**Project Objective:  
This project leverages a real-world ridership dataset from Bangalore’s Namma Metro, sourced from Kaggle, to perform end-to-end SQL-based data analysis.**

**The goal is to explore and understand patterns in metro usage — including daily and monthly ridership trends, fare media preferences (smart cards, tokens, passes, QR codes), digital ticketing adoption, and usage fluctuations.**

**The project demonstrates how SQL can be used to generate actionable insights from raw transportation data that could help optimize services, monitor growth, and inform operational decisions.**

**🗃️ Dataset Details:**

* **Source: Kaggle (public dataset)**
* **Format: CSV imported into MySQL**
* **Time Period: Oct 2024 – May 2025**
* **Size: 168 records × 13 columns**

**🔧 Tools Used:**

* **MySQL Workbench**
* **Github**

**📊 SQL Features Used:**

* **Aggregate functions: SUM, AVG, MIN, MAX**
* **Window functions: RANK()**
* **Date/time: DATE\_FORMAT, DAYNAME**
* **Logic: CASE, GROUP BY, ORDER BY, LIMIT**

**📈 Key Insights:**

**1. Daily Ridership Trends**

**2. Peak Ridership Days**

**3. Drop Ridership Days**

**4. Monthly Ridership Trends**

**5. Monthly Ridership Spikes**

**6. Monthly Ridership Drops**

**7. Fare Type Percentage Share**

**8. Most Used Fare Type Overall**

**9. Pass Usage Trends**

**10. Highest Pass Usage Month**

**11. Lowest Pass Usage Month**

**12. QR Platform Comparison**

**13. Most Used QR Platform**

**14. Smart Card vs Token Usage**

**15. Weekday vs Weekend Ridership**

**16. Most Preferred Day of the Week**

**17. First and Last Day of Each Month**

**18. Popular Fare Type on Peak Days**

**19. Month-over-Month Growth (%)**

**20. Min & Max Riderships per Month**

**Project by :**  
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