Superset Dashboard: Business Problem Statement & Filtering Plan

Dashboard Title: Departmental Flight Expense and Travel Efficiency Dashboard

Business Objective:

The organization aims to monitor and analyze departmental flight expenses to identify inefficiencies, ensure travel policy compliance, and make informed decisions about cost optimization. The dashboard should allow users to interactively filter and explore data across various dimensions, such as department, date, airline, ticket type, and destination region. These filters must be context-aware and scoped to relevant charts for performance and clarity.

1. Department-Level Spend Analysis

Goal: Track and compare travel expenses across departments over time.
Filters to Apply: Department, Travel Date, Ticket Type, Travel Class
Filter Scope: Spend trends, carbon emissions, cost/km, and ticket type analysis charts. Scoped per dashboard tab or section.
Filter Dependency: Department selection updates Airline, Destination Region, and Ticket Class.

2. Airline Usage and Route Efficiency

Goal: Determine which airlines are used most by departments and analyze cost-efficiency on different routes.
Filters to Apply: Airline, Distance Category, Department
Filter Scope: Airline preference, route cost, and cost per km charts.
Filter Dependency: Airline selection filters available Routes.

3. Geo Spend & Carbon Impact

Goal: Evaluate cost and emission distribution across regions.
Filters to Apply: Destination Region, Department, Travel Date
Filter Scope: Region-wise spending charts, CO_2 emission summaries, and maps.
Filter Dependency: Destination Region narrows available Airlines and Routes.

4. Return vs Single Ticket Cost Efficiency

Goal: Assess which ticket type offers better cost per km.
Filters to Apply: Ticket Single or Return, Department, Travel Class, Travel Date
Filter Scope: Cost-efficiency KPIs only.
Filter Dependency: Changing Ticket Type or Travel Class adjusts relevant charts only.

Superset Filter Setup Strategy

Filter Name	Column Used	Type	Suggested Behavior
Department	Department	Dropdown	Multi-select, scoped to rele
Travel Date	Travel Date	Date/Range	Time filter (range selector)
Ticket Type	Ticket Single or Return	Dropdown	Return/Single
Distance Category	Derived from Distance	Dropdown	Short / Medium / Long
Destination Region	Destination Region	Dropdown	Region filter
Airline	Airline	Dropdown	Airline-specific filtering
Ticket Class	Ticket Class	Dropdown	Economy, Business, etc.
Origin-Destination Route	CONCAT(Origin ICAO → Destination ICAO)	Dropdown	Frequent route filter

Superset Tips for Filters, Scoping, and Dependencies

1. Set up Filters via Dashboard > Edit > Add Filter Box.

2. Use the 'Scoping' icon in each chart to control which filters affect it.

3. Enable 'Cascade Filters' in filter configuration to create dynamic dependencies (requires Superset v1.4+).

4. Derived filters like Distance Category or Route ID can be created in virtual datasets using SQL.