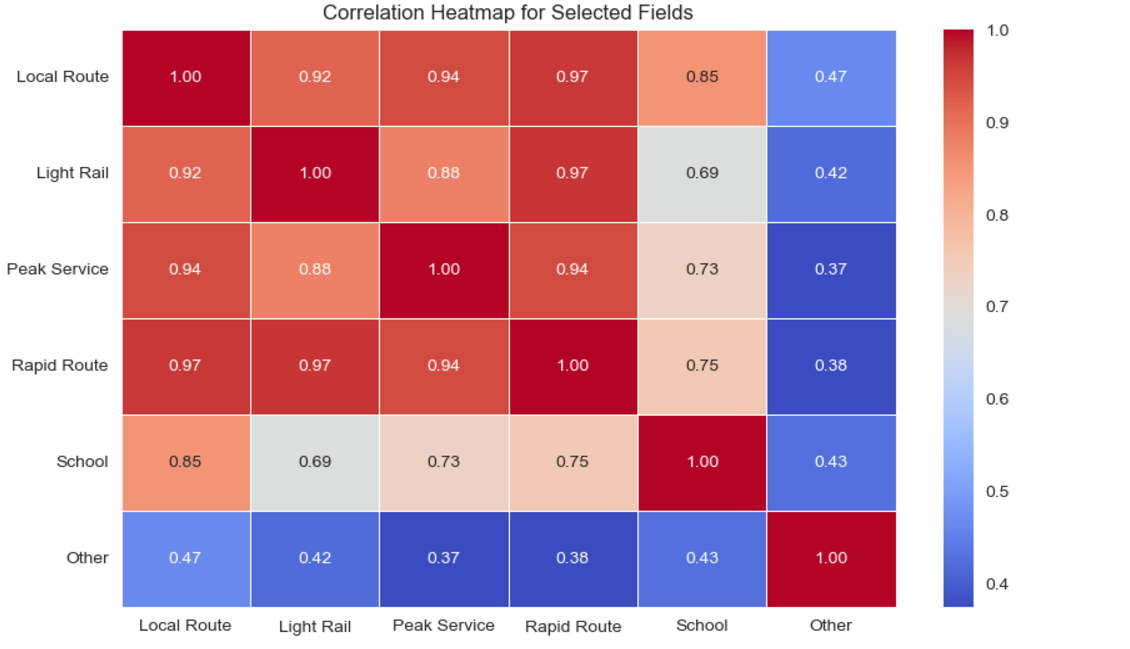
INSIGHT :

CORRELATION:

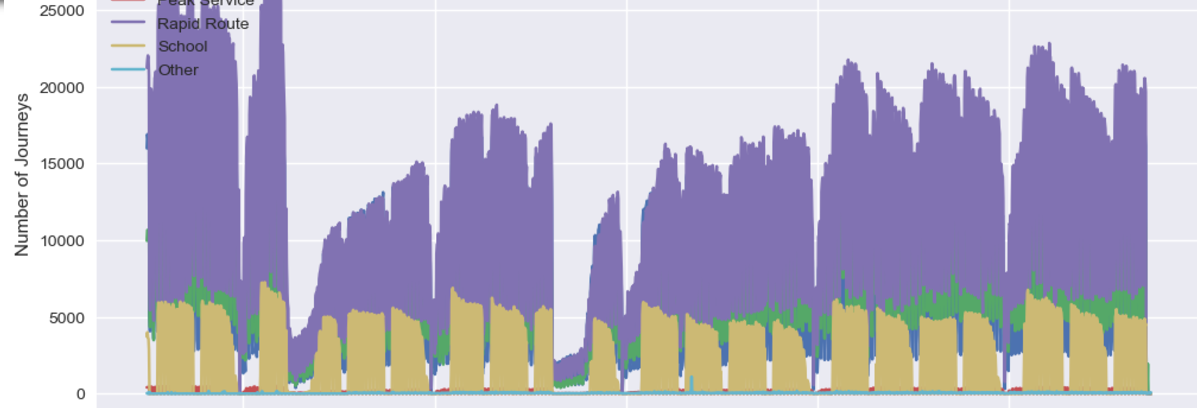


"Local Route" and "Rapid Route" have a very strong positive correlation (0.97), indicating similar trends.

"Light Rail" and "Rapid Route" also show a high correlation (0.97), suggesting shared usage patterns.

The "Other" category has weaker correlations, suggesting it represents less predictable or diverse transport patterns.

TREND ANALYSIS:



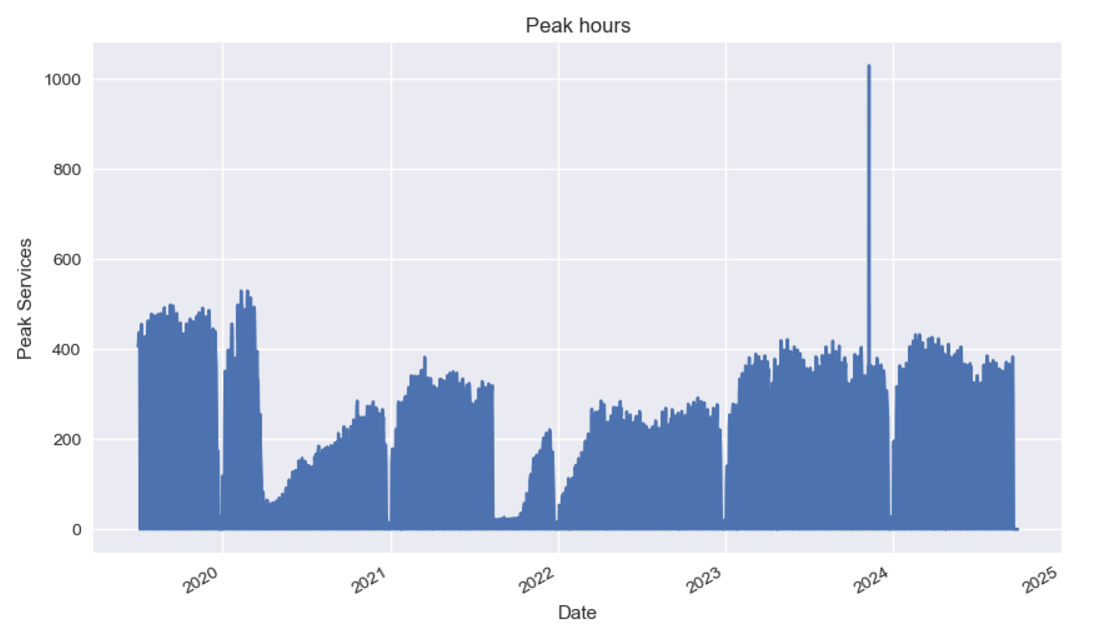
The Rapid Route shows the highest and most consistent patronage, especially during peak periods.

Seasonal fluctuations are evident, with clear peaks and valleys in ridership, likely influenced by events or holidays.

Both Light Rail and Local Route exhibit a growing trend, especially after 2022, indicating increased usage.

School and Other categories have stable but low ridership, showing minimal seasonal variation.

Overall, there is a gradual increase in patronage across all transport types, suggesting rising demand over time



The visualization fo peak hours of transportation.

TEST AND TRAIN DATA:

80 % - TEST

20%- TRAIN

ALGORITHMS USED:

ARIMA :  
  
The dataset shows fluctuations in the number of journeys on different routes, with **Local Route** and **Light Rail** showing a steady increase, while **Peak Service** drops on specific days like **2023-07-30**.

* **Total Journeys** peaked at **36,426.81** on **2023-08-01**, likely due to specific events or increased service demand, and dropped to **30,749.82** on **2023-07-30**.
* **School** route journeys spiked on **2023-08-01** and **2023-08-02**, possibly due to school-related activities or events.
* The **Rapid Route** and **Local Route** show consistent passenger numbers, indicating high demand, while **Other** remains a minor contributor.
* Further analysis could include time series forecasting, trend decomposition, and route optimization for better service planning and demand management.

