**KUBERNETES ASSIGNMENT 1**

**Exercise 1: Deploy an Nginx pod**

**Step 1: Start a Kubernetes cluster (Minikube or other cluster):**

minikube start

**Step 2: Create an Nginx pod:**

kubectl run nginx-pod --image=nginx --restart=Never

**Step 3: Verify the pod is running:**

kubectl get pods

**Step 4: Check pod details:**

kubectl describe pod nginx-pod

**Step 5: Delete the pod:**

kubectl delete pod nginx-pod

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**Exercise – 2: Create an Nginx Deployment and scale it.**

**Step 1: Create a deployment with Nginx:**

kubectl create deployment nginx-deployment --image=nginx

**Step 2: Check the deployment:**

kubectl get deployments

**Step 3: Scale the deployment to 3 replicas:**

kubectl scale deployment nginx-deployment --replicas=3

**Step 4:Check the running pods:**

kubectl get pods -o wide

**Step 5: Delete the deployment:**

kubectl delete deployment nginx-deployment

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**KUBERNETES ASSIGNMENT 2**

**Exercise 1: Create a Pod using a YAML Manifest**

**Step 1: Create a YAML file (nginx-pod.yaml):**

**Step 2: Apply the YAML file:**

kubectl apply -f nginx-pod.yaml

**Step 3: Check if the pod is running:**

kubectl get pods

**Step 4: Delete the pod using YAML:**

kubectl delete -f nginx-pod.yaml

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**Exercise 2: Create and Use a ConfigMap**

**Step 1: Create a ConfigMap:**

kubectl create configmap app-config --from-literal=APP\_ENV=production

**Step 2: Verify ConfigMap:**

kubectl get configmaps app-config -o yaml

**Step 3: Create a pod that uses the ConfigMap (nginx-config-pod.yaml):**

**Step 4: Deploy the pod:**

kubectl apply -f nginx-config-pod.yaml

**Step 5: Check if the pod is running:**

kubectl get pods

**Step 6: Delete the pod and ConfigMap:**

kubectl delete -f nginx-config-pod.yaml

kubectl delete configmap app-config

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**KUBERNETES ASSIGNMENT 3**

**Exercise 1: Create and Use a Secret**

**Step 1: Create a Secret for database credentials:**

kubectl create secret generic db-secret --from-literal=DB\_USER=admin --from-literal=DB\_PASS=password123

**Step 2: Verify the Secret:**

kubectl get secrets

kubectl describe secret db-secret

**Step 3: Create a Pod that uses the Secret (nginx-secret-pod.yaml):**

**Step 4:** **Deploy the pod:**

kubectl apply -f nginx-secret-pod.yaml

**Step 5: Check the pod and logs:**

kubectl get pods

kubectl logs nginx-secret-pod

**Step 6: Delete the pod and Secret:**

kubectl delete -f nginx-secret-pod.yaml

kubectl delete secret db-secret

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**Exercise 2: Create and Expose a Service**

**Step 1: Create a deployment:**

kubectl create deployment webapp --image=nginx

**Step 2: Expose the deployment using a service:**

kubectl expose deployment webapp --type=NodePort --port=80

**Step 3: Get service details:**

kubectl get svc webapp

**Step 4: Access the service (Minikube users):**

minikube service webapp --url

**Step 5: Delete the service and deployment:**

kubectl delete svc webapp

kubectl delete deployment webapp

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