📄 Task 2: Provision and Mount Storage

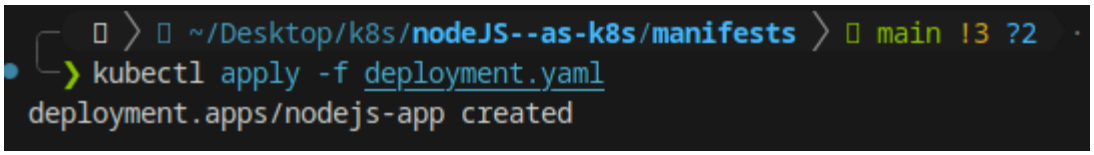
Objective: Provision a PersistentVolumeClaim (PVC), mount it inside the container, and verify persistent storage.

🛠️ Steps Taken

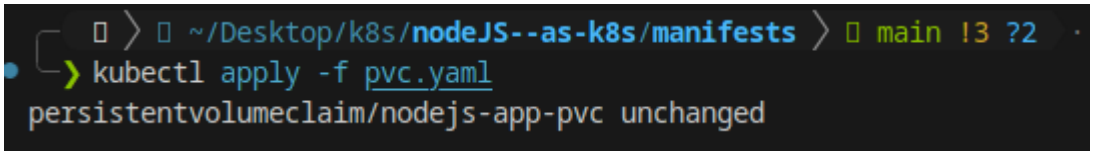
1. Deploy new deployment with volume mounted
2. Defined a PVC in `pvc.yaml` requesting 1Gi of storage.
3. Applied the PVC manifest.
4. Verified the PVC reached **Bound** status.
5. Updated the Deployment to mount the volume inside the container at `/app/data`.
6. Verified volume mounting via `kubectl describe pod`.
7. Wrote a file inside the mounted volume using `kubectl exec`, then read it to verify persistence.

📸 Screenshots

- **Screenshot 1:** `kubectl apply -f deployment.yaml`
  (Deploy new deployment with volume mounted)

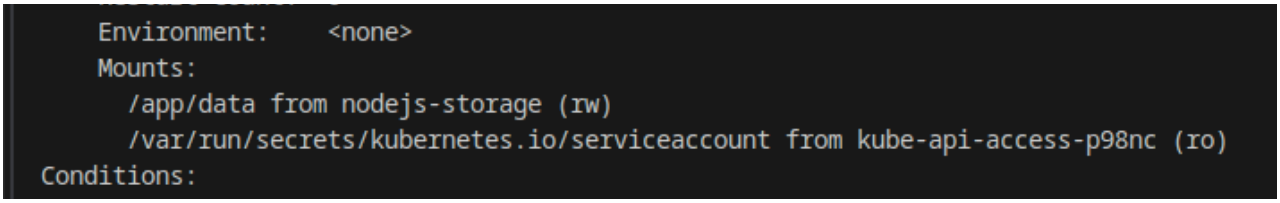


- **Screenshot 2:** `kubectl apply -f pvc.yaml`
  (PVC creation)



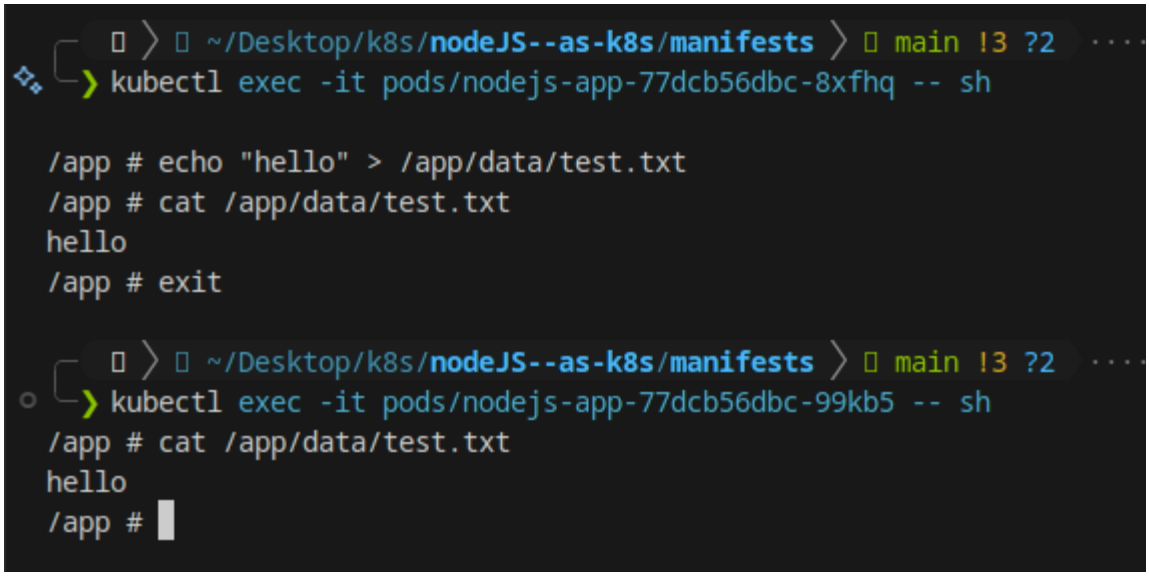
- **Screenshot 3:** `kubectl get pvc`
  (Shows that PVC is in Bound state)

- **Screenshot 4:** `kubectl describe pod <pod-name>`
  (Verifies volume is mounted at `/app/data`)

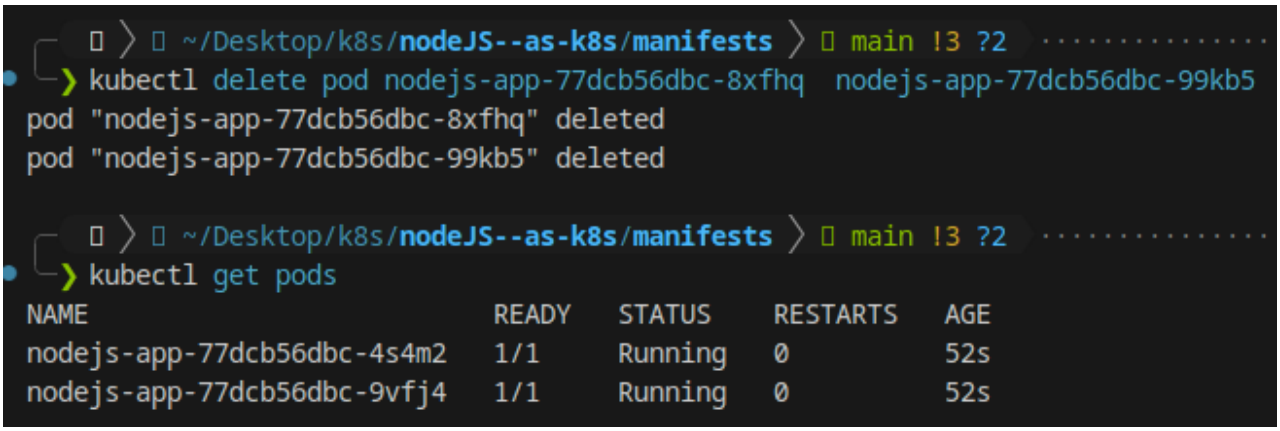


- **Screenshot 5:** `kubectl exec` and file operations
  Commands:

```
kubectl exec -it <pod-name> -- sh
echo "hello" > /app/data/test.txt
cat /app/data/test.txt
```



- **Screenshot 6 (optional):** Recreate Pod and check file again
  (Proves data persisted across Pod restarts)



✅ Outcome

The application successfully mounted the persistent volume. Files written to the volume remained intact even after restarting the Pod, proving that persistent storage works correctly.