LAB 2

1-How many Namespaces exist on the system?

```
root@manar-VirtualBox:/home/manar/linux/kuber/lab2# kubectl get namespaces
NAME                   STATUS   AGE
default                Active   13d
kube-node-lease        Active   13d
kube-public            Active   13d
kube-system            Active   13d
local-path-storage     Active   13d
```

2- How many pods exist in the kube-system namespace?

```
root@manar-VirtualBox:/home/manar/linux/kuber/lab2# kubectl get pods -n kube-system
NAME                                          READY   STATUS    RESTARTS         AGE
coredns-668d6bf9bc-8wbxx                      1/1     Running   6 (4d23h ago)    13d
coredns-668d6bf9bc-t2gst                      1/1     Running   6 (4d23h ago)    13d
etcd-kind-control-plane                       1/1     Running   6 (4d23h ago)    13d
kindnet-dhlp2                                 1/1     Running   6 (4d23h ago)    13d
kube-apiserver-kind-control-plane             1/1     Running   6 (4d23h ago)    13d
kube-controller-manager-kind-control-plane    1/1     Running   16 (4d23h ago)   13d
kube-proxy-hkctm                              1/1     Running   6 (4d23h ago)    13d
kube-scheduler-kind-control-plane             1/1     Running   16               13d
root@manar-VirtualBox:/home/manar/linux/kuber/lab2#
```

3- Create a deployment with Name:

Name: beta

Image: redis

Replicas: 2

Namespace: finance

Resources Requests:

CPU: .5 vcpu

Mem: 1G Resources

Limits: CPU: 1 vcpu

Mem: 2G

```yaml
apiVersion: apps/v1
kind: Deployment
#metadata for deployment (name ,namespace)
metadata:
  name: beta
  namespace: finance
  #how deployment will connect with pods (match with pods have label app:beta)
spec:
  replicas: 2
  selector:
    matchLabels:
      app: beta
    #template for pod
  template:
    metadata:
      labels:
        app: beta
     # spec for pod
    spec:
      containers:
      - name: redis
        image: redis
        # limit  range
        resources:
          requests:
            memory: "1Gi"
```

```yaml
        image: redis
        # limit  range
        resources:
          requests:
            memory: "1Gi"
            cpu: "500m"
            #max range
          limits:
            memory: "2Gi"
            cpu: "1"
```

```
PROBLEMS 2  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS                                  sudo -
kube-apiserver-kind-control-plane            1/1     Running   6 (4d23h ago)    13d
kube-controller-manager-kind-control-plane   1/1     Running   16 (4d23h ago)   13d
kube-proxy-hkctm                             1/1     Running   6 (4d23h ago)    13d
kube-scheduler-kind-control-plane            1/1     Running   16               13d
root@manar-VirtualBox:/home/manar/linux/kuber/lab2# kubectl create finance
error: Unexpected args: [finance]
See 'kubectl create -h' for help and examples
root@manar-VirtualBox:/home/manar/linux/kuber/lab2# kubectl create namespace finance
namespace/finance created
root@manar-VirtualBox:/home/manar/linux/kuber/lab2# kubectl apply -f deployment.yml
deployment.apps/beta created
root@manar-VirtualBox:/home/manar/linux/kuber/lab2#
```

4- How many Nodes exist on the system?

```
root@manar-VirtualBox:/home/manar/linux/kuber/lab2# kubectl get nodes
NAME                 STATUS   ROLES           AGE   VERSION
kind-control-plane   Ready    control-plane   13d   v1.32.3
```

5- Do you see any taints on master?

```
root@manar-VirtualBox:/home/manar/linux/kuber/lab2# kubectl get nodes
NAME                 STATUS   ROLES           AGE   VERSION
kind-control-plane   Ready    control-plane   13d   v1.32.3
```

```
^[[201~root@manar-VirtualBox:/home/manar/linux/kuber/lab2# kubectl describe node kind-control-planeTaints:Taints:
Taints:             <none>
```

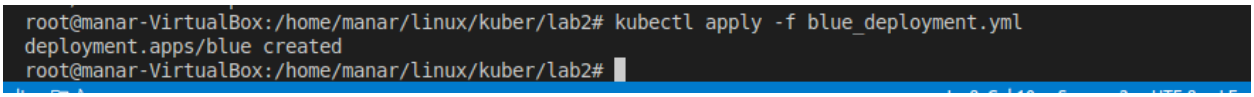
6- Apply a label color=blue to the master node

```
root@manar-VirtualBox:/home/manar/linux/kuber/lab2# kubectl label node kind-control-plane color=blue
node/kind-control-plane labeled
```

7- Create a new deployment
named blue with
the nginx image
and 3 replicas

Set Node Affinity to the deployment to place the pods on master only
NodeAffinity: requiredDuringSchedulingIgnoredDuringExecution
Key: color
values: blu

```yaml
apiVersion: apps/v1
kind: Deployment
metadata:
  name: blue
spec:
  replicas: 3
  selector:
    matchLabels:
      app: blue
  template:
    metadata:
      labels:
        app: blue
    spec:
      affinity:
        nodeAffinity:
          requiredDuringSchedulingIgnoredDuringExecution:
            nodeSelectorTerms:
            - matchExpressions:
              - key: color
                operator: In
                values:
                - blue
      containers:    One or more containers do not have re
      - name: nginx
        image: nginx
```


root@manar-VirtualBox:/home/manar/linux/kuber/lab2# kubectl apply -f blue_deployment.yml
deployment.apps/blue created
root@manar-VirtualBox:/home/manar/linux/kuber/lab2#