



COMSATS University Islamabad, Vehari Campus

Department of Computer Science

Lab Mid Term Exam

Spring-2025

CSC337 Advanced Web Technologies

Class: BSSE

Instructor: Yasmeen Jana

Date: 14/04/2025

Marks: 25

Name: \_\_\_\_\_

Reg. No: \_\_\_\_\_

CLO NO	Course Learning Outcome	Blooms Taxonomy Learning Level
CLO5	Develop REST API based web server for web applications.	Creating

Note: You are required to submit a ZIP file that includes the source code, along with a Word or PDF document containing the code and a demonstration video.

Q1	<p><b>You have been hired as a Full Stack Developer. Your task is to develop a complete web application that allows users to view a list of available books, search for books by author, and add new books to the system. You are required to build both the frontend and the backend components of this application.</b></p> <p><b>On the frontend, design a responsive interface using HTML, CSS (Bootstrap), and JavaScript. The main page should display all books retrieved from the backend via a REST API. A search bar must allow users to filter books based on the author name</b></p>	<p><b>[CLO5]</b></p> <p><b>[25]</b></p>
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	<p><b>only. Additionally, create a separate page with a form to add new books by entering the book's title, author, and price. This form should send the data to the backend using JavaScript's fetch() API.</b></p> <p><b>On the backend, use Node.js with Express to build a RESTful API connected to a MongoDB database. The API should support the following operations: retrieve all books, search books by author, and add new books. Implement appropriate routing and ensure the use of environment variables for configuration. Use MongoDB (with either the native driver or Mongoose) to handle all data storage.</b></p> <p><b>Your project should be well-organized with separate folders for frontend and backend, follow best practices for modular coding, and demonstrate full interaction between the frontend and backend through API requests.</b></p>	
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## Marks Distribution Criteria

Criteria	Marks
Backend: Express server with required API routes	3
MongoDB integration with schema/model and proper CRUD operations	3
Frontend displays books via fetch() and uses Bootstrap for layout	3
Book addition form works correctly and submits data via API	3
Search functionality by author using query string or input field	3
Organized project structure (frontend/backend separation, modular code)	2
Clean, readable, and well-commented code	2
Proper use of .env and package.json	1
Word or PDF document explaining project structure and functionality	3
Clear and complete walkthrough of the working project	2
<b>TOTAL</b>	<b>25</b>