Lab 14: Taints and Tolerations

Training Goals Covered:

- Apply a Taint to a specific Minikube node.
- Observe a Pod being "repelled" by a Taint.
- Create a Pod with a Toleration to "bypass" the Taint.

Steps:

1. Add a taint to the node minikube-m02.

```shell
kubectl taint nodes minikube-m02 department=finops:NoSchedule
```

ℹ️NoSchedule → This means no new Pods will be placed here unless they have a matching toleration.

2. Deploy a pod using nodeSelector to define the node (minikube-m02) where the pod should be deployed.

```shell
apiVersion: v1
kind: Pod
metadata:
  name: pod
spec:
  containers:
  - name: busybox
    image: busybox
    command: ["sh", "-c", "sleep 3600"]
  nodeSelector:
    kubernetes.io/hostname: minikube-m02
```

Shell

```
k describe pod pod

 Warning  FailedScheduling  14s   default-scheduler  0/2 nodes are available: 1
node(s) didn't match Pod's node affinity/selector, 1 node(s) had untolerated
taint {department: finops}. no new claims to deallocate, preemption: 0/2 nodes
are available: 2 Preemption is not helpful for scheduling.
```

3. Observe what happens to the pod.

Shell

```
k get po
NAME   READY   STATUS    RESTARTS   AGE
pod    0/1     Pending   0          75s
```

4. Add a Toleration to the pod.

Shell

```
apiVersion: v1
kind: Pod
metadata:
  name: pod
spec:
  containers:
  - name: busybox
    image: busybox
    command: ["sh", "-c", "sleep 3600"]
  tolerations:
  - key: "department"
    operator: "Equal"
    value: "finops"
    effect: "NoSchedule"
  nodeSelector:
    kubernetes.io/hostname: minikube-m02
```

5. Observe again what happened to the pod.

→ The pod is deployed on node minikube-02.

6. Delete the resources.