PUBLIC TRANSPORTATION ANALYSIS PROJECT

PROJECT DEFINITION:

Public transportation systems play a pivotal role in urban areas, ensuring the seamless movement of people. However, various challenges affect the efficiency and quality of these services. Timeliness, passenger satisfaction, and operational effectiveness are crucial aspects that demand continuous evaluation and improvement. Delays, overcrowding, and passenger dissatisfaction can lead to decreased ridership and affect the overall urban mobility experience. This project aims to address these challenges by analyzing public transportation data comprehensively. By focusing on on-time performance, passenger feedback, and service efficiency, we intend to identify key bottlenecks, assess customer experience, and propose data-driven strategies. Through this analysis, our goal is to enhance the overall quality of public transportation, making it more reliable, convenient, and passenger-friendly.

DESIGN THINKING

ANALYSIS OBJECTIVES:

1. Assess On-Time Performance: One of the primary objectives is to evaluate the on-time performance of public transportation services. We will measure and report the percentage of services that adhere to their schedules.

2. Evaluate Passenger Satisfaction: Another key objective is to gauge passenger satisfaction. This will involve the collection and analysis of passenger feedback through surveys or other available data sources.

3. Analyze Service Efficiency: To determine the efficiency of public transportation services, we will assess factors such as route optimization, vehicle utilization, and punctuality.

DATA COLLECTION:

1. Schedules Data: We will collect schedules data from the provided dataset. This data will include information about planned departure and arrival times, routes, and stops.

2.Real-time Updates: Real-time data will be gathered to track actual departure and arrival times, allowing us to measure on-time performance accurately.

3.Passenger Feedback: Passenger feedback will be collected through surveys or online platforms, if available. This data will provide insights into passenger satisfaction and areas for improvement.

4.Weather Data: Weather data may also be considered to understand its impact on service efficiency and delays.

VISUALIZATION STRATEGY:

1. IBM Cognos Dashboards: We will use IBM Cognos to design informative dashboards and reports. These dashboards will include visualizations such as line charts for tracking on-time performance trends, bar charts for comparing passenger satisfaction across different routes, and geographic maps to visualize service efficiency based on location.

2.Interactive Reports: Interactive reports will allow stakeholders to drill down into specific details, making it easier to identify areas that require improvement.

3.Key Performance Indicators (KPIs): We will present KPIs like on-time percentage, passenger satisfaction scores, and service efficiency indices prominently on the dashboards.

CODE INTEGRATION:

1.Data Cleaning: Code will be used to clean and preprocess the raw transportation data. This may include handling missing values, standardizing data formats, and removing outliers.

2.Transformation: Code will be employed to transform data into a format suitable for analysis, including merging data from different sources and creating derived variables for deeper insights.

3.Statistical Analysis: Advanced statistical analysis, if necessary, will be conducted using code to identify correlations, trends, and potential areas for optimization.

CONCLUSION:

This design thinking document outlines the project's objectives, data sources, visualization strategy, and the role of code in analyzing public transportation data to improve service efficiency. The defined timeline provides a structured approach to project execution. This plan will serve as a foundation for the successful completion of the project in the data analysis course of Cognos.

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