Project Task 1: Dashboard

Support Document

DSC640 – Data Presentation and Visualization

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Background

The downing of Malaysia Airlines Flight 17 in Ukraine on Thursday, following the disappearance of its Flight 370 in March, is the second mysterious incident involving the airline this year. The incidents don't appear to be related, but that isn't preventing people from insisting that they'll never fly Malaysia Airlines again. Some of them will follow through — academic studies have found that high-profile crashes can shift passenger demand away from the airlines involved in the disasters.

Is this behavior rational? Should we really be less inclined to fly airlines that have had fatal crashes in the past — even when the crashes don't appear to be their fault? Or are crashes essentially random events that occur at about the same rate on all airlines over the long run?

Dataset

We can study this by looking at safety records for major commercial airlines over the past 30 years, as based on the Aviation Safety Network's database. The method is relatively simple. I'll break the 30-year period down into two halves: first from 1985 to 1999, and then from 2000 to 2014.

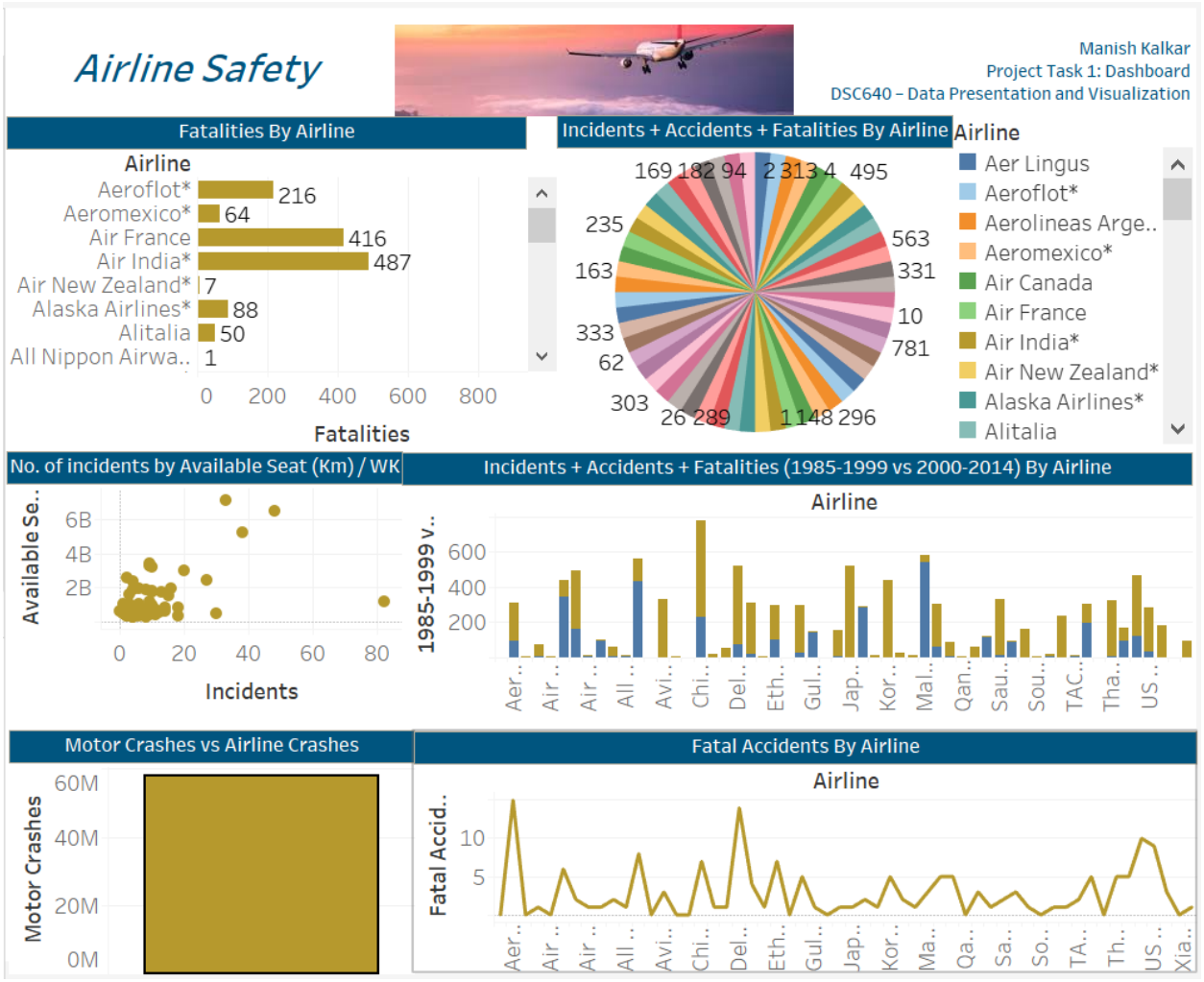
The dataset outlined in the airline_safety.csv file contain following fields:

Header	Definition
airline	Airline
avail_seat_km_per_week	Available seat kilometers flown every week
incidents_85_99	Total number of incidents, 1985–1999
fatal_accidents_85_99	Total number of fatal accidents, 1985–1999
fatalities_85_99	Total number of fatalities, 1985–1999
incidents_00_14 Total	Total number of incidents, 2000–2014
fatal_accidents_00_14	Total number of fatal accidents, 2000–2014
fatalities_00_14	Total number of fatalities, 2000–2014

The dataset belongs to 56 airlines that were in the global top 100 as of December 2012 and which have operated continuously since Jan. 1, 1985.

Dashboard Visualization

Below visualization metrics has been developed using Tableau.



Based on the Dashboard, the number of fatalities is not very consistent from the first half of the data set to the next. Avianca, the national airline of Colombia, had a series of major crashes from 1983 through 1990. But it has had almost no problems since then — no fatal accidents since 1990, and no incidents of any kind since 1999. By contrast, Kenya Airways was fatality-free until 2000 but has had two major accidents since then and ranks as the worst airline since 2000 based on the number of fatalities.

Supplemental Dataset

The data for Motor Vehicle crashes within 2000-2014 was pulled from one of the Supplemental datasets - Fatality Analysis Reporting System (FARS), NHTSA. Per the data, as many as total 40,898,471 Motor Vehicle crashes were reported within the 2000-2014 timeframe, which is way more than the Airline crashes reported in thousands. The Dashboard shows only Motor Vehicle crashes, which is dominant number in the comparison.