Kubernetes Advanced Assessment

1.Create an helm chart for mysql deployment. we are frequently updating the mysql image version using values.yml do the same

Creating heml charts for mysql

```
apiVersion: v2
name: mysql
description: A Helm chart for mysql
type: application
version: 0.1.0
appVersion: "1.1.0"
```

values.yaml

```
image: mysql:5.6
```

Deploying the helm chart

```
root@ansible:~/new/kubernetes-advanced-assessment/mysql# helm install mysql .
NAME: mysql
LAST DEPLOYED: Sun Jan 15 09:09:28 2023
NAMESPACE: default
STATUS: deployed
REVISION: 1
TEST SUITE: None
root@ansible:~/new/kubernetes-advanced-assessment/mysql# kubectl get pods
NAME                            READY   STATUS    RESTARTS      AGE
details-v1-5ffd6b64f7-s4xxt     2/2     Running   4 (64s ago)   2d23h
my-nginx-f44495498-9h2k9        1/1     Running   3 (64s ago)   11d
mysql-df7c58587-bhvt8           0/2     Pending   0             13s
productpage-v1-979d4d9fc-llsd6  1/2     Running   4 (64s ago)   2d23h
ratings-v1-5f9699cfdf-4rczf     1/2     Running   4 (64s ago)   2d23h
reviews-v1-569db879f5-gn86n     2/2     Running   4 (64s ago)   2d23h
reviews-v2-65c4dc6fdc-vdz9b     1/2     Running   4 (64s ago)   2d23h
reviews-v3-c9c4fb987-9d6f6      2/2     Running   4 (64s ago)   2d23h
root@ansible:~/new/kubernetes-advanced-assessment/mysql# kubectl get svc
NAME        TYPE        CLUSTER-IP       EXTERNAL-IP   PORT(S)        AGE
details     ClusterIP   10.103.202.143   <none>        9080/TCP       2d23h
kubernetes  ClusterIP   10.96.0.1        <none>        443/TCP        11d
my-nginx    NodePort    10.111.207.215   <none>        80:30972/TCP   11d
mysql       ClusterIP   None             <none>        3306/TCP       20s
```

Updating image: helm upgrade mysql . --set image=mysql:8.0

2. Create another helm chart for frontend deployment. we are frequently updating the frontend service values.yml do the same. Try with load balancer nodeport and cluster ip

Creating helm chart for frontend

```
apiVersion: v2
name: frontend
description: A Helm chart for frontend app
type: application
version: 0.1.0
appVersion: "1.1.0"
```

values.yaml

```
service: LoadBalancer
```

Deploying charts

```
root@ansible:~/new/kubernetes-advanced-assessment/mysql# cd ..
root@ansible:~/new/kubernetes-advanced-assessment# cd frontend/
root@ansible:~/new/kubernetes-advanced-assessment/frontend# helm install frontend .

NAME: frontend
LAST DEPLOYED: Sun Jan 15 09:11:12 2023
NAMESPACE: default
STATUS: deployed
REVISION: 1
TEST SUITE: None
root@ansible:~/new/kubernetes-advanced-assessment/frontend#
root@ansible:~/new/kubernetes-advanced-assessment/frontend# kubectl get pods
NAME                              READY   STATUS     RESTARTS        AGE
details-v1-5ffd6b64f7-s4xxt       2/2     Running    4 (3m9s ago)    2d23h
my-nginx-f44495498-9h2k9          1/1     Running    3 (3m9s ago)    11d
mysql-df7c58587-bhvt8             0/2     Init:0/1   0               2m18s
productpage-v1-979d4d9fc-llsd6    2/2     Running    4 (3m9s ago)    2d23h
ratings-v1-5f9699cfdf-4rczf       1/2     Running    4 (3m9s ago)    2d23h
reviews-v1-569db879f5-gn86n       2/2     Running    4 (3m9s ago)    2d23h
reviews-v2-65c4dc6fdc-vdz9b       1/2     Running    4 (3m9s ago)    2d23h
reviews-v3-c9c4fb987-9d6f6        2/2     Running    4 (3m9s ago)    2d23h
usermgmt-webapp-5ddfc7d6d6-cwrrf  0/2     Pending    0               9s
root@ansible:~/new/kubernetes-advanced-assessment/frontend# kubectl get svc
```

```
root@ansible:~/new/kubernetes-advanced-assessment/frontend# kubectl get svc
NAME                     TYPE          CLUSTER-IP       EXTERNAL-IP     PORT(S)          AGE
details                  ClusterIP     10.103.202.143   <none>          9080/TCP         2d23h
kubernetes               ClusterIP     10.96.0.1        <none>          443/TCP          11d
my-nginx                 NodePort      10.111.207.215   <none>          80:30972/TCP     11d
mysql                    ClusterIP     None             <none>          3306/TCP         10m
productpage              ClusterIP     10.100.92.176    <none>          9080/TCP         2d23h
ratings                  ClusterIP     10.109.248.40    <none>          9080/TCP         2d23h
reviews                  ClusterIP     10.96.95.19      <none>          9080/TCP         2d23h
usermgmt-webapp-service  LoadBalancer  10.100.36.33     <pending>       80:31771/TCP     8m16s
```

Changing the service type to NodePort

```
root@ansible:~/new/kubernetes-advanced-assessment/frontend# helm upgrade frontend . --set service=NodePort
Release "frontend" has been upgraded. Happy Helming!
NAME: frontend
LAST DEPLOYED: Sun Jan 15 09:21:18 2023
NAMESPACE: default
STATUS: deployed
REVISION: 2
TEST SUITE: None
root@ansible:~/new/kubernetes-advanced-assessment/frontend# kubectl get svc
NAME                     TYPE          CLUSTER-IP       EXTERNAL-IP     PORT(S)          AGE
details                  ClusterIP     10.103.202.143   <none>          9080/TCP         2d23h
kubernetes               ClusterIP     10.96.0.1        <none>          443/TCP          11d
my-nginx                 NodePort      10.111.207.215   <none>          80:30972/TCP     11d
mysql                    ClusterIP     None             <none>          3306/TCP         12m
productpage              ClusterIP     10.100.92.176    <none>          9080/TCP         2d23h
ratings                  ClusterIP     10.109.248.40    <none>          9080/TCP         2d23h
reviews                  ClusterIP     10.96.95.19      <none>          9080/TCP         2d23h
usermgmt-webapp-service  NodePort      10.100.36.33     <none>          80:31771/TCP     9m58s
root@ansible:~/new/kubernetes-advanced-assessment/frontend# helm list
NAME        NAMESPACE    REVISION    UPDATED                                          STATUS      CHART            APP VERSION
frontend    default      2           2023-01-15 09:21:18.874046152 +0000 UTC deployed frontend-0.1.0  1.1.0
my-nginx    default      5           2023-01-04 09:22:07.423893592 +0000 UTC deployed my-nginx-0.2.0  1
mysql       default      1           2023-01-15 09:09:28.84004778 +0000 UTC  deployed mysql-0.1.0     1.1.0
root@ansible:~/new/kubernetes-advanced-assessment/frontend# cd ..
root@ansible:~/new/kubernetes-advanced-assessment# cd ..
```