**Information Visualization P5**

**Group Members:**

Baijun Desai

Kashyap Patel

**Dataset Chosen:**

Aircraft Incidents

**Supposed Analytic Tasks:**

Find how many incidents occur in a certain year

Find how many incidents occur over a range of years

Find how many injuries occur in a range of years

Find how many incidents occur in a range of years

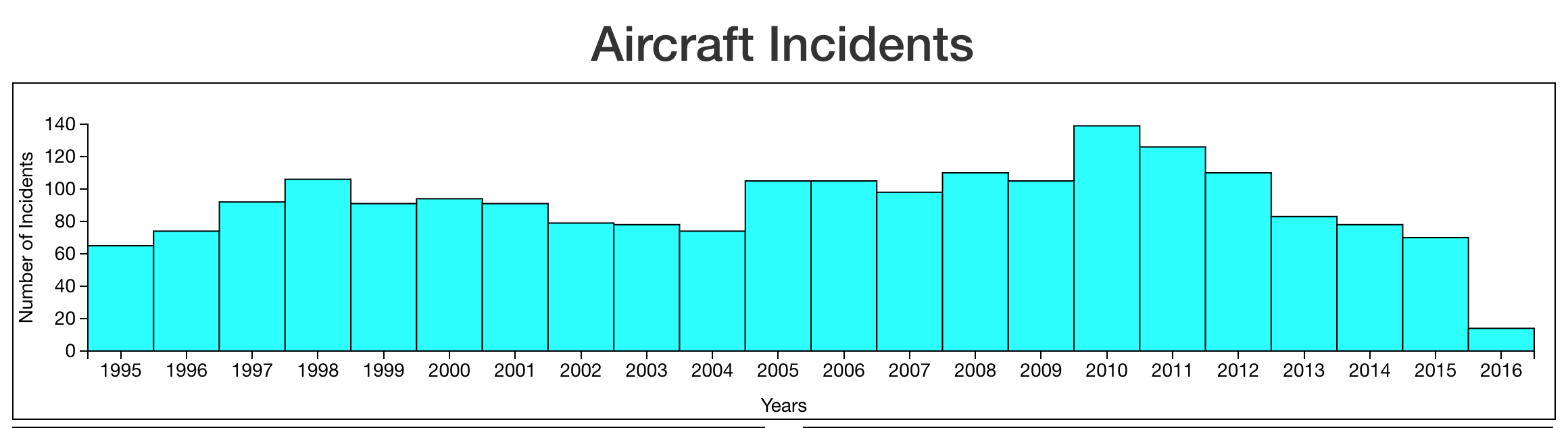
Explore the geographic distribution of incidents in a certain range of years

Explore changes in aircraft damage over a range of years.

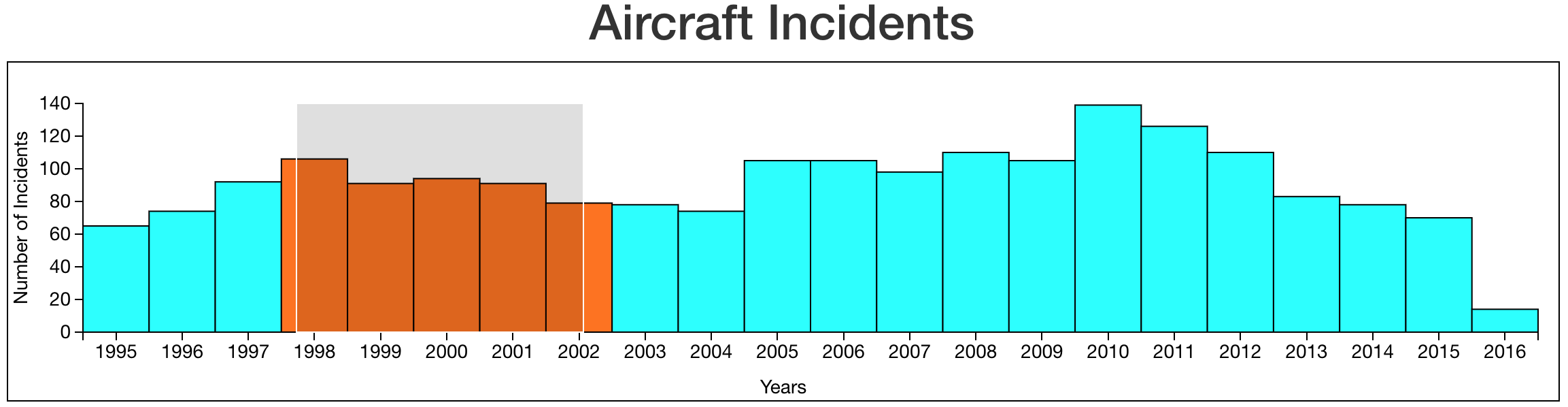
**Design Overview:**

The goal of the visualization is to explore changes in various aspects of aircraft incidents over time ranges. As soon as the user loads the visualization, (s)he is presented with a bar chart that extends the whole page and four smaller charts below the main chart. The main chart not only represents the amount of aircraft incidents that occur every year, but also allows the user to create a brush over the bars. This brush is linked, and results in a change in all four sub graphs. The visualizations shown in the four sub graphs only include data from years that the user has brushed over. When the visualization loads for the first time, the sub graphs visualize data over the whole time period (1995 – 2016).

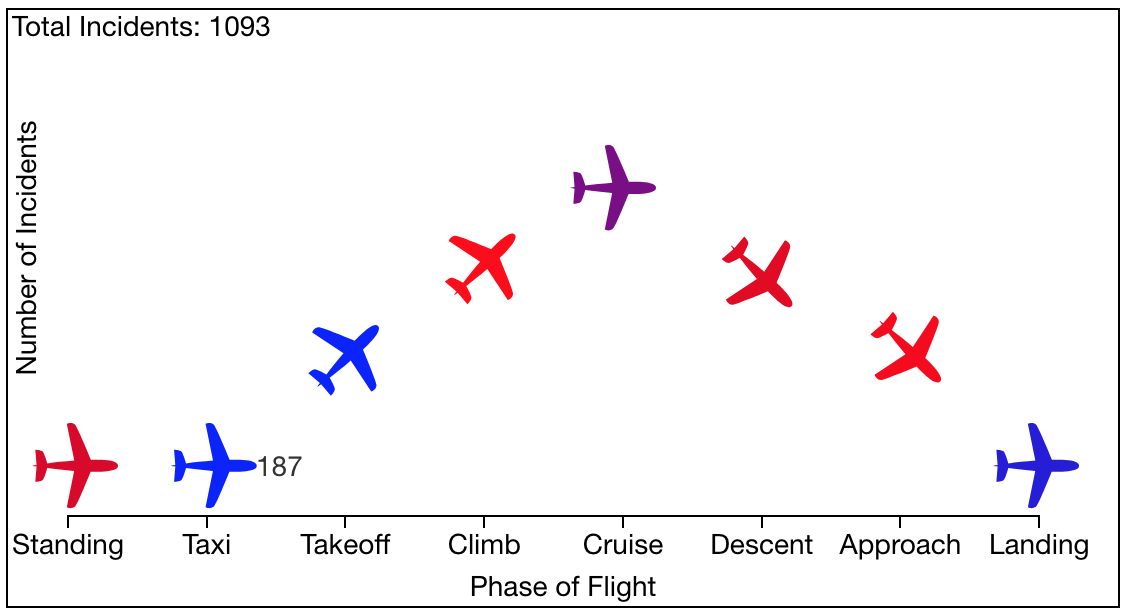
User Interface:



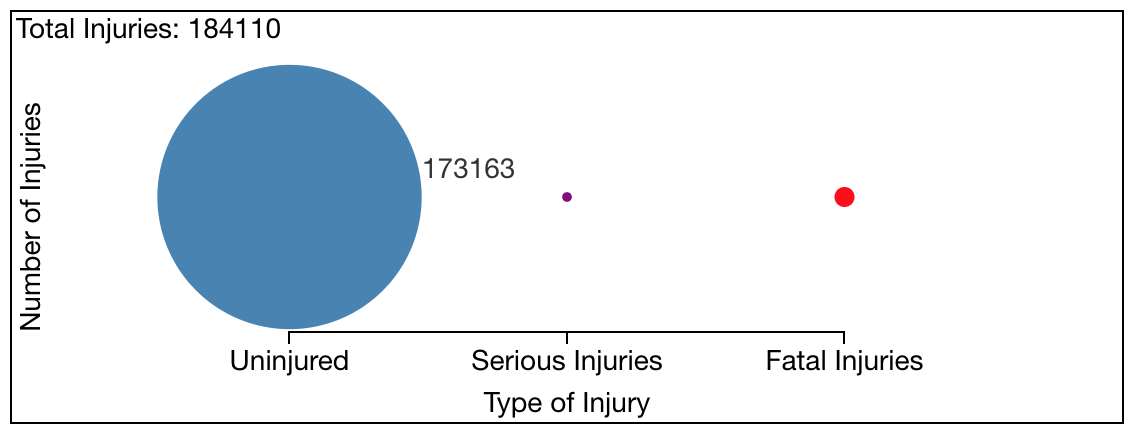
Main chart at the top. Allows the user to brush over the bars, like so:



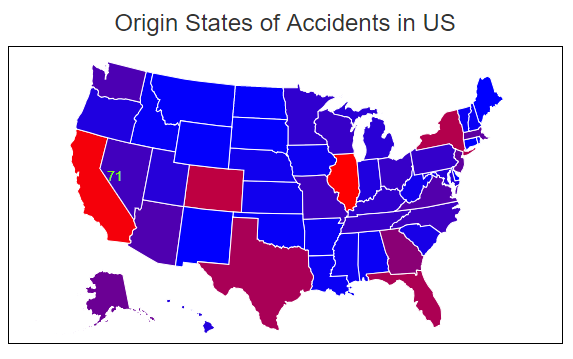
A bar is considered brushed if at least half of its area is within the brush.



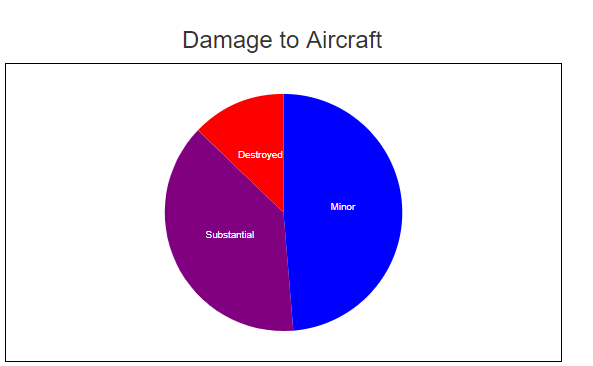
Top left chart. The planes are oriented in a way to symbolize the orientation of the plane during each phase. The color of the plane represents the relative number of incidents that occurred in that phase. Redder color corresponds to relative higher count. Additionally, the user can find how many incidents occurred in a certain phase by hovering their mouse over the plane. The “Total Incidents” text and color of the planes update as the user brushes over years on the main chart.



Bottom left chart. The circles represent the number of injuries that occur out of total injuries. The bigger the circle, the bigger the percentage of that type of injury. When the user hovers over a circle, its radius increases to let the know it was highlighted, and the actual number of that injury type is shown. The “Total Injuries” text and radius of the circles update as the user brushes over years on the main chart.



Top right chart. This chart shows the distribution of accidents among origin states in the US. Redder color indicates that the state under consideration is the origin state of more crashed flight. By brushing in the time chart, the geographic distribution is linked and dynamically updated. The user can get details on demand on the absolute count of accidents by hovering the mouse over a state. This is shown in this image next to California in green text.



Bottom right chart. This chart shows the distribution of the type of damage that accidents in a given range of years have sustained. By brushing the time bar graph, the time range is linked to this pie chart, and increases/decreases the area of wedges. More detail on demand can be obtained by hovering a mouse over individual wedges to get information on percentage as well as absolute count.