Linux-Foundation

Exam Questions CKAD

Certified Kubernetes Application Developer (CKAD) Program

NEW QUESTION 1
Exhibit:

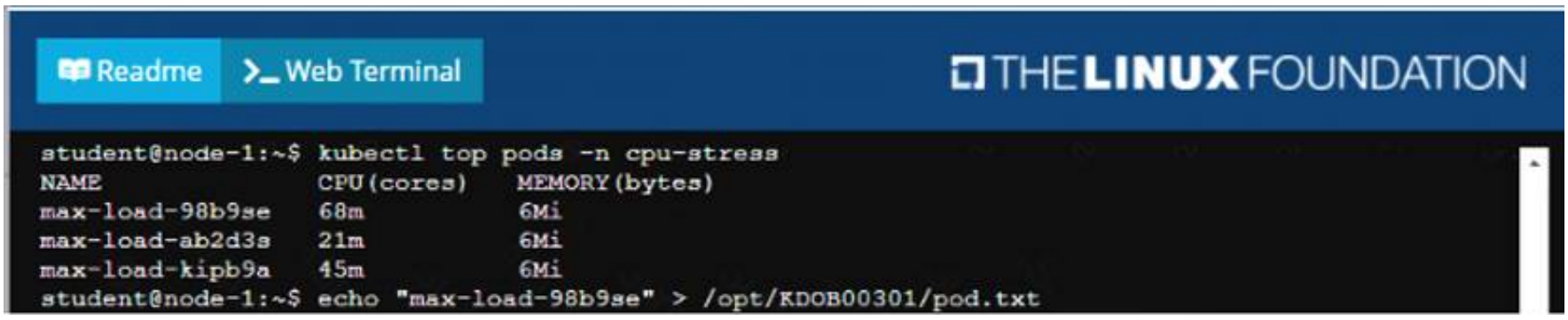
Context
It is always useful to look at the resources your applications are consuming in a cluster. Task
• From the pods running in namespacecpu-stress , write the name only of the pod that is consuming the most CPU to file /opt/KDOBG030l/pod.txt, which has already been created.

A. Mastered
B. Not Mastered

Answer: A

Explanation:

Solution:



NEW QUESTION 2
Exhibit:

Context
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:

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```
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: {}
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~
"nginx_secret.yml" 15L, 253C                                  1,1           All
```

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```
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
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-- INSERT --                                                  16,20         All
```

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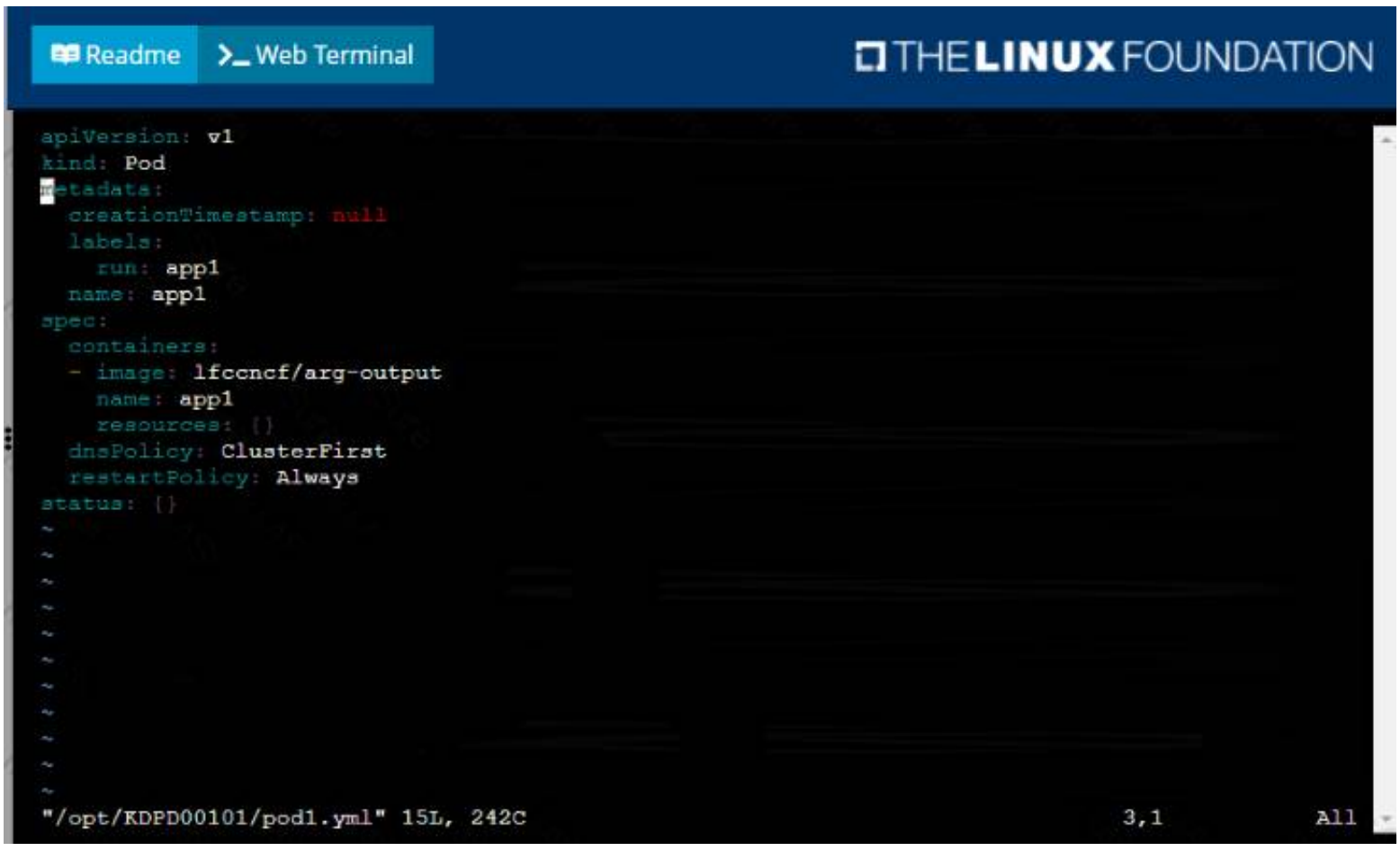
```
student@node-1:~$ kubectl get pods -n web
NAME    READY   STATUS    RESTARTS   AGE
cache   1/1     Running   0          9s
student@node-1:~$ kubectl create secret generic some-secret --from-literal=key1=value4
secret/some-secret created
student@node-1:~$ kubectl get secret
NAME                  TYPE                                  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
student@node-1:~$ kubectl create -f nginx_secret.yml
pod/nginx-secret created
student@node-1:~$ kubectl get pods
NAME           READY   STATUS              RESTARTS   AGE
liveness-http  1/1     Running             0          6h38m
nginx-101      1/1     Running             0          6h39m
nginx-secret   0/1     ContainerCreating   0          4s
poller         1/1     Running             0          6h39m
student@node-1:~$ kubectl get pods
NAME           READY   STATUS    RESTARTS   AGE
liveness-http  1/1     Running   0          6h38m
nginx-101      1/1     Running   0          6h39m
nginx-secret   1/1     Running   0          8s
poller         1/1     Running   0          6h39m
student@node-1:~$
```

NEW QUESTION 3
Context
Anytime a team needs to run a container on Kubernetes they will need to define a pod within which to run the container.
Task
Please complete the following:
• Create a YAML formatted pod manifest
/opt/KDPD00101/podl.yml to create a pod named app1 that runs a container named app1cont using image lfccncf/arg-output
with these command line arguments: -lines 56 -F
• Create the pod with the kubect1 command using the YAML file created in the previous step
• When the pod is running display summary data about the pod in JSON format using the kubect1 command and redirect the output to a file named
/opt/KDPD00101/out1.json
• All of the files you need to work with have been created, empty, for your convenience

A. Mastered
B. Not Mastered
Answer: A

Explanation:
Solution:



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```
apiVersion: v1
kind: Pod
metadata:
  labels:
    run: app1
  name: app1
spec:
  containers:
  - image: lfccncf/arg-output
    name: app1
    args: ["--lines","56","-F"]
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                                                              11,30         All
```

```
pod/app1 created
student@node-1:~$ kubectl get pods
NAME              READY   STATUS              RESTARTS   AGE
app1              0/1     ContainerCreating   0          5s
counter           1/1     Running             0          4m44
liveness-http     1/1     Running             0          6h50
nginx-101         1/1     Running             0          6h51
nginx-configmap   1/1     Running             0          6m21
nginx-secret      1/1     Running             0          11m
poller            1/1     Running             0          6h51
student@node-1:~$ kubectl get pods
NAME              READY   STATUS    RESTARTS   AGE
app1              1/1     Running   0          26s
counter           1/1     Running   0          5m5s
liveness-http     1/1     Running   0          6h50m
nginx-101         1/1     Running   0          6h51m
nginx-configmap   1/1     Running   0          6m42s
nginx-secret      1/1     Running   0          12m
poller            1/1     Running   0          6h51m
student@node-1:~$ kubectl delete pod app1
pod "app1" deleted
student@node-1:~$ vim /opt/KDPD00101/pod1.yml
```

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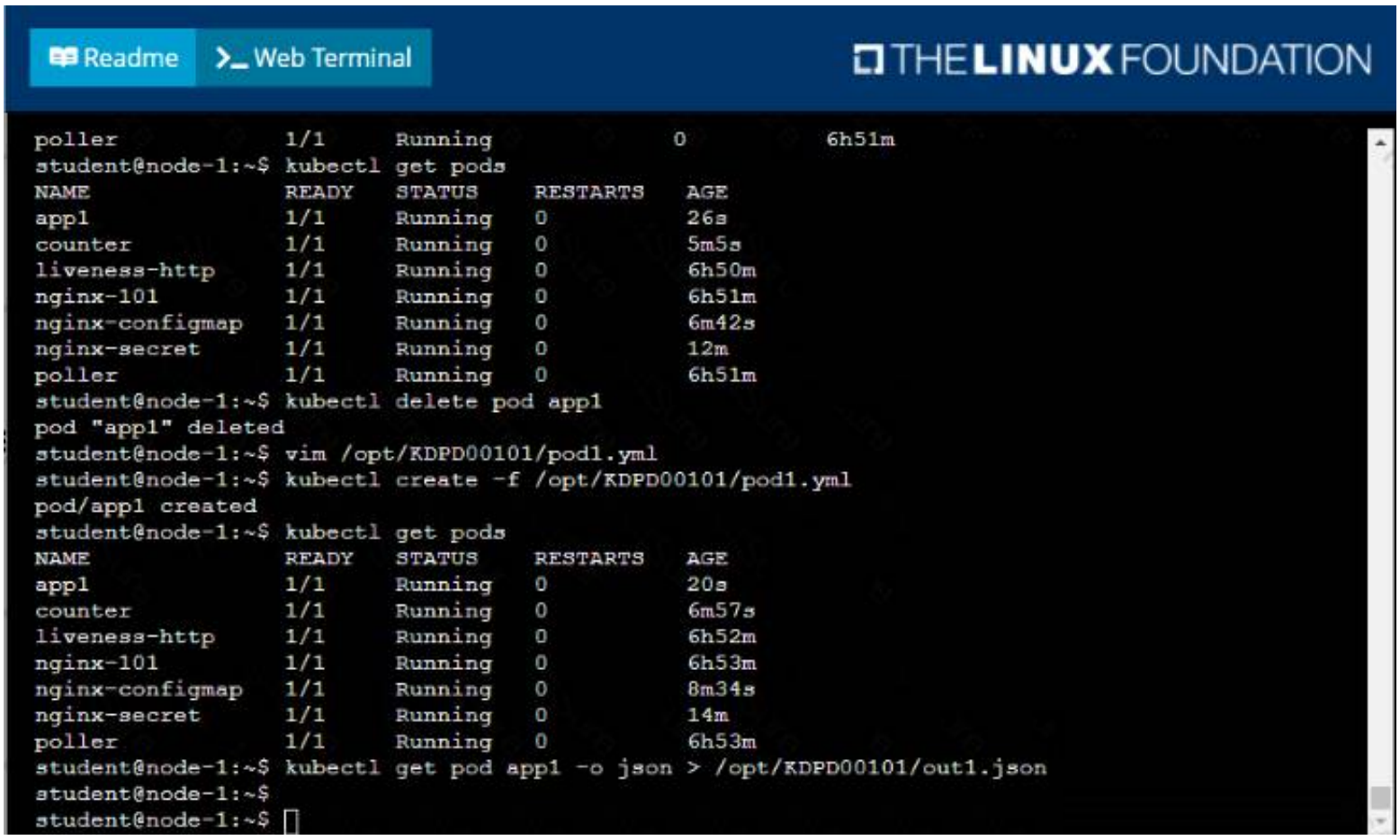
```
nginx-configmap   1/1     Running             0          6m2
nginx-secret      1/1     Running             0          11m
poller            1/1     Running             0          6h5
student@node-1:~$ kubectl get pods
NAME              READY   STATUS    RESTARTS   AGE
app1              1/1     Running   0          26s
counter           1/1     Running   0          5m5s
liveness-http     1/1     Running   0          6h50m
nginx-101         1/1     Running   0          6h51m
nginx-configmap   1/1     Running   0          6m42s
nginx-secret      1/1     Running   0          12m
poller            1/1     Running   0          6h51m
student@node-1:~$ kubectl delete pod app1
pod "app1" deleted
student@node-1:~$ vim /opt/KDPD00101/pod1.yml
student@node-1:~$ kubectl create -f /opt/KDPD00101/pod1.yml
pod/app1 created
student@node-1:~$ kubectl get pods
NAME              READY   STATUS    RESTARTS   AGE
app1              1/1     Running   0          20s
counter           1/1     Running   0          6m57s
liveness-http     1/1     Running   0          6h52m
nginx-101         1/1     Running   0          6h53m
nginx-configmap   1/1     Running   0          8m34s
nginx-secret      1/1     Running   0          14m
poller            1/1     Running   0          6h53m
student@node-1:~$ kubectl get pod app1 -o json >
```



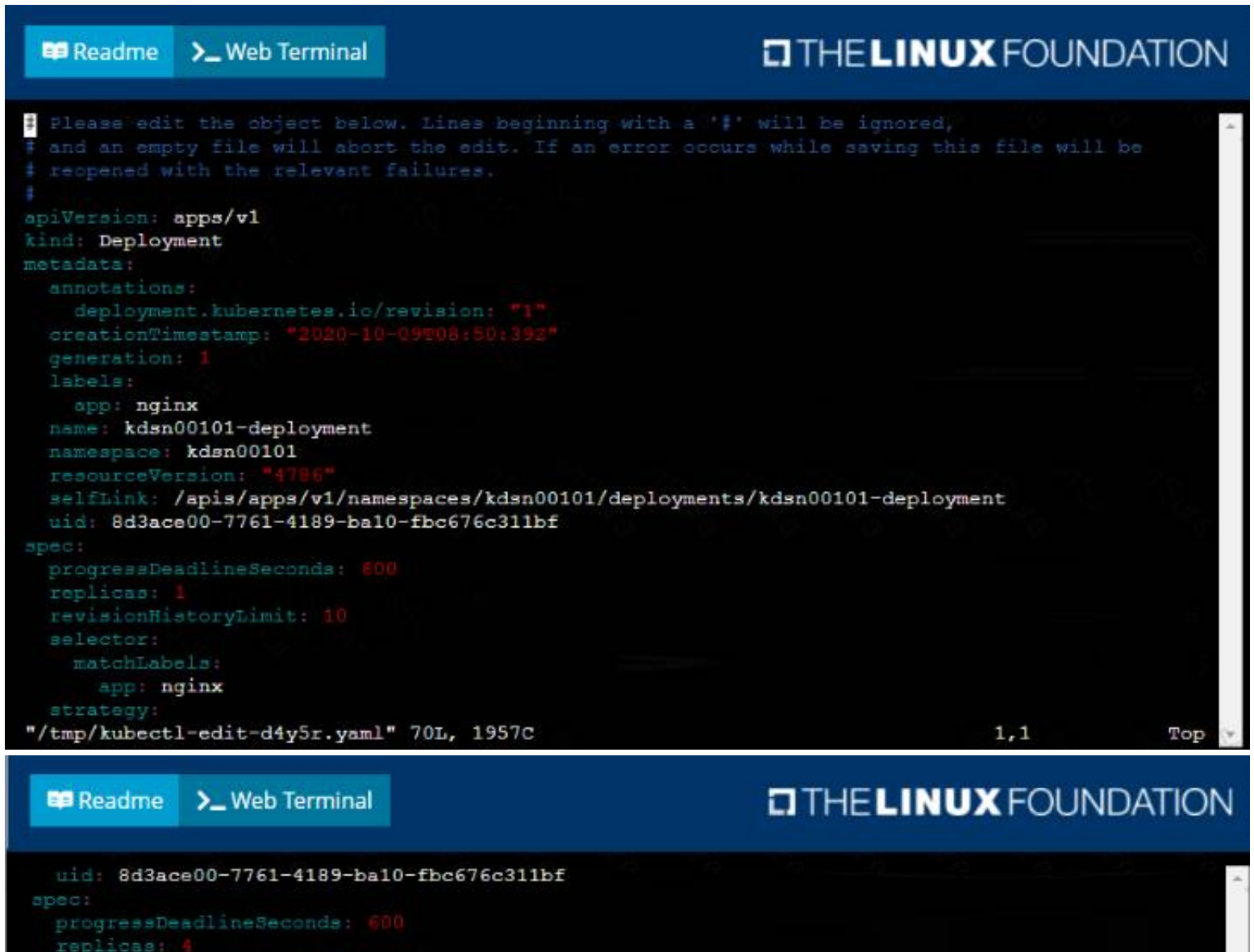
NEW QUESTION 4
Exhibit:

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

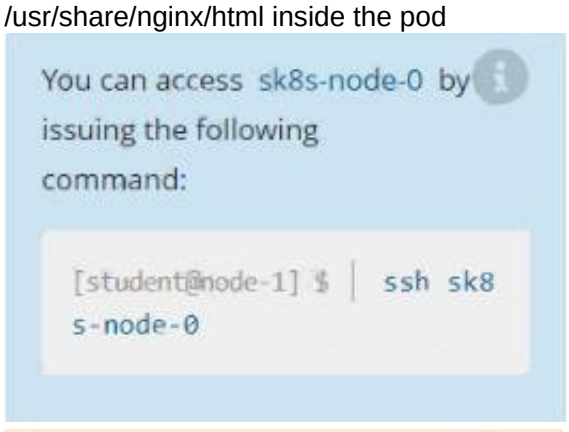
Explanation:
Solution:



NEW QUESTION 5
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.

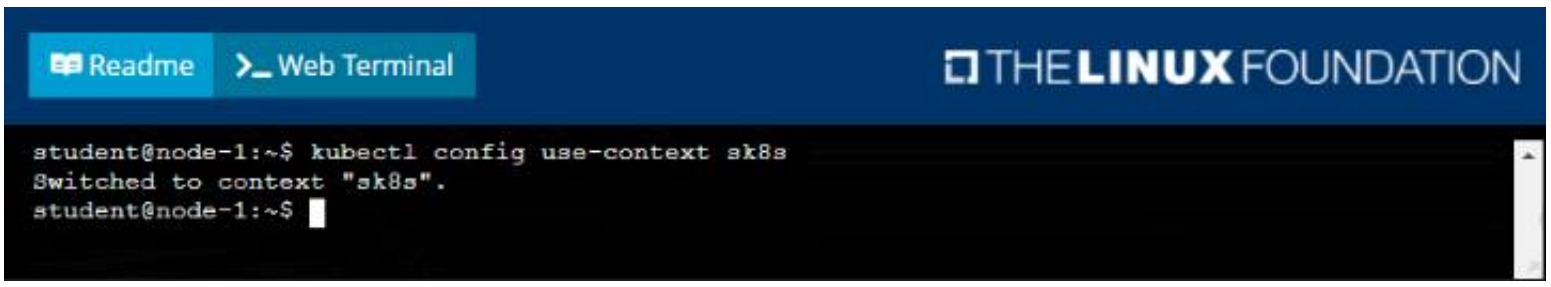
• Create a PefsissentVolumeClaim named task-pv-claim that requests a volume of at least100Mi and specifies an access mode of ReadWriteOnce
• Create a pod that uses the PersistentVolmeClaim as a volume with a label app: my-storage-app mounting the resulting volume to a mountPath /usr/share/nginx/html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

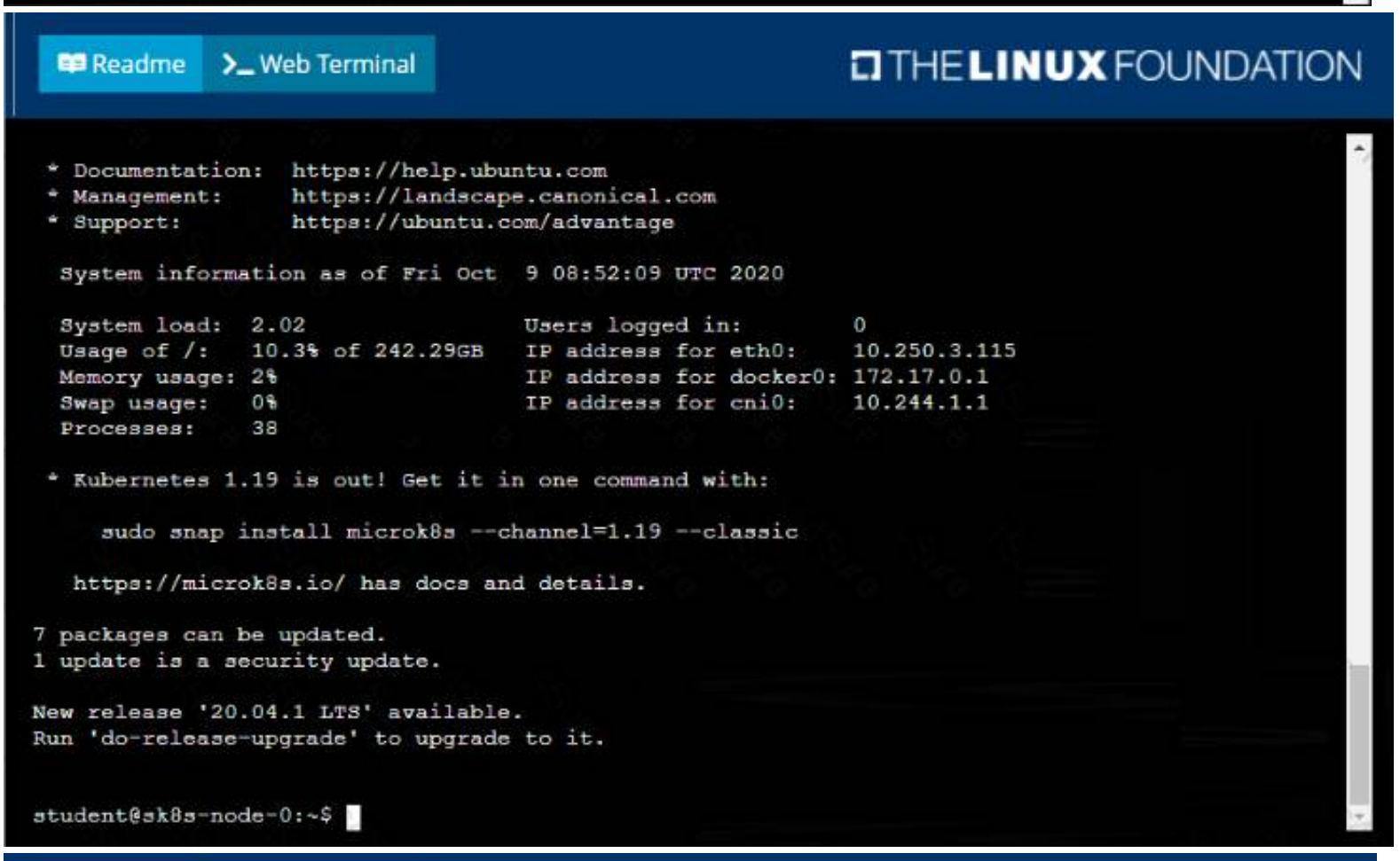


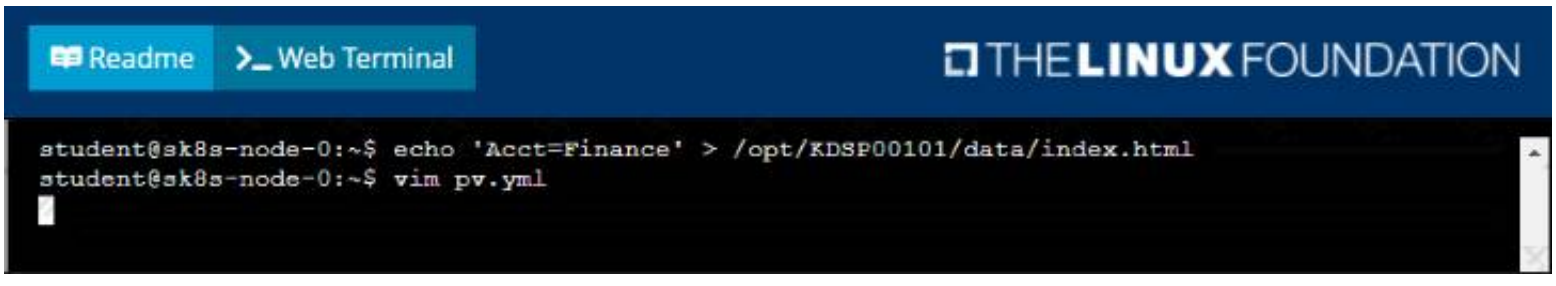
A. Mastered
B. Not Mastered

Answer: A

Explanation:
Solution:







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

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

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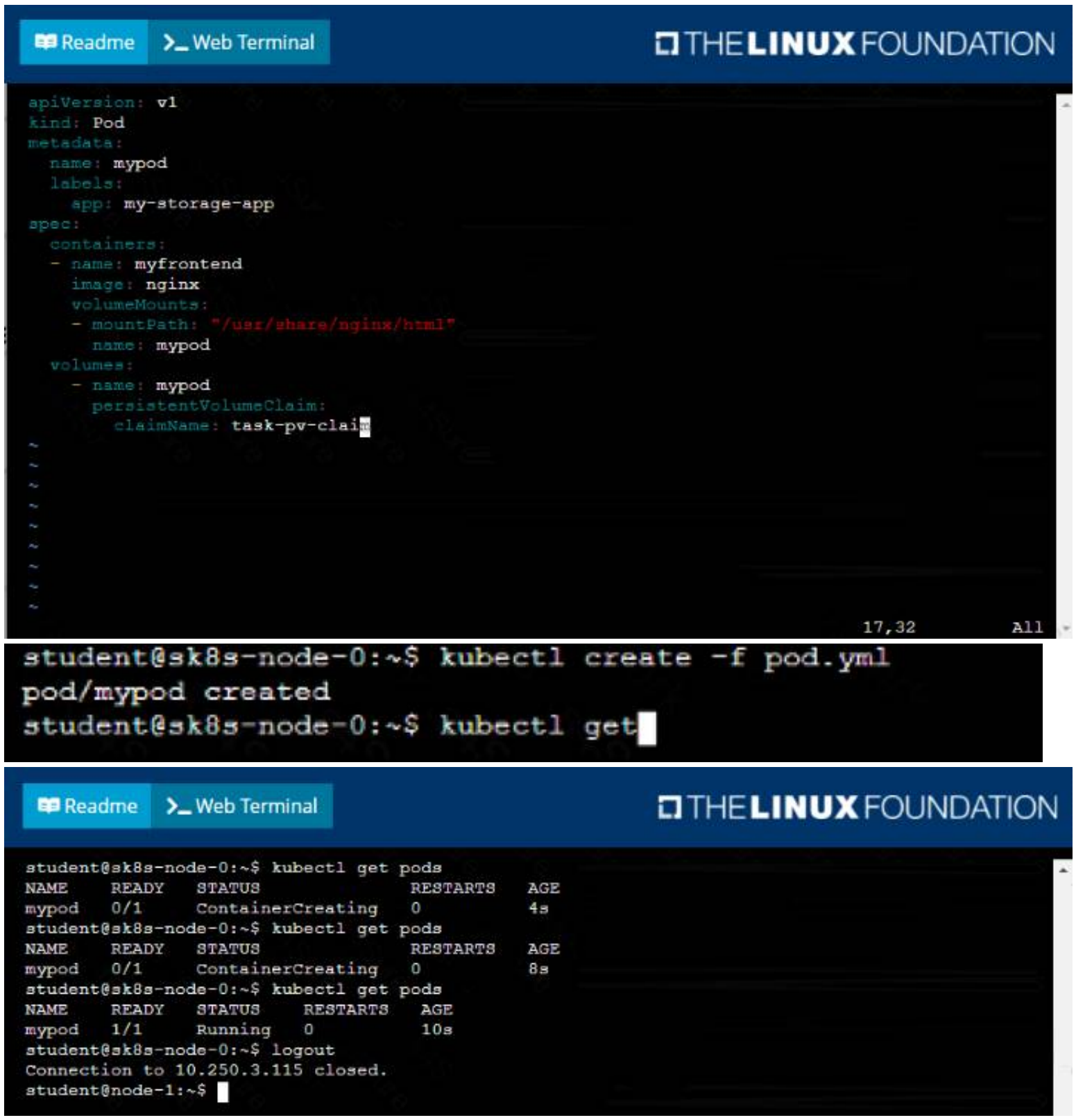
```
apiVersion: v1
kind: PersistentVolumeClaim
metadata:
  name: task-pv-claim
spec:
  accessModes:
  - ReadWriteOnce
  resources:
    requests:
      storage: 100Mi
  storageClassName: storage
~
```

```
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 6
Exhibit:

Context
You are tasked to create a ConfigMap and consume the ConfigMap in a pod using a volume mount. Task
Please complete the following:
• Create a ConfigMap namedanother-config containing the key/value pair: key4/value3
• starta pod named nginx-configmap containing a single container using the
nginx image, and mount the key you just created into the pod under directory /also/a/path

A. Mastered
B. Not Mastered

Answer: A

Explanation:
Solution:

```
student@node-1:~$ kubectl create configmap another-config --from-literal=key4=value3
configmap/another-config created
student@node-1:~$ kubectl get configmap
NAME             DATA   AGE
another-config   1      5s
student@node-1:~$ kubectl run nginx-configmap --image=nginx --dry-run=client -o yaml > ngin_conf
igmap.yml
student@node-1:~$ vim ngin_configmap.yml ^C
student@node-1:~$ mv ngin_configmap.yml nginx_configmap.yml
student@node-1:~$ vim nginx_co
```

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```
apiVersion: v1
kind: Pod
metadata:
  creationTimestamp: null
  labels:
    run: nginx-configmap
  name: nginx-configmap
spec:
  containers:
  - image: nginx
    name: nginx-configmap
    resources: {}
  dnsPolicy: ClusterFirst
  restartPolicy: Always
status: {}
~
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~
~
"nginx_configmap.yml" 15L, 262C                                1,1           All
```

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```
apiVersion: v1
kind: Pod
metadata:
  labels:
    run: nginx-configmap
  name: nginx-configmap
spec:
  containers:
  - image: nginx
    name: nginx-configmap
    volumeMounts:
    - name: myvol
      mountPath: /also/a/path
  volumes:
  - name: myvol
    configMap:
      name: another-config
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~
                                                               13,6          All
```
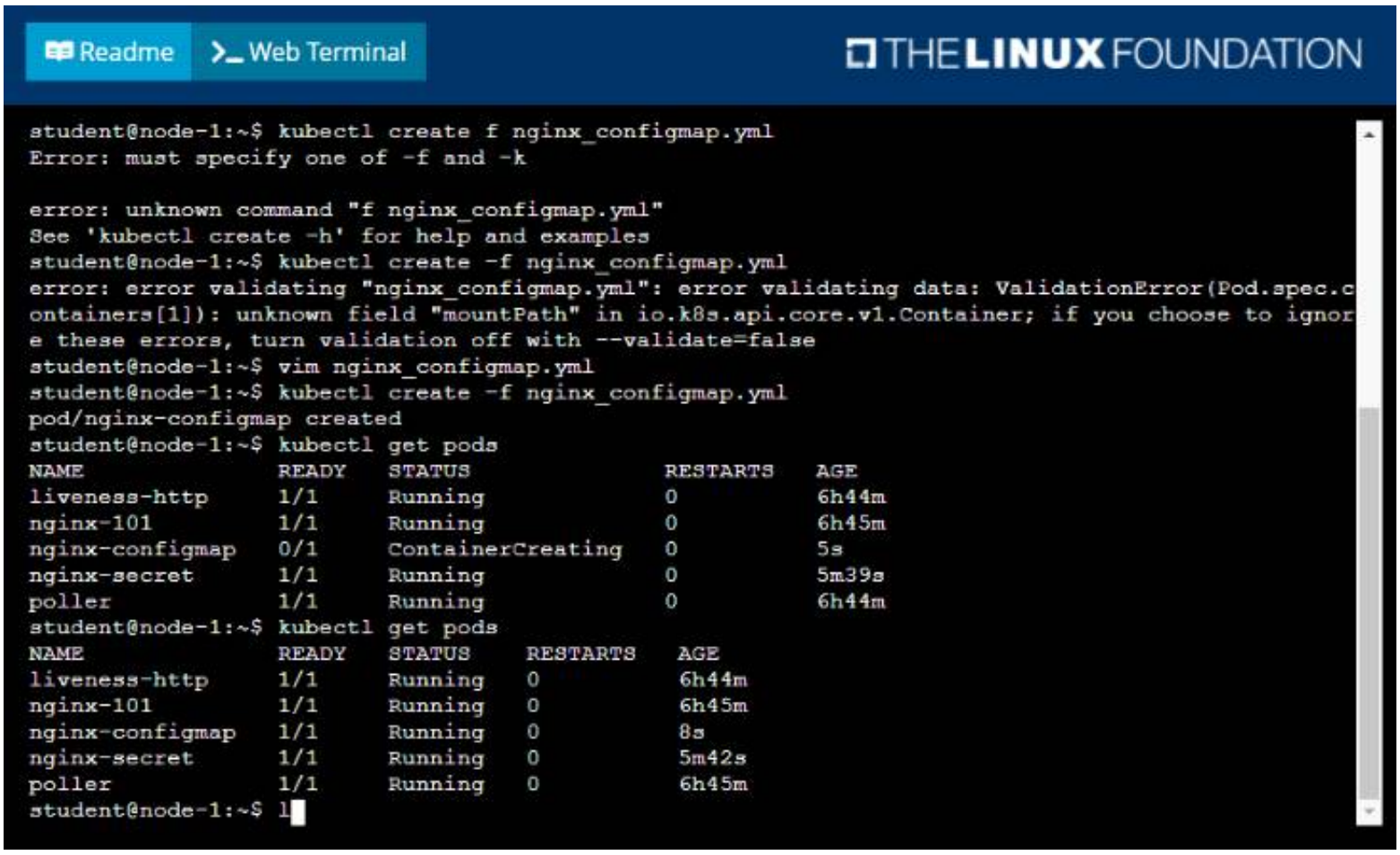

```
student@node-1:~$ kubectl create configmap another-config --from-literal=key4=value3
configmap/another-config created
student@node-1:~$ kubectl get configmap
NAME             DATA   AGE
another-config   1      5s
student@node-1:~$ kubectl run nginx-configmap --image=nginx --dry-run=client -o yaml > ngin_conf
igmap.yml
student@node-1:~$ vim ngin_configmap.yml ^C
student@node-1:~$ mv ngin_configmap.yml nginx_configmap.yml
student@node-1:~$ vim nginx_configmap.yml
student@node-1:~$
```



NEW QUESTION 10

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