Milestone 2: DataRingz

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1 Project Goal

DataRingz is an interactive 3D visualization platform for the Paris 2024 Summer Olympics. It allows users to explore the Olympic venues on a 3D map of Paris and access a rich variety of visual insights about sports, athletes, and countries. By clicking on a venue, users can learn about the sports and athletes present there, with popups providing deep stats. Additional panels offer country rankings, sport comparisons, and demographic statistics.

2 Visualizations

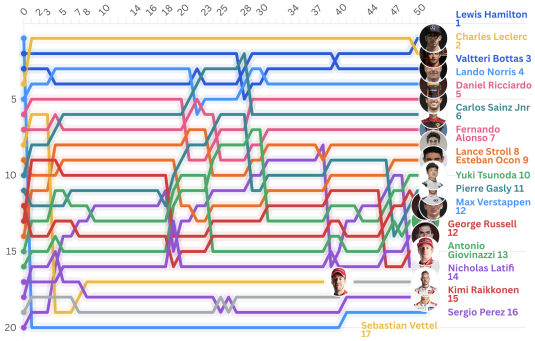
The visual experience begins with our initial 3D map of Paris, which already serves as a core visualization. It allows users to navigate Olympic venues spatially and acts as the entry point to explore deeper layers of data through interactive elements (the highlighted buildings, corresponding to venues). We use Mapbox that provides us a complete and free API, to customize it like we want. **Lecture 8.1 on Maps** gave us useful insights on this topic! Here is what it looks like:

2.1 Global statistics

We felt it was important to include **global statistics** about the **2024 Olympics**. However, since the goal of our project is to let users **freely explore the map**, we wanted to avoid adding a traditional menu. Instead, we'll include a simple **search bar** (more on that later). Our preferred solution is to introduce a **special venue**, distinctively colored, located at the **Jardin des Tuileries**, where the Olympic torch was displayed. Clicking on it will open up a panel with a wide range of global statistics.

- To provide a high-level overview, we will use a **zoomable sunburst chart** showing which sports and disciplines are most **"profitable" in terms of medals**. The inner circle will represent major sports categories, and the outer one, individual disciplines. We will use `D3.js` Sunburst component, to make it interactive, following **Lecture 4.2, 5.1 and 5.2** on D3 usage.

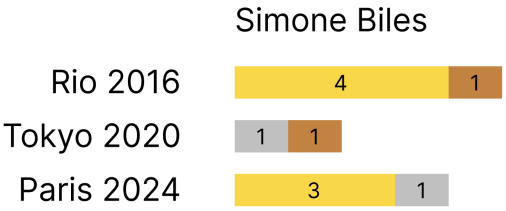
- We also plan to include a **timeline visualization** of **medal rankings by country**, both within the Paris 2024 edition and across multiple Olympics (e.g. evolution over the last 20 years), on the same component, and user will select which one he/she wants to see. We will use `D3.js` directly labeled line component, following again **Lecture 4.2, 5.1 and 5.2** on D3 usage. You can also see the video of the animation wanted `here`:



- General stats such as the **number of athletes, events, and visitors** will be shown using a **line chart** that highlights increases from previous editions. We will also display the **number of world and Olympic records** broken during the Paris games.

2.2 Per athlete

We want to provide a detailed view of individual athlete performance. This includes a comparison of their results at Paris 2024 with previous Olympic editions using a bar chart.



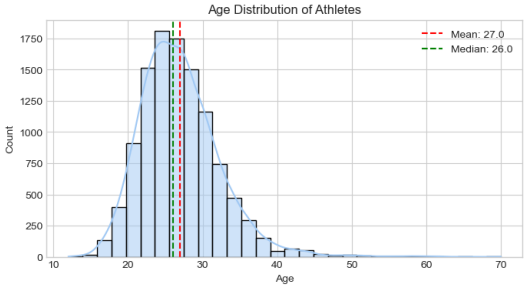
Additionally, we will plot all results of an athlete to highlight their performance over time and across events. This visualization aims to show patterns such as peak performance periods or consistency. Various statistics (when available), will be shown on the athlete's page (other job, height, weight, idol, philosophy...)

2.3 Per sport

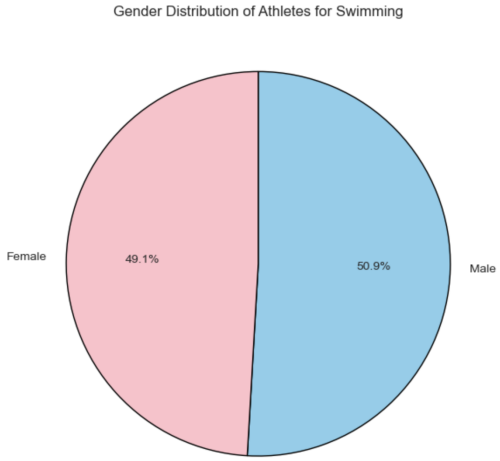
Each sport will have its **own dashboard** presenting useful statistics.

- We will display an double age histogram similar to the EDA, where the age distribution of the selected sport is shown in the foreground and the other selected sport, or the mean of all sports are displayed in the background

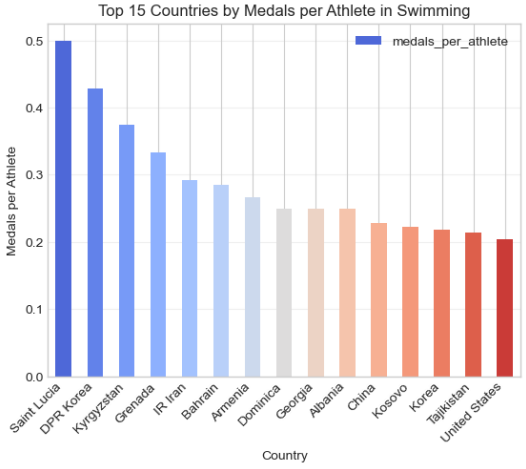
for context, see `here`. The same **Lectures on D3** are needed!



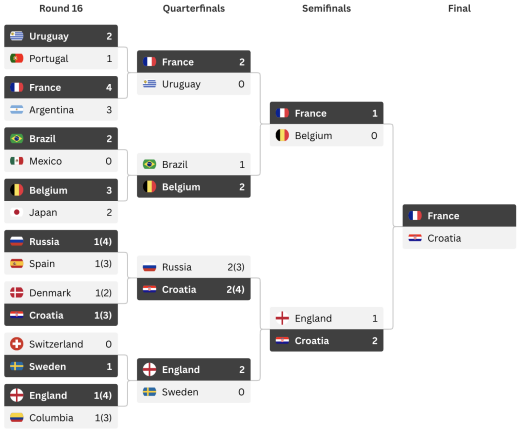
- Gender representation will also be illustrated through a pie chart, again with contextual comparison to other sports.



- A key component will be a map-based or bar chart visualization (still in discussion) of the participating countries per sport, both in total and adjusted per capita, to highlight geographic diversity and investment. Either it will be a **D3 interactive version of this**, or a **D3 map-based** like `here`. Again, **D3 lectures on interactivity, 8.1 and 8.2 on Maps, and 7.2 on Do and Don't in Viz**, will be used to implement this, and to choose which option we keep!



- For performance insights, we will extract the top 3 results (time or score) for each event, separated by gender, and display it on a podium.
- Lastly, sports involving direct matchups (e.g. tennis, judo) will be represented with tables showing 1v1 outcomes, which are clearly more visual, and show path of teams to reach the gold medal! Since we will making it from scratch with D3 again, same **D3 lectures and 7.1 Designing Viz concepts** will be used! Our inspiration interactive bracket can be seen on Flourish `here`



2.4 Per country

The country-focused section will include a medal ranking breakdown by sport, allowing users to compare a nation's strength in each discipline with others. This will be represented with bar charts, placing the selected country in the context of its competitors (same type as above with the medals per athlete).
We also want to compare each country's performance with its past Olympic results — both in terms of medal count and ranking evolution, similar as the Simone Biles example, but for countries.
- Additionally, we will display the total number of athletes per country, to reflect the scale of each delegation.

2.5 Bonus: animated insight

As a creative bonus, we are considering an animation that illustrates time-based performance improvements - inspired by the New York Times visualization of swimmer Léon Marchand, see `here`. This could show how winning times evolve across Olympic editions for selected events, reinforcing the narrative of athletic progress over time.

3 Functional Project Prototype Review

Our up-to-date website can be seen at `dataringz.martinctl.dev`, with our animations, actual animations and more insights about the Paris Olympics!