Project Submission Report

1. Task Title

Day 2 – Node.js Backend Task (Booking Session with Admin Dashboard)

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2. Approach / Methodology

- I started by setting up the backend using **Node.js** and **Express.js**.

- I connected the booking form to the **PostgreSQL database** using the pg package.

- For normal users, I created a route to submit booking data, which gets stored in the database.

- I created an **admin login system** (with fixed credentials for Day 2: admin/admin).

- Once logged in as admin, I built a separate route to fetch booking data and display it in the **Admin Dashboard**.

- I ensured that normal users cannot access booking data and only the admin can see the bookings.

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3. Difficulties Faced

- Initially faced some issues while connecting PostgreSQL with Node.js and handling async queries.

- Had to debug the **authentication flow** to make sure only admin could access the dashboard.

- Encountered some problems rendering booking data correctly in the frontend table format.

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4. Solutions / How I Resolved Them

- Resolved database connection issues by properly configuring Pool from the pg package.

- Used middleware to restrict routes only for the admin.

- Debugged the frontend fetch call and mapped the booking data into an HTML/React table to display it neatly.

- Validated input before inserting into the database to avoid malformed entries.

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5. Learning & Takeaways

- Learned how to integrate **Node.js + Express.js + PostgreSQL** smoothly.

- Improved understanding of **role-based access control**.

- Understood how to separate routes for users and admins for better clarity.

- Practiced handling JSON responses and mapping them into a frontend UI.

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6. Self-Reflection

- I could improve error handling in both backend and frontend (e.g., better messages for invalid logins or empty bookings).

- I realized that securing admin credentials using hashing (like bcrypt) is important for real-world apps.

- I plan to implement **JWT authentication** in future tasks to strengthen security.

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7. Overall Summary

This task gave me practical experience in building a **backend booking system with admin access**. I successfully connected the booking form to PostgreSQL, stored booking data, and created an **admin dashboard** where only admins can log in and view bookings. The project helped me understand backend development flow, database integration, and access control. Overall, it was a valuable step in learning **full-stack application development**.