Implementing a Relational Database with MySQL

6.170 Recitation 5
Step 0: Before Recitation

Set up an MIT MySQL Account (see Stellar for instructions)

**Bring your MySQL Account username & password to recitation

Create a database at sql.mit.edu.

- We’ll be continuing the URL Shortener example, so you can call it URLshortener.
Step 1: Create tables

Create the following tables using SQL:

- **users** with field **name**
- **shorts** with fields **id**, **name**, **url**, and **creator**

Your code that creates the tables should make at least one use of the notion of integrity constraint.

Creating a table: [https://www.w3schools.com/SQL/sql_create_table.asp](https://www.w3schools.com/SQL/sql_create_table.asp)
Integrity Constraints: [https://www.w3schools.com/sql/sql_constraints.asp](https://www.w3schools.com/sql/sql_constraints.asp)
Step 2: Populate tables

Add a user with name **bob**.

Add a short named **google** for **https://google.com**.

Insert: [https://www.w3schools.com/sql/sql_insert.asp](https://www.w3schools.com/sql/sql_insert.asp)
Step 3: Update Tables

Change the url for google to https://www.stellar.mit.edu.

Add a new url for piazza, then delete it.

Update: https://www.w3schools.com/sql/sql_update.asp
Delete: https://www.w3schools.com/SQL/sql_delete.asp
Step 4: Connect to the DB

Clone today’s repo: https://github.mit.edu/6170-fa18/url-shortener-db-starter-code

Fill out the config object in database.js.

Install dependencies & run the application:

```
npm i

npm start```

Step 5: Access tables from application

Signing in should work (if you have table `users` with field `name`).

Implement the methods in `models/Shorts.js`.

- `addOne`
- `findOne`
- `findAll`
- `updateOne`
- `deleteOne`

Hint: use the query method in `database.js`, and look at `models/Users.js`
Things to think about moving forward

- Formatting responses from the DB before passing them on.
- Catching all errors.
- Using IDs for referencing, instead of names.
- Doing as much with the queries as possible (e.g. filtering, sorting).
- Enforcing 3NF.