Step 1 - Creating a configuration file for a Pod that has two labels

Environment: production

app: nginx

Create a YAML File adding the Labels

vi pod-label.yaml

```
apiVersion: v1
kind: Pod
metadata:
  name: label-demo
  labels:
    environment: production
    app: nginx
spec:
  containers:
  - name: nginx
    image: nginx
    ports:
    - containerPort: 80
```

kubectl create -f pod-label.yaml

```
SJCMAC17JJHD4:Downloads lcastro$ vi pod-label.yaml
SJCMAC17JJHD4:Downloads lcastro$ kubectl create -f pod-label.yaml
pod/label-demo created
```

kubectl get pods

kubectl get pods -o wide

```
SJCMAC17JJHD4:Downloads lcastro$ kubectl get pods
NAME         READY   STATUS    RESTARTS   AGE
label-demo   1/1     Running   0          3m24s
SJCMAC17JJHD4:Downloads lcastro$ kubectl get pods -o wide
NAME         READY   STATUS    RESTARTS   AGE     IP            NODE       NOMINATED NODE   READINESS GATES
label-demo   1/1     Running   0          3m27s   172.17.0.10   minikube   <none>           <none>
```

Validate pods with the labels defined above

kubectl get pods -l environment=production,app=nginx

```
SJCMAC17JJHD4:Downloads lcastro$ Kubectl get pods -l environment=production,app=nginx
NAME         READY   STATUS    RESTARTS   AGE
label-demo   1/1     Running   0          4m15s
```

Step 2 - Deploy a Pod in a specific Node based on a Label selector

Create a Label for Node Worker-2 of Disktype=ssd

kubectl label nodes worker-2 disktype=ssd

```
root@kubernetes-master:/home/ubuntu# kubectl get nodes
NAME                STATUS     ROLES    AGE   VERSION
ip-10-1-0-12        NotReady   <none>   22h   v1.18.1
kubernetes-master   Ready      master   23h   v1.18.1
worker-2            Ready      <none>   22h   v1.18.1
root@kubernetes-master:/home/ubuntu# kubectl get nodes -o wide
NAME                STATUS     ROLES    AGE   VERSION   INTERNAL-IP   EXTERNAL-IP   OS-IMAGE             KERNEL-VERSION     CONTAINER-RUNTIME
ip-10-1-0-12        NotReady   <none>   22h   v1.18.1   10.1.0.12     <none>        Ubuntu 18.04.3 LTS   4.15.0-1057-aws    docker://19.3.8
kubernetes-master   Ready      master   23h   v1.18.1   10.1.0.109    <none>        Ubuntu 18.04.3 LTS   4.15.0-1057-aws    docker://19.3.8
worker-2            Ready      <none>   22h   v1.18.1   10.1.0.85     <none>        Ubuntu 18.04.3 LTS   4.15.0-1057-aws    docker://19.3.8
root@kubernetes-master:/home/ubuntu#
```

kubectl get nodes --show-labels

```
root@kubernetes-master:/home/ubuntu# kubectl get nodes --show-labels
NAME                STATUS     ROLES    AGE   VERSION   LABELS
ip-10-1-0-12        NotReady   <none>   22h   v1.18.1   beta.kubernetes.io/arch=amd64,beta.kubernetes.io/os=linux,kubernetes.io/arch=amd64,kubernetes.io/hostname=ip-10-1-0-12,kubernetes.io/os=linux
kubernetes-master   Ready      master   23h   v1.18.1   beta.kubernetes.io/arch=amd64,beta.kubernetes.io/os=linux,kubernetes.io/arch=amd64,kubernetes.io/hostname=kubernetes-master,kubernetes.io/os=linux,node-role.kubernetes.io/master=
worker-2            Ready      <none>   22h   v1.18.1   beta.kubernetes.io/arch=amd64,beta.kubernetes.io/os=linux,disktype=ssd,kubernetes.io/arch=amd64,kubernetes.io/hostname=worker-2,kubernetes.io/os=linux
```

Create YAML File

vi pod-node-selector.yaml

```
apiVersion: v1
kind: Pod
metadata:
  name: nginx
  labels:
    env: test
spec:
  containers:
  - name: nginx
    image: nginx
    imagePullPolicy: IfNotPresent
  nodeSelector:
    disktype: ssd
```

kubectl create -f pod-node-selector.yaml

Step 3 - Validate Pod is running in designated Node

kubectl get pods -o wide

```
root@kubernetes-master:/home/ubuntu# kubectl create -f pod-node-selector.yaml
pod/nginx created
root@kubernetes-master:/home/ubuntu# kubectl get pods -o wide
NAME    READY   STATUS    RESTARTS   AGE   IP           NODE       NOMINATED NODE   READINESS GATES
nginx   1/1     Running   0          9s    10.244.2.5   worker-2   <none>           <none>
```

Step 4 - Delete Pod

```
kubectl delete pods nginx
```

```
Kubectl delete pods label-demo
```

```
root@kubernetes-master:/home/ubuntu# kubectl delete pod nginx
pod "nginx" deleted
```