A close up of a logo

Description automatically generated

**Lesson 7 Demo 1**

**Understanding the Working of Persistent Volumes**



Steps to be followed:

1. Creating a basic persistent volume
2. Creating a persistent volume claim
3. Creating a pod using persistent volume claim

**Step 1: Creating a basic persistent volume**

* 1. Create a persistent volume configuration file using the ***vi simple-persistence-vol.yaml*** command and add the following code to it:

***apiVersion: v1***

***kind: PersistentVolume***

***metadata:***

***name: task-pv-volume***

***labels:***

***type: local***

***spec:***

***storageClassName: manual***

***capacity:***

***storage: 10Gi***

***accessModes:***

***- ReadWriteOnce***

***hostPath:***

***path: "/mnt/data"***

* 1. Create the resource using the following command:

***kubectl apply -f simple-persistence-vol.yaml***



* 1. View details of the persistence volume using the following command:

***kubectl get pv task-pv-volume***



**Step 2: Creating a persistent volume claim**

1. Create the configuration file using the ***vi simple-persistence-vol-claim.yaml*** command and add the following code to the file:

***apiVersion: v1***

***kind: PersistentVolumeClaim***

***metadata:***

***name: task-pv-claim***

***spec:***

***storageClassName: manual***

***accessModes:***

***- ReadWriteOnce***

***resources:***

***requests:***

***storage: 3Gi***

1. Create the resource using the following command:

***kubectl apply -f simple-persistence-vol-claim.yaml***



1. View the details of the volume using the following commands:

***kubectl get pv task-pv-volume***



***kubectl get pvc task-pv-claim***



**Step 3: Creating a pod to use the persistent volume claim**

1. Create a pod configuration file using the ***vi persistent-volume-pod.yaml*** command and add the following code to it:

***apiVersion: v1***

***kind: Pod***

***metadata:***

***name: task-pv-pod***

***spec:***

***volumes:***

***- name: task-pv-storage***

***persistentVolumeClaim:***

***claimName: task-pv-claim***

***containers:***

***- name: task-pv-container***

***image: nginx***

***ports:***

***- containerPort: 80***

***name: "http-server"***

***volumeMounts:***

***- mountPath: "/usr/share/nginx/html"***

***name: task-pv-storage***

1. Create the resource using the below command:

***kubectl apply -f persistent-volume-pod.yaml***



1. View the pod details using the following command:

**kubectl get pod task-pv-pod**

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1. Open a shell in the container running in the pod using the following command:

***kubectl exec -it task-pv-pod -- /bin/bash***

