Database assignment

1. Open WSL or Ubuntu on windows computer

2. Type these commands to create a folder for the project and use it as the working directory

   mkdir mongodb

   cd mongodb

3. Type this command to create the mongodeployment yaml file

   nano mongodeployment.yaml

4. Paste the following code in the file

```
apiVersion: apps/v1
kind: Deployment
metadata:
 name: mongodb-deployment
spec:
 replicas: 1
 selector:
  matchLabels:
   app: mongodb
 template:
  metadata:
   labels:
    app: mongodb
  spec:
   containers:
    - name: mongodb
      image: mongo:5
      ports:
        - containerPort:
27017
      env:
      - name:
```

```
MONGO_INITDB_ROOT_USERNAME
          valueFrom:
            secretKeyRef:
              name: mongodb-secret
              key: mongo-root-username
        - name: MONGO_INITDB_ROOT_PASSWORD
          valueFrom:
            secretKeyRef:
              name: mongodb-secret
              key: mongo-root-password
```

```
---
apiVersion: v1
kind: Service
metadata:
  name: mongo-service
spec:
  selector:
    app: mongodb
  ports:
    - protocol: TCP
      port: 27017
      targetPort: 27017
```

5. Type this command to see the user for the database

   echo -n mongo-root-username | base64

6. This is the results

   bW9uZ28tcm9vdC11c2VybmFtZQ==

7. Type this command to see the user for the database

   echo -n mongo-root-password | base64

8. This is the results

   bW9uZ28tcm9vdC1wYXNzd29yZA==

9. Type this command to create the mongodbsecret yaml file

   nano mongodbsecret.yaml

10. Paste the following code in the file

```
apiVersion: v1
kind: Secret
metadata:
   name: mongodb-secret
type: Opaque
data:
   mongo-root-username:
bW9uZ28tcm9vdC11c2VybmFtZQ==
   mongo-root-password:
bW9uZ28tcm9vdC1wYXNzd29yZA==
```

11. Type this command to create the configmap yaml file

   nano configmap.yaml

12. Paste the following code in the file

```
apiVersion: v1
kind: ConfigMap
metadata:
  name: mongodb-configmap
data:
  database_url: mongo-service
```

13. Type this command to create the mongoexpress yaml file

   nano mongoexpress.yaml

14.Paste the following code in the file

```
apiVersion: apps/v1
kind: Deployment
metadata:
  name: mongoexp-deployment
spec:
  replicas: 1
  selector:
    matchLabels:
      app: mongo-express
  template:
    metadata:
      labels:
        app: mongo-express
    spec:
      containers:
        - name: mongo-express
          image: mongo-express
          ports:
            - containerPort: 8081
          env:
          - name:
ME_CONFIG_MONGODB_ADM
INUSERNAME
            valueFrom:
              secretKeyRef:
                name: mongodb-secret
                key: mongo-root-
username
          - name:
ME_CONFIG_MONGODB_ADM
INPASSWORD
            valueFrom:
              secretKeyRef:
                name: mongodb-secret
                key: mongo-root-
```

```
password
        - name:
ME_CONFIG_MONGODB_SERV
ER
          valueFrom:
            configMapKeyRef:
              name: mongodb-
configmap
              key: database_url
---
apiVersion: v1
kind: Service
metadata:
  name: mongo-exp-service
spec:
  selector:
    app: mongo-express
  type: LoadBalancer
  ports:
    - protocol: TCP
      port: 8081
      targetPort: 8081
```

15. Type this command to create the cluster and the loadbalancer

    k3d cluster create mongodb -p "8081:8081@loadbalancer"

16. Type this command to apply the mongodbsecret yaml file

    kubectl apply -f mongodbsecret.yaml

17. Type this command to apply the mongodeployment yaml file

    kubectl apply -f mongodeployment.yaml

18. Type this command to apply the configmap yaml file

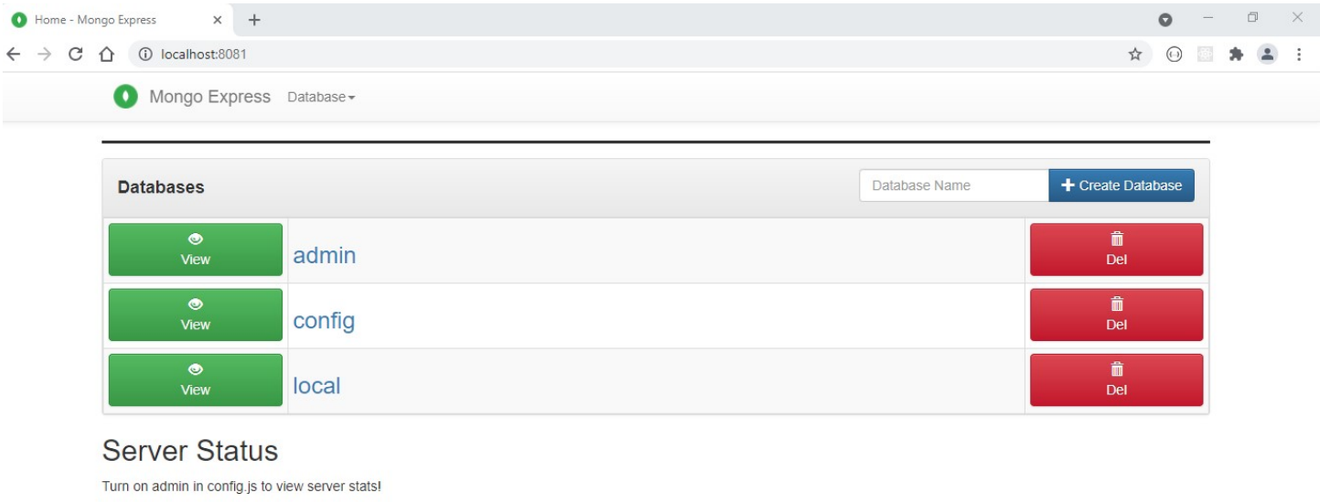
    kubectl apply -f configmap.yaml

19. Type this command to apply the mongoexpress yaml file

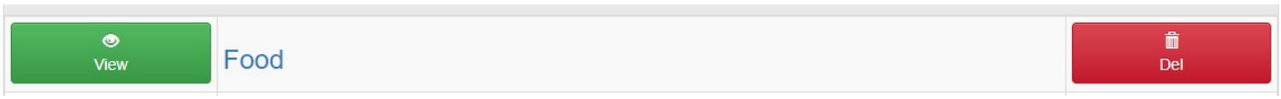
    kubectl apply -f mongoexpress.yaml

20.Launch a web browser and type in the url

localhost:8081

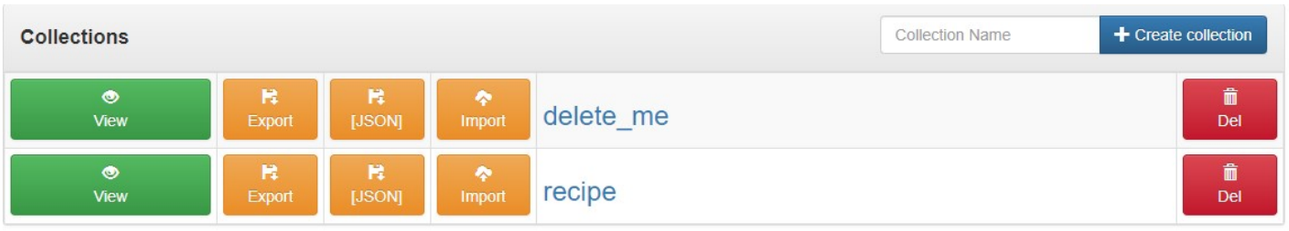


21.Type in the database name ***Food*** and click on Create Database



22.Click on view Food

23.Type in the Collection Name ***Recipe*** and click on Create Collection



24.Click on view recipe

25.Click on New Document and paste following code in the file

```
{

  title: 'Chicken Soft Tacos',
  calories_per_serving: 205,
```

```
  cook_time: 19,
  desc: 'Mexican soft tacos',
  directions: [
    'Put seasoning on chicken
breasts',
    'Grill until done',
    'Chop chicken into peices',
    'Put in totillas'
  ],
  ingredients: [
    {
      name: 'chicken breast',
      quantity: {
        amount: 1,
        unit: 'lbs'
      }
    },
    {
      name: 'taco seasoning',
      quantity: {
        amount: 2,
        unit: 'oz'
      }
    },
    {
      name: 'small flour totillas',
      quantity: {
        amount: 12,
        unit: 'oz'
      }
    }
  ],
  likes: [
    261,
    1,
    415
```

```
  ],
  likes_count: 3,
  prep_time: 10,
  rating: [
    4,
    4,
    4,
    4,
    2,
    5,
    3
  ],
  rating_avg: 3.71,
  servings: 5,
  tags: [
    'mexican',
    'quick',
    'easy',
    'chicken'
  ],
  type: 'Dinner'
}
```

26.Click on save

_id	title	calories_per_serving	cook_time	desc	directions	ingredients	likes	likes_count	prep_time	rating
617e827875c668000746574b	Chicken Soft Tacos	205	19	Mexican soft tacos	Put seasoning on chicken breasts,Grill until done,Chop chicken into peices,Put in totillas	⊖[⊕{...}, ⊕{...}, ⊕{...}]	261,1,415	3	10	4,4,4,4,2,5

27.k3d cluster delete mongodb

Levy Andrew Documentation

Topology