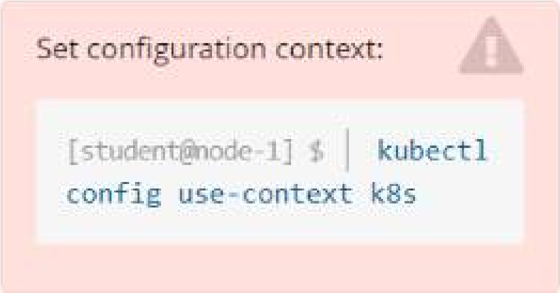
Exam Questions CKAD

Certified Kubernetes Application Developer (CKAD) Program

https://www.2passeasy.com/dumps/CKAD/

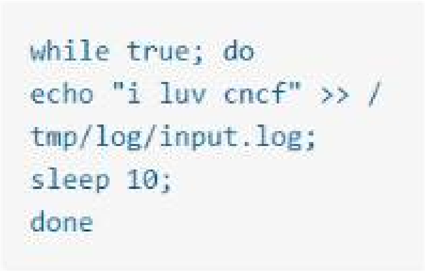
NEW QUESTION 1
Exhibit:



Set configuration context:

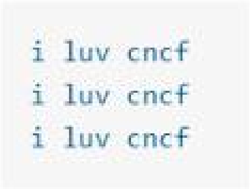
```
[student@node-1] $ | kubectl
config use-context k8s
```

Given a container that writes a log file in format A and a container that converts log files from format A to format B, create a deployment that runs both containers such that the log files from the first container are converted by the second container, emitting logs in format B.
Task:
- Create a deployment named deployment-xyz in the default namespace, that:
•Includes a primary
lfccncf/busybox:1 container, named logger-dev
•includes a sidecar lfccncf/fluentd:v0.12 container, named adapter-zen
•Mounts a shared volume /tmp/log on both containers, which does not persist when the pod is deleted
•Instructs the logger-dev container to run the command



```
while true; do
echo "i luv cncf" >> /
tmp/log/input.log;
sleep 10;
done
```

which should output logs to /tmp/log/input.log in plain text format, with example values:



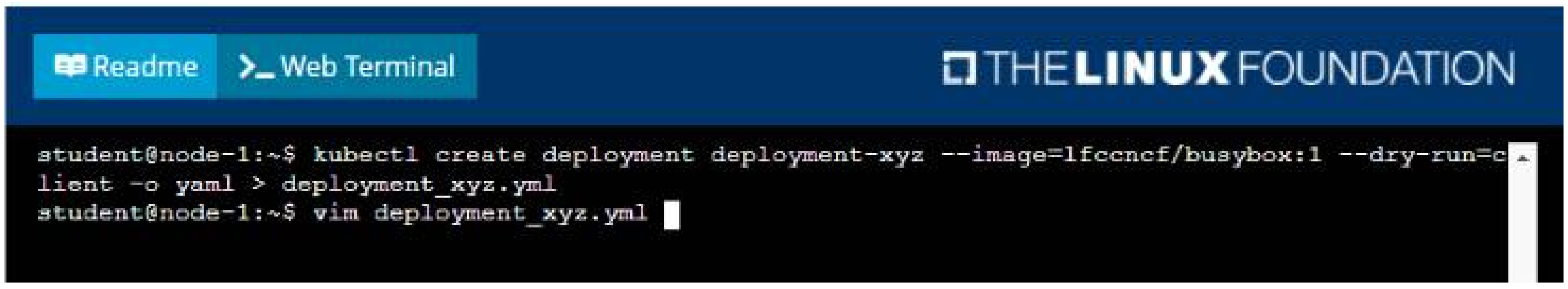
```
i luv cncf
i luv cncf
i luv cncf
```

- The adapter-zen sidecar container should read /tmp/log/input.log and output the data to /tmp/log/output.* in Fluentd JSON format. Note that no knowledge of Fluentd is required to complete this task: all you will need to achieve this is to create the ConfigMap from the spec file provided at /opt/KDMC00102/fluentd-configma p.yaml , and mount that ConfigMap to /fluentd/etc in the adapter-zen sidecar container

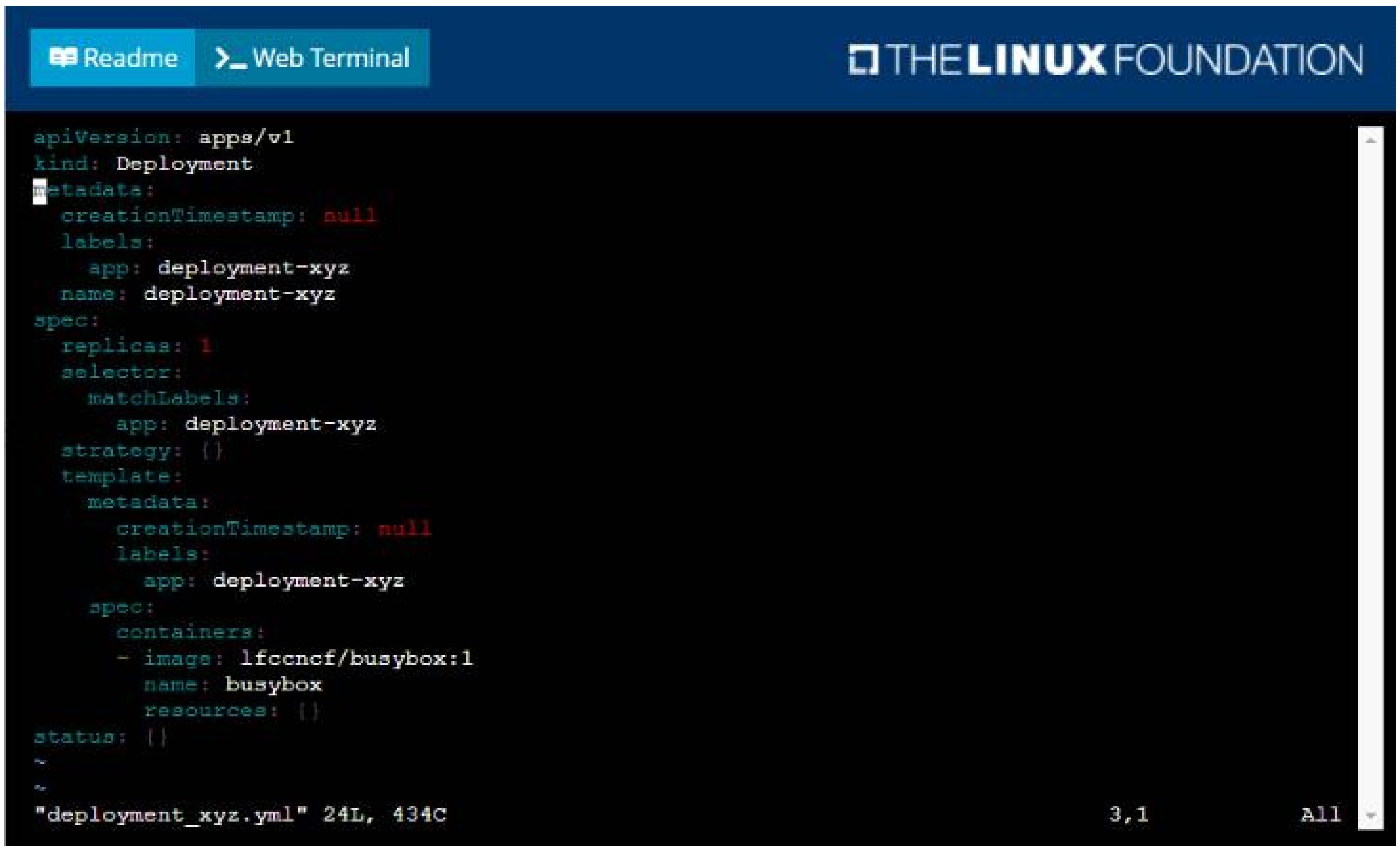
A. Mastered
B. Not Mastered

Answer: A

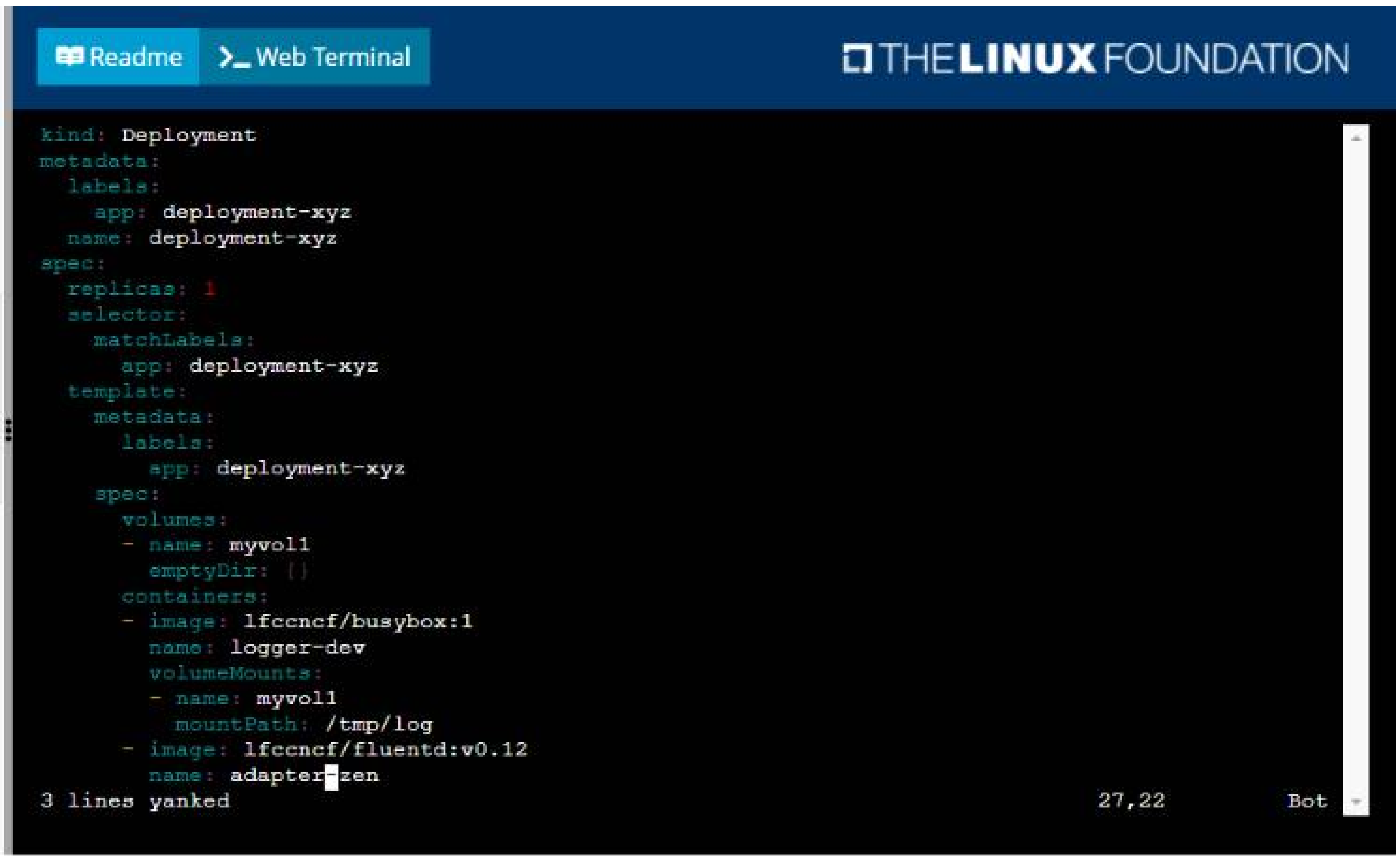
Explanation:
Solution:



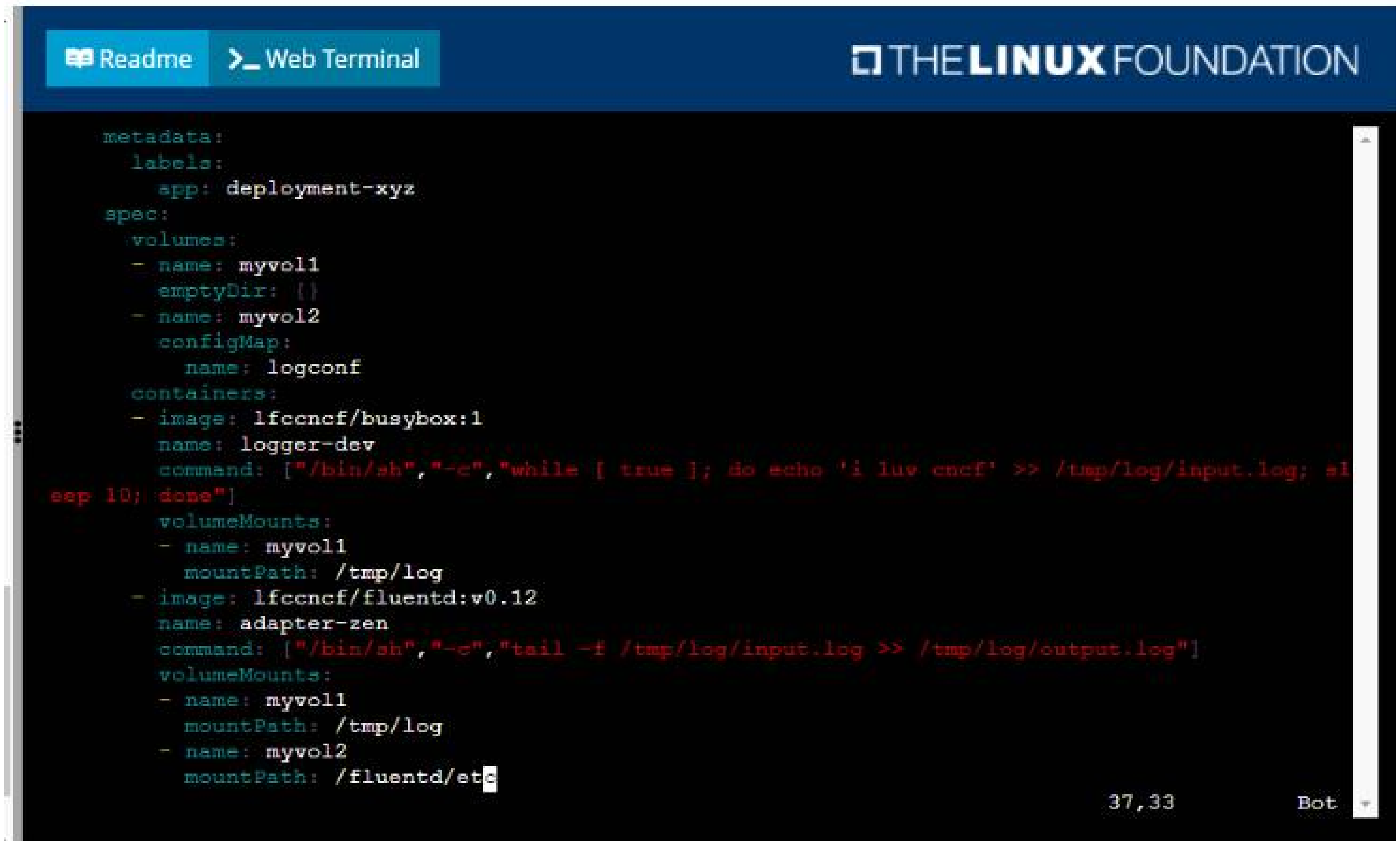
```
student@node-1:~$ kubectl create deployment deployment-xyz --image=lfccncf/busybox:1 --dry-run=c
lient -o yaml > deployment_xyz.yml
student@node-1:~$ vim deployment_xyz.yml
```



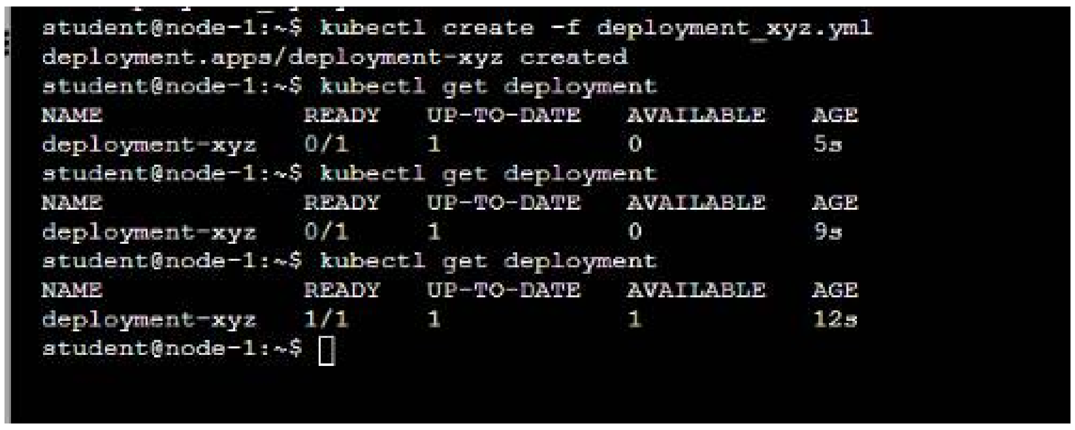
```
apiVersion: apps/v1
kind: Deployment
metadata:
  creationTimestamp: null
  labels:
    app: deployment-xyz
  name: deployment-xyz
spec:
  replicas: 1
  selector:
    matchLabels:
      app: deployment-xyz
  strategy: {}
  template:
    metadata:
      creationTimestamp: null
      labels:
        app: deployment-xyz
    spec:
      containers:
      - image: lfccncf/busybox:1
        name: busybox
        resources: {}
status: {}
~
~
"deployment_xyz.yml" 24L, 434C                                    3,1           All
```



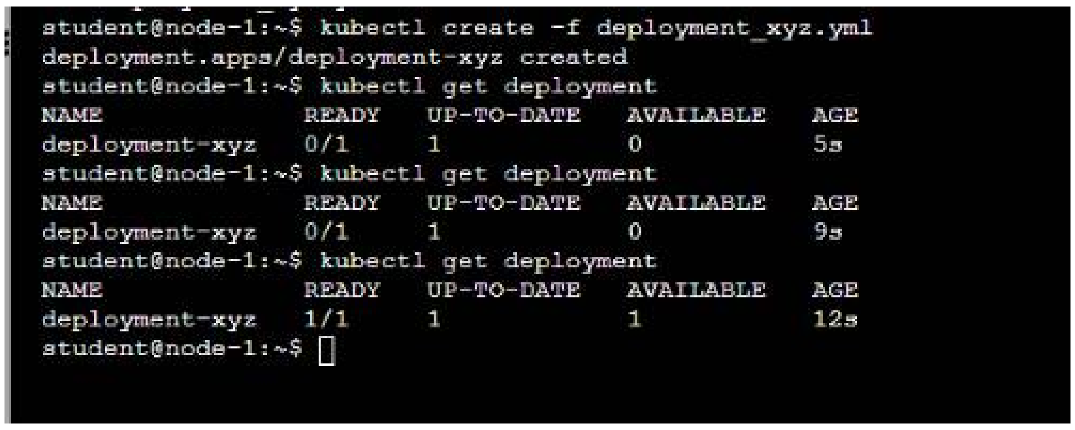
```
kind: Deployment
metadata:
  labels:
    app: deployment-xyz
  name: deployment-xyz
spec:
  replicas: 1
  selector:
    matchLabels:
      app: deployment-xyz
  template:
    metadata:
      labels:
        app: deployment-xyz
    spec:
      volumes:
      - name: myvol1
        emptyDir: {}
      containers:
      - image: lfccncf/busybox:1
        name: logger-dev
        volumeMounts:
        - name: myvol1
          mountPath: /tmp/log
      - image: lfccncf/fluentd:v0.12
        name: adapter-zen
3 lines yanked                                                    27,22         Bot
```



```
    metadata:
      labels:
        app: deployment-xyz
    spec:
      volumes:
      - name: myvol1
        emptyDir: {}
      - name: myvol2
        configMap:
          name: logconf
      containers:
      - image: lfccncf/busybox:1
        name: logger-dev
        command: ["/bin/sh","-c","while [ true ]; do echo 'i luv cncf' >> /tmp/log/input.log; sl
eep 10; done"]
        volumeMounts:
        - name: myvol1
          mountPath: /tmp/log
      - image: lfccncf/fluentd:v0.12
        name: adapter-zen
        command: ["/bin/sh","-c","tail -f /tmp/log/input.log >> /tmp/log/output.log"]
        volumeMounts:
        - name: myvol1
          mountPath: /tmp/log
        - name: myvol2
          mountPath: /fluentd/etc
                                                                  37,33         Bot
```

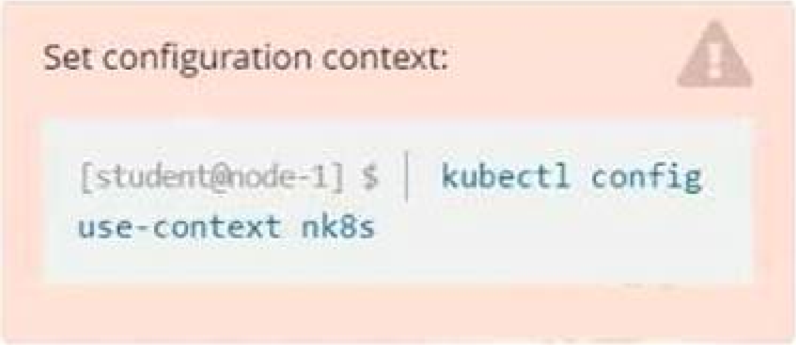


```
student@node-1:~$ kubectl create -f deployment_xyz.yml
deployment.apps/deployment-xyz created
student@node-1:~$ kubectl get deployment
NAME             READY   UP-TO-DATE   AVAILABLE   AGE
deployment-xyz   0/1     1            0           5s
student@node-1:~$ kubectl get deployment
NAME             READY   UP-TO-DATE   AVAILABLE   AGE
deployment-xyz   0/1     1            0           9s
student@node-1:~$ kubectl get deployment
NAME             READY   UP-TO-DATE   AVAILABLE   AGE
deployment-xyz   1/1     1            1           12s
student@node-1:~$ 
```



```
student@node-1:~$ kubectl create -f deployment_xyz.yml
deployment.apps/deployment-xyz created
student@node-1:~$ kubectl get deployment
NAME             READY   UP-TO-DATE   AVAILABLE   AGE
deployment-xyz   0/1     1            0           5s
student@node-1:~$ kubectl get deployment
NAME             READY   UP-TO-DATE   AVAILABLE   AGE
deployment-xyz   0/1     1            0           9s
student@node-1:~$ kubectl get deployment
NAME             READY   UP-TO-DATE   AVAILABLE   AGE
deployment-xyz   1/1     1            1           12s
student@node-1:~$ 
```

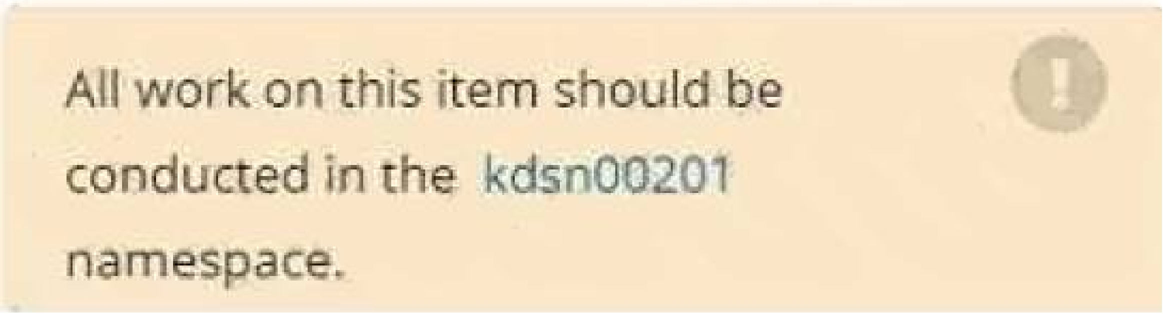
NEW QUESTION 2
Exhibit:



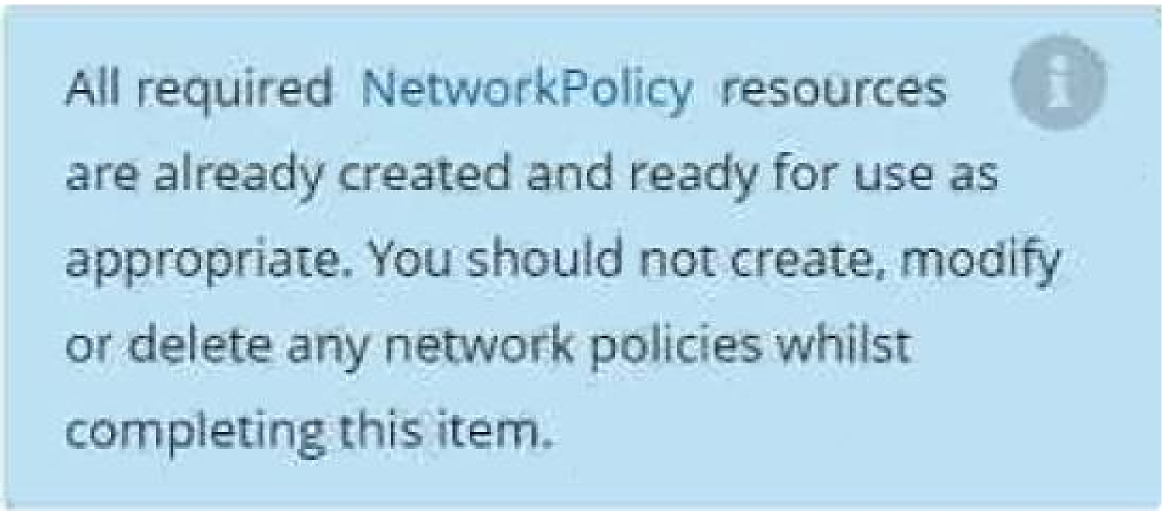
Set configuration context:

```
[student@node-1] $ | kubectl config
use-context nk8s
```

Task
You have rolled out a new pod to your infrastructure and now you need to allow it to communicate with the web and storage pods but nothing else. Given the running pod kdsn00201 -newpod edit it to use a network policy that will allow it to send and receive traffic only to and from the web and storage pods.



All work on this item should be conducted in the kdsn00201 namespace.



All required NetworkPolicy resources are already created and ready for use as appropriate. You should not create, modify or delete any network policies whilst completing this item.

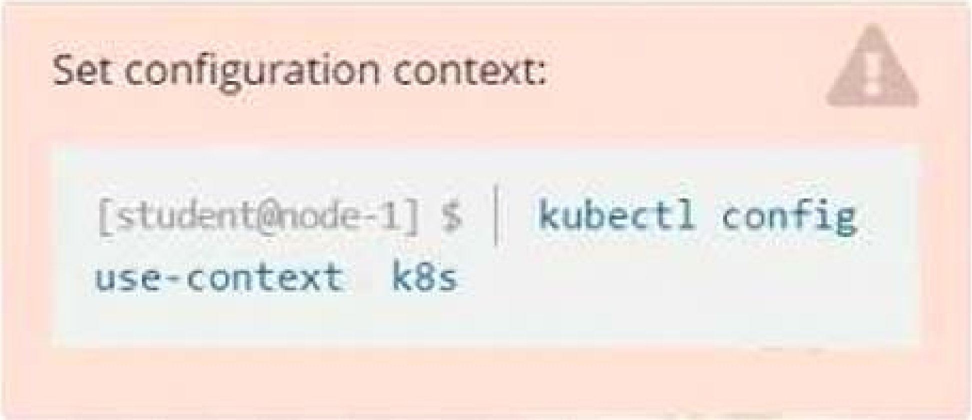
A. Mastered
B. Not Mastered

Answer: A

Explanation:

Suggest the Solution.

NEW QUESTION 3
Exhibit:



Set configuration context:

```
[student@node-1] $ | kubectl config
use-context k8s
```

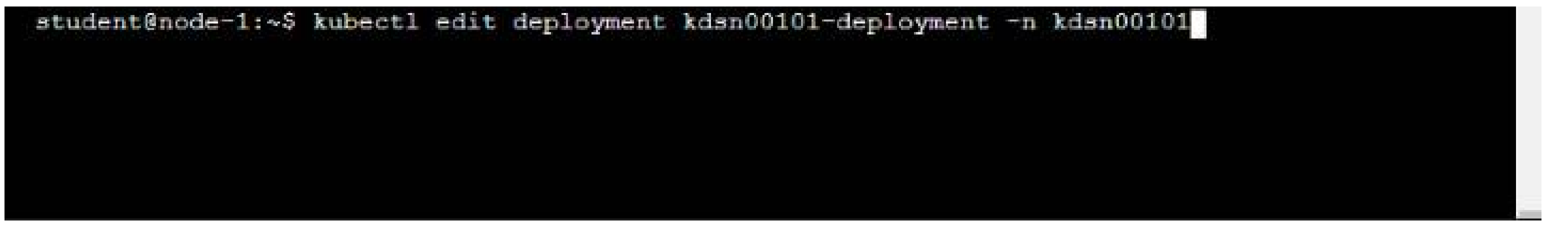
Context
You have been tasked with scaling an existing deployment for availability, and creating a service to expose the deployment within your infrastructure. Task
Start with the deployment named kdsn00101-deployment which has already been deployed to the namespace kdsn00101 . Edit it to:
- Add the func=webFrontEndkey/value label to the pod template metadata to identify the pod for the service definition
- Have 4 replicas

Next, create ana deploy in namespace kdsn00l01 a service that accomplishes the following:
- Exposes the service on TCP port 8080
- is mapped to me pods defined by the specification of kdsn00l01-deployment
- Is of type NodePort
- Has a name of cherry

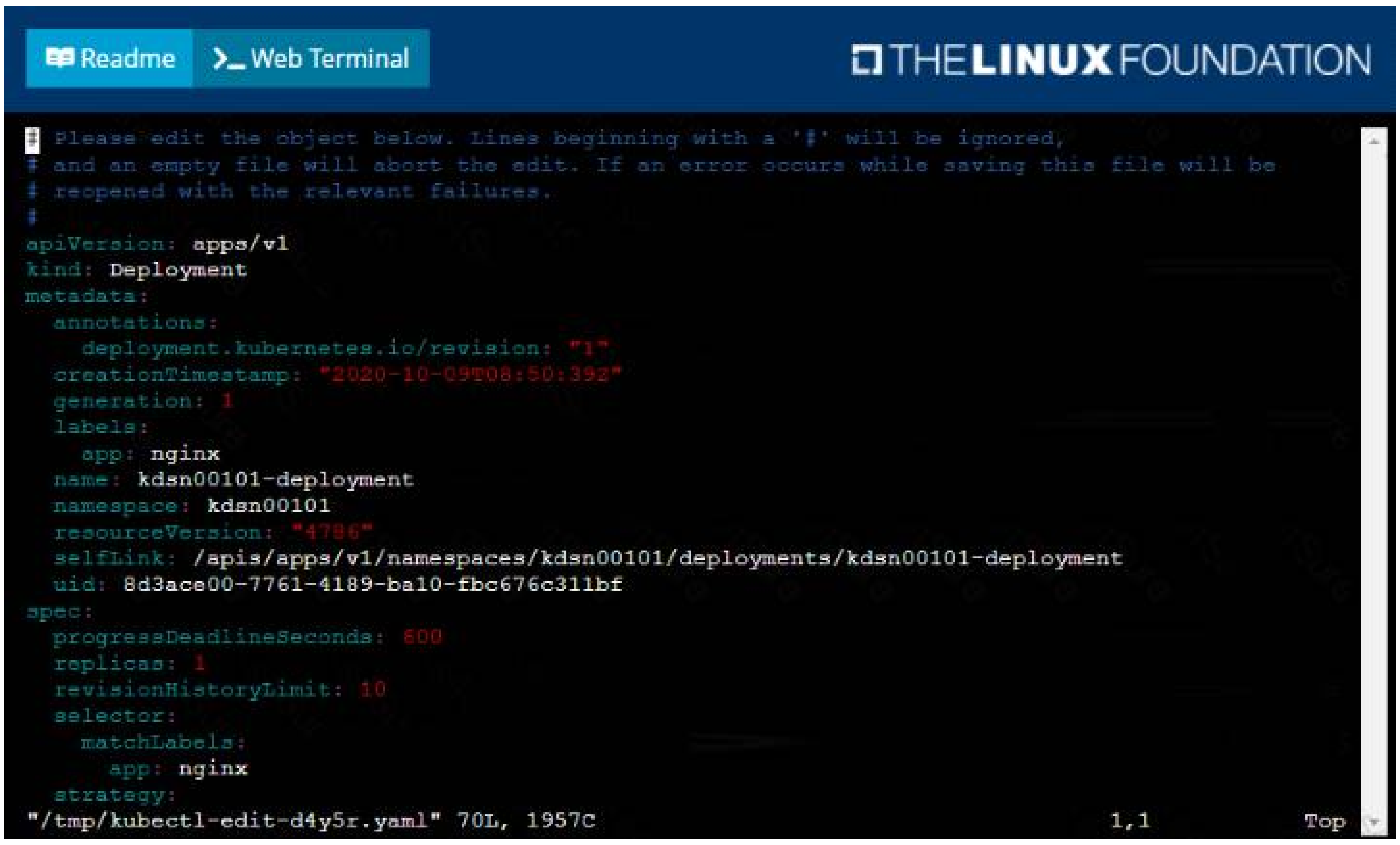
A. Mastered
B. Not Mastered

Answer: A

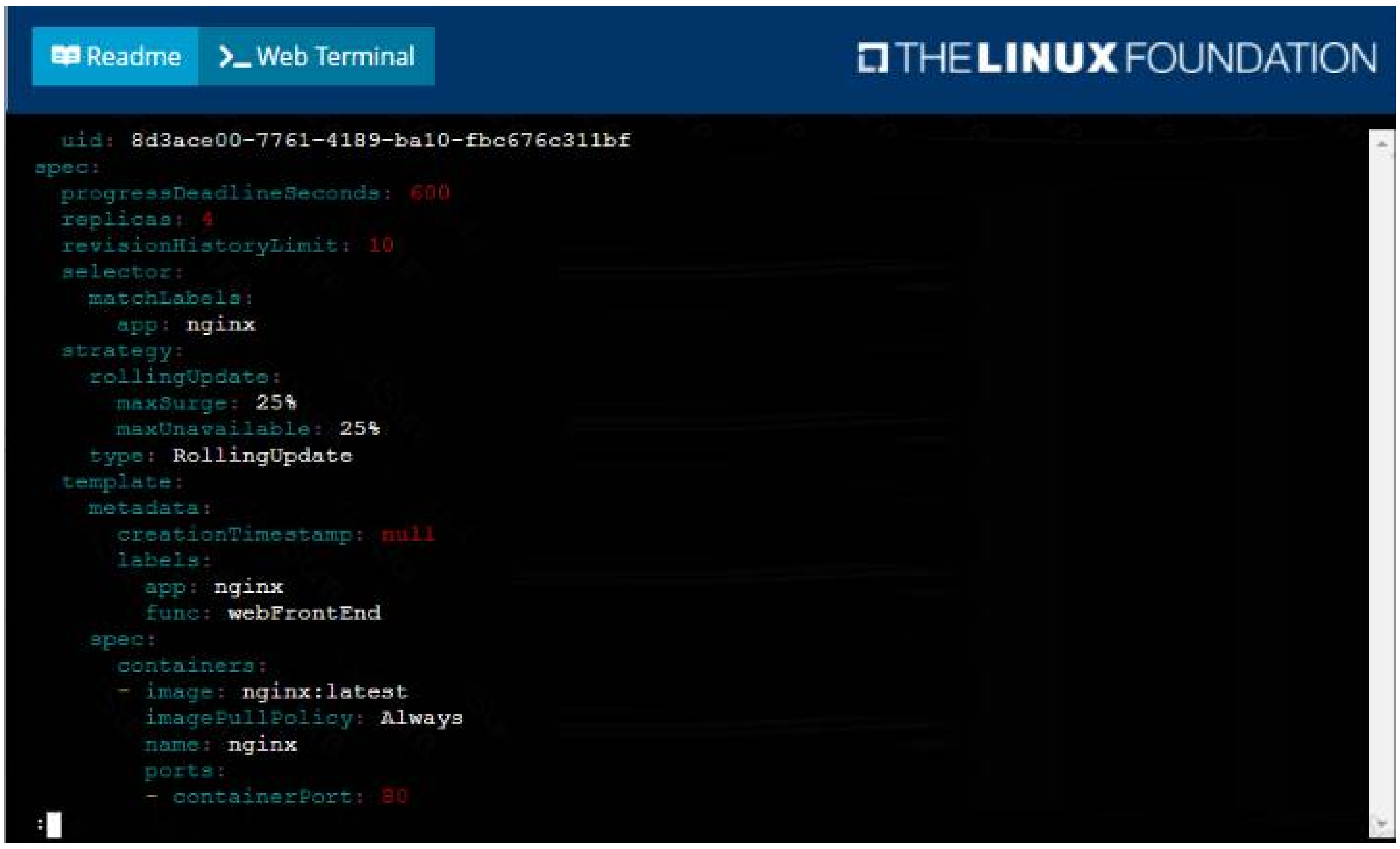
Explanation:
Solution:



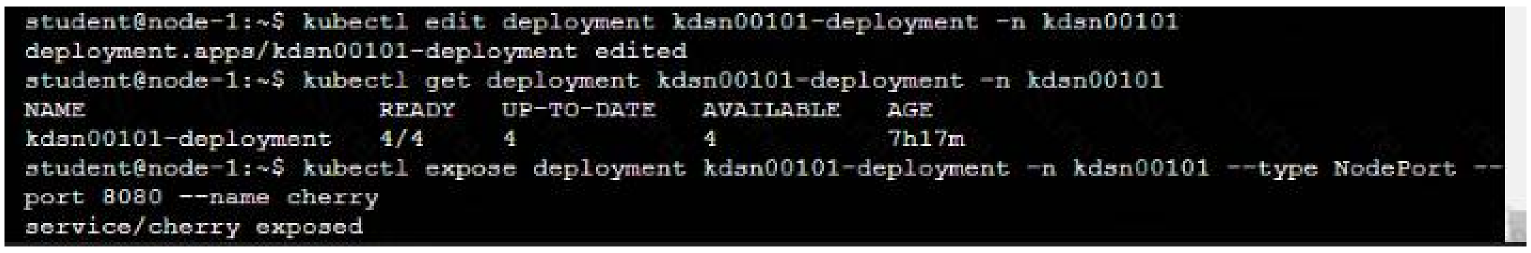
```
student@node-1:~$ kubectl edit deployment kdsn00101-deployment -n kdsn00101
```



```
# Please edit the object below. Lines beginning with a '#' will be ignored,
# and an empty file will abort the edit. If an error occurs while saving this file will be
# reopened with the relevant failures.
#
apiVersion: apps/v1
kind: Deployment
metadata:
  annotations:
    deployment.kubernetes.io/revision: "1"
  creationTimestamp: "2020-10-09T08:50:39Z"
  generation: 1
  labels:
    app: nginx
  name: kdsn00101-deployment
  namespace: kdsn00101
  resourceVersion: "4786"
  selfLink: /apis/apps/v1/namespaces/kdsn00101/deployments/kdsn00101-deployment
  uid: 8d3ace00-7761-4189-ba10-fbc676c311bf
spec:
  progressDeadlineSeconds: 600
  replicas: 1
  revisionHistoryLimit: 10
  selector:
    matchLabels:
      app: nginx
  strategy:
"/tmp/kubectl-edit-d4y5r.yaml" 70L, 1957C                              1,1           Top
```

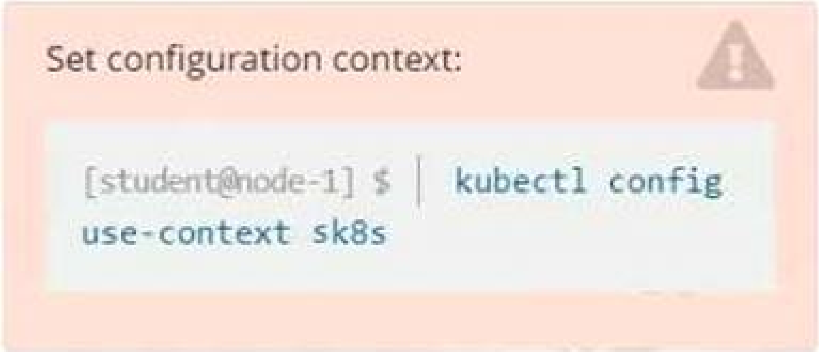


```
  uid: 8d3ace00-7761-4189-ba10-fbc676c311bf
spec:
  progressDeadlineSeconds: 600
  replicas: 4
  revisionHistoryLimit: 10
  selector:
    matchLabels:
      app: nginx
  strategy:
    rollingUpdate:
      maxSurge: 25%
      maxUnavailable: 25%
    type: RollingUpdate
  template:
    metadata:
      creationTimestamp: null
      labels:
        app: nginx
        func: webFrontEnd
    spec:
      containers:
      - image: nginx:latest
        imagePullPolicy: Always
        name: nginx
        ports:
        - containerPort: 80
:
```



```
student@node-1:~$ kubectl edit deployment kdsn00101-deployment -n kdsn00101
deployment.apps/kdsn00101-deployment edited
student@node-1:~$ kubectl get deployment kdsn00101-deployment -n kdsn00101
NAME                   READY   UP-TO-DATE   AVAILABLE   AGE
kdsn00101-deployment   4/4     4            4           7h17m
student@node-1:~$ kubectl expose deployment kdsn00101-deployment -n kdsn00101 --type NodePort --
port 8080 --name cherry
service/cherry exposed
```

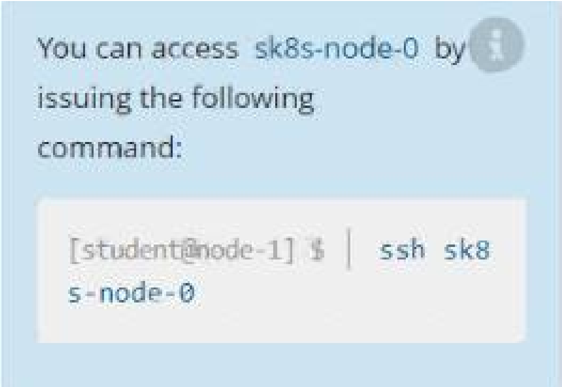
NEW QUESTION 4
Exhibit:



Set configuration context:

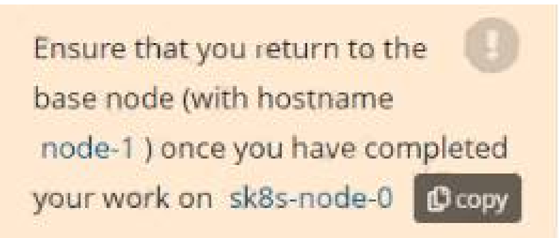
```
[student@node-1] $ | kubectl config
use-context sk8s
```

Context
A project that you are working on has a requirementfor persistent data to be available. Task
To facilitate this, perform the following tasks:
• Create a file on node sk8s-node-0 at /opt/KDSP00101/data/index.html with the content Acct=Finance
• Create a PersistentVolume named task-pv-volume using hostPath and allocate 1Gi to it, specifying that the volume is at /opt/KDSP00101/data on the cluster's node. The configuration should specify the access mode of ReadWriteOnce . It should define the StorageClass name exam for the PersistentVolume , which will be used to bind PersistentVolumeClaim requests to this PersistenetVolume.
• Create a PefsissentVolumeClaim named task-pv-claim that requests a volume of at least100Mi and specifies an access mode of ReadWriteOnce
• Create a pod that uses the PersistentVolmeClaim as a volume with a label app: my-storage-app mounting the resulting volume to a mountPath /usr/share/nginx/html inside the pod



You can access sk8s-node-0 by issuing the following command:

```
[student@node-1] $ | ssh sk8s-node-0
```

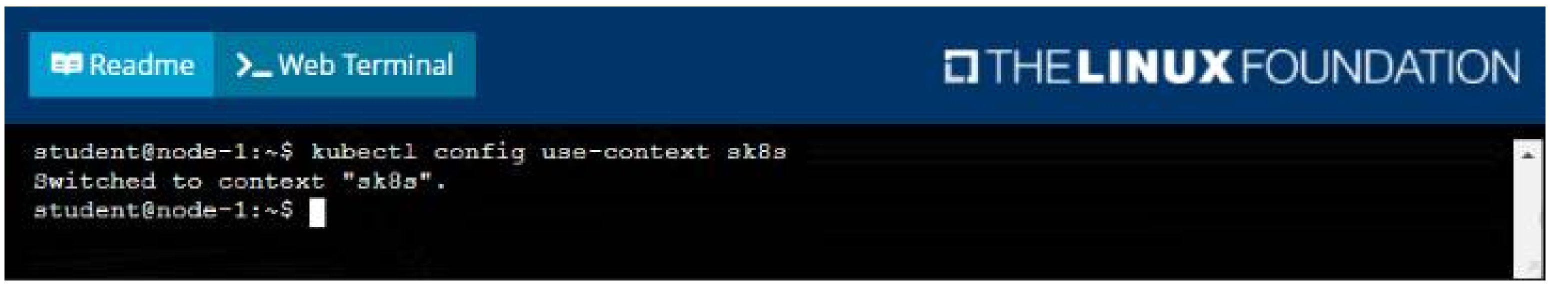


Ensure that you return to the base node (with hostname node-1) once you have completed your work on sk8s-node-0

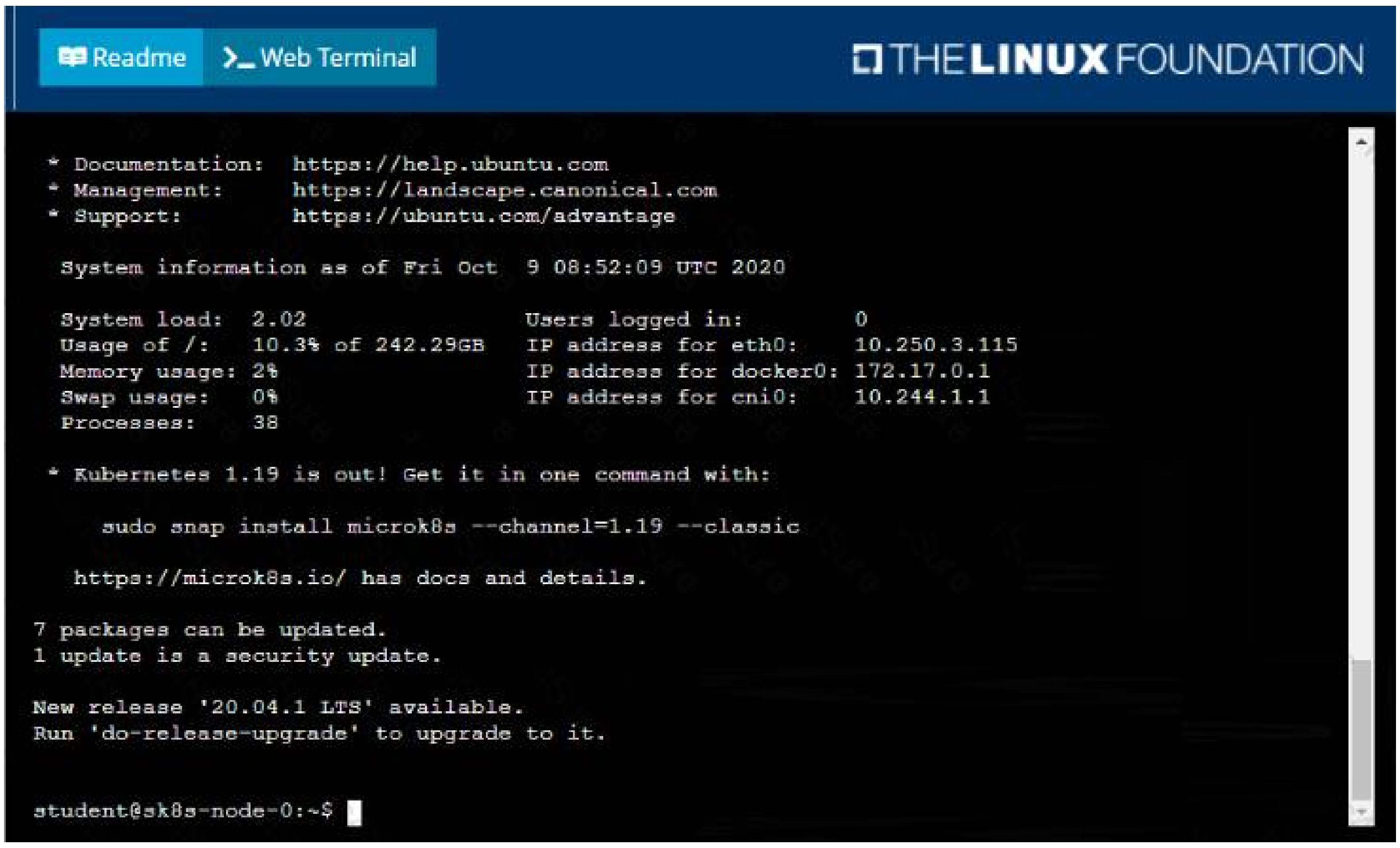
A. Mastered
B. Not Mastered

Answer: A

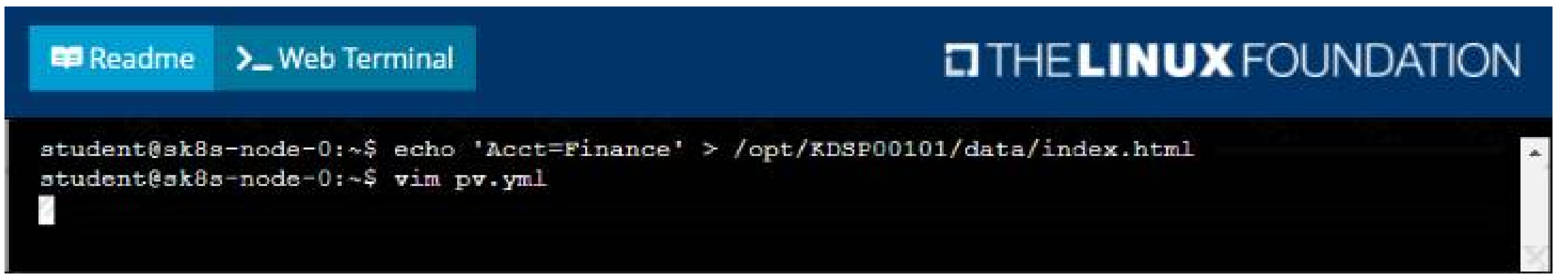
Explanation:
Solution:



```
student@node-1:~$ kubectl config use-context sk8s
Switched to context "sk8s".
student@node-1:~$ 
```



```
 * Documentation:  https://help.ubuntu.com
 * Management:     https://landscape.canonical.com
 * Support:        https://ubuntu.com/advantage

  System information as of Fri Oct  9 08:52:09 UTC 2020

  System load:  2.02              Users logged in:        0
  Usage of /:   10.3% of 242.29GB  IP address for eth0:    10.250.3.115
  Memory usage: 2%                IP address for docker0: 172.17.0.1
  Swap usage:   0%                IP address for cni0:    10.244.1.1
  Processes:    38

 * Kubernetes 1.19 is out! Get it in one command with:

     sudo snap install microk8s --channel=1.19 --classic

   https://microk8s.io/ has docs and details.

7 packages can be updated.
1 update is a security update.

New release '20.04.1 LTS' available.
Run 'do-release-upgrade' to upgrade to it.


student@sk8s-node-0:~$ 
```



```
student@sk8s-node-0:~$ echo 'Acct=Finance' > /opt/KDSP00101/data/index.html
student@sk8s-node-0:~$ vim pv.yml
```

```

~
~
~
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~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
-- INSERT --                                                  0,1          All
```
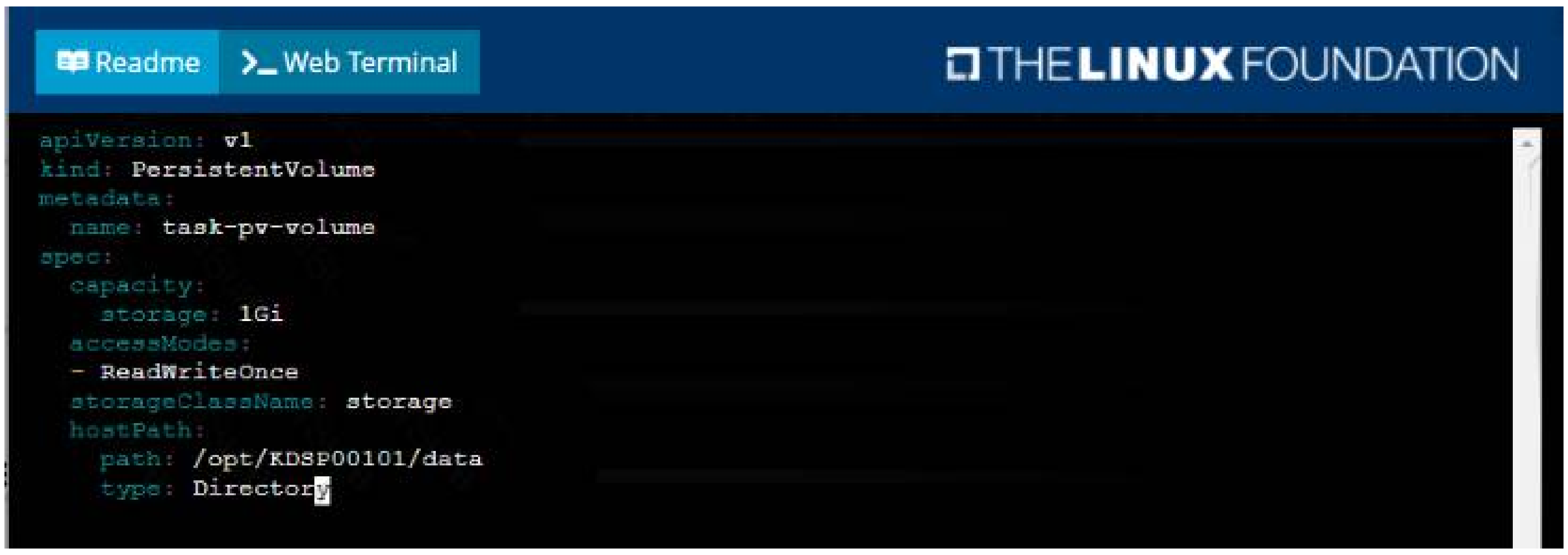
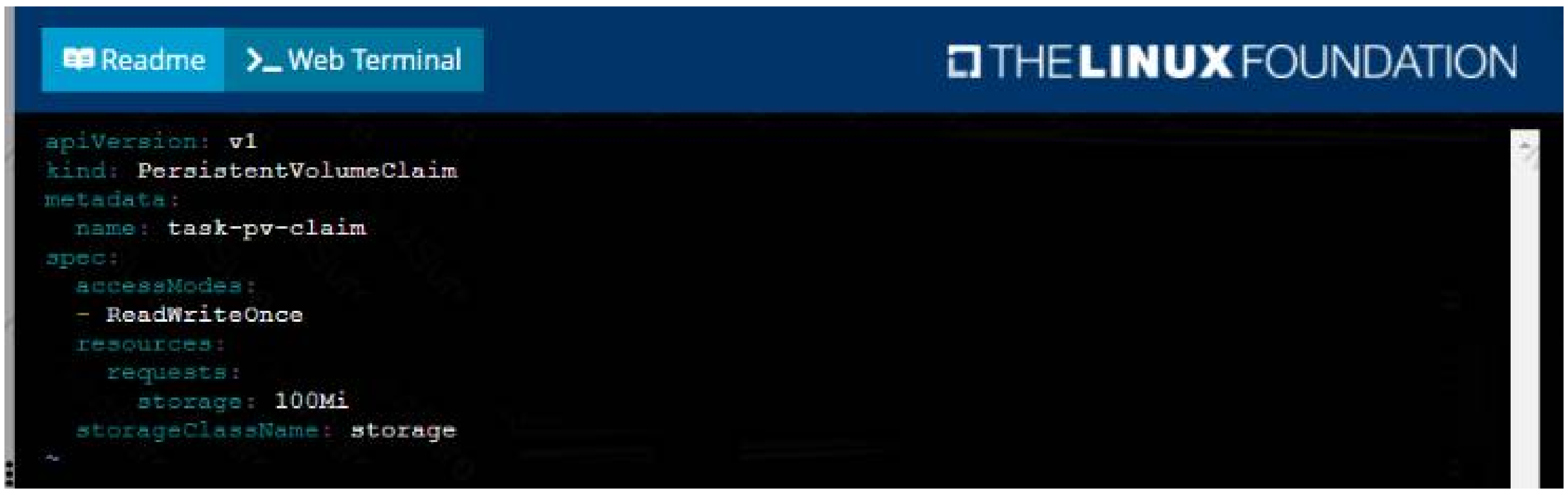
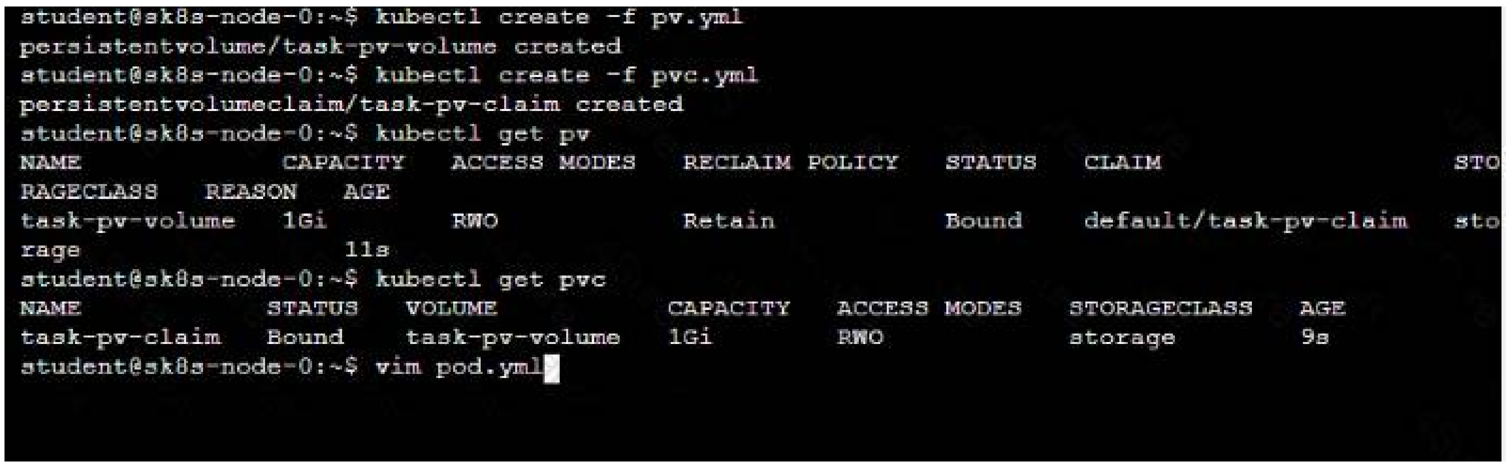



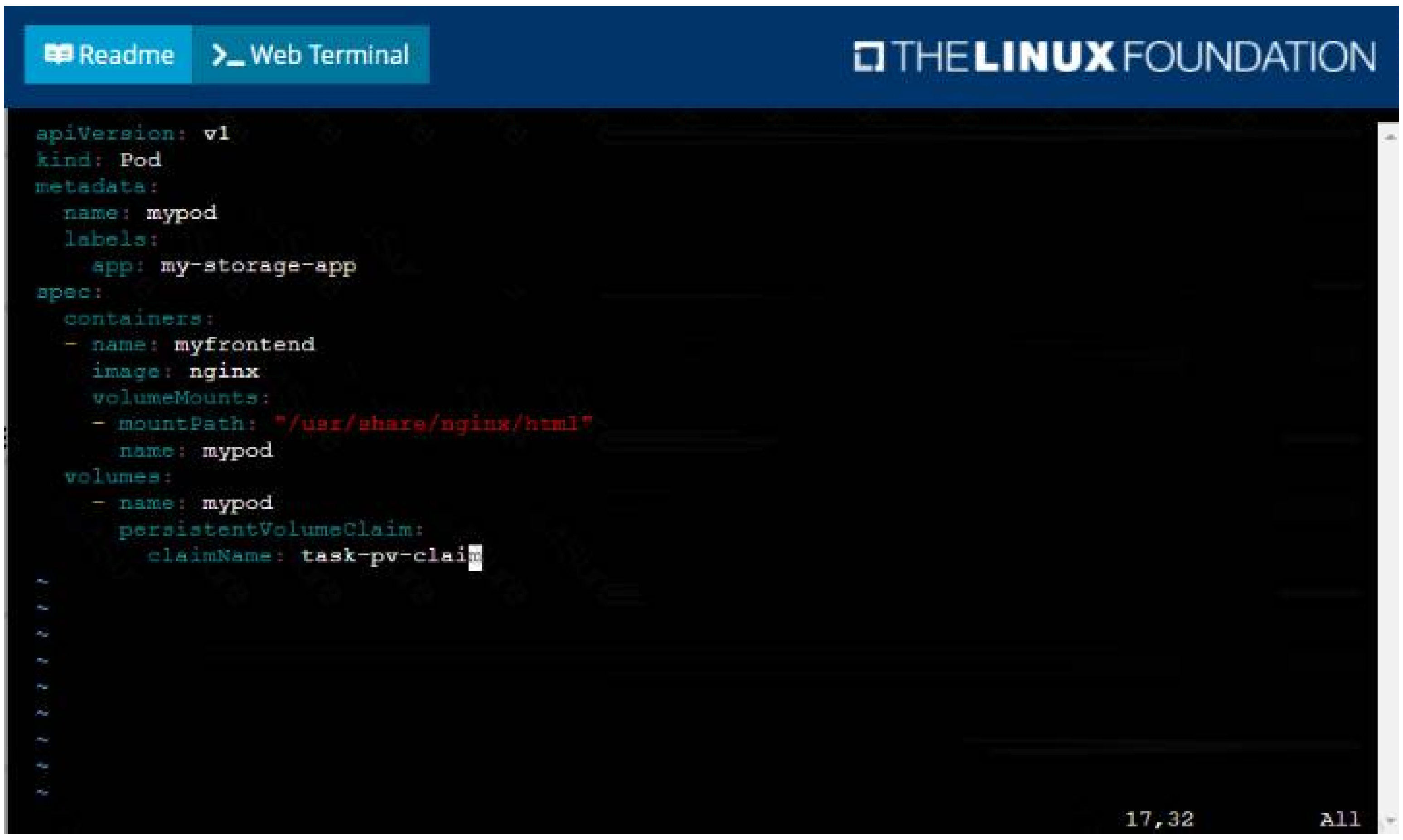
```
apiVersion: v1
kind: PersistentVolume
metadata:
  name: task-pv-volume
spec:
  capacity:
    storage: 1Gi
  accessModes:
  - ReadWriteOnce
  storageClassName: storage
  hostPath:
    path: /opt/KDSP00101/data
    type: Directory
```



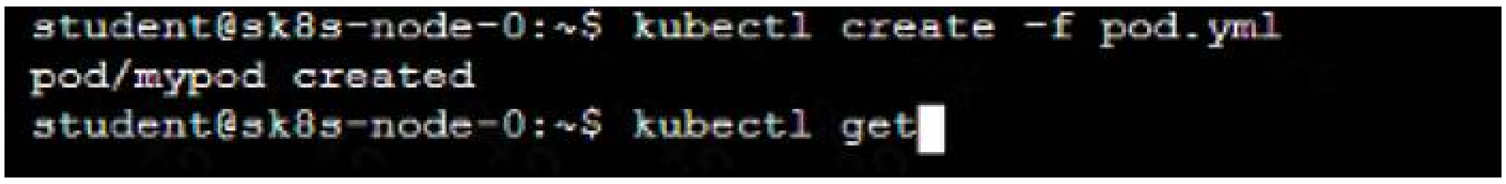
```
apiVersion: v1
kind: PersistentVolumeClaim
metadata:
  name: task-pv-claim
spec:
  accessModes:
  - ReadWriteOnce
  resources:
    requests:
      storage: 100Mi
  storageClassName: storage
~
```



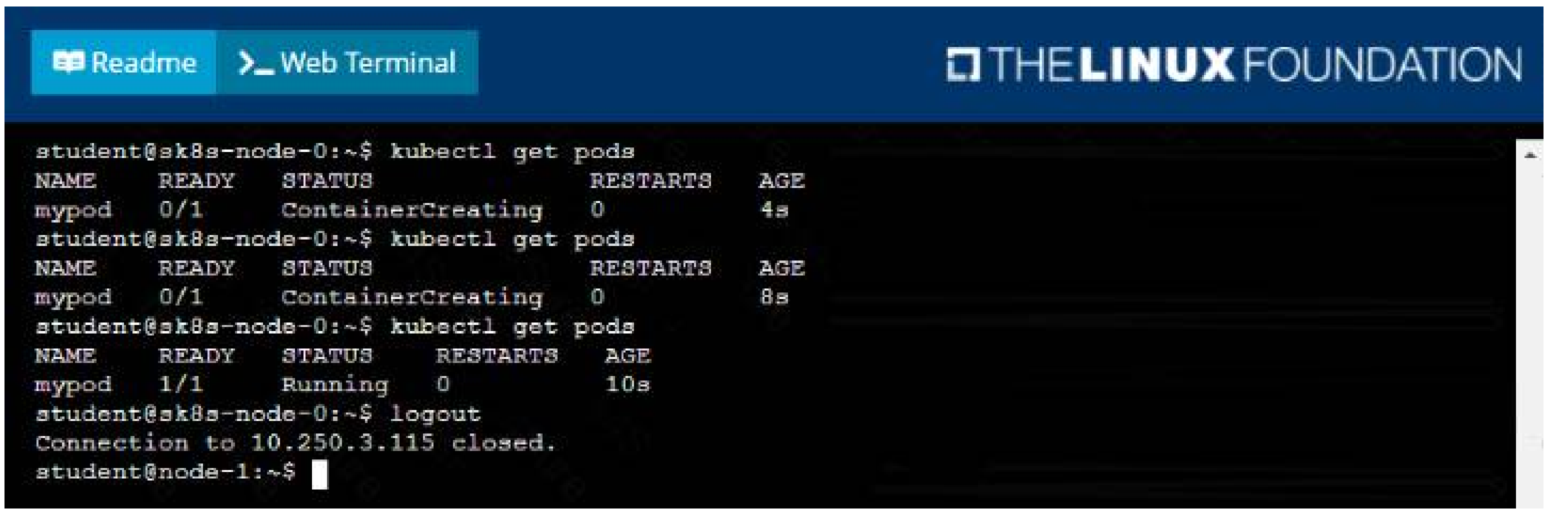
```
student@sk8s-node-0:~$ kubectl create -f pv.yml
persistentvolume/task-pv-volume created
student@sk8s-node-0:~$ kubectl create -f pvc.yml
persistentvolumeclaim/task-pv-claim created
student@sk8s-node-0:~$ kubectl get pv
NAME             CAPACITY   ACCESS MODES   RECLAIM POLICY   STATUS   CLAIM                   STO
RAGECLASS   REASON   AGE
task-pv-volume   1Gi        RWO            Retain           Bound    default/task-pv-claim   sto
rage                 11s
student@sk8s-node-0:~$ kubectl get pvc
NAME            STATUS   VOLUME           CAPACITY   ACCESS MODES   STORAGECLASS   AGE
task-pv-claim   Bound    task-pv-volume   1Gi        RWO            storage        9s
student@sk8s-node-0:~$ vim pod.yml
```



```
apiVersion: v1
kind: Pod
metadata:
  name: mypod
  labels:
    app: my-storage-app
spec:
  containers:
  - name: myfrontend
    image: nginx
    volumeMounts:
    - mountPath: "/usr/share/nginx/html"
      name: mypod
  volumes:
    - name: mypod
      persistentVolumeClaim:
        claimName: task-pv-claim
~
~
~
~
~
~
~
~
~
                                                                     17,32          All
```



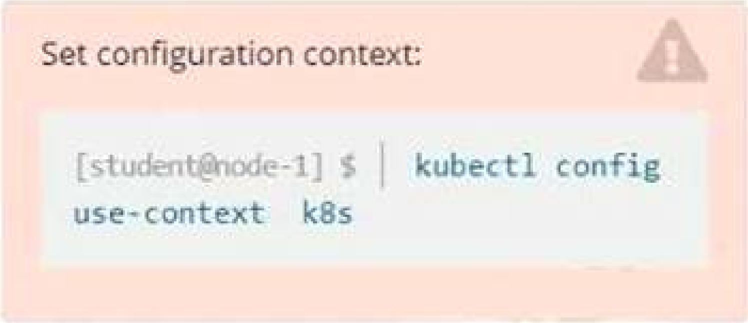
```
student@sk8s-node-0:~$ kubectl create -f pod.yml
pod/mypod created
student@sk8s-node-0:~$ kubectl get
```



```
student@sk8s-node-0:~$ kubectl get pods
NAME     READY   STATUS              RESTARTS   AGE
mypod    0/1     ContainerCreating   0          4s
student@sk8s-node-0:~$ kubectl get pods
NAME     READY   STATUS              RESTARTS   AGE
mypod    0/1     ContainerCreating   0          8s
student@sk8s-node-0:~$ kubectl get pods
NAME     READY   STATUS    RESTARTS   AGE
mypod    1/1     Running   0          10s
student@sk8s-node-0:~$ logout
Connection to 10.250.3.115 closed.
student@node-1:~$
```

NEW QUESTION 5

Exhibit:



Set configuration context:

```
[student@node-1] $ | kubectl config
use-context k8s
```

Context

As a Kubernetes application developer you will often find yourself needing to update a running application. Task

Please complete the following:

- Update theappdeployment in the kdpd00202 namespace with a maxSurge of5% and a maxUnavailable of2%
- Perform a rolling update of the web1 deployment, changing the lfccncf/ngmx image version to 1.13
- Roll back theappdeployment to the previous version

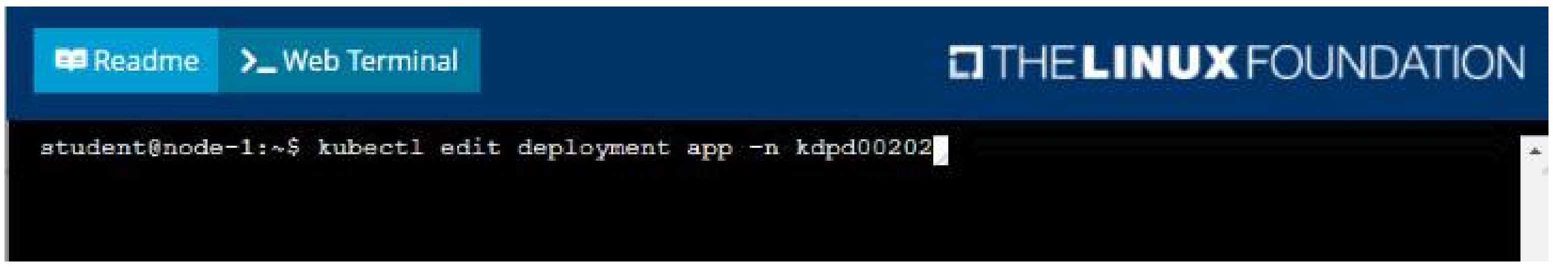
A. Mastered

B. Not Mastered

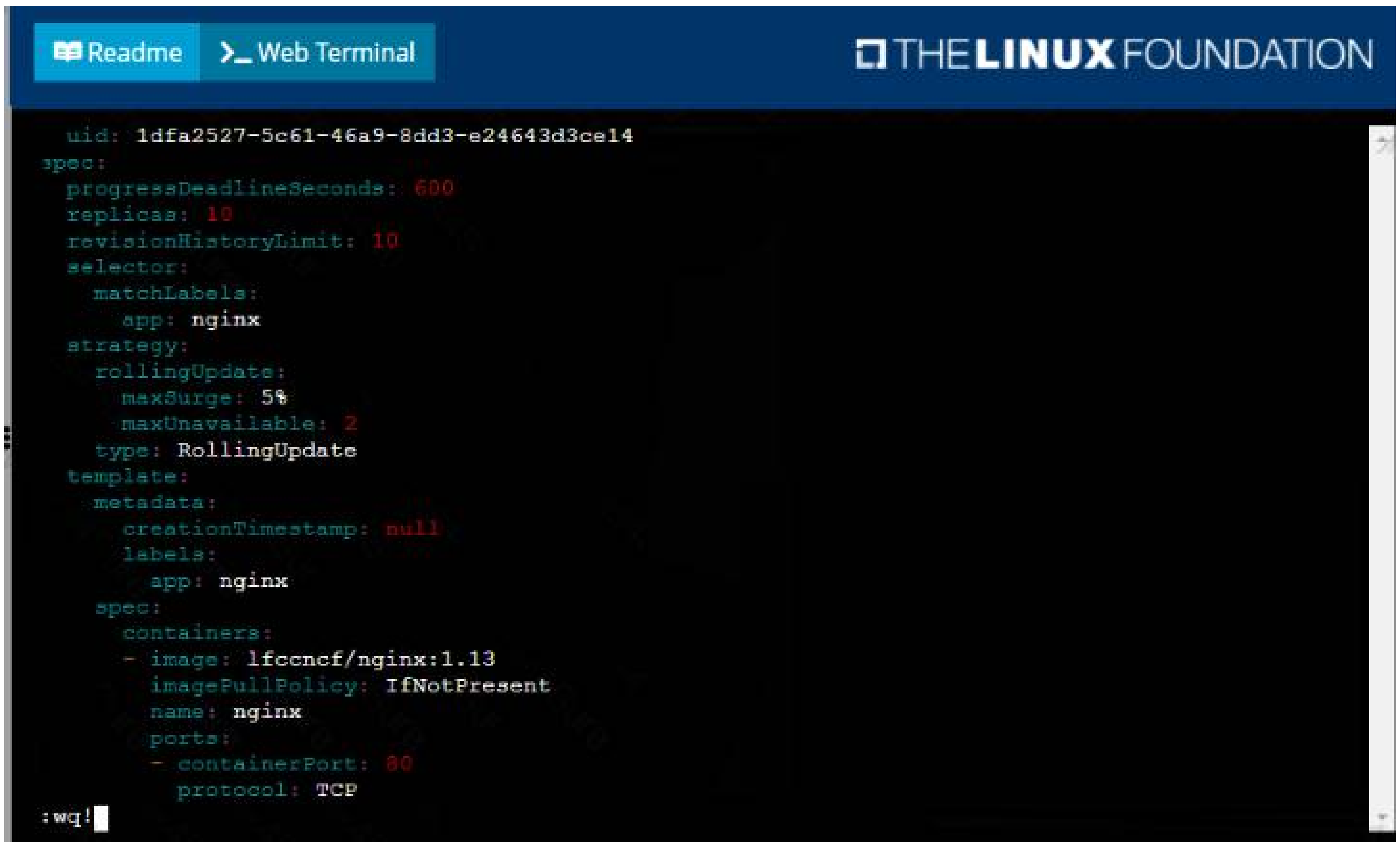
Answer: A

Explanation:

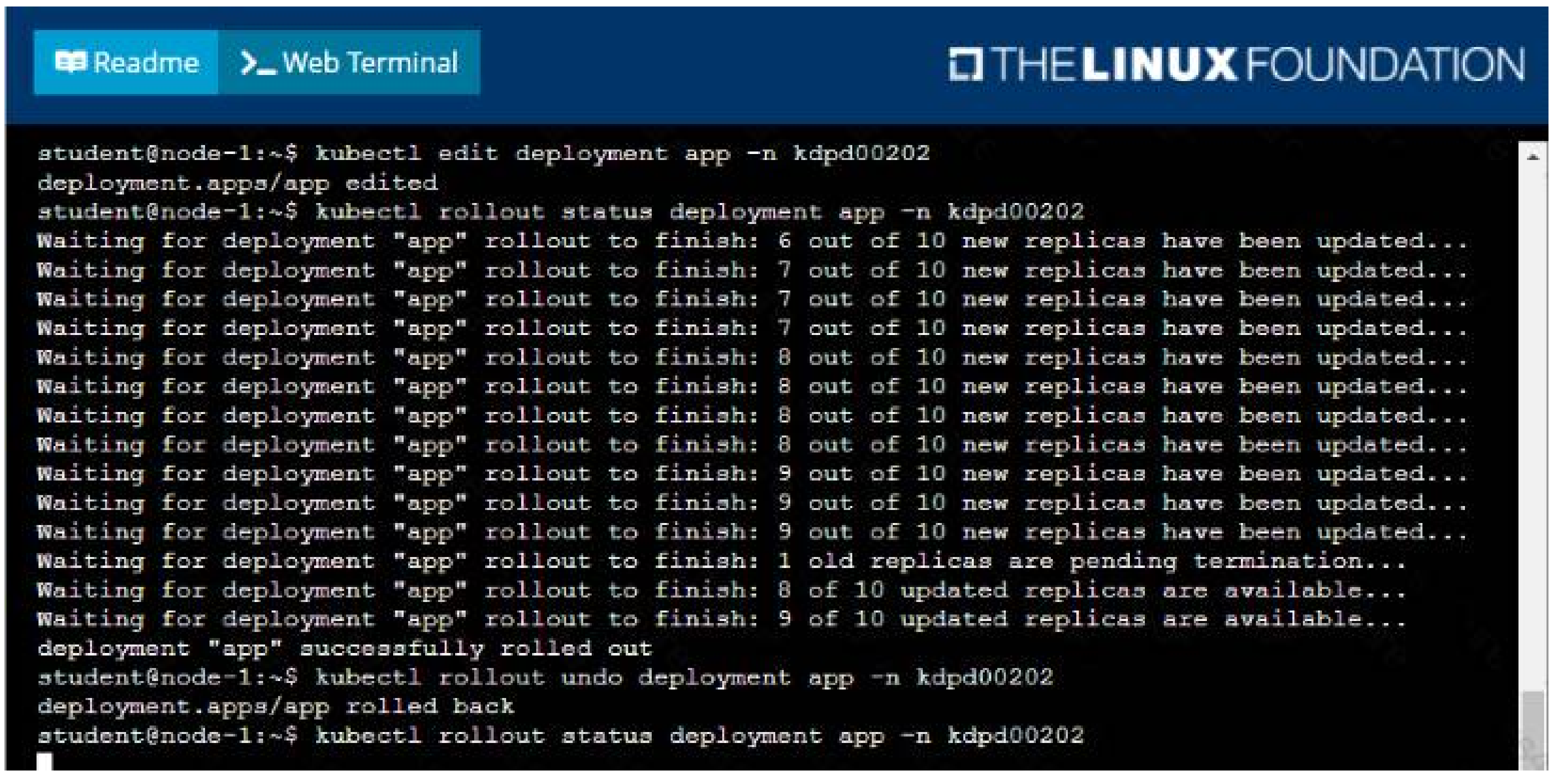
Solution:



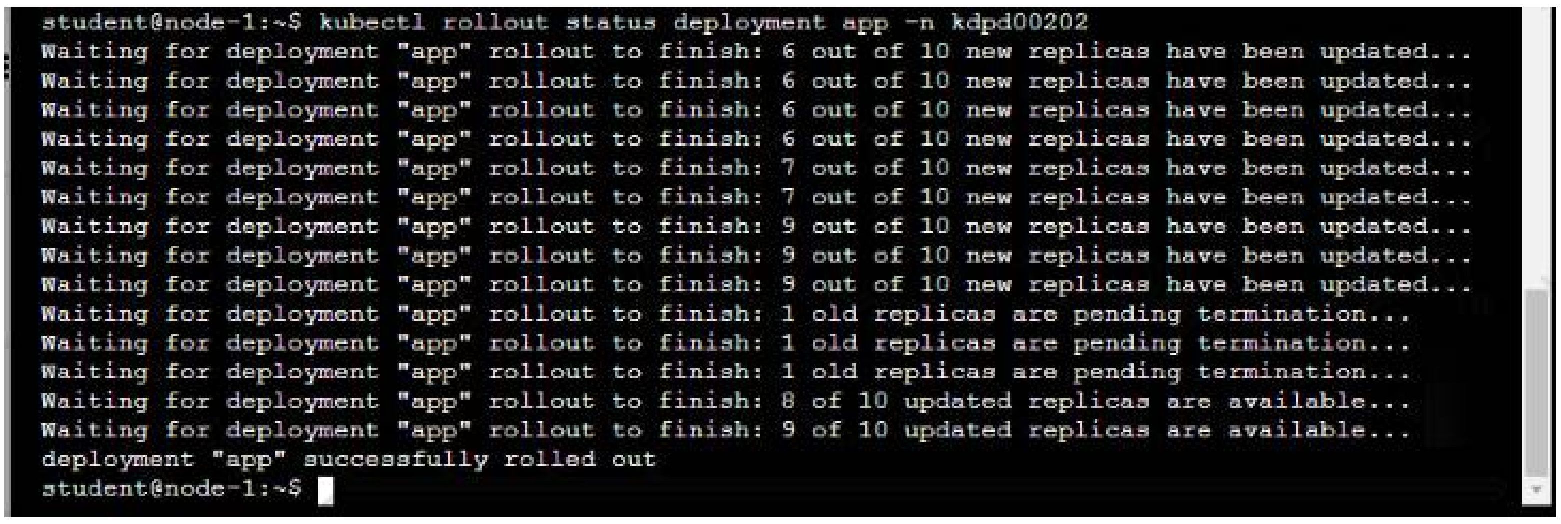
```
student@node-1:~$ kubectl edit deployment app -n kdpd00202
```



```
  uid: 1dfa2527-5c61-46a9-8dd3-e24643d3ce14
spec:
  progressDeadlineSeconds: 600
  replicas: 10
  revisionHistoryLimit: 10
  selector:
    matchLabels:
      app: nginx
  strategy:
    rollingUpdate:
      maxSurge: 5%
      maxUnavailable: 2
    type: RollingUpdate
  template:
    metadata:
      creationTimestamp: null
      labels:
        app: nginx
    spec:
      containers:
      - image: lfccncf/nginx:1.13
        imagePullPolicy: IfNotPresent
        name: nginx
        ports:
        - containerPort: 80
          protocol: TCP
:wq!
```



```
student@node-1:~$ kubectl edit deployment app -n kdpd00202
deployment.apps/app edited
student@node-1:~$ kubectl rollout status deployment app -n kdpd00202
Waiting for deployment "app" rollout to finish: 6 out of 10 new replicas have been updated...
Waiting for deployment "app" rollout to finish: 7 out of 10 new replicas have been updated...
Waiting for deployment "app" rollout to finish: 7 out of 10 new replicas have been updated...
Waiting for deployment "app" rollout to finish: 7 out of 10 new replicas have been updated...
Waiting for deployment "app" rollout to finish: 8 out of 10 new replicas have been updated...
Waiting for deployment "app" rollout to finish: 8 out of 10 new replicas have been updated...
Waiting for deployment "app" rollout to finish: 8 out of 10 new replicas have been updated...
Waiting for deployment "app" rollout to finish: 8 out of 10 new replicas have been updated...
Waiting for deployment "app" rollout to finish: 9 out of 10 new replicas have been updated...
Waiting for deployment "app" rollout to finish: 9 out of 10 new replicas have been updated...
Waiting for deployment "app" rollout to finish: 9 out of 10 new replicas have been updated...
Waiting for deployment "app" rollout to finish: 1 old replicas are pending termination...
Waiting for deployment "app" rollout to finish: 8 of 10 updated replicas are available...
Waiting for deployment "app" rollout to finish: 9 of 10 updated replicas are available...
deployment "app" successfully rolled out
student@node-1:~$ kubectl rollout undo deployment app -n kdpd00202
deployment.apps/app rolled back
student@node-1:~$ kubectl rollout status deployment app -n kdpd00202
```



```
student@node-1:~$ kubectl rollout status deployment app -n kdpd00202
Waiting for deployment "app" rollout to finish: 6 out of 10 new replicas have been updated...
Waiting for deployment "app" rollout to finish: 6 out of 10 new replicas have been updated...
Waiting for deployment "app" rollout to finish: 6 out of 10 new replicas have been updated...
Waiting for deployment "app" rollout to finish: 6 out of 10 new replicas have been updated...
Waiting for deployment "app" rollout to finish: 7 out of 10 new replicas have been updated...
Waiting for deployment "app" rollout to finish: 7 out of 10 new replicas have been updated...
Waiting for deployment "app" rollout to finish: 9 out of 10 new replicas have been updated...
Waiting for deployment "app" rollout to finish: 9 out of 10 new replicas have been updated...
Waiting for deployment "app" rollout to finish: 9 out of 10 new replicas have been updated...
Waiting for deployment "app" rollout to finish: 1 old replicas are pending termination...
Waiting for deployment "app" rollout to finish: 1 old replicas are pending termination...
Waiting for deployment "app" rollout to finish: 1 old replicas are pending termination...
Waiting for deployment "app" rollout to finish: 8 of 10 updated replicas are available...
Waiting for deployment "app" rollout to finish: 9 of 10 updated replicas are available...
deployment "app" successfully rolled out
student@node-1:~$
```

NEW QUESTION 10

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