

Subject: Advanced Web Technologies

Internal Lab Question

Objective:

Design and implement a backend system for a **Simple E-commerce platform** using **Node.js, Express, and MongoDB**. The system should allow users to register and authenticate, and provide functionality for managing products with full CRUD operations.

Requirements:

Schema Design:

User Schema

- name: String (required)
- email: String (required, unique)
- password: String (required)

Product Schema

- name: String (required)
 - description: String
 - price: Number (required)
 - category: String
 - stock: Number (default: 0)
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API Endpoints:

User Routes:

- **POST** /api/register → Register a new user
- **POST** /api/login → Authenticate user and return a JWT token

Product Routes:

- **GET** /api/products → Retrieve all products
 - **GET** /api/products/:id → Retrieve a specific product by ID
 - **POST** /api/products → Add a new product
 - **PUT** /api/products/:id → Update an existing product
 - **DELETE** /api/products/:id → Delete a product by ID
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Task:

- Set up an **Express server** and establish a connection to **MongoDB** using **Mongoose** and develop **CRUD API** endpoints for product management.
- Test all endpoints using a frontend interface built with basic **HTML/CSS/JS, Angular, or React**.