

P5 Project Overview

PROJECT: Fatal Aircraft Crash Rates from 1995-2016

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DATASET: Aircraft Incidents

LOW-LEVEL TASKS SUPPORTED:

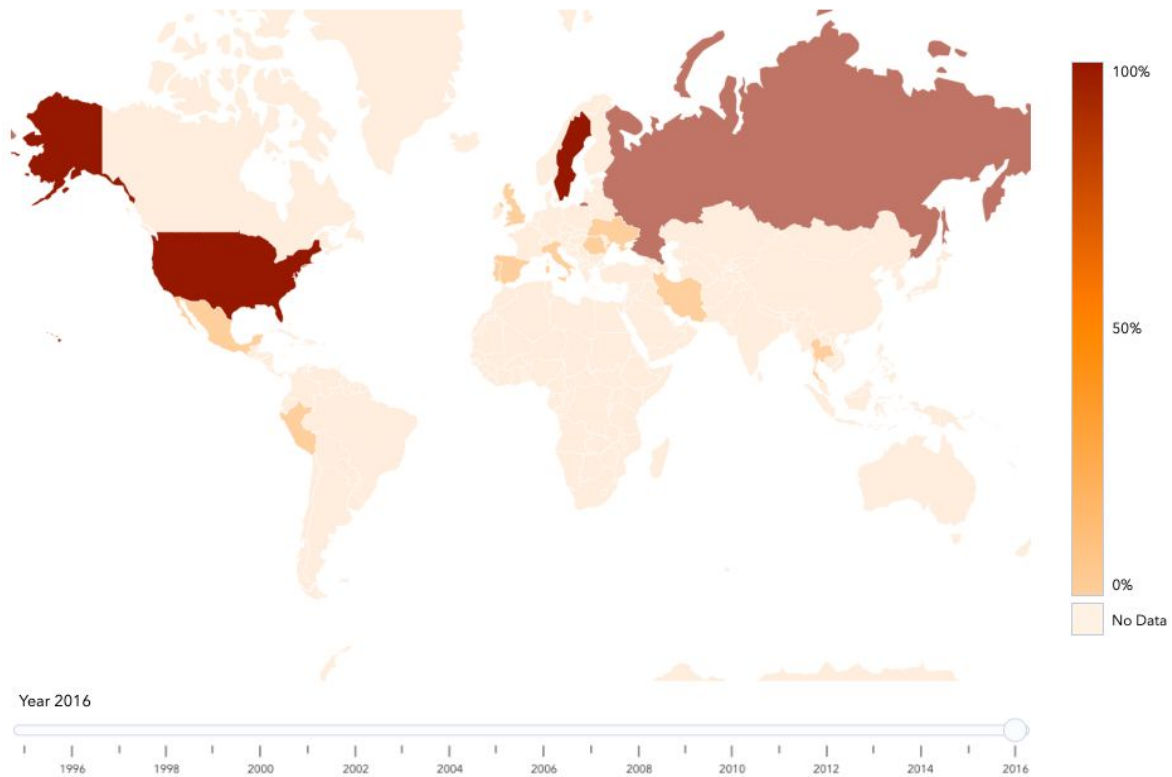
- Computer Derived Values
 - Calculates total deaths from incidents for each country year by year, as well as the percentage of incidents which are fatal each year to provide perspective on the impact and pervasiveness (or lack thereof) of deadly plane incidents within each nation
- Finds Extremum
 - Utilizes a color ramp to display the extreme values of within each calculated year, allowing users to explore nations with the highest number of deadly crashes as well as highlighting nations with only minor incidents.
- Determines Range
 - Through the use of a key, value for each nation is mapped concretely within the range, From this, users can easily begin to scrub through years and determine the worst events throughout the period thanks to an ease of legibility.

ABSTRACT TASK AND USER INTERACTION SUPPORTED:

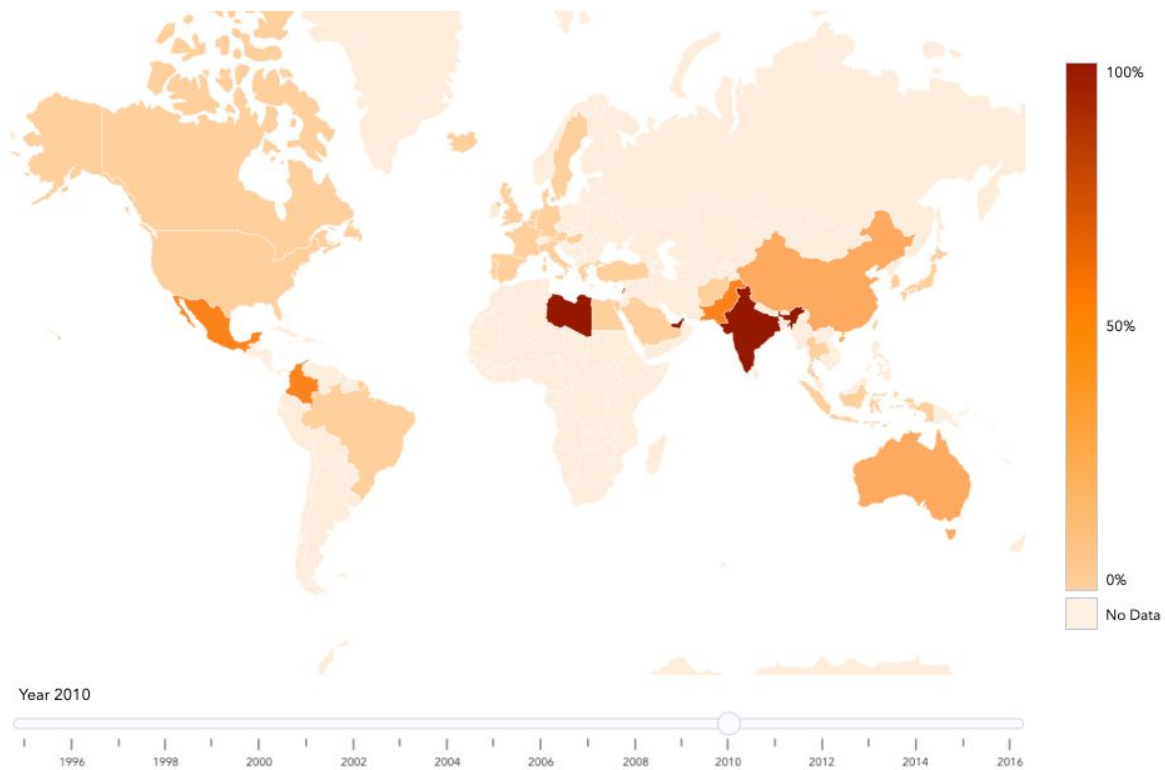
- Highlighting
 - On scroll over highlights selections where data is available, allowing the user to differentiate dataless and data rich cells.
- Accessing Extra Info
 - Allows user to directly interact with vis in an explorative manner, allowing them to reveal a deeper understanding of each cells associated data
- Filtering
 - Project is filtered by years, allowing for a multitude of views as well as collapsing large datasets into manageable bites indexed by time.
- Details on Demand Through Tooltip
 - Tooltip enabled users a personal interface and enables user to obtain a deeper understanding of the data at hand.
- Re-Visualizing
 - Data examined on a yearly scale not only filters, but creates a whole new visualization to explore and reveal for the user

VISUALIZATION:

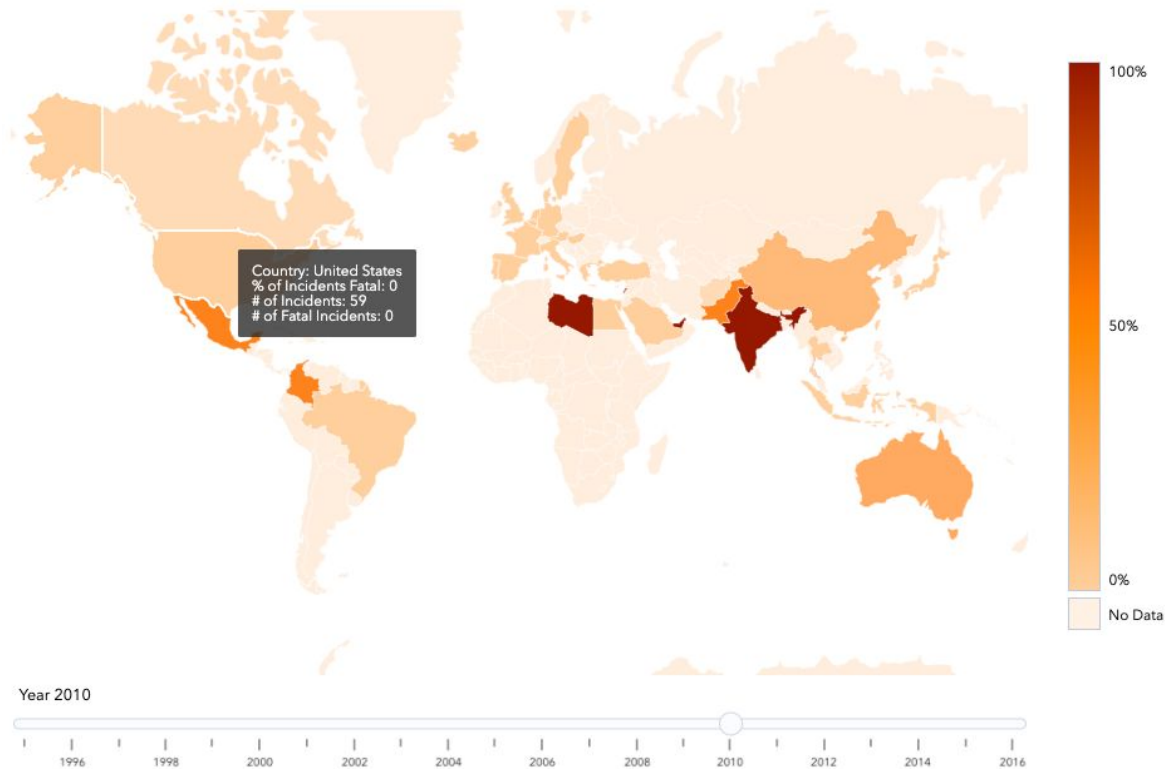
Fatal Aircraft Crash Rates from 1995-2016



Fatal Aircraft Crash Rates from 1995-2016



Fatal Aircraft Crash Rates from 1995-2016



DESIGN OVERVIEW:

Our visualization *Fatal Aircraft Crash Rates from 1995-2016* calls to attention the various airplane incidents throughout the period [1995-2016] and works to highlight the toll on human life that these events have as well as where they take place. When first examining the data our first question was “Where are these events taking place?”, a face value question of the data which directed us towards the idea of a choropleth map. The question then became “How do we actually populate this map and by what metrics?”. This dataset led us to question the nature of these incidents and what the fatality rates were for them across the globe. We believed the clearest way to display this was in a ratio of fatal aircraft incidents over all incidents because it would highlight truly problematic regions over mere flukes. From there, we observed that the clutter of a filtered view of this data could be misleading and it would be more helpful to view this data over time. To clear this clutter we moved to the use of a slider to filter by year. This way the visualization becomes three dimensional, with the viewer able to explore what would otherwise summary of all years and incidents into a simplified map of the incidents for the year they were interested in. This also encourages users to interact with the visualization, another guiding factor in this decision.

The actual specifications of our map are as follows: Our visualization is a collection of choropleth maps indexable by year using the slider beneath it. It utilizes a key with a color ramp to display to the users what the different colors on the map represent. These individual choropleth maps provide an overview of the dataset, and the user can get details on demand by hovering over regions of interest. Upon hovering over a region, a tooltip appears, allowing users to highlight regions and examine the fine details of their statistics. In this way, users can also identify truly catastrophic events and regions versus those that suffered more small time events. This coupled with the multiplicative views of the timeline, allows users to explore the data for themselves and begin to see trends in regions and problematic patterns across time. It is the hope that with all these utilities in cohesion, users can begin to truly understand the data at hand, far and away from the illegible mass of cells the original csv represented.