Relationship between QS Rankings, International Student Mobility and National Economy Indicators

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This project aims to explore how a country's QS ranking and economic indicators influence the flow of international students.

Key message: What factors are related to the number of international students coming into a country?

Target audience: Government agencies, educational institutions, and students from various countries.

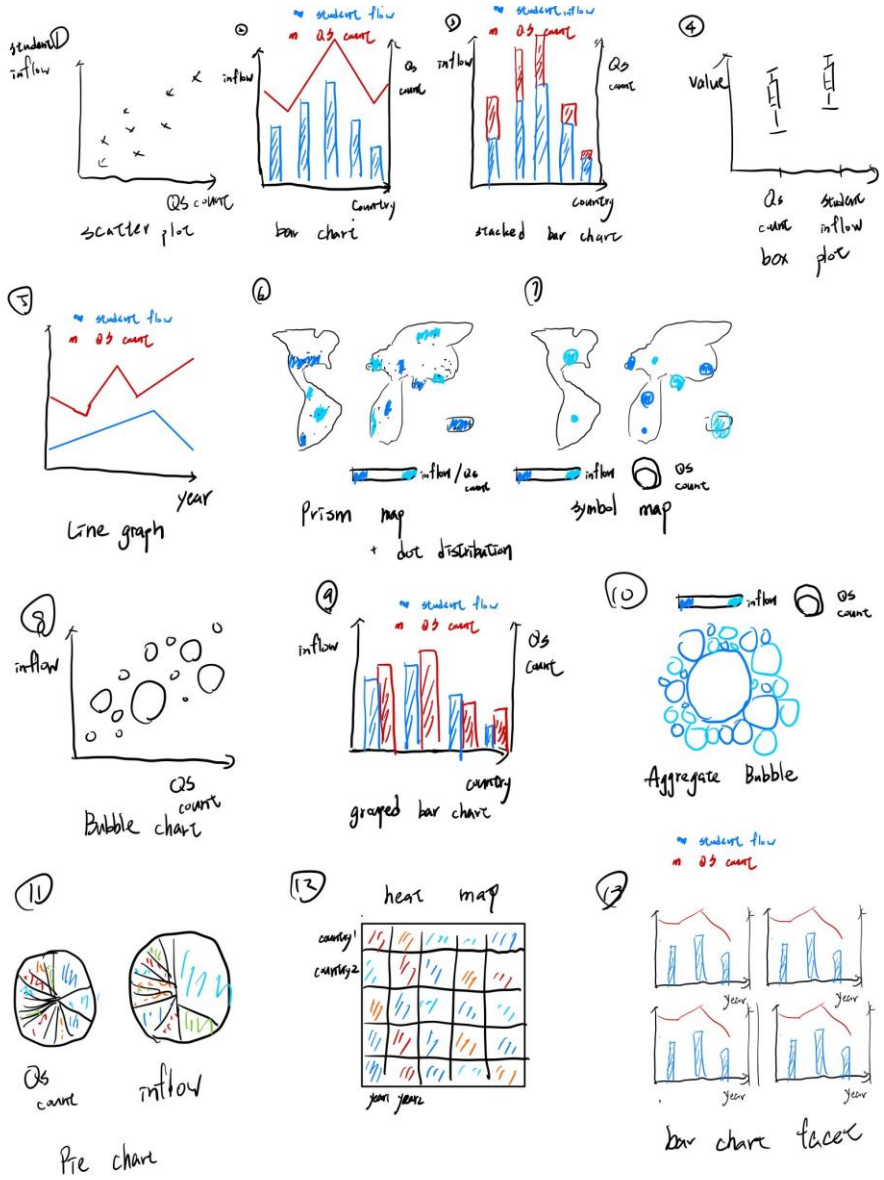
- High interactivity
- High readability
- Offers as many data selection options as possible to allow users to explore the data independently

Sheet 1

Brain Storming:

- 13 ideas
- 11 ideas after filtering
  Eliminated
  - Pie chart
  - Aggregate bubble chart
- 5 categories
  - 2D-distributed
  - Map
  - Bar chart
  - Heat map
  - Line graph

- Combined into 3 design
  - 2D-distributed graph + bar chart
  - Map + bar chart
  - Heat map + line graph



Sheet 2

Bubble Chart + Bar Chart

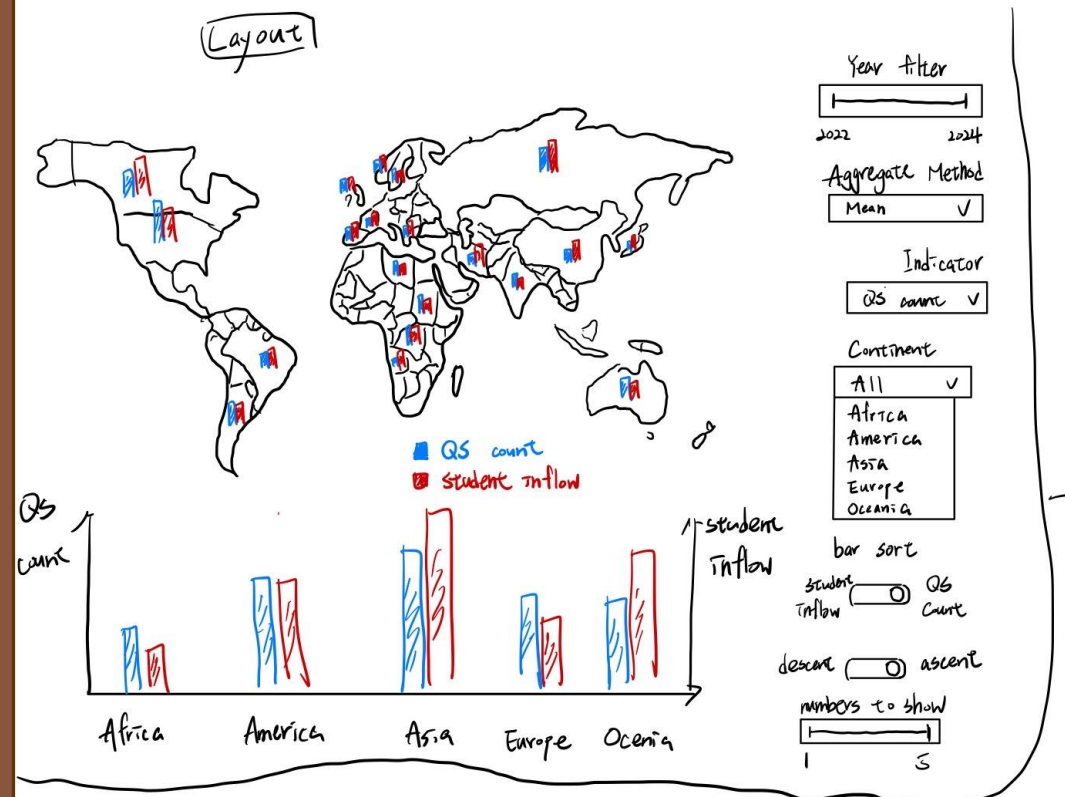
- Core
  - 2D position shows the relationship between QS/economy indicators and student flow
  - The bar chart shows the data changes over time
  - Provide high interactivity

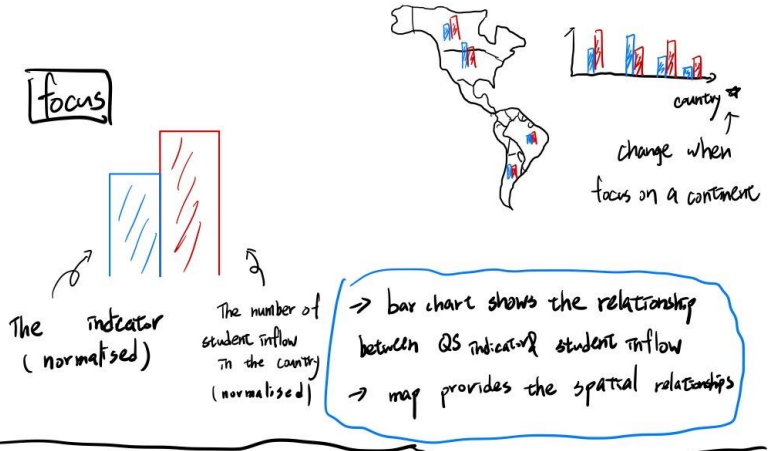
- Advantage
  - Clearly shows the relationship
  - Size option can provide additional information
- Disadvantage
  - Size may reduce readability, need to avoid it when implementing

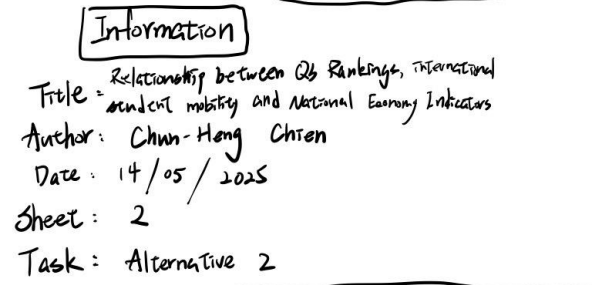
Sheet 3

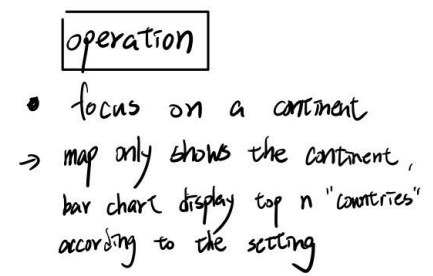
Symbol Map + bar chart

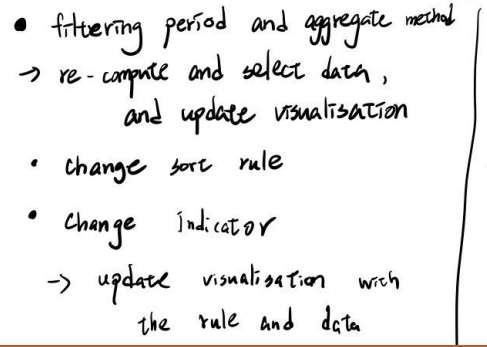
- Core
  - Geographical position shows the data distribution in the spatial domain
  - The bar chart shows the relationship of indicators and student flow
  - Users can zoom the map to view the area they concern
- Advantage
  - Maps provide additional spatial information
- Disadvantage
  - The symbol design might be misunderstanding
  - Not clear to show the relationship

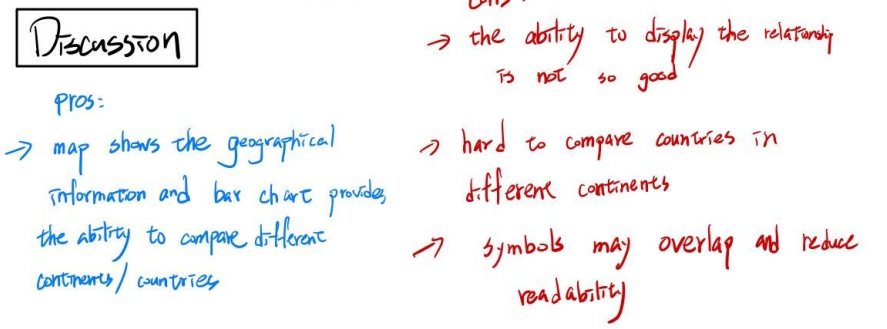








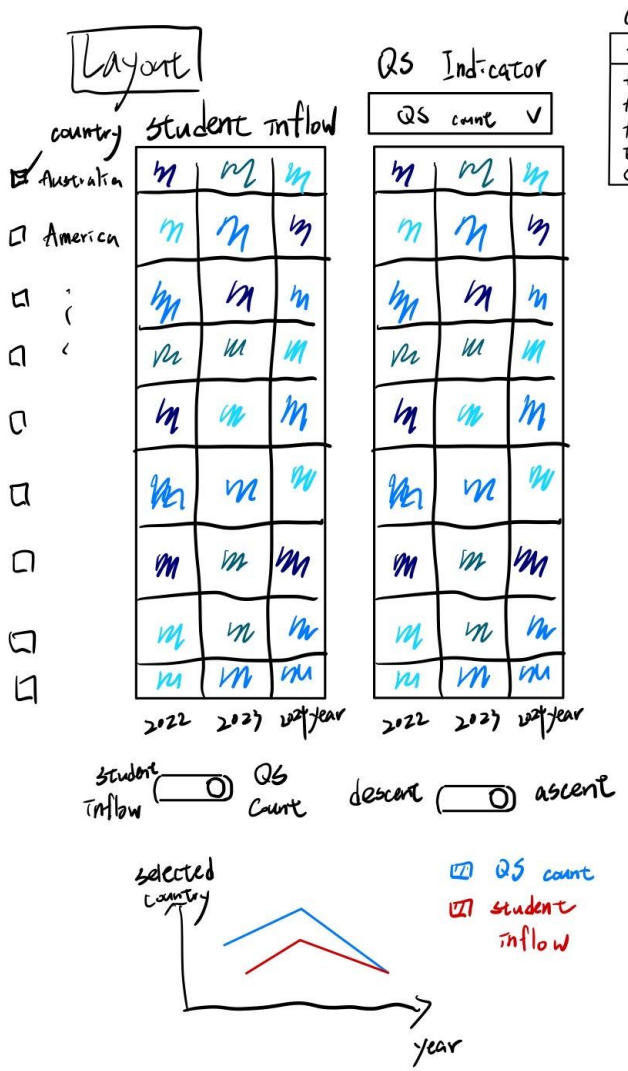




Sheet 4

Heat Map + line Graph

- Core
  - Heat map shows the data changes over time
  - Multiple heat map shows the relationship
  - The line graph shows the relationship and changes over time
- Advantage
  - Can show the most information without interaction
- Disadvantage
  - Hard to compare the pattern
  - Multiple indicators in a line graph need multiple y-axes, increasing the difficulty of implement



focus

→ shows the relationship by the pattern of 2 or more heat map
→ check box provides interactability in line graph
→ line graph provides ability to compare QS count and student inflow in one graph

operation

- check / uncheck check box
  → update line graph
- change sort rule
  → update matrix
- select continent
  → display / hide country according to the user action
- add new heat map
  → build and display new heat map
  → add new line in line graph

Discussion

pros:
→ shows the country, year, indicator and student inflow in one graph
→ line graph can help comparing the indicator and student inflow

cons:
→ 2 matrix may be not easy to compare the pattern
→ difficult to find specific country

Information

Title: Relationship between QS Rankings, International student mobility and National Economy Indicators
Author: Chun-Heng Chien
Date: 14/05/2025
Sheet: 2
Task: Alternative design 3

Sheet 5

Final design
Bubble Chart + Bar Chart

- Core
  - Bubble chart focuses on the relationship between student flow and selected indicator
  - Bar chart gives additional information in time domain
- Operation
  - Aggregate method of bubbles
  - Continents
  - X-axis and size value
  - Year filter
  - Bubble selection (detail)
- Detail
  - QS, economy and student flow dataset
  - Implement in D3
  - ~25 hours to build