Food Delivery Delay Analysis

# 1. Business Problem and Motivation

This project analyzes the factors influencing delivery delays in food delivery services like Glovo or Wolt. Delays impact customer satisfaction and operational efficiency. The goal is to identify timeframes and conditions that are most associated with late deliveries, and use data insights to recommend improvements.

# 2. Datasets and Cleaning Process

Two datasets were used: (1) a structured CSV file with over 2,500 delivery orders containing attributes like date, time, location, delivery duration, price, and rating; (2) a JSON file with 300 customer reviews containing text, rating, date, and location.  
In Power BI, data was cleaned using Power Query: missing values were handled, time of day and delay status were calculated, and sentiment classification was derived from the review texts.

# 3. Summary of Insights

- Delays are more common during peak hours (6–9 PM) and on weekends, especially Fridays and Sundays.  
- Bad weather (rain/snow) significantly increases delivery time.  
- Negative reviews correlate strongly with longer delivery times.  
- Some locations consistently experience higher delays.

# 4. Limitations

Some assumptions were made about peak hours and sentiment classification. The JSON reviews were synthetically generated, so in a real-world scenario, natural language processing would be more complex. Also, no live API was connected to weather data.

# 5. Recommendations

- Add more delivery staff during peak hours and on weekends.  
- Monitor weather forecasts and proactively adjust delivery schedules.  
- Use customer feedback sentiment to improve service training.  
- Focus on high-delay areas to optimize delivery routes.