MongoDB - 1

Connecting to MongoDB

Mongoose

To start using MongoDB with our express application we will need to install the mongoose package

```
npm install mongoose
```

Connecting to MongoDB

1. Import mongoose
2. Create the MongoDB connection string
3. Call the mongoose.connect function with the mongoDB url string as a parameter

```javascript
import mongoose from 'mongoose';

const url = 'mongodb://localhost:27017/zuvy'

mongoose.connect(url)
.then(() => console.log("Connected to MongoDB"))
.catch((err) => console.log("Connection to MongoDB failed", err))
```

What is a schema ?

A schema in MongoDB, particularly when using Mongoose with Node.js, is a structure that defines the shape and properties of documents within a collection.

Designing the Schema

1. We need create a schema object using the mongoose Schema constructor class.
2. Below is a schema for a User

```
const userSchema = new mongoose.Schema({
  name: { type: String, required: true },
  email: { type: String, required: true, unique: true },
  password: { type: String, required: true },
  createdAt: { type: Date, default: Date.now }
});
```

Designing the Schema

- **type**: Specifies the data type (String, Number, Date, etc.)
- **required**: Makes the field mandatory
- **unique**: Ensures no two documents have the same value for this field
- **default**: Sets a default value if none is provided

```javascript
const userSchema = new mongoose.Schema({
  name: { type: String, required: true },
  email: { type: String, required: true, unique: true },
  password: { type: String, required: true },
  createdAt: { type: Date, default: Date.now }
});
```

What is a Modal ?

Models are constructors compiled from Schema definitions.

An instance of a model is called a document.

Models are used to create, read, update, and delete documents in the database

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

The "User" argument

- Defines the name of the model

- Mongoose uses this to create the collection name in MongoDB

- Collection name: Lowercase, pluralized version of the model name
  - Example: 'User' model ↠ 'users' collection

What happens when mongoose.model() is called?

- Creates a new model class

- Links the model to a MongoDB collection

- Applies schema validations and middleware

- Provides an interface for database operations

Creating and using Modal

1. Create the modal by calling the model function.
2. Export the Created Model class to be used in other files
3. Import the Model class in other file
4. Use the Modal class to create the modal object.
5. The created model object will have built in methods for MongoDB operations

Examples of methods:

- User.create()
- User.find()
- User.updateOne()
- User.deleteMany()

Creating and storing data in Databse