Object-Relational Mapping (ORM)

Coding Boot Camp

Module 13

What are some of the challenges of using plain SQL in JavaScript?

Challenges of SQL in JavaScript

- It is prone to accidental syntax errors.
- Complicated queries can be hard to follow.
- It requires extra work to validate and secure data.
- Similar routes can lead to repetitive queries being written.
- Data relationships aren’t obvious just by looking at the code.

How can objects help us manage SQL queries in JavaScript?

Objects and SQL

01

We can set up object methods to run generic SQL queries based on the method’s parameters.

02

We can structure objects to mimic how the data is stored in the database, eliminating ambiguity.

03

We can import objects into any other module that needs to execute its SQL queries.

Is there a library that might already do this for us?

Sequelize is an object-relational mapper (ORM) that can be installed with npm.

Sequelize

Sequelize provides the following benefits:

- Allows you to model your data as JavaScript classes.
- Abstracts SQL queries to simpler object methods.
- Provides built-in validation checks for securing data.
- Makes it easier to visualize and join relational data.
- And more!

How can we learn to use and implement Sequelize?

Sequelize and other ORMs were created to make managing and using data easier, but they still come with a learning curve!

How to Learn Sequelize

You can try the following strategies to learn Sequelize:

- Read the official documentation and practice with the provided examples.
- Reverse-engineer finished code to see how something was accomplished.
- Build something from scratch.
- Debug a broken app.
- And most importantly, ask questions!

The `async` and `await` Keywords

- `async/await` is a feature that makes asynchronous code look and behave more like synchronous code.
- The use of `async/await` improves the readability and maintainability of code that involves asynchronous operations.
- `async/await` is built on top of Promises, but provides a more elegant way to work with them.
- Unlike Promises, which can lead to complex nested structures, the `async` and `await` keywords provide a more linear and readable code structure.
- For example, we can use `try/catch` blocks to handle errors that might occur during the asynchronous operations within an `async` function.

Instructor Demonstration

Mini-Project