Daily-Public-Transport-Passenger-Journey

Insight Report

1. **Local route and Rapid route** contribute almost the same number of journeys during the **peak hours.**
2. The total number of journeys **increases from 2019 to 2023** but **drops in 2024,** might be use of less public transportation.
3. There are many zeros in the data indicating inactivity of the people. Majority of public holidays show almost no activity in school, and peak journeys but line journeys are active.

Algorithm Report

1. **Algorithm used**: Exponential smoothing

Exponential smoothing was used because the problem statement includes historical data points and it has the ability to find potential underlying patterns that can be used for accurate predictions

1. **Code:**

model = ExponentialSmoothing(df[col], trend='add', seasonal='add', seasonal\_periods=7)

    model\_fit = model.fit()

    forecast = model\_fit.forecast(steps=7)

    forecast\_table[col] = forecast

1. **Parameters used:**

**Trend:** This parameter indicates that the time series data has a linear trend. The number of passengers might increase or decrease which will form a trend.

**Seasonal:** This parameter models the seasonality (i.e., repeating patterns) in the data. The seasonal effect is constant across different periods. There might be a pattern followed by journeys.

**Seasonal period:** This parameter tells the model the number of periods in one season.