GEOG 778

Executive Summary

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# Kosovo War Project Executive Summary

**Introduction:**

In initiating this project, I would like to explain my inspiration of creating my interactive map project. During my time studying in GIS and Cartography at University of Wisconsin, I have been constantly inspired by the creativity of precedent cartographers and students. Which made me to critique myself about my own creativity. So I decide to create a project based on my own interest, regardless it is popular or rare mentioned. My grandfather, who was served as an officer in Air Force, asked me to memorize the war in Yugoslavia region when he knew about my interest of Geography and Europe history. That is the reason I decided to create a project about Kosovo War.

Secondly, the focus of my project centers on the air operations during the Kosovo War, utilizing a database to document NATO air strikes during Operation Allied Force and visualizing it through interactive map. The product is intended to create an iteration of existing static maps of same topic. The project is intended to distinguishing itself from static maps by dynamically demonstrates the air operation on daily basis and also provides the detail of each air strikes through interaction with audience.

Thirdly, the target audience for this project includes scholars specializing in 20th Century European History, individuals with a keen interest in contemporary historical events, and documentary filmmakers.

**Structure and Methods:**

The structure of this project is based on two primary components. A backend PostgreSQL database and a frontend interactive map. The communication between them relies on a local server. Figure 1 shows the project general structure.

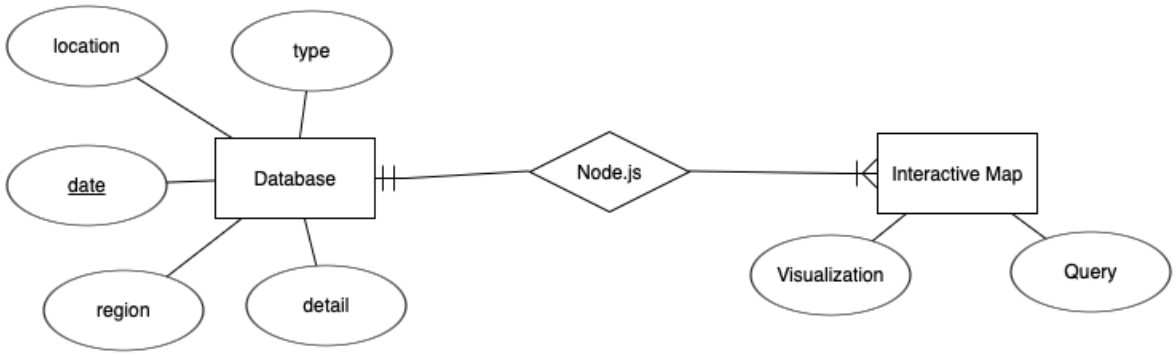


Figure 1

Regarding to platform, the database is created and manipulated through PostgreSQL on pgAdmin 4. All programming endeavors are composed in Javascript language and within Visual Studio Code environment. The project also utilizes serval existed API tools during its construction. The local host server is established using Node.js, and the interactive map is crafted with the Leaflet Library.

To create PostgreSQL database, the fundamental raw-data are collected from Milos Popovic's open source GitHub repository: *Replication files for "Strongmen Cry Too: The Effect of Aerial*

*Bombing on Voting for the Incumbent in Competitive Autocracies"*(Popovic, 2021). To visualize the database, a local host server is necessary. This project includes a server.js file to create the server, enabling the frontend interactive map to access the database and visualize its data.

The frontend interactive map includes two primary functionalities. Firstly, interactive data visualization on a daily basis is facilitated by a month and day selector, enabling the audience to view event data for each specific day on the map. The map also generates a pop-up window to demonstrate the event details while clicked.

Secondly, the data querying functionality allows the audience to query the database using three attributes: Month, Region, and Type. The frontend map sends a pull request via the server to the backend database, and the resulting query output is displayed on the frontend through the server.

**Results:**

After successful test trials, the complete project has been uploaded to Github as an open-source repository: *https://github.com/Chen2023-UW/KosovoProject.git*. The subsequent figures illustrate each components mentioned in method section above. Figure 2 demonstrates the PostgreSQL database on pgAdmin 4. Figure 3 provides a typical project layout in Visual Studio Code environment. Figures 4 and 5 respectively displays the data visualization functionality and the data querying functionality of the interactive map.

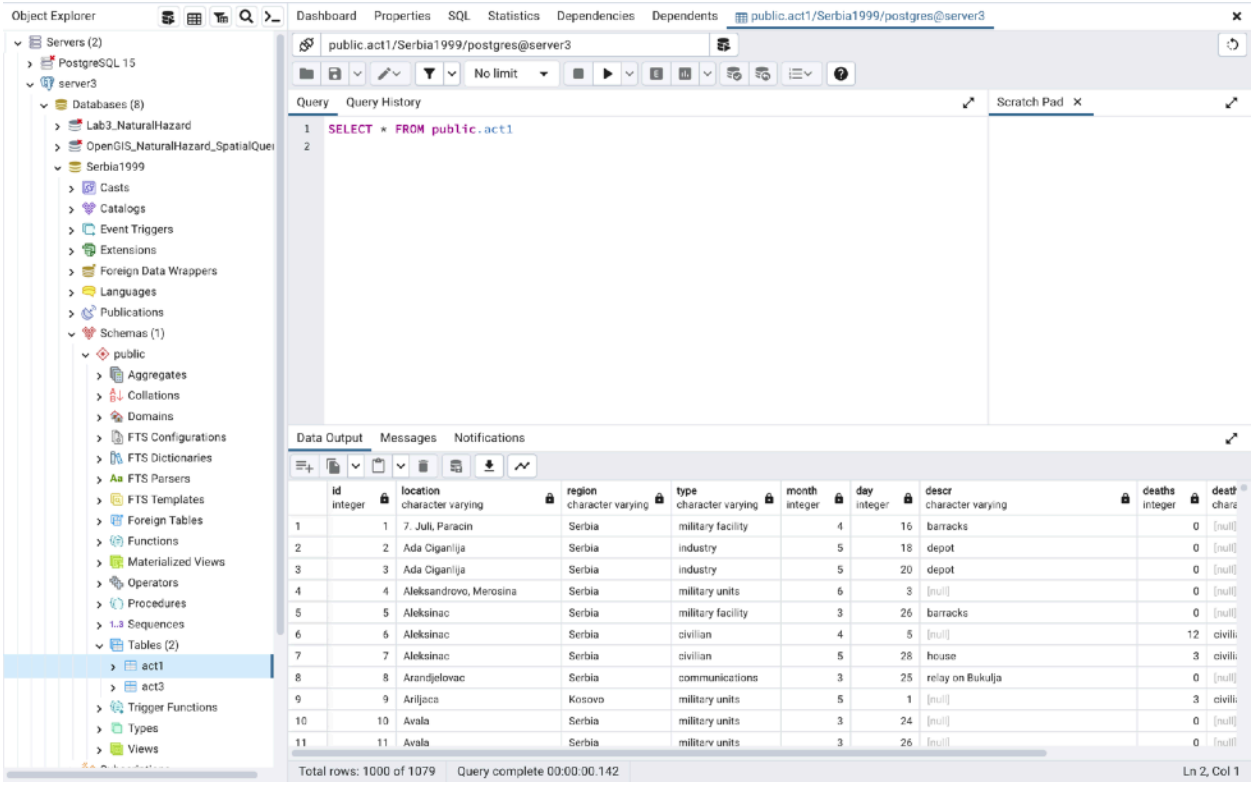


Figure 2

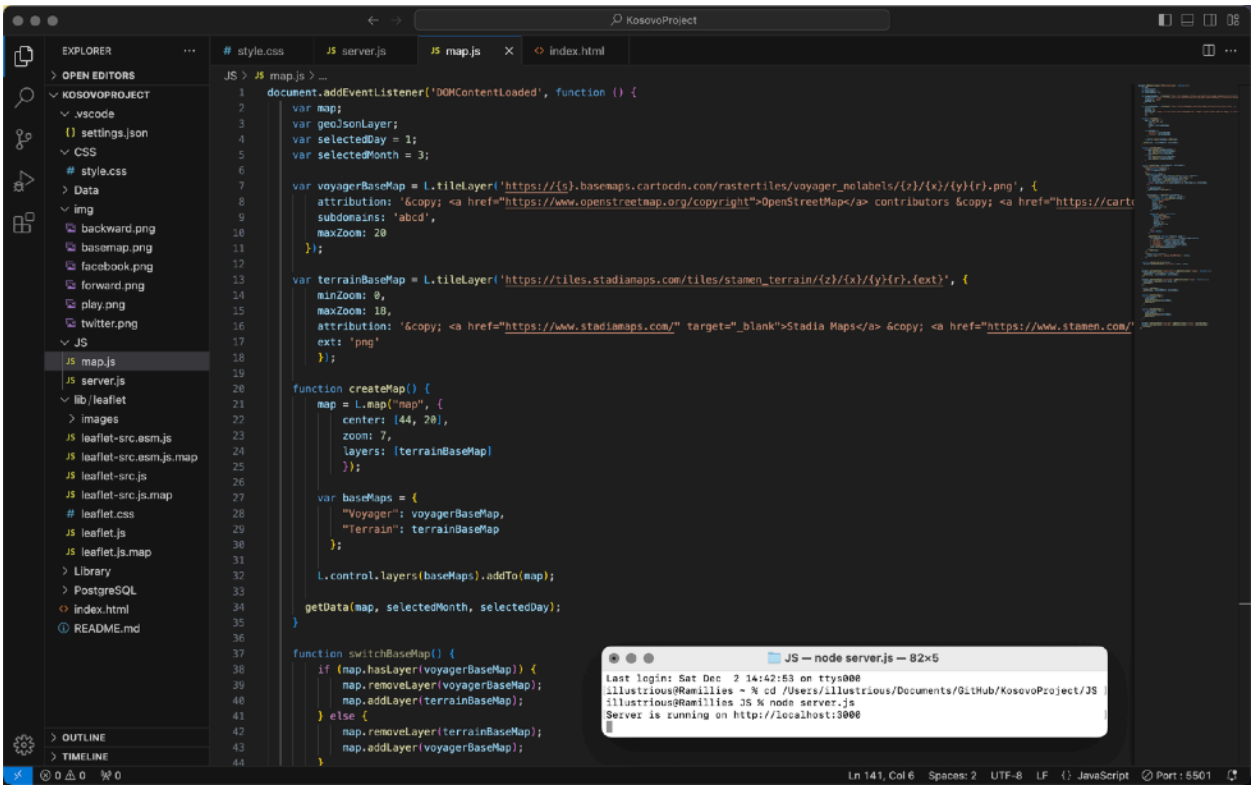


Figure 3

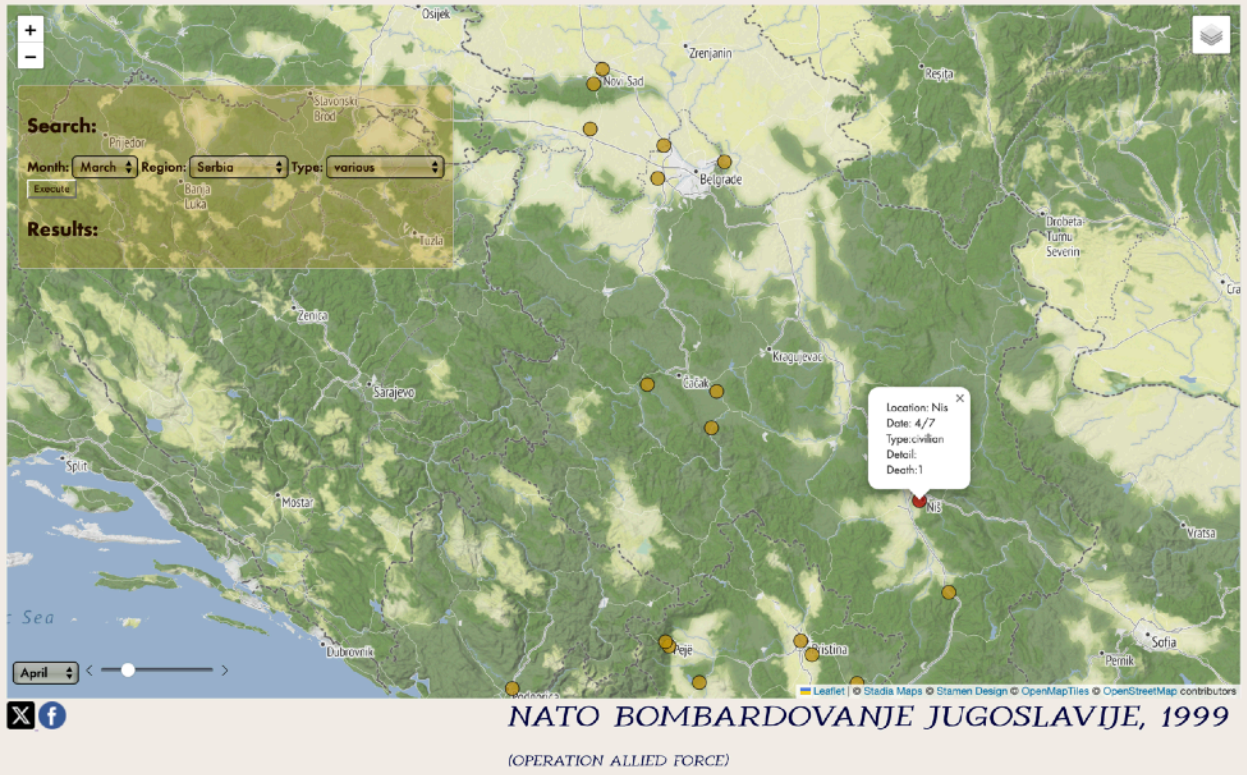


Figure 4

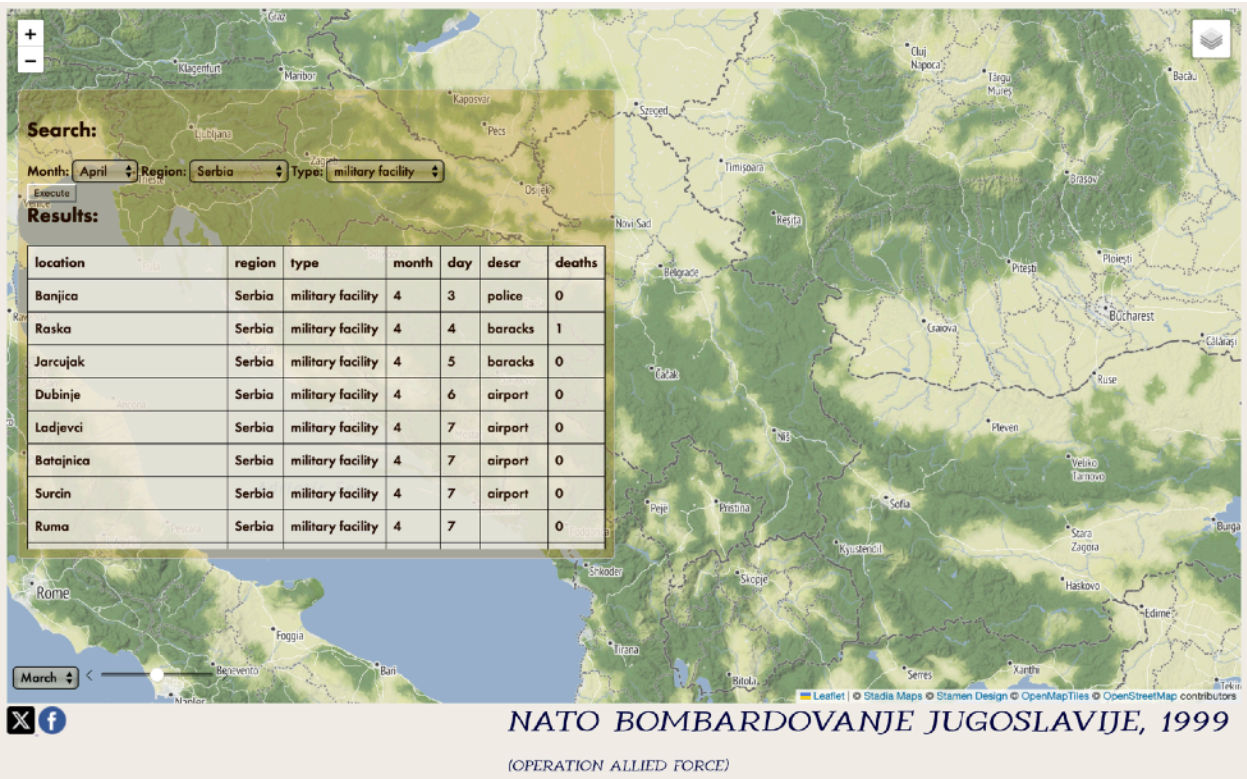


Figure 5

As a typical user scenario of this project, Robert, a senior year college student major in history, visited the project website to collect information about NATO air strikes during Kosovo War to support his thesis. This student trying to find how many air strikes targets on military facilities in Serbia region during April, 1999, and the total casualties of these strikes. He access the website through a desktop computer. Robert can use the selector to change event chronology. Also, a window pops up when this student clicked on a specific air strike event. Once Robert decided to divide into the database, he can use the query panel on the left side of website. He can select 'April', 'Serbia', 'military facilities' separately within each selector. Robert could find the information he needs on the query results. He can sum up the deaths toll from each event displayed in results since he needs to know the total casualties of these strikes. However, it is important to know that exact statistic data of these aerial operations are either classified or already lost during the war. The data sown on results may not accurate and cannot be utilized as a verified source unless corroborated by other authoritative resources.

**Conclusion and discussion:**

The project exceeds inherent limitation of static maps through its interactive format. Audiences can easily locate the information they need through date selector or query panel. The other advantage of this project is the database structure, which permitis updating of the data. It is particularly important for history related topic, considering the possibility of future data declassification. However, a notable limitation of this project is its local hosting. Which seriously limited its portability, especially its incompatibly of usage on mobile devices. The project requires a crucial modification to enhance accessibility for public use. Firstly hosting the

database on the cloud. And the interactive map should also be easily accessible and manipulable through a website link.

**References:**

Popovic, 2021: Agathon, Milos. *Strongmen_Replication.* GitHub, 20 Aug.2021, https://github.com/milos-agathon/strongmen_replication.git.

Other Database Data Resources:

*The Collapse of Yugoslavia, 1991-99(Revised Edition)* (ISBN: 9781472851222);

*'OPERATION ALLIED FORCE' : NATO IN KOSOVO, 10 YEARS LATER* (NATO Thematic Bibliographies NO.8/2009)

*Final Report to the Prosecutor by the Committee Established to Review the NATO Bombing Campaign Against the Federal Republic of Yugoslavia,* UN International Criminal Tribunal for the former Yugoslavia.

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