# Process Book
## FemWorld Project

Website

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# Introduction

This webpage aims to transmit and analyze information graphically about femicide. Additionally, it offers links to other websites related to this topic and bibliographic information.

Femicide, representing the most severe form of gender-based violence against women and girls, is rarely an isolated incident. It is more often the deadly consequence of systemic gender-based violence present in all regions worldwide. These gender-related killings of women and girls, occurring across private and public domains, are motivated by gender-based factors. These factors are embedded in societal norms and stereotypes that deem women subordinate to men, alongside discrimination, inequality, and unequal power relations between genders in society.

This situation is reflected in all countries, some more than others. Women experience it at different ages and in different circumstances. The objective of the website is to visualize the dynamics of femicide using these attributes and determine whether there is any relationship with poverty and the victim's educational level.

# The Context

The framework used is the UNODC and UN Women's statistical framework, approved in March 2022, categorizes femicide (gender-related killing of women and girls) into three types:

1. Intentional homicides of women and girls perpetrated by intimate partners

2. Intentional homicides of women and girls perpetrated by other family members

3. Intentional homicides of women and girls committed by perpetrators other than intimate partners or other family members and where the killing meets at least one of eight criteria identified in the Statistical framework

Summary of the context for collecting the data:
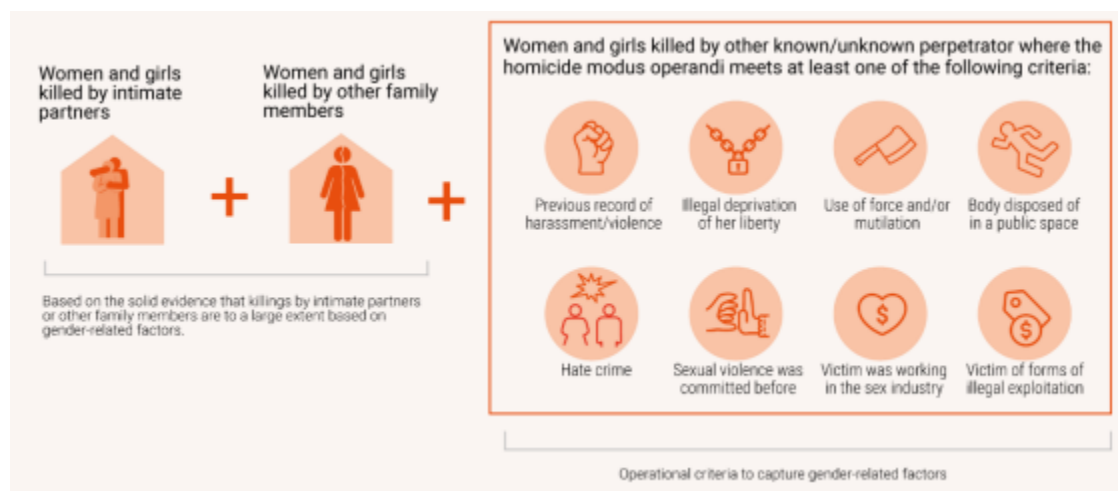


Source: https://www.unodc.org/documents/data-and-analysis/briefs/Femicide_Brief_2024.pdf

Additionally, the variables poverty of the victim were used as derived attributes to complete the data set. For this, we will use the **Gini index** as an indicator of the country's poverty.

# The Principal Attributes

The gender killing  data set has the following characteristics:

- Homicide by relationship with the perpetrator
- Unit of measurement: Counts and Rate per 100K population
- Country
- Year
- Number of femicides

# Gini index (poverty indicator/income inequality)

The Gini index  is a statistical measure used in economics to represent the degree of income inequality, wealth inequality, or consumption inequality within a nation or social group.

**0-1 Value:**  The Gini index ranges between 0 and 1. A value of 0 represents perfect equality, while a value of 1 represents maximum inequality. Scaled Range (0-100) in the web site.

**Comparison of different situations:** The Gini index allows you to compare inequality between different countries, regions, or time periods.

# Visualization Focus

This visualization project focuses on understanding and disseminating information about femicide through its statistics. The questions I aim to answer are to identify and rank the countries with the highest number of cases, and to compare the number of cases between these top countries using frequency statistics. Three categories of homicide were used in the visualization of section 2, as shown in Fig. 1. This same section also visualizes the countries with the highest number of cases across the entire data timeframe (2013 - 2022)
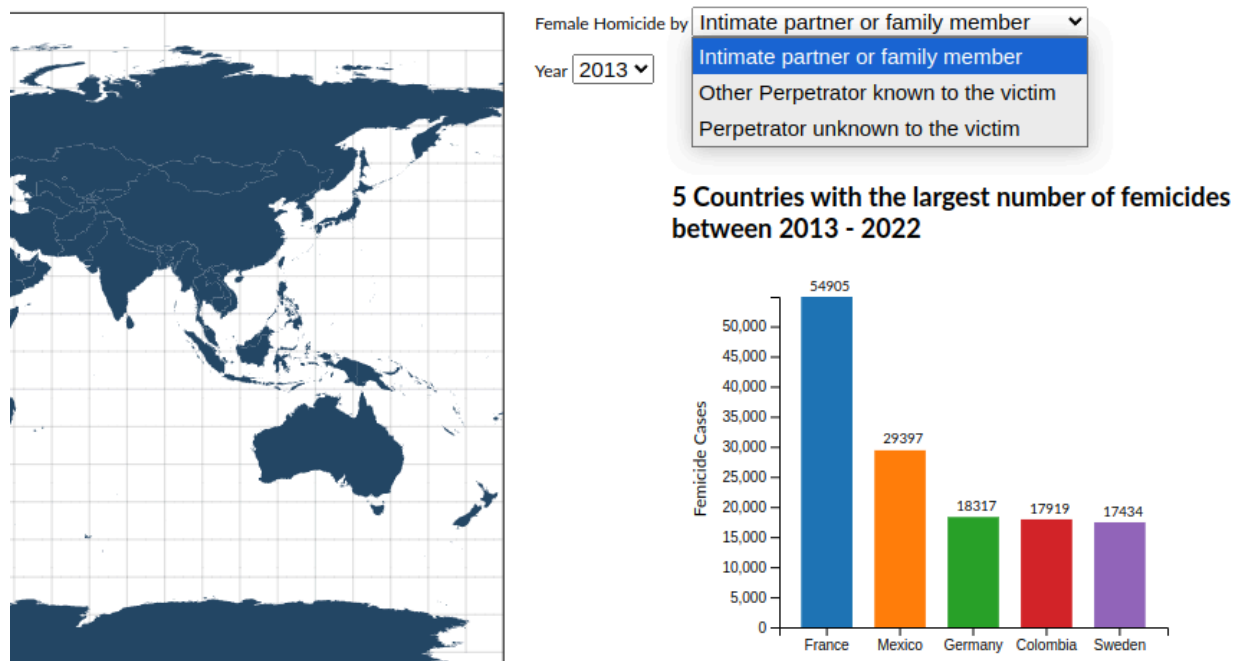


Fig. 1.

The website has three interactive tabs for the user, as shown in Fig. 2. The home section displays links to the database used for the project, other data sources related to femicide statistics. It also includes links to activists and journals with general and clarifying information about this phenomenon and social problem, and finally, seminal books by researchers.
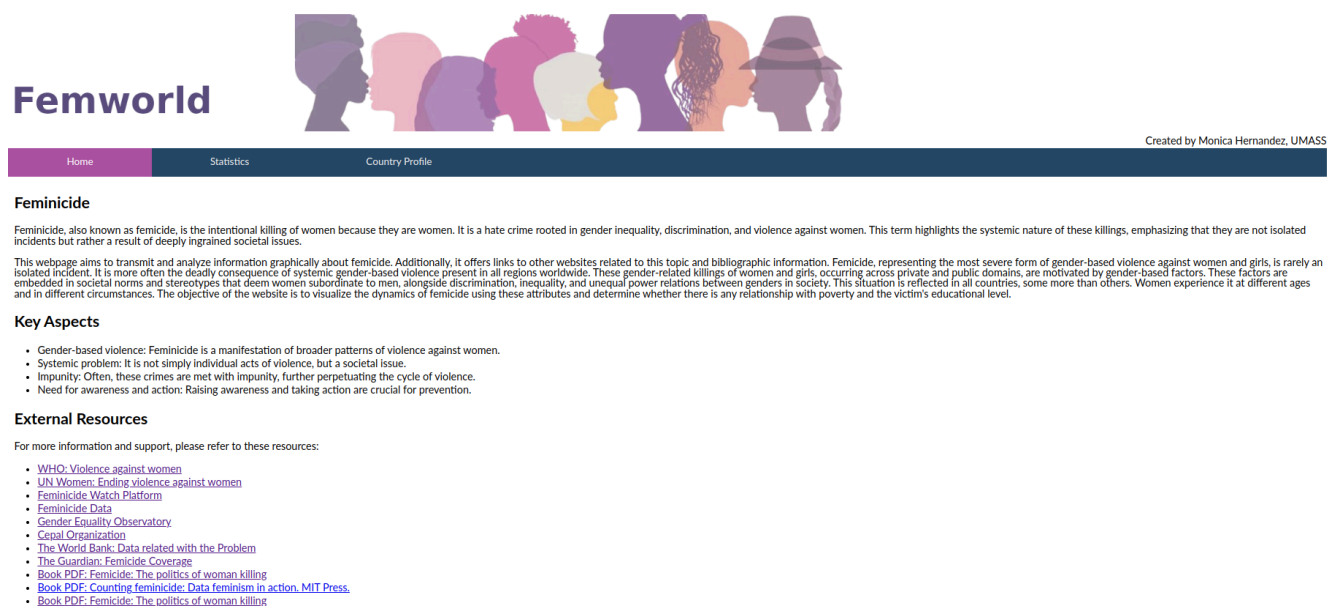


Fig. 2.

Section 2 specifically displays the visualization of femicide worldwide. You use a selector to choose the category and the year. First, you select the year, and then the category. When it shows you the countries with the highest number of cases highlighted by color intensity, you can click on a country to see its name and the number of femicides in that year and with that category. This step is illustrated in Fig. 3. In this same section, a comparative statistic of countries with the highest number of cases is also shown.
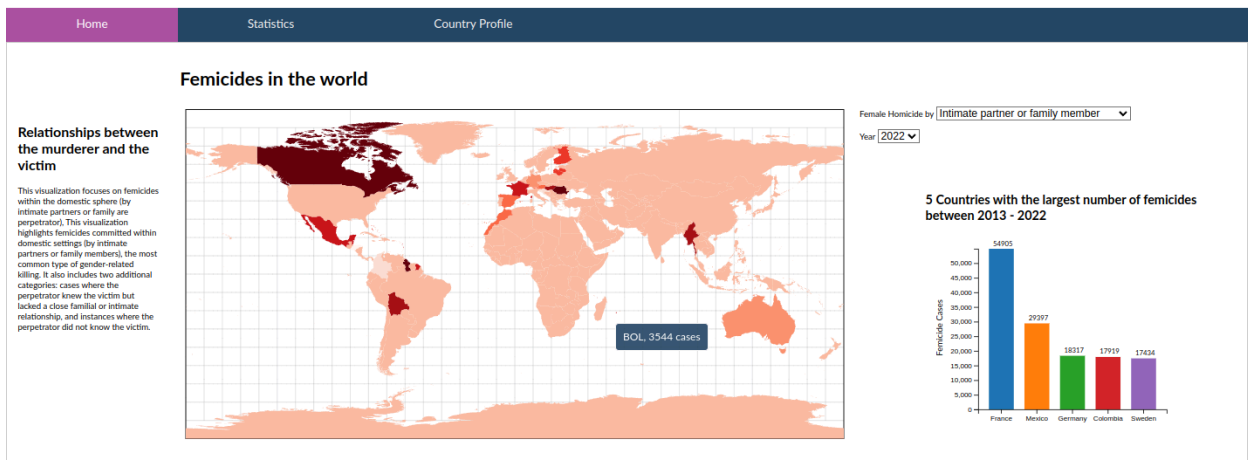
Fig. 3.

In Section 3, a profile per country is displayed, see Fig. 4. This shows the evolution of femicide over time since 2016 in the 5 countries with the highest number of cases; this is the year where the data is most complete for all the countries reviewed. In the visualization for Section 3, only the category "Intimate partner or family member" is used. This was chosen because there's a common belief that this category, in terms of the number of cases, best demonstrates femicide as a social and cultural phenomenon. This belief turned out to be false in my country, Colombia, compared to Canada, for example. That is, in Canada, there are more femicides committed by a partner or family member than in Colombia, which is considered a highly patriarchal country compared to Canada. The visualization revealed that the South American countries with the highest number of femicides are Mexico and Colombia.
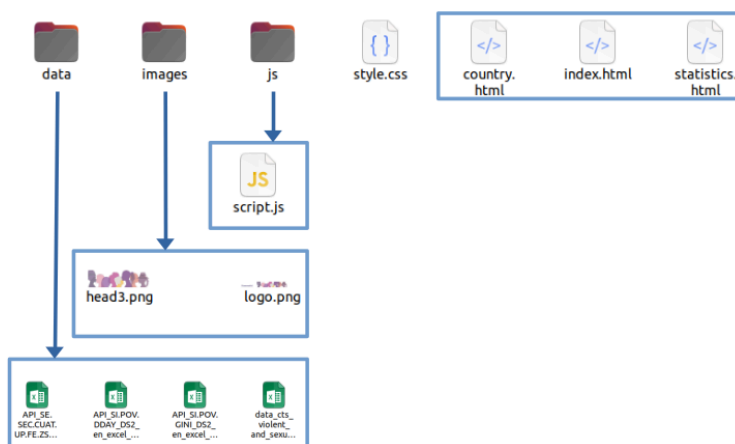
Fig. 4.

# Structure Website



Fig. 5.

## Implementation

The overall implementation follows the structure presented in Fig. 6. `map.js` displays `statistics.html` (the map visualization), `profile.js` displays `country.html` (the country profile), and `script.js` serves the data and instantiates all the classes. There is a styles section named `style.css`. There is a Process book explaining the project's implementation and results. Finally, `readme.md` provides implementation details.
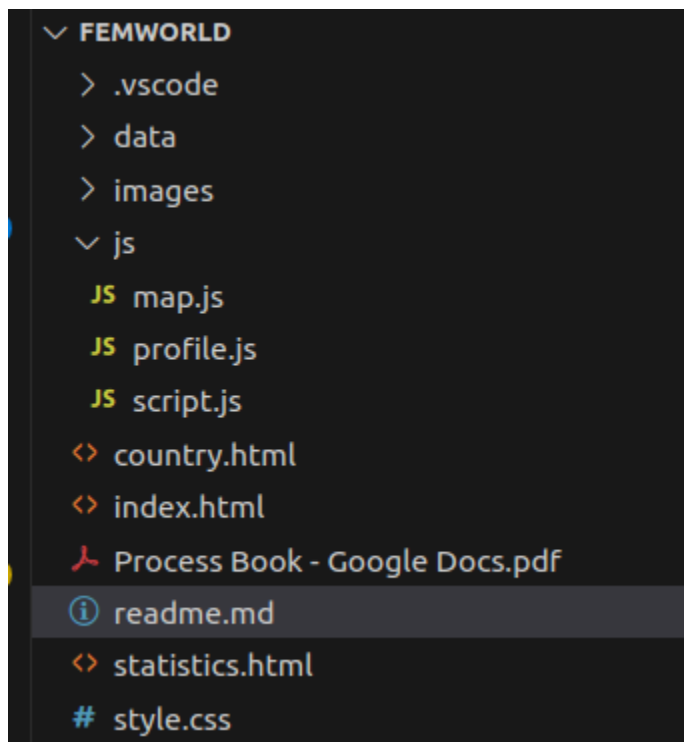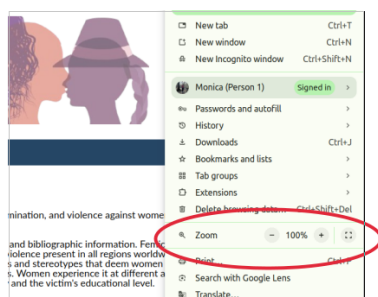


Fig.6.

The main script that deploys and launches all instances is shown in Fig. 7.

```js
> JS script.js > ...
1    // ******* DATA LOADING *******
2    // We took care of that for you
3    async function loadData () {
4        const femData = await d3.csv('data/femicidedata.csv');
5        const mapData = await d3.json('data/world.json');
6        const giniData = await d3.csv('data/gini.csv');
7        return {femData, mapData, giniData};
8    }
9
10
11   // ******* STATE MANAGEMENT *******
12   // This should be all you need, but feel free to add to this if you
13   // communicate across the visualizations
14   var globalApplicationState = {
15       selectedYear: '2013',
16       femData: null,
17       mapData: null,
18       giniData: null,
19       worldMap: null,
20       profileChart: null,
21   };
22
23   //******* APPLICATION MOUNTING *******
24   loadData().then((loadedData) => {
25       console.log('Here is the imported data:', loadedData.femData);
26
27       // Store the loaded data into the globalApplicationState
28       globalApplicationState.femData = loadedData.femData;
29       globalApplicationState.mapData = loadedData.mapData;
30       globalApplicationState.giniData = loadedData.giniData
31
32
33       // Creates the view objects with the global state passed in
34       const worldMap = new MapVis(globalApplicationState);
35       const profileChart = new ProfileVis(globalApplicationState);
36
37
38       globalApplicationState.worldMap = worldMap;
39       globalApplicationState.profileChart = profileChart;
40
```

Fig. 7.

To ensure the website layout remains in perfect condition, please maintain the zoom level between 90-100%.

## Data

The official data used for the project can be found at:

https://dataunodc.un.org/dp-crime-victims-sexual-violence (femicide cases) y
https://data.worldbank.org/ GINI poverty index or GDP).

Additionally, these links are in the Home section of the website.



## Evaluation

I learned from this project in two ways. Technically, I learned how to structure a JavaScript visualization project using D3. I learned to handle events, design a data and instance manager, and present visual information using the tools provided in the course. I was very happy doing this project. Regarding the topic of femicide, I was interested in knowing the case statistics in most countries around the world, identifying the highest-risk countries, and determining if my country, Colombia, was among them, which was confirmed. I also wanted to know and show which Latin American countries had the highest number of cases and in what categories. For example, in Colombia, there are

more femicides committed by people external to the victim compared to European countries, which suggests that Colombia might be an unsafe place for a female tourist, for instance. Finally, I wanted to know if there was a correlation between a country's poverty (GDP indicator) and the number of femicides. I found only a moderate correlation in France out of the 5 countries studied or visualized. Therefore, it could be said that such a correlation does not exist in general. However, a particular correlation exists in France, and it would be necessary to analyze the conditions for this correlation, such as culture, living conditions, education, etc.