Analytical Approach

Identifying the pattern to address the question

Business Goal

A transportation company aims to optimize its delivery routes and schedules to minimize costs and improve delivery efficiency. The company wants to use data science to identify the most optimal routes and delivery time windows based on historical delivery data and external factors such as traffic and weather conditions.

Various questions are targeted by data scientist to achieve this business goal

Directions: Identify the 'Question Pattern' relevant to each analytical approach. Drag each question into the relevant 'Analytical Approach' box.

Predictive Model	Descriptive Model	Classification Model
How can we forecast the optimal number of delivery vehicles required for a specific day based on the expected order volume?	What are the most frequently used routes and their respective delivery time variations during peak and off-peak hours?	How can we group delivery regions based on customer density and order frequency to optimize delivery route planning?
How can we determine the most suitable delivery routes for perishable goods, ensuring timely deliveries without explicitly using past data to make predictions?	What historical data highlights the busiest delivery days and time intervals during the week based on past order data?	How can we classify delivery routes into different categories based on the average delivery time and order volume?
What are the expected delivery time for each route considering historical traffic patterns and anticipated weather conditions?	What insights can be gathered on the average delivery times for different vehicle types, how do these times vary based on the complexity of the delivery route?	How can we cluster customer locations to create distinct groups for efficient delivery route planning, without explicitly making predictions based on past data?
How can we anticipate the potential impact of traffic incidents or road closures on delivery times to proactively adjust routes?	What are the average delivery costs for different delivery routes, and how do they vary during different times of the day?	What are the various time slots in which delivery schedules can be classified to balance workload and minimize delivery delays?

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