

1. Project planning

PHASE 1: DATA PREPARATION (Week 1 - COMPLETED)

- Data cleaning & validation completed.
- DAX measures created.
- Data model reviewed.

PHASE 2: ANALYSIS & DASHBOARD (Week 2-3 - CURRENT)

This Week:

- Create key analysis questions from the DAX measures.
- Design dashboard layout.
- Validate data supports all planned visualizations.

Next Week:

- Build an interactive dashboard in Power BI.
- Review and test dashboard functionality.
- Finalize forecasting analysis.

PHASE 3: FINAL DELIVERY (Week 4)

- Compile final presentation deck
- Practice presentation and Q&A preparation

2. Stakeholder analysis

Our project analyzes UK Train Rides sales data to uncover insights into revenue trends, delay impacts, and customer purchasing behavior.

The dashboard supports decision-making by providing real-time visibility into key performance indicators such as total revenue, on-time performance, refund rates, and popular routes.

Stakeholder	Needs	Will Use	Influence Level	Key Data-Informed Decisions
Sales Manager	Revenue trends, ticket class performance, forecasting	Revenue DAX measures, forecasting	Very High	Adjust ticket pricing, forecast revenue growth
Operations Manager	On-time performance, delay reasons, route efficiency	On-Time %, delay analysis, route performance visuals	High	Optimize schedules, reduce delays
Marketing Manager	Purchase patterns, popular routes, customer preferences	Purchase type analysis, popular routes, ticket types	Medium	Planning promotions and route-based campaigns

Stakeholder	Needs	Influence Level	Key Data-Informed Decisions
Station Managers	Route-specific data and performance	Low	Improve station-level operations
Finance Team	Revenue and refund metrics	Medium	Track financial health and refund costs
Customer Service	Delay and refund patterns	Low	Handle complaints efficiently, spot recurring issues

KEY QUESTIONS EACH STAKEHOLDER WILL ASK:

- "Which routes are most profitable?" (Revenue Manager)
- "What are the main causes of delays?" (Operations Manager)
- "How do customers prefer to buy tickets?" (Marketing Manager)
- "Are we meeting our 98% on-time target?" (Operations Manager)

3. Database design

UK Train Rides [Date of Journey] → Calendar [Date]

(One to Many relationship, active)

UK Train Rides column	Calendar table column
Transaction ID	Date
Date of purchase	Day of week
Time of purchase	Month
Purchase type	Year
Payment method	Year Month
Rail card	
Ticket class	
Ticket type	
Price	
Departure Station	
Arrival destination	
Date of journey	
Departure time	
Arrival time	
Actual arrival time	
Journey status	
Reason for delay	
Refund request	

4. UI/ UX design

Objectives

- To visualize key performance indicators (KPIs) such as Total Revenue, Average Ticket Price, Delay Rate, and Cancellation Rate.
- To monitor train performance and identify the main causes of delays.
- To assist decision-makers in improving service quality and customer satisfaction.
- To provide an intuitive interface for filtering and exploring train journey data.

User Flow

- The user opens the dashboard and selects filters such as Date of Journey and Departure Station.
- The top KPIs display overall performance metrics.
- The user explores charts for revenue trends, ticket classes, and reasons for delay.
- Insights are drawn based on the visual breakdowns and comparisons.

Wireframe / Layout

- The dashboard layout follows a top-down hierarchy:
- Top section: Key KPIs (Total Revenue, Total Transactions, Average Ticket Price, Delay %, Cancellation %, etc.).
- Middle section: Revenue and performance charts (Revenue Over Time, Revenue by Ticket Class, Ticket Sales by Station).
- Bottom section: Categorical insights (Reasons for Delay, Journey Status Breakdown, Revenue by Purchase Type).
- Left panel: Interactive filters (Date, Departure Station, Journey Status, Payment Method).

UI Design

Color Palette

- Blue: Represents reliability and stability (used for positive or neutral metrics).
- Red: Highlights negative performance or delays.
- White background: Ensures clarity and clean visualization.

Typography

- Clear and bold fonts are used for KPIs to enhance readability.
- The UI ensures that users can:
- View important KPIs instantly at the top.
- Interact with filters easily on the left side.
- Interpret visual insights quickly through consistent chart formatting.

UX Considerations

- Simplicity: Clean and minimal layout for easier interpretation.
- Interactivity: Filters and slicers allow dynamic data exploration.
- Color Coding: Enhances quick recognition of positive vs. negative indicators.
- Consistency: Similar chart styles and color logic across all visuals.

Tools Used

- Power BI: For dashboard creation and visualization.
- Excel: As a data source for the analysis.