

The project name: Fantasy international study abroad

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Tutorial number: Tutorial 17

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Introduction

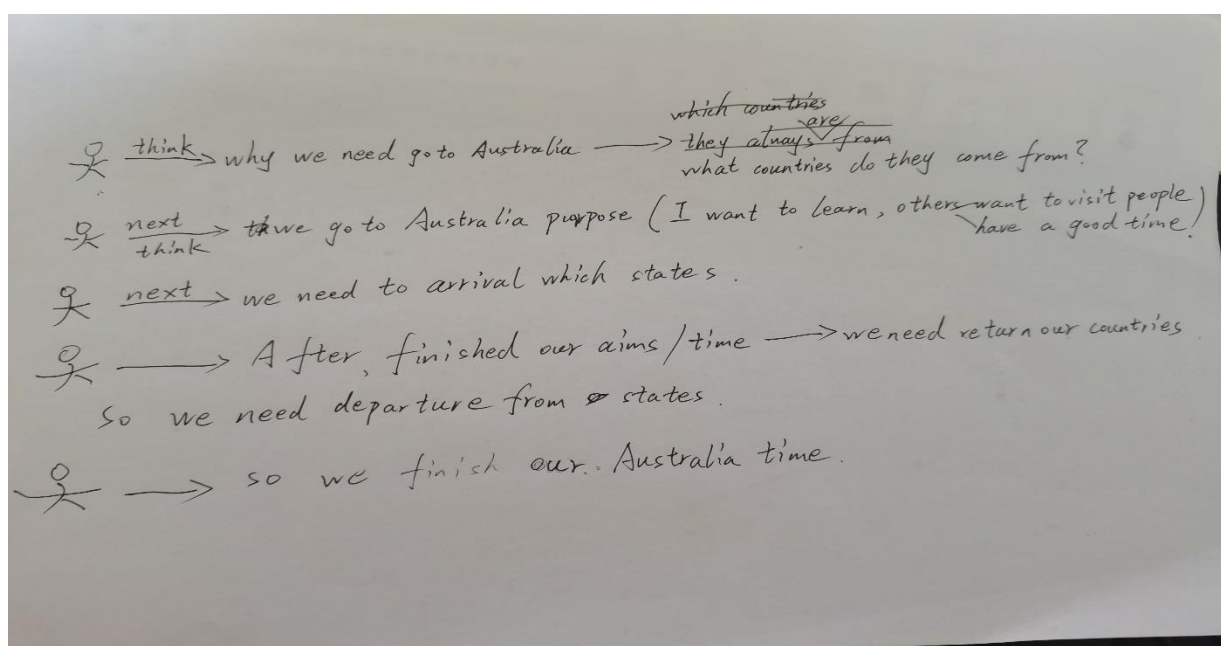
What I found in narrative visualization: Due to the impact of COVID-19, the international flow of people has been severely impacted, and the data exchange activities in the past year have become more and more active. Use the form of narrative to show an overseas student's journey (this is similar to Inception, this is just a virtual story).

The expected audience is people with international communication needs such as international travelers, international students, international business people and so on.

Design

Design process:

1. Design the story template (My reasonable guess as an overseas student)
2. Determine the content of the story (Steps for International students to prepare for studying in Australia: Why am I going there? What am I doing there? How do I get there?
I generally divided into, according to the analysis to Australia mainly what people (including me), we go to Australia for the purpose of (travel abroad to visit and so on), we arrived in Australia which state (reaches), we leave Australia from which state (leave), and to this end our whole trip in Australia.
3. Determine the language or implementation:
D3JS JS leafletjs CSS HTML jQueryJS vectorJS
The compiler is VScode
4. Design flow chart:



5. Design images

World map required for multiple countries (preferably a drag-and-drop map)

The pie chart shows the proportion of each purpose

The bars represent the number of purposes

Australian state data requires a select button

A line chart is needed to show change

These have been shown in ideas for the first design drawing,

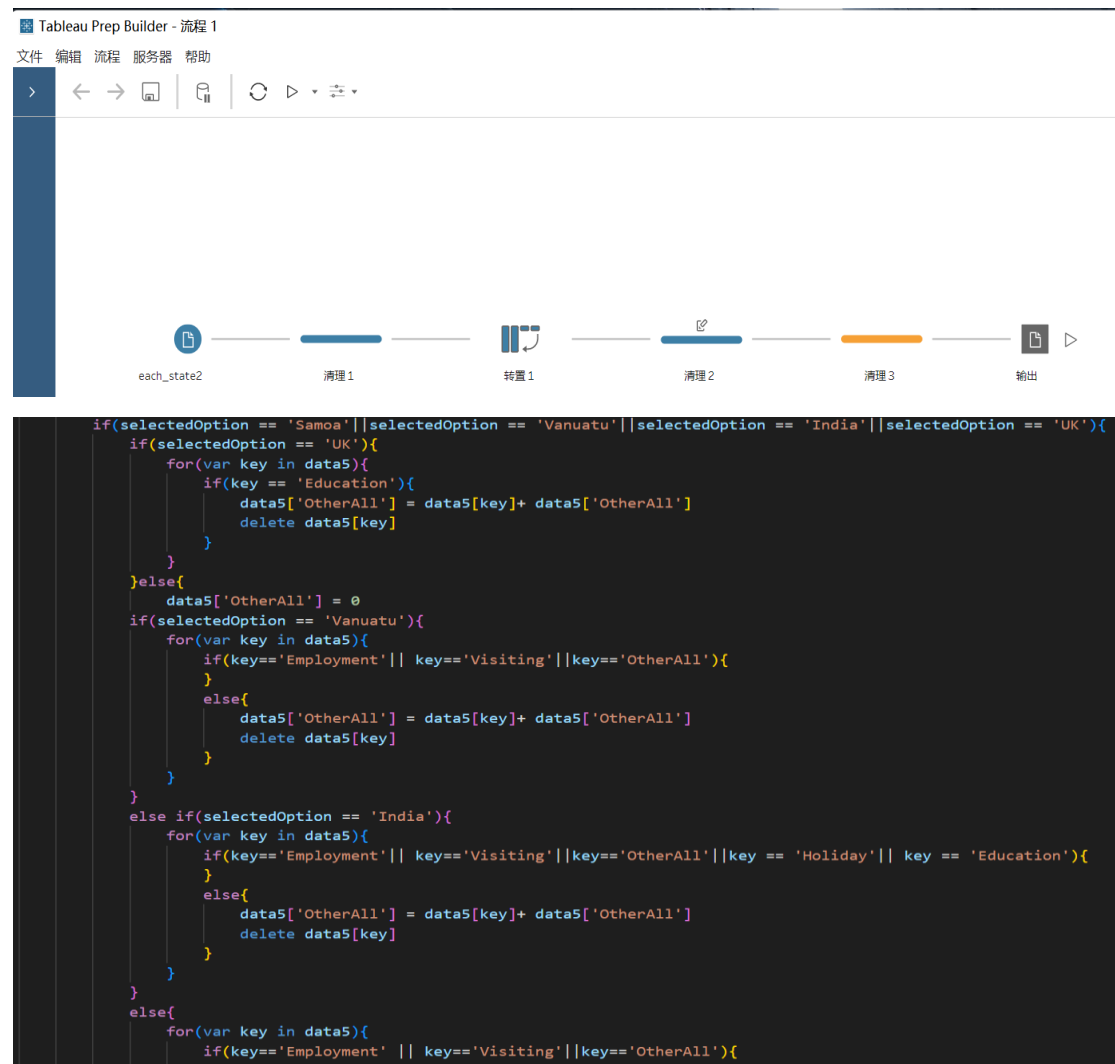
In the selection of the map, the map style of the second design is adopted, and the drag-and-zoom effect is added (which can better show the desired map effect and country content).

The time axis adopts the drag axis design of the fifth design (which is more in line with the style of time flow). While the pie chart and bar plan to take in the fourth chapter design of pie chart and bar chart (better reflect people's purpose and the number of various purposes), line chart to implement reference map from the third design (because after leaving the map can not be sure people to leave destination so better using the number of line chart to represent the left)

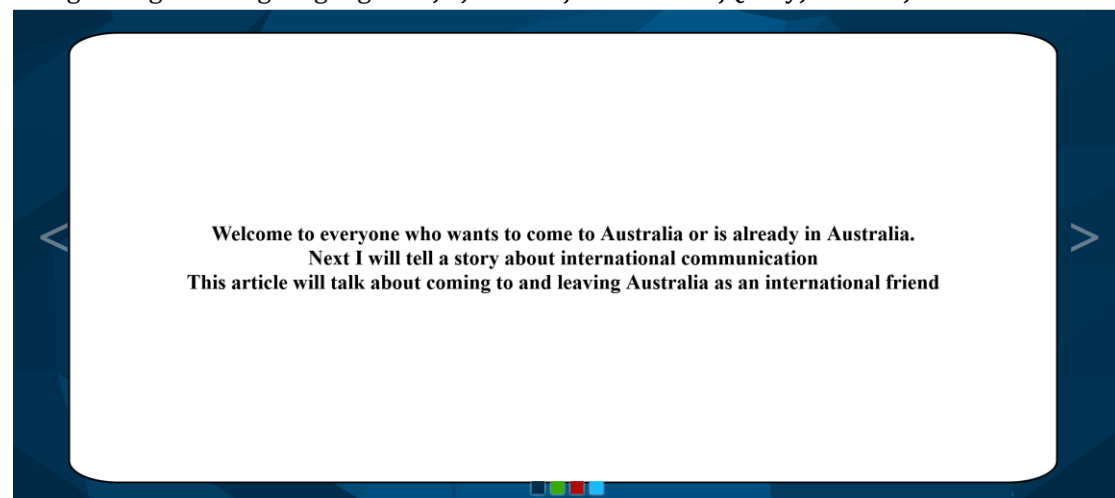
The combination of static and dynamic is used to explain information. First, the static is used for participants to see the rules, and then the participants are allowed to conduct their own operations to increase the interaction and attract users to watch. The color of the active section uses white background, and the background uses a variety of colors (which can be replaced), which not only increases the user's experience and diversity. Contrasting colors are easy to distinguish between various contents. Bright colors such as red are used for circular fan images. And increase the color difference of each color, can better let the user see clearly.

Implementation

For data use, three CSV files were used, and tableau prep and JS were used for data processing and cleaning.



Using a Programming language: D3JS JS leafletjs CSS HTML jQueryJS vectorJS



Describe Page 1 description

Interaction

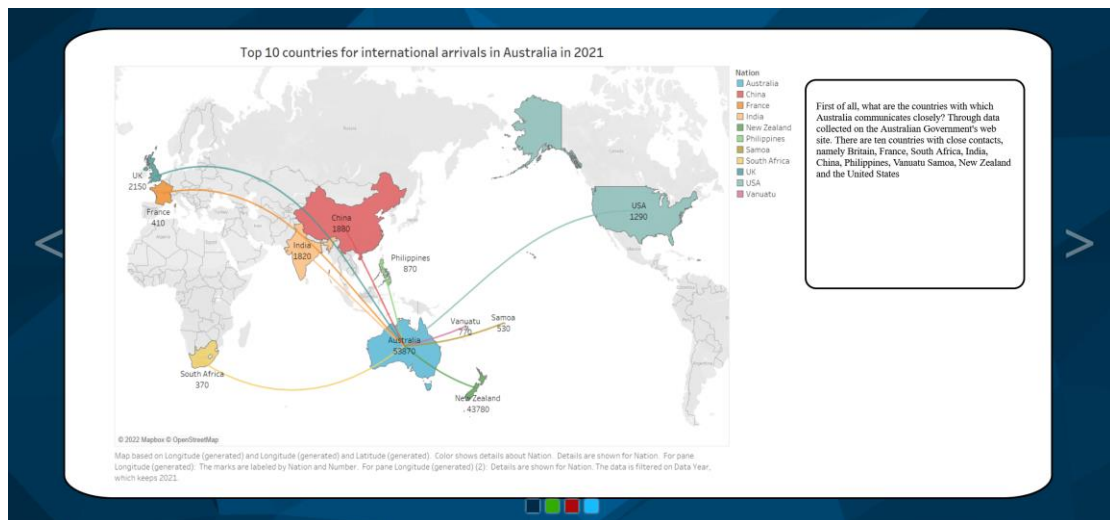
1. The left and right buttons can switch between pages (If the operation of the previous page is performed on the first page, a prompt box will be displayed to prompt the user to use the first page)
2. Below the four dark blue green red light blue box, the mouse to move to the box to switch the background color

Animation

1. The background images are animated stereograms using a jQueryJS vectorJS
2. Switch between pages using layer z-index change and transparency change

Use the library name as: d3.js jquery.min.js vector.js

Reference external code: <https://www.lanrenzhijia.com/js/10334.html>



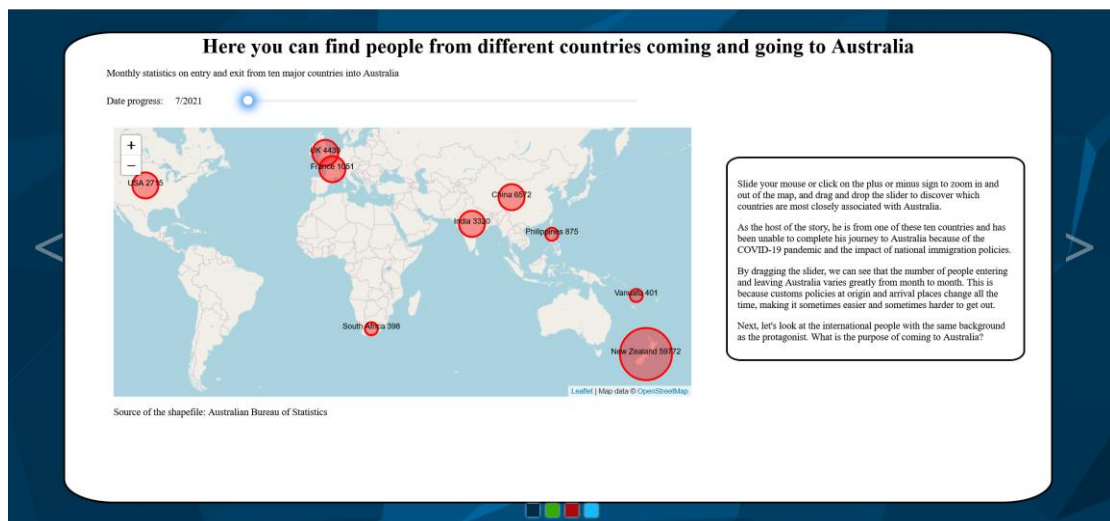
Describe: The number of people travelling to and from Australia

Interaction

- 1.The left and right buttons can switch between pages
- 2.Below the four dark blue green red light blue box, the mouse to move to the box to switch the background color

Animation

- 1.The background images are animated stereograms using a jQueryJS vectorJS
- 2.Switch between pages using layer z-index change and transparency change



Describe: The number of people travelling to and from Australia

Interaction

1.The left and right buttons can switch between pages
2.Below the four dark blue green red light blue box, the mouse to move to the box to switch the background color

1. Drag the blue slider

2. The mouse on the map can be dragged to zoom in and out, click and other operations

Animation

3.The background images are animated stereograms using a jQueryJS vectorJS

4.Switch between pages using layer z-index change and transparency change

5. The slider drags the animation

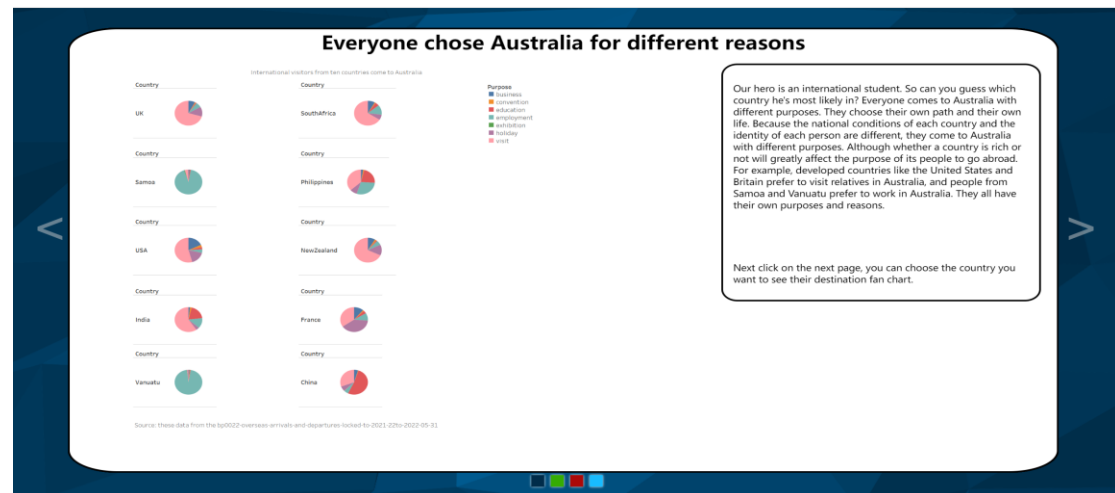
6. Map movement animation

7. Red shaded area moves animation

8. Date text change

Node: The HD network map library is used

Reference external code: https://d3-graph-gallery.com/graph/bubblemap_leaflet_basic.html



Describe: The purpose of entry and exit of international persons to Australia

Interaction

1.The left and right buttons can switch between pages
2.Below the four dark blue green red light blue box, the mouse to move to the box to switch the background color

Animation

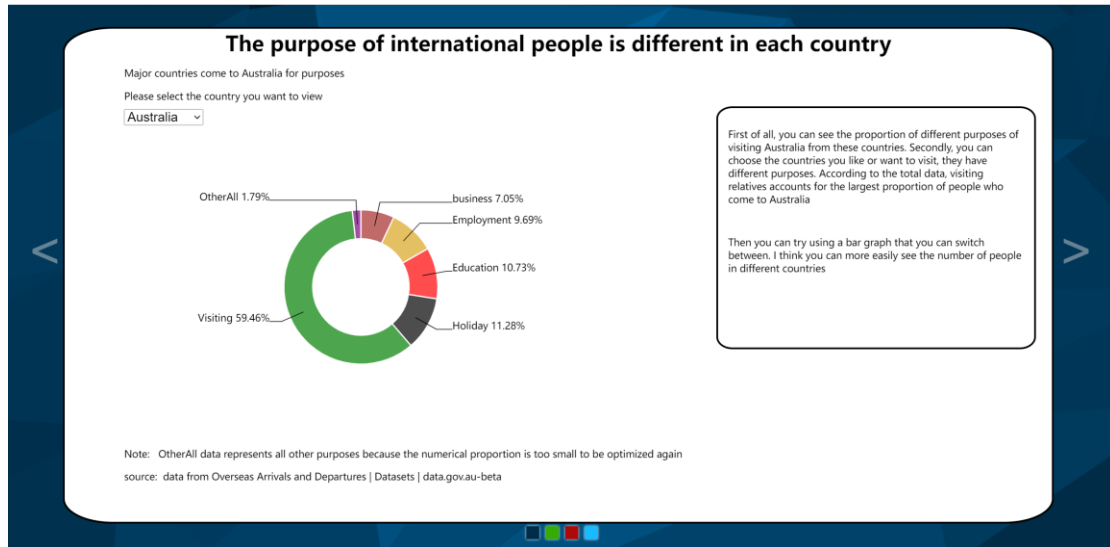
1.The background images are animated stereograms using a jQueryJS vectorJS

2.Switch between pages using layer z-index change and transparency change

Use the library name as: d3.js jquery.min.js vector.js

Reference external code:

The external code is the same as in the first figure



Describe: The purpose of entry and exit of international persons to Australia

Interaction

- 1.The left and right buttons can switch between pages
- 2.Below the four dark blue green red light blue box, the mouse to move to the box to switch the background color
3. Click on the label

Animation

- 1.The background images are animated stereograms using a jQueryJS vectorJS
- 2.Switch between pages using layer z-index change and transparency change

Use the library name as: d3.js jquery.min.js vector.js

Reference external code: https://d3-graph-gallery.com/graph/donut_label.html



Describe: The number of international persons entering and leaving Australia for all purposes

Interaction

- 1.The left and right buttons can switch between pages
- 2.Below the four dark blue green red light blue box, the mouse to move to the box to switch

the background color

3. Click on the label

Animation

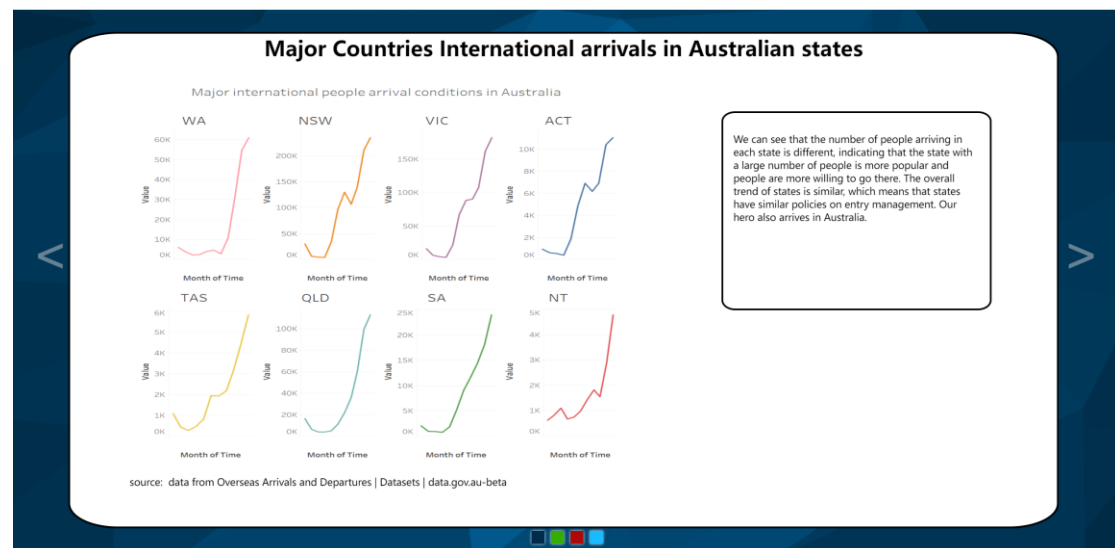
1.The background images are animated stereograms using a jQueryJS vectorJS

2.Switch between pages using layer z-index change and transparency change

3. Toggle data animation

Use the library name as: d3.js jquery.min.js vector.js

Reference external code: https://d3-graph-gallery.com/graph/barplot_button_data_csv.html



Describe: Data on state arrivals to Australia

Interaction

1.The left and right buttons can switch between pages

2.Below the four dark blue green red light blue box, the mouse to move to the box to switch the background color

Animation

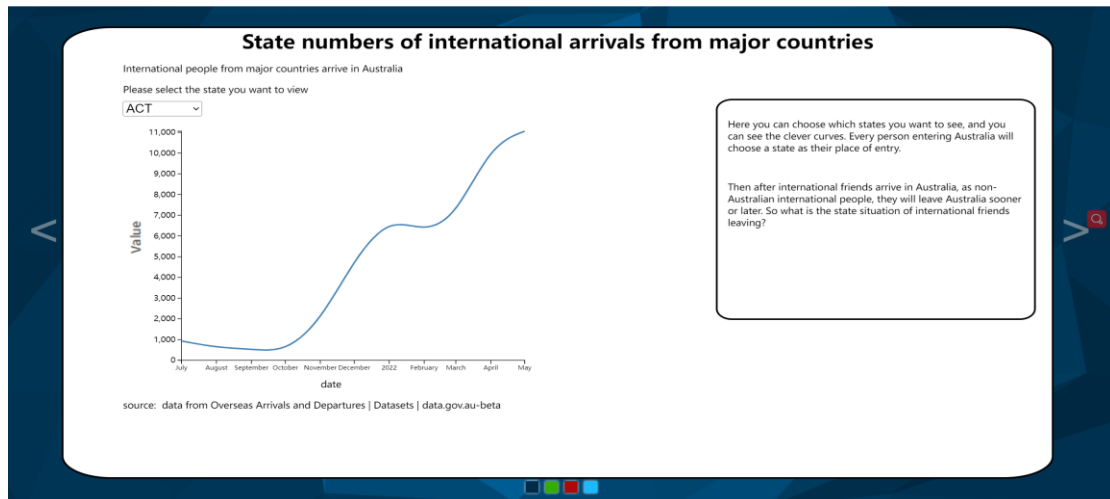
1.The background images are animated stereograms using a jQueryJS vectorJS

2.Switch between pages using layer z-index change and transparency change

Use the library name as: d3.js jquery.min.js vector.js

Reference external code:

The external code is the same as in the first figure



Describe: Data on state arrivals to Australia

Interaction

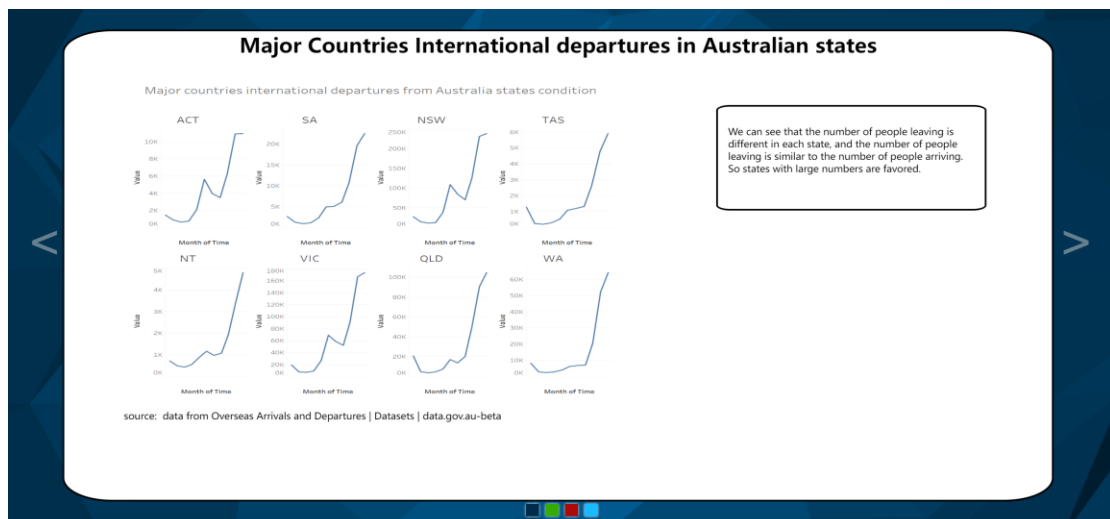
1. The left and right buttons can switch between pages
2. Below the four dark blue green red light blue box, the mouse to move to the box to switch the background color
3. Click on the label

Animation

1. The background images are animated stereograms using a jQueryJS vectorJS
2. Switch between pages using layer z-index change and transparency change
3. Toggle data animation

Use the library name as: d3.js jquery.min.js vector.js

Reference external code: https://d3-graph-gallery.com/graph/line_change_data.html



Describe: Data on departures by state in Australia

Interaction

1. The left and right buttons can switch between pages
2. Below the four dark blue green red light blue box, the mouse to move to the box to switch the background color

Animation

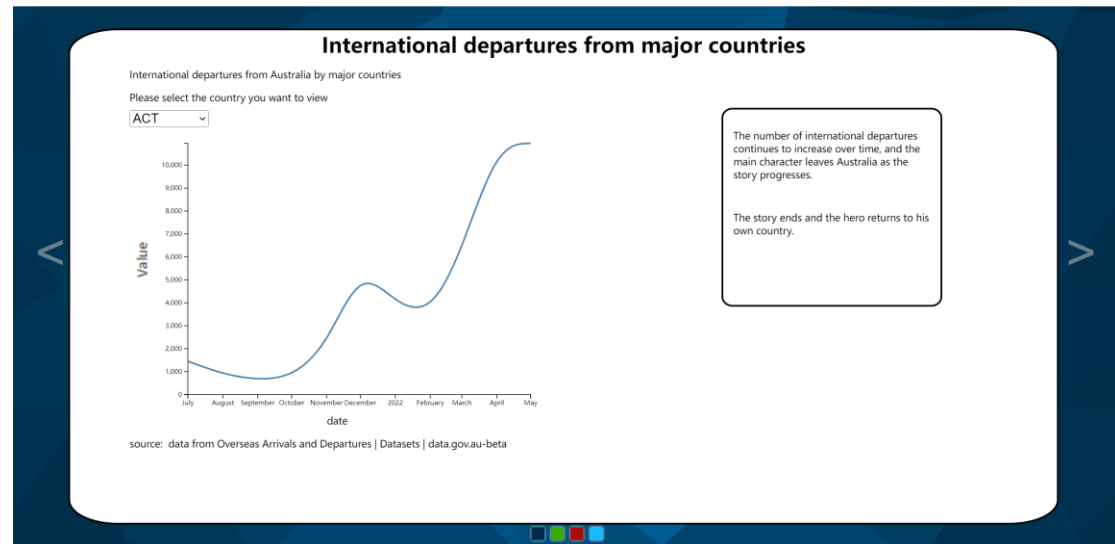
3.The background images are animated stereograms using a jQueryJS vectorJS

4.Switch between pages using layer z-index change and transparency change

Use the library name as: d3.js jquery.min.js vector.js

Reference external code:

The external code is the same as in the first figure



Describe: Data on departures by state in Australia

Interaction

1.The left and right buttons can switch between pages

2.Below the four dark blue green red light blue box, the mouse to move to the box to switch the background color

3. Click on the label

Animation

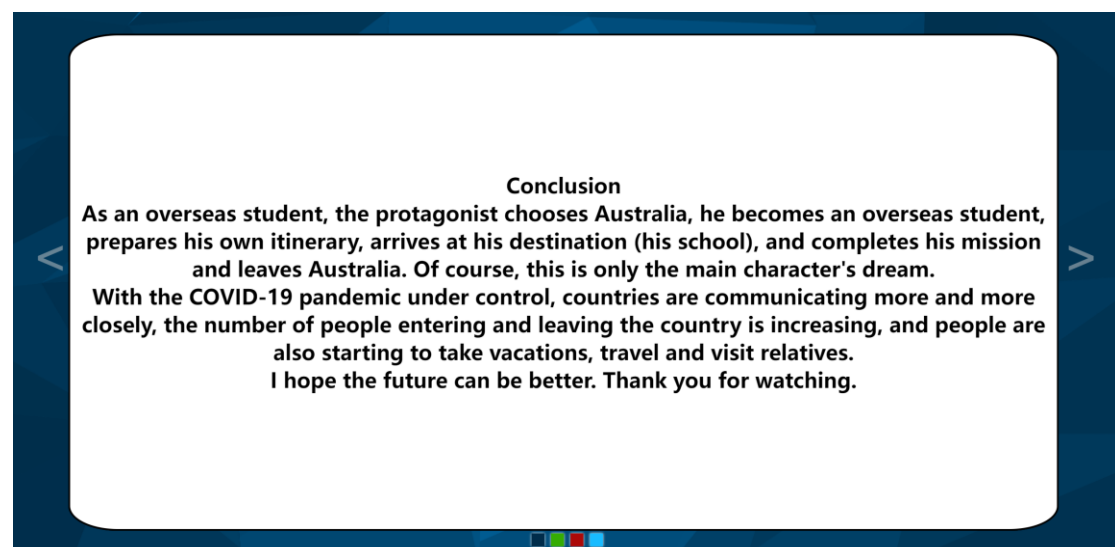
1.The background images are animated stereograms using a jQueryJS vectorJS

2.Switch between pages using layer z-index change and transparency change

3. Toggle data animation

Use the library name as: d3.js jquery.min.js vector.js

Reference external code: https://d3-graph-gallery.com/graph/line_change_data.html



Describe: conclusion

Interaction

1.The left and right buttons can switch between pages

2.Below the four dark blue green red light blue box, the mouse to move to the box to switch the background color

Animation

3.The background images are animated stereograms using a jQueryJS vectorJS

4.Switch between pages using layer z-index change and transparency change

Use the library name as: d3.js jquery.min.js vector.js

Reference external code:

The external code is the same as in the first figure

Data Difficult: Table function data cannot be directly retrieved and must be manually retrieved, 10000 pieces of data were screened. Process multiple JSON CSS files. And online map data.

The user guide

1. Unzip my job file
2. First the user needs to use the VScode editor open my job file
3. Choose kaixu_32891059_code.html
4. Right click and select the 'open with live serve' option.
5. And use Google Chrome to open web pages.
6. Users can switch the background color they want in any interface
7. Users can click the left and right buttons to change pages
8. On the map page of the third page, you can drag the progress bar to enlarge the map, and the mouse wheel operation to drag and move the map.
9. On page 5 click on the top left option to select the country
10. On page 6 click on the top left option to select the country
11. On page 8 click on the top left option to select the state of Australia
12. On page 10 click on the top left option to select the state of Australia

Note: 1. Please wait for the animation to end before clicking
2. The data load may be slow and the amount of data is large
3. Although page window changes are supported along with content size changes, text content may not fit. Please adjust the browser size for the best reading effect.

Conclusion

In this task, I found some problems when I was using D3JS, such as data type error, folder location error, data reading error, image location error, image switching error, animation failure, and errors in D3JS were displayed in D3JS instead of the JS written by myself. I worked on them and took care of them. The biggest problem I encountered was that I could not find the location of the bug, because the error message of D3JS was very general and there was relatively little reference content to find (it was not easy to solve the corresponding Bug).

In terms of narrative, I think I have chosen a good story, but I still have some shortcomings in the description of the story, which can not be so attractive to read as the writer, but I am clear in logic.

In the future study, I think I should be more proficient in using various data processing tools and D3JS and other JS image processing languages. In the future, I hope I can participate in the update of D3JS to make drawing easier and prompt bugs easier to understand.

Bibliography

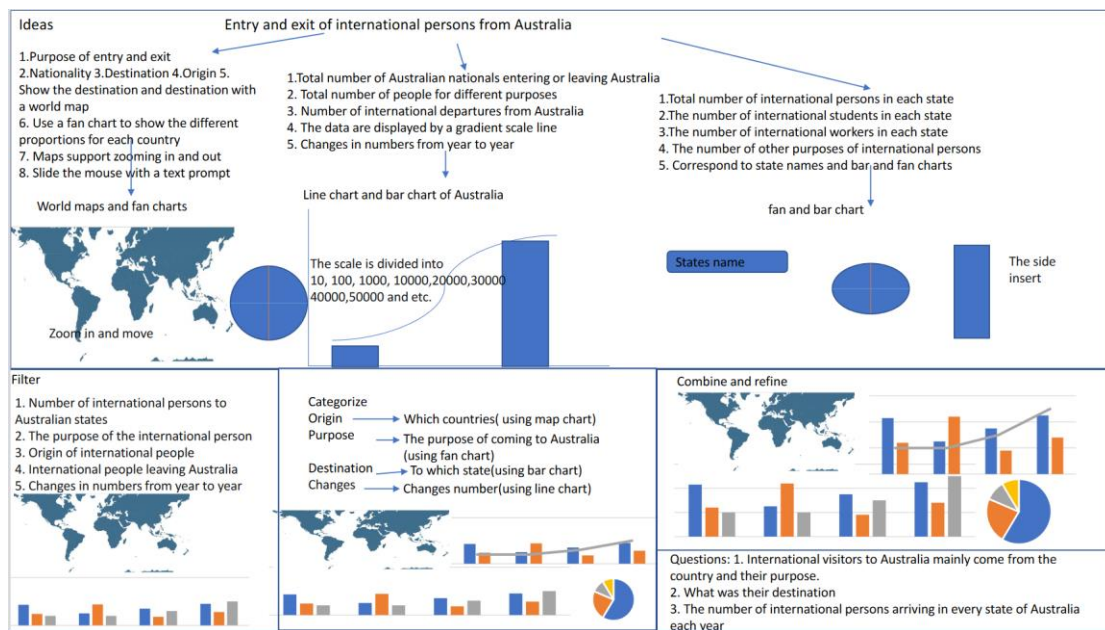
- [1] Html5 全屏酷炫 3D 多边形背景动画特效. (2019, November 8). Retrieved October 31, 2022, from <https://www.lanrenzhijia.com/js/10334.html>
- [2] Basic Bubblemap with Leaflet.js and D3.js. (n.d.). Retrieved October 31, 2022, from https://d3-graph-gallery.com/graph/bubblemap_leaflet_basic.html
- [3] Donut Chart with Group Label in D3.js. (n.d.). Retrieved October 31, 2022, from https://d3-graph-gallery.com/graph/donut_label.html
- [4] Button to Change Input Data in Barplot - .Csv Version. (n.d.). Retrieved October 31, 2022, from https://d3-graph-gallery.com/graph/barplot_button_data_csv.html
- [5] Input Data Transition for D3.js Line Chart. (n.d.). Retrieved October 31, 2022, from https://d3-graph-gallery.com/graph/line_change_data.html
- [6] Mike, B. (2022, July 3). D3 API Reference. Retrieved October 31, 2022, from <https://github.com/d3/d3/blob/main/API.md>





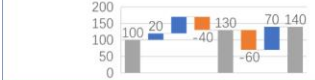
Appendix


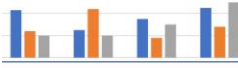


Survey of international persons from major nations entering and leaving Australia





Aims and motivation: I am an international students. I come from China. I want to come to Australia for study, but the expensive air ticket and various complicated epidemic prevention policies lead me to choose online study. I know the impact of the pandemic has been huge around the world, including in Australia. So I want to find out how many international people from major nations have come to or leave Australia under the global epidemic situation. And their purpose, their destination, etc





Name: Kai Xu
Tutor: Bruno Mendivez



<p>Layout</p> 		<p>Title: International staff dashboard Author: Kai Xu Date: 10 September Sheet: option one Task: The purpose of the international movement</p>
<p>Text box</p>	 <p>Filter years</p>	<p>Operations Screening the number of different categories of data; Marking important events; All graphs are linked to time series data, and for page restrictions, only major country data is shown. If the user wants to see the data visualization, there is an option to check for specific country data.</p> <p>Discussion: PRO: This table shows detailed information about staff turnover. Line charts and bar charts are easy to read and understand. The pie chart helps to see the difference between the parts.</p> <p>CON: Lack of narrative, basically no story to speak of. Less relationship visualization</p>
 <p>Filter Nation</p>	<p>Text box</p>	
<p>Text box</p>	 <p>Filter state</p>	
 <p>Filter years</p>	<p>Text box</p>	
<p>Focus</p> <p>It provides the purpose of the international movement, the country of origin, the destination, trends in the number of people, and people can choose what they are interested in.</p> <p>Data visualization provides all the data we need.</p>		

<p>Layout</p> 		<p>Title: International staff dashboard Author: Kai Xu Date: 10 September Sheet: option one Task: The purpose of the international movement</p>
<p>Text box</p>	 <p>state</p> <p>state</p> <p>state</p>	<p>Operations The flow shows the departure and destination of people. Select the country and time to display the current time of this country's international personnel in different states of the number and data. Select time flow shows the number of people leaving every state in Australia.</p> <p>Discussion: PRO: The regional graph provides a good indication of personnel turnover. The time and map options allow you to select the number of people from each country in each region of Australia. The last left map of Australia shows the departure</p> <p>CON: Lack of narrative, basically no story to speak of. Less relationship visualization</p>
 <p>nation</p>	<p>state</p> <p>state</p> <p>state</p>	
<p>Text box</p>	 <p>Filter years</p>	
<p>Text box</p>	<p>Filter Nation</p> <p>Filter Date</p>	
<p>Focus</p> <p>It provides the purpose of the international movement via, the country of origin, the destination, and the proportion of each region, and people can choose what they are interested in.</p> <p>Data visualization provides all the data we need.</p>		

<p>Layout</p>  <p>Slide the mouse to display information</p>	<p>Title:International staff dashboard Author: Kai Xu Date: 10 September Sheet: option one Task: The purpose of the international movement</p>
<p>Text box</p>  <p>Filter Nation</p>  <p>Drag and drop the time bar to display the number of people in that month</p>  <p>Drag and drop the time bar to control both the fan chart and the bar chart</p> <p>Text box</p>	<p>Operations</p> <p>With time series as variables, the situation at different times is displayed. Due to page limitations, only the data of major countries are displayed. If the user wishes to see the data visualization, there is an option to examine the data for a specific country.</p> <p>Discussion:</p> <p>PRO: This table shows detailed information about staff turnover. Line charts and bar charts are easy to read and understand. The pie chart helps to see the difference between the parts. A good narrative.</p> <p>CON: More information should be provided</p>
<p>Focus</p> <p>It provides time as a variable, the proportion of international people and regions, changes over time. People can choose their favorite time data display. Data visualization provides all the data we need.</p>	

<p>Layout</p> <p>Scene 1 description</p>  <p>Drag and drop the time bar to display the number of people in different dates</p> <p>Scene 2The drag-and-drop time control displays the total number of international visitors to Australia description</p> <p>Slide the mouse to display information</p>	<p>Title:International staff dashboard Author: Kai Xu Date: 10 September Sheet: option one Task: The purpose of the international movement</p> <p>Operations</p> <p>Drag and drop time series data to control animation horizontally; Select and select the time scale and country scale to display the relevant data; The timeline serves as a preview of the entire time period; Annotated to important events; The link chart shows the country's international person information and data for each Australian state.</p> <p>Detail:</p> <p>Tooltip circles display specific details; The timeline preview can be changed through filters based on different data categories. The nodes in different graphs should be consistent to smooth the transition. Text descriptions can be scrolled down, and visual updates will be triggered when the relevant text moves to the center of the view.</p>
<p>Scene 3 description</p>  <p>state</p>  <p>nation</p> <p>state</p>  <p>Filter Nation</p> <p>Filter Date</p> <p>Text box some feedback problems; Information links; Reference; A statement of the dataset</p>	
<p>Focus</p> <p>The storytelling narrative, scroll trigger provides an immersive fluid experience. The data is displayed in timelines, showing the history of international human mobility. It also provides a wealth of data for readers to read and a variety of options to choose from.</p>	