**Project Design Phase**

**Problem Solution Fit**

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| Date | 9 APRIL 2025 |
| Team ID | SWTID1742640402 |
| Project Name | MyRide |
| Maximum Marks | 4 Marks |

The **Cab Booking Application** bridges the gap between urban mobility challenges and a tech-driven solution by aligning real-world transportation pain points with targeted features.

**Problem Recap**

1. **Inefficient Ride Matching**:
   * *User Struggle*: Long wait times during peak hours due to poor driver allocation.
   * *Impact*: Frustration, missed appointments.
2. **Unreliable Real-Time Tracking**:
   * *User Struggle*: GPS delays or inaccurate ETAs lead to uncertainty.
   * *Impact*: Passenger-driver miscommunication, wasted time.
3. **Payment Failures**:
   * *User Struggle*: Transactions decline due to network issues or app glitches.
   * *Impact*: Ride cancellations, loss of trust.
4. **Safety Concerns**:
   * *User Struggle*: Riding with unknown drivers feels risky, especially at night.
   * *Impact*: Low adoption among vulnerable groups (e.g., solo travelers).
5. **Driver Dissatisfaction**:
   * *Driver Struggle*: Low earnings after commissions, unfair ride distribution.
   * *Impact*: High turnover, fewer available cabs.

**Our Solution**

**Inefficient Ride Matching**

**Solution:** AI-powered dynamic dispatch algorithm  
**Key Feature:** Matches riders with the nearest available driver in under 90 seconds.  
**How It Works:** The app utilizes AI algorithms to analyze real-time data, predicting optimal driver-passenger pairings and optimizing routes. This approach minimizes wait times and enhances fleet efficiency .​

**Unreliable Tracking**

**Solution:** Live WebSocket updates combined with Google Maps integration  
**Key Feature:** Provides real-time location synchronization every 10 seconds.  
**How It Works:** By leveraging WebSockets, the app ensures continuous, low-latency communication between the server and client, enabling seamless real-time location tracking on Google Maps .​

**Payment Failures**

**Solution:** Supports multiple payment gateways (UPI, cards, wallets) with offline retry logic  
**Key Feature:** Automatically retries payments during temporary glitches.  
**How It Works:** The app integrates with various payment gateways and incorporates smart retry mechanisms that attempt to process failed transactions multiple times, enhancing the likelihood of successful payments .​

**Safety Gaps**

**Solution:** In-app SOS button with live location sharing to emergency contacts  
**Key Feature:** Sends SMS alerts with real-time location to trusted contacts.  
**How It Works:** Upon activation, the SOS feature shares the user's live location and trip details with emergency services and designated contacts, facilitating prompt assistance .​

**Driver Dissatisfaction**

**Solution:** Transparent earnings dashboard with priority for high-rated drivers  
**Key Feature:** Provides daily profit breakdowns and performance-based bonuses.  
**How It Works:** The app offers drivers a comprehensive dashboard to monitor earnings and performance metrics. High-rated drivers receive prioritized ride requests and additional incentives, fostering motivation and satisfaction .​