1. Ideas

Map

- Colour saturation for number of competitors

Line chart
Country ranking over time

China
USA
South Korea

Heatmap
Country

- Saturation for score

Stacked Area chart
Total score over time

← P3
← P2
← P1

Scatterplot
Ranking vs gender

Number of contestants

Stacked Bar chart
Gender distribution over time

□ = Male
□ = female

Radar chart
Score per problem

P1
P5
P2
P4
P3
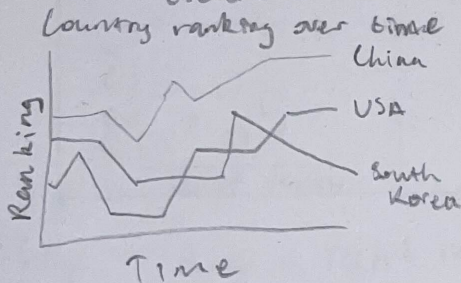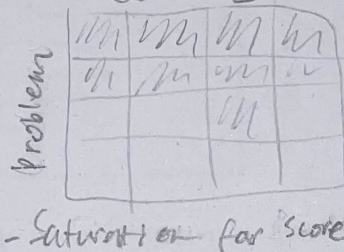
2. Filter
Stacked Area
Heatmap
- Same information
- Stacked Area may be harder to see later problems
- Heatmap distinctly shows each problem, easier to compare.

3. Categorize
Line chart and Scatterplot
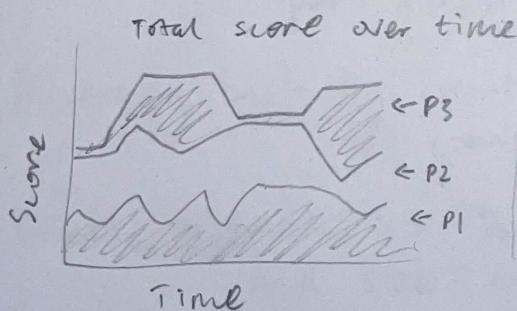- Both show ranking

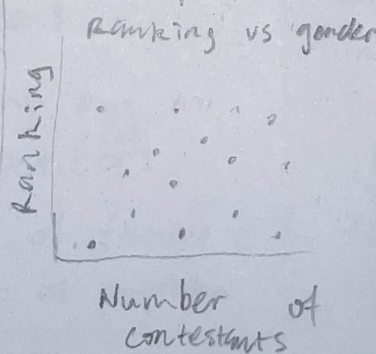# 4. Combine and Refine
Stacked Bar
- Make diverging bar?
Scatterplot → Bubble
- x = % of female competitors
- y = Avg rank
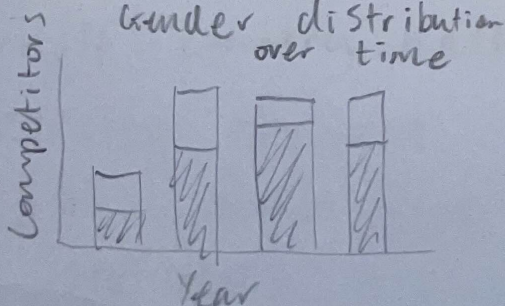- Bubble size = no of participants
- Shows how gender affects rank
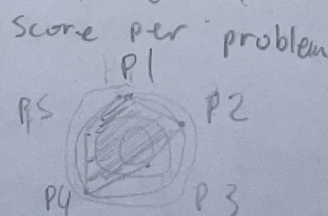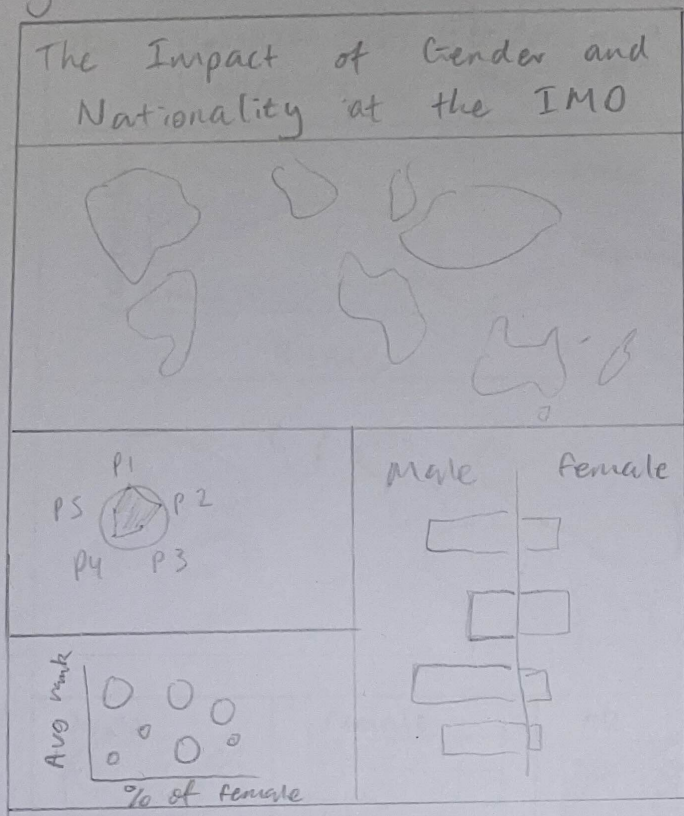
5. Questions
- What other ways are there to show difference in gender?
- How to show both country and year in one idiom?

Layout

The Impact of Gender and Nationality at the IMO

Map - Avg ranking

Radar - Top countries score per questions

Diverging bar - By country avg no of competitors

Bubble - Rank vs % of female and size = no of competitors

Focus

- Half country, half gender
- Give general overview of gender and nationality statistics

Operations

- Use consistent colour scheme between gender
- Filters to filter out top countries

Discussion

Pros

- Simple, easy to understand
- Shows variety of analysis

Cons

- Analysis could be deeper
- Map data is not impactful
- Idioms should have clear focus on either gender or nationality, ideally both.
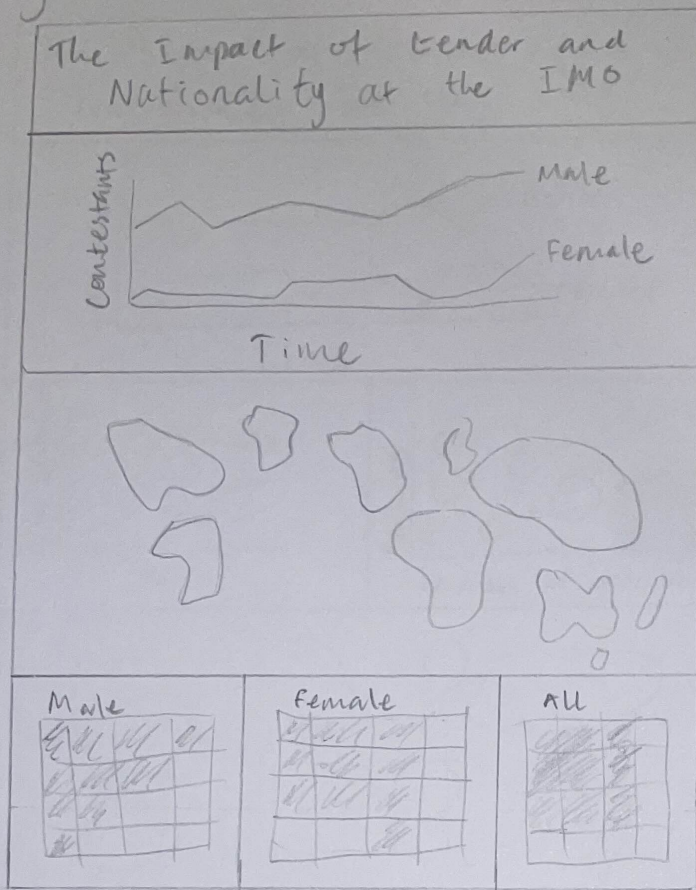
Title: The Impact of Gender and Nationality at the IMO
Author: Brandon Truong
Date: 02/10/25
Sheet: 2
Description: Comparison between gender and nationality at the IMO

Layout

| The Impact of Gender and Nationality at the IMO |

Line chart - No of male/female over time

Map - % of female competitors

Heatmaps - Country vs problem

Focus

- Story telling flow
1. Set context for number of competitors
2. Set context for nationality
3. Compare performance of both gender and nationality

Operations

- Annotate line graph for significant moments in time
- Consistent colour scheme between gender

Discussion

Pros

- Flows naturally
- Good balance of simple and complex idioms

Cons

- Not enough different idioms
- Usage of space could be better, line chart can be smaller, another idiom next to it?

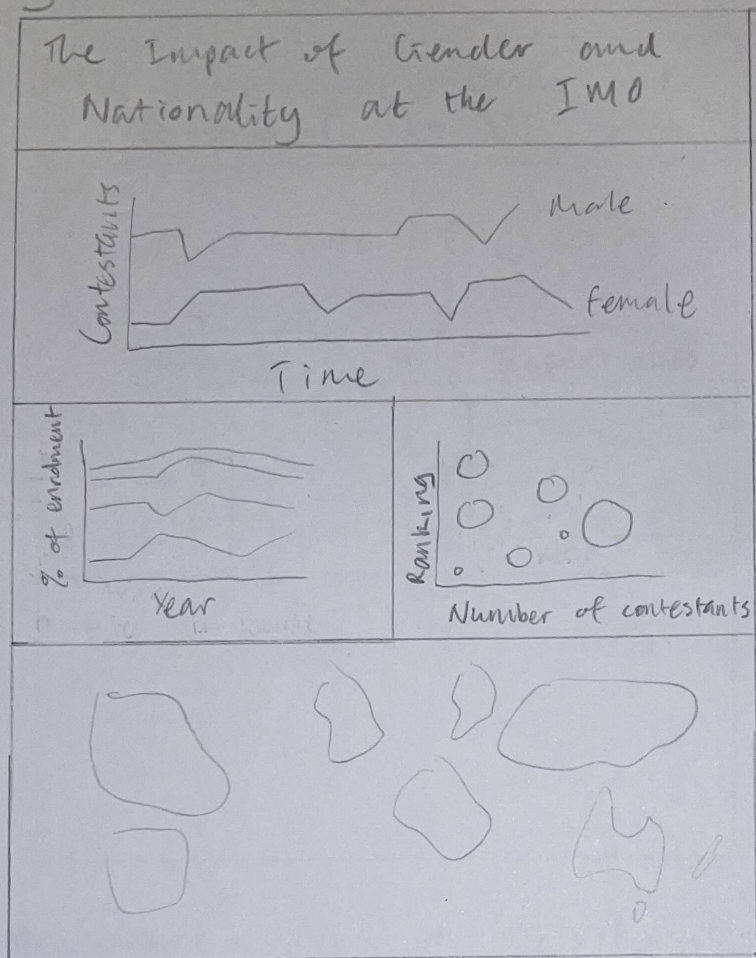Title: The Impact of Gender and Nationality at the IMO
Author: Brandon Truong
Date: 02/10/25
Sheet: 3
Description: Comparison between gender and nationality at the IMO

Layout

The Impact of Gender and Nationality at the IMO

Line chart — No of male/female contestants

Stacked Area — % of females enrolled in STEM

Bubble chart — Ranking vs gender
Bubble size = no of participants

Map — Percentage of female competitors

focus
- focus more on trends over time

Operations
- Slider for map year overtime
- Colour scheme for genders

Discussion
Pros
- Shows trends better
- Balances information

Cons
- Could have another idiom next to line chart

Title: The Impact of Gender and Nationality at the IMO
Author: Brandon Truong
Date: 08/10/25
Sheet: 4
Description: Comparison between gender and nationality at the IMO over time

Layout

The Impact of Gender and Nationality at the IMO
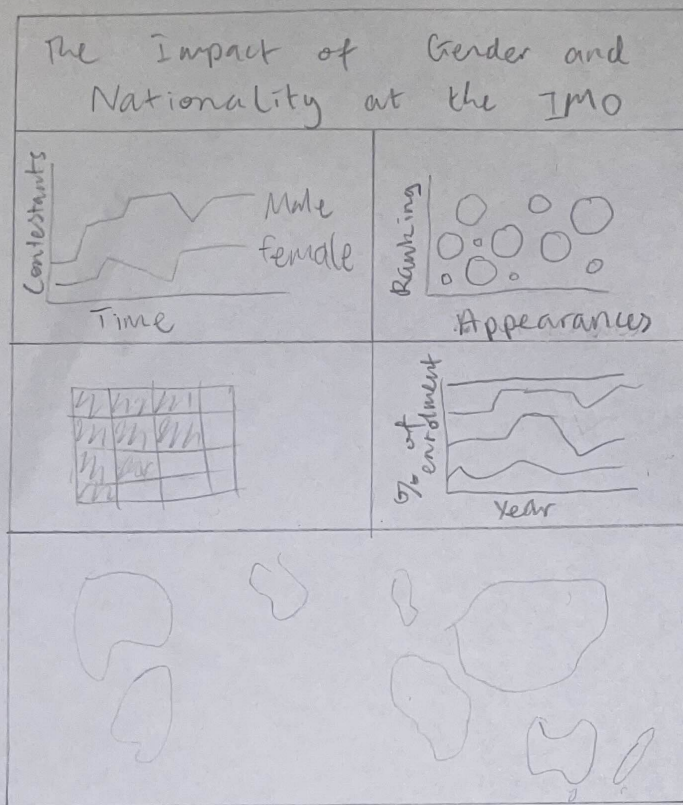
Line chart - No of male/female overtime

Bubble chart - Ranking vs Appearances
Bubble size = no of participants

Heatmap - Country vs problem

Stacked Area - % of females enrolled in STEM

Map - % of female competitors

focus
- Interactivity on multiple charts
- Nationality AND Gender

Operations
- filter by country for heatmap
- Use hue for gender
- Slider on map for years

Discussion
- Join data sets via country name
- Ensure data is up to date
- Ensure enough data for graphs especially for maps

Title: The Impact of Gender and

Author: Brandon Truong
Date: 09/10/25
Sheet: 5
Description: Comparison between gender and nationality at the IMO