

Lab Mid



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Submitted by: Ruhma

Registration #: SP22-BSE-023

Course Title: Advanced Web Technologies

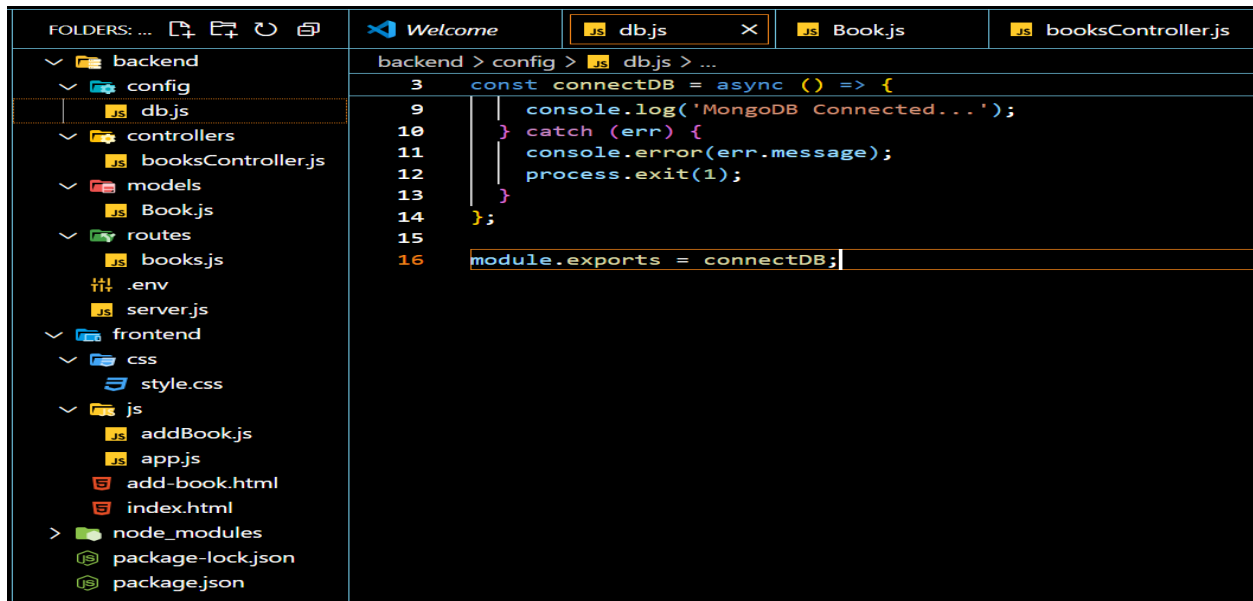
Program: Bachelor Science in Software Engineering

Department of Computer Science

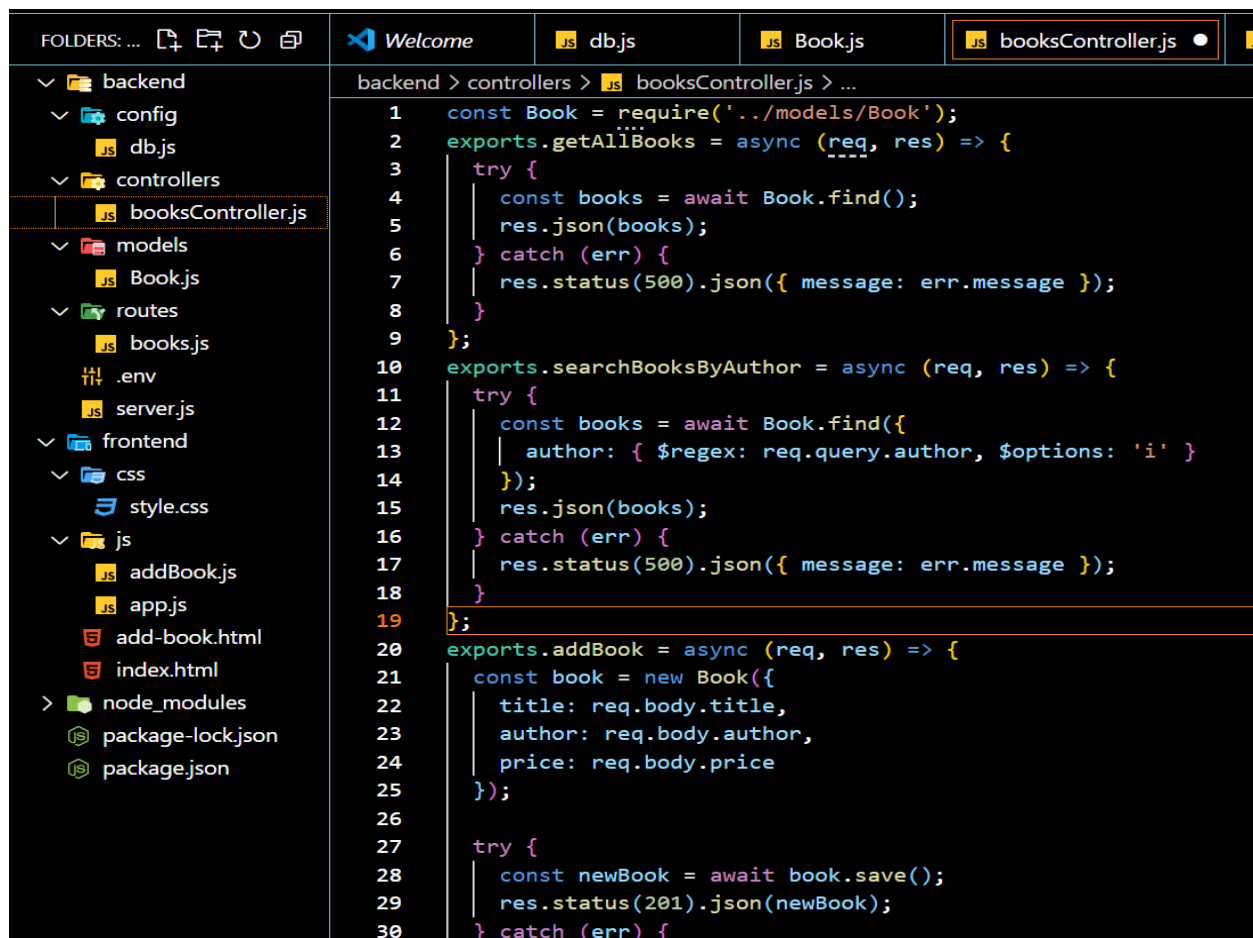
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Vehari Campus

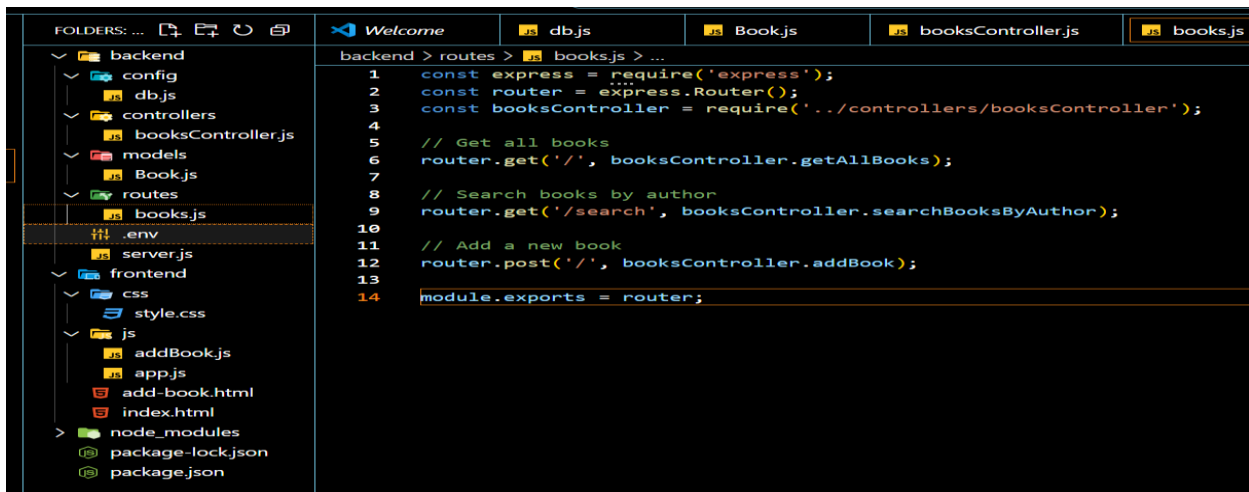
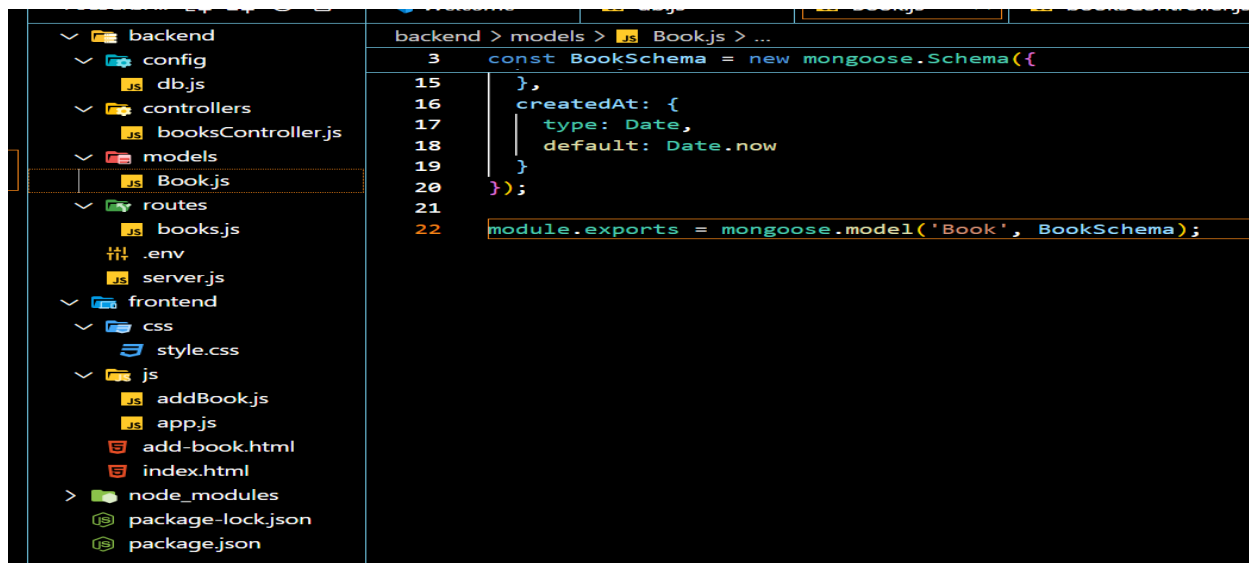
Backend:

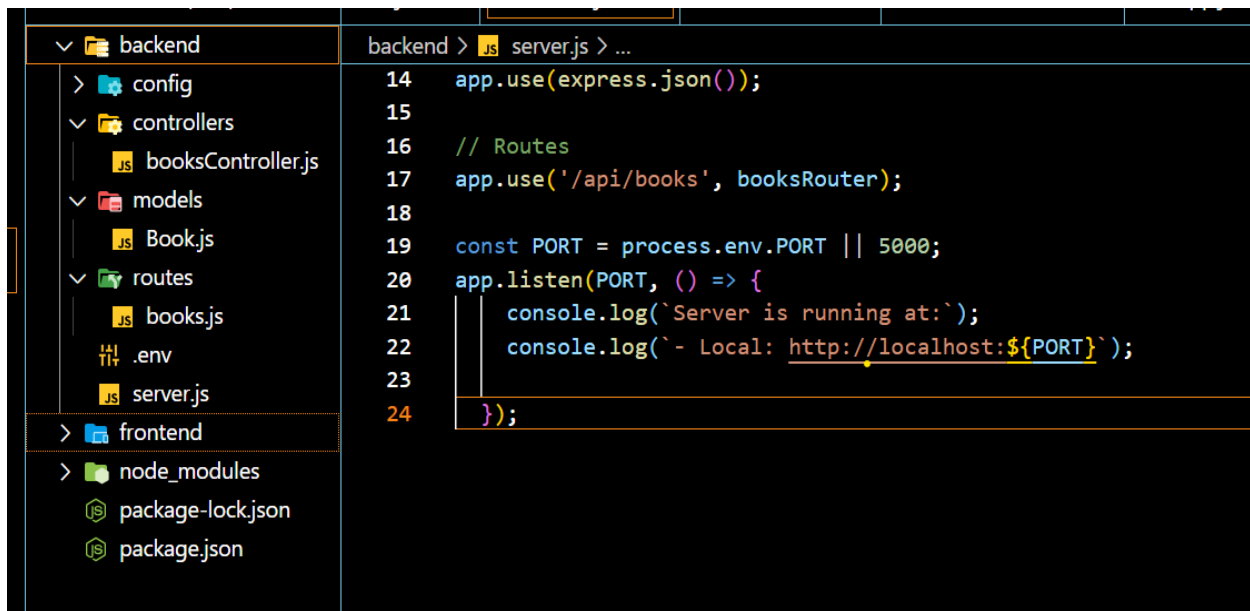


```
backend > config > db.js > ...
3  const connectDB = async () => {
9      console.log('MongoDB Connected...');
10 } catch (err) {
11     console.error(err.message);
12     process.exit(1);
13 }
14 };
15
16 module.exports = connectDB;
```

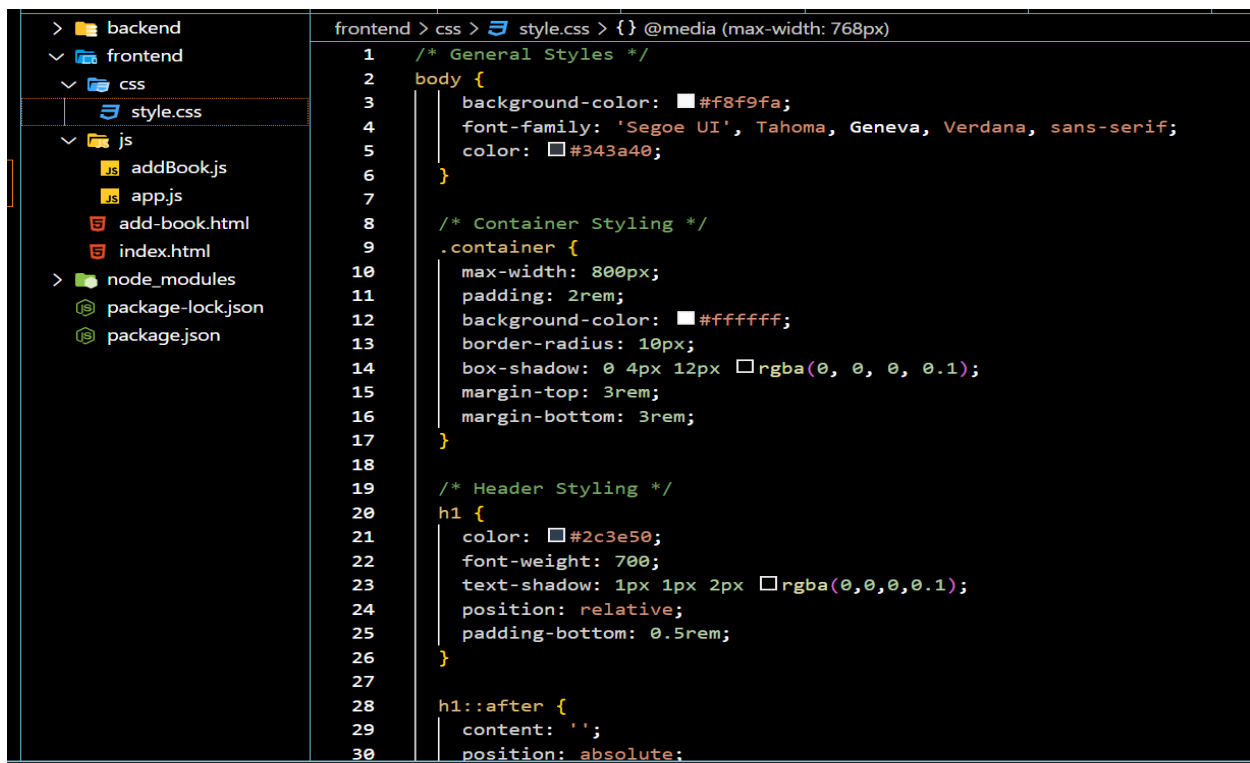


```
backend > controllers > booksController.js > ...
1  const Book = require('../models/Book');
2  exports.getAllBooks = async (req, res) => {
3      try {
4          const books = await Book.find();
5          res.json(books);
6      } catch (err) {
7          res.status(500).json({ message: err.message });
8      }
9  };
10 exports.searchBooksByAuthor = async (req, res) => {
11     try {
12         const books = await Book.find({
13             author: { $regex: req.query.author, $options: 'i' }
14         });
15         res.json(books);
16     } catch (err) {
17         res.status(500).json({ message: err.message });
18     }
19 };
20 exports.addBook = async (req, res) => {
21     const book = new Book({
22         title: req.body.title,
23         author: req.body.author,
24         price: req.body.price
25     });
26
27     try {
28         const newBook = await book.save();
29         res.status(201).json(newBook);
30     } catch (err) {
```





Frontend:



```
> backend
  frontend
    css
      style.css
    js
      addBook.js
      app.js
      add-book.html
      index.html
    node_modules
      package-lock.json
      package.json

frontend > css > style.css > ...
27
28 h1::after {
29   content: '';
30   position: absolute;
31   bottom: 0;
32   left: 50%;
33   transform: translateX(-50%);
34   width: 80px;
35   height: 4px;
36   background: linear-gradient(to right, #3498db, #2ecc71);
37   border-radius: 2px;
38 }
39
40 /* Form Styling */
41 #addBookForm {
42   background-color: #ffffff;
43   padding: 2rem;
44   border-radius: 8px;
45   box-shadow: 0 2px 8px rgba(0, 0, 0, 0.05);
46 }
47
48 .form-label {
49   font-weight: 600;
50   color: #495057;
51   margin-bottom: 0.5rem;
52 }
```

```
FOLDERS: ... books.js server.js index.html add-book.html app.js addE
  backend
    config
    controllers
    models
    routes
    .env
    server.js
  frontend
    css
      style.css
    js
      addBook.js
      app.js
      add-book.html
      index.html
    node_modules
      package-lock.json
      package.json

frontend > js > addBook.js > ...
1 document.addEventListener('DOMContentLoaded', function() {
2   const addBookForm = document.getElementById('addBookForm');
3   addBookForm.addEventListener('submit', function(e) {
4     e.preventDefault();
5     const title = document.getElementById('title').value;
6     const author = document.getElementById('author').value;
7     const price = parseFloat(document.getElementById('price').value);
8     const bookData = {
9       title,
10      author,
11      price
12    };
13    fetch('http://localhost:5000/api/books', {
14      method: 'POST',
15      headers: {
16        'Content-Type': 'application/json',
17      },
18      body: JSON.stringify(bookData)
19    })
20    .then(response => response.json())
21    .then(data => {
22      alert('Book added successfully!');
23      window.location.href = 'index.html';
24    })
25    .catch(error => {
26      console.error('Error:', error);
27      alert('Error adding book');
28    });
29  });
30 }
```

```
FOLDERS: ... L4 L4 O EP books.js server.js index.html add-book.html app.js addBook.js style
  backend
  > config
  > controllers
  > models
  > routes
  .env
  server.js
  frontend
  > css
  style.css
  > js
  addBook.js
  app.js
  add-book.html
  index.html
  > node_modules
  package-lock.json
  package.json

frontend > js > app.js > ...
1 document.addEventListener('DOMContentLoaded', function() {
2   const booksTable = document.getElementById('booksTable');
3   const searchInput = document.getElementById('searchInput');
4
5   // Load all books on page load
6   fetchBooks();
7
8   // Search functionality
9   searchInput.addEventListener('input', function() {
10    const searchTerm = this.value.trim();
11    if (searchTerm.length > 0) {
12      searchBooks(searchTerm);
13    } else {
14      fetchBooks();
15    }
16  });
17
18  // Fetch all books
19  function fetchBooks() {
20    fetch('http://localhost:5000/api/books')
21      .then(response => response.json())
22      .then(books => {
23        renderBooks(books);
24      })
25      .catch(error => console.error('Error:', error));
26  }
27
28  // Search books by author
29  function searchBooks(author) {
30    fetch('http://localhost:5000/api/books/search?author=${encodeURIComponent(author)}')
```

```
FOLDERS: ... L4 L4 O EP books.js server.js index.html add-book.html app.js addBook.js style
  backend
  > config
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  > models
  > routes
  .env
  server.js
  frontend
  > css
  style.css
  > js
  addBook.js
  app.js
  add-book.html
  index.html
  > node_modules
  package-lock.json
  package.json

frontend > js > app.js > ...
1 document.addEventListener('DOMContentLoaded', function() {
27
28   // Search books by author
29   function searchBooks(author) {
30     fetch('http://localhost:5000/api/books/search?author=${encodeURIComponent(author)}')
31       .then(response => response.json())
32       .then(books => {
33         renderBooks(books);
34       })
35       .catch(error => console.error('Error:', error));
36   }
37
38   // Render books to the table
39   function renderBooks(books) {
40     booksTable.innerHTML = '';
41     books.forEach(book => {
42       const row = document.createElement('tr');
43       row.innerHTML = `
44         <td>${book.title}</td>
45         <td>${book.author}</td>
46         <td>${book.price.toFixed(2)}</td>
47       `;
48       booksTable.appendChild(row);
49     });
50   }
51 });
```

```
▼ backend
  > config
  > controllers
  > models
  > routes
  > .env
  > server.js
▼ frontend
  > css
  > style.css
  > js
  > addBook.js
  > app.js
  > add-book.html
  > index.html
  > node_modules
  > package-lock.json
  > package.json

frontend > add-book.html > html > body > div.container.mt-5 > div.row.justify-content-center
1 <!DOCTYPE html>
2 <html lang="en">
3 <head>
4   <meta charset="UTF-8">
5   <meta name="viewport" content="width=device-width, initial-scale=1.0">
6   <title>Add New Book</title>
7   <link href="https://cdn.jsdelivr.net/npm/bootstrap@5.3.0/dist/css/bootstrap.min.css" rel="stylesheet">
8   <link href="css/style.css" rel="stylesheet">
9
10  <link href="https://fonts.googleapis.com/css2?family=Poppins:wght@400;500;600;700&display=swap" rel="stylesheet">
11 </head>
12 <body>
13   <div class="container mt-5">
14     <h1 class="text-center mb-4">Add New Book</h1>
15
16     <div class="row justify-content-center">
17       <div class="col-md-6">
18         <form id="addBookForm">
19           <div class="mb-3">
20             <label for="title" class="form-label">Title</label>
21             <input type="text" class="form-control" id="title" required>
22           </div>
23           <div class="mb-3">
24             <label for="author" class="form-label">Author</label>
25             <input type="text" class="form-control" id="author" required>
26           </div>
27           <div class="mb-3">
28             <label for="price" class="form-label">Price</label>
29             <input type="number" step="0.01" class="form-control" id="price" required>
30           </div>
31         </form>
32       </div>
33     </div>
34   </div>
35 </body>
36 </html>
```

```
▼ backend
  > config
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  > models
  > routes
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  > server.js
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  > css
  > style.css
  > js
  > addBook.js
  > app.js
  > add-book.html
  > index.html
  > node_modules
  > package-lock.json
  > package.json

frontend > add-book.html > html > body > div.container.mt-5 > div.row.justify-content-center
2 <html lang="en">
12 <body>
13   <div class="container mt-5">
16     <div class="row justify-content-center">
17       <div class="col-md-6">
19         <div class="mb-3">
20           <label for="title" class="form-label">Title</label>
21           <input type="text" class="form-control" id="title" required>
22         </div>
23         <div class="mb-3">
24           <label for="author" class="form-label">Author</label>
25           <input type="text" class="form-control" id="author" required>
26         </div>
27         <div class="mb-3">
28           <label for="price" class="form-label">Price</label>
29           <input type="number" step="0.01" class="form-control" id="price" required>
30         </div>
31         <button type="submit" class="btn btn-primary">Add Book</button>
32         <a href="index.html" class="btn btn-secondary ms-2">Cancel</a>
33       </div>
34     </div>
35   </div>
36 </div>
37
38 <script src="js/addBook.js"></script>
39 <script src="https://cdn.jsdelivr.net/npm/bootstrap@5.3.0/dist/js/bootstrap.bundle.min.js"></script>
40 </body>
41 </html>
```

```

  frontend > index.html > html
  1  <!DOCTYPE html>
  2  <html lang="en">
  3  <head>
  4    <meta charset="UTF-8">
  5    <meta name="viewport" content="width=device-width, initial-scale=1.0">
  6    <title>Book Management System</title>
  7    <link href="https://cdn.jsdelivr.net/npm/bootstrap@5.3.0/dist/css/bootstrap.min.css" rel="stylesheet">
  8    <link href="css/style.css" rel="stylesheet">
  9  </head>
 10  <body>
 11    <div class="container mt-5">
 12      <h1 class="text-center mb-4">Book Management System</h1>
 13
 14      <div class="row mb-4">
 15        <div class="col-md-6">
 16          <input type="text" id="searchInput" class="form-control" placeholder="Search by author...">
 17        </div>
 18        <div class="col-md-6">
 19          <a href="add-book.html" class="btn btn-primary float-end">Add New Book</a>
 20        </div>
 21      </div>
 22
 23      <div class="table-responsive">
 24        <table class="table table-striped">
 25          <thead>
 26            <tr>
 27              <th>Title</th>
 28              <th>Author</th>
 29              <th>Price</th>
 30            </tr>

```

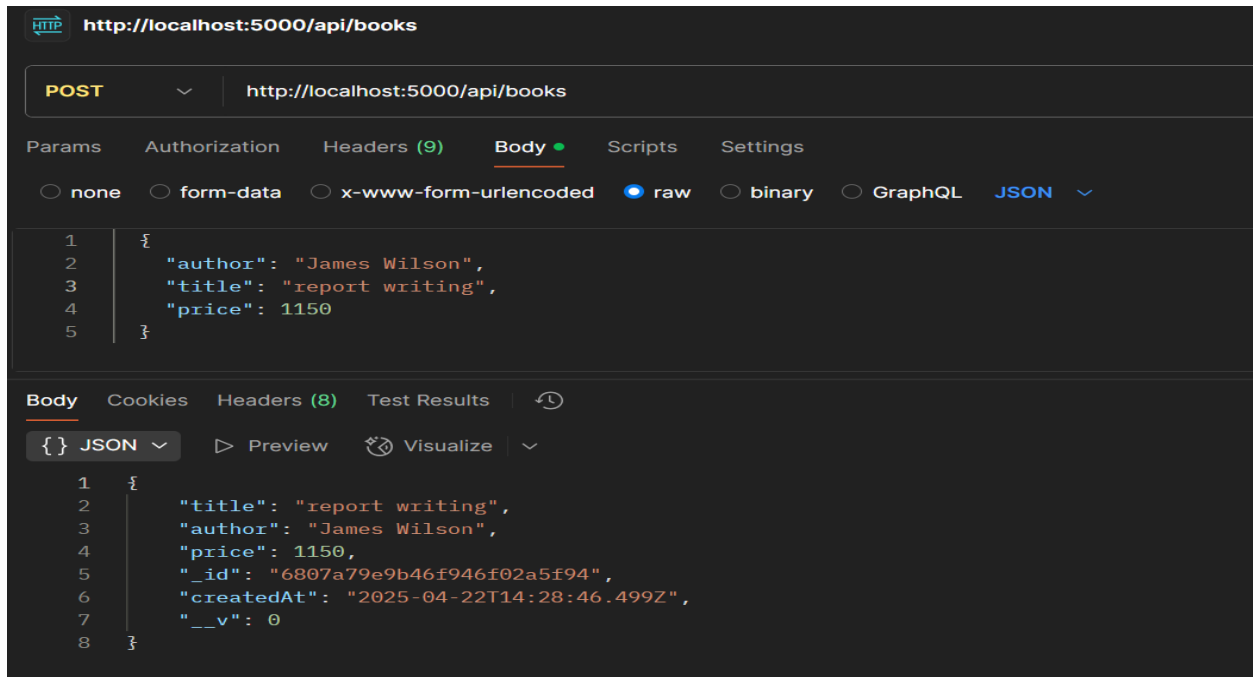
```

  frontend > index.html > ...
  2  <html lang="en">
 10  <body>
 11    <div class="container mt-5">
 14    <div class="row mb-4">
 17      </div>
 18      <div class="col-md-6">
 19        <a href="add-book.html" class="btn btn-primary float-end">Add New Book</a>
 20      </div>
 21    </div>
 22
 23    <div class="table-responsive">
 24      <table class="table table-striped">
 25        <thead>
 26          <tr>
 27            <th>Title</th>
 28            <th>Author</th>
 29            <th>Price</th>
 30          </tr>
 31        </thead>
 32        <tbody id="booksTable">
 33          <!-- Books will be loaded here -->
 34        </tbody>
 35      </table>
 36    </div>
 37  </div>
 38
 39  <script src="js/app.js"></script>
 40  <script src="https://cdn.jsdelivr.net/npm/bootstrap@5.3.0/dist/js/bootstrap.bundle.min.js"></script>
 41 </body>
 42 </html>

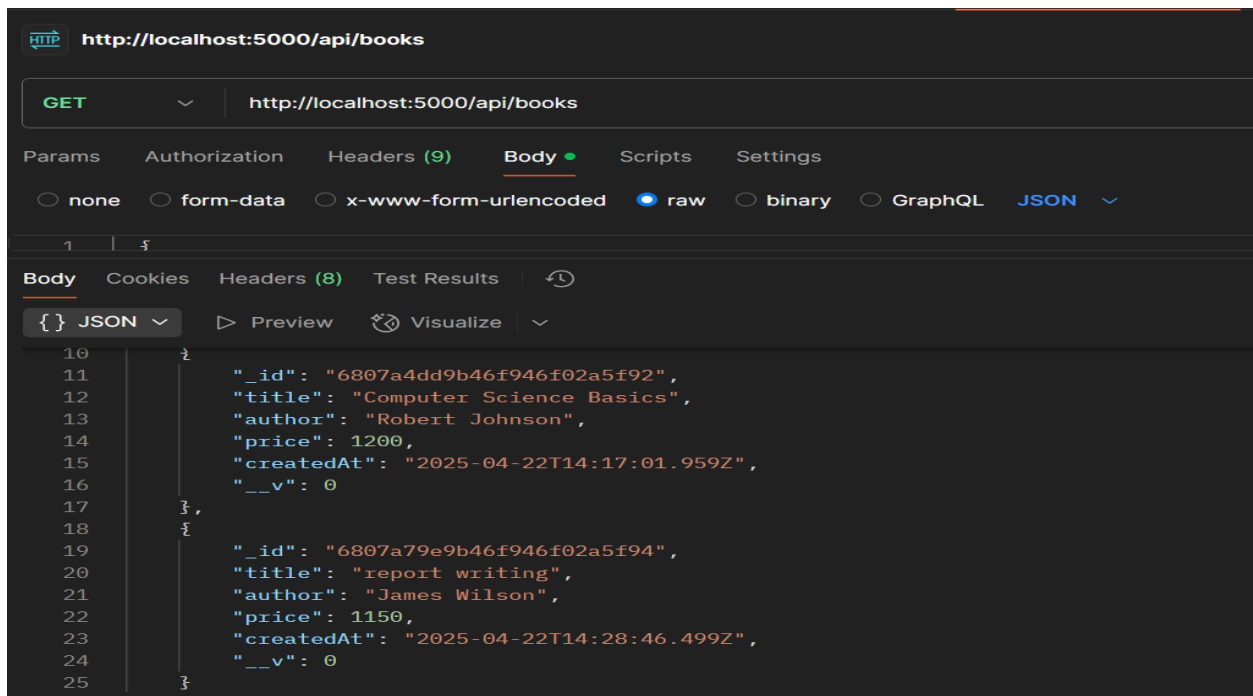
```


Postman:

Post method



Get method



Mongo DB:

```
backend > .env
1 # MongoDB connection URI
2 MONGODB_URI=mongodb://localhost:27017/book_management
3
4 # Server port
5 PORT=5000
6
```

Compass

{ } My Queries

CONNECTIONS (1)

Search connections

localhost:27017

- admin
- book_management
 - books
 - config
 - local

books

localhost:27017 > book_management > books

Documents (1) Aggregations Schema Indexes (1) Validation

Type a query: { field: 'value' } or [Generate query](#)

ADD DATA EXPORT DATA UPDATE DELETE

```
{
  "_id": ObjectId('680774ae48e578ba3c19ecca'),
  "title": "English",
  "author": "john doe",
  "price": 1300,
  "createdAt": 2025-04-22T10:51:26.927+00:00,
  "__v": 0
}
```

Compass

{ } My Queries

CONNECTIONS (1)

Search connections

localhost:27017

- admin
- book_management
 - books
 - config
 - local

books

localhost:27017 > book_management > books

Documents (1) Aggregations Schema Indexes (1) Validation

Type a query: { field: 'value' } or [Generate query](#)

ADD DATA EXPORT DATA UPDATE DELETE

```
{
  "author": "john doe",
  "price": 1300,
  "createdAt": 2025-04-22T10:51:26.927+00:00,
  "__v": 0
}
```

```
{
  "_id": ObjectId('6807a4dd9b46f946f02a5f92'),
  "title": "Computer Science Basics",
  "author": "Robert Johnson",
  "price": 1200,
  "createdAt": 2025-04-22T14:17:01.959+00:00,
  "__v": 0
}
```

```
{
  "_id": ObjectId('6807a79e9b46f946f02a5f94'),
  "title": "report writing",
  "author": "James Wilson",
  "price": 1150,
  "createdAt": 2025-04-22T14:28:46.499+00:00,
  "__v": 0
}
```

Output:

127.0.0.1:5501/frontend/add-book.html

Add New Book

Title

Author

Price

ADD BOOK **CANCEL**

C:/Users/PMLS/Documents/doc/semester%207/advance%20web/web%20lab/book-management-system/frontend/index.html

Book Management System

Search by author...

ADD NEW BOOK

Title	Author	Price
English	john doe	\$1300.00
Computer Science Basics	Robert Johnson	\$1200.00
report writing	James Wilson	\$1150.00