An Investigation of Map User Experience: Immigration into Germany
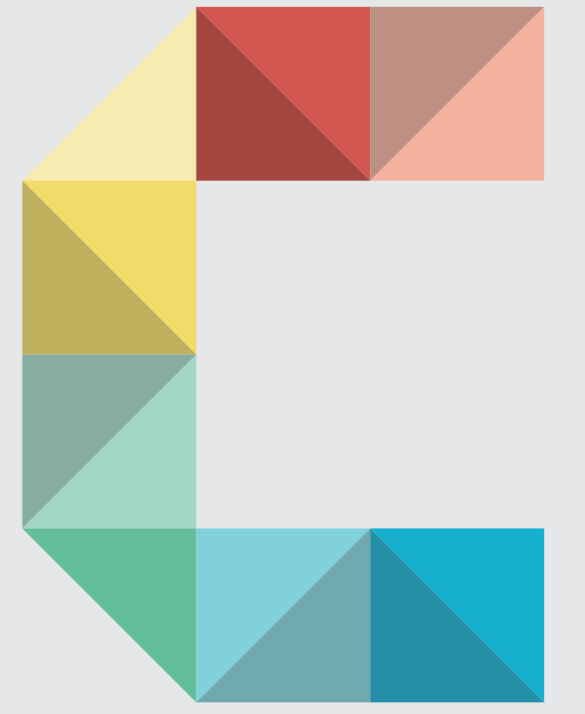
by MADELEINE NOET and MAHYAR BINESHTARIGH

This project aims to analyze user experience with different map designs, focusing on immigration into Germany from the top five countries with the highest immigrant numbers in 2021. Multiple designs were created, and user interviews, featuring two specific questions, were conducted. Response times were recorded for comparison based on mean values, with a shorter response time indicating a more effective and user friendly design. A final map design, resulting from these user experiences, was created.

HOW WE BUILT IT

Data exclusively sourced from the OECD Library underwent initial processing within the same library before being downloaded for further manipulation in Excel, utilizing tools such as Microsoft Excel, ArcGIS Pro, AutoCAD, and Figma in the creation of our project.

To methodically assess user experience, four map sets were crafted, each comprising specific combinations (e.g., Set 1 - maps 1A and 1B, Set 2 - 1B and 2B). Series A featured four proportional symbol maps, while Series B consisted of four flow maps, each introducing distinctive designs and symbols.

In addition to this, a user experience interview was conducted to gauge responses, pinpointing maps offering superior user experiences. Participants evaluated maps from one of the four sets, responding to two questions per map. Response times were meticulously recorded, and average response times calculated, with shorter, correct responses indicative of effective information conveyance. Each map design received a final grade on a 1 to 5 scale, ranging from difficult to understand (1) to very easy to understand (5).

CHALLENGES WE RAN INTO

Our initial aim was to create a dynamic, animated map showcasing immigration flows. However, due to constraints in animation and programming capabilities, we chose to pivot towards static maps. This transition prompted us to concentrate on enhancing the user-friendly implementation of thematic mapping techniques tailored to our dataset. Throughout interviews, a spectrum of diverse opinions surfaced, spanning preferences from aesthetic colors and fonts to a preference for bold, clear, and concise visualizations. This exploration of varied viewpoints has added depth to our project, guiding us towards a more nuanced understanding of design preferences in the realm of thematic mapping.

WHAT WE'RE PROUD OF

We take pride in the outcome, which presents a visually pleasing method to showcase the findings of our user test. The journey involved a process of acquiring insights from the users of the maps. The collaborative learning experience has both enriched our understanding and contributed to the enhancement of our project.
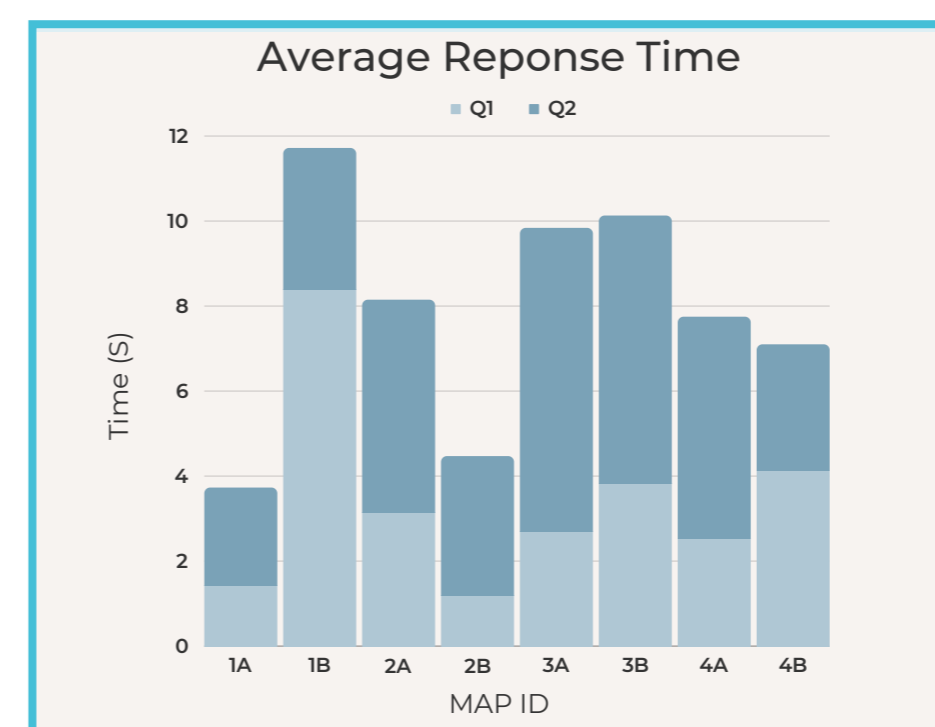
The chart depicts the average response time for questions 1 and 2 across the four map sets, with a lower response time indicating more effective design.

WHAT WE LEARNED

We gained valuable insights into the accurate implementation of a user experience survey and honed our ability to conduct more efficient and effective user studies. Our journey allowed us to refine our application of cartographic principles, offering ample opportunities for practicing map-making skills. The creative process, coupled with skill development using tools such as ArcGIS Pro, Figma, and AutoCAD, proved to be significant bonuses that enriched the entire project from inception to completion. Moreover, the project provided a platform to enhance our project management and time management skills within the context of small group collaboration, making it a holistic learning experience.

WHAT'S NEXT?

Our forward-looking vision for this map dataset involves transitioning to a dynamic, movement-focused map in response to crucial user feedback stressing impeccable design. With a focus on enhancing data manipulation and software proficiency, our goal is to create an animated map unfolding over a specific time frame, offering a visually engaging and informative experience.

Furthermore, we aspire to implement a user interactive interface, enabling users to pinpoint a specific year and discover the significant historical events associated with surges or drops in the number of immigrants during that period. This additional feature aims to provide users with a more comprehensive understanding of the contextual factors influencing immigration trends over time.
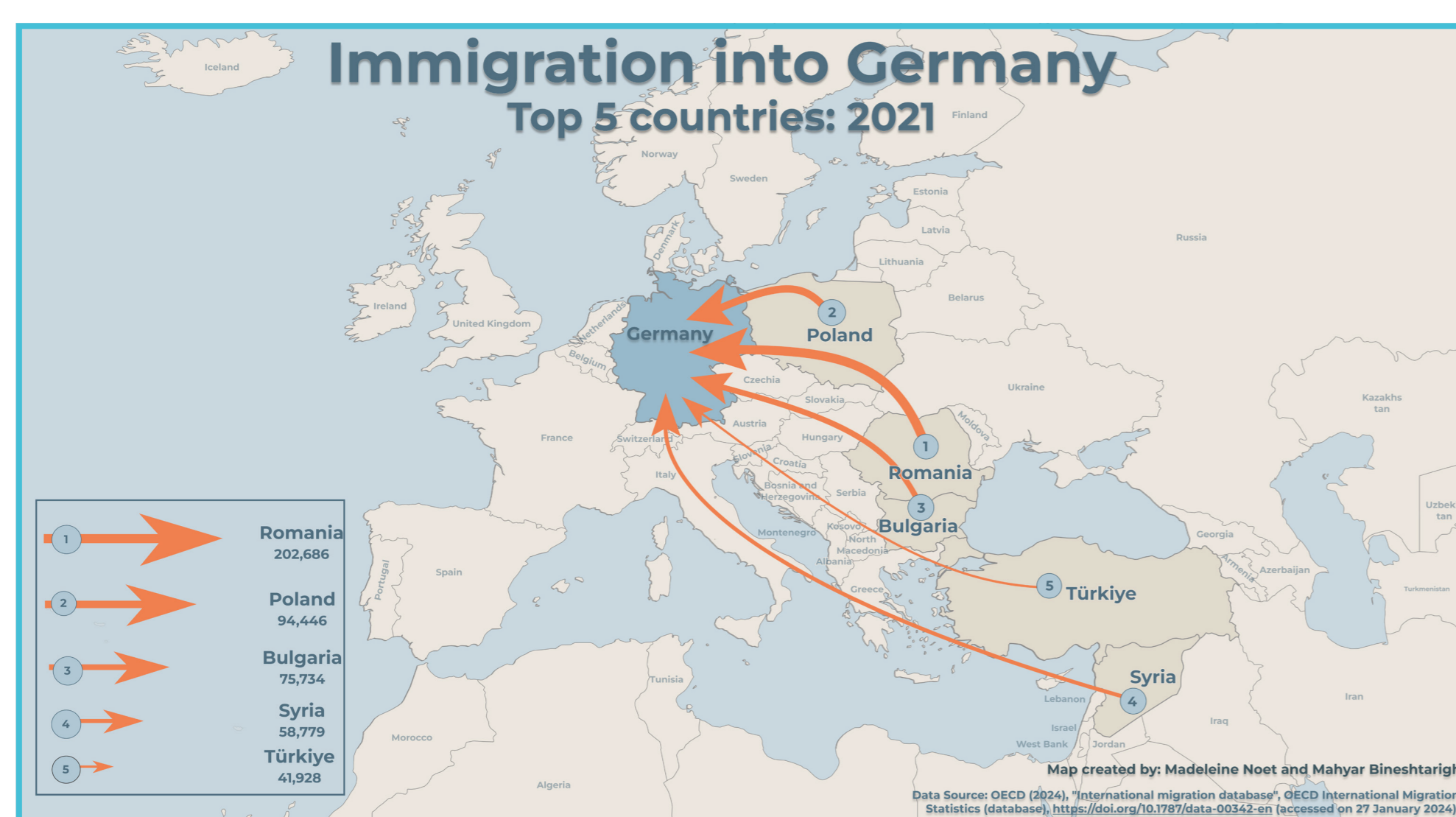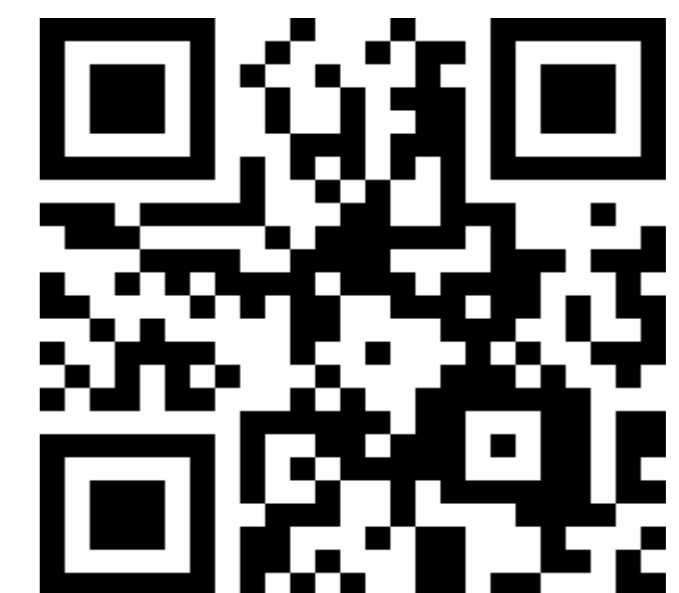
The conclusive map design, refined through user experience insights, effectively highlights the top five countries with the highest immigrant numbers in 2021.

REFERENCES

[1] International Migration Database. (n.d.). Stats.oecd.org. https://stats.oecd.org/viewhtml.aspx?datasetcode=MIG&lang=en

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