Summary:

This project involved developing an Excel-based interactive dashboard for analyzing aviation accidents and safety data. The dashboard provides comprehensive insights into accident trends, injury statistics, geographic distribution, and various flight-related factors to help aviation authorities and stakeholders improve safety measures.

Client Requirements:

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

1. Overall Statistics: Display total accidents and injury severity breakdown

2. Geographic Analysis: Show top accident locations by airport

3. Historical Trends: Visualize accident patterns across years

4. Aircraft Damage Assessment: Categorize damage levels

5. Flight Purpose Analysis: Track accidents by mission type

6. Flight Phase Analysis: Monitor accidents during different flight stages

7. Multiple Filtering Options: Enable analysis by date, purpose, aircraft type, and country

8. Comprehensive Data View: Present both high-level and detailed accident information

Stakeholders:

1. Aviation Safety Authorities

2. Airport Management Teams

3. Aircraft Manufacturers

4. Aviation Insurance Companies

5. Flight Training Organizations

6. Commercial Airlines

7. Aviation Policy Makers

8. Air Traffic Control Organizations

Steps in Project:

1. Aviation Accident Data Collection

2. Data Cleaning and Standardization

3. Excel Database Structure Creation

4. Dashboard Layout Design

5. Visualization Development

6. Filter Panel Implementation

7. Quality Assurance Testing

8. Documentation and Deployment

Insights and Final Outcome:

1. Accident Overview: Total of 88,889 aviation accidents recorded

2. Injury Statistics: 50,201 fatal injuries, 21,377 serious injuries, 27,478 minor injuries, and 441,889 uninjured

3. Geographic Distribution: Anchorage, AK leads with 548 accidents, followed by Miami, FL (275) and Houston, TX (271)

4. Aircraft Damage: 64,148 aircraft destroyed, 18,623 with substantial damage, 3,194 with minor damage

5. Purpose of Flight: Personal flights account for highest accidents (49,448), followed by Unknown (10,601)

6. Flight Phase Analysis: Landing (15,428) and Takeoff (12,493) show highest accident rates

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

8. Comprehensive Filtering: Multiple filter options including date, purpose of flight, aircraft category, and country