Web Development Capstone Project

📘 **Assignment: Cab Booking Portal for Corporate Offices**

Project Overview:

Design and develop a **Cab Booking Portal** tailored for **corporate office travel needs**, enabling Companies to book cabs via associated vendors for specific dates and times. The system will support different car categories (Sedan, Hatchback, SUV, Luxury) and offer real-time booking, vendor collaboration, and fallback mechanisms via an **open market** model.

🔧 **Suggested Tech Stack**

• Frontend: Next.js with typescript + Tailwind/ Shadcn components.

• Backend: Node.js (Express.js).

• Database: PostgreSQL/Supabase.

• Middleware: RabbitMQ for real-time communication among respective companies and vendors.

• Map & GPS Integration: Google Maps API or Mapbox

• Auth-Module: JWT + Role-based Access

• Deployment: Docker or AWS or vercel or any hosting of your choice.

👨‍💻 **WorkFlow**

The company is associated with a list of vendors, similarly, vendors are also associated with various companies (many-to-many relation).

1.In the company dashboard, we take in the guest and trip details in the form and then send in The booking request to related vendors via RabbitMQ,

2. Vendor can choose to accept, reject, or place requests in the open market.

3. If the vendor accepts the booking, a pop-up appears to assign the driver and vehicle on the date and then confirm, on confirmation this event goes to the "Upcoming bookings" section.

4. If the vendor cancels, it should show in "Cancelled bookings" in both vendor and company.

5. If the vendor selects "place in open market", it shows up in the live bookings section for the associated-vendors (associated list of vendors with the vendor) until 30 min, first to accept the The order gets the booking, IF NO associated member accepts, it is open to all the vendors associated with the company and first to choose gets the booking.

6. The trip status:started will be triggered by driver,but you can include a function call to "starttrip" as a dummy button for this project, and record the event, when this is triggered, the status of the booking will be changed to "ongoing" on all dashboard.

7. The trip status:ended will be triggered by driver,but you can include a function call to "endtrip" as a dummy button for this project, and record the event, when this is triggered, the status of the booking will be changed to "completed" on all dashboards.

🖥️ Company Dashboard Features

1. Bookings - Ongoing, Upcoming, Completed.

- Filter by date, vehicle type, vendor, driver, status
- (upcoming/completed/cancelled).
- Add a search feature to search the respective bookings(optional).
- Ongoing tab - shows the trips that are in progress live.
- Upcoming - shows the trips that have some time between the current time and
- the upcoming trip.
- Completed - shows the list of completed trips with payment status, trip type,
- location, vehicle type, vendor name, booking Id.

2. Place New Booking

- Form-based interface to select:
  - Pickup & drop-off location
  - Guest Name

- No of passengers

- Email ID

- Mobile number

- Address

- Trip Type - Local/Outstation

- Date and Time

- Vehicle type

- Choose from the associated vendors with the company.

3. Monitor Live Bookings

- Live map view with GPS integration.

- Real-time status: link to show the vehicle.

4. Invoices and Billing

Download and view invoices with details such as

- Booking.

- Mobile number

- Trip Type - Local/Outstation

- Date and Time

- Vehicle type

- Vendor name

- Payment Status -> paid or unpaid

5. Cancellation & Rebooking

- Cancel button in "Upcoming Bookings" tab to place a cancel request.