Headless Services in Kubernetes

Headless Service:

- A Headless Service in Kubernetes is a service that does not have a cluster IP assigned to it.
- Its purpose is to directly expose individual pods rather than load balancing across them.
- It allows clients to discover and connect to each pod individually using DNS.

Headless Service Creation:

- To create a headless service, you can define a Kubernetes Service manifest (YAML file) and set the clusterIP field to "None".
- This configuration tells Kubernetes that the service should be treated as headless, and it won't assign a cluster IP to the service.

VolumeClaimTemplates in StatefulSet:

- By adding the volumeClaimTemplates field to the YAML file of a StatefulSet, each pod replica of the StatefulSet can automatically create a Persistent Volume Claim (PVC).
- When the PVC is created, Kubernetes provisions a corresponding Persistent Volume (PV) based on the specified StorageClass.
- The PV and PVC are then bound together, providing persistent storage for each replica of the StatefulSet.