### ****Project Title: Indian Army Mission Logistics Analysis with Weather Impact****

· **Analyze the efficiency of military/logistics missions** using delivery and weather data.

· **Identify factors causing mission delays or failures**, especially due to adverse weather conditions.

· **Correlate environmental factors** (like snowfall, wind speed, and visibility) with mission outcomes.

· **Support decision-making** to improve mission planning and risk assessment.

· **Create insights for optimized resource allocation** under changing weather conditions.

### ****Project Description****

**Data Sources**:

Logistics Table: Contains mission-level details like delivery ID, transport mode, battery usage, source/destination, status, etc.

Weather Table: Stores weather data by date and location (temperature, snowfall, visibility, wind speed, etc.).

Drone Table:Battery usage, payload weight, average speed, mode of transport.

**Key Features Implemented**:

· **Join logistics and weather data** on common fields (Source\_Base = Location) to correlate missions with weather.

· **Filter missions delayed/failed due to weather** like heavy snowfall, low visibility, or high wind speed.

· **Run queries to find most used mission routes** (Source–Destination pairs).

· **Detect patterns where snowfall > 10cm** and mission failed or was delayed.

· **Highlight critical missions** affected by adverse conditions.

**SQL Queries Executed**:

* Find frequent delivery paths.
* Join and analyze logistics with corresponding weather conditions.
* Extract delayed/failed missions with extreme weather conditions.
* Pattern identification: visibility < X, snowfall > Y, wind speed > Z.

**Tools & Technologies Used**:

· **Python** for scripting.

· **MySQL** for data storage and query execution.

· **MySQL Connector** (mysql.connector) to connect Python with MySQL.

· Optional: Can be extended with **Pandas**, **Matplotlib** for reporting.

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**Expected Outcome**:

· Generate insights into how weather affects mission success.

· Provide recommendations for future missions based on past trends.

· Improve logistics operations in weather-sensitive regions.