Problem Statement

You are working as a Devops Administrator. You've been tasked to deploy a multi-tier application on Kubernetes Cluster. The application is a NodeJS application available on Docker Hub with the following name:

devopsedu/employee

This NodeJS application works with a mongo database. MongoDB image is available on DockerHub with the following name:

mongo

You are required to deploy this application on Kubernetes:

- NodeJS is available on port 8888 in the container and will be reaching out to port 27017 for mongo database connection
- MongoDB will be accepting connections on port 27017

You must deploy this application using the CLI.

Once your application is up and running, ensure you can add an employee from the NodeJS application and verify by going to Get Employee page and retrieving your input.

Hint: Name the Mongo DB Service and deployment, specifically as "mongo".

```
 gcloud config set project edureka-handson
  gcloud container clusters create vag-gke-cluster --num-nodes=2 --zone=us-central1-a

kubectl create deployment employee-app --image=devopsedu/employee

 kubectl create deployment mongo --image=mongo
```

```
-rw-r--r-- 1 vagish999 vagish999  647 Mar 12 18:29  nodejs-deployment.yml
drwxr-xr-x 4 vagish999 vagish999 4096 Mar 12 16:58  SubmissionFiles/
vagish999@cloudshell:~/ExternalFiles/GIT/Edureka-Assignment/CaseStudy7-Kuberneters/Edureka-DevOps-Assignments (edureka-handson)$ kubectl create deployment employee-ap
p --image=devopsedu/employee
deployment.apps/employee-app created
vagish999@cloudshell:~/ExternalFiles/GIT/Edureka-Assignment/CaseStudy7-Kuberneters/Edureka-DevOps-Assignments (edureka-handson)$ kubectl create deployment mongo --ima
ge=mongo
deployment.apps/mongo created
vagish999@cloudshell:~/ExternalFiles/GIT/Edureka-Assignment/CaseStudy7-Kuberneters/Edureka-DevOps-Assignments (edureka-handson)$ kubectl get all
NAME                                 READY   STATUS             RESTARTS   AGE
pod/employee-app-7fcdf8467b-ldx25    1/1     Running            0          24s
pod/mongo-7fd695869b-242mg           0/1     ContainerCreating  0          7s

NAME                 TYPE        CLUSTER-IP   EXTERNAL-IP   PORT(S)   AGE
service/kubernetes   ClusterIP   10.72.0.1    <none>        443/TCP   3m53s

NAME                          READY   UP-TO-DATE   AVAILABLE   AGE
deployment.apps/employee-app  1/1     1            1           25s
deployment.apps/mongo         0/1     1            0           8s

NAME                                     DESIRED   CURRENT   READY   AGE
replicaset.apps/employee-app-7fcdf8467b  1         1         1       25s
replicaset.apps/mongo-7fd695869b         1         1         0       8s
vagish999@cloudshell:~/ExternalFiles/GIT/Edureka-Assignment/CaseStudy7-Kuberneters/Edureka-DevOps-Assignments (edureka-handson)$ kubectl get all
NAME                                 READY   STATUS    RESTARTS   AGE
pod/employee-app-7fcdf8467b-ldx25    1/1     Running   0          37s
pod/mongo-7fd695869b-242mg           1/1     Running   0          20s

NAME                 TYPE        CLUSTER-IP   EXTERNAL-IP   PORT(S)   AGE
service/kubernetes   ClusterIP   10.72.0.1    <none>        443/TCP   4m6s
```

kubectl expose deployment employee-app --type=LoadBalancer --port=8888


```
NAME                                     DESIRED   CURRENT   READY   AGE
replicaset.apps/employee-app-7fcdf8467b  1         1         1       38s
replicaset.apps/mongo-7fd695869b         1         1         1       21s
vagish999@cloudshell:~/ExternalFiles/GIT/Edureka-Assignment/CaseStudy7-Kuberneters/Edureka-DevOps-Assignments (edureka-handson)$ kubectl expose deployment employee-ap
p --type=LoadBalancer --port=8888
service/employee-app exposed
vagish999@cloudshell:~/ExternalFiles/GIT/Edureka-Assignment/CaseStudy7-Kuberneters/Edureka-DevOps-Assignments (edureka-handson)$ kubectl get all
NAME                                 READY   STATUS    RESTARTS   AGE
pod/employee-app-7fcdf8467b-ldx25    1/1     Running   0          111s
pod/mongo-7fd695869b-242mg           1/1     Running   0          94s

NAME                   TYPE           CLUSTER-IP     EXTERNAL-IP   PORT(S)          AGE
service/employee-app   LoadBalancer   10.72.15.206   <pending>     8888:31756/TCP   4s
service/kubernetes     ClusterIP      10.72.0.1      <none>        443/TCP          5m19s

NAME                          READY   UP-TO-DATE   AVAILABLE   AGE
deployment.apps/employee-app  1/1     1            1           112s
deployment.apps/mongo         1/1     1            1           95s

NAME                                     DESIRED   CURRENT   READY   AGE
replicaset.apps/employee-app-7fcdf8467b  1         1         1       112s
replicaset.apps/mongo-7fd695869b         1         1         1       95s
vagish999@cloudshell:~/ExternalFiles/GIT/Edureka-Assignment/CaseStudy7-Kuberneters/Edureka-DevOps-Assignments (edureka-handson)$ minikube service list
|-------------|------------------|--------------|---------------------------|
|  NAMESPACE  |       NAME       | TARGET PORT  |            URL            |
|-------------|------------------|--------------|---------------------------|
| default     | emp-app-nodeport |         8888 | http://192.168.49.2:32045 |
| default     | employee-app     |         8888 | http://192.168.49.2:30678 |
| default     | kubernetes       | No node port |                           |
| default     | mongo            | No node port |                           |
| kube-system | kube-dns         | No node port |                           |
```
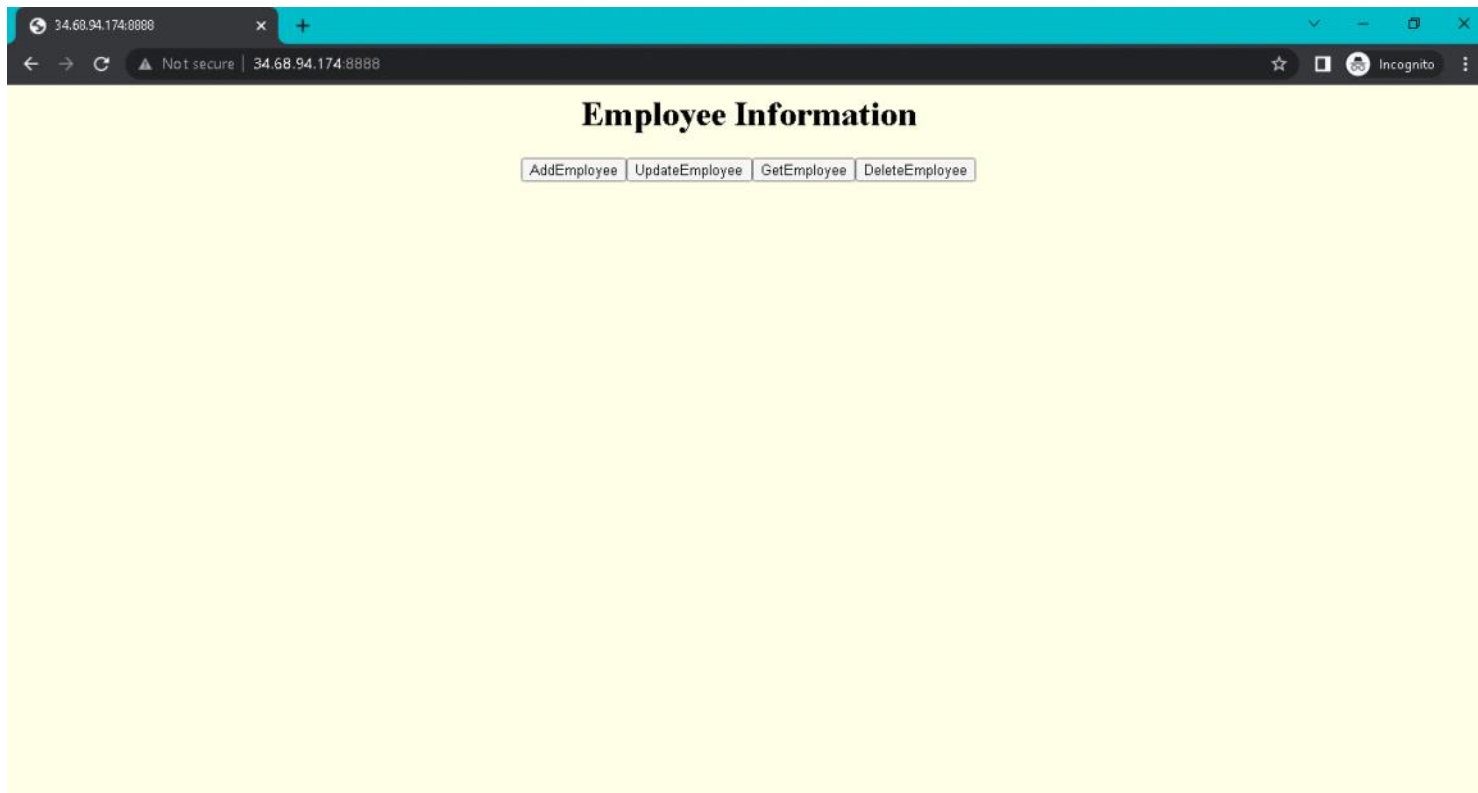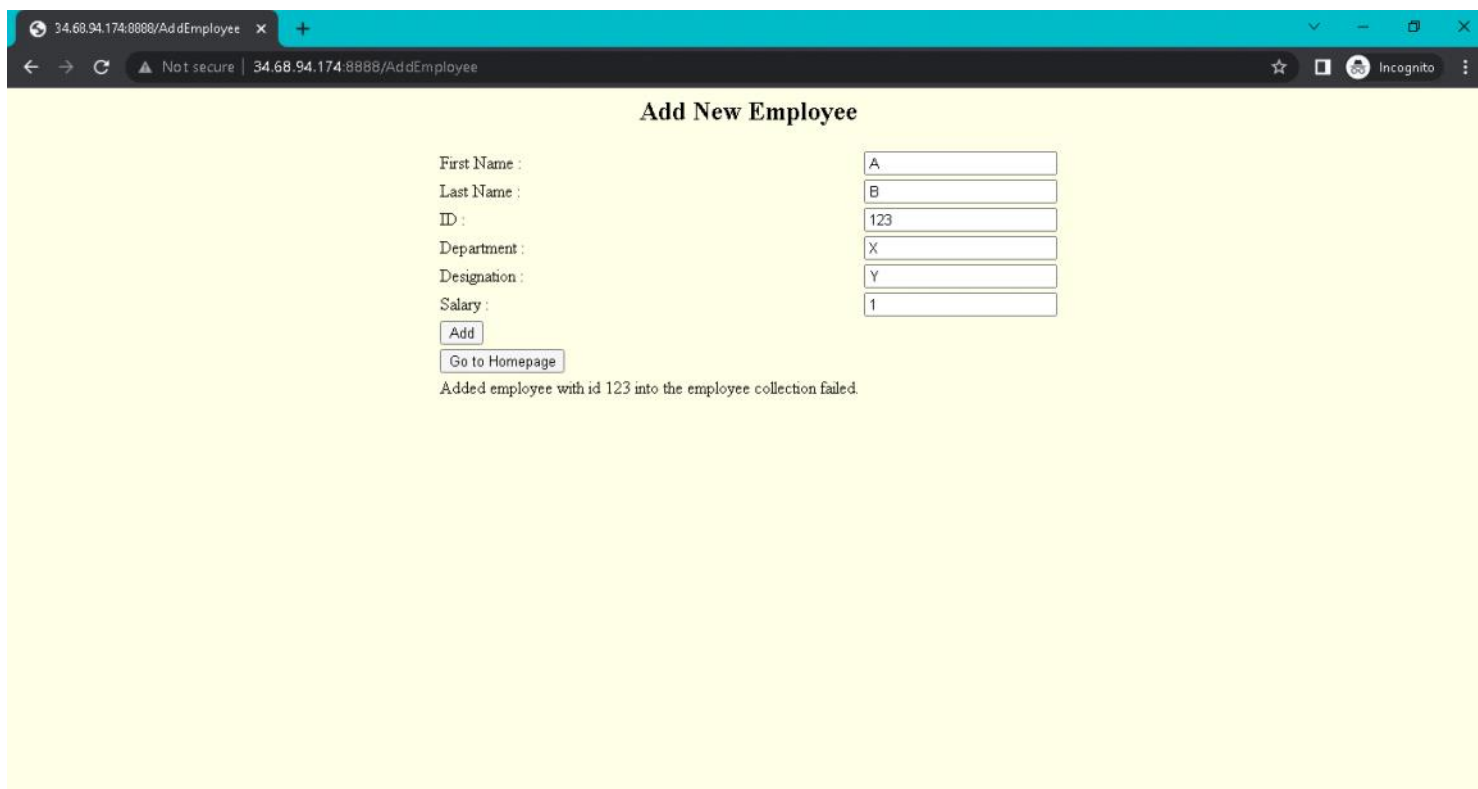
kubectl expose deployment mongo --type=ClusterIP --port=27017

Able to Access Node JS Application

Employee Information

AddEmployee | UpdateEmployee | GetEmployee | DeleteEmployee

Adding Employee Failed as code used in image Node JS application in devopsedu/employee has older Query Syntax which is deprecated from MongoDB

Add New Employee

First Name :   A
Last Name :   B
ID :   123
Department :   X
Designation :   Y
Salary :   1

Add

Go to Homepage

Added employee with id 123 into the employee collection failed.

Uploaded PDF with consolidated Screenshots.
Below tasks are performed:

1. nodeJs deployed using given Employee Image
2. Mongo DB deployed using Mongo Image
3. Exposed Ports to access the application
4. Checked Connectivity between NodeJS & Mongo DB: worked fine.
5. Accessed Web page from Public IP.