SWINBURNE UNIVERSITY OF TECHNOLOGY

COS30045

PROGRESS BOOK

NAME & STUDENTID : **Nguyen Gia Binh (104219428)**

Nguyen Quang Dao - 104211864

CLASS : **COS30045**

LECTURER : **HOANG XUAN TUNG**

(txhoang@swin.edu.au)

TUTOR : **HOANG XUAN TUNG**

(txhoang@swin.edu.au)

Hanoi, April 1, 2024

TABLE OF CONTENTS

TABLE OF CONTENTS

CHAPTER 1: INTRODUCTION

1.1: Background and motivation

Migration is a natural and inevitable aspect of human history. In the current globalized world, international migration has become more common. In 2020 alone, there were an estimated 281 million international migrants worldwide, comprising 3.6 percent of the global population (UN DESA, 2020). There are both push factors like conflict, persecution and human rights violations that force people to flee, as well as pull factors like better economic opportunities and living conditions that attract migrants.

Internal displacement due to violence has been a major driver of migration in the Israeli-Palestinian conflict. According to UNRWA, there were over 5.7 million Palestinian refugees as of 2021, including those displaced since 1948 and their descendants (UNRWA, 2021). The situation remains volatile, with frequent outbreaks of hostilities leading to new displacement, particularly in Gaza. A large Palestinian diaspora population also exists outside the region.

Understanding these complex forced migration dynamics is crucial for policies and international relations efforts to resolve the core Israeli-Palestinian conflict and address the refugee crisis humanely based on international law (UNRWA, 2021).

1.2: Visualization purpose

In this assignment, a few visualization are made to explore and analyze geographic patterns and underlying events that contribute to complex issues. By synthesizing location-based data, the visualization offers several potential benefits. The topic we chose is the invasion of Russian in Ukraine and finally the displacement due to forest fire and other natural disaster of Australia in recent year.

This interactive map and data visualization allows you to delve into what's going on with population displacement in a certain area. First off, the map clearly shows exactly where major events happened that caused displacement over different time periods, so you can pinpoint those locations. Additionally, the viz enables you to further analyze how those displacement-inducing events are dispersed and clustered throughout the region. By combining the geographic map with other visual elements like charts and graphs, you get a comprehensive, multi-faceted picture of the intricate reasons behind mass displacement. Consequently, this tool lets you thoroughly explore the underlying root causes from multiple vantage points

and facilitates a deeper understanding of the bigger forces at play in complex situations where sizeable populations are forced to become refugees.

1.3: Project Schedule and deliverable

Week	Tasks
6	1. Choose the topic 2. Find data about it
7	1. Choose the topic 2. Find data about it
8	1. Finalize the topic 2. Clean the data
9	1. Start making the demo charts 2. Start sketching the front-end to present the visaulization
10	1. Choose what kind of visualization you want to use 2. Visualize the EU map 3. Code the charts out for Russia vs Ukraine 4. Finalize on front-end design
11	1. Sorting through the Demo code to finalize the design 2. Writing the report
12	1. Bug fixing 2. Writing the report

	3. Conclude the project

CHAPTER 2: DATA

2.1: Data source

This analysis on [topic of your analysis] utilizes data from a variety of credible sources: IOM (International Organization for Migration), CEDOS (Center for Economic Development Studies), CEEOL (Central and Eastern European Online Library), Humanitarian Data Exchange(HDX) and EuroStat. We'll be meticulously combining and processing this information to create insightful visualizations. Each source brings unique strengths: IOM provides expertise in migration patterns, CEDOS offers insights into Eastern European development, CEEOL grants access to relevant academic research, HDX covers a wide range of categories relevant to humanitarian emergencies and crises, such as population statistics, administrative boundaries, displaced populations,..... and EuroStat supplies official statistics. This multifaceted approach ensures we leverage the most comprehensive and up-to-date information to illuminate the topic at hand.

Here are the URL to the dataset respective to our visualization:

Geomap :

- The geomap itself : https://github.com/amcharts/amcharts4/blob/master/dist/geodata/es2015/json/region/world/europeUltra.json
- https://en.wikipedia.org/wiki/Ukrainian_refugee_crisis_(2022%E2%80%93present)#:~:text=An%20ongoing%20refugee%20crisis%20began,country%20by%20late%20May%202022.
- The data to incorporate with the map: https://data.unhcr.org/en/situations/ukraine

For the line chart, the dataset is a little problematic as no one site have the full dataset, each have just a part of it or some set of the dataset is missing. Nonetheless, the data is taken from IOM, CEDOS, CEEOL,HDX and EuroStat.

The bar chart, it is taken from only 1 source but 2 different report, both are the same report format just in different time 2022, 2024

2.2: Data processing

The datasets obtained from the aforementioned organizations guarantee both high integrity and timeliness. However, it is essential to conduct data cleaning and restructuring on the original datasets to ensure they meet the necessary level of 'conformity' required for visualization in D3.

Geomap

//

Line Chart

//

Stacked Bar Chart

CHAPTER 3: REQUIREMENT

3.1 Must-Have Features

There are a few features that we consider to be very important to give the reader an easier time understanding of what the chart is for. These features include:

- Interactive visualization:

    a) Hover effect: With hover effect, user can see the detail in which a point on the map or a section of a chart represent.

    b) Zoom in: This effect allow the user to see the timeline closer especially in line chart or area chart

    c) Clickable: Point on the map or sections of the chart may be clickable and would lead to a sub html page with smaller chart or found report representing that point or section

- Additional information:

    a) Label: This is a must be to help the reader quickly indentify What the reader is seeing.

- Color: data can be categorize in dozens of type and column, the contrast between color can make some important element to shine through and get to the reader.

3.2 Optional Features

d) Tooltip: in the first design, sub pages would be use to give a more detail view on the points or section of the data but if we use tool tip, there would need to be a sub page and therefore maintaining the page integrity would be easier but at the same time tooltip is relatively hard to implement effectively and easily in my experience.

e) Guide: There should be a guide either by a button or render out next to the chart to give the reader an easier time indentify each section.

CHAPTER 4: VISUALIZATION DESIGN

4.1: Concept

Since the early stage of the visualization design process, we aim to provide a simple, yet interactive and or intuitive layout that would suit our targeted audiences as general public and not for expert.

Geomap

//

Line Chart

//

Stacked Bar Chart

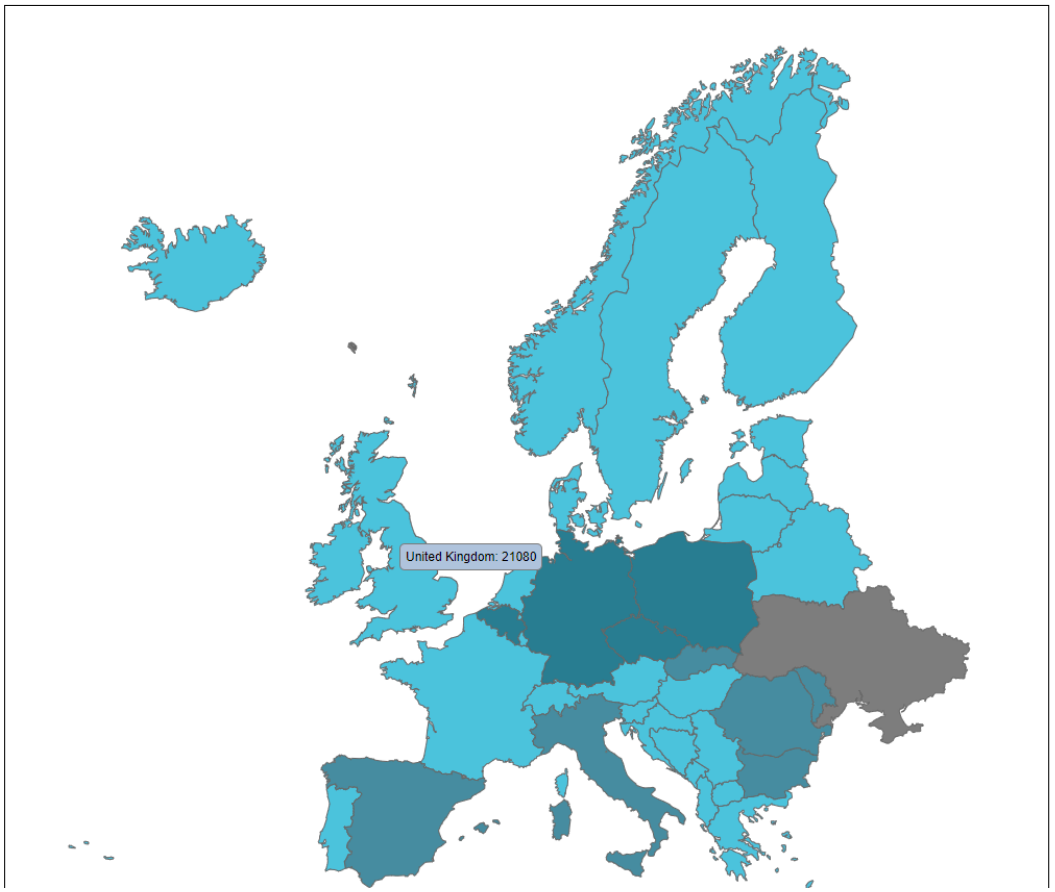
//

4.2: Manifestation

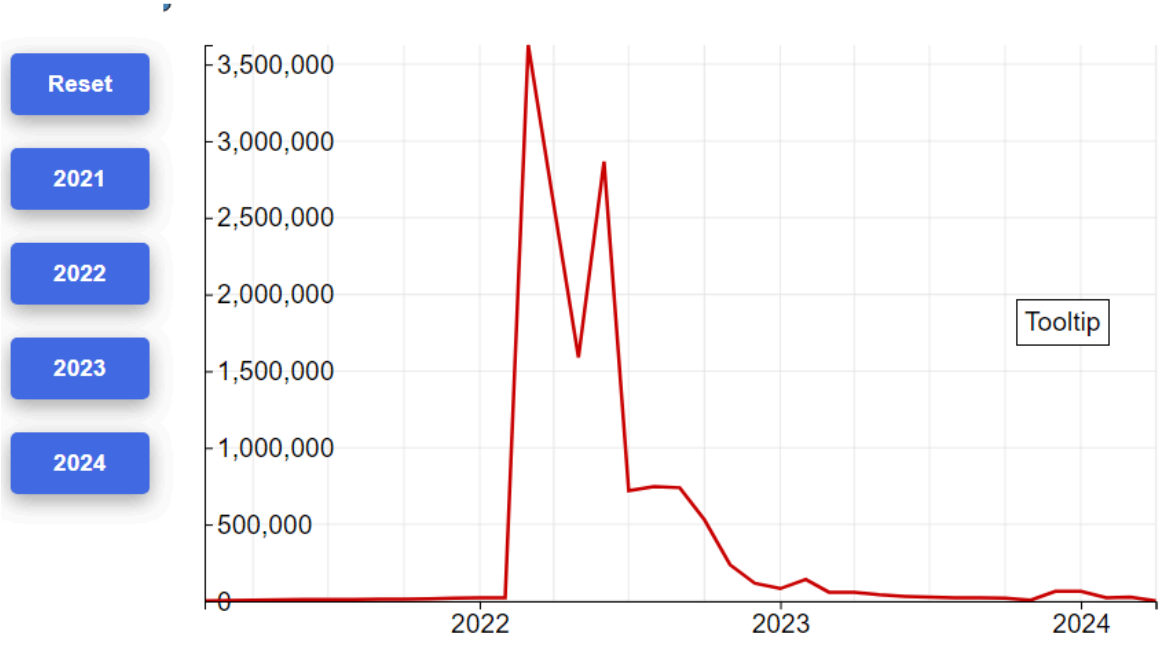
The final version of our visualization can be access through Mercury : **Mercury** or through our Github repository: **GitHub**

Geomap

Migration of Ukraine to Europe in 2023



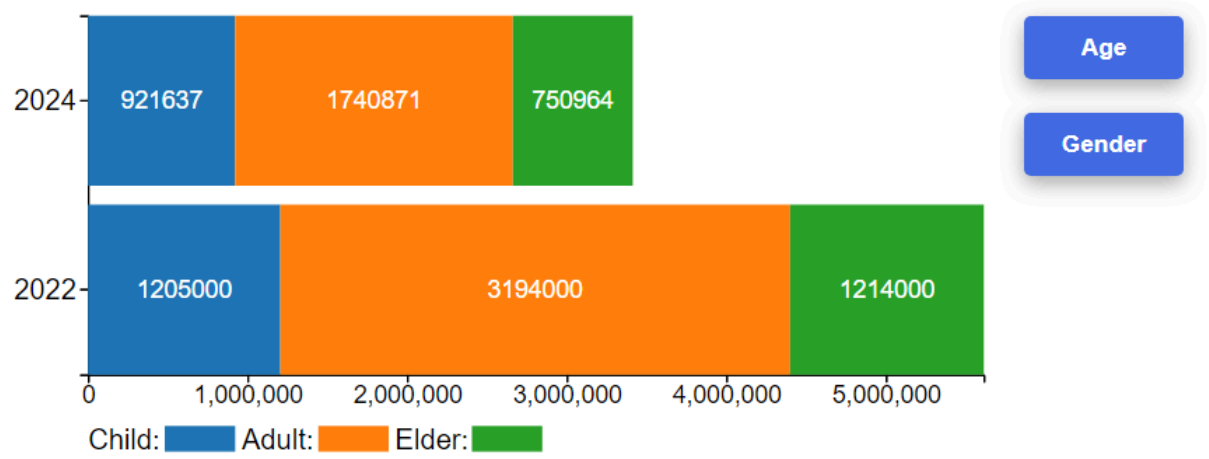
Line Chart

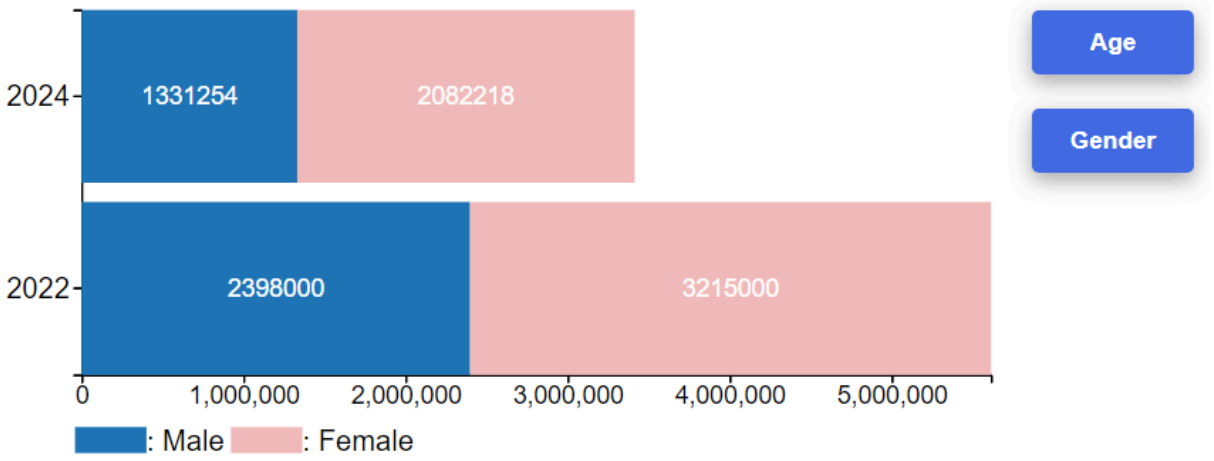


* remember to insert the old version later*

Stacked Bar Chart

insert explanation later





CHAPTER 5: VALIDATION

CHAPTER 6: CONCLUSION

REFFERENCE

Europe - mixed migration flows to Europe, yearly overview (2023). Europe - Mixed Migration Flows to Europe, Yearly Overview (2023) | Displacement Tracking Matrix. (n.d.). https://dtm.iom.int/datasets/europe-mixed-migration-flows-europe-yearly-overview-2023

Filipchuk, L., Lomonosova, N., Syrbu, O., & Kabanets, Y. (2022, May 4). *Forced migration and the war in Ukraine (February 24 - March 24, 2022)*. Cedos. https://cedos.org.ua/en/researches/forced-migration-and-the-war-in-ukraine-february-24-march-24/

Koroutchev, R. (n.d.). *UKRAINIAN MIGRATION DURING THE FIRST YEAR AFTER THE BEGINNING OF THE RUSSIAN ARMED CONFLICT IN 2022UKRAINIAN MIGRATION DURING THE FIRST YEAR AFTER THE BEGINNING OF THE RUSSIAN ARMED CONFLICT IN 2022*. PDF Viewer. https://www.ceeol.com/search/viewpdf?id=1207439

Statistics explained. Statistics Explained. (n.d.). https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Temporary_protection_for_persons_fleeing_Ukraine_-_monthly_statistics

Ukraine - internal displacement report - General Population Survey Round 11 (25 November - 5 December 2022). Ukraine - Internal Displacement Report - General Population Survey Round 11 (25 November - 5 December 2022) | Displacement Tracking Matrix. (n.d.). https://dtm.iom.int/reports/ukraine-internal-displacement-report-general-population-survey-round-11-25-november-5

Ukraine - area baseline assessment (raion level) - round 33 (February 2024). Ukraine - Area Baseline Assessment (Raion Level) - Round 33 (February 2024) | Displacement Tracking Matrix. (n.d.). https://dtm.iom.int/reports/ukraine-area-baseline-assessment-raion-level-round-33-february-2024

Situation Ukraine refugee situation. UNHCR Data Portal. (n.d.). https://data.unhcr.org/en/situations/ukraine

Home. Humanitarian Data Exchange. (n.d.). https://data.humdata.org/dataset/ukraine-data-explorer-inputs