MongoDB + Mongoose: Quick Setup & CRUD Operations

1. Introduction to MongoDB & Mongoose

MongoDB is a NoSQL database known for its flexibility and scalability. Mongoose is an ODM (Object Data Modeling) library for MongoDB and Node.js, helping to define schemas and manage data with ease.

2. MongoDB Setup (using Atlas)

1. Go to https://www.mongodb.com/cloud/atlas
2. Create an account and set up a cluster
3. Create a database user and get your connection string
4. Allow your IP address in network access
5. Use this connection string in your Node.js app

3. Installing Mongoose

Run this command in your Node.js project:

```
npm install mongoose
```

Then connect to your database:

```
const mongoose = require('mongoose');
mongoose.connect('your_mongodb_uri')
  .then(() => console.log('Connected'))
  .catch(err => console.log(err));
```

4. Schema & Schema Types

Define a schema:

```
const userSchema = new mongoose.Schema({
  name: String,
  email: { type: String, required: true },
```

```
  age: Number,
  isActive: Boolean,
  createdAt: { type: Date, default: Date.now }
});

const User = mongoose.model('User', userSchema);
```

5. CRUD Operations in Mongoose

CREATE:

```
const newUser = new User({ name: 'Sumit', email: 'sumit@example.com' });
await newUser.save();
```

READ:

```
const users = await User.find();
```

UPDATE:

```
await User.updateOne({ _id: id }, { name: 'Updated' });
```

DELETE:

```
await User.deleteOne({ _id: id });
```

6. Bonus Tips

- Always validate user inputs
- Use try/catch for async operations
- Use `.lean()` for faster queries when you don't need Mongoose features