

NATIONAL INSTITUTE
OF TECHNOLOGY
SURATHKAL

IT-254 WTA Lab

Server Side Programming -
Using MongoDB

Submitted By-
Akshay B Bistagond
191EC203

Develop an online library website for your department. Design an admin page where the admin can list, add, remove, update books available in the library. Consider details such

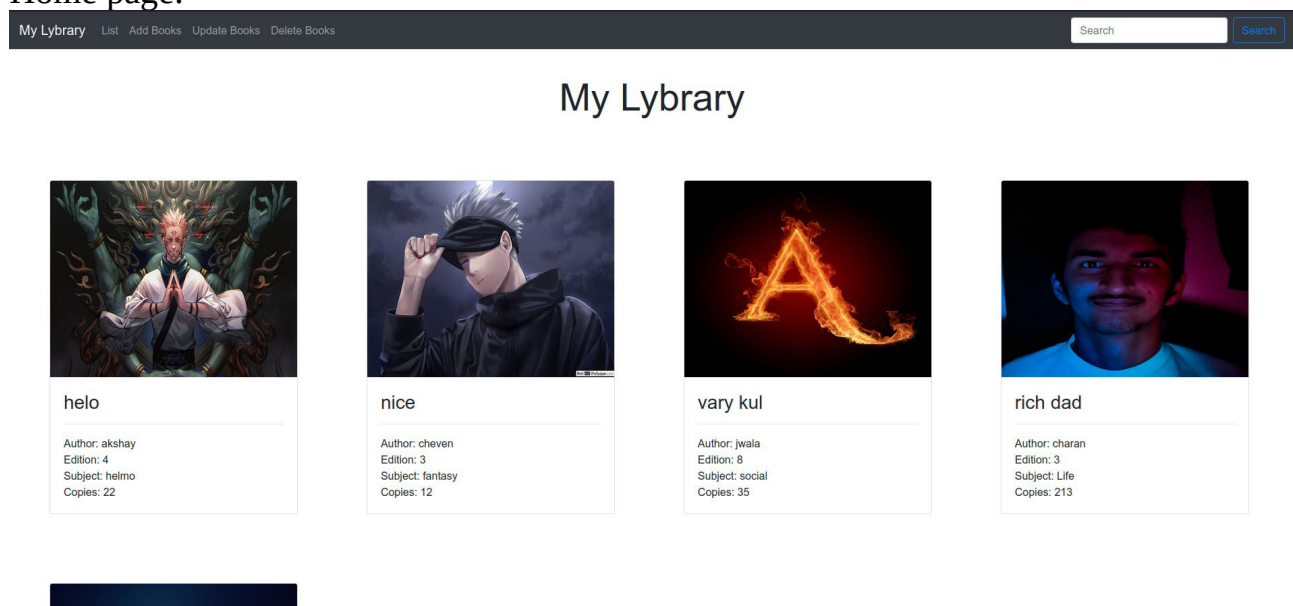
as: book title, author name, edition, subject, number of copies available.

- The admin must make a list of books and add it to the online library.
- Admin must be able to retrieve all the books in the library.
- Admin must be able to search and list the books based on author as well as subject. Example: Web technologies must display a list of Web technologies related books.
- Admin must be able to delete any book.
- Admin must be able to update the details of any book.

It is required to follow the Model View and Controller approach for this assignment. Make an appealing frontend for user interaction

Pages:

Home page:



Add Book Page:

Add a book to My Lybrary

Book Name

Book Name...

Author Name

Author name...

Edition

edition...

Subject

Subject name...

No. of Copies

Number of copies...

Cover Image

Browse...

No file selected.

Description

Add Book

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Update Book page:

Update a Book in My Lybrary

Find Book

Book Name

Book Name...

Author Name

Author name...

Find Book

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Delete Book page:

Delete a book from My Lybrary

Find Book

Book Name

Book Name...

Author Name

Author name...

Find Book

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Search Result page:



helo

Author: akshay
Edition: 4
Subject: helmo
Copies: 22

Views used (ejs):

Home page:

```
1 <!DOCTYPE html>
2 <html lang="en">
3 <head>
4   <%- include('../partials/head.ejs') %>
5 </head>
6 <body>
7   <header>
8     <%- include('../partials/navbar.ejs') %>
9   </header>
10  <h2 class="title">My Lybrary</h2>
11  <% if(books.length>0) {%>
12    <%- include('../partials/book_grid.ejs'), {books:books} %>
13  <% }else {%>
14    <p>No Books available</p>
15    <%}%>
16  <footer>
17    <%- include('../partials/foot.ejs') %>
18
19  </footer>
20 </body>
21 </html>
```

Add Book Page:

```

1 <!DOCTYPE html>
2 <html lang="en">
3 <head>
4   <%- include('../partials/head.ejs')%>
5 </head>
6 <body>
7   <header>
8     <%- include('../partials/navbar.ejs') %>
9   </header>
10  <h2 class="title">Add a book to My Lybrary</h2>
11  <%- include('../partials/add_form.ejs') %>
12
13  <footer>
14    <%- include('../partials/foot.ejs')%>
15  </footer>
16 </body>
17 </html>

```

Update Book Page:

```

1 <!DOCTYPE html>
2 <html lang="en">
3 <head>
4   <%- include('../partials/head.ejs')%>
5 </head>
6 <body>
7   <header><%- include('../partials/navbar.ejs') %></header>
8   <h2 class="title">Update a Book in My Lybrary</h2>
9   <% if(book!==null) { %>
10    <%- include('../partials/update_form.ejs'), {book:book}%> <%
  }else{%>
11    <%- include('../partials/find_book.ejs')%>
12    <%}%>
13
14   <footer><%- include('../partials/foot.ejs')%></footer>
15 </body>
16 </html>

```

Delete Book Page:

```
1 <!DOCTYPE html>
2 <html lang="en">
3   <head>
4     <%- include('../partials/head.ejs')%>
5   </head>
6   <body>
7     <header><%- include('../partials/navbar.ejs') %></header>
8     <h2 class="title">Delete a book from My Library</h2>
9
10    <% if(book!==null) {%> <%- include(
11      '../partials/delete_form.ejs'),
12      {book:book} %> <% }else {%> <%- include(
13        '../partials/find_book.ejs')%> <%}%>
14
15    <footer><%- include('../partials/foot.ejs')%></footer>
16  </body>
17 </html>
```

Search Result Page:

```
1 <!DOCTYPE html>
2 <html lang="en">
3   <head>
4     <%- include('../partials/head.ejs')%>
5   </head>
6   <body>
7     <header><%- include('../partials/navbar.ejs') %></header>
8
9     <% if(books!==null) {%> <%-
10       include('../partials/book_grid.ejs',{books:books}), %> <% }
11     else {%> <%-
12       include('../partials/find_book.ejs')%> <%}%>
13
14     <footer><%- include('../partials/foot.ejs')%></footer>
15   </body>
16 </html>
17
```

Various Partial ejs files used:
add_form.js

```
1 <iframe name="dummyframe" id="dummyframe" style="display: none;
  "></iframe>
2 <form action="/" target="dummyframe" method="POST" class=
  "add_form" enctype="multipart/form-data" id="add_form">
3   <div class="form-group">
4     <label for="name">Book Name</label>
5     <input
6       type="text"
7       class="form-control"
8       id="name"
9       name="name"
10      placeholder="Book Name..."
11      required
12    />
13   </div>
14   <div class="form-group">
15     <label for="author">Author Name</label>
16     <input class="form-control" id="author" name="author"
17     type="text" placeholder="Author name..." required/>
18   </div>
19   <div class="row">
20     <div class="form-group col">
21       <label for="edition"> Edition </label>
22       <input
23         type="number"
24         class="form-control"
25         id="edition"
26         name="edition"
27         placeholder="edition..."
28         required
29       />
30     </div>
31     <div class="form-group col">
32       <label for="subject">Subject</label>
33       <input class="form-control" id="subject" name="subject"
34       type="text" placeholder="Subject name..." required/>
35     </div>
36   </div>
37   <div class="row">
38     <div class="form-group col">
39       <label for="copies"> No. of Copies </label>
40       <input
41         type="number"
42         class="form-control"
43         id="copies"
44         name="copies"
45         placeholder="Number of copies..."
46         required
47       />
48     </div>
49     <div class="form-group col">
50       <label for="coverimg"> Cover Image </label>
51       <input
52         type="file"
53         class="form-control"
54         id="coverimg"
55         name="coverimg"
56       />
57     </div>
58   </div>
59   <div class="form-group">
60     <label for="description">Description</label>
61     <textarea class="form-control" id="description" name=
62     "description" rows="3"></textarea>
63   </div>
64   <button type="submit" class="btn btn-primary">Add Book</
65   button>
66 </form>
```


book_card.js

```
1 <div class="book_card card" style="width: 23rem;margin: 2.7%;">
2   <img class="card-img-top covering" id="coverimg" alt="<%= book
   .name %>" style="height: 30vh;"/>
3   <div class="card-body">
4     <h3 class="card-title"><%= book.name %></h3><hr>
5     <p class="card-text">
6       Author: <%= book.author %> <br />
7       Edition: <%= book.edition %> <br />Subject: <%= book.
subject %> <br />
8       Copies: <%= book.copies %>
9     </p>
10  </div>
11 </div>
12
```

book_grid.js

```
1 <div class="book_grid">
2   <%= books.forEach(book=>{ %>
3     <%= include('./book_card',{book:book}) %>
4   <%= }) %>
5 </div>
```

delete_form.js


```
1 <div class="card delete_form">
2   <img class="card-img-top covering" alt="<%=book.name%>" />
3   <div class="card-body">
4     <h3 class="card-title"><%= book.name %></h3>
5     <p class="card-text"><%= book.description %></p>
6   </div>
7   <ul class="list-group list-group-flush text-center">
8     <li class="list-group-item">Author : <%= book.author %></li>
9   >
10    <li class="list-group-item">Edition: <%= book.edition %></li>
11    <li class="list-group-item">Subject: <%= book.subject %></li>
12    <li class="list-group-item">Copies: <%= book.copies %></li>
13  </ul>
14  <div class="card-body">
15    <button class="btn btn-danger" id="delete_btn">Delete Book
16  </button>
17  </div>
18  <script defer>
19    let test = '<%= JSON.stringify(book) %>';
20  </script>
21 </div>
```

find_book.js

```

1 <div class="find_book">
2   <h2>Find Book</h2>
3   <form id="find_form" class="add_form">
4     <div class="form-group">
5       <label for="name">Book Name</label>
6       <input
7         type="text"
8         class="form-control"
9         id="name"
10        name="name"
11        placeholder="Book Name..."
12        required
13      />
14    </div>
15    <div class="form-group">
16      <label for="author">Author Name</label>
17      <input class="form-control" id="author" name="author"
18        type="text" placeholder="Author name..." required/>
19    </div>
20    <button type="button" id="find_btn" class="btn btn-primary" >
21      Find Book</button>
22  </form>
23 </div>

```

foot.js

```

1 <p class="text-center text-muted">&copy;
  Made with ❤️ by Akshay Bistagond</p>

```

head.js



```
1 <meta charset="UTF-8" />
2 <meta http-equiv="X-UA-Compatible" content="IE=edge" />
3 <meta name="viewport" content=
  "width=device-width, initial-scale=1.0" />
4 <link rel="stylesheet" href=
  "https://cdnjs.cloudflare.com/ajax/libs/twitter-bootstrap/4.5.2/c
  ss/bootstrap.min.css"
  >
5 <script defer type="text/javascript" src="/js/script.js"></script
  >
6 <link id="main-css" rel="stylesheet" href="/css/style.css">
7 <title>Lybrary</title>
8
```

navbar.js



```
1 <nav class="navbar navbar-expand-lg navbar-dark bg-dark">
2   <a class="navbar-brand" href="/">My Lybrary</a>
3   <button class="navbar-toggler" type="button" data-toggle=
  "collapse" data-target="#navbarNavDropdown" aria-controls=
  "navbarNavDropdown" aria-expanded="false" aria-label=
  "Toggle navigation">
4     <span class="navbar-toggler-icon"></span>
5   </button>
6   <div class="collapse navbar-collapse" id=
  "navbarNavDropdown">
7     <ul class="navbar-nav">
8       <li class="nav-item">
9         <a class="nav-link" href="/">List <span class=
  "sr-only">(current)</span></a>
10      </li>
11      <li class="nav-item">
12        <a class="nav-link" href="/add">Add Books</a>
13      </li>
14      <li class="nav-item">
15        <a class="nav-link" href="/update">Update Books</a>
16      </li>
17      <li class="nav-item">
18        <a class="nav-link" href="/delete">Delete Books</a>
19      </li>
20    </ul>
21  </div>
22  <form class="form-inline" id="search_form">
23    <input
24      class="form-control mr-sm-2"
25      type="search"
26      placeholder="Search"
27      name="term"
28      aria-label="Search"
29    />
30    <button class="btn btn-outline-primary my-2 my-sm-0" id
  ="search_btn" type="button">
31      Search
32    </button>
33  </form>
34 </nav>
```


search_form.js

```
1 <div class="card delete_form">
2   <img class="card-img-top othercovering" alt="<%=book.name%>
   " />
3   <div class="card-body">
4     <h5 class="card-title"><%= book.name %></h5>
5     <p class="card-text"><%= book.description %></p>
6   </div>
7   <ul class="list-group list-group-flush text-center">
8     <li class="list-group-item">Author : <%= book.author %></
li>
9     <li class="list-group-item">Edition: <%= book.edition %>
</li>
```

```
1 <iframe name="dummyfra" id="dummyfra" style="display: none;"></
iframe>
2 <form id="update_form" action="/update/<%=book._id.toString()%>
  " target="dummyfra" method="POST" class="add form" enctype=
  "multipart/form-data">
3   <div class="form-group">
4     <label for="name">Book Name</label>
5     <input
6       type="text"
7       class="form-control"
8       id="name"
9       name="name"
10      placeholder="Book Name..."
11      value="<%=book.name%>"
12      required
13     />
14   </div>
15   <div class="form-group">
16     <label for="author">Author Name</label>
17     <input class="form-control" id="author" name="author"
type="text" placeholder="Author name..." value="<%=book.author
%>" required/>
18   </div>
19   <div class="row">
20     <div class="form-group col">
21       <label for="edition"> Edition </label>
22       <input
23         type="number"
24         class="form-control"
25         id="edition"
26         name="edition"
27         placeholder="edition..."
28         value="<%=book.edition%>"
29         required
30       />
31     </div>
32     <div class="form-group col">
33       <label for="subject">Subject</label>
34       <input class="form-control" id="subject" name="subject"
type="text" placeholder="Subject name..." required/>
35     </div>
36   </div>
37   <div class="row">
38     <div class="form-group col">
39       <label for="copies"> No. of Copies </label>
40       <input
41         type="number"
42         class="form-control"
43         id="copies"
44         name="copies"
45         placeholder="Number of copies..."
46         required
47       />
48     </div>
49     <div class="form-group col">
50       <label for="covering"> Cover Image </label>
51       <input
52         type="file"
53         class="form-control"
54         id="covering"
55         name="covering"
56       />
57     </div>
58   </div>
59 </div>
60
61 <div class="form-group">
62   <label for="description">Description</label>
63   <textarea class="form-control" id="description" name=
"description" rows="3"></textarea>
64 </div>
65
66 <button type="submit" class="btn btn-primary" id="update_btn"
>Update Book</button>
67 </form>
68
69
```

update_form.js

Database Schema to Store book details:-



```
1  const {Schema, model} = require("mongoose");
2
3  const bookSchema = new Schema({
4    name:{
5      type: String,
6      required: true,
7      minlength: 2
8    },
9    author :{
10     type : String,
11     required : true,
12     minlength: 3,
13     maxlength : 50
14   },
15   edition:{
16     type: Number,
17     default:1
18   },
19   subject:{
20     type:String,
21     default:"",
22     required:true
23   },
24   copies:{
25     type:Number,
26     required:true
27   },
28   description:{
29     type:String,
30     default:""
31   }
32 },
33 {timestamps:true});
34
35 module.exports = model("book_mod",bookSchema);
```



```

1 const express = require("express");
2 const router = express.Router();
3 const Book = require("../models/book");
4 const multer = require("multer");
5
6 const storage = multer.diskStorage({
7   destination: function (req, file, cb) {
8     cb(null, "../public/covers");
9   },
10  filename: function (req, file, cb) {
11    cb(null, req.body.name + "." + file.mimetype.split("/")[1]
12  });
13 });
14
15 const upload = multer({ storage: storage });
16
17 router.get("/", async (req, res) => {
18   let books = await Book.find().limit(10);
19   res.render("pages/index", { books: books });
20 });
21
22 router.get("/add", async (req, res) => {
23   res.render("pages/add");
24 });
25
26 router.get("/delete", async (req, res) => {
27   res.render("pages/delete", { book: null });
28 });
29
30 router.get("/update", async (req, res) => {
31   res.render("pages/update", { book: null });
32 });
33
34 router.post("/find", async (req, res) => {
35   try {
36     console.log(req.body);
37     let curr_book = await Book.find({
38       name: req.body.name,
39       author: req.body.author,
40     });
41     res.status(200).json(curr_book);
42   } catch (err) {
43     res.status(500).json(err);
44   }
45 });
46
47 router.post("/", upload.single("coverimg"), async (req, res)
48 => {
49   try {
50     console.log(req.body);
51     const newBook = await new Book({
52       name: req.body.name,
53       author: req.body.author,
54       edition: req.body.edition,
55       subject: req.body.subject,
56       copies: req.body.copies,
57       description: req.body.description,
58     });
59     const book = await newBook.save();
60     res.status(200).json("sucess");
61   } catch (err) {
62     res.status(500).json(err);
63   }
64 });
65
66 router.delete("/delete/:id", async (req, res) => {
67   try {
68     await Book.findByIdAndDelete(req.params.id);
69     res.status(200).json("Book Successfully Deleted");
70   } catch (err) {
71     res.status(500).json(err);
72   }
73 });
74
75 router.get("/update/:id", async (req, res) => {
76   try {
77     const currBook = await Book.findById(req.params.id);
78     res.render("pages/update", { book: currBook });
79   } catch (err) {
80     res.status(500).send({ err: err });
81   }
82 });
83
84 router.post("/update/:id", upload.single("coverimg"), async (
85 req, res) => {
86   try {
87     const currBook = await Book.findByIdAndUpdate(req.params.
88 id, {
89   $set: req.body,
90 });
91     res.status(200).send("works");
92   } catch (err) {
93     console.log(err);
94     res.status(500).send(err);
95   }
96 });
97
98 router.get("/delete/:id", async (req, res) => {
99   try {
100     const currBook = await Book.findById(req.params.id);
101     if (currBook) res.render("pages/delete", { book: currBook
102 });
103     else {
104       res.redirect("/book/delete");
105     }
106   } catch (err) {
107     res.status(500).send({ err: err });
108   }
109 });
110
111 router.get("/search/:term", async (req, res) => {
112   try {
113     let books = [];
114     let x = await Book.find({ name: req.params.term });
115     books = books.concat(x);
116     x = await Book.find({ author: req.params.term });
117     books = books.concat(x);
118     x = await Book.find({ subject: req.params.term });
119     books = books.concat(x);
120     res.render("pages/search", { books: books });
121   } catch (err) {
122     console.log(err);
123     res.redirect("/");
124   }
125 });
126
127 module.exports = router;
128

```



```
1  const express = require("express");
2  const app = express();
3  const mongoose = require("mongoose");
4  const dotenv = require("dotenv");
5  const morgan = require("morgan");
6  const router = express.Router();
7  const path = require("path");
8  const cors = require('cors');
9  const indexRoute = require('./routes/index')
10 const bookRoute = require('./routes/book')
11
12 dotenv.config();
13
14 //middleware
15 app.use(express.json());
16 app.use(morgan("common"));
17 app.use(cors());
18 app.use(express.static('./public'))
19 app.set("view engine","ejs");
20
21 // app.use('/',indexRoute);
22 app.use('/',bookRoute);
23
24 const uri = process.env.MONGO_URL;
25
26 mongoose.connect(
27   uri,
28   { useNewUrlParser: true },
29   () => {
30     console.log("Connected to DataBase");
31   }
32 );
33
34 app.listen(3030, () => {
35   console.log("server running at 3030");
36 });
```