CCPS530 6J0
Web Systems Development
W2025
Kyle Purves
500315422

Lab 8 (MongoDB version)

For this course, I am taking a unique approach by developing duelling sister sites—two interconnected web pages that evolve with each lab while adhering to the assignment requirements.

Concept Overview:
- "Found: Places I've Been" – A personal reflection site documenting past travels, experiences, and memorable locations.
- "Lost: Places I Want to Go" – A future-focused site showcasing bucket list destinations, aspirations, and anticipated adventures..

Rather than treating each lab as a separate assignment, I am ensuring continuity and consistency across submissions, allowing the project to grow organically. This portfolio-driven approach mirrors real-world web development, where sites evolve over time.

These sister sites follow distinct themes:

- ❖ "Found" evokes warm nostalgia with earthy tones and reminiscence-based storytelling.
- ❖ "Lost" embraces cool, futuristic aesthetics that represent aspirations and uncharted adventures.

Lab 7: Why a Book Inventory Works for the Lost Site

For Lab 7, I chose to focus exclusively on the Lost site, as the objective was to create a book inventory system. I felt that books aligned more naturally with the sentiment of preparing for travel and what you might plan to do while traveling.
- Books are a traveler's companion, making them a perfect fit for the Lost site's aspirational theme.
- I expanded on the base requirements by creating a form that allows users to add books dynamically, enriching their personal travel research library.
- The book inventory system is structured to allow users to categorize books based on pre-trip inspiration, travel memoirs, and cultural deep dives.

Future Enhancements

- In future iterations, I may apply similar techniques to the Found site but instead of books, I would create a media library focused on films, TV shows, and music that remind users of places they've already traveled.
- As this project evolves, I see it becoming more like **Letterboxd for travel**, a social platform for documenting and sharing travel experiences, allowing users to curate books, films, and memories tied to specific locations.

For this lab, I implemented a book inventory system using MongoDB as the database and Node.js to handle server-side operations. The inventory allows users to add, view, and delete books, with data being stored in a MongoDB collection. The backend was developed using Express.js, and books were inserted into the database using Mongoose.

MongoDB Atlas - "books" Collection

Atlas Kyle's Org - ... ⚙   Access Manager ▾ Billing   All Clusters   Get Help ▾   Kyle ▾

📁 Project 0 ▾ ⋮   **Data Services**   Charts   👤+ 🔧 🔔

👤 **Cluster0**   VERSION   REGION
                                                            8.0.4   AWS Oregon (us-west-2)

Overview | Overview   Real Time   Metrics   **Collections**   Atlas Search   Performance Advisor   Online Archive   Cmd Line Tools   Infrast
⚙ **DATABASE**
Clusters | DATABASES: 3   COLLECTIONS: 9   📊 VISUALIZE YOUR DATA   ⟳ REFRESH

🖥 **SERVICES**
Atlas Search   **+ Create Database**   **travel_library.books**
Stream Processing
Triggers   🔍 Search Namespaces   STORAGE SIZE: 36KB   LOGICAL DATA SIZE: 1.9KB   TOTAL DOCUMENTS: 6   INDEXES TOTAL SIZE: 36KB
Migration
Data Federation   ▸ sample_mflix   **Find**   Indexes   Schema Anti-Patterns ⓪   Aggregation   Search Indexes

🔒 **SECURITY**   ▸ test   Generate queries from natural language in Compass⧉   **INSERT DOCUMENT**
Quickstart   ▾ travel_library
Backup   books   Filter ⧉   Type a query: { field: 'value' }   Reset   Apply   Options ▸
Database Access
Network Access   QUERY RESULTS: **1-6 OF 6**
Advanced
                                                _id: ObjectId('67c78e9b280311ce25305bd4')
Goto   title : "Tokyo Vice"
                                                author : "Jake Adelstein"
                                                publisher : "Pantheon Books"
                                                date : "2009"
                                                website : "https://www.penguinrandomhouse.ca/books/198646/tokyo-vice-by-jake-adel…"
                                              ▸ tags : Array (2)
                                                location : "Tokyo, Japan"
                                                __v : 0

                                                _id: ObjectId('67c78e9b280311ce25305bd5')
                                                title : "In a Sunburned Country"
                                                author : "Bill Bryson"
                                                publisher : "Broadway Books"
                                                date : "2000"
                                                website : "https://www.penguinrandomhouse.ca/books/20559/in-a-sunburned-country-b…"
                                              ▸ tags : Array (2)
                                                location : "Sydney, Australia"
                                                __v : 0

                                                _id: ObjectId('67c78e9b280311ce25305bd6')
                                                title : "Bangkok Wakes to Rain"
                                                author : "Pitchaya Sudbanthad"
                                                publisher : "Riverhead Books"
                                                date : "2019"
                                                website : "https://www.penguinrandomhouse.ca/books/566672/bangkok-wakes-to-rain-b…"
                                              ▸ tags : Array (2)
                                                location : "Bangkok, Thailand"
                                                __v : 0

🖧 Cluster0

	VERSION	REGION
	8.0.4	AWS Oregon (us-west-2)

Overview | Real Time | Metrics | **Collections** | Atlas Search | Performance Advisor | Online Archive | Cmd Line Tools | Infrast

Overview

💾 **DATABASE**

Clusters

⚙ **SERVICES**

Atlas Search

Stream Processing

Triggers

Migration

Data Federation

🔒 **SECURITY**

Quickstart

Backup

Database Access

Network Access

Advanced

Goto

DATABASES: 3   COLLECTIONS: 9

📊 VISUALIZE YOUR DATA   ⟳ REFRESH

[+ Create Database]

🔍 Search Namespaces

▸ sample_mflix

▸ test

▾ travel_library

　books

travel_library.books

STORAGE SIZE: 36KB   LOGICAL DATA SIZE: 1.9KB   TOTAL DOCUMENTS: 6   INDEXES TOTAL SIZE: 36KB

Find   Indexes   Schema Anti-Patterns ⓪   Aggregation   Search Indexes

Generate queries from natural language in Compass⧉

INSERT DOCUMENT

Filter⧉   Type a query: { field: 'value' }   Reset   Apply   Options ▸

```
_id: ObjectId('67c78e9b280311ce25305bd7')
title : "The Island"
author : "Victoria Hislop"
publisher : "HarperCollins"
date : "2005"
website : "https://www.harpercollins.com/products/the-island-victoria-hislop?vari…"
▸ tags : Array (2)
location : "Santorini, Greece"
__v : 0
```

```
_id: ObjectId('67c78e9b280311ce25305bd8')
title : "A Strangeness in My Mind"
author : "Orhan Pamuk"
publisher : "Knopf"
date : "2015"
website : "https://www.penguinrandomhouse.com/books/212404/a-strangeness-in-my-mi…"
▸ tags : Array (2)
location : "Istanbul, Turkey"
__v : 0
```

```
_id: ObjectId('67c7a009694e472c312a45bc')
title : "The Alchemist"
author : "Paulo Coelho"
publisher : "HarperOne"
date : "1988"
website : "https://www.harpercollins.com/products/the-alchemist-25th-anniversary-…"
▸ tags : Array (2)
location : "Andalusia, Spain"
__v : 0
```

MongoDB Atlas - Database Cluster

📁 Project 0   ▾   ⋮   Data Services   Charts   👤⁺   🔧   🔔

Overview

⚙ DATABASE

Clusters

🖥 SERVICES

Atlas Search

Stream Processing

Triggers

Migration

Data Federation

🔒 SECURITY

Quickstart

Backup

Database Access

Network Access

Advanced

New On Atlas 6

Goto

Clusters

🔍 Find a database deployment...   🗄 Edit Config ▾   ＋ Create

● **Cluster0**   Connect   View Monitoring   Browse Collections   ⋯   FREE
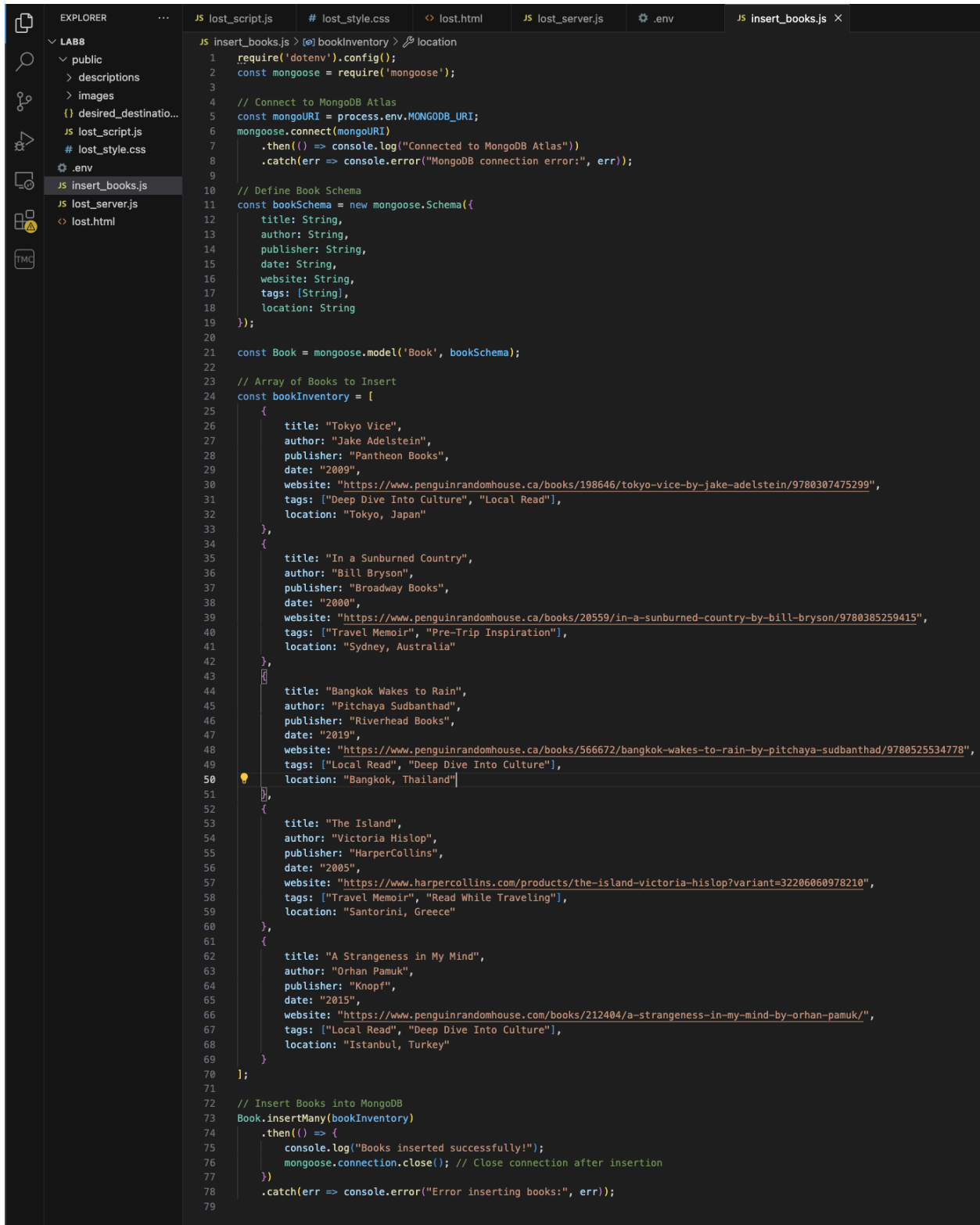
VERSION	REGION	TYPE	BACKUPS	LINKED APP SERVICES	ATLAS SQL	ATLAS SEARCH
8.0.4	AWS / Oregon (us-west-2)	Replica Set - 3 nodes	Inactive	None Linked	Connect	Create Index

+ Add Tag

Node.js Code - Inserting Books into MongoDB

EXPLORER ···

∨ LAB8
  ∨ public
    > descriptions
    > images
    {} desired_destinatio...
    JS lost_script.js
    # lost_style.css
    ⚙ .env
    JS insert_books.js
    JS lost_server.js
    <> lost.html

JS lost_script.js   # lost_style.css   <> lost.html   JS lost_server.js   ⚙ .env   JS insert_books.js ✕

insert_books.js > [∅] bookInventory > 🔗 location

```javascript
require('dotenv').config();
const mongoose = require('mongoose');

// Connect to MongoDB Atlas
const mongoURI = process.env.MONGODB_URI;
mongoose.connect(mongoURI)
    .then(() => console.log("Connected to MongoDB Atlas"))
    .catch(err => console.error("MongoDB connection error:", err));

// Define Book Schema
const bookSchema = new mongoose.Schema({
    title: String,
    author: String,
    publisher: String,
    date: String,
    website: String,
    tags: [String],
    location: String
});

const Book = mongoose.model('Book', bookSchema);

// Array of Books to Insert
const bookInventory = [
    {
        title: "Tokyo Vice",
        author: "Jake Adelstein",
        publisher: "Pantheon Books",
        date: "2009",
        website: "https://www.penguinrandomhouse.ca/books/198646/tokyo-vice-by-jake-adelstein/9780307475299",
        tags: ["Deep Dive Into Culture", "Local Read"],
        location: "Tokyo, Japan"
    },
    {
        title: "In a Sunburned Country",
        author: "Bill Bryson",
        publisher: "Broadway Books",
        date: "2000",
        website: "https://www.penguinrandomhouse.ca/books/20559/in-a-sunburned-country-by-bill-bryson/9780385259415",
        tags: ["Travel Memoir", "Pre-Trip Inspiration"],
        location: "Sydney, Australia"
    },
    {
        title: "Bangkok Wakes to Rain",
        author: "Pitchaya Sudbanthad",
        publisher: "Riverhead Books",
        date: "2019",
        website: "https://www.penguinrandomhouse.ca/books/566672/bangkok-wakes-to-rain-by-pitchaya-sudbanthad/9780525534778",
        tags: ["Local Read", "Deep Dive Into Culture"],
        location: "Bangkok, Thailand"
    },
    {
        title: "The Island",
        author: "Victoria Hislop",
        publisher: "HarperCollins",
        date: "2005",
        website: "https://www.harpercollins.com/products/the-island-victoria-hislop?variant=32206060978210",
        tags: ["Travel Memoir", "Read While Traveling"],
        location: "Santorini, Greece"
    },
    {
        title: "A Strangeness in My Mind",
        author: "Orhan Pamuk",
        publisher: "Knopf",
        date: "2015",
        website: "https://www.penguinrandomhouse.com/books/212404/a-strangeness-in-my-mind-by-orhan-pamuk/",
        tags: ["Local Read", "Deep Dive Into Culture"],
        location: "Istanbul, Turkey"
    }
];

// Insert Books into MongoDB
Book.insertMany(bookInventory)
    .then(() => {
        console.log("Books inserted successfully!");
        mongoose.connection.close(); // Close connection after insertion
    })
    .catch(err => console.error("Error inserting books:", err));
```

Travel Book Inventory page

Lost - Travel Book Library

Kyle Purves

Travel Book Inventory

Tokyo Vice
by Jake Adelstein
Publisher: Pantheon Books
Published: 2009
Location: Tokyo, Japan
Website: Pantheon Books Website

Tags:
Deep Dive Into Culture   Local Read

Delete Book

In a Sunburned Country
by Bill Bryson
Publisher: Broadway Books
Published: 2000
Location: Sydney, Australia
Website: Broadway Books Website

Tags:
Travel Memoir   Pre-Trip Inspiration

Delete Book

Travel Memoir   Pre-Trip Inspiration

Delete Book

Bangkok Wakes to Rain
by Pitchaya Sudbanthad
Publisher: Riverhead Books
Published: 2019
Location: Bangkok, Thailand
Website: Riverhead Books Website

Tags:
Local Read   Deep Dive Into Culture

Delete Book

The Island
by Victoria Hislop
Publisher: HarperCollins
Published: 2005
Location: Santorini, Greece
Website: HarperCollins Website

Tags:
Travel Memoir   Read While Traveling

Delete Book

A Strangeness in My Mind
by Orhan Pamuk
Publisher: Knopf
Published: 2015
Location: Istanbul, Turkey
Website: Knopf Website

Tags:
Local Read   Deep Dive Into Culture

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The Island
by Victoria Hislop
Publisher: HarperCollins
Published: 2005
Location: Santorini, Greece
Website: HarperCollins Website

Tags:
Travel Memoir   Read While Traveling

Delete Book

A Strangeness in My Mind
by Orhan Pamuk
Publisher: Knopf
Published: 2015
Location: Istanbul, Turkey
Website: Knopf Website

Tags:
Local Read   Deep Dive Into Culture

Delete Book

The Alchemist
by Paulo Coelho
Publisher: HarperOne
Published: 1988
Location: Andalusia, Spain
Website: HarperOne Website

Tags:
Pre-Trip Inspiration   Travel Memoir

Delete Book

Add Book to Library page

Lost - Travel Book Library

Kyle Purves

Add a New Travel Book

Title:

Atlas Obscura

Author:

Publisher:

Publication Date:

Website:

Location/Destination:

Tags (comma-separated):

Pre-Trip Inspiration, Local Read, etc.

Suggested tags (click to add):
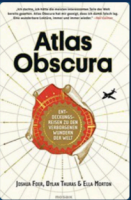
Pre-Trip Inspiration   Local Read

Travel Memoir   Read While Traveling

Deep Dive Into Culture

Add Book

Book Cover Preview

Preview updates as you type

Successful Book Add page

Lost - Travel Book Library

Kyle Purves

Book Added Successfully!

Your book has been added to the library.

| View Book Inventory | Add Another Book |