Linux-Foundation

Exam Questions CKAD

Certified Kubernetes Application Developer (CKAD) Program

NEW QUESTION 1
Exhibit:

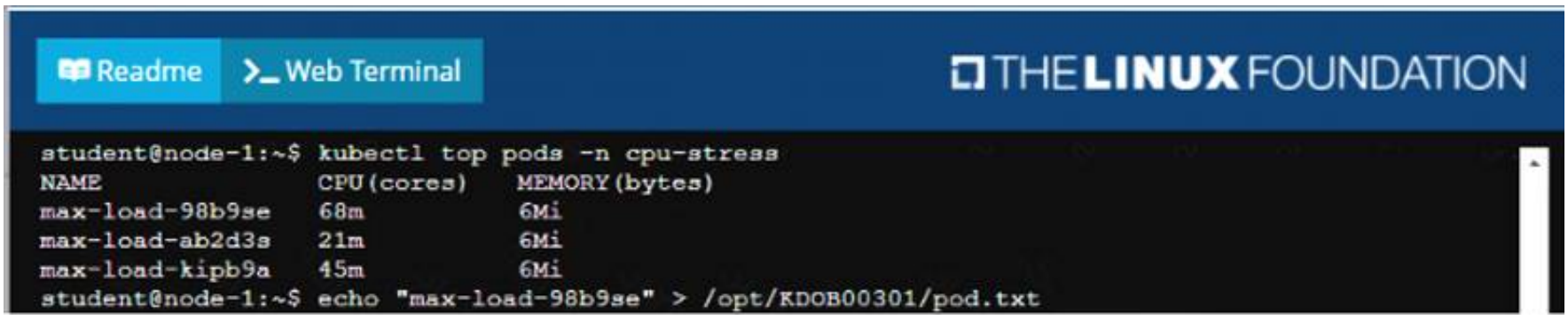
Context
It is always useful to look at the resources your applications are consuming in a cluster. Task
• From the pods running in namespacecpu-stress , write the name only of the pod that is consuming the most CPU to file /opt/KDOBG030l/pod.txt, which has already been created.

A. Mastered
B. Not Mastered

Answer: A

Explanation:

Solution:



NEW QUESTION 2
Exhibit:

Context
A container within the poller pod is hard-coded to connect the nginxsvc service on port90 . As this port changes to5050 an additional container needs to be added to the poller pod which adapts the container to connect to this new port. This should be realized as an ambassador container within the pod.
Task
• Update the nginxsvc service to serve on port5050.
• Add an HAproxy container named haproxy bound to port90 tothe poller pod and deploy the enhanced pod. Use the image haproxy and inject the configuration located at /opt/KDMC00101/haproxy.cfg, with a ConfigMap named haproxy-config, mounted into the container so that haproxy.cfg is available at /usr/local/etc/haproxy/haproxy.cfg. Ensure that you update the args of the poller container to connect to localhost instead of nginxsvc so that the connection is correctly proxied to the new service endpoint. You must not modify the port of the endpoint in poller's args . The spec file used to create the initial poller pod is available in /opt/KDMC00101/poller.yaml

A. Mastered
B. Not Mastered

Answer: A

Explanation:
Solution: apiVersion: apps/v1 kind: Deployment metadata:
name: my-nginx spec:
selector: matchLabels: run: my-nginx replicas: 2 template: metadata: labels:
run: my-nginx spec: containers:
- name: my-nginx image: nginx ports:
- containerPort: 90
This makes it accessible from any node in your cluster. Check the nodes the Pod is running on: kubectl apply -f ./run-my-nginx.yaml
kubectl get pods -lrun=my-nginx -o wide
NAME READY STATUS RESTARTS AGE IP NODE
my-nginx-3800858182-jr4a2 1/1 Running 0 13s 10.244.3.4 kubernetes-minion-905m
my-nginx-3800858182-kna2y 1/1 Running 0 13s 10.244.2.5 kubernetes-minion-ljyd Check your pods' IPs:
kubectl get pods -lrun=my-nginx -o yaml | grep podIP podIP: 10.244.3.4

podIP: 10.244.2.5

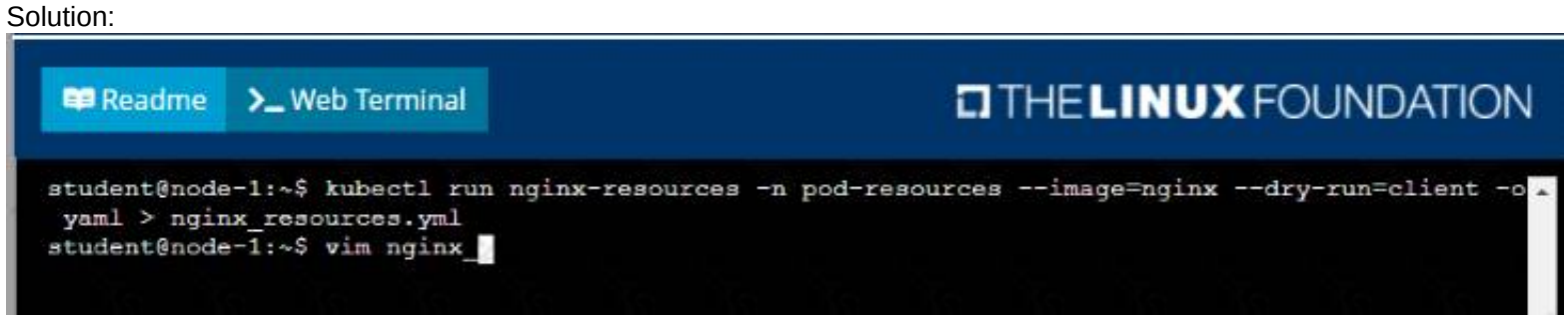
NEW QUESTION 3
Exhibit:

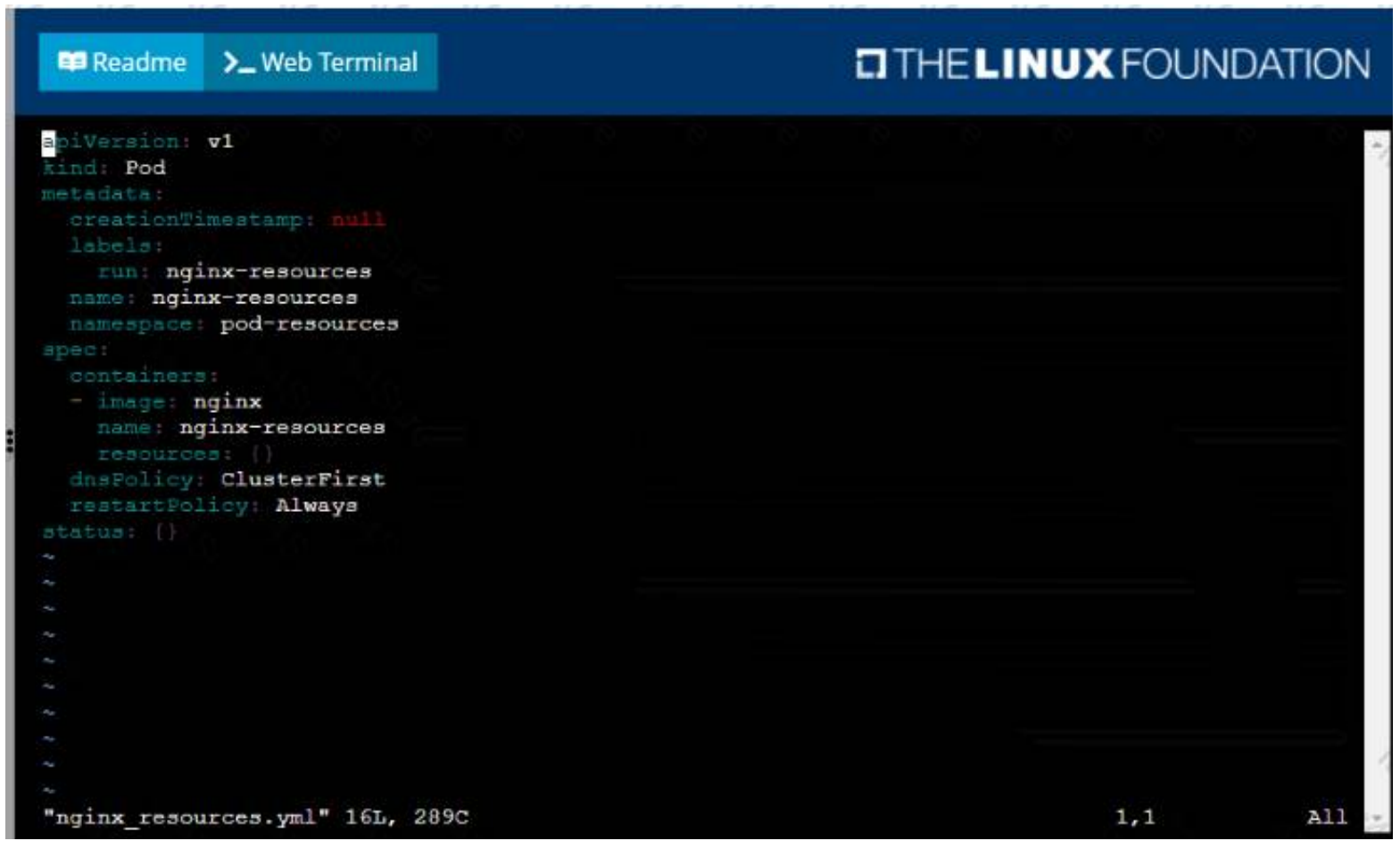
Task
You are required to create a pod that requests a certain amount of CPU and memory, so it gets scheduled to-a node that has those resources available.
• Create a pod named nginx-resources in the pod-resources namespace that requests a minimum of200m CPU and1Gi memory for its container
• The pod should use the nginx image
• The pod-resources namespace has already been created

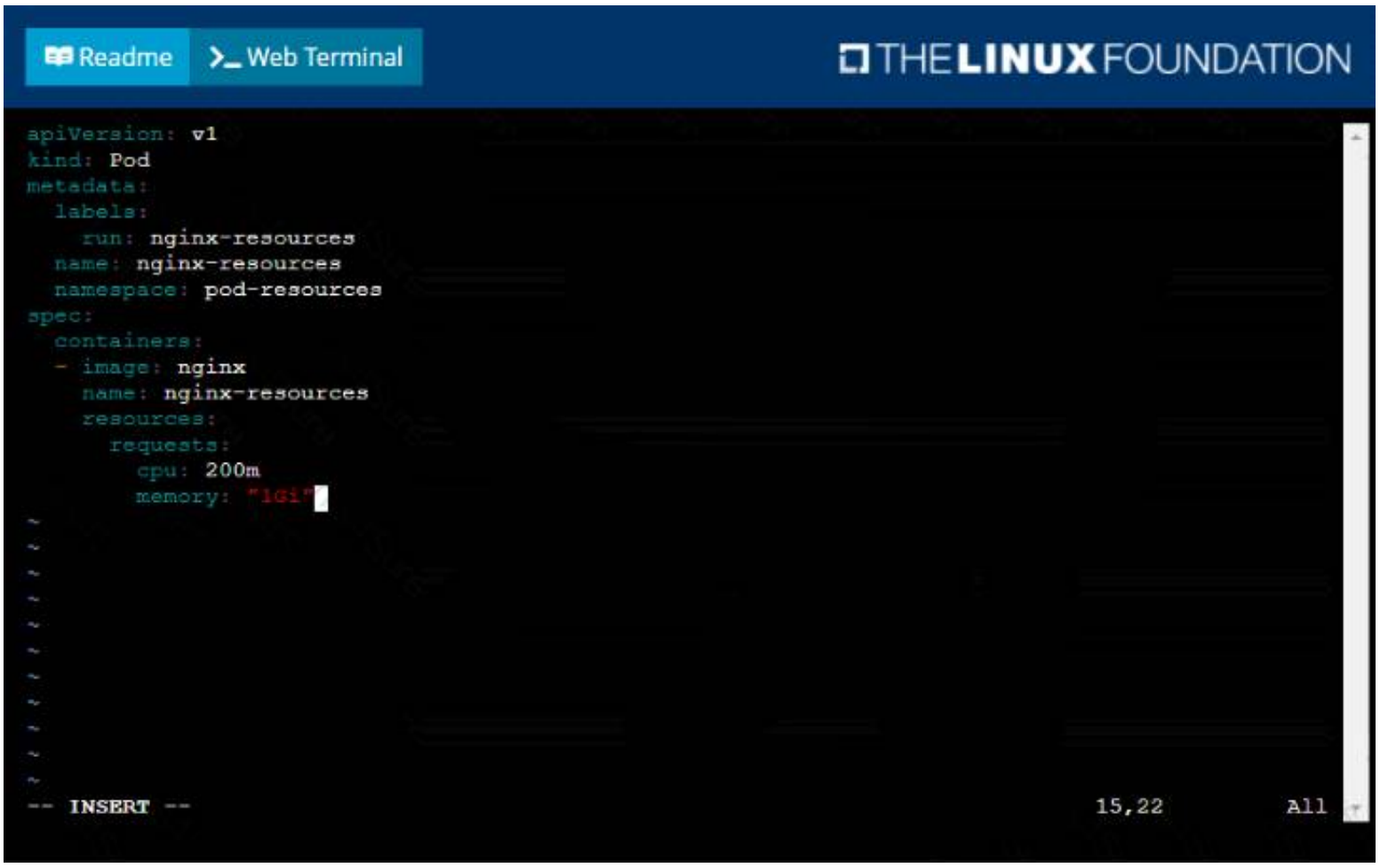
A. Mastered
B. Not Mastered

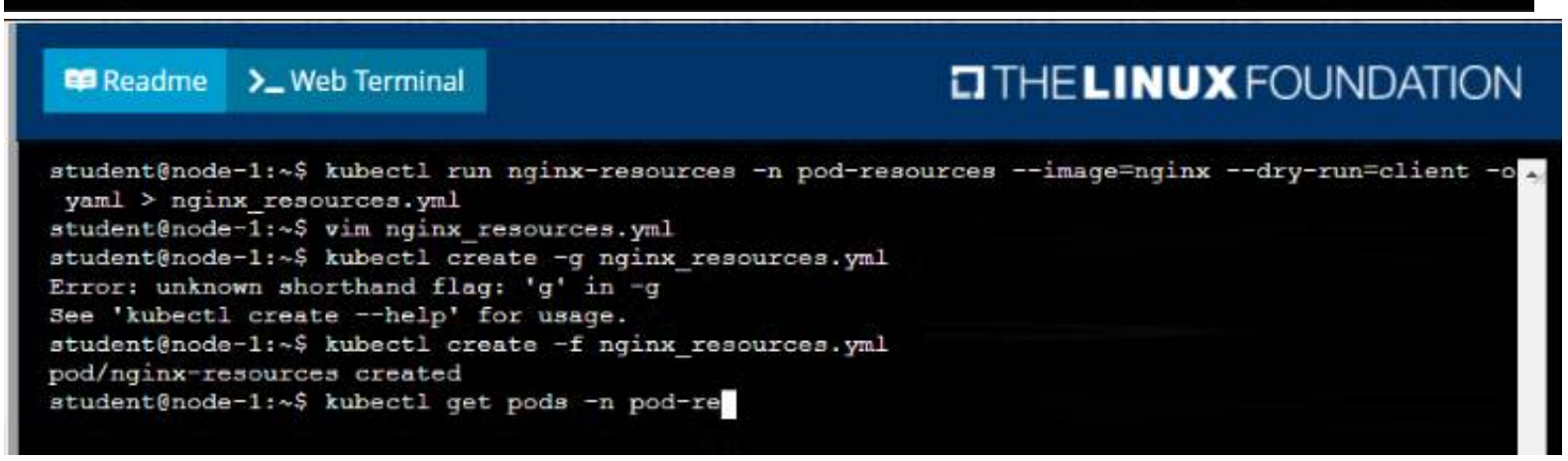
Answer: A

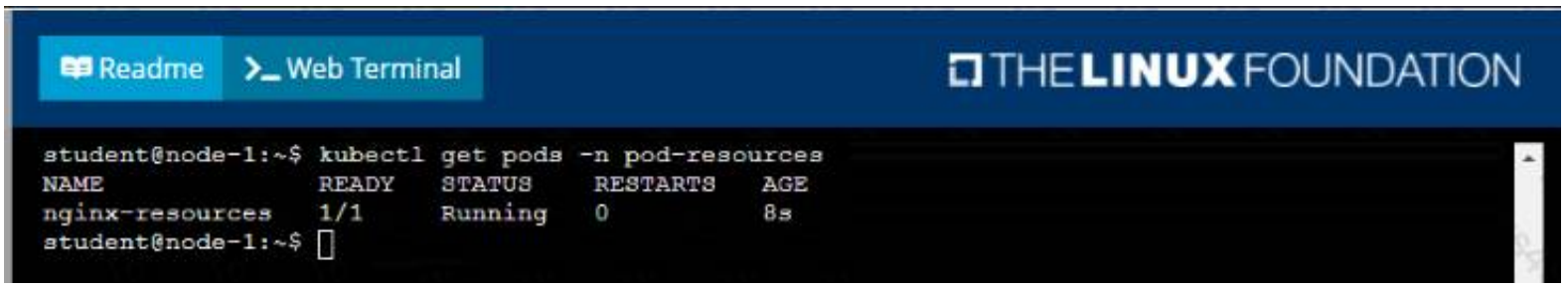
Explanation:
Solution:











NEW QUESTION 4
Exhibit:

Context
You are tasked to create a secret and consume the secret in a pod using environment variables as follow:
Task
• Create a secret named another-secret with a key/value pair; key1/value4
• Start an nginx pod named nginx-secret using container image nginx, and add an environment variable exposing the value of the secret key key 1, usingCOOL_VARIABLE as the name for the environment variable inside the pod

A. Mastered
B. Not Mastered

Answer: A

Explanation:
Solution:

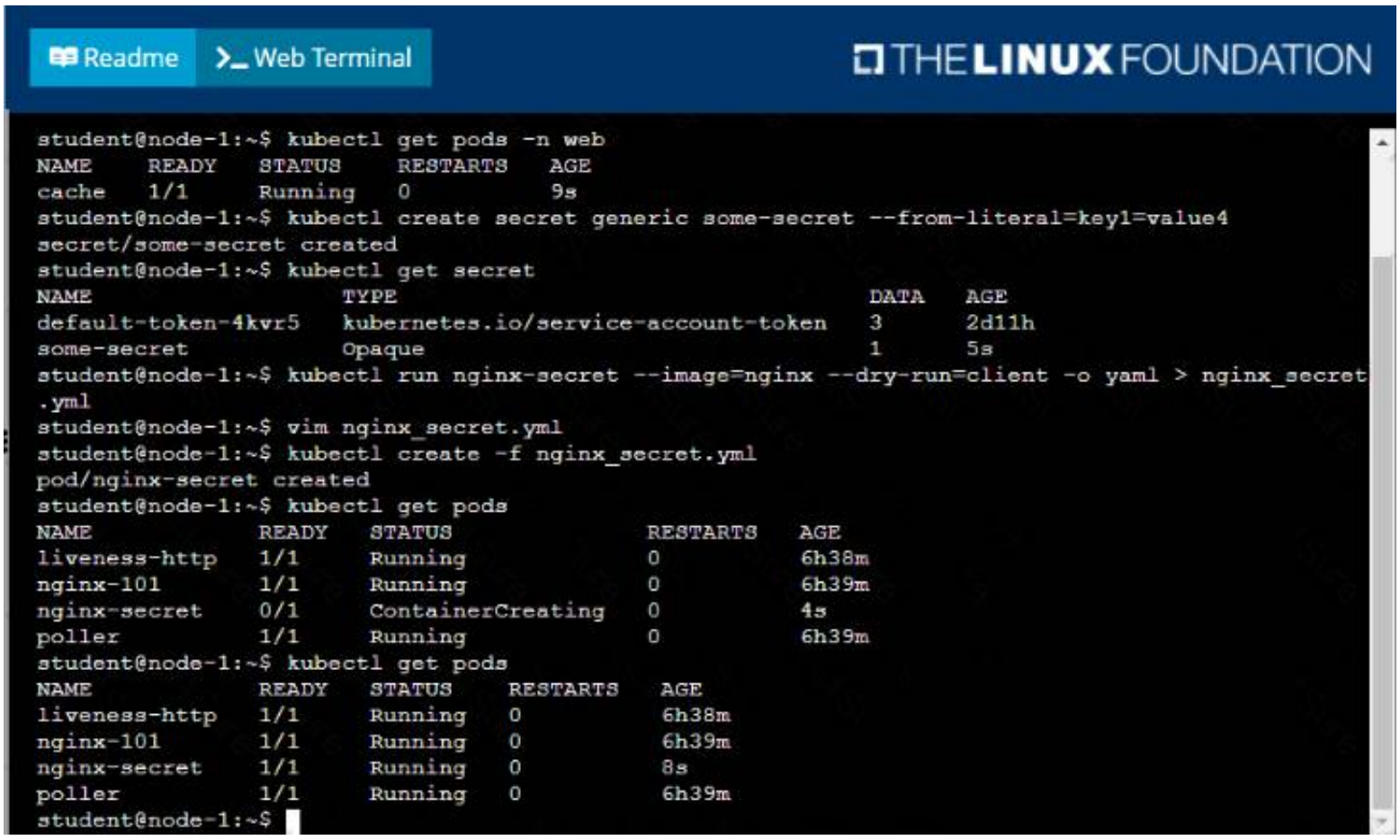
```
student@node-1:~$ kubectl create secret generic some-secret --from-literal=key1=value4
secret/some-secret created
student@node-1:~$ kubectl get secret
NAME                  TYPE                                  DATA   AGE
default-token-4kvr5   kubernetes.io/service-account-token   3      2d11h
some-secret           Opaque                                1      5s
student@node-1:~$ kubectl run nginx-secret --image=nginx --dry-run=client -o yaml > nginx_secret
.yml
student@node-1:~$ vim nginx_secret.yml
```

Readme | Web Terminal — THE LINUX FOUNDATION

```
apiVersion: v1
kind: Pod
metadata:
  creationTimestamp: null
  labels:
    run: nginx-secret
  name: nginx-secret
spec:
  containers:
  - image: nginx
    name: nginx-secret
    resources: {}
  dnsPolicy: ClusterFirst
  restartPolicy: Always
status: {}
~
~
~
~
~
~
~
~
~
~
~
"nginx_secret.yml" 15L, 253C                                  1,1           All
```

Readme | Web Terminal — THE LINUX FOUNDATION

```
apiVersion: v1
kind: Pod
metadata:
  labels:
    run: nginx-secret
  name: nginx-secret
spec:
  containers:
  - image: nginx
    name: nginx-secret
    env:
    - name: COOL_VARIABLE
      valueFrom:
        secretKeyRef:
          name: some-secret
          key: key1
~
~
~
~
~
~
~
~
~
~
~
-- INSERT --                                          16,20         All
```



NEW QUESTION 5
Exhibit:

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:

Readme | Web Terminal — THE LINUX FOUNDATION

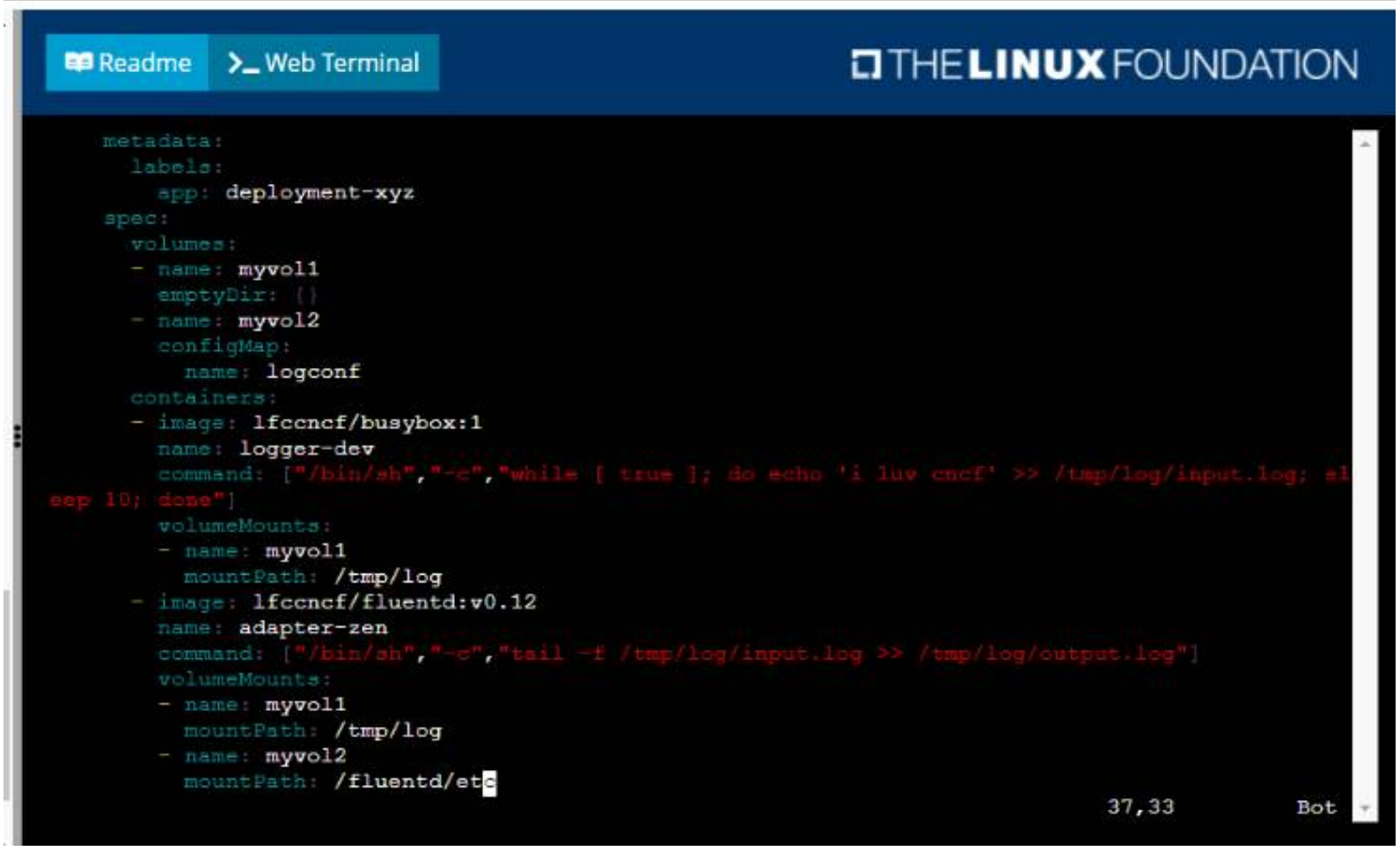
```
student@node-1:~$ kubectl create deployment deployment-xyz --image=lfccncf/busybox:1 --dry-run=client -o yaml > deployment_xyz.yml
student@node-1:~$ vim deployment_xyz.yml
```

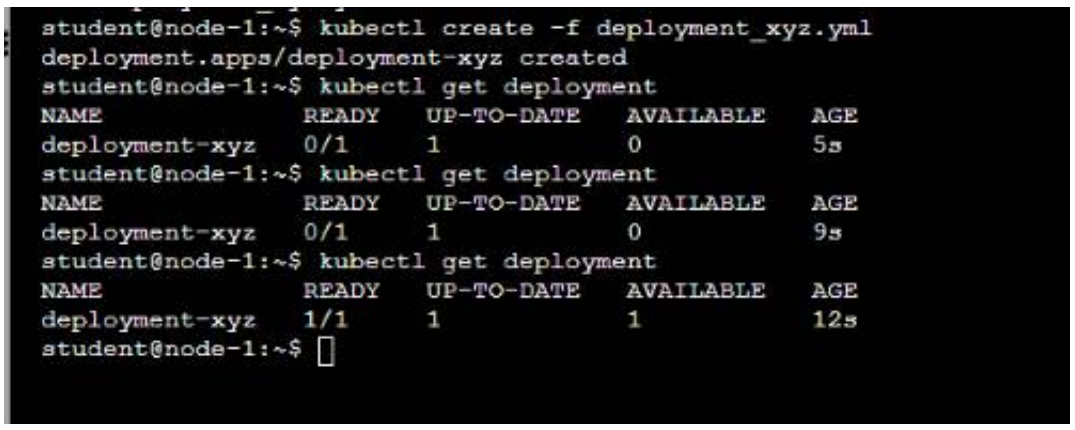
Readme | Web Terminal — THE LINUX FOUNDATION

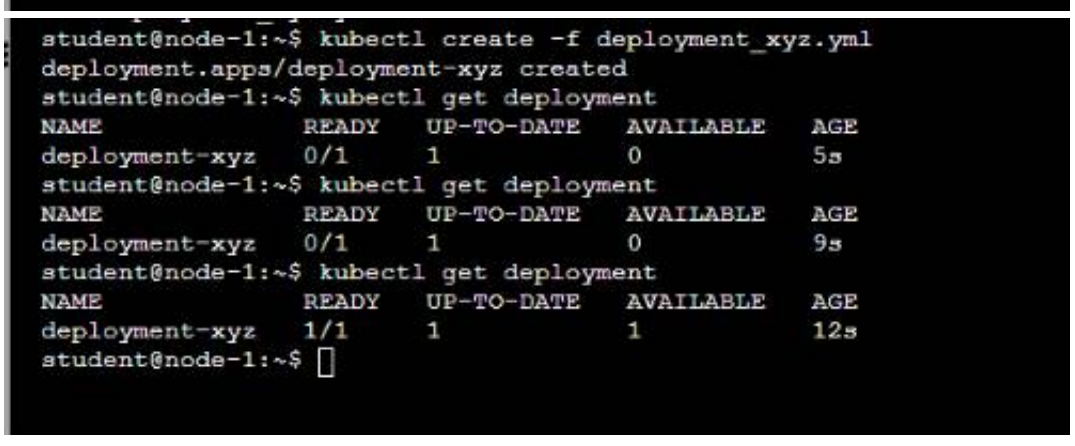
```
apiVersion: apps/v1
kind: Deployment
metadata:
  creationTimestamp: null
  labels:
    app: deployment-xyz
  name: deployment-xyz
spec:
  replicas: 1
  selector:
    matchLabels:
      app: deployment-xyz
  strategy: {}
  template:
    metadata:
      creationTimestamp: null
      labels:
      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

Readme | Web Terminal — THE LINUX FOUNDATION

```
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
```







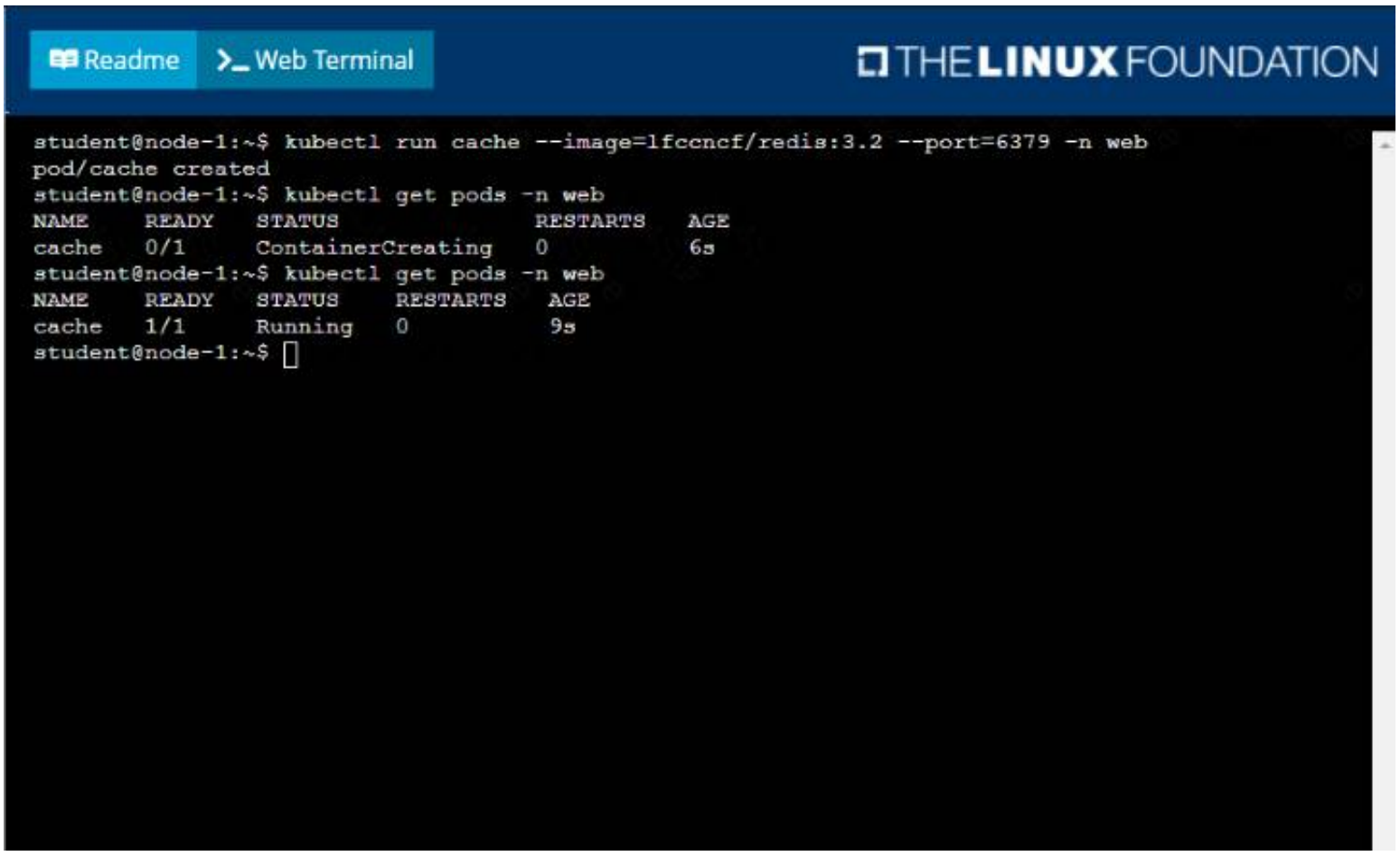
NEW QUESTION 6
Exhibit:

Context
Your application's namespace requires a specific service account to be used.
Task
Update the app-adeployment in theproductionnamespace to run as therestrictedserviceservice account. The service account has already been created.

A. Mastered
B. Not Mastered

Answer: A

Explanation:
Solution:



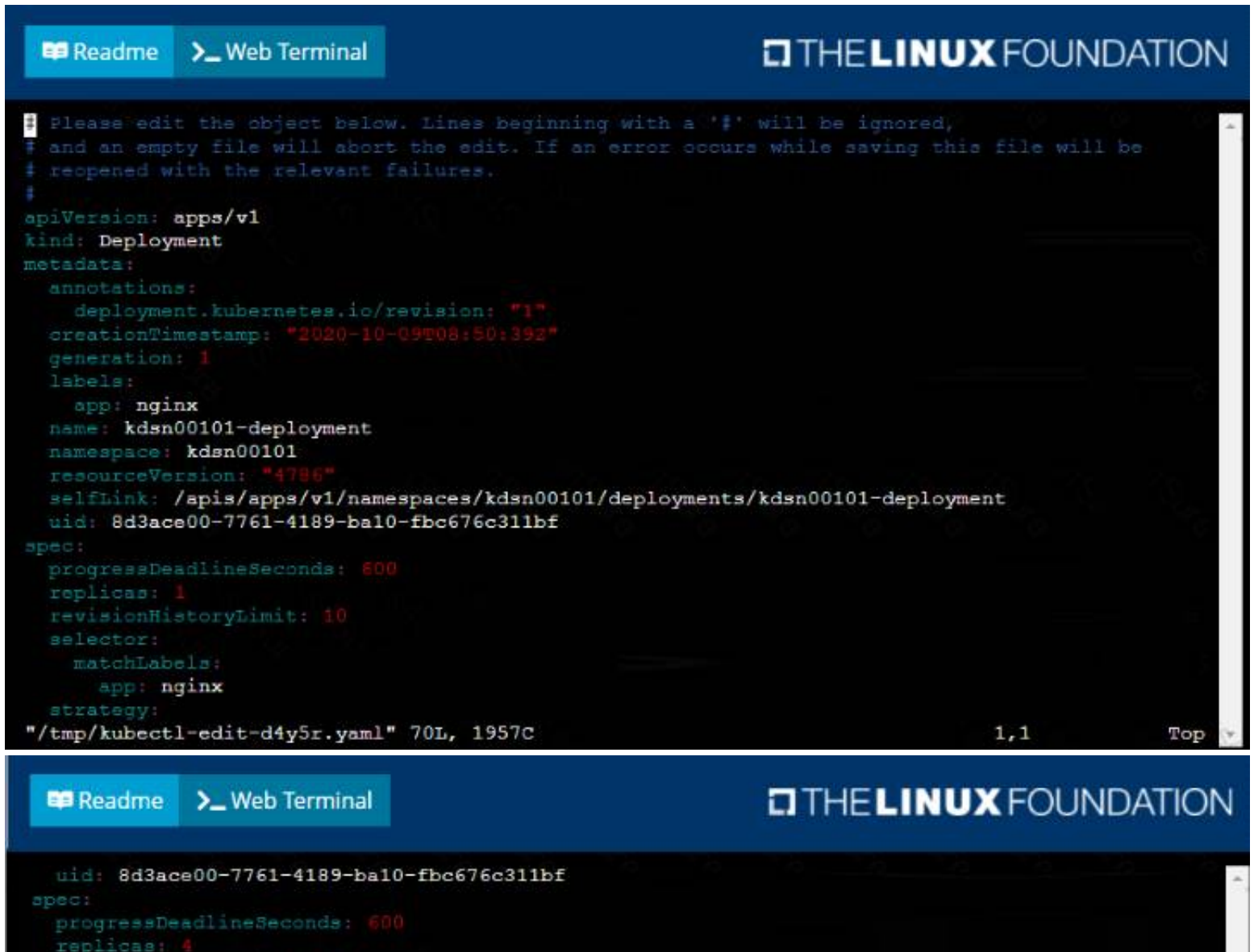
NEW QUESTION 7
Exhibit:

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:

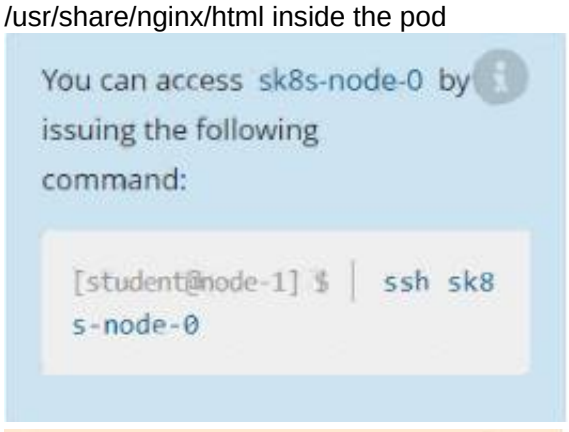



```
student@node-1:~$ kubectl edit deployment kdsn00101-deployment -n kdsn00101
deployment.apps/kdsn00101-deployment edited
student@node-1:~$ kubectl get deployment kdsn00101-deployment -n kdsn00101
NAME                   READY   UP-TO-DATE   AVAILABLE   AGE
kdsn00101-deployment   4/4     4         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

NEW QUESTION 8
Exhibit:

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.

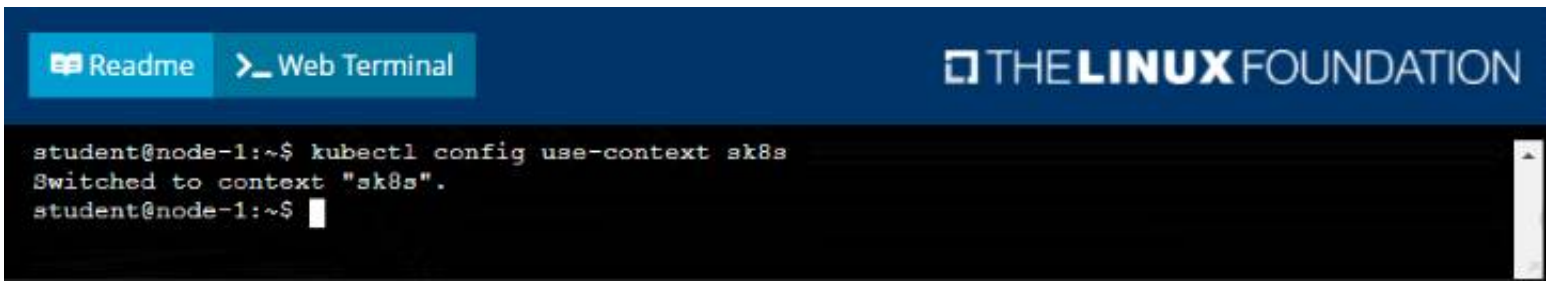
• Create a PefsissentVolumeClaim named task-pv-claim that requests a volume of at least100Mi and specifies an access mode of ReadWriteOnce
• Create a pod that uses the PersistentVolmeClaim as a volume with a label app: my-storage-app mounting the resulting volume to a mountPath /usr/share/nginx/html inside the pod

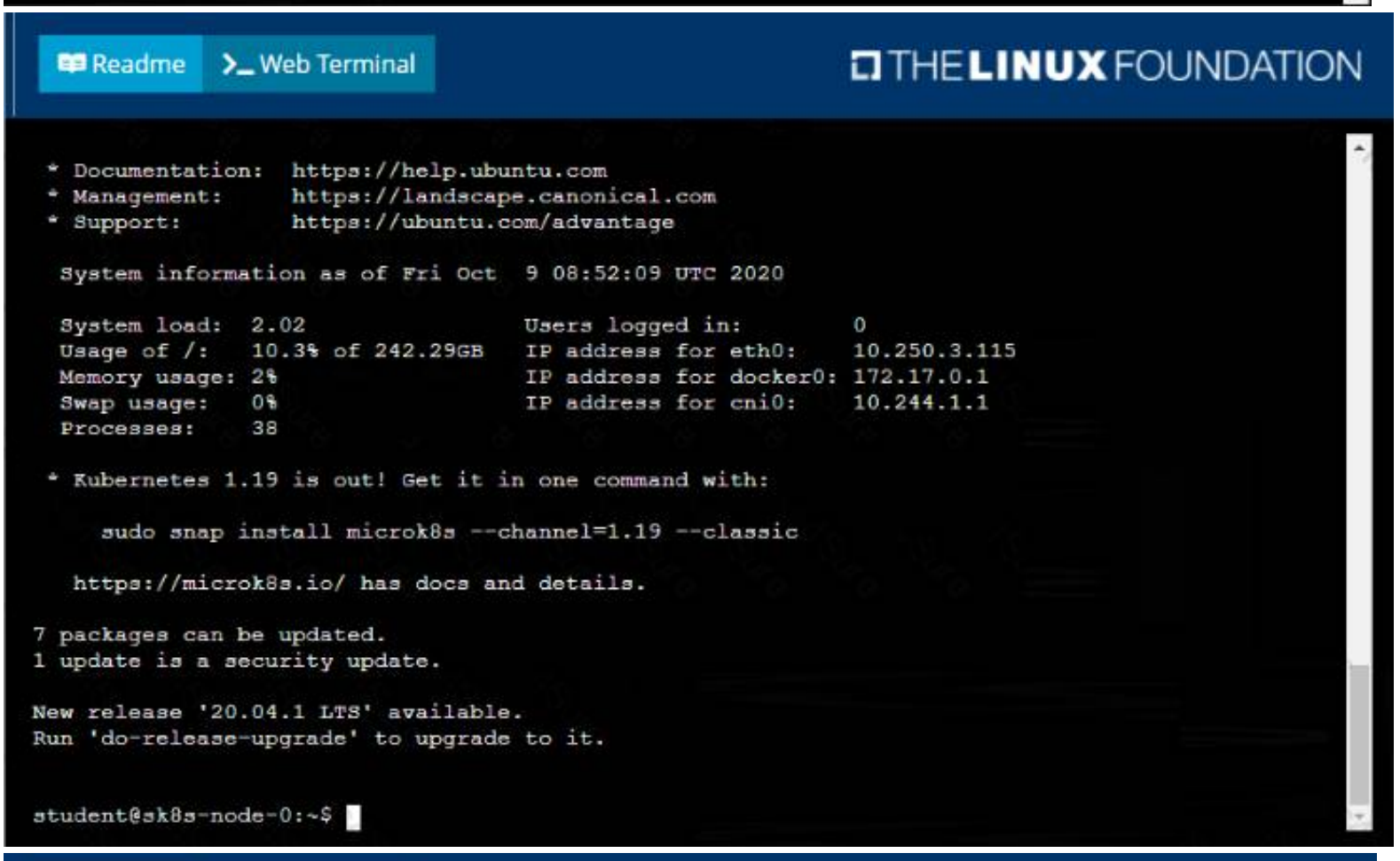


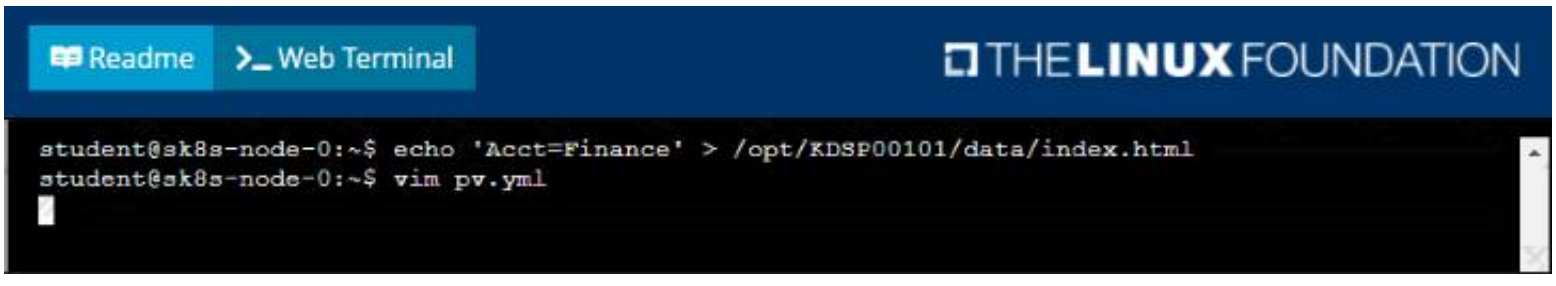
A. Mastered
B. Not Mastered

Answer: A

Explanation:
Solution:







Readme >_ Web Terminal THE LINUX FOUNDATION

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

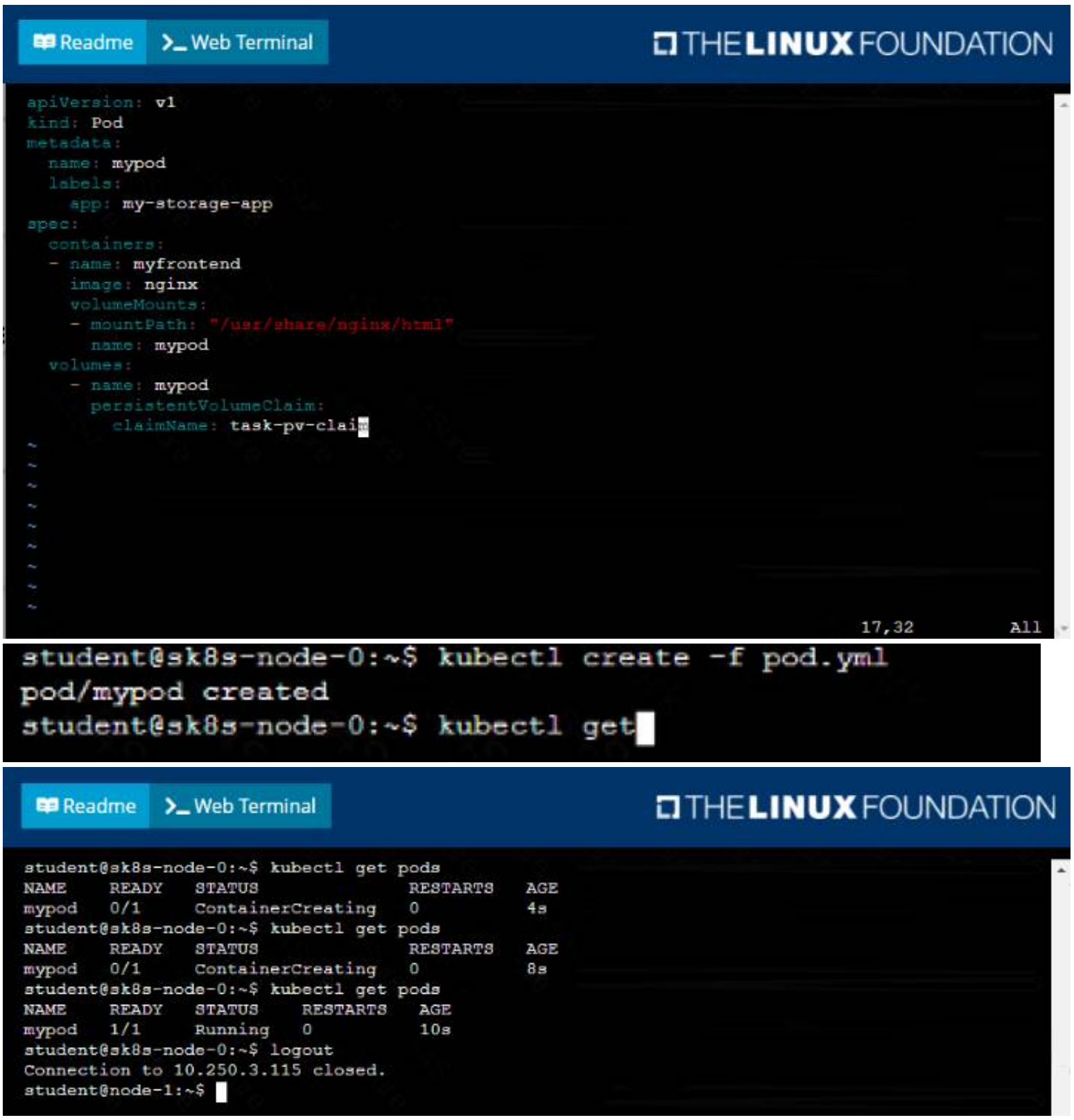
Readme >_ Web Terminal THE LINUX FOUNDATION

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

Readme >_ Web Terminal THE LINUX FOUNDATION

```
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
```



NEW QUESTION 10

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