# Lab Exercise 5- Using NodeSelector in Kubernetes

This exercise will guide you through creating a Kubernetes deployment with a NodeSelector to ensure that pods are scheduled on specific nodes based on labels.

**Step 1: Label the Nodes**

Identify the nodes in your cluster:

```
kubectl get nodes
```

Label a node:

Choose one of the nodes and label it. Replace <node-name> with the name of your chosen node and mylabel and myvalue with your desired label key and value:

```
kubectl label nodes <node-name> lbl=node1
```

Example:

```
kubectl label nodes node1 mylabel=myvalue
```

Verify the node label:

```
kubectl get nodes --show-labels
```

**Step 2: Create a Deployment with NodeSelector**

Create a YAML file for the deployment:

Create a file named **nginx-deployment.yaml** with the following content:

```
apiVersion: v1
kind: Pod
metadata:
  name: example-pod
spec:
  containers:
  - name: nginx
    image: nginx
  nodeSelector:
    lbl: node1
```

Apply the deployment:

```
kubectl apply -f nginx-deployment.yaml
```

Verify that the pods are scheduled on the labeled node:

```
kubectl get pods -o wide
```

Check the NODE column to ensure that the pods are scheduled on the node with the label mylabel=myvalue.

**Step 3: Clean Up**

Delete the deployment:

```
kubectl delete -f nginx-deployment.yaml
```

Remove the label from the node (optional):

```
kubectl label nodes <node-name> mylabel-
```

Example:

```
kubectl label nodes node1 mylabel-
```