

Full Stack Development with MERN

Database Design and Development Report

Date	10 July 2024
Team ID	SWTID1720101616
Project Name	Video Sharing App MERN

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Prepared by: Vishal S

Objective:

The objective of this report is to outline the database design and implementation details for the Video Sharing App MERN project, including schema design and database management system (DBMS) integration.

Technologies Used:

- **Database Management System (DBMS):** MongoDB
- **Object-Document Mapper (ODM):** Mongoose

Design the Database Schema:

The database schema is designed to accommodate the following entities and relationships:

1. Users:

- Attributes: `_id`, `name`, `email`, `img`, `subscribers`, `subscribedUsers`, `fromGoogle`, `createdAt`, `updatedAt`.

2. Videos:

- Attributes: `_id`, `userId`, `title`, `desc`, `imgUrl`, `videoUrl`, `views`, `tags`, `likes`, `dislikes`, `createdAt`, `updatedAt`.

3. Comments:

- Attributes: `_id`, `userId`, `videoId`, `desc`.

Implement the Database using MongoDB:

The MongoDB database is implemented with the following collections and structures:

Database Name: test

1. Collection: users

- Schema:

```
...  
  
{  
  _id: ObjectId,  
  name: String,  
  email: String,  
  img: String,  
  subscribers: Number,  
  subscribedUsers: [String],  
  fromGoogle: Boolean,  
  createdAt: Date,  
  updatedAt: Date  
}  
...
```

2. Collection: videos

- Schema:

```
...  
  
{  
  _id: ObjectId,  
  title: String,  
  desc: String,  
  imgUrl: String,  
  videoUrl: String,  
}
```

```
views: Number,  
tags: [String],  
likes: [String],  
dislikes: [String],  
createdAt: Date,  
updatedAt: Date  
}  
...
```

3. Collection: comments

- Schema:

```
...  
  
{  
  _id: ObjectId,  
  userId: String,  
  videoId: String,  
  desc: String,  
  createdAt: Date,  
  updatedAt: Date  
}  
...
```

Integration with Backend:

- Database connection: Give Screenshot of Database connection done using Mongoose.

MONGO = `mongodb+srv://Mohan:Mohan@cluster0.spuif10.mongodb.net/?retryWrites=true&w=majority&appName=Cluster0`

```
const connect = () => {  
  mongoose  
    .connect(process.env.MONGO)  
    .then(() => {  
      console.log("Connected to DB");  
    })  
    .catch((err) => {  
      throw err;  
    });  
};
```

- The backend APIs interact with MongoDB using Mongoose ODM Key interactions include:
 - User Management: CRUD operations for users.
 - Videos Management: CRUD operations for Videos, with user authentication.
 - Comment Management: CRUD operations for comments associated with videos.