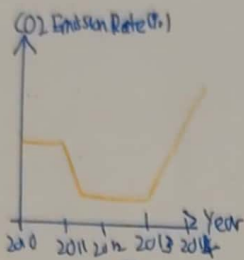
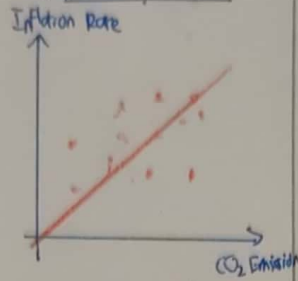


1) IDEAS

1) Line CHARTS

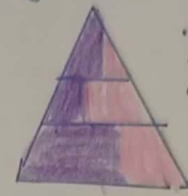


2) Scatter Plot:



2) Filter

Pyramid chart

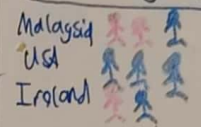


- Inflation
- unemployment
- population
- CO₂ emission

Reasons:

- Complexity: Mirrored structure can confuse viewers and make comparisons harder
- limited use: More suited for population data, not economic/environmental variables
- visual clutter: can appear cluttered for continuous data across regions

Grouped Symbol



- visual overload: using multiple symbols for different variables can overwhelm viewers

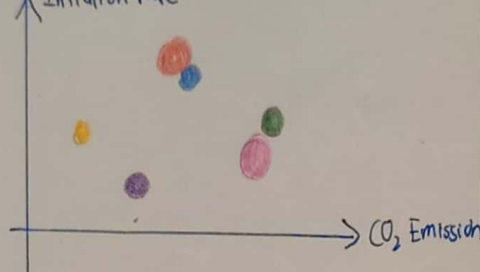
- Lack of precision: Symbols may not convey exact data values as effectively

- clutter with dense data: comparing many regions could make this chart cluttered

3) Bar Chart



4) Bubble Chart



5) Isotype

Malaysia

USA

Ireland

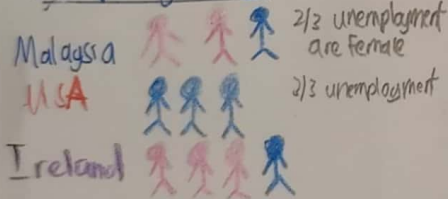
1 figure = 1 tonne CO₂ emissions

6) Stacked Column Chart

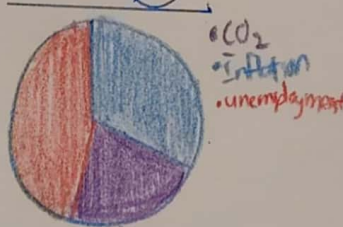


Inflation

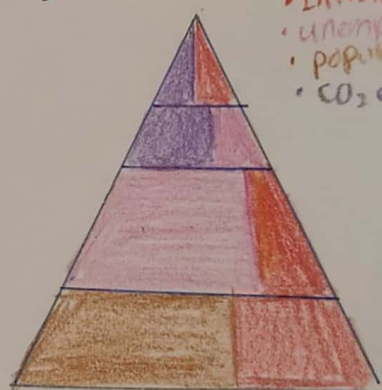
6) Grouped Symbol Chart



7) Pie Chart



8) Pyramid Chart



- Inflation
- unemployment
- population
- CO₂ emission

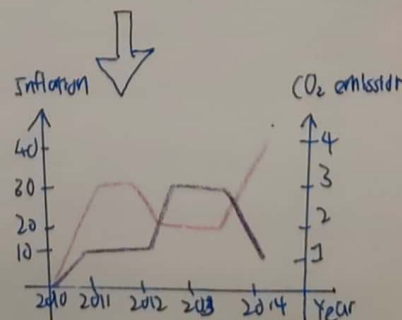
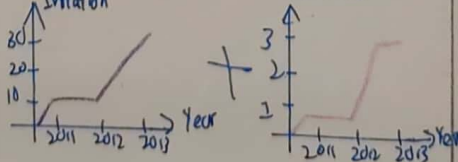
USA statistics

3) Categorize

- 1) Establishing Inflation Trends Over Time
- 2) Introducing Environmental Impact - CO₂ emission
- 3) Exploring correlations between inflation and CO₂ emissions
- 4) Examining Unemployment as a Separate Economic Factor
- 5) Unifying the story - Bubble chart showing all variables
- 6) Detailed comparative insights (Pyramid, stacked, Pie charts)

4) Combine & Refine

- Combine line chart for Inflation and CO₂ into Dual Axis



5) Questions

- 1) Can this visualization help policy makers balance economic growth with environmental sustainability?
- 2) Does it show clear links between CO₂ emissions, unemployment and inflation that could guide policy decisions?
- 3) Can this visualization help policy makers create region-specific policies by highlighting trade-offs between inflation and unemployment?

Layout



CO₂ emission
Unemployment

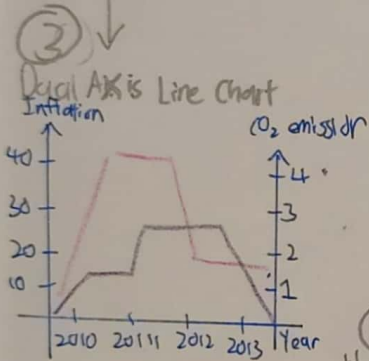
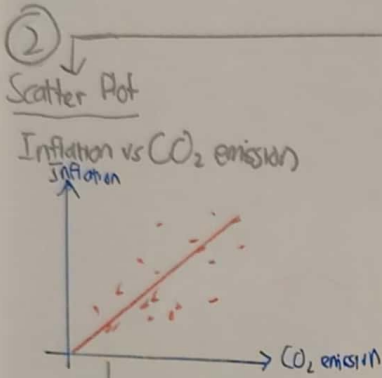
Title: Flow Chart

Author: Ethan Yang

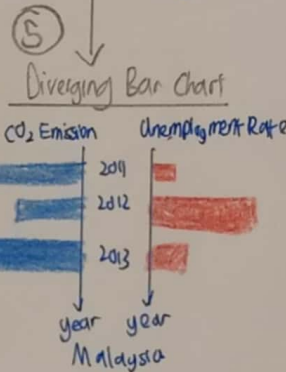
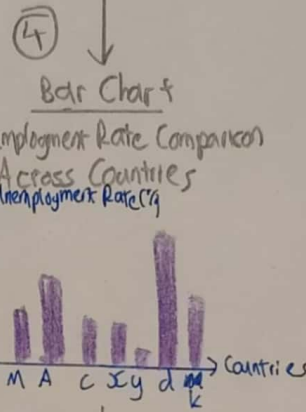
Date: 10/10/2024

Sheet: 2

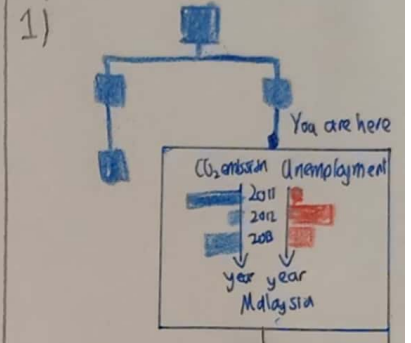
Task: Design a Flowchart like poster



⑥ Heat map Choropleth



Operations

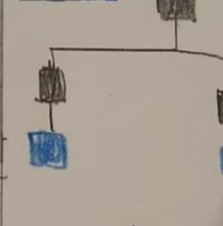


- Blue line indicates flow chart progression with a mini dot tracing the path chart saying "you are here"

- When clicked the window will enlarge

2) Dropdown menu

Unemployment	CO ₂	Inflation
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>



Have a drop down menu which shows all the variables that are included for this visualization when selected ~~not~~ would gray out visualisations that do not include the variable but instead highlight those that are included

Focus

- ~~Sanburst~~ Sanburst Chart: Provides an overview of inflation, CO₂ emissions, and unemployment across regions, allowing easy drill-downs
 - Scatter Plot: Examines the correlation between Inflation and CO₂ emissions across regions
 - Bar Chart: Compares unemployment rates across countries, highlighting trends and disparities
 - Heatmap: Identifies regional hotspots by integrating inflation, CO₂ emissions, and unemployment
- *To visualize logical progression of insights from broad context (Inflation trends) to specific outcomes (Unemployment by Country)

Discussion

Advantages

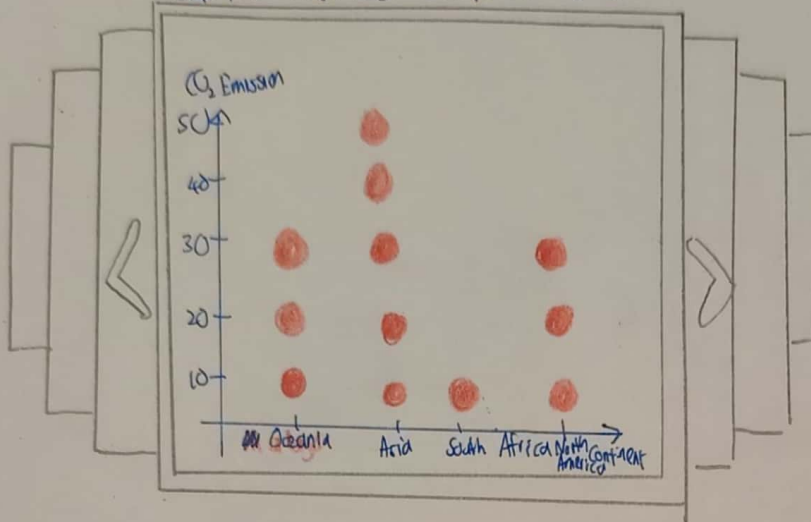
- 1) Clear Structure:
 - Benefit: Sanburst chart gives a high-level overview, guiding viewers from general to detailed insights
- 2) Logical Flow
 - Flowchart naturally moves from the root to deeper insights which maintains a consistent narrative and simplifies exploration

Disadvantages

- 1) Complexity Overload
 - Multiple charts can overwhelm less familiar viewers as too many layers can confuse the overall message
- 2) Time intensive
 - Requires time to navigate through steps like moving from Sanburst to ~~scatter~~ scatterplot
- 3) Space Constraints
 - Flowchart layout requires lots of space, charts might become cramped on a poster
 - Reduce readability if visualisations are too ~~over~~ compressed

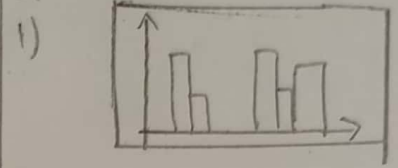
Layout

Slide 4: Dot Plot - CO₂ Emissions per capita by Region



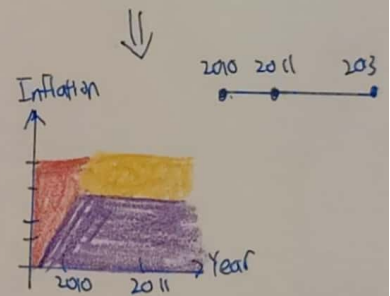
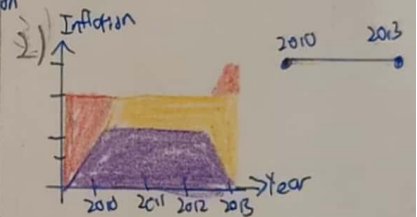
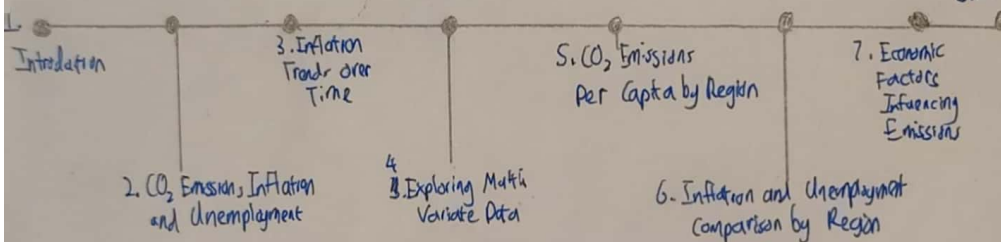
Title: Presentation slides
Author: Ethan Yong
Date: 10/10/2024
Sheet: 3
Task: Design presentation slides

Operations

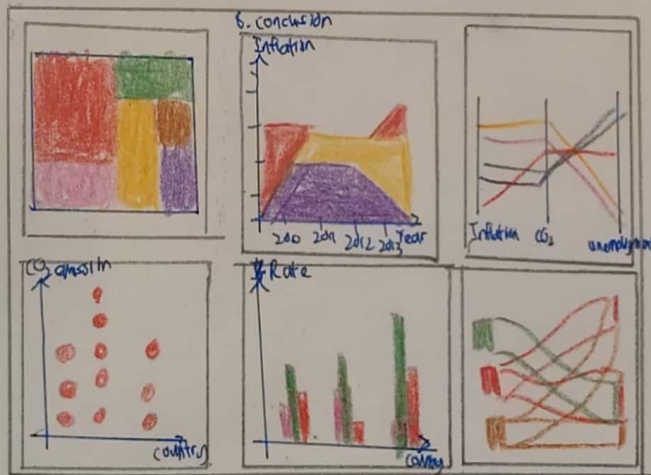


1) Buttons for users to hover to see different previews of the slides, click to teleport to the slides

8. conclusion



• Horizontal scroll so users can slide over the years to see how the data changes over time for each specific year



Focus

- 1) Treemap: Provides an overview of all variables at once
- 2) Stacked Area Chart: Adds time context to how the variables have evolved.
- 3) Parallel Coordinates Plot: Dives into multivariate comparisons across regions.
- 4) Dot Plot: Focuses on CO₂ emissions per capita for detailed environmental analysis
- 5) Grouped Bar Chart: Brigs back economic indicators for clear region-wise comparison
- 6) Sankey Diagram: Condenses by tying all variables together in a flow visualisation

Discussion

Advantages

- 1) Logical Flow and Progression
 - Slides guide the audience step by step, building understanding gradually
- 2) Focused Attention:
 - One visual per slide keeps the audience focused on key points
- 3) Flexibility:
 - Benefit: Different styles, transitions, and customization options keep the presentation engaging
- 4) Emphasis on key insights:
 - Easy to highlight and reinforce the main takeaways

Disadvantages

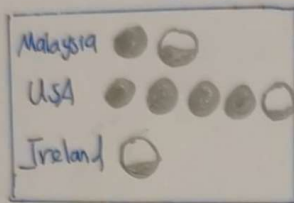
- 1) Big Picture Loss
 - Viewers can lose sight of the overall relationships between variables
- 2) Limited Depth
 - Each slide focuses on one point, restricting deeper analysis
- 3) Disruptive Transitions
 - Moving between slides can break the flow for some viewers
- 4) Risk of Disengagement
 - Too many slides or repetitive content may lose the audience's interest.

Layout

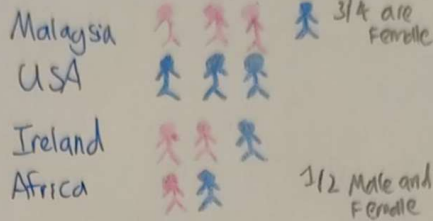
Visualizing Global Economic and Environmental Dynamics: CO₂ Emissions, Inflation, and Unemployment Across Regions

Title: Partitioned Poster
Author: Ethan Yang
Date: 10/10/2024
Sheet: 4
Task: Design visualization based & Partitioned Poster

CO₂ Emissions by region



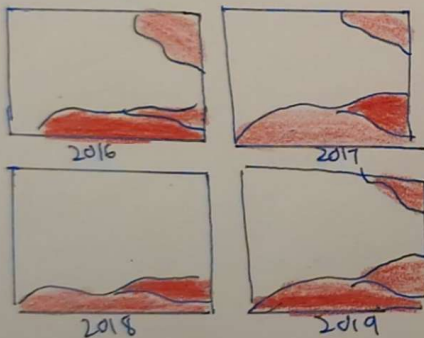
Inflation Rate and Unemployment Rate



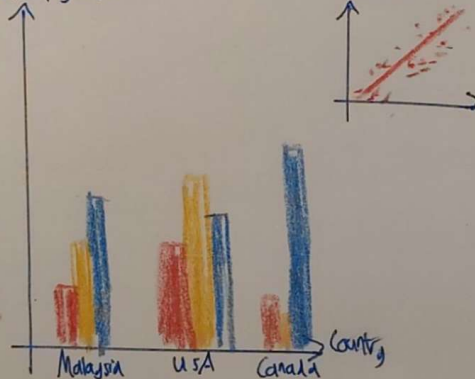
World Map - CO₂ Emissions Across Countries



Multiple Chart World Map



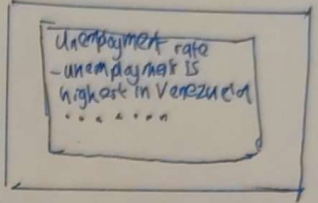

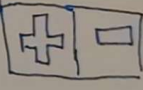
Unemployment Rate



Inflation Rate



Operations

- 1) 
- When a user clicks on a section it could expand to show more detailed information or data.
- 2) 
Question
Is there a higher population of Male or Female unemployed in USA?
A. Male C. Both are same
B. Female
- Embedding quizzes or polls within the poster to test their understanding or gather feedback on the visualisation
- 3)  zoom 100%
- Implement zoom functionality on specific parts of the poster

Focus

- 1) CO₂ Emissions by region: introduces the environmental impact with an intuitive isotype chart to show the scale & emissions across different regions
- 2) Economic Comparison: Offers a direct comparison between two economic variables (inflation and unemployment) across regions to show disparities and economic conditions
- 3) Global CO₂ Distribution: gives a global perspective on emissions, showing which countries contribute the most to environmental degradation

Discussion

Advantages

- 1) Clear Segmentation:
- Each section focuses on a different variable, making the data easy to follow
- 2) Visual Diversity
- Varied charts keep the poster engaging and help present different data types effectively
- 3) Holistic View
- Combines global overviews with detailed breakdowns, providing a comprehensive analysis

Disadvantages

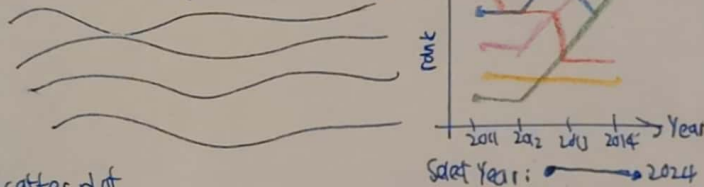
- 1) Space Constraints
- Limited space may reduce the detail or clarity of complex visualisations
- 2) Information Overload
- Too many variables can overwhelm viewers and make it harder to focus.

Global Analysis of Inflation, Unemployment, and CO₂ Emissions: Understanding Interdependencies

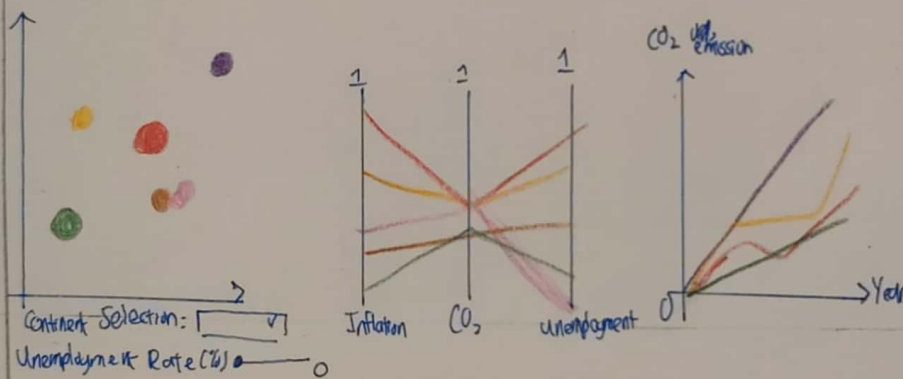
Unemployment Index by Country (2020-2024)



Inflation Trends Among the Top 10 Countries



Scatter plot



Title: Final Design Sheet

Author: Ethan Yong

Date: 10/10/2024

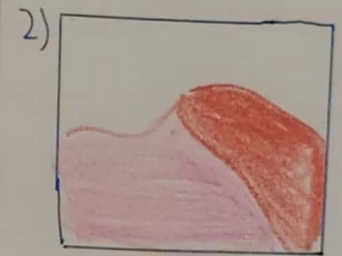
Sheet: 5

Task: Final Implementation Design

Operations

1)

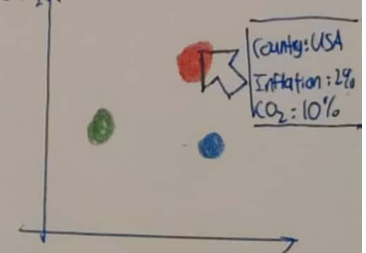
- year slider to view seasonal data



zoom:

- zoom slider to view states in countries

3) Scatter plot



- Tooltips to allow users to gain insightful data such as country name, inflation rate and CO₂ emission rate

Focus

- Global Analysis of CO₂ Emissions, Inflation, and Unemployment over time
- Highlighting regional disparities in economic and environmental factors
- Understanding the interaction between inflation and unemployment across countries
- Showing the distribution of CO₂ emissions across different regions
- Identifying key trends and potential areas for policy intervention

Discussion

Advantages

- 1) Clarity:
 - Focused sections make each visual easy to understand without overcrowding
- 2) Variety:
 - Different charts keep the poster visually engaging and diverse
- 3) Detailed Comparisons:
 - Each visual allows for in-depth analysis of specific variables

Disadvantages

- 1) Fragmentation:
 - Harder to see the full picture or connect variables across sections
- 2) Visual Overload: Too many charts could overwhelm viewers

Detail

- Use R for data cleaning
- Estimated Time: 8 days
- Ensure to use large layout for clarity, while maintaining dimension if it were to be viewed from mobile.