubectl create -f file_name

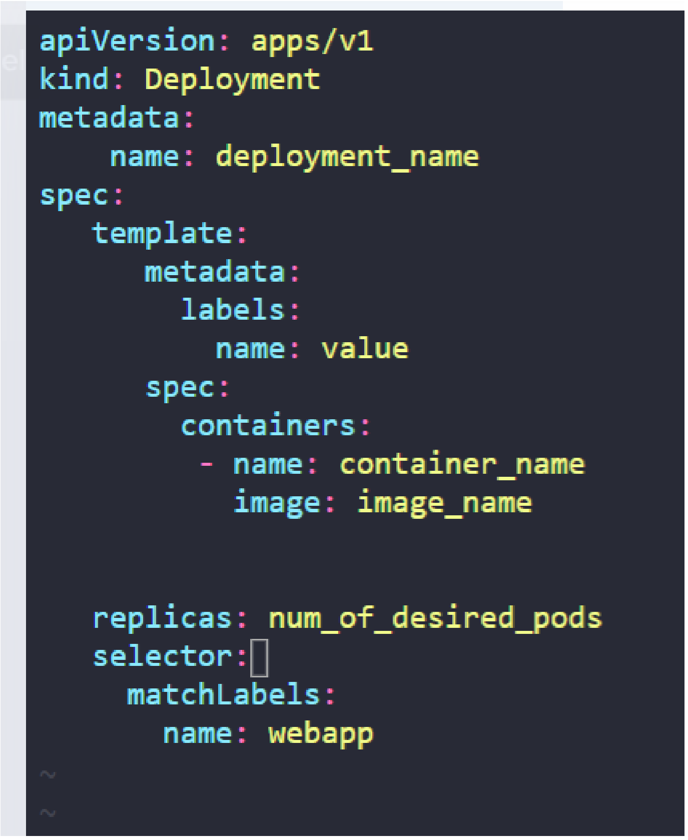


```
controlplane ~ ➜ kubectl create -f deploy1.yml
deployment.apps/frontend created

controlplane ~ ➜ kubectl get pods
NAME                        READY   STATUS    RESTARTS   AGE
frontend-75d9b4f9b9-4qn4b   1/1     Running   0          6s
frontend-75d9b4f9b9-jsnl2   1/1     Running   0          6s
frontend-75d9b4f9b9-7vgb8   1/1     Running   0          6s
frontend-75d9b4f9b9-66qjf   1/1     Running   0          6s
```



```
controlplane ~ ➜ cat deploy1.yml
apiVersion: apps/v1
kind: Deployment
metadata:
    name: frontend
spec:
   template:
      metadata:
        labels:
          name: webapp
      spec:
        containers:
         - name: simple-webapp
           image: kodekloud/webapp-color:v2
           ports:
           - containerPort: 8080
             protocol: TCP
   strategy:
     type:  Recreate
   replicas: 4
   selector:
     matchLabels:
       name: webapp
```

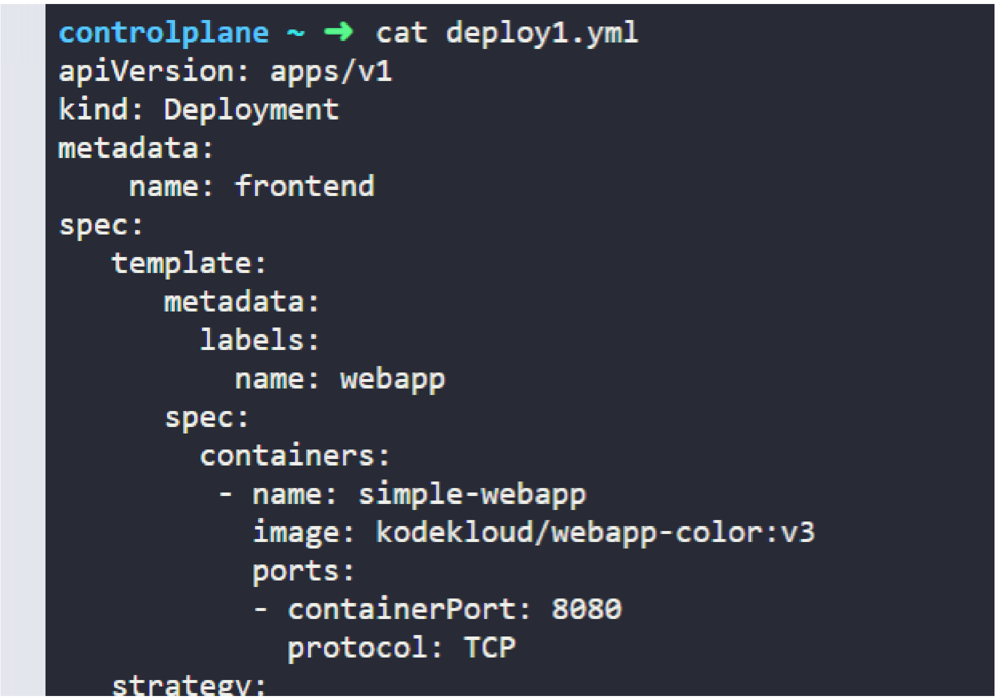


```
apiVersion: apps/v1
kind: Deployment
metadata:
    name: deployment_name
spec:
   template:
      metadata:
        labels:
          name: value
      spec:
        containers:
         - name: container_name
           image: image_name


   replicas: num_of_desired_pods
   selector:
     matchLabels:
       name: webapp
~
~
```

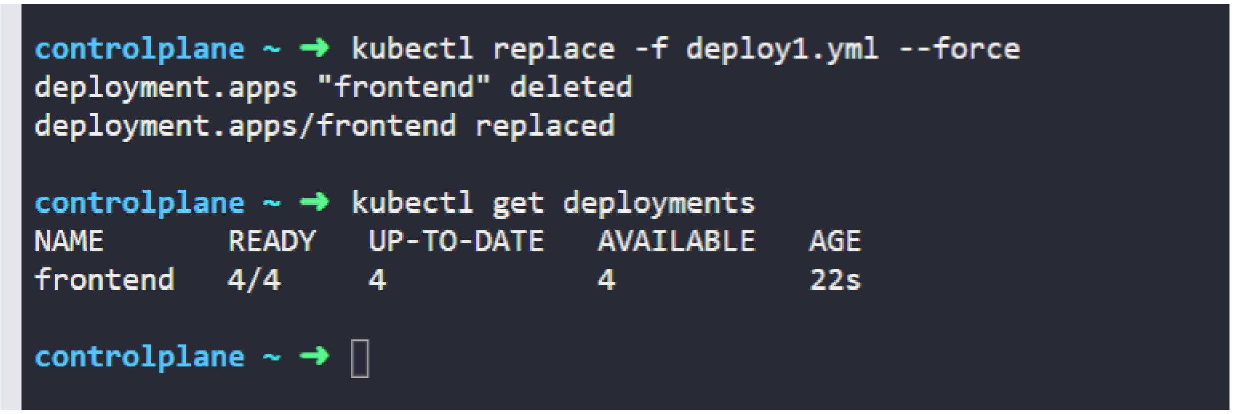
Q10) Upgrade the application by setting the image on the deployment to kodekloud/webapp-color:v3

1) open yaml file ---> make updates --> save file



```
controlplane ~ ➜  cat deploy1.yml
apiVersion: apps/v1
kind: Deployment
metadata:
    name: frontend
spec:
   template:
      metadata:
        labels:
          name: webapp
      spec:
        containers:
         - name: simple-webapp
           image: kodekloud/webapp-color:v3
           ports:
           - containerPort: 8080
             protocol: TCP
   strategy:
```

$ kubectl replace -f file name   --force -------------> delete old deployment and create new deployment



```
controlplane ~ ➜  kubectl replace -f deploy1.yml --force
deployment.apps "frontend" deleted
deployment.apps/frontend replaced

controlplane ~ ➜  kubectl get deployments
NAME       READY   UP-TO-DATE   AVAILABLE   AGE
frontend   4/4     4            4           22s

controlplane ~ ➜  
```