Graded Assignment 4.3

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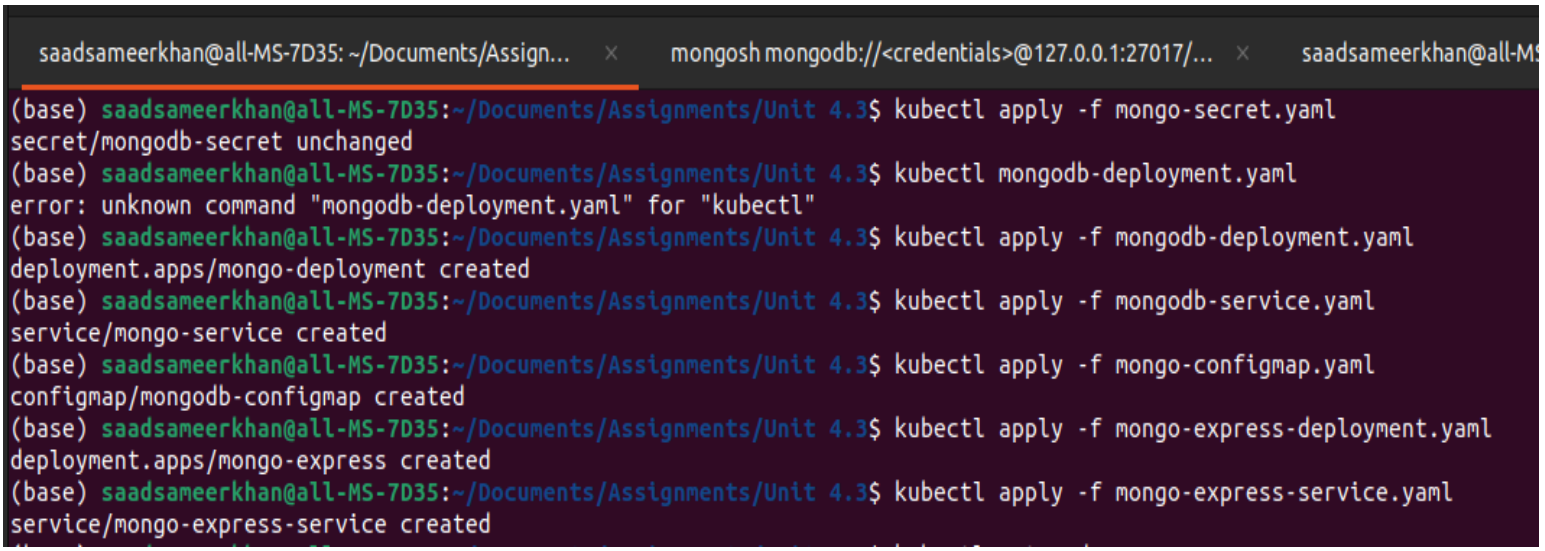
1) Running the mongoDB and mongo-express deployment & service files

We first start the secret yaml file and configMap yaml file before starting mongoDB and mongo-express as the secret and configMap are referenced in these files.



2) Listing all running deployments, pods, containers, etc.

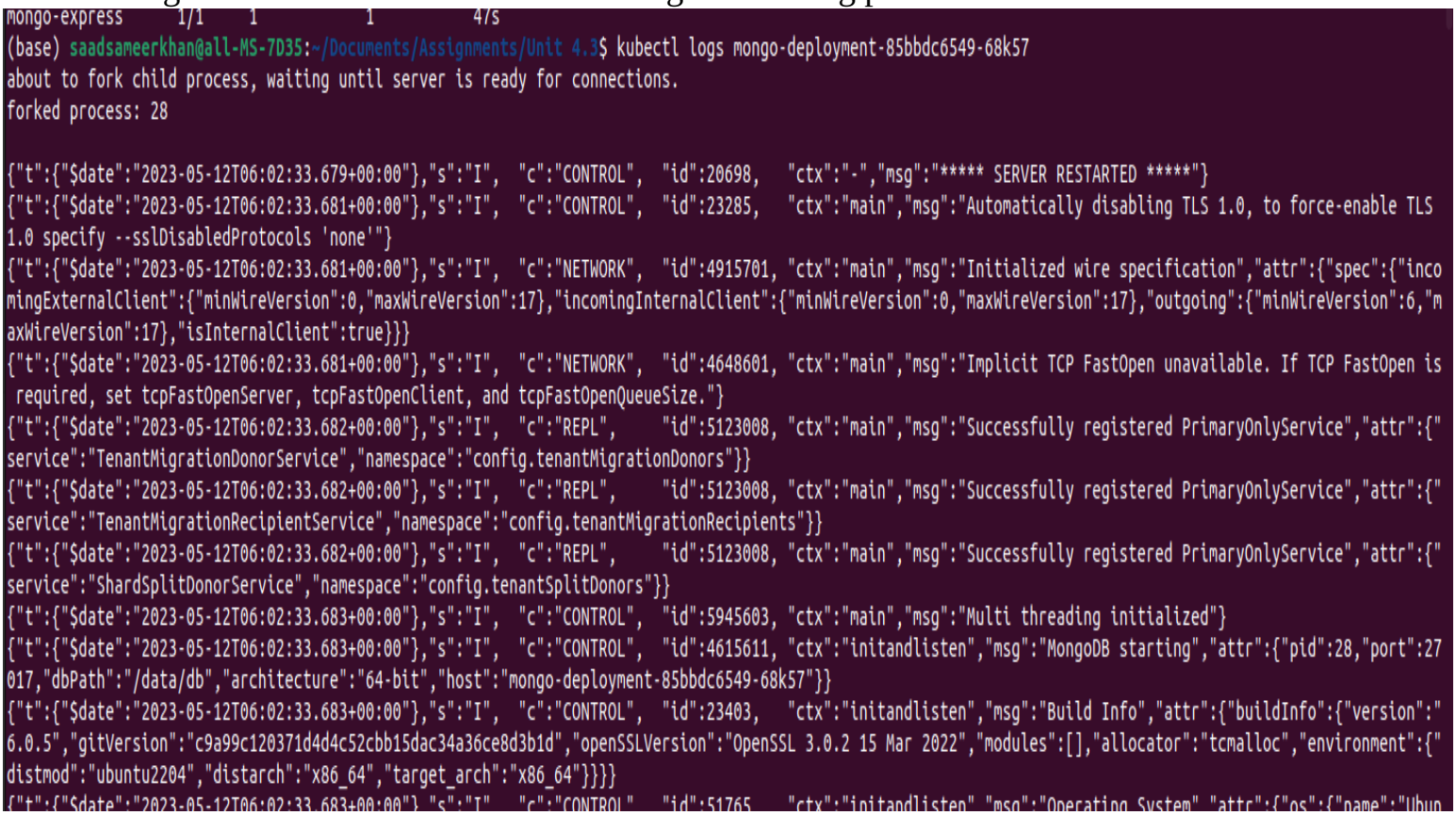
```
(base) saadsameerkhan@all-MS-7D35:~/Documents/Assignments/Unit 4.3$ kubectl get pod
NAME                                  READY   STATUS    RESTARTS   AGE
mongo-deployment-85bbdc6549-68k57     1/1     Running   0          18m
mongo-express-5bcd46fcff-bpjxb        1/1     Running   0          17m
(base) saadsameerkhan@all-MS-7D35:~/Documents/Assignments/Unit 4.3$ kubectl get deployment
NAME              READY   UP-TO-DATE   AVAILABLE   AGE
mongo-deployment  1/1     1            1           18m
mongo-express     1/1     1            1           17m
(base) saadsameerkhan@all-MS-7D35:~/Documents/Assignments/Unit 4.3$ kubectl get service
NAME                  TYPE           CLUSTER-IP       EXTERNAL-IP    PORT(S)          AGE
kubernetes            ClusterIP      10.96.0.1        <none>         443/TCP          2d22h
mongo-express-service LoadBalancer   10.106.189.165   192.168.0.10   8080:30001/TCP   17m
mongo-service         ClusterIP      10.103.252.234   <none>         27017/TCP        18m
mongodb-service       ClusterIP      10.103.10.25     <none>         8015/TCP         80m
(base) saadsameerkhan@all-MS-7D35:~/Documents/Assignments/Unit 4.3$ kubectl get configmap
NAME               DATA   AGE
kube-root-ca.crt   1      2d22h
mongodb-configmap  1      18m
(base) saadsameerkhan@all-MS-7D35:~/Documents/Assignments/Unit 4.3$ kubectl get secret
NAME             TYPE     DATA   AGE
mongodb-secret   Opaque   2      80m
```

3) Getting detailed information on a mongoDB pod by using describe

```
(base) saadsameerkhan@all-MS-7D35:~/Documents/Assignments/Unit 4.3$ kubectl describe pod mongo-deployment-85bbdc6549-68k57
Name:             mongo-deployment-85bbdc6549-68k57
Namespace:        default
Priority:         0
Service Account:  default
Node:             minikube/192.168.49.2
Start Time:       Fri, 12 May 2023 11:02:31 +0500
Labels:           app=mongodb
                  pod-template-hash=85bbdc6549
Annotations:      <none>
Status:           Running
IP:               10.244.0.6
IPs:
  IP:           10.244.0.6
Controlled By:  ReplicaSet/mongo-deployment-85bbdc6549
Containers:
  mongodb:
    Container ID:   docker://4c27afec36c5b8a800572187a62b1d46460392cfa6601f92a777d687016ed6d8
    Image:          mongo
    Image ID:       docker-pullable://mongo@sha256:928347070dc089a596f869a22a4204c0feace3eb03470a6a2de6814f11fb7309
    Port:           27017/TCP
    Host Port:      0/TCP
    State:          Running
      Started:      Fri, 12 May 2023 11:02:33 +0500
    Ready:          True
    Restart Count:  0
    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:
      /var/run/secrets/kubernetes.io/serviceaccount from kube-api-access-7xbjr (ro)
Conditions:
  Type              Status
  Initialized       True
  Ready             True
  ContainersReady   True
  PodScheduled      True
Volumes:
  kube-api-access-7xbjr:
    Type:                    Projected (a volume that contains injected data from multiple sources)
    TokenExpirationSeconds:  3607
    ConfigMapName:           kube-root-ca.crt
    ConfigMapOptional:       <nil>
    DownwardAPI:             true
QoS Class:                   BestEffort
Node-Selectors:              <none>
```

4) Getting logs for the mongoDB pod

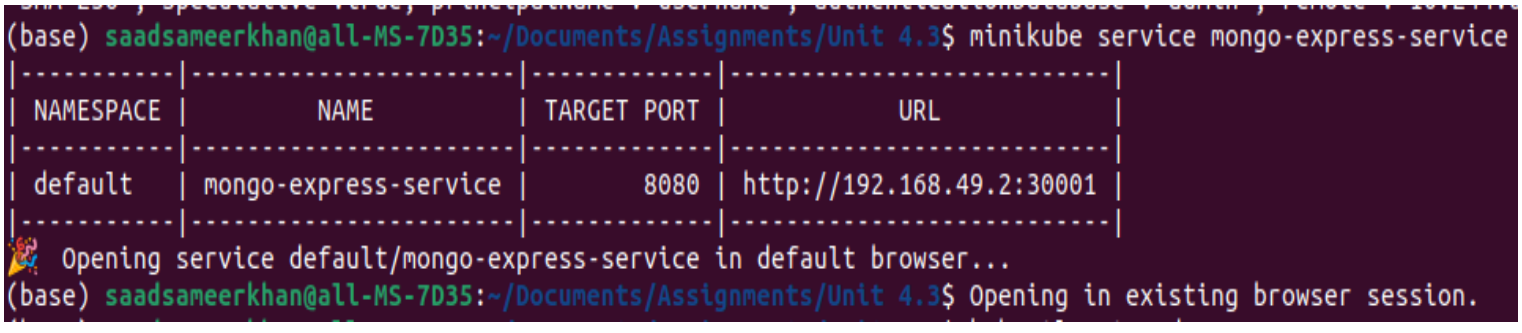
Logs can be viewed for troubleshooting and solving problems.



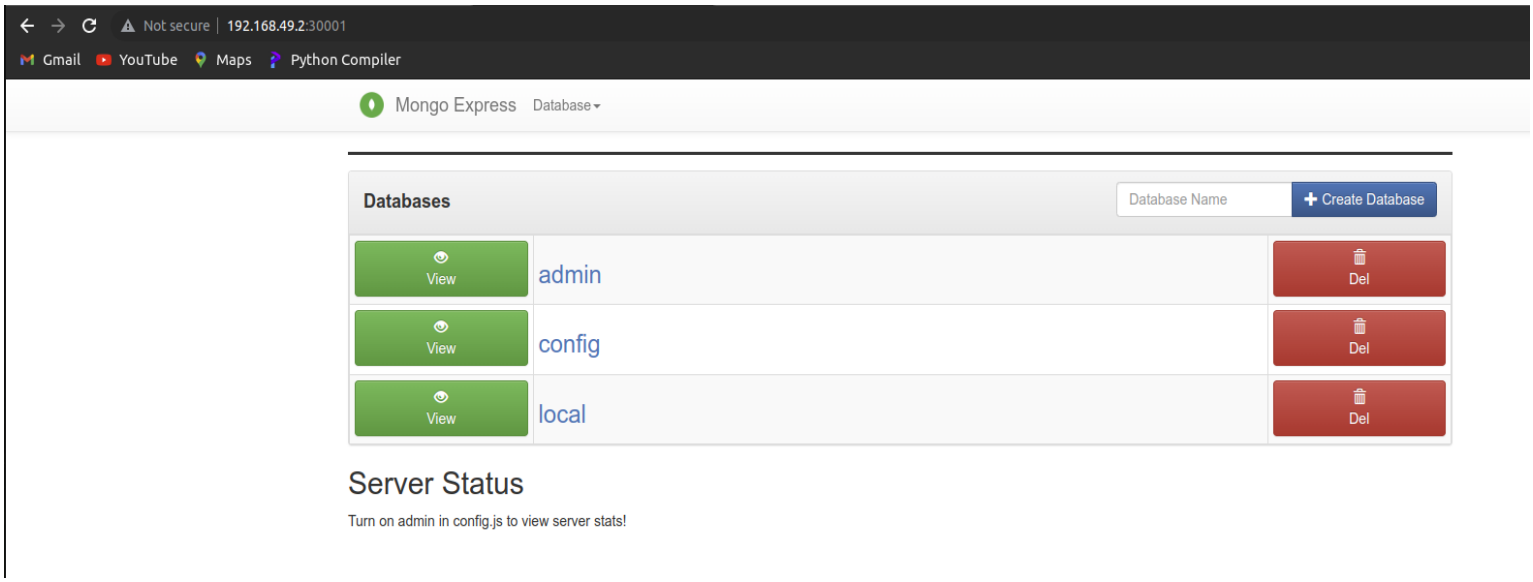
5) Opening Mongo Express on browser

Now, we have to open Mongo Express on browser.

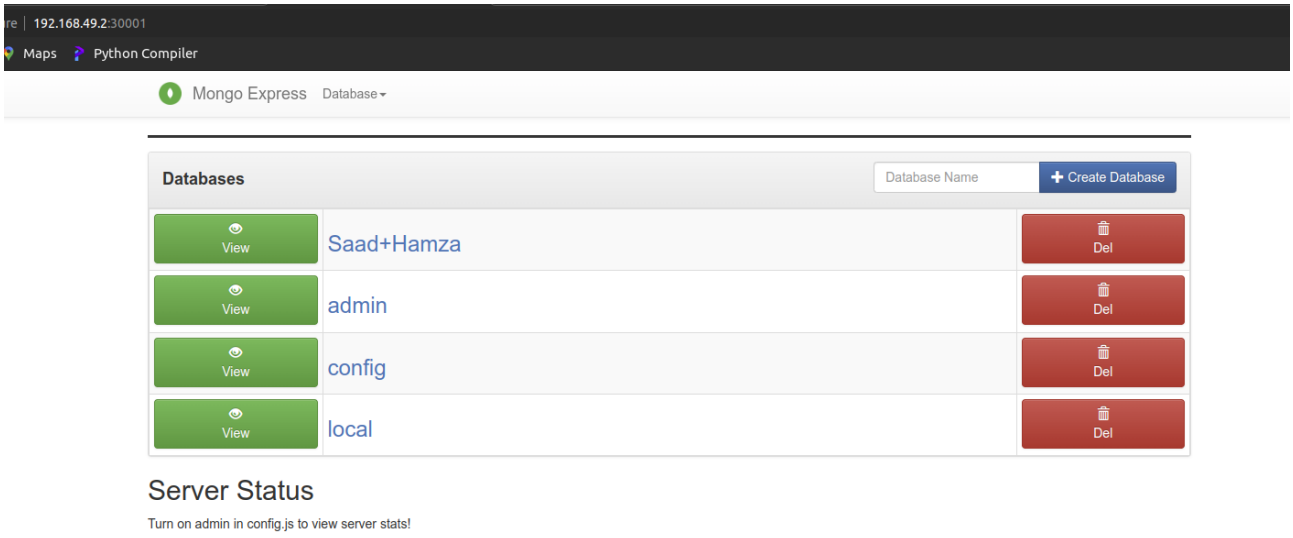
- To do that, first we open mongo-express' service:



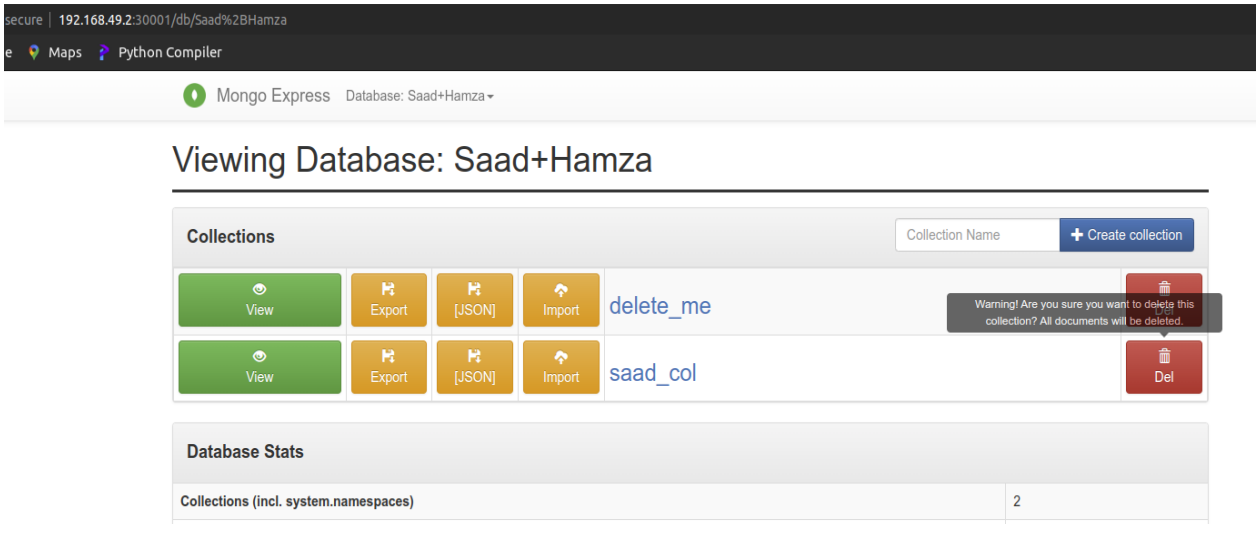
- This will open Mongo Express on our browser at nodeport 30001, as was defined in the mongo-express service file:



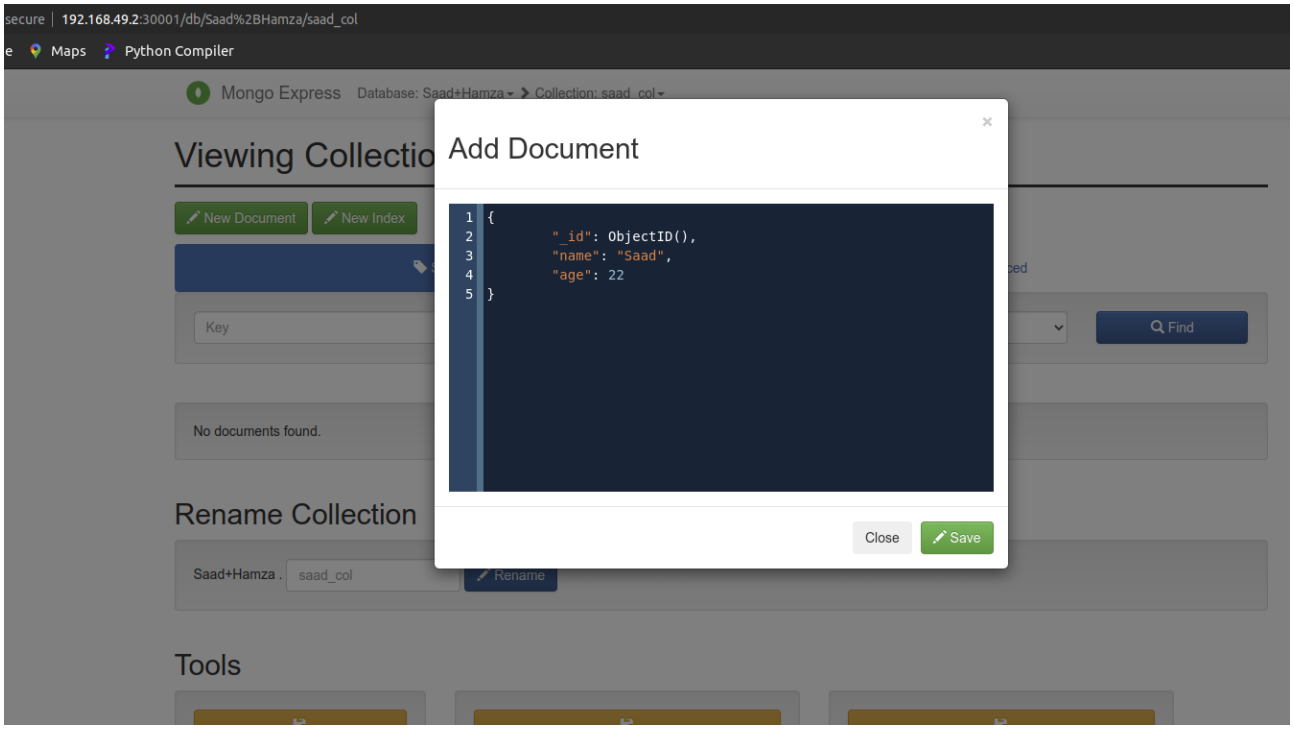
- Now we create a new database with the name ‘Saad+Hamza’



- Inside the database, we create a new collection named ‘saad_col’



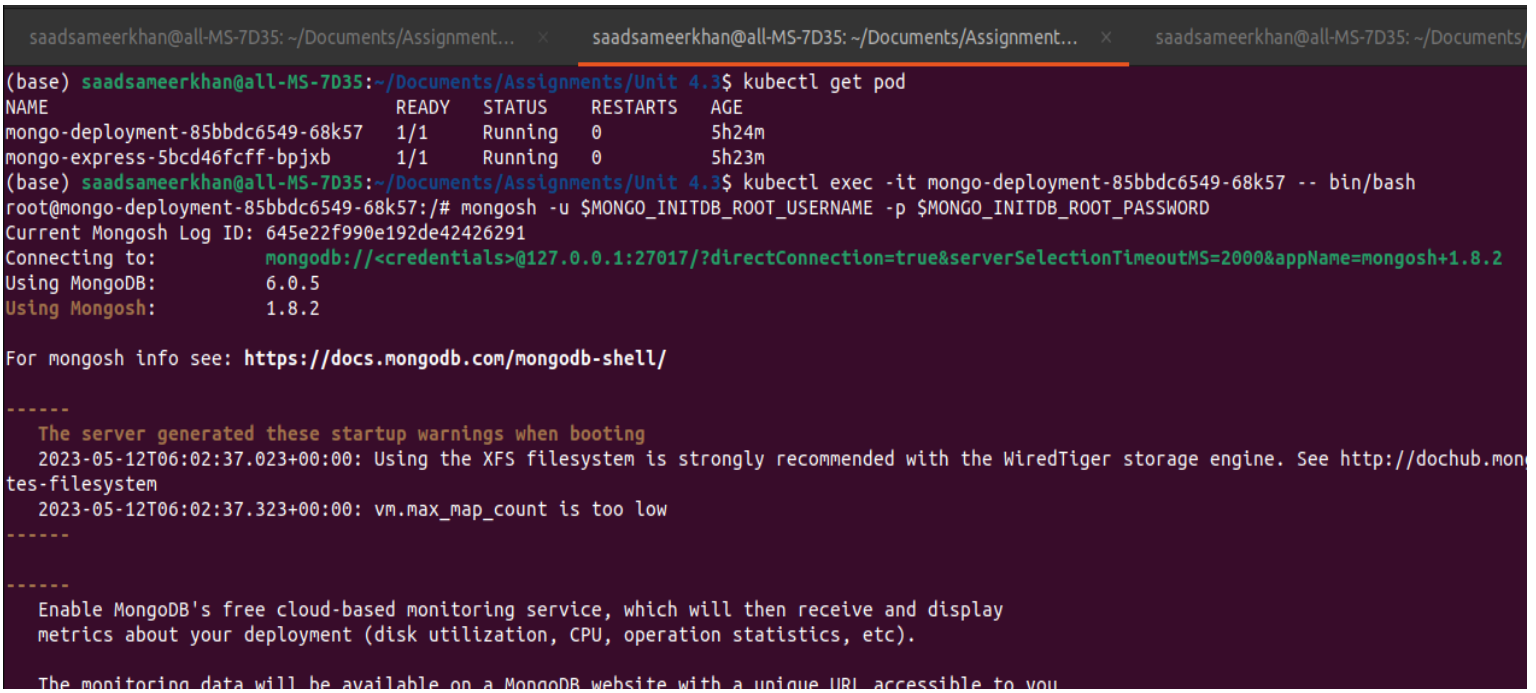
- Now we create a new document inside this collection:



6) Verifying changes

Now, we want to see whether the changes we made in mongo-express took place inside mongoDB.

- To do that, we get into the interactive terminal of the pod of mongoDB. After which we log into mongosh with the username and password we declared in the secret file.



- Now we get into our database ‘Saad+Hamza’. And then we list all the collections. And finally view the document inside ‘saad_col’ collection. We then see that our newly document is there.