National Rail
Putting Passengers First

U.K Train Rides Analysis

CLS_ONL3_DAT2_G5

Team #4

Digital Egypt Pioneers

- Overview
- Financial & Operational Metrics
- Operational Performance
- Reasons of DeLay & Cancellation
- Revenue & Price: Segmentation & Flow
- Revenue & Price: Temporal & Average
- Statistics & Route: Movement
- Statistics & Route Analysis: Quality
- Forecasting & Startegy

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Operational Performance Details

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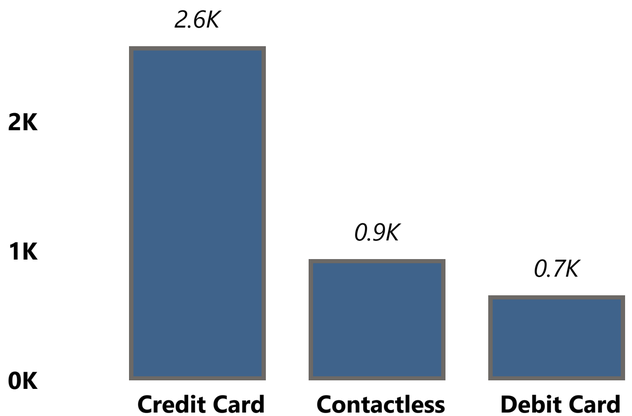
Count Tickets Sold By Payment method



Total Tickets
31653

Avg Ticket Price
23.44

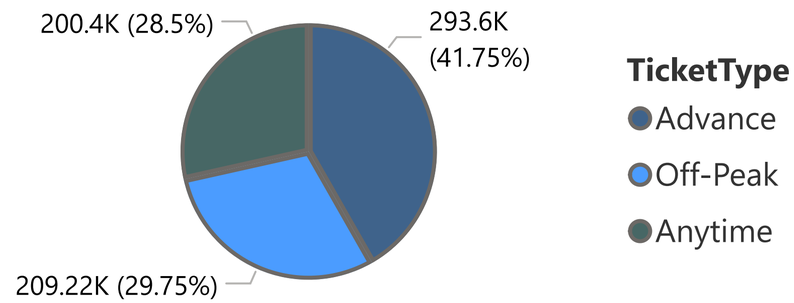
Net Revenue
703.22K

IsWeekend
False | True

On Time Rides
27K

Off Time Rides
4K

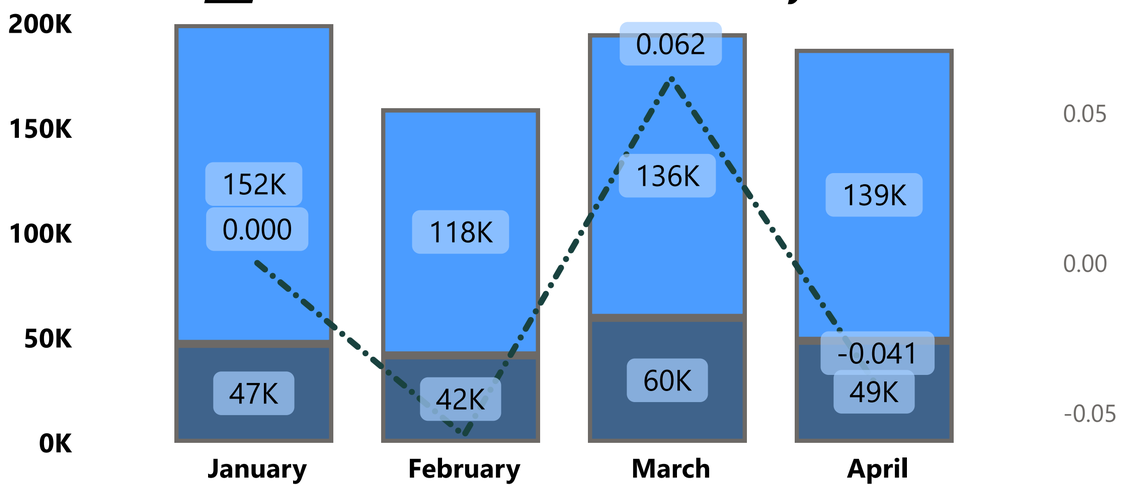
Net Revenue by TicketType



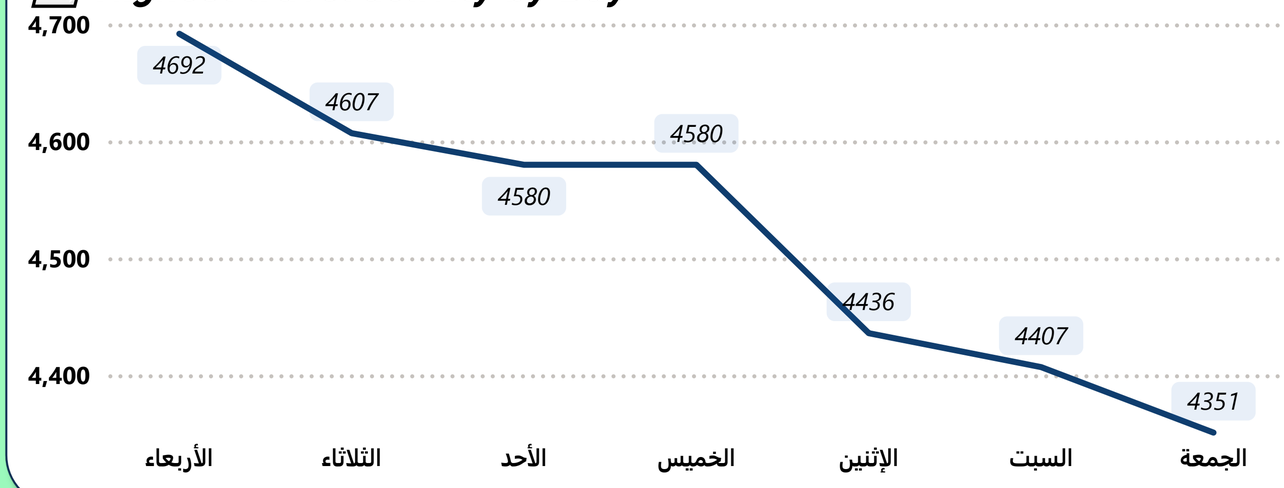
IsCancelled
False | True

WasDelayed
False | True

Growth rate of tickets sold by month



Highest travel activity by Day



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Financial and Operational Performance

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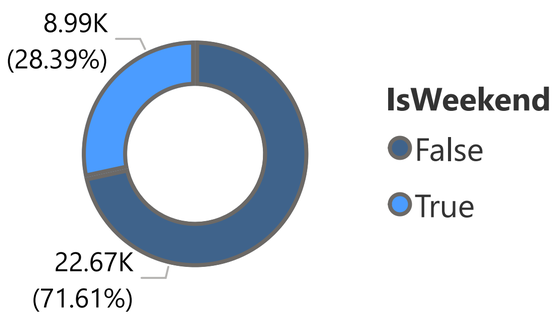
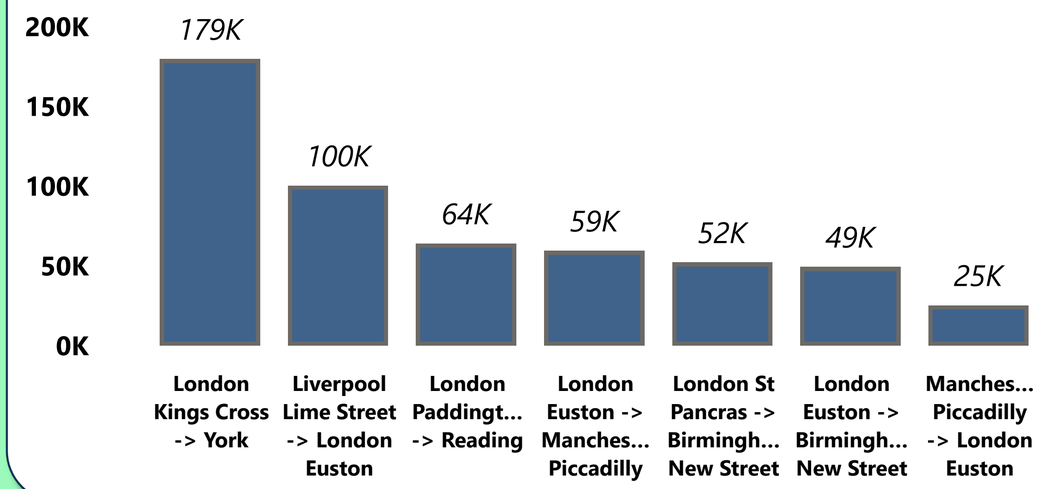
Count Tickets Sold by Is-WeekEnd



Net Revenue by RouteKey



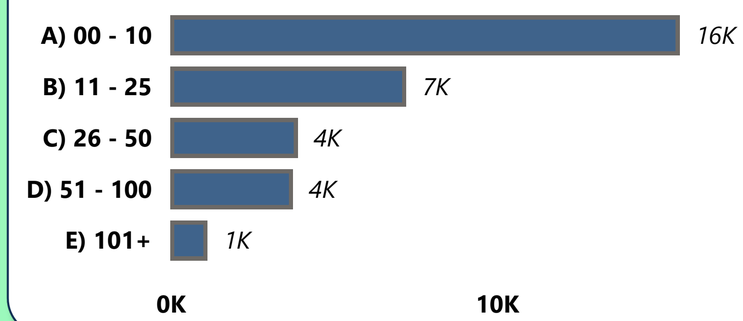
Total Refund Amount

38.70K

Purchase Type

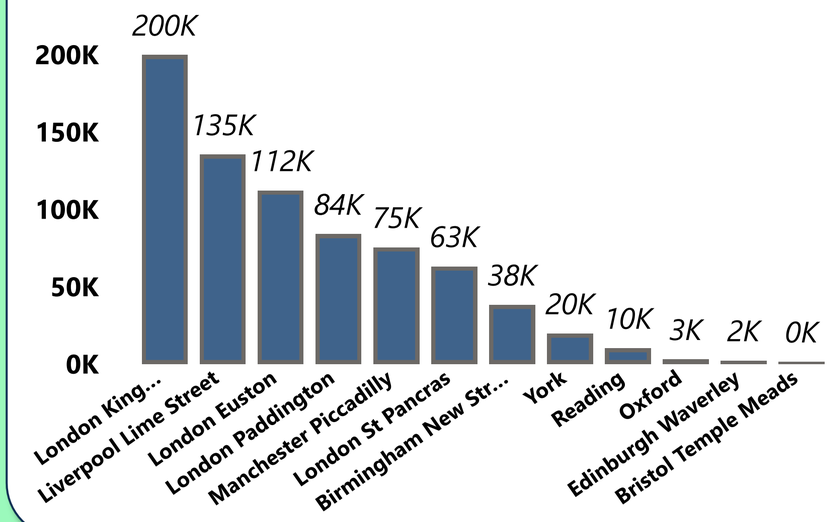
Online | Station

Total Rides by FareBucket

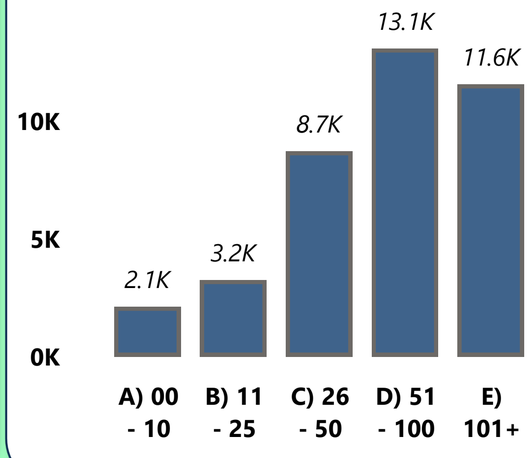


Lost Revenue From Delays by RouteKey

Total Revenue (Gross) by StationName



Total Refund by FareBucket



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Operational Performance

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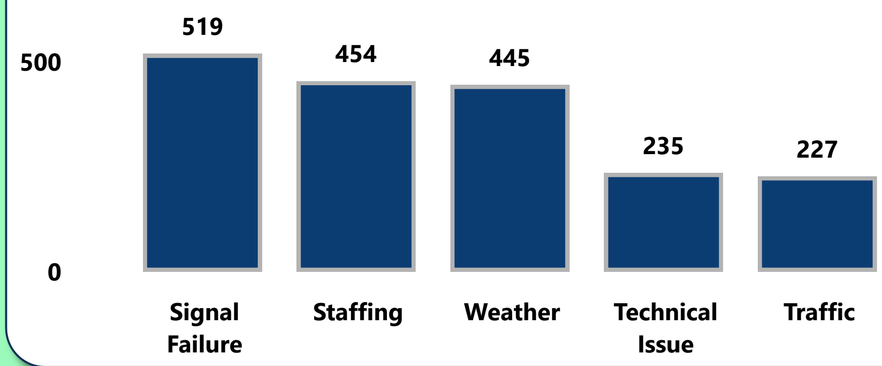
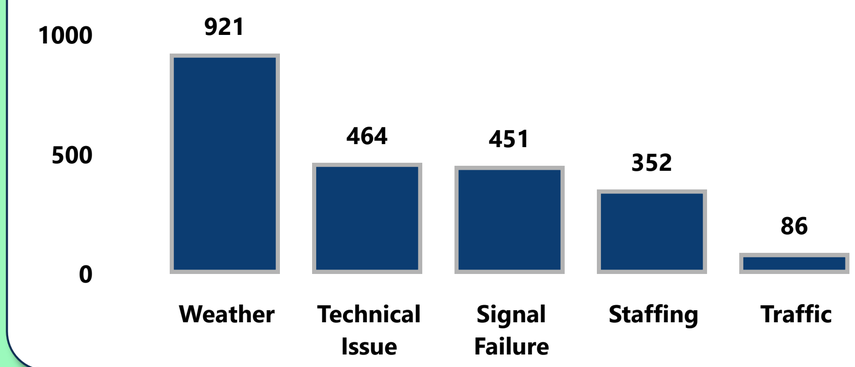
Average Delay (Min)	On-Time Rides Percentage	Delayed Trips Percentage	Cancellation_Rate
3.25	87%	7%	6%

Reasons of Canceled Trips



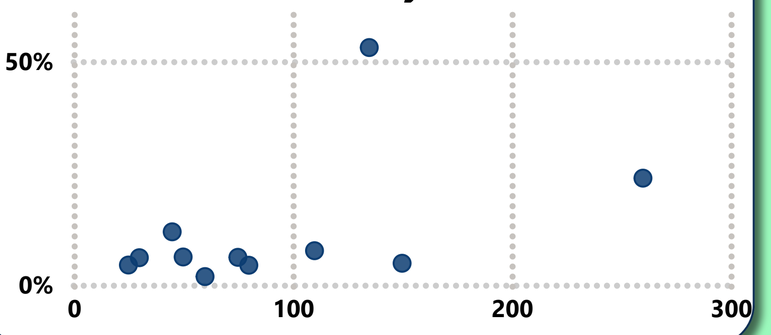
Reasons of Delayed Trips



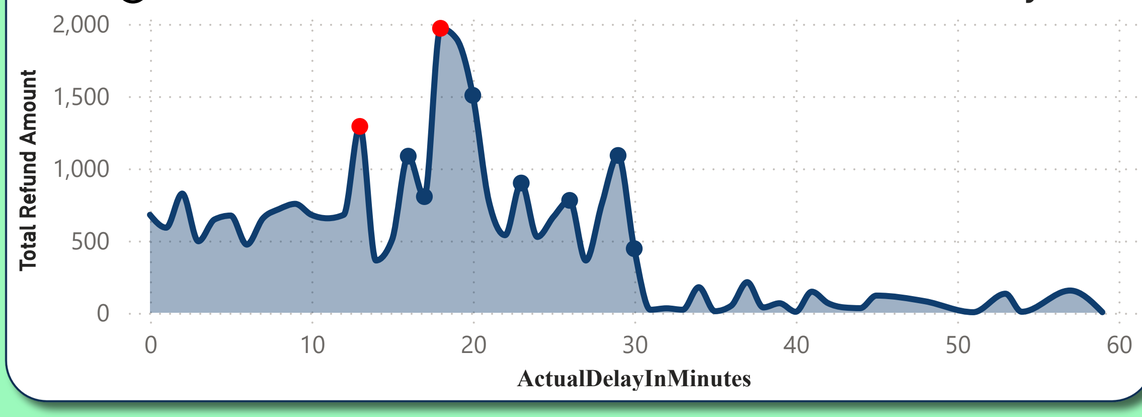
Trip Status Overview

	Count of Transaction ID
Cancelled	1.88K
Delayed	2.292K
On Time	27.481K

Relation Between Trips Duration and delay rate



Correlation Between Refund Amount and Delay



Lead Time

LeadTimeDays	Online	Station	Total
0	15978	11475	27453
1	409	271	680
2	243	105	348
3	151	96	247
4	133	94	227
5	117	96	213
6	159	96	255
Total	**18521**	**13132**	**31653**

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Reasons of DeLay & Cancellation

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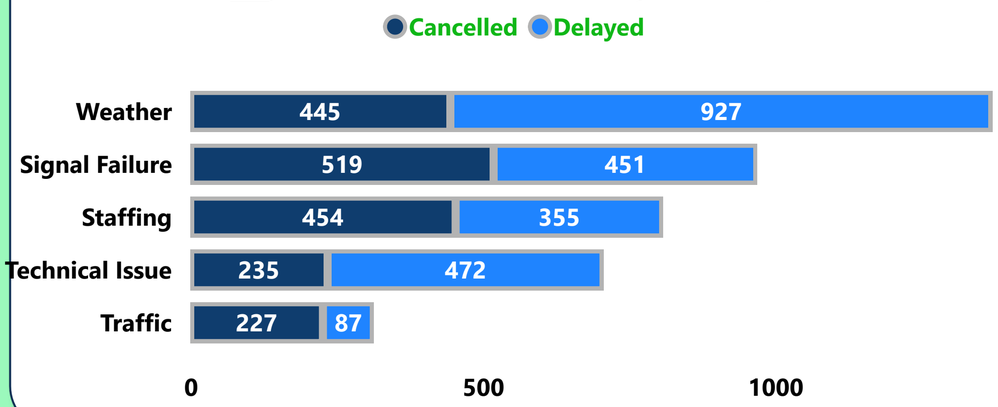
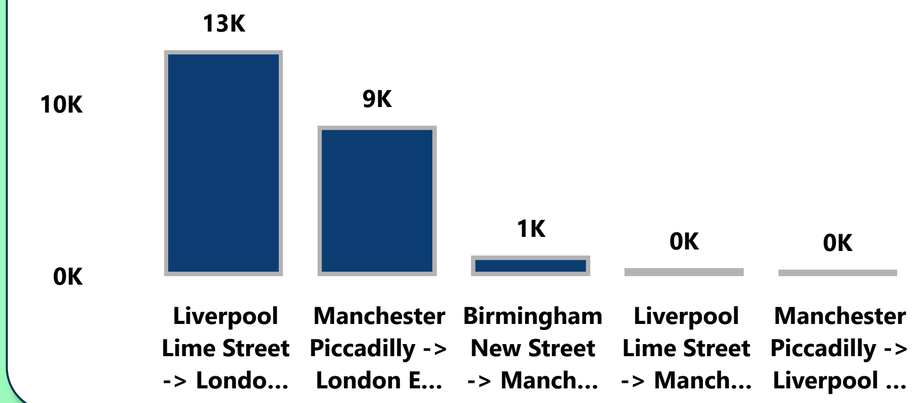
Delayed & Cancelled Rides	Sum Actual Delay (Min)	Total Refund Amount	On-Time Rides	Off Time Rides Percentage
4154	96.75K	38.70K	27K	13%

Reasons for Delayed Trips



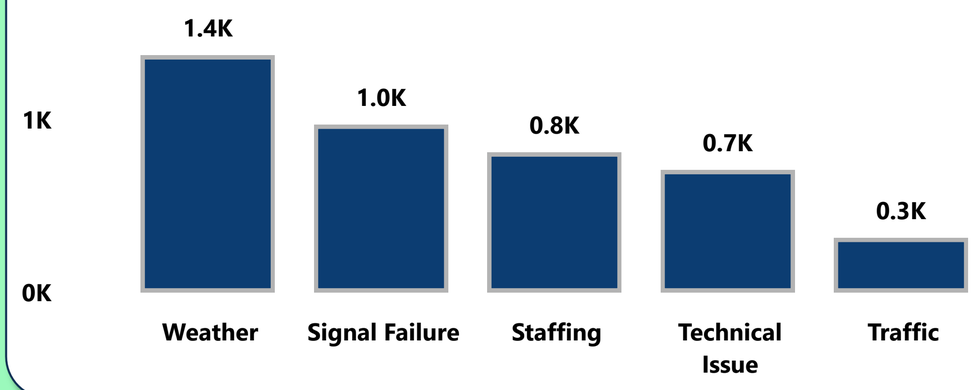
Most Refundable route



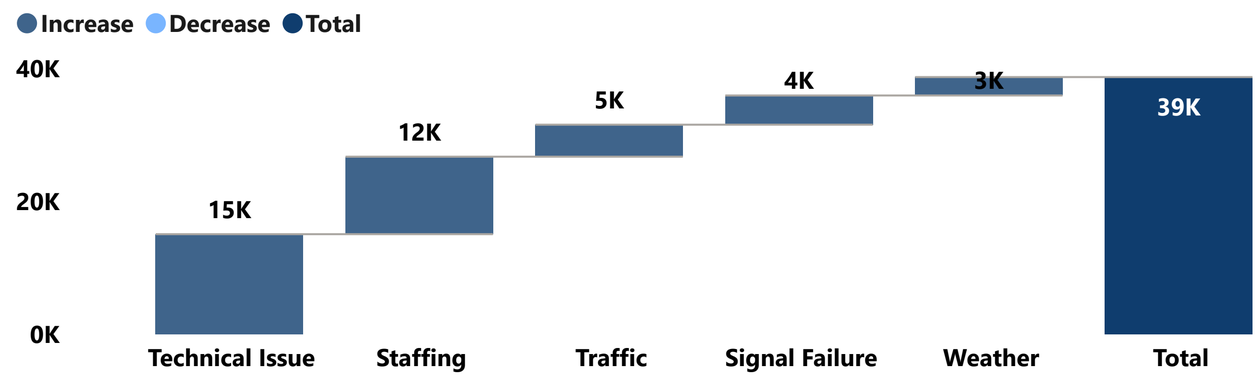
ReasonForDelay

- [ ] Signal Failure
- [ ] Staffing
- [ ] Technical Issue
- [ ] Traffic
- [ ] Weather

Reasons for cancelled Trips



Total Refund Amount by ReasonForDelay



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Revenue & Price: Segmentation & Flow

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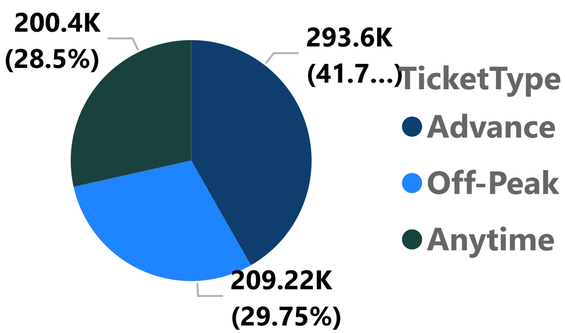
Net Revenue by TicketType



Total Revenue

741.92K

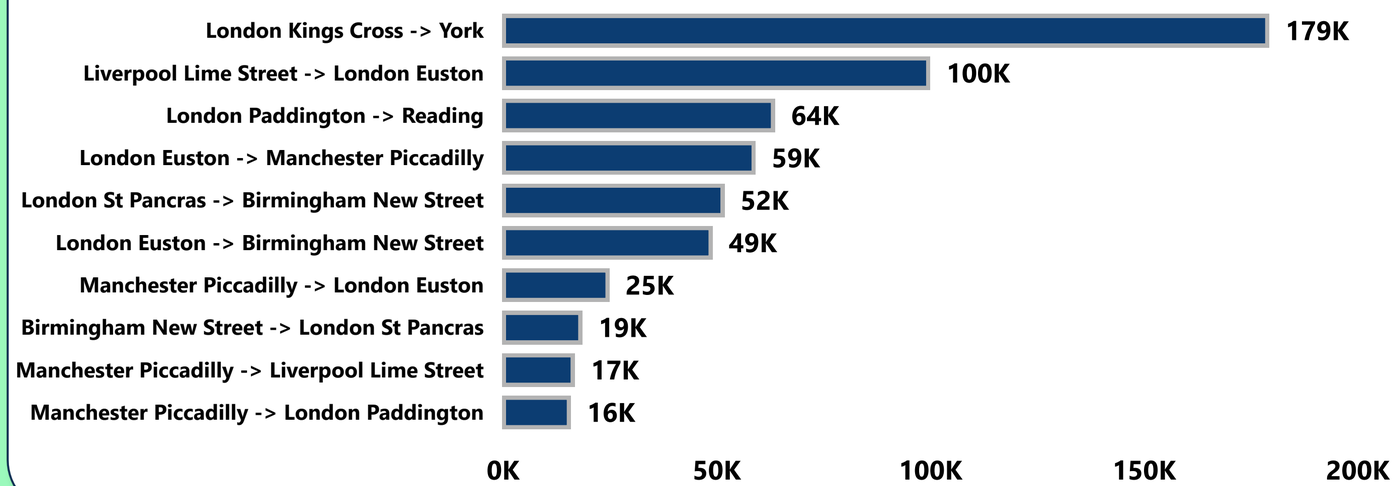
Net Revenue

703.22K

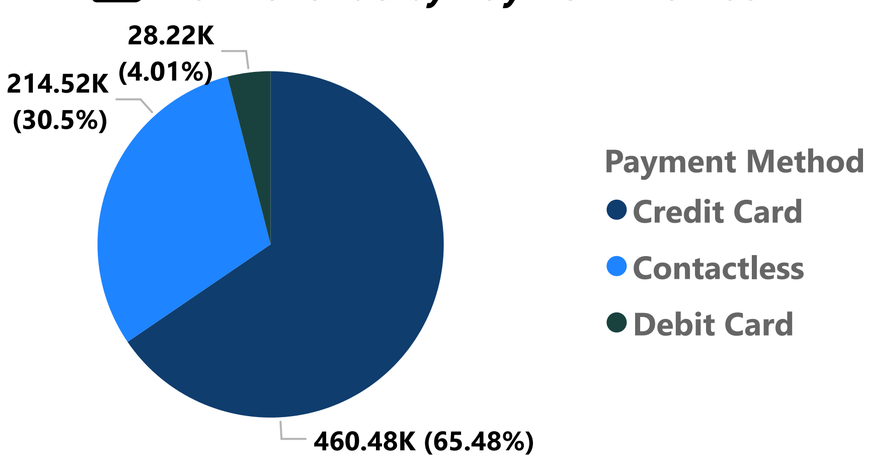
Average Ticket Price

23.44

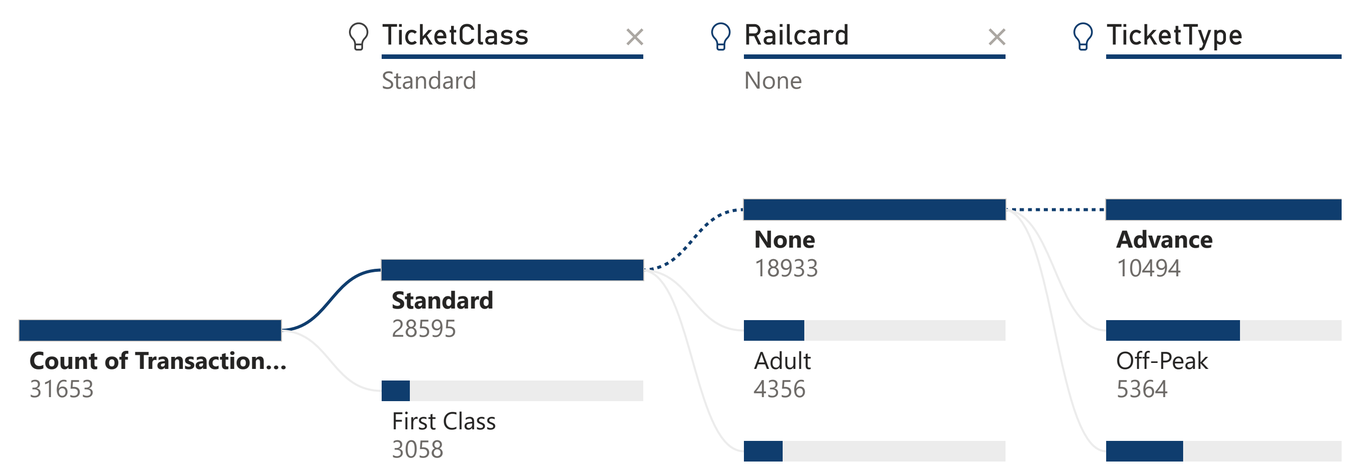
Net Revenue by RouteKey



Net Revenue by Payment Method



Ticket Class & Railcard Distribution



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Revenue & Price: Temporal & Average

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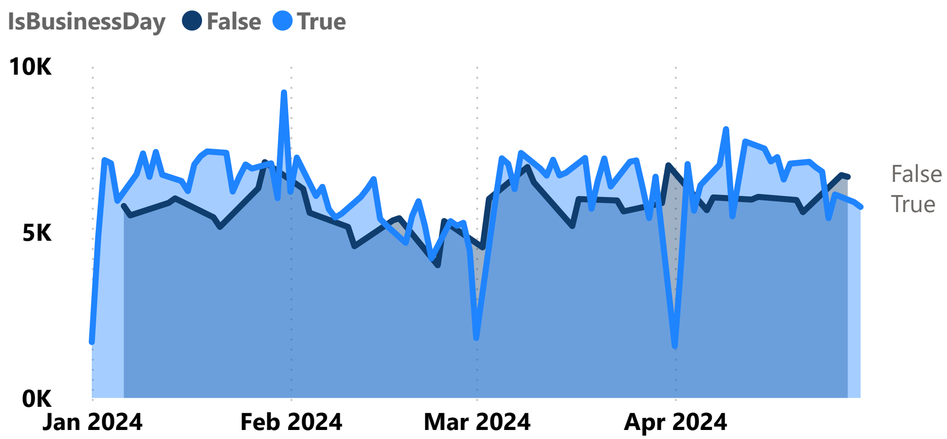
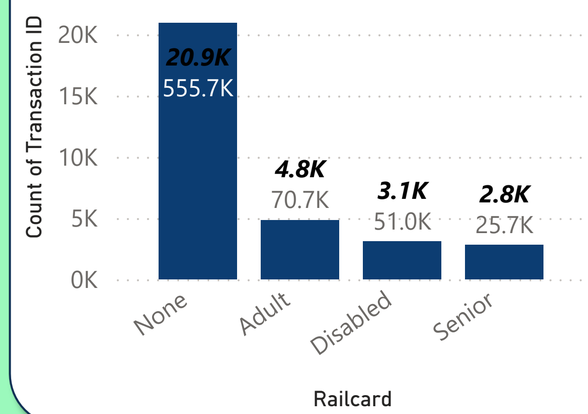
Growth rate of tickets sold by month



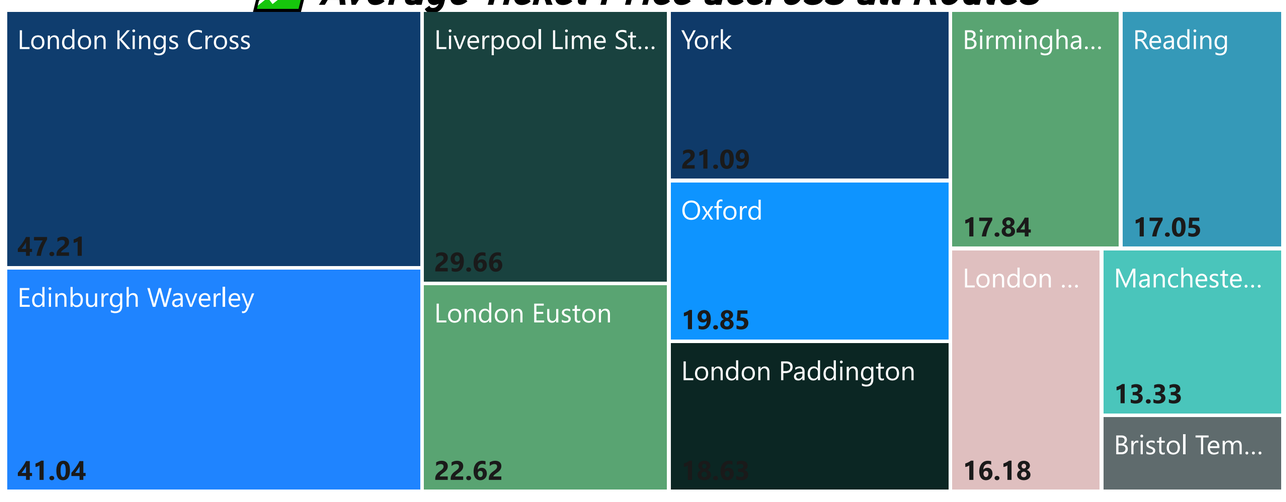
Average Ticket Price by RouteKey

RouteKey	Avg Ticket Price
Manchester Piccadilly -> London Paddington	114.11
Liverpool Lime Street -> London St Pancras	104.77
Liverpool Lime Street -> London Euston	103.28
Liverpool Lime Street -> London Paddington	99.96
Manchester Piccadilly -> London St Pancras	99.56
Manchester Piccadilly -> London Euston	98.14
Reading -> Liverpool Lime Street	94.13
London Paddington -> Manchester Piccadilly	93.93
Manchester Piccadilly -> London Kings Cross	90.25
London Euston -> Manchester Piccadilly	85.68
Total	**23.44**

Count of Tickets Sold by Railcard & Revenue



Average Ticket Price accross all Routes



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Statistics & Route: Movement

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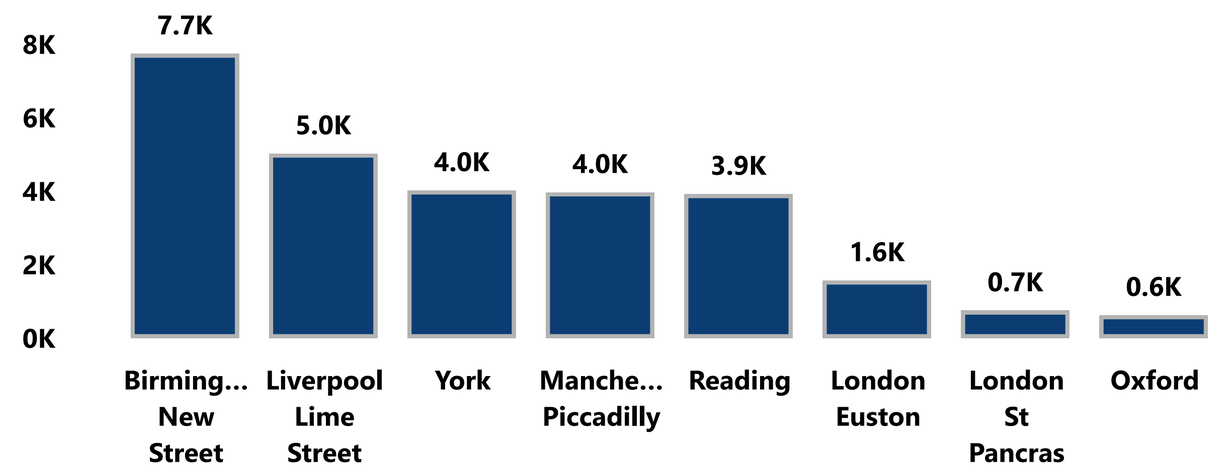
Monthly Tickets Sold by Route

RouteKey	يناير	فبراير	مارس	أبريل	Total
Manchester Piccadilly -> Liverpool Lime Street	1206	1098	1211	1113	**4628**
London Euston -> Birmingham New Street	1079	1026	1082	1022	**4209**
London Kings Cross -> York	1011	944	1004	963	**3922**
London Paddington -> Reading	974	935	1012	952	**3873**
London St Pancras -> Birmingham New Street	866	863	879	863	**3471**
Liverpool Lime Street -> Manchester Piccadilly	790	714	755	743	**3002**
Liverpool Lime Street -> London Euston	289	257	278	273	**1097**
London Euston -> Manchester Piccadilly	194	173	174	171	**712**
Birmingham New Street -> London St Pancras	159	167	197	179	**702**
Total	**8111**	**7644**	**8117**	**7781**	**31653**

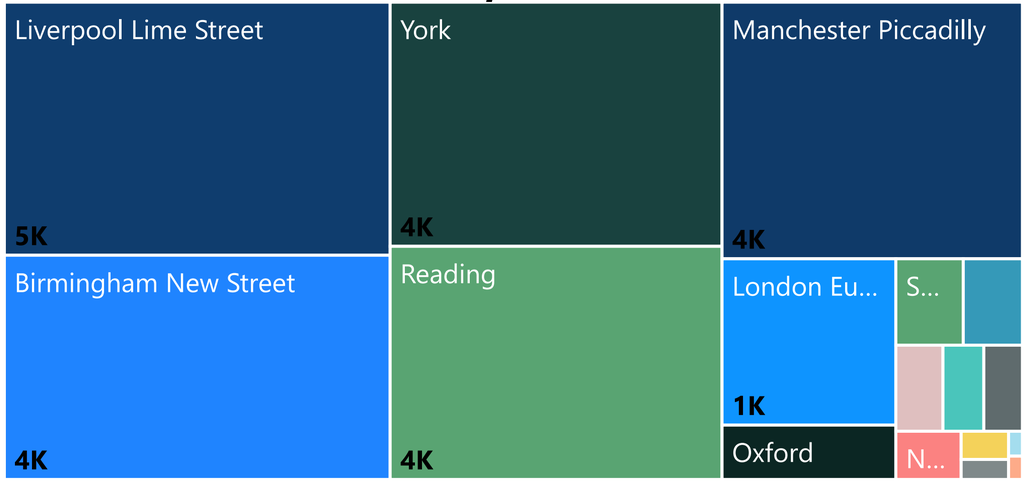
Most Common Arrival Stations



Total Revenue by Route

RouteKey	يناير	فبراير	مارس	أبريل	Total
Liverpool Lime Street -> London Euston	3,573.00	2,809.00	3,366.00	3,378.00	**13,126.00**
Manchester Piccadilly -> London Euston	2,705.00	1,609.00	2,302.00	2,108.00	**8,724.00**
London Kings Cross -> York	1,042.00	719.00	1,279.00	655.00	**3,695.00**
Edinburgh Waverley -> London Kings Cross	637.00	470.00	519.00	467.00	**2,093.00**
London Euston -> Manchester Piccadilly	550.00	299.00	311.00	524.00	**1,684.00**
London Paddington -> Reading	407.00	337.00	437.00	346.00	**1,527.00**
Birmingham New Street -> Manchester Piccadilly	303.00	238.00	359.00	251.00	**1,151.00**
London Euston -> Birmingham New Street	295.00	97.00	386.00	316.00	**1,094.00**
Total	**11,006.00**	**7,845.00**	**10,554.00**	**9,297.00**	**38,702.00**

Busiest Departure Stations



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Forecasting and Strategy

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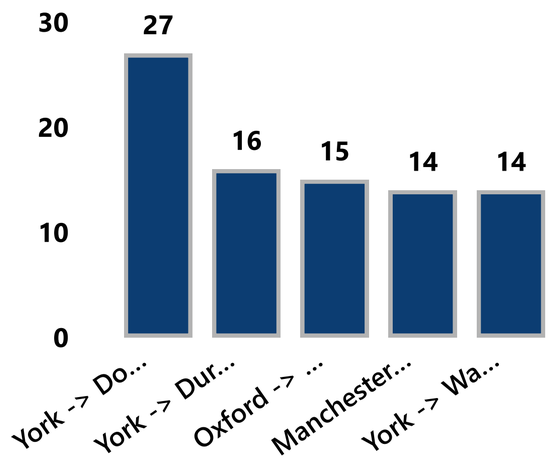
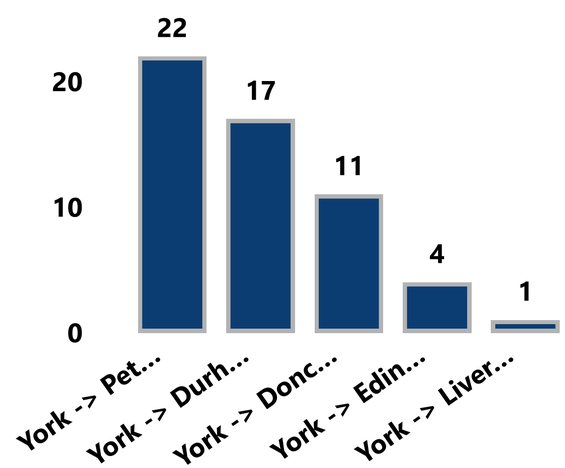
Most Delayed Routes



Most Cancelled Routes



Total Cancellation Rides

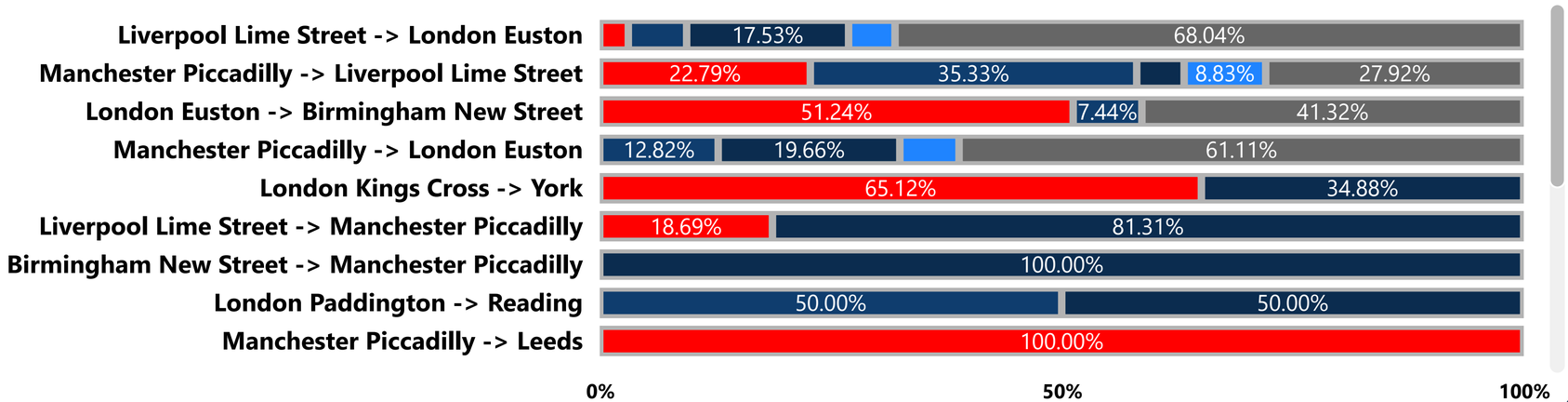
1880

Total Delayed Rides

2274

Most Delayed Routes and Their Causes

Signal Failure · Staffing · Technical Issue · Traffic · Weather



Performance by Ticket Type

TicketType	Cancelled	Delayed	On Time	Total
Advance	1041	1211	15309	17561
Anytime	365	486	4489	5340
Off-Peak	474	595	7683	8752
Total	**1880**	**2292**	**27481**	**31653**

Ride Outcomes by Purchase Type

Purchase Type	Cancelled	Delayed	On Time	Total
Online	1222	207	17092	18521
Station	658	2085	10389	13132
Total	**1880**	**2292**	**27481**	**31653**

Service Reliability by Payment Method

Payment Method	Cancelled	Delayed	On Time	Total
Contactless	550	386	9898	10834
Credit Card	1255	1325	16556	19136
Debit Card	75	581	1027	1683
Total	**1880**	**2292**	**27481**	**31653**

Primary Causes of Ride Delays

ReasonForDelay	Cancelled	Delayed	Total
Technical Issue	1,819.00	13,227.00	15,046.00
Staffing	3,186.00	8,481.00	11,667.00
Traffic	1,676.00	3,140.00	4,816.00
Signal Failure	3,081.00	1,317.00	4,398.00
Weather	2,775.00		2,775.00
Total	**12,537.00**	**26,165.00**	**38,702.00**

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Forecasting and Strategy

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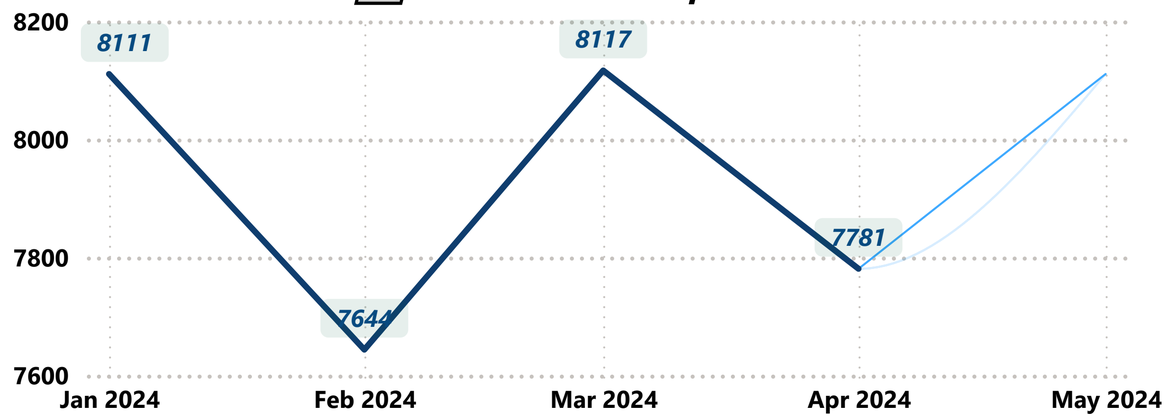
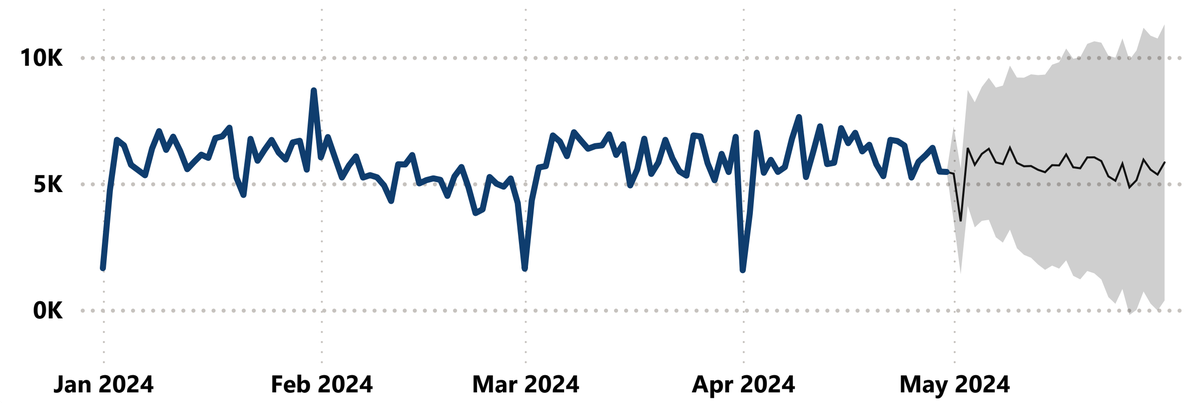
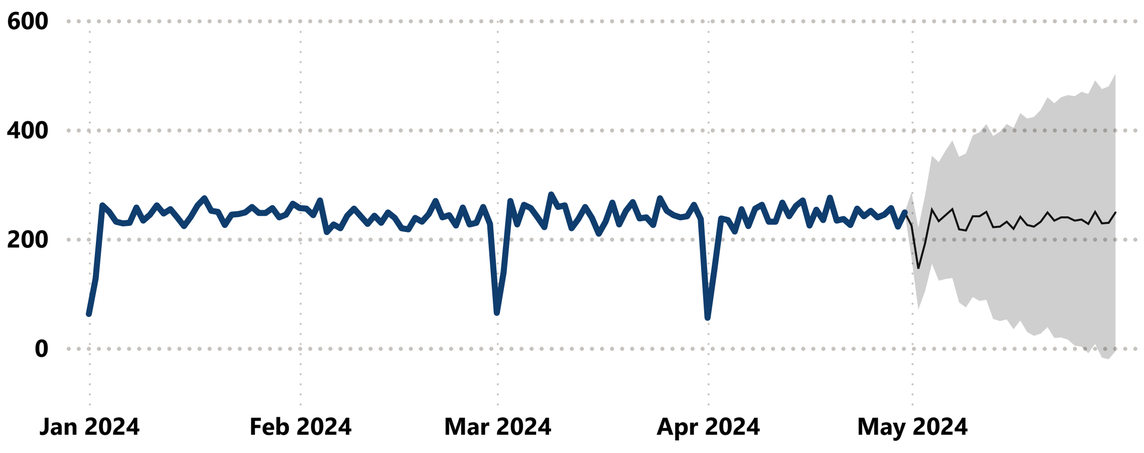
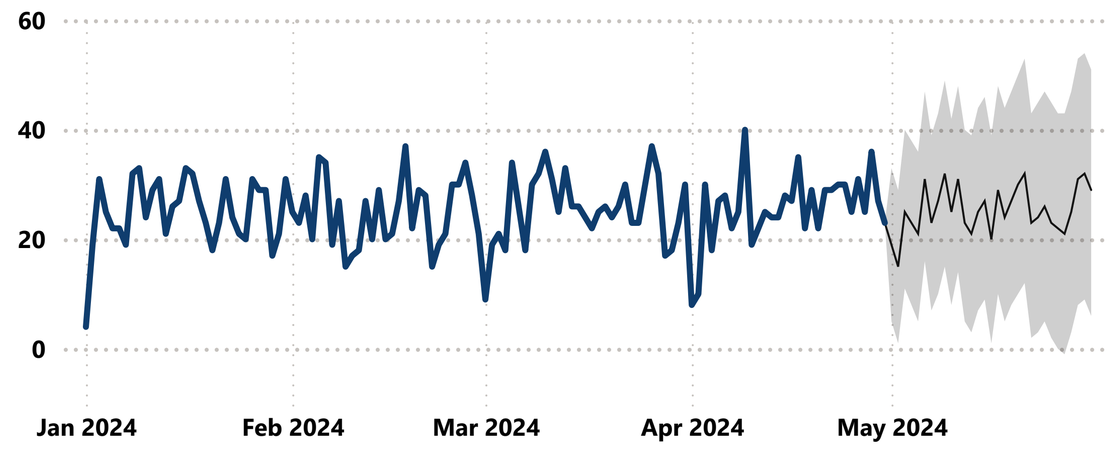
Next Month Trip Forecast



Next Month Daily Revenue Forecast



Next Month Standard Ticket Demand Forecast



Next Month First Class Ticket Demand Forecast