CASA0003 Personal assessment

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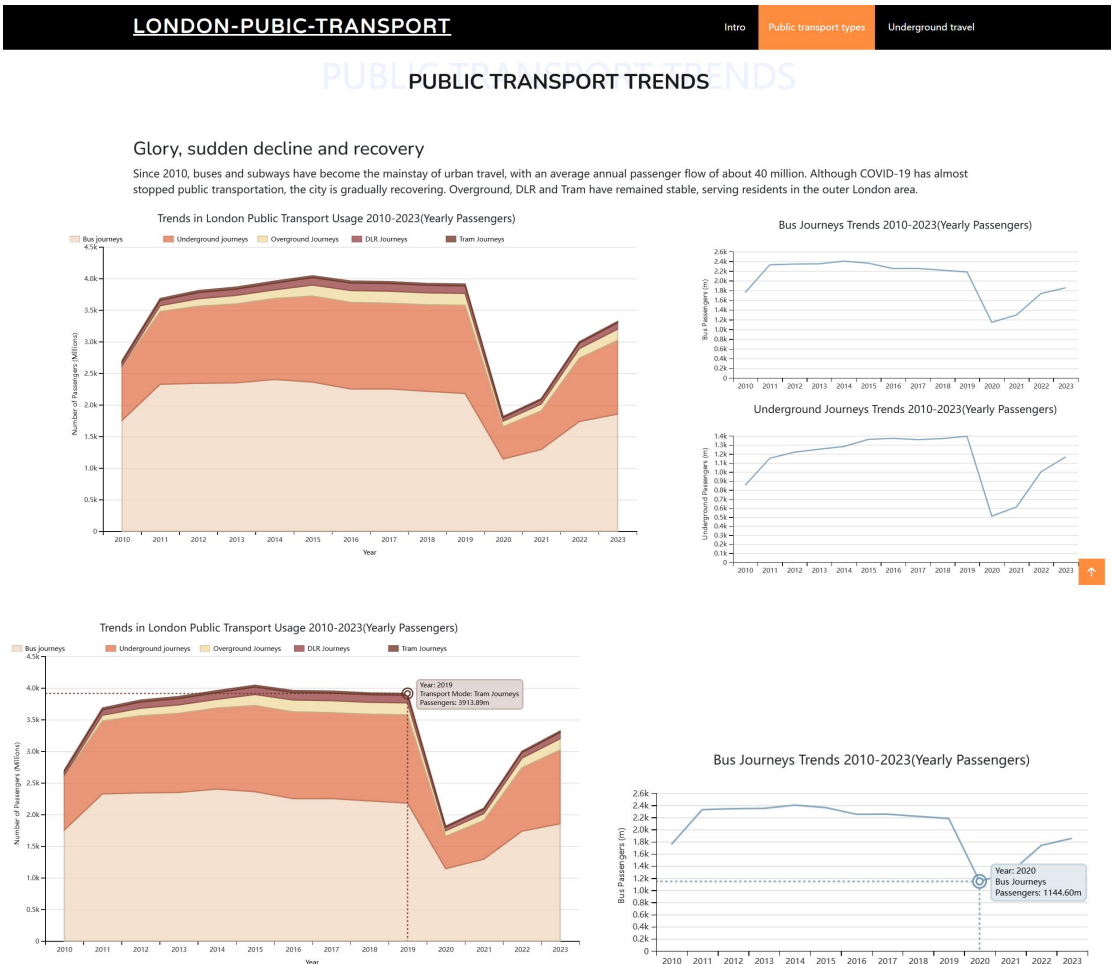
Public transportation options:

Exploring London's Transport Trends & Station Analysis

London's transportation network is a multifaceted system. While weekday commuting patterns often dominate transit discussions, I try to focus on weekend travel behavior, specifically analyzing public transportation trends and underground station performance on Sundays.

Understanding Public Transport Usage

The first section shows passenger trends across all public transport modes in London. To gain a comprehensive view, I analyze data from 2010 to 2023, focusing on annual and Monthly.
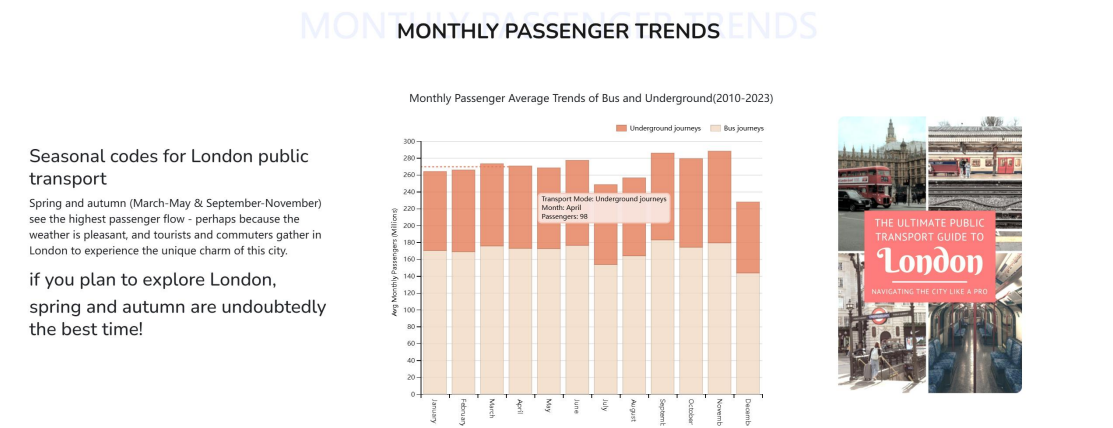
Annual Patterns

This interactive visualization, D3.js , presents a stacked area chart displaying the total number of passengers across all public transport modes.This chart highlights key trends such as the steady

growth in public transport usage before 2020, the sharp decline due to the COVID-19 and the gradual recovery in the subsequent years.

The separate line graph shows the trends for bus and underground journeys.
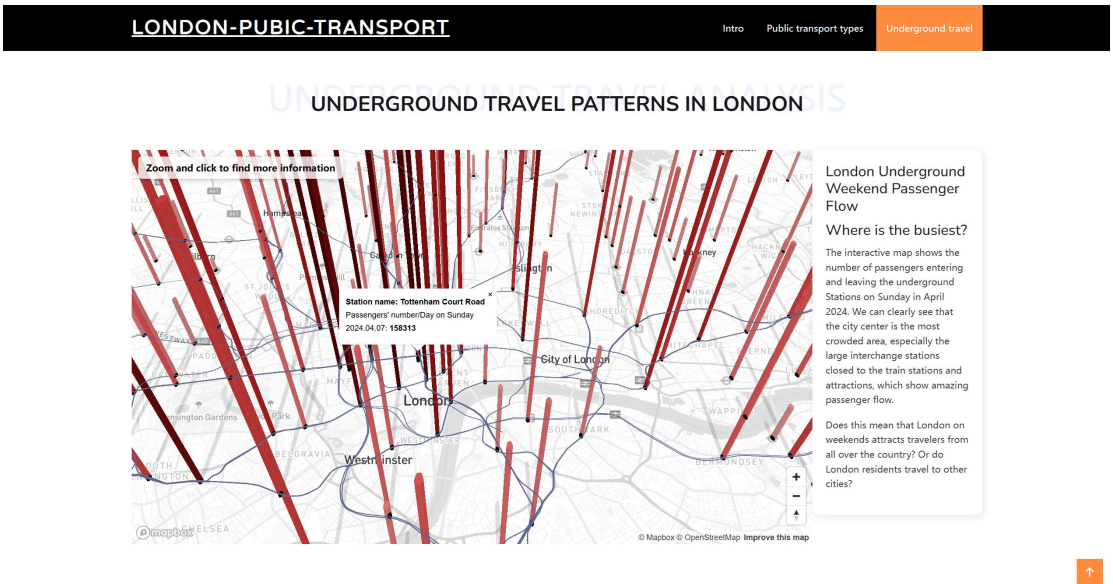
Monthly Patterns

To explore seasonal variations,I analyze average monthly passenger volumes for buses and underground services(passenger numbers from 2010 to 2023 for each month and calculating the average).Peak of travel tends to occur during spring and autumn.

MONTHLY PASSENGER TRENDS

Monthly Passenger Average Trends of Bus and Underground(2010-2023)

Seasonal codes for London public transport

Spring and autumn (March-May & September-November) see the highest passenger flow - perhaps because the weather is pleasant, and tourists and commuters gather in London to experience the unique charm of this city.

if you plan to explore London,
spring and autumn are undoubtedly the best time!

Transport Mode: Underground journeys
Month: April
Passengers: 98

Underground Station Analysis: Passenger Flow and Service

While buses provide extensive coverage, underground data is more accessible and precise.

3D Visualization of Station Passengers number

LONDON-PUBIC-TRANSPORT   Intro   Public transport types   Underground travel

UNDERGROUND TRAVEL PATTERNS IN LONDON

Zoom and click to find more information

Station name: Tottenham Court Road
Passengers' number/Day on Sunday
2024.04.07: 158313

London Underground Weekend Passenger Flow

Where is the busiest?

The interactive map shows the number of passengers entering and leaving the underground Stations on Sunday in April 2024. We can clearly see that the city center is the most crowded area, especially the large interchange stations closed to the train stations and attractions, which show amazing passenger flow.

Does this mean that London on weekends attracts travelers from all over the country? Or do London residents travel to other cities?
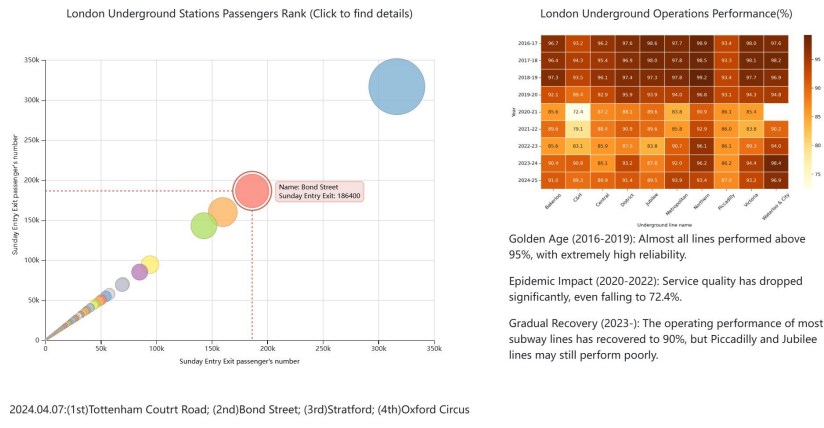
© Mapbox © OpenStreetMap Improve this map

I created a 3D bar chart in mapbox with color-coded intensity to map the entry and exit volume at each underground station on a Sunday. Stations with the tallest and darkest bars indicate more passengers, mainly concentrated in central London and train stations.

Ranking the Busiest Stations and Service Performance Across Underground Lines

Beyond passenger flow, it is essential to evaluate how well each underground line has performed.

DETAILED UNDERGROUND STATION ANALYSIS

London Underground Stations Passengers Rank (Click to find details)

Name: Bond Street
Sunday Entry Exit: 186400

London Underground Operations Performance(%)

Golden Age (2016-2019): Almost all lines performed above 95%, with extremely high reliability.

Epidemic Impact (2020-2022): Service quality has dropped significantly, even falling to 72.4%.

Gradual Recovery (2023-): The operating performance of most subway lines has recovered to 90%, but Piccadilly and Jubilee lines may still perform poorly.

2024.04.07:(1st)Tottenham Coutrt Road; (2nd)Bond Street; (3rd)Stratford; (4th)Oxford Circus

This visualization aim to offer valuable insights for visitors and locals if they choose underground during weekend trips.

Data source:

1.London underground stations and lines data, geojson and csv

https://overpass-turbo.eu/

2.Public Transport Journeys by Type of Transport

Number of journeys on the public transport network by TFL reporting period, by type of transport. Data is broken down by bus, underground, DLR, tram, Overground and cable car.

https://data.london.gov.uk/dataset/public-transport-journeys-type-transport

3.Number of passengers for each stations

2024 Stations annualized entries and exits, by TFL. Data is broken down by Monday to Sunday.

https://crowding.data.tfl.gov.uk/

4.London Underground Performance Reports

TLF count the number of people using our service, where they travel to and from and how long their journeys last.

https://data.london.gov.uk/dataset/london-underground-performance-reports
https://tfl.gov.uk/corporate/publications-and-reports/underground-services-performance