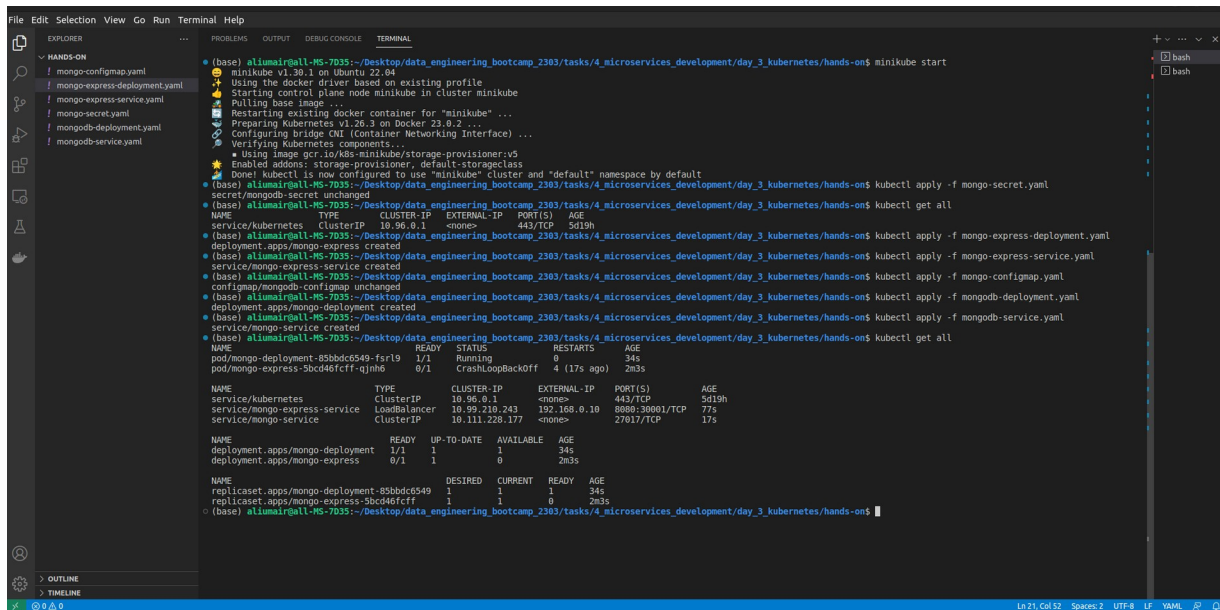


Display logs of a running MongoDB container. Add a document to the DB via Mongo Express frontend. Get into the pod and verify the document's existence via *mongosh*.

Step 1:

- ✓ Start Minikube
- ✓ Deploying all yaml files using Kubectl



```
(base) aliumair@MS-7035:~/Desktop/data_engineering_bootcamp_2303/tasks/4_microservices_development/day_3_kubernetes/hands-on$ minikube start
* minikube v1.29.1 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
* Done! kubectll is now configured to use "minikube" cluster and "default" namespace by default
(base) aliumair@MS-7035:~/Desktop/data_engineering_bootcamp_2303/tasks/4_microservices_development/day_3_kubernetes/hands-on$ kubectl apply -f mongo-secret.yaml
secret/mongodb-secret unchanged
(base) aliumair@MS-7035:~/Desktop/data_engineering_bootcamp_2303/tasks/4_microservices_development/day_3_kubernetes/hands-on$ kubectl get all
NAME                                TYPE                CLUSTER-IP      EXTERNAL-IP      PORT(S)          AGE
service/kubernetes                  ClusterIP           10.96.0.1        <none>            443/TCP          5d19h
deployment.apps/mongo-express       ReplicaSet           10.99.219.243    192.168.0.10     8080:8080/TCP    77s
deployment.apps/mongo-service       ReplicaSet           10.111.228.177   <none>            27017/TCP         17s
(base) aliumair@MS-7035:~/Desktop/data_engineering_bootcamp_2303/tasks/4_microservices_development/day_3_kubernetes/hands-on$ kubectl apply -f mongo-express-deployment.yaml
deployment.apps/mongo-express created
(base) aliumair@MS-7035:~/Desktop/data_engineering_bootcamp_2303/tasks/4_microservices_development/day_3_kubernetes/hands-on$ kubectl apply -f mongo-express-service.yaml
service/mongo-express-service created
(base) aliumair@MS-7035:~/Desktop/data_engineering_bootcamp_2303/tasks/4_microservices_development/day_3_kubernetes/hands-on$ kubectl apply -f mongo-configmap.yaml
configmap/mongodb-configmap unchanged
(base) aliumair@MS-7035:~/Desktop/data_engineering_bootcamp_2303/tasks/4_microservices_development/day_3_kubernetes/hands-on$ kubectl apply -f mongodb-deployment.yaml
deployment.apps/mongo-deployment created
(base) aliumair@MS-7035:~/Desktop/data_engineering_bootcamp_2303/tasks/4_microservices_development/day_3_kubernetes/hands-on$ kubectl apply -f mongodb-service.yaml
service/mongo-service created
(base) aliumair@MS-7035:~/Desktop/data_engineering_bootcamp_2303/tasks/4_microservices_development/day_3_kubernetes/hands-on$ kubectl get all
NAME                                READY   STATUS    RESTARTS   AGE
pod/mongo-deployment-85bbdc6549-fsr19    1/1     Running   0           34s
pod/mongo-express-5bcd46fcff-qjnh6       0/1     CrashLoopBackOff   4 (17s ago)    2m3s

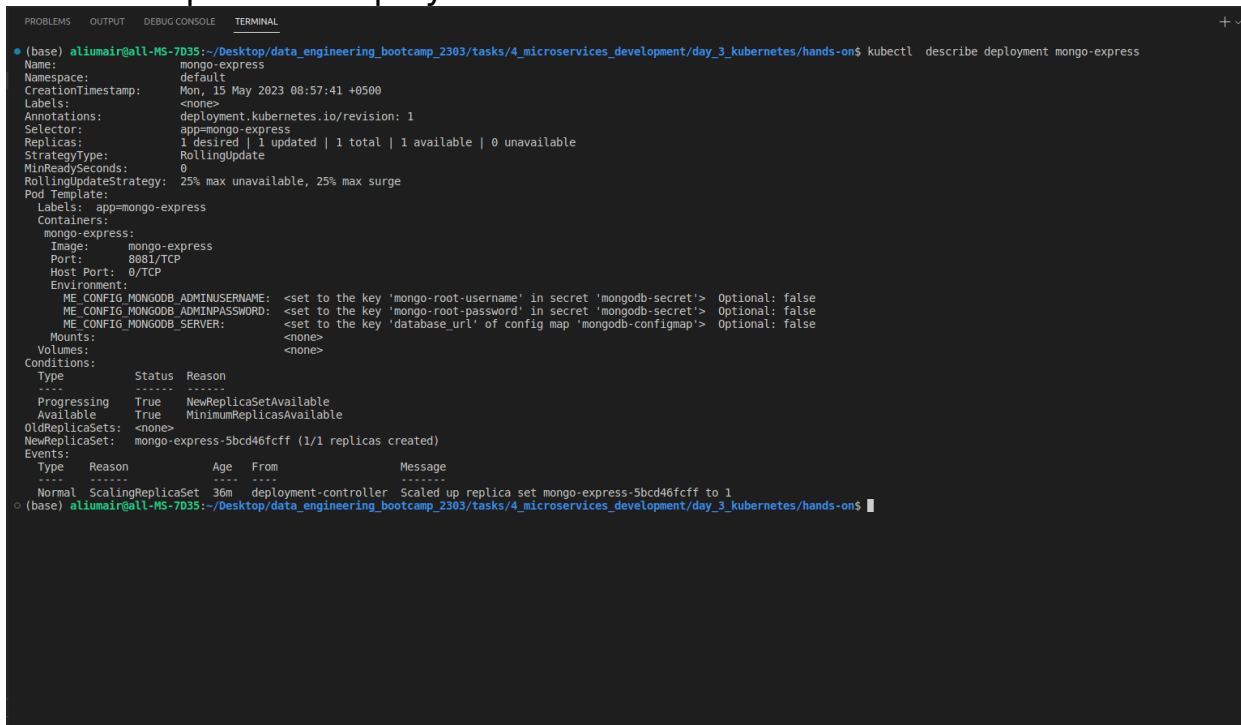
NAME                                TYPE                CLUSTER-IP      EXTERNAL-IP      PORT(S)          AGE
service/kubernetes                  ClusterIP           10.96.0.1        <none>            443/TCP          5d19h
service/mongo-express-service       ClusterIP           10.99.219.243    192.168.0.10     8080:8080/TCP    77s
service/mongo-service               ClusterIP           10.111.228.177   <none>            27017/TCP         17s

NAME                                READY   UP-TO-DATE   AVAILABLE   AGE
deployment.apps/mongo-deployment     1/1     1             1           34s
deployment.apps/mongo-express        0/1     1             0           2m3s

NAME                                DESIRED   CURRENT   READY   AGE
replicaset.apps/mongo-deployment-85bbdc6549    1         1         1       34s
replicaset.apps/mongo-express-5bcd46fcff       1         1         0       2m3s
(base) aliumair@MS-7035:~/Desktop/data_engineering_bootcamp_2303/tasks/4_microservices_development/day_3_kubernetes/hands-on$
```

Step 2:

- ✓ Description of Deployment and Service.



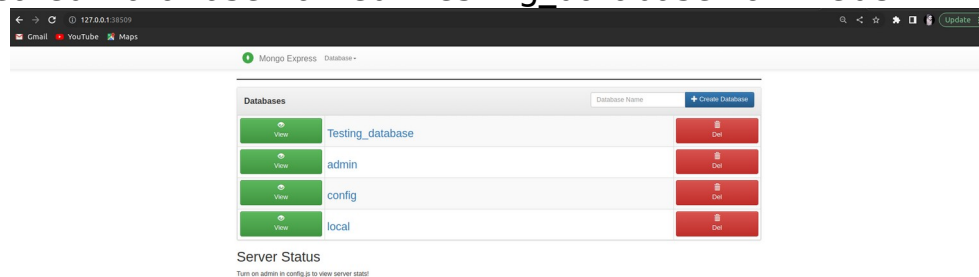
```
(base) aliumair@MS-7035:~/Desktop/data_engineering_bootcamp_2303/tasks/4_microservices_development/day_3_kubernetes/hands-on$ kubectl describe deployment mongo-express
Name: mongo-express
Namespace: default
CreationTimestamp: Mon, 15 May 2023 08:57:41 +0500
Labels: <none>
Annotations: deployment.kubernetes.io/revision: 1
Selector: app=mongo-express
Replicas: 1 desired | 1 updated | 1 available | 0 unavailable
StrategyType: RollingUpdate
MinReadySeconds: 0
RollingUpdateStrategy: 25% max unavailable, 25% max surge
Pod Template:
  Labels: app=mongo-express
  Containers:
    mongo-express:
      Image: mongo-express
      Port: 8081/TCP
      Host Port: 0/TCP
      Environment:
        ME_CONFIG_MONGODB_ADMINUSERNAME: <set to the key 'mongo-root-username' in secret 'mongodb-secret'> Optional: false
        ME_CONFIG_MONGODB_ADMINPASSWORD: <set to the key 'mongo-root-password' in secret 'mongodb-secret'> Optional: false
        ME_CONFIG_MONGODB_SERVER: <set to the key 'database.url' of config map 'mongodb-configmap'> Optional: false
      Mounts:
        <none>
      Volumes:
        <none>
  Conditions:
    Type          Status    Reason
    ----          -
    Progressing   True      NewReplicaSetAvailable
    Available     True      MinimumReplicasAvailable
    OldReplicaSets: <none>
    NewReplicaSet: mongo-express-5bcd46fcff (1/1 replicas created)
  Events:
    Type          Reason          Age          From          Message
    ----          -
    Normal        ScalingReplicaSet   36m         deployment-controller   Scaled up replica set mongo-express-5bcd46fcff to 1
(base) aliumair@MS-7035:~/Desktop/data_engineering_bootcamp_2303/tasks/4_microservices_development/day_3_kubernetes/hands-on$
```

```

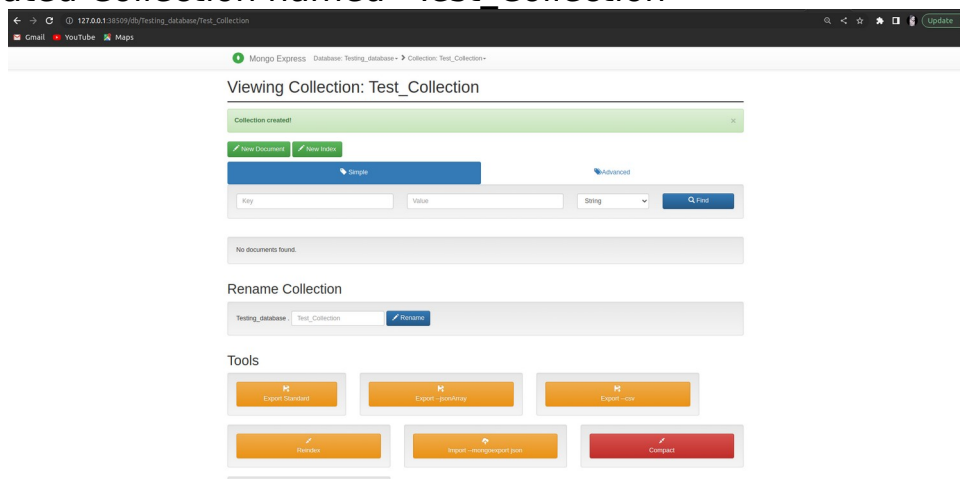
(base) aliumair@all-MS-7035:~/Desktop/data_engineering_bootcamp_2303/tasks/4_microservices_development/day_3_kubernetes/hands-on$ kubectl describe deployment mongo-deployment
Name: mongo-deployment
Namespace: default
CreationTimestamp: Mon, 15 May 2023 08:59:10 +0500
Labels: app=mongodb
Annotations: 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:
        Volumes:
      Conditions:
        Type      Status      Reason
        ----      -
        Available  True        MinimumReplicasAvailable
        Progressing True        NewReplicaSetAvailable
        OldReplicaSets: <none>
        NewReplicaSet: mongo-deployment-85bdc6549 (1/1 replicas created)
      Events:
        Type      Reason      Age      From      Message
        ----      -
        Normal    ScalingReplicaSet  35m      deployment-controller    Scaled up replica set mongo-deployment-85bdc6549 to 1
(base) aliumair@all-MS-7035:~/Desktop/data_engineering_bootcamp_2303/tasks/4_microservices_development/day_3_kubernetes/hands-on$
```

Step 3:

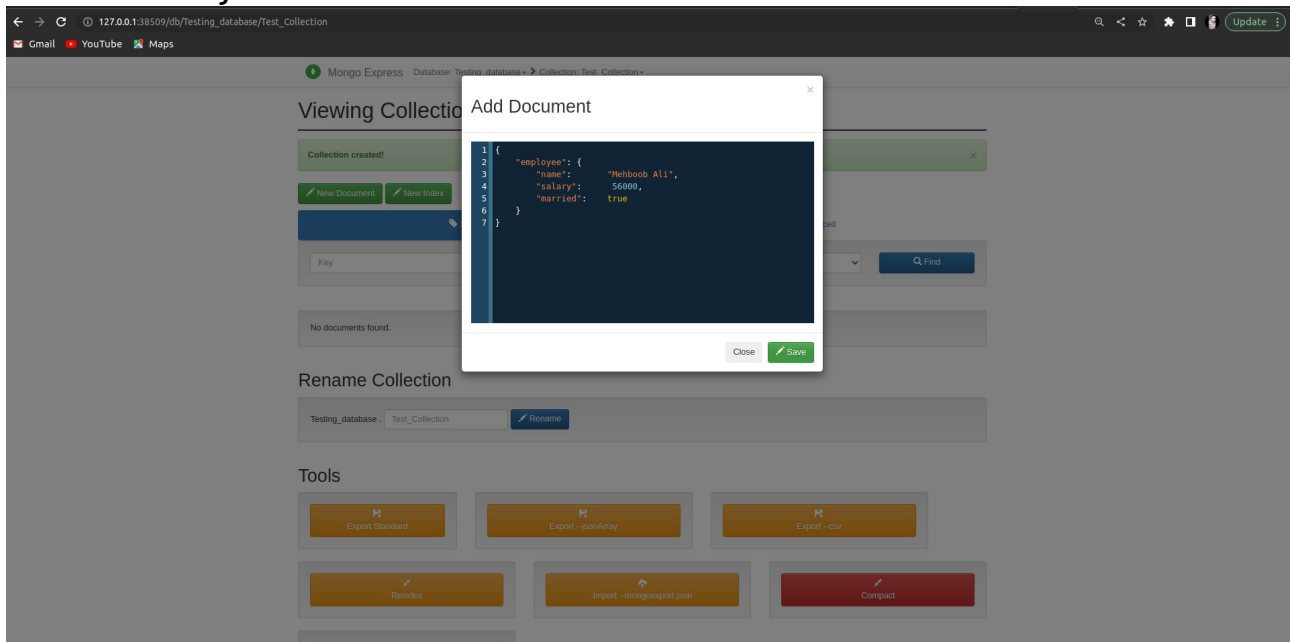
- ✓ Created DataBase named “Testing_database” on WebUI



- ✓ Created Collection named “Test Collection”



✓ Added JSON file into the collection



Step 4:

- ✓ Logged In the pod using Mongosh
- ✓ Accessed the DataBase and Collection
- ✓ Viewed the Output of the JSON Example.

```
File Edit Selection View Go Run Terminal Help
EXPLORER PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
HANDS-ON
! mongo-configmap.yaml
! mongo-express-deployment.yaml
! mongo-express-service.yaml
! mongo-secret.yaml
! mongodb-deployment.yaml
! mongodb-service.yaml

(base) aliumir@ell-M5-7035:~/Desktop/data_engineering_bootcamp_2303/tasks/4_microservices_development/day_3_kubernetes/hands-on$ kubectl exec -it mongo-deployment-85bdc6549-fsr19 -- bash
root@mongo-deployment-85bdc6549-fsr19:/# mongosh -u $MONGO_INITDB_ROOT_USERNAME -p $MONGO_INITDB_ROOT_PASSWORD
Current Mongosh Log ID: 6461b0719f5ae8804036de
Connecting to:  mongodb://<credentials>@127.0.0.1:27017/?directConnection=true&serverSelectionTimeoutMS=2000&appName=mongosh+1.6.2
Using MongoDB: 6.0.5
Using Mongosh: 1.6.2

For mongosh info see: https://docs.mongodb.com/mongosh-shell/

To help improve our products, anonymous usage data is collected and sent to MongoDB periodically (https://www.mongodb.com/legal/privacy-policy).
You can opt-out by running the disableTelemetry() command.

-----
The server generated these startup warnings when booting
2023-05-15T03:59:18.881+00:00: Using the XFS filesystem is strongly recommended with the WiredTiger storage engine. See http://dochub.mongodb.org/core/prodnotes-filesystem
2023-05-15T03:59:19.554+00:00: vm.max_map_count is too low
-----

Enable MongoDB's free cloud-based monitoring service, which will then receive and display
metrics about your deployment (disk utilization, CPU, operation statistics, etc).

The monitoring data will be available on a MongoDB website with a unique URL accessible to you
and anyone you share the URL with. MongoDB may use this information to make product
improvements and to suggest MongoDB products and deployment options to you.

To enable free monitoring, run the following command: db.enableFreeMonitoring()
To permanently disable this reminder, run the following command: db.disableFreeMonitoring()
-----

test> use Testing database
switched to db Testing_database
Testing_database> db.Test_Collection.find()
[
  {
    _id: ObjectId('6461af9e1775c0007d9b36c'),
    employee: { name: 'Mehboob Ali', salary: 56000, married: true }
  }
]
Testing_database> |
```