



# COS30045

## Project Reflection

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Ng Kang Jen  
105002263

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## Introduction

The project we started on data visualization offered an interesting examination of suicide rates in Asia compared to Europe. We strived to develop a visual tool that is user-friendly and easy to access, which would highlight current trends, offer insights for policymakers, support academic research, and improve public awareness. We successfully transformed intricate datasets containing thousands of data points into captivating, interactive visual displays. The project gave us a valuable chance to analyse the suicide rates in Asia and Europe and explore the potential causes. This procedure enhanced our technical abilities in making visualizations and also emphasized the diverse aspects of suicide worldwide and the reasons behind it.

## Reflection For The Team:

### What We Understand About Data Visualization Concepts

As we advanced in this project, we delved into the hands-on use of several data visualization techniques. We utilized appropriate visual tools such as choropleth maps, line charts, and grouped bar charts to showcase the dynamic and complex element contained in our data. Our approach in designing focuses on fostering user engagement, urging individuals to explore trends, analyse data, and uncover valuable insights on their own. Applying these techniques thoughtfully helped us convert intricate data into simple graphics, significantly improving stakeholders' comprehension of the suicide rate trends in Asia compared to Europe over time.

### Applying Data Programming Concepts

The strict implementation of data programming concepts played a crucial role in our visualization strategy. Implementing these principles was vital in streamlining, standardizing, and automating our processes, leading to a substantial enhancement in the project's overall productivity. We employed a strong tool, Python, for certain datasets to ensure the accuracy and integrity of the data. Giving importance to top-notch data was crucial for creating trustworthy visual representations, thus upholding the validity of our findings and analyses.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
1	RegionCode	RegionName	CountryCode	CountryName	Year	Sex	SuicideRate	CauseSpecificRate	StandardizedDeathRate	DeathRate	Population	GDP	GDPPerCapita	GNI	GNIPerCapita	InflationRate	Employment	PopulationRatio	
2	EU	Europe	ALB	Albania	1992	Male	33	0.331959	2.335802	2.076386	3247039	6.52E+08	200.8522	9.06E+08	1740	226.0054	45.315		
3	EU	Europe	ALB	Albania	1992	Female	14	0.19186	0.86642	0.874563	3247039	6.52E+08	200.8522	9.06E+08	1740	226.0054	45.315		
4	EU	Europe	ALB	Albania	1993	Male	46	0.477724	3.330938	2.937233	3227287	1.19E+09	367.2792	1.02E+09	2110	85.00475	47.798		
5	EU	Europe	ALB	Albania	1993	Female	27	0.385164	1.755077	1.686025	3227287	1.19E+09	367.2792	1.02E+09	2110	85.00475	47.798		
6	EU	Europe	ALB	Albania	1994	Male	37	0.419406	2.678796	2.332619	3207536	1.88E+09	586.4161	1.22E+09	2300	22.56505	50.086		
7	EU	Europe	ALB	Albania	1994	Female	15	0.243427	0.988147	0.928333	3207536	1.88E+09	586.4161	1.22E+09	2300	22.56505	50.086		
8	EU	Europe	ALB	Albania	1995	Male	57	0.612113	3.659538	3.545217	3187784	2.39E+09	750.6044	2.04E+09	2710	7.793219	53.186		
9	EU	Europe	ALB	Albania	1995	Female	34	0.503928	2.11338	2.071781	3187784	2.39E+09	750.6044	2.04E+09	2710	7.793219	53.186		
10	EU	Europe	ALB	Albania	1996	Male	53	0.539825	3.6563	3.263547	3168033	3.2E+09	1009.977	2.82E+09	3050	12.72548	53.039		
11	EU	Europe	ALB	Albania	1996	Female	39	0.562852	2.431447	2.350814	3168033	3.2E+09	1009.977	2.82E+09	3050	12.72548	53.039		
12	EU	Europe	ALB	Albania	1997	Male	124	1.254934	8.196264	7.612499	3148281	2.26E+09	717.38	2.53E+09	2780	33.18027	51.873		
13	EU	Europe	ALB	Albania	1997	Female	52	0.825266	3.062683	3.067123	3148281	2.26E+09	717.38	2.53E+09	2780	33.18027	51.873		
14	EU	Europe	ALB	Albania	1998	Male	104	1.077051	6.651705	6.304177	3128530	2.55E+09	813.7894	2.7E+09	3110	20.64286	49.373		
15	EU	Europe	ALB	Albania	1998	Female	61	0.894428	3.434274	3.578342	3128530	2.55E+09	813.7894	2.7E+09	3110	20.64286	49.373		
16	EU	Europe	ALB	Albania	1999	Male	101	1.136492	6.13762	6.077016	3108778	3.21E+09	1033.243	2.96E+09	3550	0.389438	48.201		
17	EU	Europe	ALB	Albania	1999	Female	53	0.826446	2.883407	3.09688	3108778	3.21E+09	1033.243	2.96E+09	3550	0.389438	48.201		
18	EU	Europe	ALB	Albania	2000	Male	39	0.410829	2.650325	2.449749	3089027	3.48E+09	1126.683	3.41E+09	3980	0.050018	48.925		
19	EU	Europe	ALB	Albania	2000	Female	18	0.260191	1.098263	1.182654	3089027	3.48E+09	1126.683	3.41E+09	3980	0.050018	48.925		
20	EU	Europe	ALB	Albania	2001	Male	84	0.963745	5.793439	5.488607	3060173	3.92E+09	1281.66	3.91E+09	4440	3.107588	48.76		
21	EU	Europe	ALB	Albania	2001	Female	35	0.544578	2.30295	2.274452	3060173	3.92E+09	1281.66	3.91E+09	4440	3.107588	48.76		
22	EU	Europe	ALB	Albania	2002	Male	91	0.997479	6.41575	5.917922	3051010	4.35E+09	1425.124	4.18E+09	4780	7.770526	48.943		
23	EU	Europe	ALB	Albania	2002	Female	42	0.589474	2.770856	2.715901	3051010	4.35E+09	1425.124	4.18E+09	4780	7.770526	48.943		
24	EU	Europe	ALB	Albania	2003	Male	73	0.729125	4.784024	4.719665	3039616	5.61E+09	1846.12	5.01E+09	5130	0.484003	48.608		
25	EU	Europe	ALB	Albania	2003	Female	51	0.641267	3.305826	3.277542	3039616	5.61E+09	1846.12	5.01E+09	5130	0.484003	48.608		

**FIGURE 1: The uncleaned version of the dataset that I used for comparing high, upper-middle, lower-middle, and low-income countries between Asia and Europe**

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
1	me	CountryName	Year	Sex	SuicideRate	DeathRate	IncomeLevel												
2	Europe	Albania	1992	Male	33	2.076386	Low												
3	Europe	Albania	1992	Female	14	0.874563	Low												
4	Europe	Albania	1993	Male	46	2.937233	Low												
5	Europe	Albania	1993	Female	27	1.686025	Low												
6	Europe	Albania	1994	Male	37	2.332619	Low												
7	Europe	Albania	1994	Female	15	0.928333	Low												
8	Europe	Albania	1995	Male	57	3.545217	Low												
9	Europe	Albania	1995	Female	34	2.071781	Low												
10	Europe	Albania	1996	Male	53	3.263547	Low												
11	Europe	Albania	1996	Female	39	2.350814	Low												
12	Europe	Albania	1997	Male	124	7.612499	Low												
13	Europe	Albania	1997	Female	52	3.067123	Low												
14	Europe	Albania	1998	Male	104	6.304177	Low												
15	Europe	Albania	1998	Female	61	3.578342	Low												
16	Europe	Albania	1999	Male	101	6.077016	Lower-Middle												
17	Europe	Albania	1999	Female	53	3.09688	Lower-Middle												
18	Europe	Albania	2000	Male	39	2.449749	Lower-Middle												
19	Europe	Albania	2000	Female	18	1.182654	Lower-Middle												
20	Europe	Albania	2001	Male	84	5.488607	Lower-Middle												
21	Europe	Albania	2001	Female	35	2.274452	Lower-Middle												
22	Europe	Albania	2002	Male	91	5.917922	Lower-Middle												
23	Europe	Albania	2002	Female	42	2.715901	Lower-Middle												
24	Europe	Albania	2003	Male	73	4.719665	Lower-Middle												
25	Europe	Albania	2003	Female	51	3.277542	Lower-Middle												

**FIGURE 2: The cleaned version of FIGURE 1**

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A1 country

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
1	country	year	sex	age	suicides_n	population	suicides/1	country-ye	HDI for yea	gdp_for_ye	gdp_per_c	generation							
2	Albania	1987	male	15-24 year	21	312900	6.71	Albania1987	#####	796	Generation X								
3	Albania	1987	male	35-54 year	16	308000	5.19	Albania1987	#####	796	Silent								
4	Albania	1987	female	15-24 year	14	289700	4.83	Albania1987	#####	796	Generation X								
5	Albania	1987	male	75+ years	1	21800	4.59	Albania1987	#####	796	G.I. Generation								
6	Albania	1987	male	25-34 year	9	274300	3.28	Albania1987	#####	796	Boomers								
7	Albania	1987	female	75+ years	1	35600	2.81	Albania1987	#####	796	G.I. Generation								
8	Albania	1987	female	35-54 year	6	278800	2.15	Albania1987	#####	796	Silent								
9	Albania	1987	female	25-34 year	4	257200	1.56	Albania1987	#####	796	Boomers								
10	Albania	1987	male	55-74 year	1	137500	0.73	Albania1987	#####	796	G.I. Generation								
11	Albania	1987	female	5-14 years	0	311000	0	Albania1987	#####	796	Generation X								
12	Albania	1987	female	55-74 year	0	144600	0	Albania1987	#####	796	G.I. Generation								
13	Albania	1987	male	5-14 years	0	338200	0	Albania1987	#####	796	Generation X								
14	Albania	1988	female	75+ years	2	36400	5.49	Albania1988	#####	769	G.I. Generation								
15	Albania	1988	male	15-24 year	17	319200	5.33	Albania1988	#####	769	Generation X								
16	Albania	1988	male	75+ years	1	22300	4.48	Albania1988	#####	769	G.I. Generation								
17	Albania	1988	male	35-54 year	14	314100	4.46	Albania1988	#####	769	Silent								
18	Albania	1988	male	55-74 year	4	140200	2.85	Albania1988	#####	769	G.I. Generation								
19	Albania	1988	female	15-24 year	8	295600	2.71	Albania1988	#####	769	Generation X								
20	Albania	1988	female	55-74 year	3	147500	2.03	Albania1988	#####	769	G.I. Generation								
21	Albania	1988	female	25-34 year	5	262400	1.91	Albania1988	#####	769	Boomers								
22	Albania	1988	male	25-34 year	5	279900	1.79	Albania1988	#####	769	Boomers								
23	Albania	1988	female	35-54 year	4	284500	1.41	Albania1988	#####	769	Silent								
24	Albania	1988	female	5-14 years	0	317200	0	Albania1988	#####	769	Generation X								
25	Albania	1988	male	5-14 years	0	345000	0	Albania1988	#####	769	Generation X								

**FIGURE 3: The uncleaned version of the dataset that I used to compare suicide rate between generations in Asia vs Europe**

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Clipboard Font Alignment Number Styles Cells Editing Add-ins Analyze Data

A1 region

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
1	region	generation	sex	year	suicides_n	population	suicides_per_100k												
2	Asia	Boomers	female	1985	1543	14413095	10.70554												
3	Asia	Boomers	female	1986	1577	14334941	11.00109												
4	Asia	Boomers	female	1987	1108	13298286	8.331901												
5	Asia	Boomers	female	1988	776	8655300	8.965605												
6	Asia	Boomers	female	1989	798	8651100	9.22426												
7	Asia	Boomers	female	1990	1339	18536321	7.223656												
8	Asia	Boomers	female	1991	3868	49898304	7.751766												
9	Asia	Boomers	female	1992	3976	60899037	6.528839												
10	Asia	Boomers	female	1993	3365	48697588	6.909993												
11	Asia	Boomers	female	1994	3534	50669550	6.974603												
12	Asia	Boomers	female	1995	2721	32490325	8.374801												
13	Asia	Boomers	female	1996	2886	34863699	8.277951												
14	Asia	Boomers	female	1997	3135	41989739	7.46611												
15	Asia	Boomers	female	1998	3435	42800538	8.0256												
16	Asia	Boomers	female	1999	3454	43797287	7.886333												
17	Asia	Boomers	female	2000	3481	45084122	7.721122												
18	Asia	Boomers	female	2001	2898	36607661	7.916376												
19	Asia	Boomers	female	2002	3355	45145326	7.431556												
20	Asia	Boomers	female	2003	3335	46178426	7.221987												
21	Asia	Boomers	female	2004	2887	35878072	8.046698												
22	Asia	Boomers	female	2005	2888	34917899	8.27083												
23	Asia	Boomers	female	2006	3148	44312545	7.104083												
24	Asia	Boomers	female	2007	3105	42712990	7.269451												
25	Asia	Boomers	female	2008	3060	41365693	7.397434												

**FIGURE 4: The cleaned dataset of FIGURE 3**

### Effective Visual Communication

The project emphasized the essential importance of visual communication in effectively displaying data. We used colour coding, interactive elements, labels for axis, and titles to change complicated data into easy-to-understand visualizations. Following these design principles diligently, greatly improved the user's comprehension of trends and patterns of suicide, thereby amplifying the effect of the data that we discovered.

## COMMUNICATION

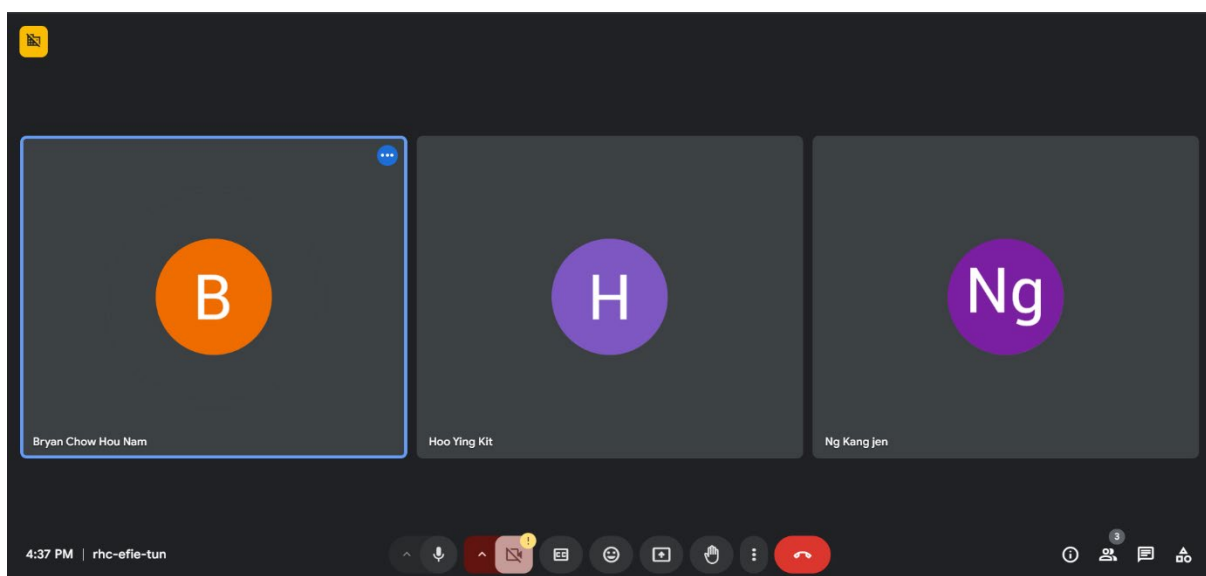
### Effective Team Communication

Establishing open and effective team communication was a key factor in the success of our project. We had daily meetings that took place both face-to-face and virtually, lasting the entire day. These meetings allowed us to cooperate on different parts of the project, generate ideas, solve problems, and stay informed on the status of our tasks. The project highlighted the great importance of effective communication among team members, enhancing our capacity to work together, encouraging shared understanding, and building a feeling of unity among all of us.

The consistency and profoundness of how we communicate enabled all of us to exchange and gain knowledge from each other's expertise, enhancing the current knowledge and skills that we have. The ongoing sharing of ideas, feedback, and knowledge played a key role in guiding the course of our project and upholding excellent work standards.

### Adjusting Ourselves To Different Ways of Communication

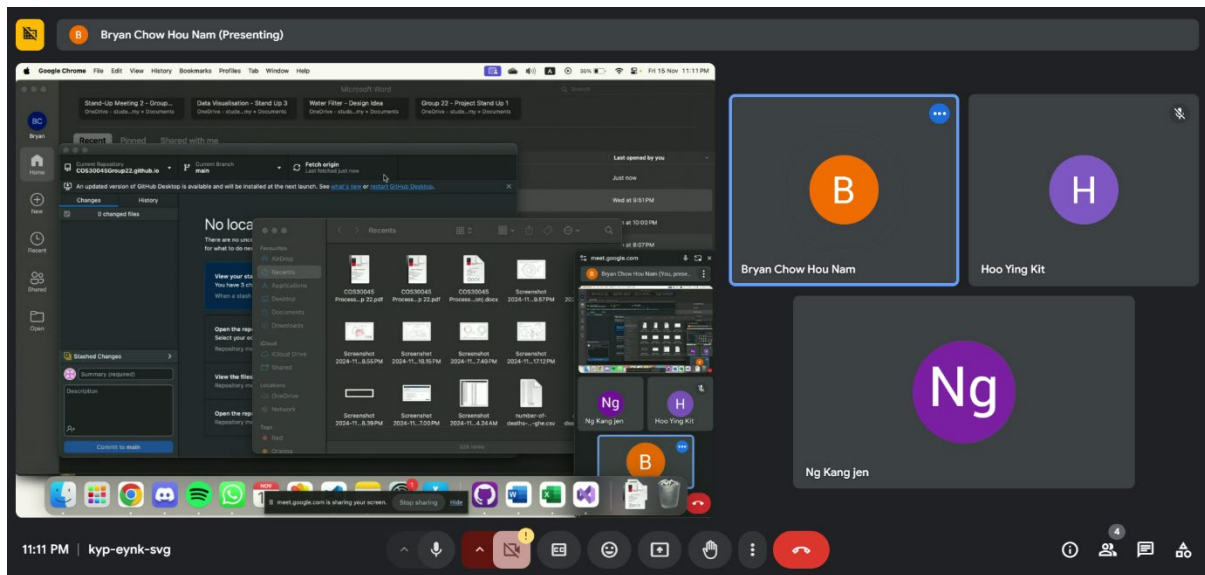
Though our communication routine was sometimes difficult, it helped us learn to adjust to various forms and timings of communication. We discovered how to blend face-to-face and virtual communication, utilizing the strengths of each for effective teamwork. For example, internet communication provided flexibility and convenience, enabling us to remain connected and efficient despite being physically separated. Alternatively, face-to-face meetings were found to be extremely beneficial for intricate project discussions, idea generation, and collaborative work.



**FIGURE 5: Our Google Meet meeting on 10/10/2024 about Project Stand Up 1**







**FIGURE 9: Final Google Meet Meeting on 15/11/2024 to finalize everything and submission.**

### Fostering Positive Communication Culture

One key lesson we learned was how vital it is to foster a positive communication environment among team members. We aimed to establish a setting where all individuals could feel at ease expressing their thoughts, concerns, and suggestions. The culture of open communication encouraged participation from all team members and ensured that everyone's viewpoints were taken into account. It also assisted us in promptly recognizing and addressing any misinterpretations or tensions, strengthening our team's cohesion and collaborative problem-solving skills.

### Balancing Communication and Tasks

Our comprehensive communication plan also included effectively handling our communication to prevent it from taking away focus from our actual tasks. We discovered how to manage our conversations alongside our duties, focusing on important and efficient interactions while steering clear of unneeded interruptions. We established guidelines for respecting one another's time and space, knowing when to have in-depth conversations and when to prioritize the tasks that were given to us.

The focus on communication in this project has highlighted its importance as a vital skill, not just for completing successful projects but also for promoting strong teamwork, this is a teaching that all of us will utilize in upcoming works to strengthen teamwork, boost project results, and form solid, unified groups.



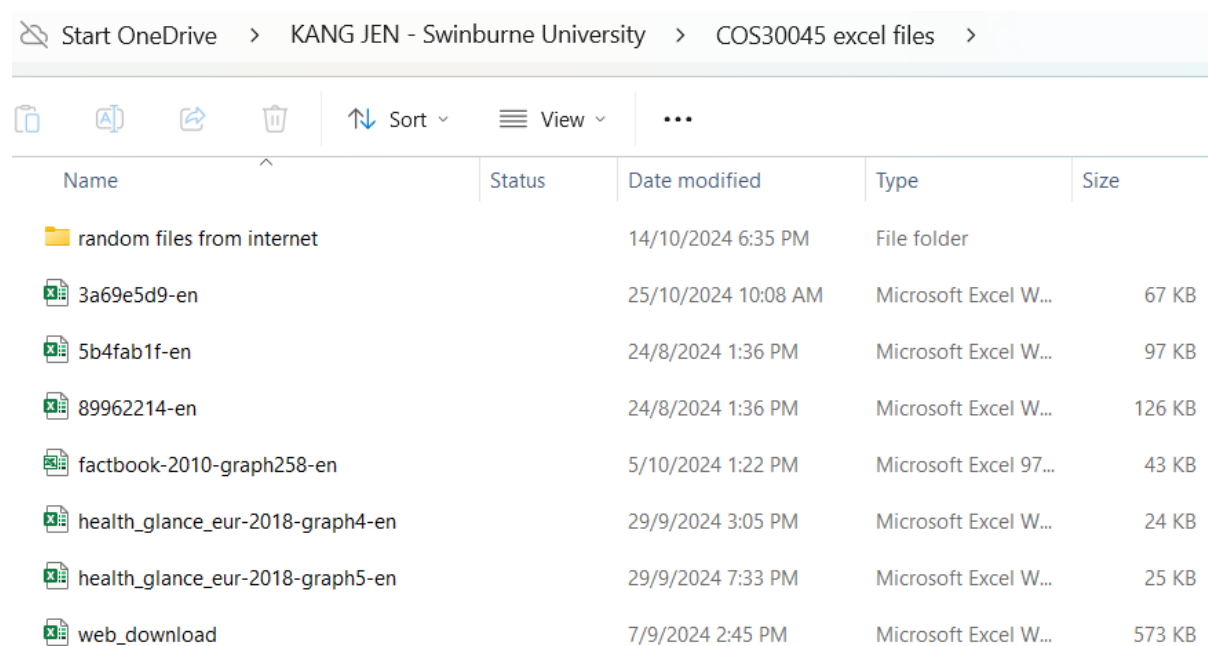
## REFLECTION ON MYSELF:

### Implement Feedback In Our Design

During the project, I realized the importance of lecturer feedback in guiding our design choices. I participated in gathering and studying feedback from my lecturer, then utilized this information to improve our visualizations. The exercise involved practicing empathy by embracing myself in the users' perspective in order to get a better understanding of their needs and challenges more effectively. This method focused on the user enabled us to develop visualizations that were not just visually attractive but also practical and easy to use.

### Research and Analysis

Before embarking on the design process, I was heavily involved in a thorough stage of research and analysis. I carefully analysed the datasets that is from the OECD website to find patterns, anomalies, and understand the importance of mental health and why when neglected, this often leads to suicide. Furthermore, I conducted additional research from external sources due to limited datasets from OECD to provide a more comprehensive understanding of the suicide pattern in Asia vs Europe. This thorough examination provided the groundwork for our design and development work, guaranteeing that our visualizations were based on strong data analysis.



Start OneDrive > KANG JEN - Swinburne University > COS30045 excel files >				
Sort View ...				
Name	Status	Date modified	Type	Size
random files from internet		14/10/2024 6:35 PM	File folder	
3a69e5d9-en		25/10/2024 10:08 AM	Microsoft Excel W...	67 KB
5b4fab1f-en		24/8/2024 1:36 PM	Microsoft Excel W...	97 KB
89962214-en		24/8/2024 1:36 PM	Microsoft Excel W...	126 KB
factbook-2010-graph258-en		5/10/2024 1:22 PM	Microsoft Excel 97...	43 KB
health_glance_eur-2018-graph4-en		29/9/2024 3:05 PM	Microsoft Excel W...	24 KB
health_glance_eur-2018-graph5-en		29/9/2024 7:33 PM	Microsoft Excel W...	25 KB
web_download		7/9/2024 2:45 PM	Microsoft Excel W...	573 KB

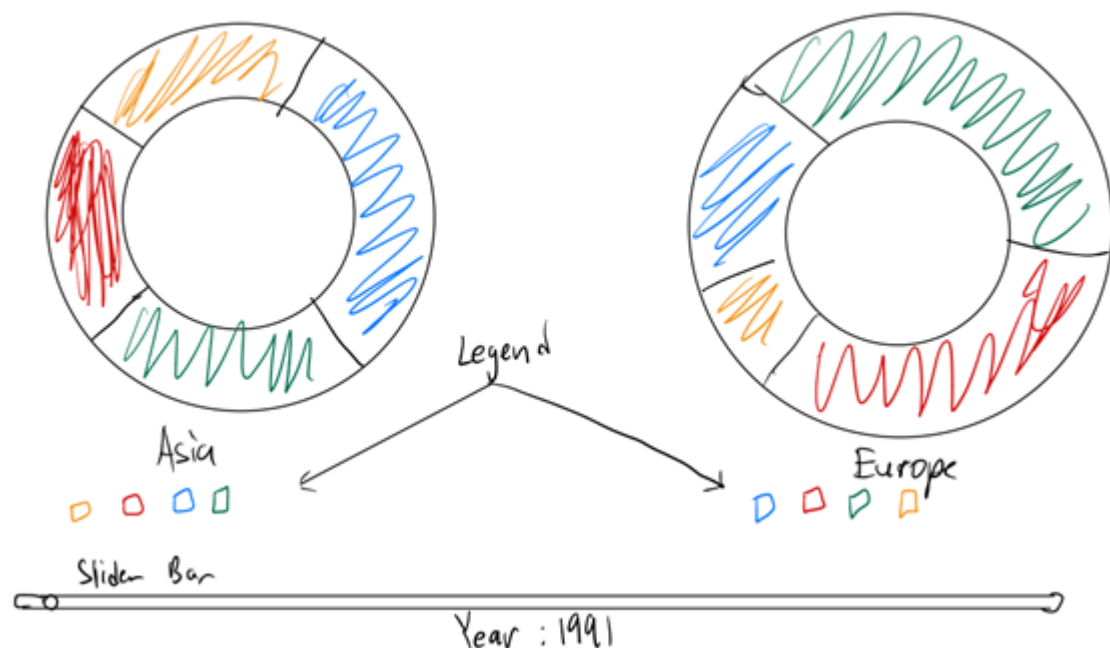
**FIGURE 10: Datasets that I found from OECD website**

Start OneDrive > KANG JEN - Swinburne University > COS30045 excel files > random files from internet >					
<div> </div>					
Name	Status	Date modified	Type	Size	
data-table		12/10/2024 9:53 PM	Microsoft Excel Co...	1 KB	
global-suicide-data		12/10/2024 9:49 PM	Compressed (zipp...	134 KB	
master.csv		12/10/2024 9:44 PM	Compressed (zipp...	398 KB	
MH_12		12/10/2024 9:54 PM	Microsoft Excel Co...	12 KB	
Monthly_Counts_of_Deaths_by_Select_Ca...		12/10/2024 9:52 PM	Microsoft Excel Co...	9 KB	

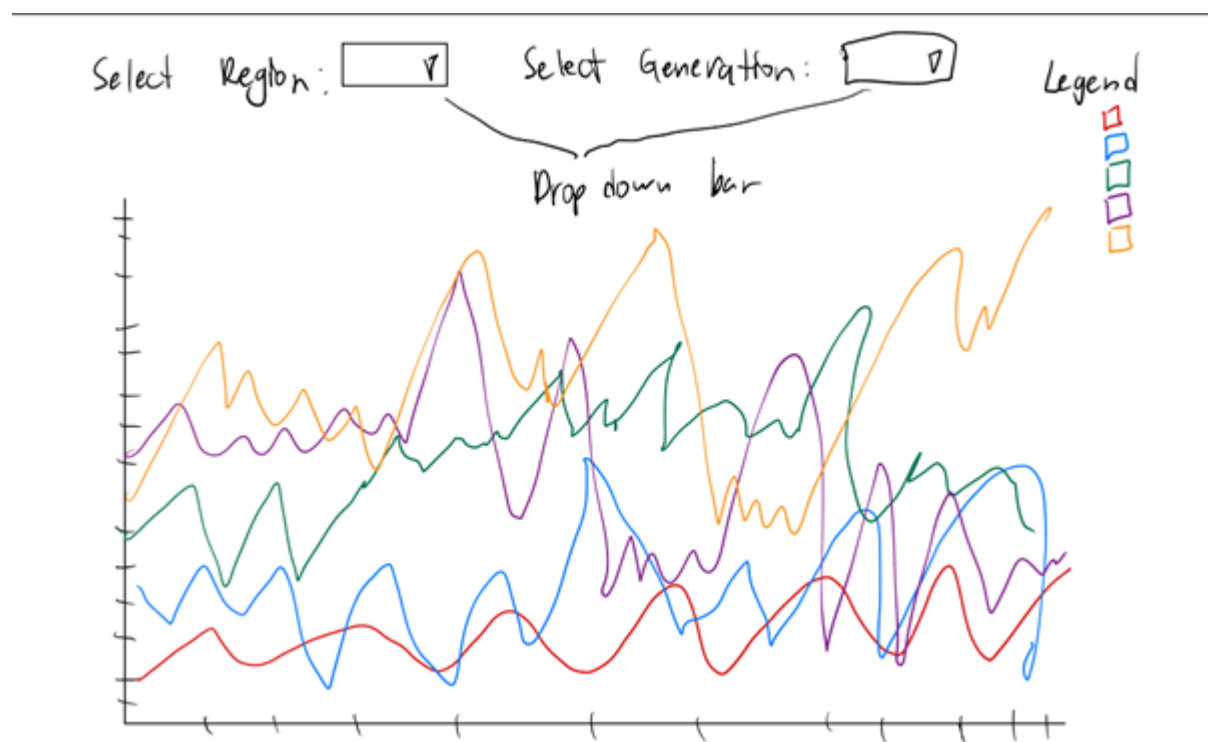
**FIGURE 11: Datasets that I found from external sources**

### Idea Generation

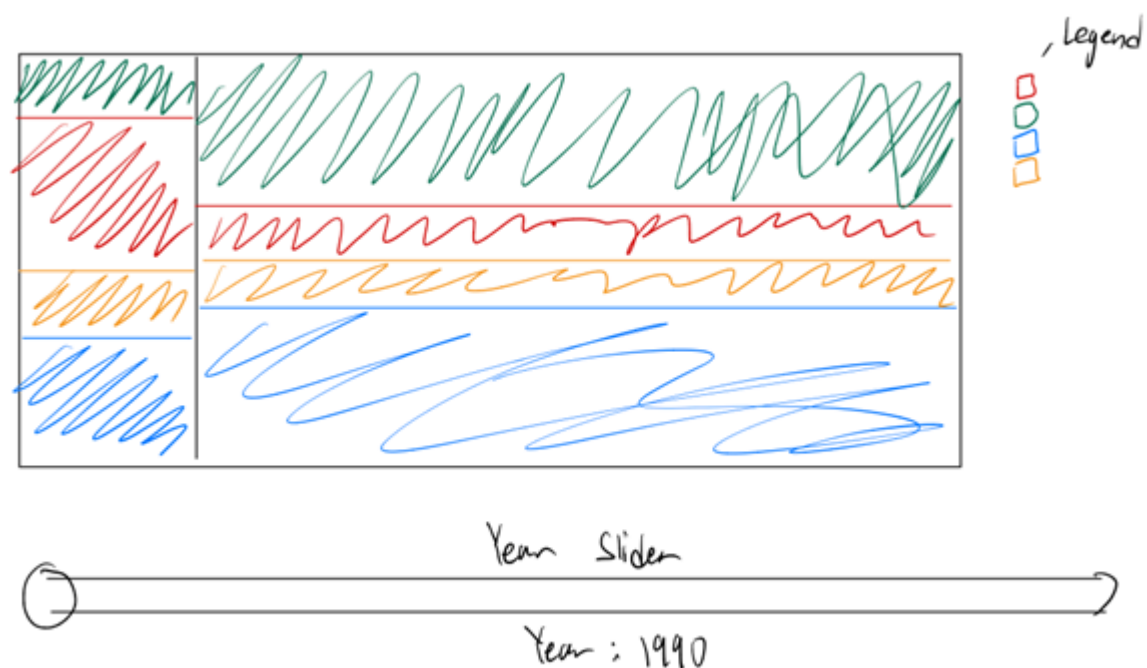
I played an active role in brainstorming and creating ideas for this project. Applying my knowledge of data visualization principles, I helped in creating initial design sketches for the visualizations we are suggesting. This project enabled everyone in the team to generate various visualization techniques, experimenting with different types of graphics before selecting the ones that most effectively conveyed our results.



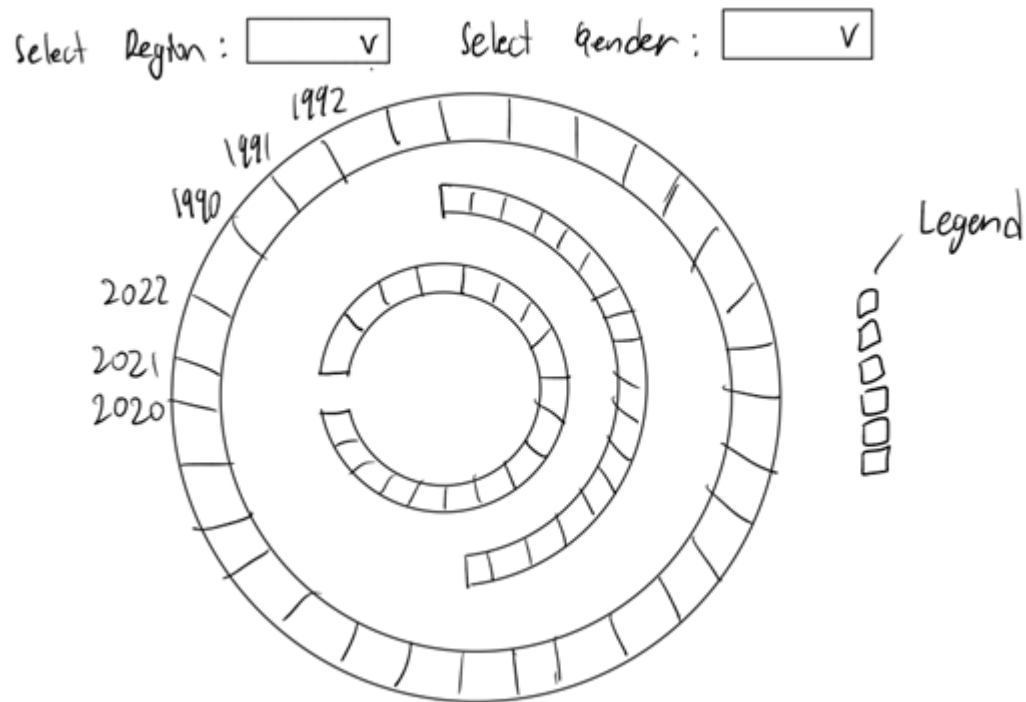
**FIGURE 12: Initial sketch of my donut chart (Initial Chart for comparing income level countries suicide rate)**



**FIGURE 13: Initial sketch of my line chart (Initial Chart for comparing suicide rate between generations)**



**FIGURE 14: Initial sketch of my Mosaic Plot (Finalized Chart for income level comparison)**



**FIGURE 15: Initial sketch of my Circular Heat Map (Finalized Chart for generations comparison)**

### Coding and Implementation

I had a key part in transforming our planned charts into attractive, functional web-based interactive visualizations. With my knowledge of HTML, CSS, and JavaScript D3, I carefully wrote the essential components for our visualizations to be interactive. This required designing and formatting different components such as data markers, legends, axes, and tooltips, all while following guidelines for chart responsiveness, easy to access, and user-friendly interaction.

```

d3.csv("income.csv").then(data => {
  function drawMarimekko(year) {
    aggregatedData.forEach(region => {
      region.incomeData.forEach(income => {
        regionGroup.append("rect")
          .attr("x", 0)
          .attr("y", yOffset)
          .attr("width", region.width)
          .attr("height", 0) // Start with height 0 for animation
          .attr("fill", colorScale(income.IncomeLevel))
          .style("stroke", "none") // No border initially
          .style("stroke-width", "2px")
          .transition()
          .duration(1000)
          .attr("height", income.height)
          .on("end", function () { // Enable hover effect only after animation ends
            d3.select(this)
              .on("mouseover", function (event) {
                tooltip.style("visibility", "visible")
                  .html(`
                    <strong>${region.region} - ${income.IncomeLevel}</strong><br>
                    Rate: ${income.DeathRate.toFixed(2)} per 100k population<br>
                    Proportion: ${(income.DeathRate / totalDeaths * 100).toFixed(1)}%
                  `);

                d3.select(this)
                  .style("stroke", "#000") // Add border
                  .style("stroke-width", "3px")
                  .style("opacity", 0.9)
                  .attr("transform", "scale(1.02)"); // Slight enlargement
              })
              .on("mousemove", function (event) {
                tooltip.style("top", `${event.pageY - 10}px`)
                  .style("left", `${event.pageX + 10}px`);
              })
              .on("mouseout", function () {
                tooltip.style("visibility", "hidden");
              });
            });
      });
    });
  }
});

```

Ln 25, Col 37 Spaces: 4 UTF-8 CRLF {} JavaScript

FIGURE 16: Code Snippet for the Mosaic Plot

```

$ test2.js > ...
47 d3.csv("generation.csv").then(data => {
48   function updateChart(region, gender) {
49     svg.selectAll("path")
50       .data(filteredData)
51       .join("path")
52       .attr("d", d => {
53         const yearAngle = angleScale(d.year);
54         const nextAngle = yearAngle + angleScale.bandwidth();
55         const genRadius = radiusScale(d.generation);
56         const nextRadius = genRadius + radiusScale.bandwidth();
57
58         const arc = d3.arc()
59           .innerRadius(genRadius)
60           .outerRadius(nextRadius)
61           .startAngle(yearAngle)
62           .endAngle(nextAngle);
63         return arc();
64       })
65       .attr("fill", d => colorScale(d.suicides_per_100k))
66       .attr("stroke", "ffff")
67       .on("mouseover", function(event, d) {
68         tooltip.style("display", "block")
69           .html(`
70             <strong>Year:</strong> ${d.year}<br>
71             <strong>Generation:</strong> ${d.generation}<br>
72             <strong>Region:</strong> ${d.region}<br>
73             <strong>Gender:</strong> ${d.sex}<br>
74             <strong>Suicide Rate:</strong> ${d.suicides_per_100k.toFixed(2)} per 100k population
75           `);
76
77         // Enlarge the arc
78         d3.select(this)
79           .transition()
80           .duration(200) // Smooth transition
81           .attr("d", d => {
82             const yearAngle = angleScale(d.year);
83             const nextAngle = yearAngle + angleScale.bandwidth();
84             const arc = d3.arc()
85               .innerRadius(genRadius)
86               .outerRadius(nextRadius)
87               .startAngle(yearAngle)
88               .endAngle(nextAngle);
89             return arc();
90           });
91       });
92     });
93   }
94 });

```

Ln 5, Col 54 Spaces: 4 UTF-8 CRLF {} JavaScript Go Live

FIGURE 17: Code Snippet for the Circular Heat Map



### Web Development

Our collaborative endeavours resulted in the development of an ultimate, user-friendly online platform. My groupmate, Bryan Chow, designed the website and its layout. I helped him to insert pictures for the website and the description of the website. I also helped him to adjust whatever that is necessary after he is done with certain part. This experience was extremely valuable in applying web development practices in a real-world setting especially working as a team

**Collaboration and Communication:** This project highlighted the importance of effective communication and teamwork in achieving common objectives. Working together with my team, exchanging ideas, receiving feedback, and aligning my work with project goals not only helped the project to succeed but also improved my personal abilities, which in a way will give me benefits in the near future.

### My Reflection on Growth and Learning

This COS30045 project was a great experience to learn and grow for me. By enhancing my coding and web development abilities and strengthening the current teamwork skills that I have, I have gained valuable knowledge and experiences that will undoubtedly benefit me in the near future. One of the main areas where I saw growth was my capability in adjusting and absorbing feedback, not just from my groupmates but also from our lecturer, Mr Faizal. This method of development, while difficult, was fulfilling and played a major role in my growth as someone trying to survive in the IT field.

### Conclusion

The COS30045 project was a valuable and transformative opportunity, providing the group with essential skills and knowledge in data programming, visualization design, user experience, teamwork, and communication. Analysing the complication of suicide rates in Asia compared to Europe provided us with a distinctive viewpoint on the practical impacts of our research. The project emphasized the importance of data and how it is interpreted in deciding public policies, impacting the opinion of the public, and guiding strategies for the economy. We are dedicated to encouraging educated conversations and backing data-driven decision-making with our powerful visualizations, ultimately impacting global mental health policies. During this experience, we have not only created a helpful tool for comprehending suicide rates, but have also evolved personally and as a group, more equipped to overcome upcoming obstacles and create a beneficial change.

## Appendix

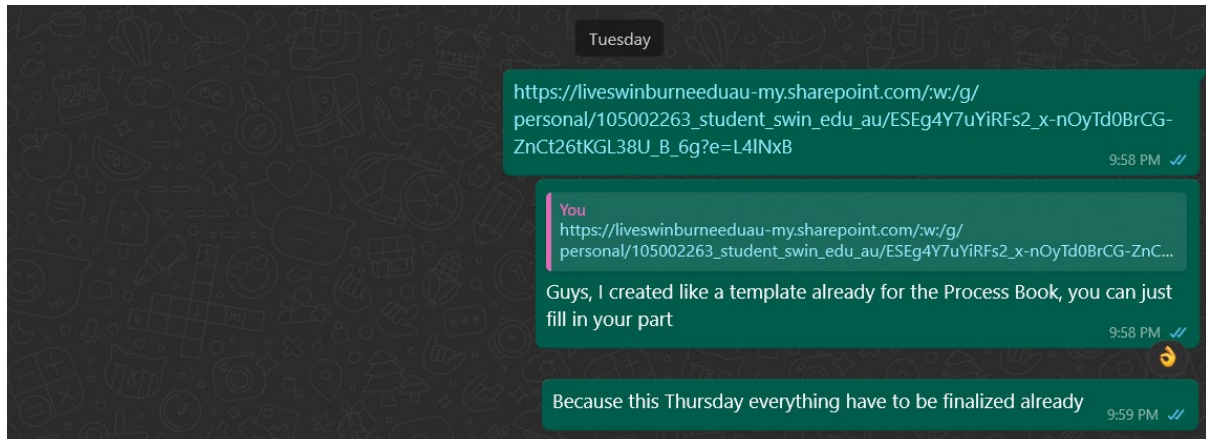


FIGURE 18: I created a template of the Process Book for my group to fill in their part.

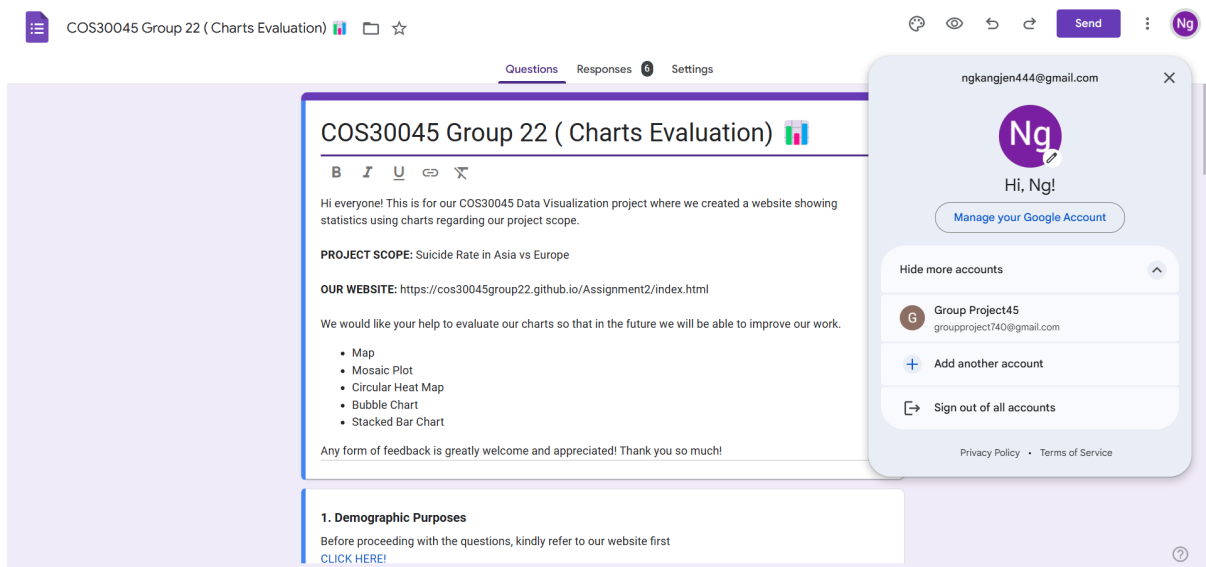


FIGURE 19: I also helped created the Google Form survey for our group.

### Step 1: Cleaning Column Names and Dropping Unnecessary Columns

```
master_data.columns = master_data.columns.str.strip()
age_std_data.columns = age_std_data.columns.str.strip()

master_cleaned = master_data.drop(columns=['country-year', 'HDI for year',
'gdp_for_year()', 'gdp_per_capita()', 'age'])
```

**FIGURE 20: Example cleaning of master.csv which is the unfiltered version of the dataset I used for suicide rate comparison between generations in Asia vs Europe using Python.**

### Step 2: Grouping and Aggregating Data for Generation Analysis

```
master_grouped = master_cleaned.groupby(
    ['country', 'generation', 'sex', 'year'], as_index=False
).agg(
    suicides_no=('suicides_no', 'sum'),
    population=('population', 'sum'),
    suicides_per_100k=('suicides/100k pop', 'mean')
)
```

**FIGURE 21: Grouping the cleaned data of generations for analysis using Python.**

Peer Assessment (Out of 20 for each member)

Criteria	Ng Kang Jen (Me)	Bryan Chow Hou Nam	Hoo Ying Kit	Comments
Contribution to project:	5	5	5	All our contributions were equal in the project. We divided our work fairly during distribution of tasks.
Communication skills:	5	5	5	We didn't have any issues in communicating.
Timeliness and Reliability:	5	5	5	We always made sure to have a meeting a day before the due date to finish up the tasks and we did.
Problem-Solving Skills	4	5	5	I made a mistake on one of my charts and I didn't even realise it until the final presentation of the website. My groupmates are good.
Overall Performance	19/20	20/20	20/20	