

# CRUD Operations using Mongoose and MongoDB

So, in this section, you learned that:

- MongoDB is an open-source document database. It stores data in flexible, JSON-like documents.
- In relational databases we have **tables** and **rows**, in MongoDB we have **collections** and **documents**. A document can contain sub-documents.
- We don't have relationships between documents.
- To connect to MongoDB:

## // Connecting to MongoDB

```
const mongoose = require('mongoose');
mongoose.connect('mongodb://localhost/playground')
  .then(() => console.log('Connected...'))
  .catch(err => console.error('Connection failed...'));
```

- To store objects in MongoDB, we need to define a Mongoose **schema** first. The schema defines the shape of documents in MongoDB.

## // Defining a schema

```
const courseSchema = new mongoose.Schema({
  name: String,
  price: Number
});
```

- We can use a SchemaType object to provide additional details:

// Using a SchemaType object

```
const courseSchema = new mongoose.Schema({  
  isPublished: { type: Boolean, default: false }  
});
```

- Supported types are: **String**, **Number**, **Date**, **Buffer** (for storing binary data), **Boolean** and **ObjectId**.
- Once we have a schema, we need to compile it into a model. A model is like a class. It's a blueprint for creating objects:

// Creating a model

```
const Course = mongoose.model('Course', courseSchema);
```

## CRUD Operations

// Saving a document

```
let course = new Course({ name: '...' });  
course = await course.save();
```

// Querying documents

```
const courses = await Course  
  .find({ author: 'Mosh', isPublished: true })  
  .skip(10)  
  .limit(10)  
  .sort({ name: 1, price: -1 })  
  .select({ name: 1, price: 1 });
```

// Updating a document (query first)

```
const course = await Course.findById(id);  
if (!course) return;  
course.set({ name: '...' });  
course.save();
```

// Updating a document (update first)

```
const result = await Course.update({ _id: id }, {  
  $set: { name: '...' }  
});
```

// Updating a document (update first) and return it

```
const result = await Course.findByIdAndUpdate({ _id: id }, {  
  $set: { name: '...' }  
}, { new: true });
```

// Removing a document

```
const result = await Course.deleteOne({ _id: id });  
const result = await Course.deleteMany({ _id: id });  
const course = await Course.findByIdAndRemove(id);
```