1. API Integration and Data Modeling:

- **API Design:** Design a RESTful API for managing trips, including endpoints for:
    - Creating trips
    - Updating trip status (Unassigned, Booked, Running, Completed, Cancelled)
    - Assigning transporters to trips (Booked)
    - Retrieving trip details

**Detailed API design (including endpoints, request/response formats)

- **Data Model:** Design a robust data model diagram to store trip information, including:
    - Trip ID
    - Creation date
    - Pickup location
    - Drop-off location
    - Current status
    - Assigned transporter
    - Real-time location tracking (if applicable)
    - Other relevant details

2. System Architecture diagram:

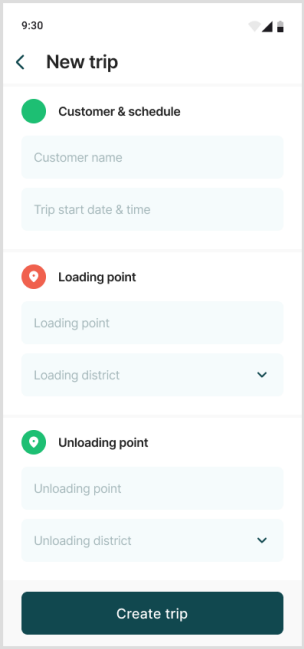
- **Microservices Architecture:** Propose a microservices architecture for the trip management system, outlining the responsibilities of each service.
- **API Gateway:** Design an API gateway to handle routing, authentication, rate limiting, and other cross-cutting concerns.
- **Event-Driven Architecture:** Implement an event-driven architecture using message queues to handle asynchronous events like real-time location updates.

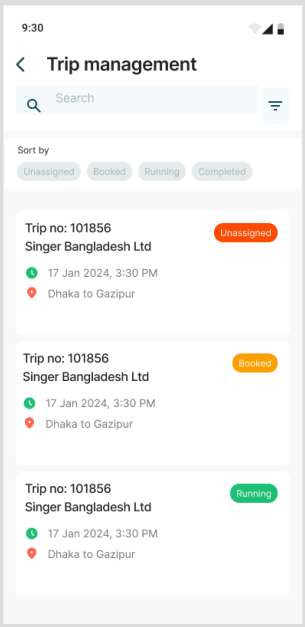
Note: Trip Status: Created->Booked->Running->Completed

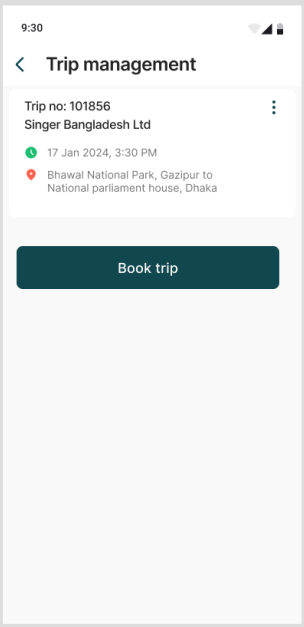
Initially every created trip is in unassigned state, Trip can be booked by assigning transporter, then tapping start button, trip can be in running state. At last, tapping complete button will end the trip journey in completed state.

Submission Format: PDF/Word file/Code repository

Sample Design is provided on the next page


9:30
New trip
Customer & schedule
Customer name
Trip start date & time
Loading point
Loading point
Loading district
Unloading point
Unloading point
Unloading district
Create trip


9:30
Trip management
Search
Sort by
Unassigned
Booked
Running
Completed
Trip no: 101856
Singer Bangladesh Ltd
Unassigned
17 Jan 2024, 3:30 PM
Dhaka to Gazipur
Trip no: 101856
Singer Bangladesh Ltd
Booked
17 Jan 2024, 3:30 PM
Dhaka to Gazipur
Trip no: 101856
Singer Bangladesh Ltd
Running
17 Jan 2024, 3:30 PM
Dhaka to Gazipur


9:30
Trip management
Trip no: 101856
Singer Bangladesh Ltd
17 Jan 2024, 3:30 PM
Bhawal National Park, Gazipur to
National parliament house, Dhaka
Book trip