

PROJECT GOALS:

- Identify the most popular routes
- Determine peak travel times
- Analyze revenue from different ticket types & classes
- Diagnose on-time performance and contributing factors

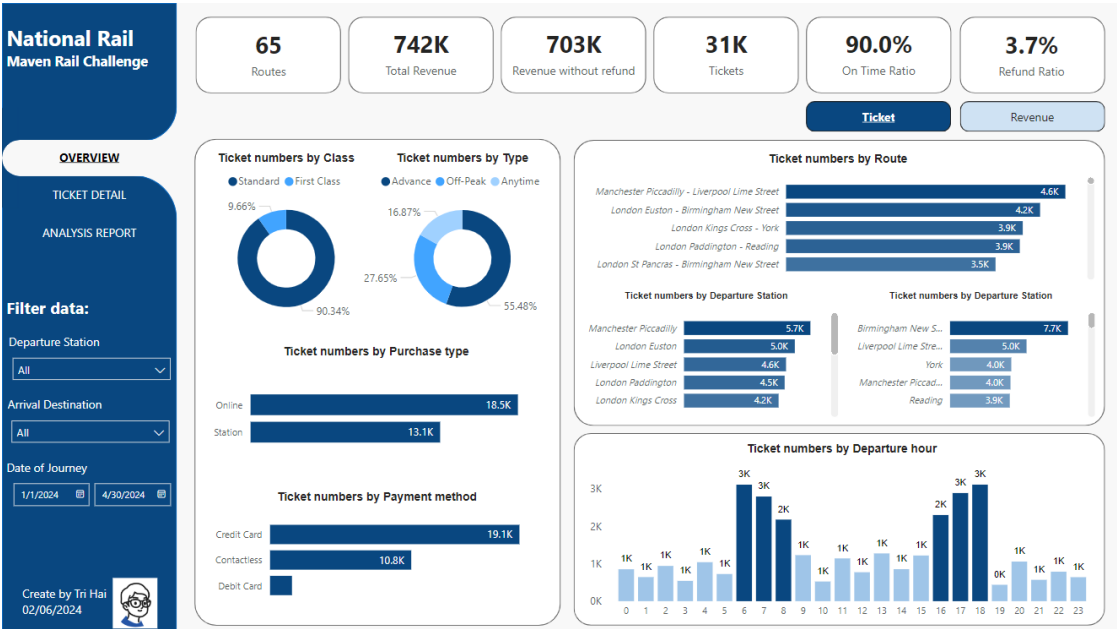
METRICS:

- **Total Routes:** The combination of departure stations and arrival destinations.
- **Total Revenue:** The sum of the price of each ticket, including refunded tickets.
- **Revenue Without Refund:** Revenue excluding refunded tickets.
- **Total Tickets:** The total number of tickets sold, including refunded tickets.
- **On-time Ratio:** The ratio of tickets on-time divided by total tickets.
- **Refund Ratio:** The ratio of refunded tickets divided by total tickets.

DASHBOARD EXPLANATION:

Instructions: Select the pages you want to view and use the filters in the left panel to focus on a specific time frame, departure station, or arrival destination.

1. OVERVIEW PAGE:



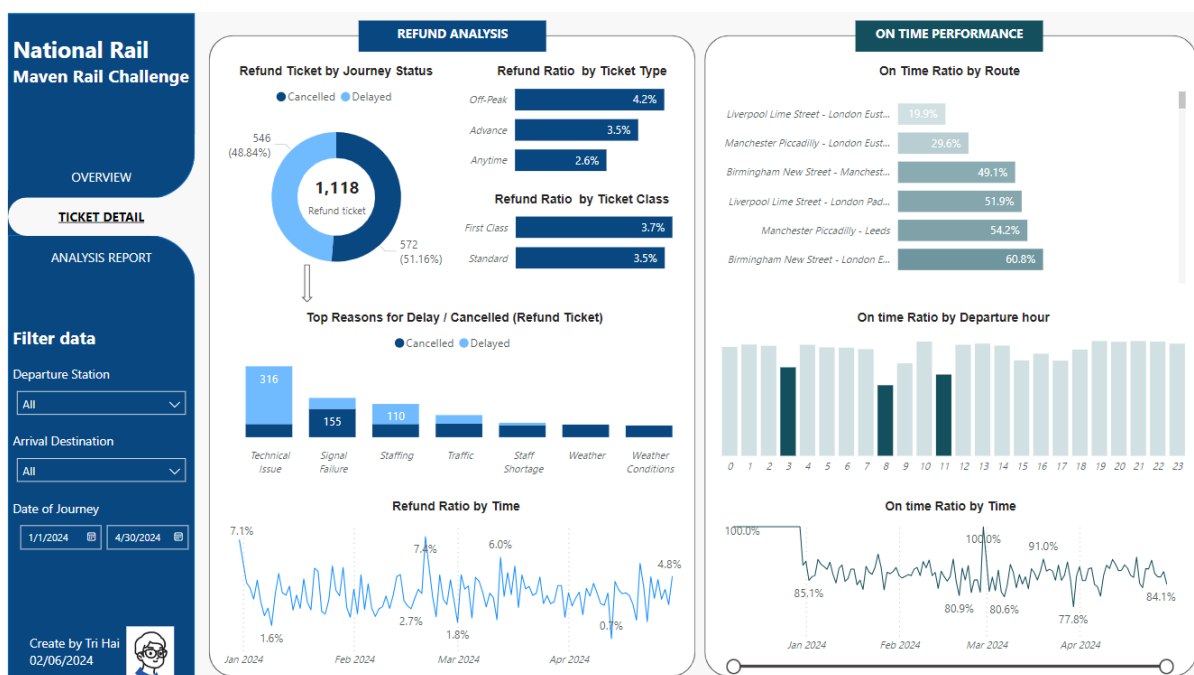
Show overall main metrics such as Routes, Total Revenue, Revenue without refund, Tickets, Overtime Ratio and Refund Ratio

Explanation of Two Main Metrics: **Tickets** and **Revenue**

- **Ticket Class:** Breakdown of the number of tickets sold/revenue by class (e.g., Standard, First Class).
- **Ticket Type:** Analysis of tickets/revenue based on type (e.g., peak, off-peak).
- **Purchase Type:** Distribution of tickets sold/Revenue through various purchase methods (e.g., online, at the station).
- **Payment Method:** Insights into the payment methods used (e.g., credit card, cash).
- **Routes:** Number of tickets sold/revenue for each route.
- **Departure Hours:** Ticket sales/revenue distribution by departure hours, highlighting peak times.

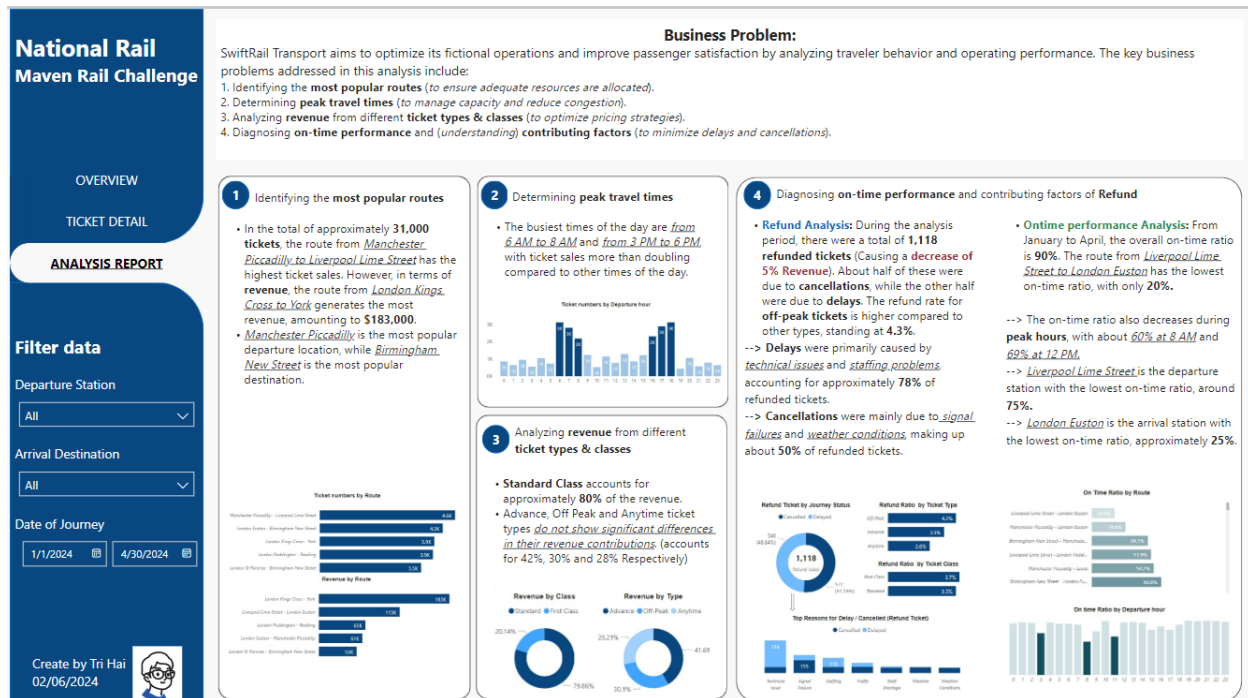
Use the **view button** in the top right corner to switch between the detailed breakdowns of Tickets and Revenue, allowing for a comprehensive analysis of each metric by the specified categories.

2. TICKET DETAIL PAGE:



Focus on two parts: Refunds and On-time Performance, to understand the reasons behind refunded tickets and the low on-time ratio.

3. ANALYSIS REPORT PAGE:



Address the questions in the project goals using data from the two previous pages.

DATA ANALYTIC INSIGHTS:

1. Identifying the most popular routes

- In about 31,000 tickets, the route from Manchester Piccadilly to Liverpool Lime Street has the highest ticket sales. However, in terms of **revenue**, the route from *London Kings Cross to York* generates the most revenue, amounting to **\$183,000**.
- *Manchester Piccadilly* is the most popular departure location, while *Birmingham New Street* is the most popular destination.

1. Determining peak travel times

The busiest times of the day are *from 6 AM to 8 AM* and *from 3 PM to 6 PM*, with ticket sales **more than doubling** compared to other times of the day.

2. Analyzing revenue from different ticket types & classes

- **Standard Class** accounts for approximately **80%** of the revenue.
- Advance, Off Peak and Anytime ticket types **do not show significant differences in their revenue contributions**. (accounts for **42%**, **30%** and **28%** respectively)

4. Diagnosing on-time performance and contributing factors of Refund

- **Refund Analysis:** During the analysis period, there were a total of **1,118 refunded tickets** (Causing a **decrease of 5% Revenue**). About half of these were due to **cancellations**, while the other half were

due to **delays**. The refund rate for **off-peak tickets** is higher compared to other types, standing at **4.3%**.

- - **Delays** were primarily caused by *technical issues* and *staffing problems*, accounting for approximately **78%** of refunded tickets.
 - **Cancellations** were mainly due to *signal failures* and *weather conditions*, making up about **50%** of refunded tickets.
- **Ontime performance Analysis:** From January to April, the overall on-time ratio is **90%**. The route from *Liverpool Lime Street* to *London Euston* has the lowest on-time ratio, with only **20%**.
- - The on-time ratio also decreases during **peak hours**, with about 60% at 8 AM and 69% at 12 PM.
 - *Liverpool Lime Street* is the departure station with the lowest on-time ratio, around **75%**.
 - *London Euston* is the arrival station with the lowest on-time ratio, approximately **25%**.

=> Thank you for visiting to the end, for more information about this challenge, you can visit this [link](#):

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