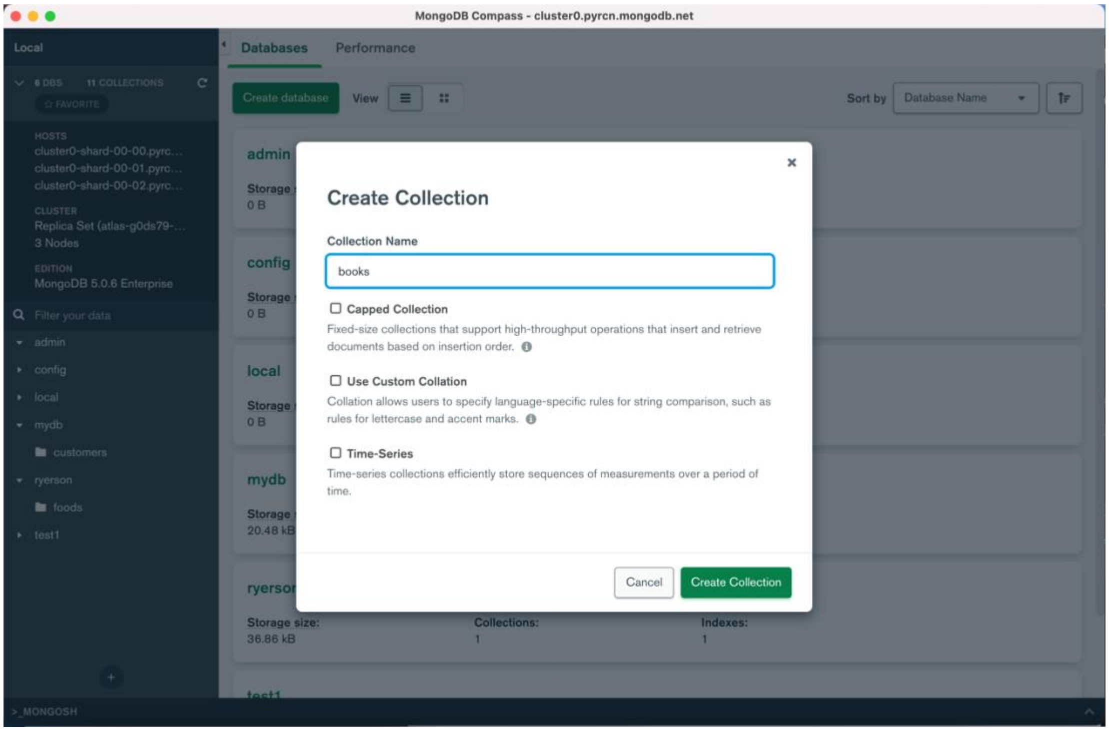
CCPS530 Lab 8 – Technical Report

Naushad Sayeed

April 8, 2022

4. Take screenshots from your website pages and attach to the report

Step 1 – First create a database called "ryerson" and inside that database, create a collection named "books".



Create Collection

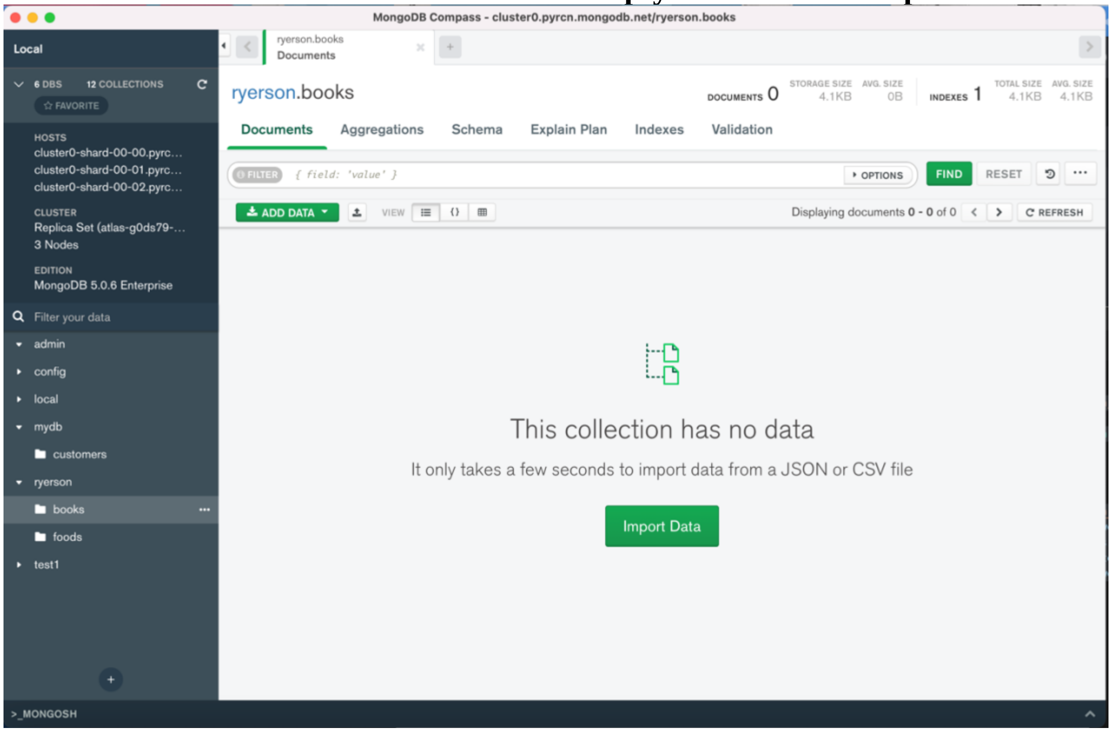
Collection Name: books

□ Capped Collection
Fixed-size collections that support high-throughput operations that insert and retrieve documents based on insertion order.

□ Use Custom Collation
Collation allows users to specify language-specific rules for string comparison, such as rules for lettercase and accent marks.

□ Time-Series
Time-series collections efficiently store sequences of measurements over a period of time.

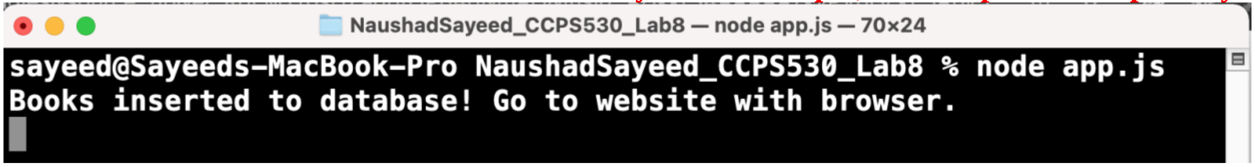
Make sure the "books" collection remains empty until the next step.



This collection has no data

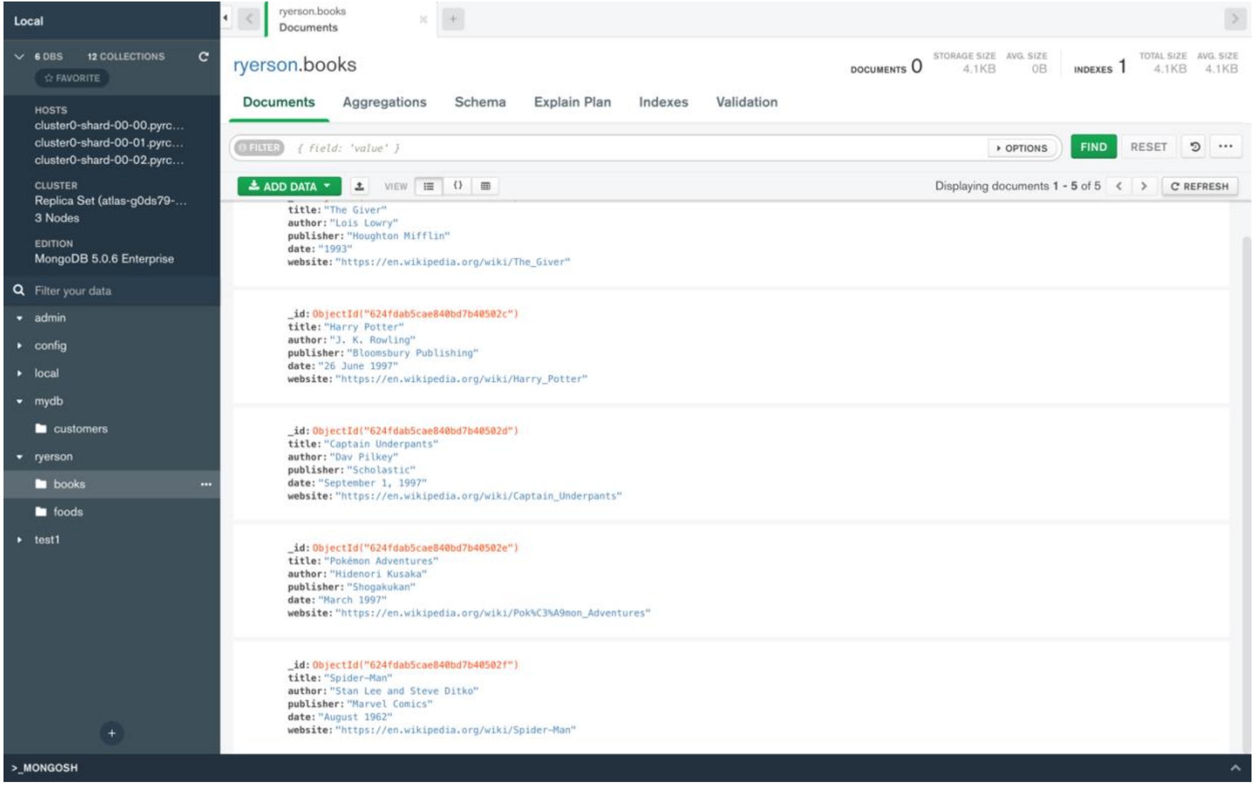
It only takes a few seconds to import data from a JSON or CSV file

Step 2 – Enter the line *node app.js* which will insert the books in the MongoDB.
NOTE: Please don't close it with Ctrl+C until you reach step 4, I will explain in step 4 why.



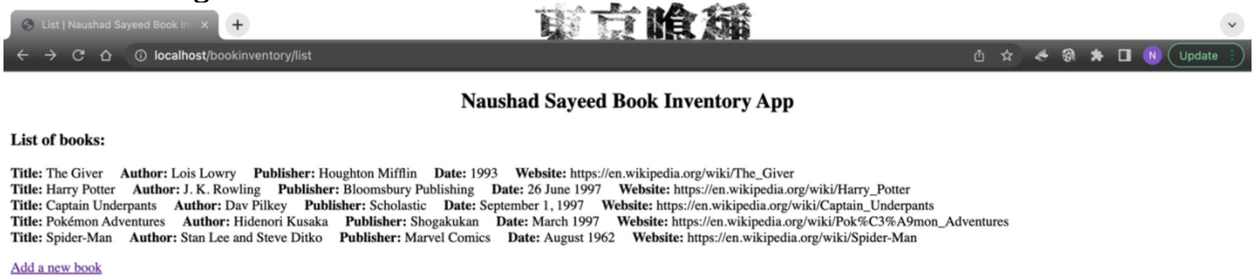
```
sayeed@Sayeeds-MacBook-Pro NaushadSayeed_CCPS530_Lab8 % node app.js
Books inserted to database! Go to website with browser.
```

When following step 2, it the "books" collection created in step 1 should have these values inserted, the same values from lab 7.



```
title:"The Giver"
author:"Lois Lowry"
publisher:"Houghton Mifflin"
date:"1993"
website:"https://en.wikipedia.org/wiki/The_Giver"

_id:ObjectId("624fdab5cae840bd7b40502c")
title:"Harry Potter"
author:"J. K. Rowling"
publisher:"Bloomsbury Publishing"
date:"26 June 1997"
website:"https://en.wikipedia.org/wiki/Harry_Potter"

_id:ObjectId("624fdab5cae840bd7b40502d")
title:"Captain Underpants"
author:"Dav Pilkey"
publisher:"Scholastic"
date:"September 1, 1997"
website:"https://en.wikipedia.org/wiki/Captain_Underpants"

_id:ObjectId("624fdab5cae840bd7b40502e")
title:"Pokémon Adventures"
author:"Hidenori Kusaka"
publisher:"Shogakukan"
date:"March 1997"
website:"https://en.wikipedia.org/wiki/Pok%C3%A9mon_Adventures"

_id:ObjectId("624fdab5cae840bd7b40502f")
title:"Spider-Man"
author:"Stan Lee and Steve Ditko"
publisher:"Marvel Comics"
date:"August 1962"
website:"https://en.wikipedia.org/wiki/Spider-Man"
```

I went on the browser and entered *http://localhost/bookinventory/list* and I was able to print from the MongoDB.



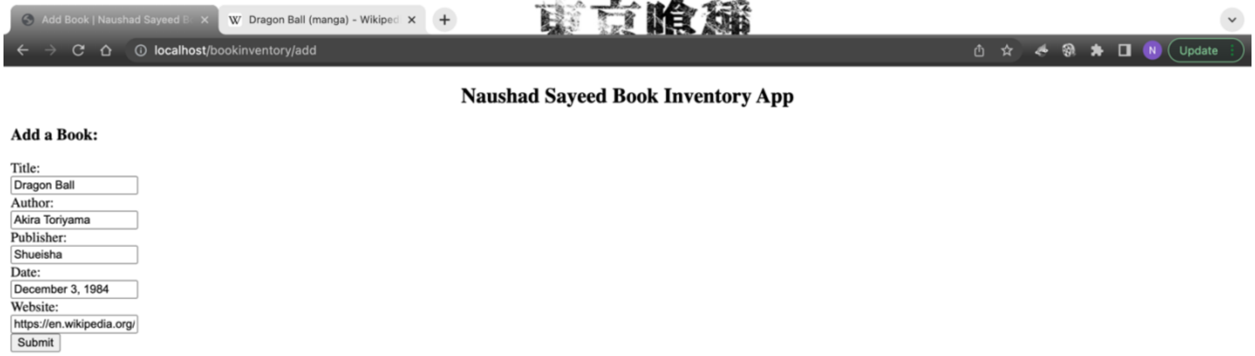
Naushad Sayeed Book Inventory App

List of books:

Title: The Giver **Author:** Lois Lowry **Publisher:** Houghton Mifflin **Date:** 1993 **Website:** https://en.wikipedia.org/wiki/The_Giver
Title: Harry Potter **Author:** J. K. Rowling **Publisher:** Bloomsbury Publishing **Date:** 26 June 1997 **Website:** https://en.wikipedia.org/wiki/Harry_Potter
Title: Captain Underpants **Author:** Dav Pilkey **Publisher:** Scholastic **Date:** September 1, 1997 **Website:** https://en.wikipedia.org/wiki/Captain_Underpants
Title: Pokémon Adventures **Author:** Hidenori Kusaka **Publisher:** Shogakukan **Date:** March 1997 **Website:** https://en.wikipedia.org/wiki/Pok%C3%A9mon_Adventures
Title: Spider-Man **Author:** Stan Lee and Steve Ditko **Publisher:** Marvel Comics **Date:** August 1962 **Website:** https://en.wikipedia.org/wiki/Spider-Man

Add a new book

Step 3 – Add a new book with the information. (I added “Dragon Ball” as the new book)

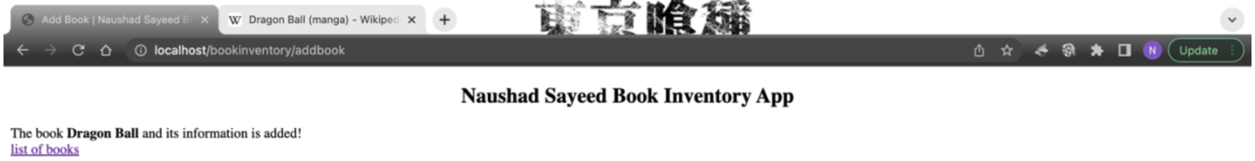

Add Book | Naushad Sayeed B
Dragon Ball (manga) - Wikiped
localhost/bookinventory/add
Update

Naushad Sayeed Book Inventory App

Add a Book:

Title:
Dragon Ball
Author:
Akira Toriyama
Publisher:
Shueisha
Date:
December 3, 1984
Website:
https://en.wikipedia.org/

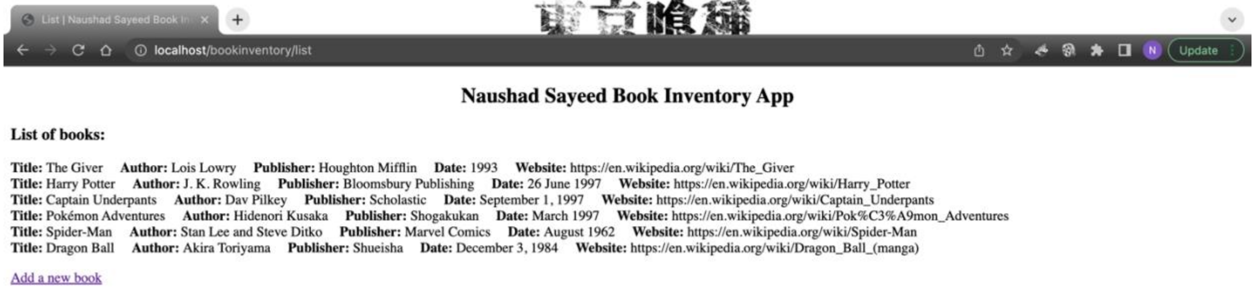
After continuing step 3, this is what it will look like.


Add Book | Naushad Sayeed B
Dragon Ball (manga) - Wikiped
localhost/bookinventory/addbook
Update

Naushad Sayeed Book Inventory App

The book **Dragon Ball** and its information is added!
list of books

When going back to the list, you can see that the Dragon Ball book I added is in the list.



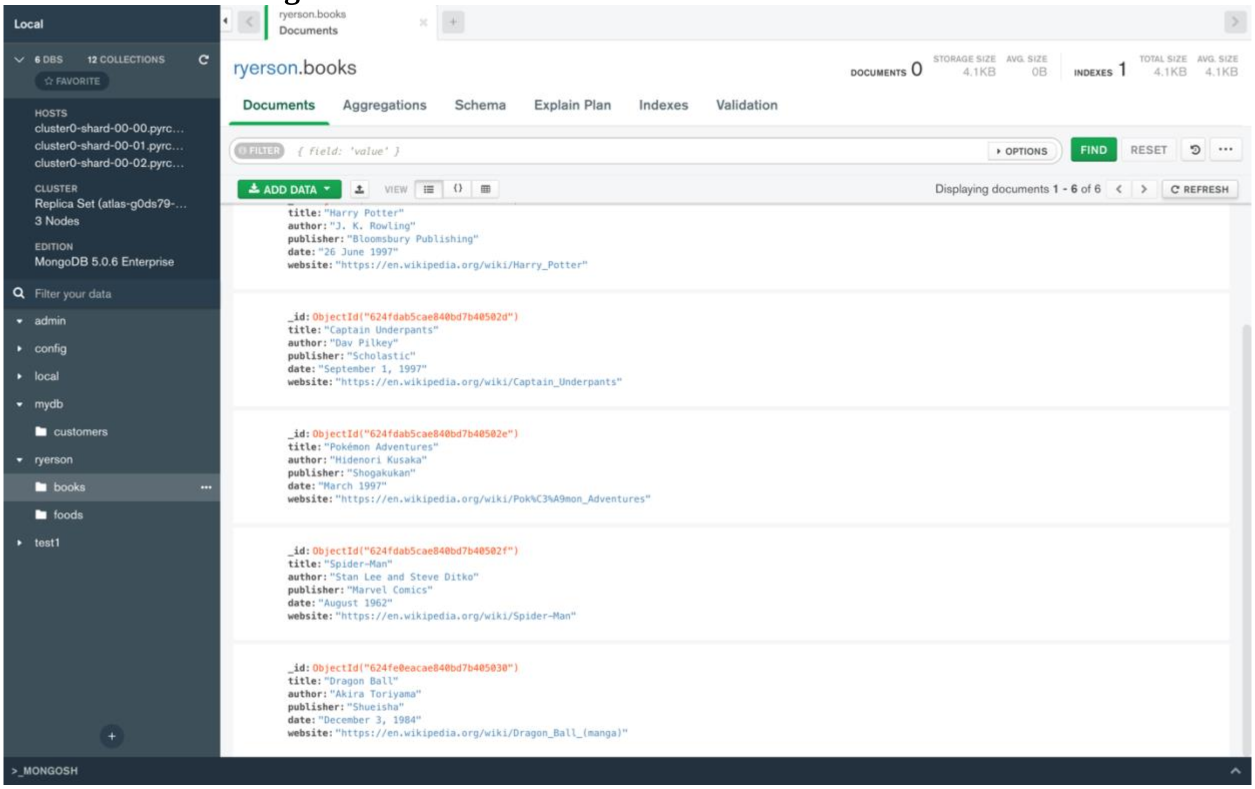
Naushad Sayeed Book Inventory App

List of books:

Title: The Giver **Author:** Lois Lowry **Publisher:** Houghton Mifflin **Date:** 1993 **Website:** https://en.wikipedia.org/wiki/The_Giver
Title: Harry Potter **Author:** J. K. Rowling **Publisher:** Bloomsbury Publishing **Date:** 26 June 1997 **Website:** https://en.wikipedia.org/wiki/Harry_Potter
Title: Captain Underpants **Author:** Dav Pilkey **Publisher:** Scholastic **Date:** September 1, 1997 **Website:** https://en.wikipedia.org/wiki/Captain_Underpants
Title: Pokémon Adventures **Author:** Hidenori Kusaka **Publisher:** Shogakukan **Date:** March 1997 **Website:** https://en.wikipedia.org/wiki/Pok%C3%A9mon_Adventures
Title: Spider-Man **Author:** Stan Lee and Steve Ditko **Publisher:** Marvel Comics **Date:** August 1962 **Website:** https://en.wikipedia.org/wiki/Spider-Man
Title: Dragon Ball **Author:** Akira Toriyama **Publisher:** Shueisha **Date:** December 3, 1984 **Website:** https://en.wikipedia.org/wiki/Dragon_Ball_(manga)

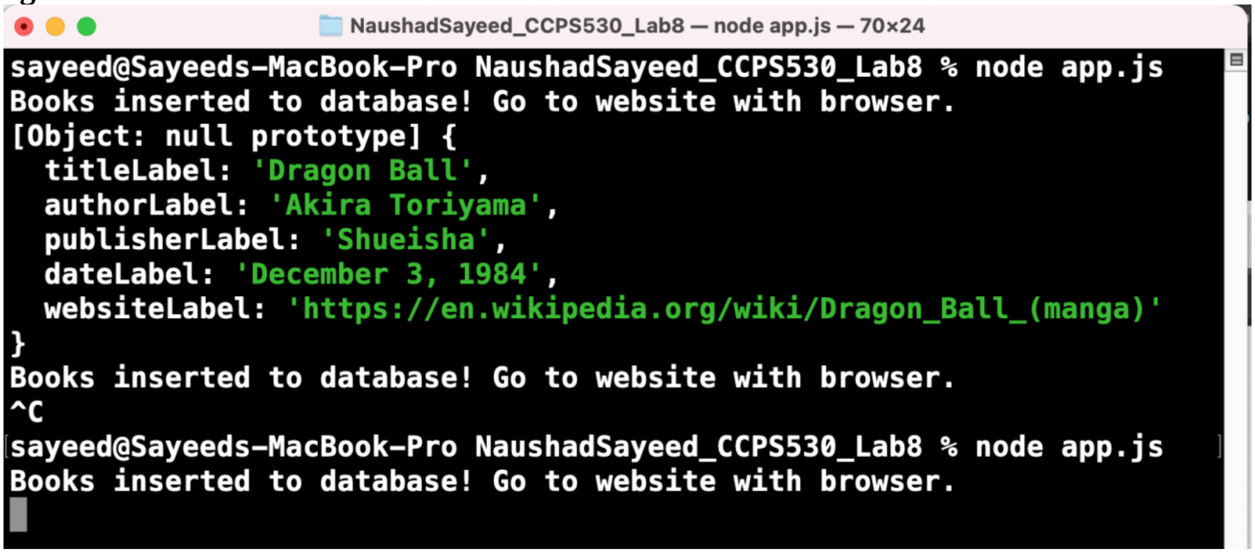
Add a new book

I went back to the books collection and I hit the “Refresh button” on the right and I can now see that the Dragon Ball book I added is in the database.



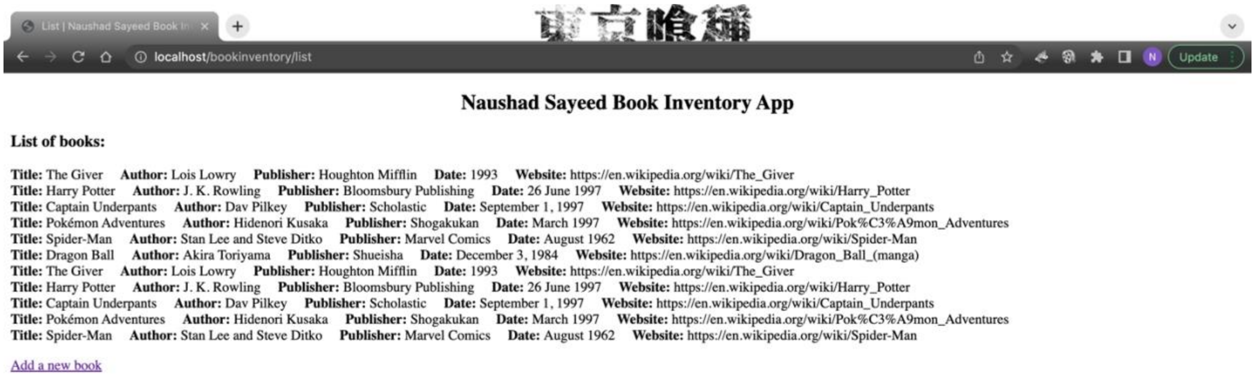
```
title:"Harry Potter"
author:"J. K. Rowling"
publisher:"Bloomsbury Publishing"
date:"26 June 1997"
website:"https://en.wikipedia.org/wiki/Harry_Potter"

_id:ObjectId("624fdab5cae840bd7b40502d")
title:"Captain Underpants"
author:"Dav Pilkey"
publisher:"Scholastic"
date:"September 1, 1997"
website:"https://en.wikipedia.org/wiki/Captain_Underpants"

_id:ObjectId("624fdab5cae840bd7b40502e")
title:"Pokémon Adventures"
author:"Hidenori Kusaka"
publisher:"Shogakukan"
date:"March 1997"
website:"https://en.wikipedia.org/wiki/Pok%C3%A9mon_Adventures"

_id:ObjectId("624fdab5cae840bd7b40502f")
title:"Spider-Man"
author:"Stan Lee and Steve Ditko"
publisher:"Marvel Comics"
date:"August 1962"
website:"https://en.wikipedia.org/wiki/Spider-Man"

_id:ObjectId("624fe0eacae840bd7b405030")
title:"Dragon Ball"
author:"Akira Toriyama"
publisher:"Shueisha"
date:"December 3, 1984"
website:"https://en.wikipedia.org/wiki/Dragon_Ball_(manga)"
```

Step 4 – Now I will go back to the terminal and exit with Ctrl+C and then enter *node app.js* again.



```
sayeed@Sayeeds-MacBook-Pro NaushadSayeed_CCPS530_Lab8 % node app.js
Books inserted to database! Go to website with browser.
[Object: null prototype] {
  titleLabel: 'Dragon Ball',
  authorLabel: 'Akira Toriyama',
  publisherLabel: 'Shueisha',
  dateLabel: 'December 3, 1984',
  websiteLabel: 'https://en.wikipedia.org/wiki/Dragon_Ball_(manga)'
}
Books inserted to database! Go to website with browser.
^C
sayeed@Sayeeds-MacBook-Pro NaushadSayeed_CCPS530_Lab8 % node app.js
Books inserted to database! Go to website with browser.
```

After following step 4, you would notice that another set of books is newly added. This is because unlike lab 6, the stuff stored in the database doesn’t get deleted when you exit with Ctrl+C.



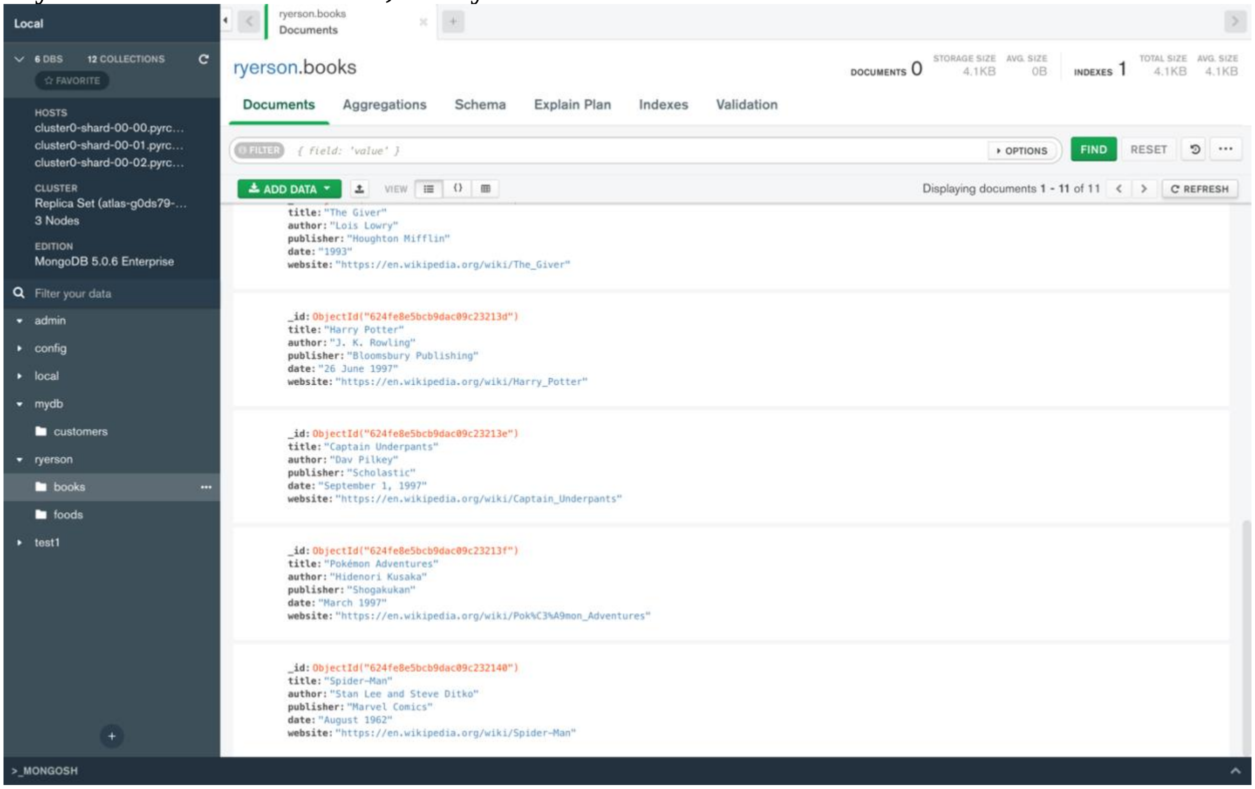
Naushad Sayeed Book Inventory App

List of books:

Title: The Giver **Author:** Lois Lowry **Publisher:** Houghton Mifflin **Date:** 1993 **Website:** https://en.wikipedia.org/wiki/The_Giver
Title: Harry Potter **Author:** J. K. Rowling **Publisher:** Bloomsbury Publishing **Date:** 26 June 1997 **Website:** https://en.wikipedia.org/wiki/Harry_Potter
Title: Captain Underpants **Author:** Dav Pilkey **Publisher:** Scholastic **Date:** September 1, 1997 **Website:** https://en.wikipedia.org/wiki/Captain_Underpants
Title: Pokémon Adventures **Author:** Hidenori Kusaka **Publisher:** Shogakukan **Date:** March 1997 **Website:** https://en.wikipedia.org/wiki/Pok%C3%A9mon_Adventures
Title: Spider-Man **Author:** Stan Lee and Steve Ditko **Publisher:** Marvel Comics **Date:** August 1962 **Website:** https://en.wikipedia.org/wiki/Spider-Man
Title: Dragon Ball **Author:** Akira Toriyama **Publisher:** Shueisha **Date:** December 3, 1984 **Website:** https://en.wikipedia.org/wiki/Dragon_Ball_(manga)
Title: The Giver **Author:** Lois Lowry **Publisher:** Houghton Mifflin **Date:** 1993 **Website:** https://en.wikipedia.org/wiki/The_Giver
Title: Harry Potter **Author:** J. K. Rowling **Publisher:** Bloomsbury Publishing **Date:** 26 June 1997 **Website:** https://en.wikipedia.org/wiki/Harry_Potter
Title: Captain Underpants **Author:** Dav Pilkey **Publisher:** Scholastic **Date:** September 1, 1997 **Website:** https://en.wikipedia.org/wiki/Captain_Underpants
Title: Pokémon Adventures **Author:** Hidenori Kusaka **Publisher:** Shogakukan **Date:** March 1997 **Website:** https://en.wikipedia.org/wiki/Pok%C3%A9mon_Adventures
Title: Spider-Man **Author:** Stan Lee and Steve Ditko **Publisher:** Marvel Comics **Date:** August 1962 **Website:** https://en.wikipedia.org/wiki/Spider-Man

Add a new book

If you do hit Refresh button, then you would notice that an extra 5 books have been added.



```
title: "The Giver"
author: "Lois Lowry"
publisher: "Houghton Mifflin"
date: "1993"
website: "https://en.wikipedia.org/wiki/The_Giver"

_id: ObjectId("624fe8e5bcb9dac09c23213d")
title: "Harry Potter"
author: "J. K. Rowling"
publisher: "Bloomsbury Publishing"
date: "26 June 1997"
website: "https://en.wikipedia.org/wiki/Harry_Potter"

_id: ObjectId("624fe8e5bcb9dac09c23213e")
title: "Captain Underpants"
author: "Dav Pilkey"
publisher: "Scholastic"
date: "September 1, 1997"
website: "https://en.wikipedia.org/wiki/Captain_Underpants"

_id: ObjectId("624fe8e5bcb9dac09c23213f")
title: "Pokémon Adventures"
author: "Hidenori Kusaka"
publisher: "Shogakukan"
date: "March 1997"
website: "https://en.wikipedia.org/wiki/Pok%C3%A9mon_Adventures"

_id: ObjectId("624fe8e5bcb9dac09c232140")
title: "Spider-Man"
author: "Stan Lee and Steve Ditko"
publisher: "Marvel Comics"
date: "August 1962"
website: "https://en.wikipedia.org/wiki/Spider-Man"
```

(Since this lab asks to only insert and retrieve from MongoDB, I decided not to overcomplicate things by adding a delete feature.)

5a. Write a technical report explaining your design choices and what you used to test the RESTful endpoints from number 1 and 2.

So, for my design choices, I just added the stuff for the required pages with bold texts for the categories and headings. I didn’t add any CSS styles since it is not required, I just added what is needed.

For my RESTful endpoints from number 4 and 5, I used the browser (Google Chrome) to test out the pages for those. I used app.get() feature on the app.js files in order to include the endpoints from those numbers.

The only difference between this lab and lab 6 is that I used the “connect()” function to connect with the MongoDB.

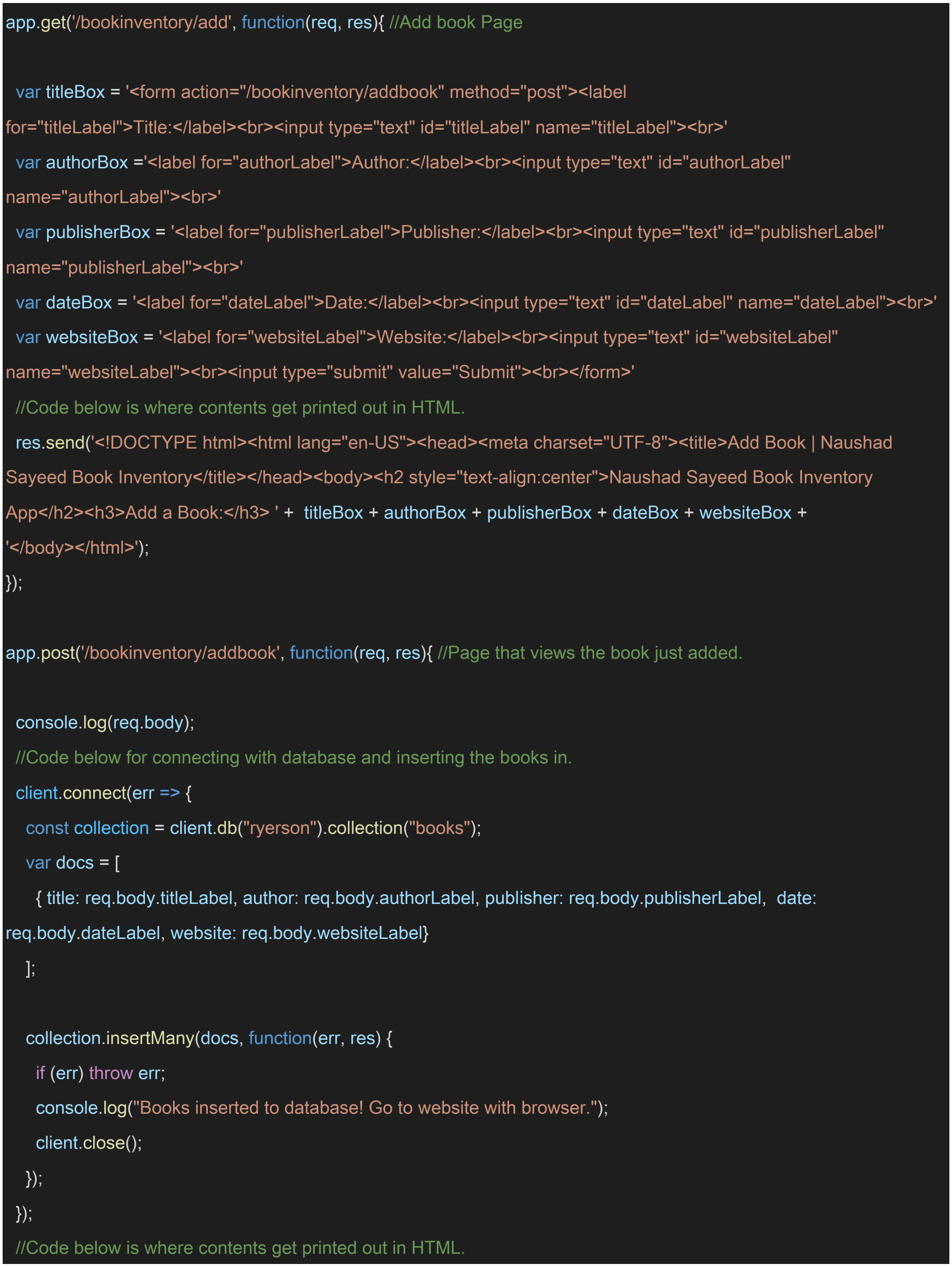
5b. How long did you spend on this lab? Length of time includes readings and research and code experimentation. State time involved in readings and research as well as code experimentation sessions.

It took me a total of 8 hours to spend on this lab.

- 3 hours of readings and research.
- 5 hours on code experimentation which lead to finishing the lab.

Appendix A – Entire Code for this Lab (file name is “app.js”)

```javascript
var express = require('express');
var app = express();

app.use(express.json() );       // to support JSON-encoded bodies
app.use(express.urlencoded({     // to support URL-encoded bodies
  extended: false
}));
const { MongoClient, ServerApiVersion } = require('mongodb');
const uri = "mongodb+srv://naushad_sayeed:naushadmedialab123@cluster0.pyrcn.mongodb.net/mydb?retryWrites=true&w=majority";

const client = new MongoClient(uri, { useNewUrlParser: true, useUnifiedTopology: true, serverApi: ServerApiVersion.v1 });

//Code below for connecting with database and inserting the books in.
client.connect(err => {
  const collection = client.db("ryerson").collection("books");
  var docs = [
    { title: "The Giver", author: "Lois Lowry", publisher: "Houghton Mifflin",  date: "1993", website: "https://en.wikipedia.org/wiki/The_Giver"},
    { title: "Harry Potter", author: "J. K. Rowling", publisher: "Bloomsbury Publishing",  date: "26 June 1997", website: "https://en.wikipedia.org/wiki/Harry_Potter"},
    { title: "Captain Underpants", author: "Dav Pilkey", publisher: "Scholastic",  date: "September 1, 1997", website: "https://en.wikipedia.org/wiki/Captain_Underpants"},
    { title: "Pokémon Adventures", author: "Hidenori Kusaka", publisher: "Shogakukan",  date: "March 1997", website: "https://en.wikipedia.org/wiki/Pok%C3%A9mon_Adventures"},
    { title: "Spider-Man", author: "Stan Lee and Steve Ditko", publisher: "Marvel Comics",  date: "August 1962", website: "https://en.wikipedia.org/wiki/Spider-Man"}
  ];

  collection.insertMany(docs, function(err, res) {
    if (err) throw err;
    console.log("Books inserted to database! Go to website with browser.");
    client.close();
  });
});

app.get('/', function(req, res){ //Main Page

  //Code below is where contents get printed out in HTML.
  res.send('<!DOCTYPE html><html lang="en-US"><head><meta charset="UTF-8"><title>Naushad Sayeed Book Inventory App</title></head><body><h1 style="text-align:center">Naushad Sayeed Book Inventory App</h1><h2 style="text-align:center"><a href="/bookinventory/list">Click here to view list!</a></h2></body></html>')
  //res.send(JSON.stringify({title:"value"}));
});

app.get('/bookinventory/list', function(req, res){ //List Page
  var MongoClient = require('mongodb').MongoClient;
  MongoClient.connect(uri, function(err, db) {
    if (err) throw err;
    var dbo = db.db("ryerson");
    //Find all documents in the books collection:
    dbo.collection("books").find({}).toArray(function(err, result) {
      if (err) throw err;
      var html = '<p>'
      for (var i = 0; i < result.length; i++) {
        html = html + '<b>Title: </b>'+result[i]['title']+'&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;<b>Author: </b>'+result[i]['author']+'&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;<b>Publisher: </b>'+result[i]['publisher']+'&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;<b>Date: </b>'+result[i]['date']+'&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;<b>Website: </b>'+result[i]['website']+'<br>';
       }
       html += '</p>'
       //Code below is where contents get printed out in HTML.
       res.send('<!DOCTYPE html><html lang="en-US"><head><meta charset="UTF-8"><title>List | Naushad Sayeed Book Inventory</title></head><body><h2 style="text-align:center">Naushad Sayeed Book Inventory App</h2><h3>List of books:</h3> ' + html+ '<a href="/bookinventory/add">Add a new book</a></body></html> ');
      db.close();
    });
  });

});
```



```
app.get('/bookinventory/add', function(req, res){ //Add book Page

  var titleBox = '<form action="/bookinventory/addbook" method="post"><label
for="titleLabel">Title:</label><br><input type="text" id="titleLabel" name="titleLabel"><br>'
  var authorBox ='<label for="authorLabel">Author:</label><br><input type="text" id="authorLabel"
name="authorLabel"><br>'
  var publisherBox = '<label for="publisherLabel">Publisher:</label><br><input type="text" id="publisherLabel"
name="publisherLabel"><br>'
  var dateBox = '<label for="dateLabel">Date:</label><br><input type="text" id="dateLabel" name="dateLabel"><br>'
  var websiteBox = '<label for="websiteLabel">Website:</label><br><input type="text" id="websiteLabel"
name="websiteLabel"><br><input type="submit" value="Submit"><br></form>'
  //Code below is where contents get printed out in HTML.
  res.send('<!DOCTYPE html><html lang="en-US"><head><meta charset="UTF-8"><title>Add Book | Naushad
Sayeed Book Inventory</title></head><body><h2 style="text-align:center">Naushad Sayeed Book Inventory
App</h2><h3>Add a Book:</h3> ' +  titleBox + authorBox + publisherBox + dateBox + websiteBox +
'</body></html>');
});

app.post('/bookinventory/addbook', function(req, res){ //Page that views the book just added.

  console.log(req.body);
  //Code below for connecting with database and inserting the books in.
  client.connect(err => {
    const collection = client.db("ryerson").collection("books");
    var docs = [
      { title: req.body.titleLabel, author: req.body.authorLabel, publisher: req.body.publisherLabel,  date:
req.body.dateLabel, website: req.body.websiteLabel}
    ];

    collection.insertMany(docs, function(err, res) {
      if (err) throw err;
      console.log("Books inserted to database! Go to website with browser.");
      client.close();
    });
  });
  //Code below is where contents get printed out in HTML.
  res.send('<!DOCTYPE html><html lang="en-US"><head><meta charset="UTF-8"><title>Add Book | Naushad Sayeed Book Inventory</title></head><body><h2 style="text-align:center">Naushad Sayeed Book Inventory App</h2>The book <b>' + req.body.titleLabel+ '</b> and its information is added!<br> <a href="/bookinventory/list">list of books</a></body></html>');
}

);


app.listen(80); //Port 80 is default port
```