Visualisation Narrative:

My website is based on the number of whales being endangered within the planet. The purpose of this article is to inform users about the different types of whales, important statistics, number of whales killed globally per decade, whale population in 1960, decline of global whale populations and how can we solve this problem?.

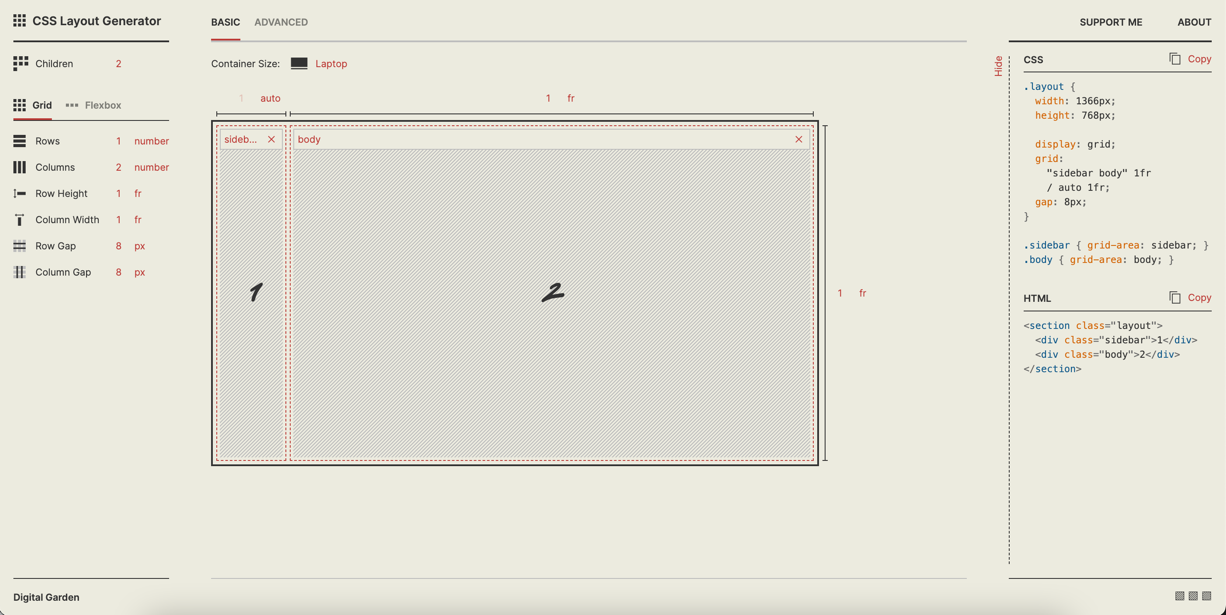
The audience viewing my article are adults aged 18-34 who live in Australia that wants to find out about whales classified as an endangered species through research about Baleen and Toothed whales, why it’s endangered, statistics to support the topic and key takeaways to apply the knowledge to their families and colleagues.

Data I collected from Our World in Data consists of three charts: Number of whales killed globally per decade , whale population in 1960 and the decline of global whale populations. Line chart represents the amount of whales used from 1900 to 2010. X axis is Year and Y axis is amount of whales killed. Bar chart shows the number of whales in 1960 divided to 2 hemispheres: Northern and Southern Hemisphere. X axis is Entity and Y axis is All whale species.

Additionally, it’s used to compare whale populations between 1890 and 2001. X axis is year and X axis is Whale population.

My insights is summarised by researching about Baleen and Toothed Whales. WDC (2023) states most whales travel from cold areas to feed and warm areas to breed, demonstrating that temperature impacts whale populations. Additionally, the status is endangered due to two reasons: Commercial Whaling and Climate Change. Whales are located within all oceans: Temperate, Equator, Artic and Antarctic (ifaw,2023). They travel from cold to warm areas when transitioning in terms of feeding and mating. In 1960, 700,000 whales are killed due to technological advances, products, fashion and Ambergris. Furthermore, there’s more killings in southern hemisphere than northern hemisphere because of the availability of breeding populations (Zerbini,2019). There are 3 solutions to resolve this problem: tracking your carbon footprint, use less plastics or no plastics and follow organisations that address this issue (ThepoorTraveller, 2015).

A software I use to develop my visualisation is Wireframe.cc to create a skeleton for my website. I took inspiration from layout.bradwoods.io by selecting the sidebar template that includes assets needed to run my code.



I mapped my data using google sheets because the interface is easier to export csv files to Visual Studio Code.

Pre-processed my data using Plotly.js from the tutorials and applying it to my graphs. Because the software includes hover templates and animations for the user to interact with all charts.

I removed the exploratory analysis part from my presentations because I want to shift my target audience from data scientists and designers to general audience.

Usability Testing

There are 3 objectives: to observe users interacting with all graphs, get users to explain charts in detail and collect feedback to improve my design. Questions addressed are: Why 1960 has the highest amount of whales killed per decade?, How they target whales from southern hemisphere and reasons Minke whale has the highest population. Metric used is success score. The success score is 100% as all participants are able to get through all tasks and 50% as some aren’t able to explain the graph clearly.

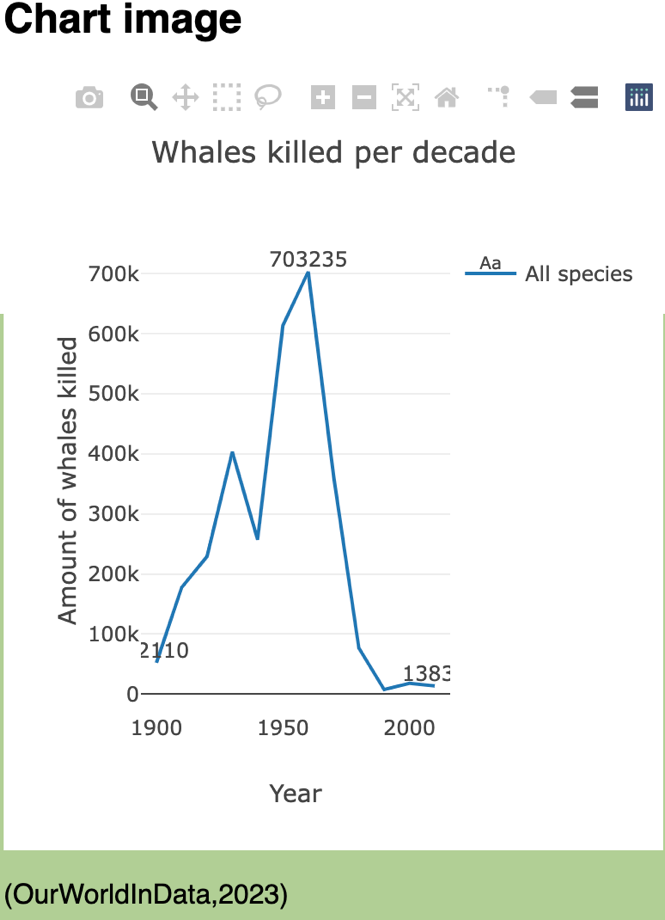
3 tasks are used to connect back to my objectives. 1. Scroll down to image after the number of whales killed globally per decade and explain chart., 2. Scroll to whale population in 1960 and explain chart. And 3. Scroll to graph under decline of global whale populations, animate graph and explain chart.

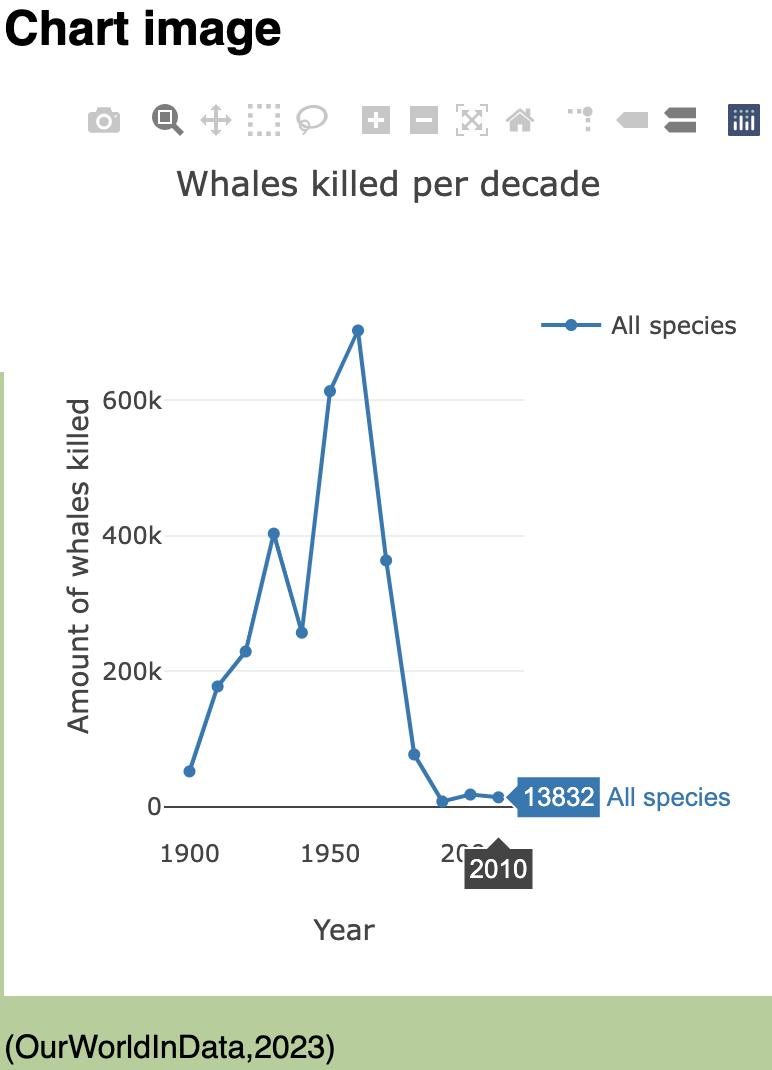
I collect 8 participants because I want to get qualitative results that is useful for my research. They are from Australia aged 18-34, representing my target demographic and diverse samples in relation to age. I’m collecting responses through an unmoderated recording and questionnaires. Additionally, conducting this usability study online as it’s easier to gain responses.

Yes the users succeeded in achieving metrics required for the study.

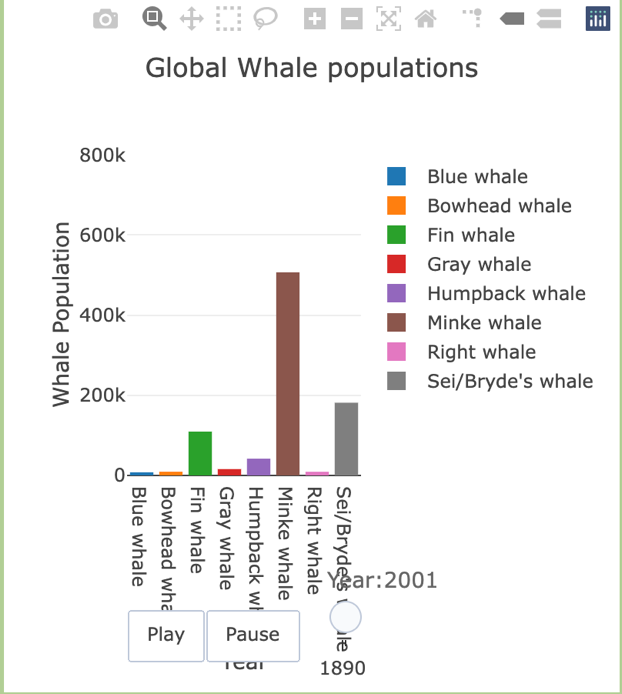
Most users explained the first graph in one sentence. A user suggested to label each point with a number. For the second graph, one user found whale population in 1960 simpler and easier to understand than the first graph, but some skipped the question. The third chart in terms of animation is very bad from one user. Most users can play the animation smoothly. Strengths are graphs are easy to read, clear labels and smooth animation. Weaknesses are less labels for each point for the first chart and animation starting from Blue Whale.

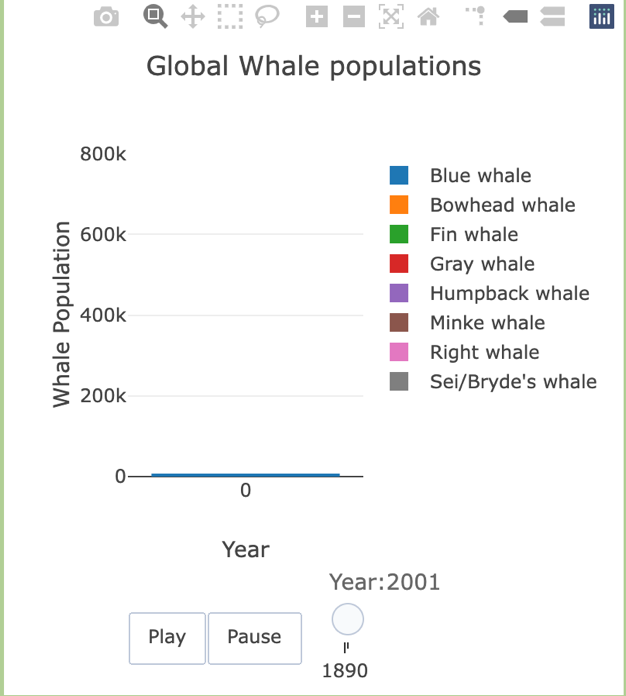
I modified some charts after getting feedback from users. I added labels for the first, middle and last point of the graph to add more context to the first chart.





Furthermore, I added one line of code that animates all datasets using x: data.x.slice(), to my traces loop.





References:

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<https://au.whales.org/whales-dolphins/what-is-baleen/>

<https://www.worldwildlife.org/species/whale>

<https://www.ifaw.org/animals/whales#:~:text=Where%20do%20whales%20live%3F,North%20Sea%20and%20the%20Mediterranean>.

<https://www.whalefacts.org/where-do-whales-live/>

<https://ourworldindata.org/grapher/whales-killed-per-decade>

<https://ourworldindata.org/grapher/whale-populations>

<https://ourworldindata.org/whaling>

<https://royalsocietypublishing.org/doi/10.1098/rsos.190368>

<https://www.thepoortraveler.net/2015/08/humpback-whale-conservation-australia/>

Code:

<https://layout.bradwoods.io/customize>

<https://stackoverflow.com/questions/23608504/css-code-for-eras-light-itc>

<https://plotly.com/javascript/legend/>

<https://plotly.com/javascript/gapminder-example/>