Step 1: Start minikube and all the services

```
saifrehman@all-MS-7D35:~/Documents/eme/SaifUrRehman-DEG-007/Assignment_4.3(kubernetes)/assignment$ minikube start
W0517 10:47:21.234366   66527 main.go:291] Unable to resolve the current Docker CLI context "default": context "default" does not exist
😄  minikube v1.30.1 on Ubuntu 22.04
✨  Using the docker driver based on existing profile
👍  Starting control plane node minikube in cluster minikube
🚜  Pulling base image ...
🔄  Restarting existing docker container for "minikube" ...
🐳  Preparing Kubernetes v1.26.3 on Docker 23.0.2 ...
🔗  Configuring bridge CNI (Container Networking Interface) ...
🔎  Verifying Kubernetes components...
    ▪ Using image gcr.io/k8s-minikube/storage-provisioner:v5
🌟  Enabled addons: default-storageclass, storage-provisioner
🏄  Done! kubectl is now configured to use "minikube" cluster and "default" namespace by default
saifrehman@all-MS-7D35:~/Documents/eme/SaifUrRehman-DEG-007/Assignment_4.3(kubernetes)/assignment$ kubectl apply -f mongo-secret.yaml
secret/mongodb-secret unchanged
saifrehman@all-MS-7D35:~/Documents/eme/SaifUrRehman-DEG-007/Assignment_4.3(kubernetes)/assignment$ kubectl apply -f mongo-configmap.yaml
configmap/mongodb-configmap unchanged
saifrehman@all-MS-7D35:~/Documents/eme/SaifUrRehman-DEG-007/Assignment_4.3(kubernetes)/assignment$ kubectl apply -f mongodb-deployment.yaml
deployment.apps/mongo-deployment unchanged
saifrehman@all-MS-7D35:~/Documents/eme/SaifUrRehman-DEG-007/Assignment_4.3(kubernetes)/assignment$ kubectl apply -f mongodb-service.yaml
service/mongo-service unchanged
saifrehman@all-MS-7D35:~/Documents/eme/SaifUrRehman-DEG-007/Assignment_4.3(kubernetes)/assignment$ kubectl apply -f mongo-express-deployment.yaml
deployment.apps/mongo-express unchanged
saifrehman@all-MS-7D35:~/Documents/eme/SaifUrRehman-DEG-007/Assignment_4.3(kubernetes)/assignment$ kubectl apply -f mongo-express-service.yaml
service/mongo-express-service unchanged
```

Step 2: List all the deployments in a kubernetes cluster
and detailed in about mongo-deployment

```
saifrehman@all-MS-7D35:~/Documents/eme/SaifUrRehman-DEG-007/Assignment_4.3(kubernetes)/assignment$ kubectl get deployments
NAME              READY   UP-TO-DATE   AVAILABLE   AGE
mongo-deployment   1/1     1            1           5d
mongo-express      1/1     1            1           5d
saifrehman@all-MS-7D35:~/Documents/eme/SaifUrRehman-DEG-007/Assignment_4.3(kubernetes)/assignment$ kubectl describe deployments mongo-deployment
Name:                   mongo-deployment
Namespace:              default
CreationTimestamp:      Fri, 12 May 2023 10:54:26 +0500
Labels:                 app=mongodb
Annotations:            deployment.kubernetes.io/revision: 1
Selector:               app=mongodb
Replicas:               1 desired | 1 updated | 1 total | 1 available | 0 unavailable
StrategyType:           RollingUpdate
MinReadySeconds:        0
RollingUpdateStrategy:  25% max unavailable, 25% max surge
Pod Template:
  Labels:  app=mongodb
  Containers:
   mongodb:
    Image:      mongo
    Port:       27017/TCP
    Host Port:  0/TCP
    Environment:
      MONGO_INITDB_DATABASE:       admin
      MONGO_INITDB_ROOT_USERNAME:  <set to the key 'mongo-root-username' in secret 'mongodb-secret'>  Optional: false
      MONGO_INITDB_ROOT_PASSWORD:  <set to the key 'mongo-root-password' in secret 'mongodb-secret'>  Optional: false
    Mounts:                        <none>
  Volumes:                         <none>
Conditions:
  Type           Status  Reason
  ----           ------  ------
  Progressing    True    NewReplicaSetAvailable
  Available      True    MinimumReplicasAvailable
OldReplicaSets:  <none>
NewReplicaSet:   mongo-deployment-85bbdc6549 (1/1 replicas created)
Events:          <none>
saifrehman@all-MS-7D35:~/Documents/eme/SaifUrRehman-DEG-007/Assignment_4.3(kubernetes)/assignment$
```

Step 3:

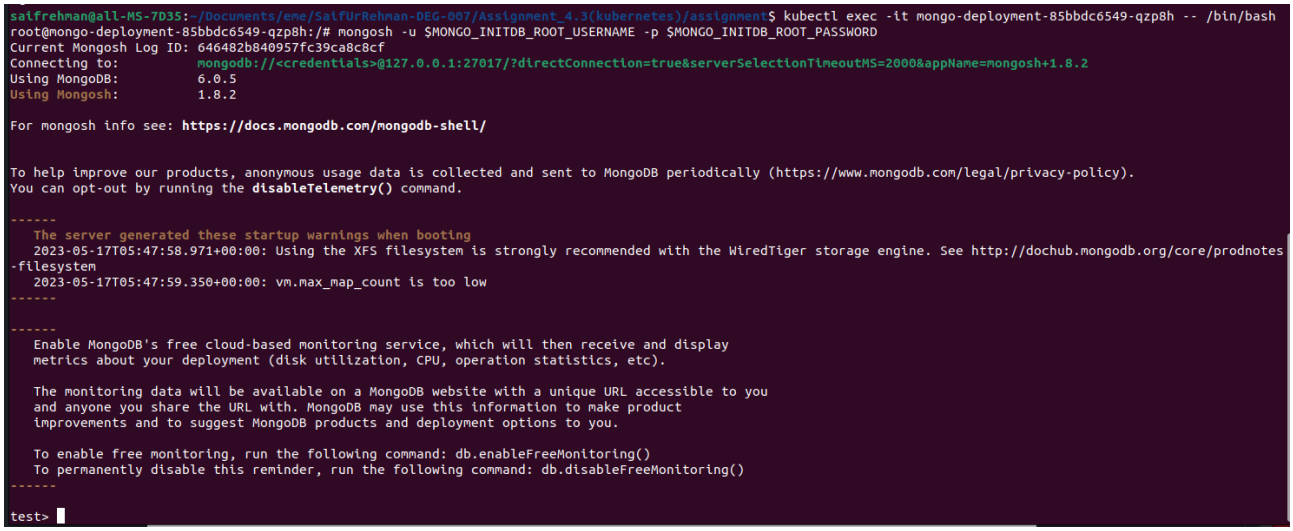
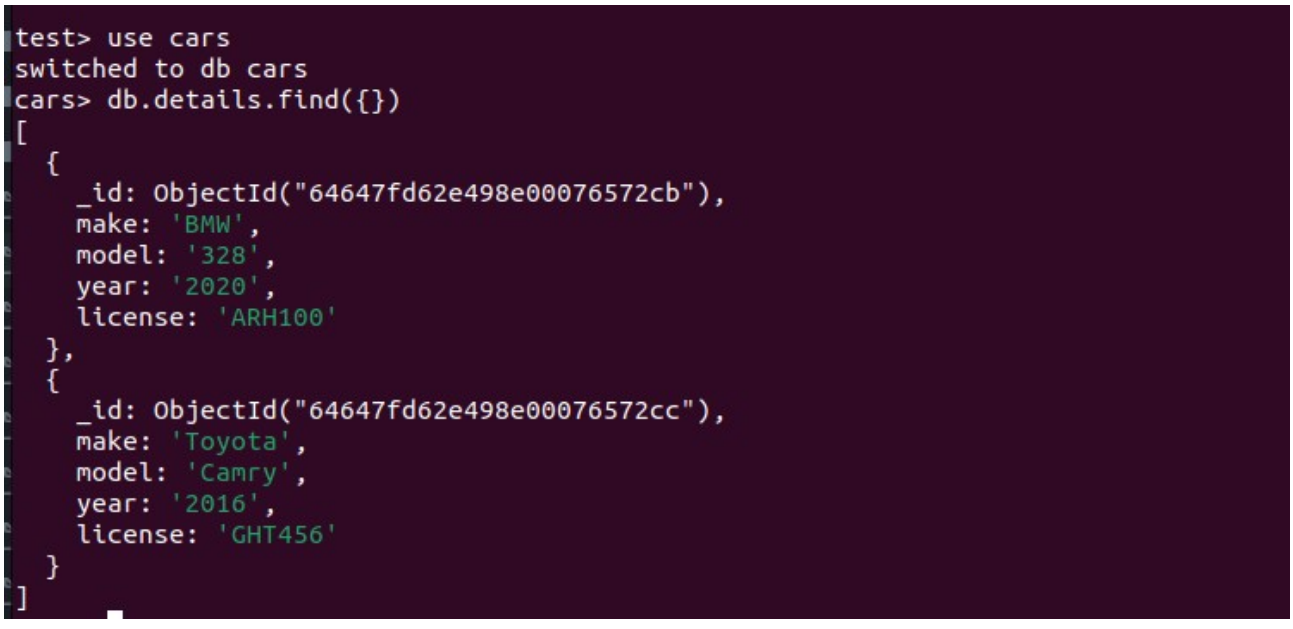
```
saifrehman@all-MS-7D35:~/Documents/eme/SaifUrRehman-DEG-007/Assignment_4.3(kubernetes)/assignment$ kubectl get pods
NAME                             READY   STATUS    RESTARTS       AGE
mongo-deployment-85bbdc6549-qzp8h   1/1     Running   6 (25m ago)    5d
mongo-express-5bcd46fcff-l8cdr   1/1     Running   17 (25m ago)   5d
saifrehman@all-MS-7D35:~/Documents/eme/SaifUrRehman-DEG-007/Assignment_4.3(kubernetes)/assignment$
```

Step 4: expose a Kubernetes service on our local machine

```
mongo-express-5bcd46fcff-l8cdr      1/1     Running   17 (25m ago)   5d
saifrehman@all-MS-7D35:~/Documents/eme/SaifUrRehman-DEG-007/Assignment_4.3(kubernetes)/assignment$ minikube service mongo-express-service
W0517 11:33:33.120002  134507 main.go:291] Unable to resolve the current Docker CLI context "default": context "default" does not exist
|-----------|----------------------|-------------|--------------------------|
| NAMESPACE |         NAME         | TARGET PORT |           URL            |
|-----------|----------------------|-------------|--------------------------|
| default   | mongo-express-service |        8080 | http://192.168.49.2:30001 |
|-----------|----------------------|-------------|--------------------------|
🎉  Opening service default/mongo-express-service in default browser...
saifrehman@all-MS-7D35:~/Documents/eme/SaifUrRehman-DEG-007/Assignment_4.3(kubernetes)/assignment$ Opening in existing browser session.
```

Step 5: here we created data

Step 6: kubectl will connect to the pod named mongo-deployment-85bbdc6549-qzp8h and start a shell.



Step 7: output