Campus Assessment Documentation

1. Schema Design

Object Chosen: Task
Reason: Simple yet demonstrates text, enum, and boolean fields.

Field Name	Type	Description
id	UUID/String	Unique task identifier
title	String	Short title for the task
description	Text	Detailed explanation of the task
priority	Enum	One of [Low, Medium, High]
isCompleted	Boolean	True if task is done
createdAt	DateTime	Automatically set on creation

2. Pseudocode for Module & Class Structure

App ■■■ AuthController ■ ■■■ login(username, password) ■ ■■■ validateUser() ■■■
TaskController ■ ■■■ createTask(title, description, priority, isCompleted) ■ ■■■ getTasks(filter,
page) ■ ■■■ updateTask(id, data) ■ ■■■ deleteTask(id) ■■■ Routes ■ ■■■ /api/login →
AuthController.login ■ ■■■ /api/tasks [POST] → TaskController.createTask ■ ■■■ /api/tasks
[GET] → TaskController.getTasks ■ ■■■ /api/tasks/:id [PUT] → TaskController.updateTask ■
■■■ /api/tasks/:id [DELETE] → TaskController.deleteTask ■■■ Views ■ ■■■ loginPage.html ■
■■■ taskForm.html ■ ■■■ taskList.html ■■■ server.js → app initialization & route binding

3. Test Plan

Test Case	Input	Expected Output
Positive: Create Task	{title: 'Buy milk', priority: 'High'}	201 Created → Task object with ID
Positive: Fetch Tasks	GET /api/tasks	List of tasks with pagination info
Negative: Missing Title	{priority: 'Low'}	400 Bad Request → Error: 'Title is requ
Negative: Invalid Priority	{title: 'Test', priority: 'Urgent'}	400 Bad Request → Error: 'Invalid prio
Edge: Title too long	{title: <256 chars>, priority: 'Low'}	400 Bad Request → Error: 'Title too lor
Edge: Empty Pagination	GET /api/tasks?page=99	Empty array with total=0

4. Reflection

If given more time, I would: - Integrate JWT-based authentication for security. - Replace in-memory
storage with PostgreSQL or MongoDB for persistence. - Add search functionality and advanced
filtering. - Write unit and integration tests using Jest. - Implement CI/CD pipeline for automated
deployment and testing.

5. AI Prompt History with Reasoning

1. "Generate Node.js Express routes for CRUD operations on a task object" → To speed up development and ensure proper REST structure. 2. "Suggest a schema for a task management system with priority and completion status" → To validate database design. 3. "List edge cases for creating a task in a task manager app" → To improve coverage in the test plan. 4. "Create basic HTML & CSS for a simple login page" → To ensure a clean and responsive design quickly.