Visualisation 2

Link: Car Crashes in Australia (1998 to 2021) (luqmaanyurzaa.github.io)

https://luqmaanyurzaa.github.io/3179/

Dataset:

Australian Fatal Road Accident 1989-2021 (kaggle.com)

Domain: The domain is about the car crashes that occurred in Australia from 1998 to 2021.

Why: The purpose of this visualisation is to educate the audience about how certain safety measures allow for safer roads

Who: The audience is the public mostly drivers and road lawmakers.

What: The data contains individual crashes that occurred in Australia from 1998 to 2021. The data contains information about the crash, the vehicle, the driver, the passengers, the road, the weather, the location, the time, and the holiday period among other things however not all attributes where used.

How: The idioms I have chosen to highlight the extent to which car crashes in Australia have been reduced in Australia.

Choropleth map: this idiom is used to showcase the difference in number of crashes from state to state in each year. It uses a slider that allows the viewer to go to a specific year and see these differences clearly. The colour theme uses red, yellow, and green to mimic the colours of a traffic light fitting the theme.

2D Histogram: The 2D histogram gives insight into the times of day that crashes occur in the different states. It uses a colourblind palette to make sure the colours are accessible.

Stacked bar Graphs: these graphs give insight into day of the week and the light conditions of the accidents and how this affects the rates of crashes. In the graph that has not been normalised we can see how the day affects the rates of car crashes. In the normalised graph we can better see how day or night affects these rates.

Line chart: this visualization showcases the same data as in the choropleth however is highlights the change in the rates of car crashes over time more than the differences between rates in individual years. We can see how each state has been able to reduce the number of car crashes and how quickly the rates have fallen. It uses the same colourblind palette as in the histogram to make sure the colours are accessible.

Layout: the page is split into two vertical columns which come of the visualisations spanning both columns. There is a clear visual hierarchy between the title of the page, the titles of the subheadings and the description. There is also clear proximity between related sections.

Colour: the colours for the different section are all colourblind friendly. The choropleth uses re[, yellow, green (traffic light) which fits the theme. The line chart and histogram use colours to show contrast between states and the colours in both the visualisation match by state. The background colour is a grey that reflets the grim nature of the topic at hand.

Typography: the font used is the default to ensure all users from all different browsers and devices are able to consume the information.

Storytelling: the user is guided through the page from top to bottom and left to right. By switching from left to right with the paragraphs in each row of information and images, it makes it more pleasant to read. Interesting facts and instructions are also bolded for users who may not have the time to read through everything

Car Crashes In Australia (1998 to 2021)

Introduction

In this series of visualizations, we turn our attention to a pivotal aspect of road safety in Australia – car crashes. Over the span of two decades, from 1998 to 2021, this analysis delves into the nuances of road accidents within the nation. This exploration unveils critical insights into accident frequency, trends, and the impact of road safety measures, in Australia's diverse geography. I aim to provide an understanding of car accidents and their implications in Australia, shedding light on regions that have made strides in improving road safety and those that continue to grapple with persistent challenges. **Hover over visualizations for tooltips.**

Crash Count Per State

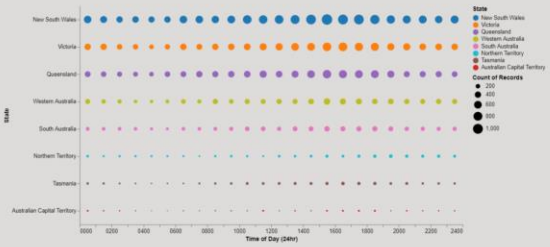
Year: 2021

The choropleth map of Australia vividly illustrates the frequency of road traffic accidents from 1998 to 2021, with each of Australia's states being color-coded to represent the number of crashes. It is immediately apparent that New South Wales consistently stands out as the state with the highest number of crashes over this extensive period.

This visualization shows the need for continued efforts in road safety, especially in New South Wales, and emphasizes the importance of comprehensive measures to reduce traffic accidents across the nation. Due to the low population and hence lower number of drivers in Northern territory and Tasmania, these states have much lower counts of car crashes.

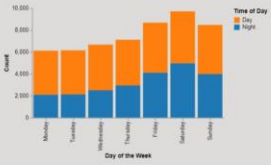
We can see that the scale changes as we move through the years with the slider as the total number of crashes each year decreases. **Drag the slider to go through the years.**

Crash Count By State And Time Of Day



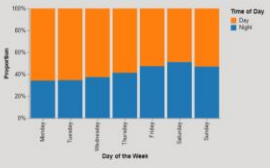
The 2D histogram scatterplot illustrates the frequency of road accidents per state per time of day. Each circle represents a state and the approximate time of day. The size of the circles represents the number of crashes. We can see that **the majority of crashes occur at around 3pm for all states**, with the highest number of crashes occurring in New South Wales. We can see that there is a trend of more crashes occurring in the afternoon and evening, with the least number of crashes occurring in the early morning.

Crash Count By Week Day



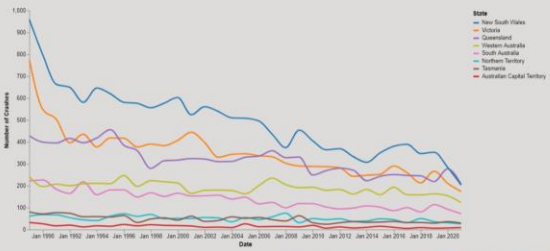
The stacked bar chart effectively portrays the crash count across different days of the week. This visualization provides a clear and intuitive overview of how accident frequency varies over the course of the week. We can see that the days with the lowest rates of crashes are Monday and Tuesday.

Crash Count By Week Day (Normalised)



The normalisation of the chart more accurately distinguishes between daytime and nighttime incidents. This visualization provides a clear and intuitive overview of how accident frequency is influenced by the time of day. We can see that on Sunday there are more crashes at nighttime than any other day.

Crash Count By State Throughout The Years



This line chart shows the trend of car crashes over the years. We can see that the number of crashes has been decreasing over the years. We can see that the state with the most crashes in 1998 was New South Wales, and this trend has continued over the years however the number of crashes has decreased significantly to the point of matching with Queensland in 2021. This downward trend of crashes in all states can be attributed to the introduction of new safety features in cars and the introduction of new road safety laws. This may also be attributed to the advancement of technology in cars and traffic.

Image 1:
https://www.google.com/imgres?imgurl=https%3A%2F%2Fprod.static9.net.au%2F_%2Fmedia%2F2018%2F10%2F10%2F15%2F21%2Fcar-crashes-news-alerts.jpg&tbnid=_oF8jHm7czWJgM&vet=12ahUKEwiM3auQwP6BAxUiUGwGHWJaAAMQMygHegQIARB-..i&imgrefurl=https%3A%2F%2Fwww.9news.com.au%2Fcar-crashes&docid=aFQx21hlZKpkQM&w=900&h=444&q=car%20crash%20images&ved=2ahUKEwiM3auQwP6BAxUiUGwGHWJaAAMQMygHegQIARB-

Image 2 :
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Image 3 :

https://www.google.com/imgres?imgurl=https%3A%2F%2Fwww.mynrma.com.au%2F-%2Fmedia%2Fdriving-images%2Famber-yellow-traffic-lights.jpg%3Fh%3D360%26w%3D640%26hash%3Ddd8f997c30d467eeadfb3e355be8f22a&tbnid=g5IhCL-wbm1yRM&vet=12ahUKEwip-ZGuwP6BAxWh2zgGHXA9CjEQMygKegQIARB5..i&imgrefurl=https%3A%2F%2Fwww.mynrma.com.au%2Fcars-and-driving%2Fdriver-training-and-licences%2Fresources%2Fwill-i-get-fined-for-driving-through-an-amber-traffic-light&docid=sENyufMg9T3F5M&w=640&h=360&q=australia%20traffic%20lighs&ved=2ahUKEwip-ZGuwP6BAxWh2zgGHXA9CjEQMygKegQIARB5