ZOLA CABS CASE STUDY for "IndiaGold"

Ques 1: The Operations team is under pressure to increase the number of rides sharing trips as single passenger ride hailing services is seeing a slowdown in month-on-month growth. The Growth team has also agreed to increase the visibility of ride sharing as an option for a price sensitive market like La La Land. As a Product Manager you are tasked with coming up with a methodology to calculate the Similarity Score that matches riders with drivers. Write a very short PRD on how such a score should be defined/ implemented. Please explain your answer with a hypothetical scenario. Feel free to make any assumptions to cover possible scenarios/ cases/ distance/ time/ cost variables. **(10 points)**

Solution-

Product Requirements Document (PRD): Similarity Score for Matching Riders with Drivers

1. Objective:

The objective of implementing a Similarity Score for matching riders with drivers is to enhance the ride-sharing experience for Zola Cabs' customers. By identifying and pairing riders and drivers who have similar preferences and interests, the aim is to increase the number of ride-sharing trips and improve customer satisfaction.

2. Methodology:

The Similarity Score will be calculated based on various factors that contribute to the compatibility between riders and drivers. The methodology will consider the following components:

a. **Location Proximity:** The algorithm will prioritize matching riders and drivers who are in close geographical proximity to each other. It will calculate the distance between the rider's pickup location and the driver's current location, aiming to minimize the detour and pickup time.

b. **Trip Preferences:** The system will consider the preferences indicated by riders and drivers regarding ridesharing. For example, riders may specify their willingness to share a ride, and drivers may indicate their availability for ridesharing. Matching riders and drivers who align in their trip preferences will increase the likelihood of a successful ride-sharing match.

c. **Compatibility Factors:** The algorithm will analyze additional factors to assess the compatibility between riders and drivers. This may include:

- **Ratings and Reviews:** Consider the past ratings and reviews given by riders to drivers and vice versa. Matching riders and drivers with similar ratings and positive reviews can enhance the overall experience.
- **Interests and Language:** If riders and drivers have indicated their interests or spoken languages, the algorithm can identify matches with shared interests or those who speak the same language, promoting a more comfortable and engaging ride.
- **Social Profiles:** If riders and drivers have linked their social profiles, the algorithm can leverage this information to identify common connections or shared interests, further enhancing the match.

3. Implementation Example:

Let's consider a hypothetical scenario to illustrate how the Similarity Score methodology could work:

a. Rider A requests a ride in La La Land, indicating a preference for ridesharing, with a pickup location near a popular shopping mall.

b. Driver X, who is currently nearby, has indicated availability for ridesharing and has a high overall rating.

c. The algorithm calculates the distance between Rider A's pickup location and Driver X's current location, finding them to be within a short proximity of 1.2 kilometers.
d. It further evaluates their compatibility factors, such as both having positive ratings (4.5 out of 5), similar interests indicated in their profiles (both enjoy music and sports), and no language barriers as they both speak English.
e. Based on the similarity score calculated using these factors, Rider A is matched with Driver X for a ride-sharing trip.

4. **Assumptions and Variables:** To define and implement the Similarity Score methodology, the following assumptions and variables may be considered:
   a. **Distance Threshold:** Define the maximum acceptable distance between the rider's pickup location and the driver's current location for a ride-sharing match, for example, 2 kilometers.
   b. **Weightage:** Assign weights to each compatibility factor to reflect their relative importance in the Similarity Score calculation. For instance, ratings and reviews could have a weight of 40%, trip preferences 30%, and compatibility factors 30%.
   c. **Privacy Settings:** Consider the privacy settings of riders and drivers and ensure that only relevant and consented information is used in the matching process.
   d. **Real-time Updates:** Incorporate real-time data updates to account for changes in rider and driver availability, preferences, and location.

By implementing a robust Similarity Score methodology, Zola Cabs can effectively match riders with drivers for ride-sharing trips, thereby increasing ride-sharing usage and meeting the objective of increasing the number of ride-sharing trips in La La Land's price-sensitive market.

Ques 2: Create a notifications management system for the drivers and the riders in a simple excel sheet mapping the various instances at which the notifications should be sent, the heading and body of the notifications, the type of notifications and what should happen/ what screen in the app should open if it is a push notification is clicked by the user. Map the entire journey of the user(s). **(5 points)**

Solution-

Notifications Management System for Drivers and Riders

To create a notifications management system for drivers and riders, we can use a simple Excel sheet to map the various instances at which notifications should be sent, along with the heading, body, notification type, and the corresponding action to be taken when a push notification is clicked by the user. Here's an example of how the Excel sheet can be structured:

For Riders:			Notification Type: Push Notification (Default)	
S.No.	**Notification Instance**	**Heading**	**Body**	**Action on Click**
1	App Update Available	App Update Available	A new version of the app is available.	Open App Store/Play Store
2	Booking Confirmed	Booking Confirmed	Your ride has been confirmed.	Open Ride Details Screen

3	Driver Arrived	Driver Arrived	Your driver has arrived at your location.	Open Driver Details Screen
4	Ride Started	Ride Started	Your ride has started.	Open Ride Status Screen
5	Ride Completed	Ride Completed	Your ride has been completed.	Open Rating and Review Screen
6	Payment Receipt	Payment Receipt	Your payment for the ride has been received.	Open Payment Details Screen
7	Promotional Offer	Exclusive Offer	Enjoy 20% off on your next ride!	Open Promotions Screen
For Drivers:			**Notification Type: Push Notification (Default)**	
S.No.	**Notification Instance**	**Heading**	**Body**	**Action on Click**
1	New Ride Request	New Ride Request	A rider has requested a ride.	Open Driver Accept/Decline Screen
2	Ride Accepted	Ride Accepted	You have accepted a ride request.	Open Ride Details Screen
3	Ride Cancelled	Ride Cancelled	The rider has cancelled the ride.	Open Ride History Screen
4	Payment Received	Payment Received	Payment for the ride received.	Open Payment Details Screen
5	Ride Completed	Ride Completed	The ride has been successfully completed.	Open Rating and Review Screen
6	App Update Available	App Update Available	A new version of the app is available.	Open App Store/Play Store

By mapping the entire journey of the user(s) and defining the appropriate notifications, headings, bodies, notification types, and actions, this Excel sheet serves as a reference for implementing the notifications management system for drivers and riders, ensuring timely and relevant communication throughout their interaction with the app.

Ques 3: On your way to work, your team member informs you that several drivers have started protesting to their cluster managers about the recent hike in CNG/ diesel prices (which is used by most cabs plying with Zola Cabs) which has led to a significant reduction in their earnings. The net impact of the fuel price hike has meant that the cost of each trip has gone up by ₹1 per km. Given that the share of drivers of the total cost for the trip borne by the customer was negotiated only last month and cannot be changed for next 11 months– you need to readjust the pricing model in a way that impact on revenue is less than ±5% of daily revenue. In the appendix you will find the hypothetical ride data for Zola cabs in an hour on a weekday during morning peak hours recorded across all cities in La La Land where Zola cabs is operational. Note that for every ₹1/km change in price, the demand for the rides (calculated as its impact on revenue) decreased by 7% in Capital city, 5% in Tier 1 cities and 10% in tier 2 and 3 cities. Please explain how you derive the answer – points would be awarded based on your approach and reasoning skills. There are no wrong answers. **(10 points)**

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Solution-

To readjust the pricing model in a way that the impact on revenue is less than ±5% of daily revenue, we need to consider the current pricing model, the fuel price hike, and the demand elasticity based on the given hypothetical ride data.

1. **Current Pricing Model:**
   a. Base Fare, Charge per km, and Minimum Fare are different for each city type (Capital City, Tier 1 Cities, Tier 2 Cities, and Tier 3 Cities).
   b. Cancellation Fee is also different for each city type.
   c. Shared rides are charged at 50% of the fare for riding alone.

2. **Impact of Fuel Price Hike:**
   The cost of each trip has increased by ₹1 per km due to the fuel price hike.

3. **Demand Elasticity:**
   A change in price leads to a certain percentage change in demand (rides booked).
   a. In the Capital City, a ₹1/km change in price leads to a 7% decrease in demand.
   b. In Tier 1 Cities, a ₹1/km change in price leads to a 5% decrease in demand.
   c. In Tier 2 and Tier 3 Cities, a ₹1/km change in price leads to a 10% decrease in demand.

4. **Approach to Readjust Pricing Model:**

   a. **Determine the revenue impact of the fuel price hike:**
      - Calculate the total revenue from the hypothetical ride data before the fuel price hike.
      - Calculate the new total revenue considering the increased cost per km due to the fuel price hike.
      - Calculate the revenue impact as a percentage of the original total revenue.

   b. **Analyze the revenue impact:**
      - If the revenue impact is within ±5% of the daily revenue, no further adjustment is needed.
      - If the revenue impact exceeds ±5% of the daily revenue, proceed to the next step.

   c. **Adjust the pricing model:**
      - Distribute the revenue impact across the base fare and charge per km to minimize the impact on revenue.
      - Increase the base fare and/or charge per km by an appropriate amount to compensate for the revenue impact.
      - Ensure that the fare structure is maintained, i.e., higher base fare for larger cities and consistent charge per km within city tiers.

   d. **Recalculate the new base fare and charge per km for each city type:**
      - Adjust the base fare and charge per km for each city type based on the revenue impact and maintaining the fare structure.

- Ensure that the new pricing model aligns with the negotiated customer cost for the next 11 months.

5. Analysis of Hypothetical Data:

Excel Sheet Link (Uploaded to G-Drive)

Based on the analysis, if the revenue impact is within ±5% of the daily revenue, no further adjustment is needed. In our analysis based on Hypothetical Data given, since the revenue impact is approximately 4.80%, which is within the allowed threshold of ±5%, there is no need to make any additional adjustments to the base fare. Only increasing the charge per kilometer by ₹1 to account for the fuel price hike would be sufficient.

Previous Pricing Model:				Adjusted Pricing Model:		
City Type	**Base Fare (₹)**	**per km (₹)**		**City Type**	**Base Fare (₹)**	**per km (₹)**
Capital	55	22		Capital	55	**23**
Tier 1	50	20		Tier 1	50	**21**
Tier 2	45	20		Tier 2	45	**21**
Tier 3	35	20		Tier 3	35	**21**

Ques 4: Create the wireframe for a back-end dashboard that can be used by a city's Operations Manager to monitor the performance of all cabs in the city. What all features would you build into the design that might be relevant for an Operation's Manager to track riders/ monitor daily KPIs/ manage fraud and safety alerts/ decide whether or not to apply surge pricing? **(10 points)**

Solution-

As an Operation Manager, it is crucial to have a comprehensive back-end dashboard to monitor the performance of all cabs in the city. The dashboard should provide real-time data and relevant features to track riders, monitor key performance indicators (KPIs), manage fraud and safety alerts, and make informed decisions regarding surge pricing. Here's an outline of the features that can be built into the design:

1. Overview Dashboard:

a. Total number of active cabs in the city.
b. Real-time data on cab availability and utilization.
c. Summary of daily revenue and number of rides.
d. Key performance indicators (KPIs) like average trip duration, completion rate, and driver ratings.
e. Current surge pricing status.

2. Rider Monitoring:

a. Number of riders currently active and their locations.
b. Real-time tracking of ongoing rides.
c. Rider rating and feedback summary.
d. Historical data of rider preferences and booking patterns.

3. **KPI Monitoring:**
   a. Daily revenue and number of rides.
   b. Average trip duration and distance.
   c. Completion rate and cancellation rate.
   d. Driver performance metrics (ratings, acceptance rate, etc.).
   e. Historical trends and visualizations for performance comparison.

4. **Fraud and Safety Alerts:**
   a. System-generated alerts for any suspicious activities or potential fraud.
   b. Notifications for safety-related incidents or violations.
   c. Tracking and resolution status for reported incidents.
   d. Flagged drivers or riders for further investigation.

5. **Surge Pricing Management:**
   a. Real-time demand-supply data to assess the need for surge pricing.
   b. Historical surge pricing patterns and their impact on revenue.
   c. Controls to enable or disable surge pricing.
   d. Insights and analytics on surge pricing effectiveness.

6. **Cab Fleet Management:**
   a. List of all active cabs with their status (available, booked, offline).
   b. Driver details, including contact information and ratings.
   c. Cab maintenance and inspection status.
   d. Alerts for expired licenses, insurance, or other compliance issues.

7. **Communication and Notifications:**
   a. Internal messaging system for communication with drivers and support team.
   b. Automated notifications for important updates or critical events.
   c. Alerts for surge pricing activation or deactivation.

The wireframe design should focus on providing a user-friendly interface with clear visualizations, intuitive navigation, and the ability to filter and drill down into specific data points. It should enable the Operations Manager to gain insights, identify trends, address issues promptly, and make informed decisions to optimize cab operations and enhance the overall customer experience.
