**Section 1: Data Cleaning & Preparation**

**1. Dispatch Date Format**

I changed the format of the Dispatch Date column to look like YYYY-MM-DD (year-month-day).  
This makes all the dates easier to read and keeps them in the same format.  
I used a simple Excel formula to do this.

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AI-generated content may be incorrect.

**2. Checking Load Weight Values**

I looked through the Load Weight (Tonnes) column to find any values that were Less than 0, Equal to 0 or More than 50 tonnes. But there were no such records all the weights were valid and within a reasonable range.

**3. Filling Missing Ratings**

There were some missing values in the Rating column.  
To fill them in, I first grouped the data based on Vendor Region and Vendor Type and calculated the average rating for each group.  
Then I merged this average back to the main table on the basis of Vendor Region and Vendor type and filled in only the blank rating values. If a rating was already present, I left it as is.

**4. Duplicate Delivery IDs**

I checked the Delivery ID column for duplicates.  
There were no duplicates all 1,000 Delivery IDs are unique.

**Section 2: Data Analysis & Insights (Excel & Google Sheets)**

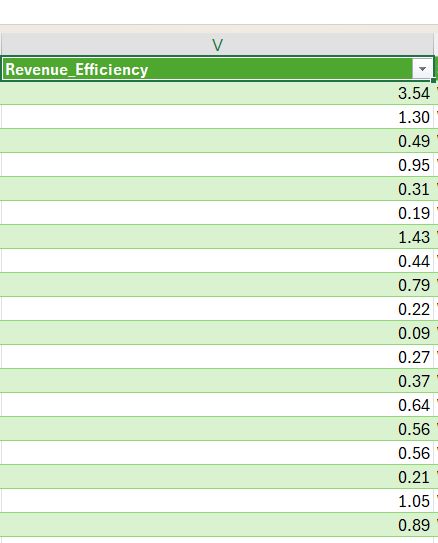
1.Calculate the average delivery delay (Actual Arrival – Expected Arrival) and the delivery success rate per Route Code. Identify the top five performing routes. A screenshot of a computer

AI-generated content may be incorrect.

=here Delivery success flag means if Actual delivery time>Expected delivery time than 0 else 1. Form this pivot table we got that every delivery is late (Actual delivery time>Expected delivery time)

=and every route has **avarage delay time(hr)** of **2 hours.**

2.Calculate a new metric called Revenue Efficiency = Revenue / (Distance × Delivery Duration in hours). Use Dispatch Date and Actual Arrival for the duration.

=here I have used simple excel formula.

3.Build a pivot table showing the average delay (in hours) grouped by Priority Level. Interpret the results. A screenshot of a computer

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4.Categorize Dispatch Dates into Winter (Dec–Feb) and Monsoon (Jul–Sep) periods. Compare Fuel Cost, Revenue, and number of delayed deliveries between the two periods.

=Thise dataset include only Winter season and below are my observations.

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**Section 4: Problem-Solving & Decision Making**

**13. Delay Analysis for Regions & Fleet Types**

In the data, the delay is the same for every delivery which is exactly **2 hours**. This means no specific **region** or **fleet type** is causing more delays than others. The issue seems to be happening across the board.

**Three ways to reduce delays:**

1. **Fix expected arrival times**  
   The current expected times might be too strict so we can make it flexible little bit. Updating them based on actual delivery times can reduce reported delays.
2. **Track deliveries in real time**  
   Use live tracking to quickly handle delays and make better decisions while the delivery is on the way. For this use more Advanced AI/ML tech.
3. **Use the right type of vehicle**  
   Assign faster or more suitable vehicles for certain areas (e.g., two-wheelers for big cities so that reduce traffics times).

**14. Improve Revenue Efficiency by 15%**

Revenue Efficiency = Revenue ÷ (Distance × Delivery Duration)

To make this number 15% better, the company can either **cut costs** or **earn more per delivery**.

**Two simple methods:**

1. **Lower fuel and time costs**  
   Look at routes where time or fuel use is high and try to improve them by Delivering multiple orders together or avoiding long routes can help.
2. **Adjust pricing according to different factors**  
   Some long or slow deliveries may not be priced well. Charging a bit more for difficult deliveries could increase revenue without losing customers.

**15. Transit Time vs Rating**

We looked at whether longer deliveries get lower ratings. But in our case according to our dataset, **every delivery takes 12 hours**, so we can’t compare different transit times.

Even though the time is the same, the **ratings are different**, which shows that other things matter more like how the driver behaves, the condition of the package, or communication with the customer.

**Observation:** Transit time doesn’t explain the ratings. We should focus on other areas to improve customer satisfaction. ex-driver behaviours, packaging or the state in which package received etc.