

DevOps Assignment 2

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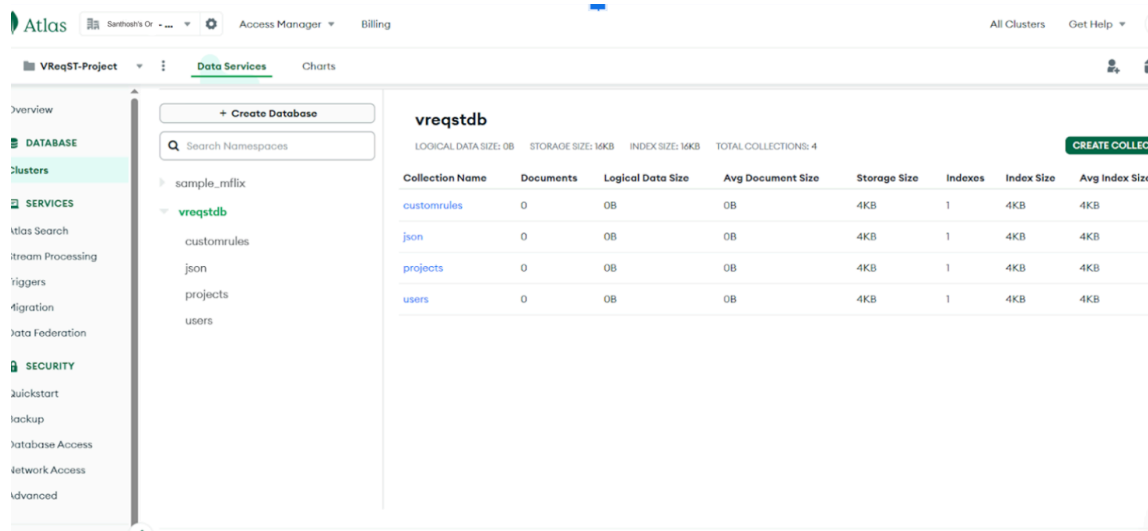
Q1 (B): Deploy VReqST – A requirement specification tool in a container.

Objective:

To deploy the VReqST (Virtual Reality Requirement Specification Tool) application using Docker, containerizing both the application and the associated MongoDB database service, ensuring proper database configuration and connectivity.

Setting up MongoDB Database:

- Create a new Project within MongoDB Atlas.
- Inside the project, create a Database Cluster (free-tier is sufficient for this assignment).



- Once the cluster is created, define four collections within a new database using the following names:
 - customrules
 - jsons
 - projects
 - users

The screenshot shows the MongoDB Atlas interface for a database named 'vreqstdb'. The sidebar on the left contains navigation links: Overview, DATABASE, Clusters, SERVICES, and SECURITY. The main panel displays the database configuration, including a search bar for namespaces and a table of collections.

Collection Name	Documents	Logical Data Size	Avg Document Size	Storage Size	Indexes	Index Size	Avg Index Size
customrules	0	0B	0B	4KB	1	4KB	4KB
json	0	0B	0B	4KB	1	4KB	4KB
projects	0	0B	0B	4KB	1	4KB	4KB
users	0	0B	0B	4KB	1	4KB	4KB

- Update the application's server code to replace any local MongoDB connection string (e.g. `mongodb://localhost:27017/vreqst`) with the above cloud-hosted MongoDB Atlas connection string.
Typically, this connection string is found in either:
 - `backend/server.js`
 - `backend/app.js`
 - or a configuration file such as `backend/config.js` or `backend/config/db.js`

Writing the Dockerfile and docker-compose.yml File:

Create a **Dockerfile** file in the project root directory with the following code:

```

1 FROM node:14
2
3 WORKDIR /app
4
5 COPY . .
6
7 WORKDIR /app/backend
8 RUN npm install
9
10 WORKDIR /app/validation_server
11 RUN npm install
12
13 WORKDIR /app/frontend
14 RUN npm install
15 RUN npm run client-install
16
17 EXPOSE 3000 5001 5002
18
19 CMD ["bash", "-c", "cd /app/backend && npx nodemon index.js && cd /app/validation_server && npx nodemon index.js && cd /app/frontend && npm run dev"]

```