**Data Analytics May Placement Project**

***Part A-The SQL Analysis case study-***

1. **Identify Peak Purchase Times and Their Impact on Delays:** This query determines the peak times for ticket purchases and analyzes if there is any correlation with journey delays.
2. **Analyze Journey Patterns of Frequent Travelers:** This query identifies frequent travelers (those who made more than three purchases) and analyzes their most common journey patterns.
3. **Revenue Loss Due to Delays with Refund Requests:** This query calculates the total revenue loss due to delayed journeys for which a refund request was made.
4. **Impact of Railcards on Ticket Prices and Journey Delays:** This query analyzes the average ticket price and delay rate for journeys purchased with and without railcards.
5. **Journey Performance by Departure and Arrival Stations:** This query evaluates the performance of journeys by calculating the average delay time for each pair of departure and arrival stations.
6. **Revenue and Delay Analysis by Railcard and Station**

This query combines revenue analysis with delay statistics, providing insights into journeys' performance and revenue impact involving different railcards and stations.

1. **Journey Delay Impact Analysis by Hour of Day**

This query analyzes how delays vary across different hours of the day, calculating the average delay in minutes for each hour and identifying the peak hours for delays.

**Part B-For Visual reports in Power BI/Tableau**

1. **Customer Loyalty and Retention Analysis**

Analyze customer loyalty and retention by identifying repeat customers, measuring their purchase frequency, and evaluating their impact on revenue over time.

1. **Impact of Journey Time on Customer Satisfaction**

Analyze how the actual journey time (from departure to actual arrival) impacts customer satisfaction, assuming delays reduce satisfaction levels(where satisfaction decreases as delay increases (e.g., -1 satisfaction point per 10 minutes of delay).

1. **Profitability Analysis Based on Ticket Type and Class**

Perform a profitability analysis based on ticket type and class, with dynamic filtering to show insights for different periods or stations(consider 55% of the ticket price is the cost of a ticket.

1. **Frequent Traveler Analysis with Dynamic Segmentation**

Identify and analyze frequent travelers dynamically segmented by the number of journeys they made.

1. **Analyzing Delays to Optimize Train Schedule**

Optimize train schedules to minimize delays. To achieve this, you need to analyze the average delay for trains by the hour of the day, considering that delays can vary based on the time of departure.