Summary:

This project involved creating a Tableau-based aviation accident analysis dashboard that provides comprehensive insights into aviation safety incidents. The dashboard focuses on accident distributions across locations, flight purposes, and damage assessments to support aviation safety improvements and risk management.

Client Requirements:

The client required an Aviation Accident Analysis Dashboard with the following objectives:

1. Accident Overview: Display total accidents and US-specific incidents

2. Geographic Analysis: Show accident distribution by airport location

3. Historical Trends: Visualize accident patterns over years

4. Flight Phase Analysis: Break down accidents by flight phases

5. Purpose Classification: Categorize accidents by flight purpose

6. Damage Assessment: Analyze aircraft damage levels

7. Category Analysis: Track accidents by airplane category

8. Filter Implementation: Enable multi-dimensional data filtering

Stakeholders:

1. Aviation Safety Authorities

2. Airport Management Teams

3. Flight Safety Investigators

4. Aviation Insurance Companies

5. Aircraft Manufacturers

6. Pilot Training Organizations

7. Air Traffic Control Management

8. Aviation Policy Makers

Steps in Project:

1. Aviation Data Collection

2. Data Cleaning and Validation

3. Tableau Model Development

4. Dashboard Layout Design

5. Visualization Creation

6. Filter Panel Implementation

7. Quality Testing

8. Documentation and Deployment

Insights and Final Outcome:

1. Overall Statistics: 88,889 total aviation accidents with 82,248 (92.53%) in the United States

2. Airport Analysis: Anchorage, AK leads with 434 accidents, followed by Miami, FL (200)

3. Flight Purpose: Personal flights account for highest accidents (49,448), followed by Instructional (10,601)

4. Phase Distribution: Null phase leads with 30.56%, followed by Landing (17.36%)

5. Aircraft Damage: Substantial damage in 72.17% (64,148) of cases, followed by Destroyed at 20.95%

6. Categorical Impact: 27,617 accidents (31.07%) specific to airplane category

7. Historical Trend: Shows significant decline from peak in early 1980s to present

8. Comprehensive Filtering: Multiple filter options including aircraft category, damage type, and location