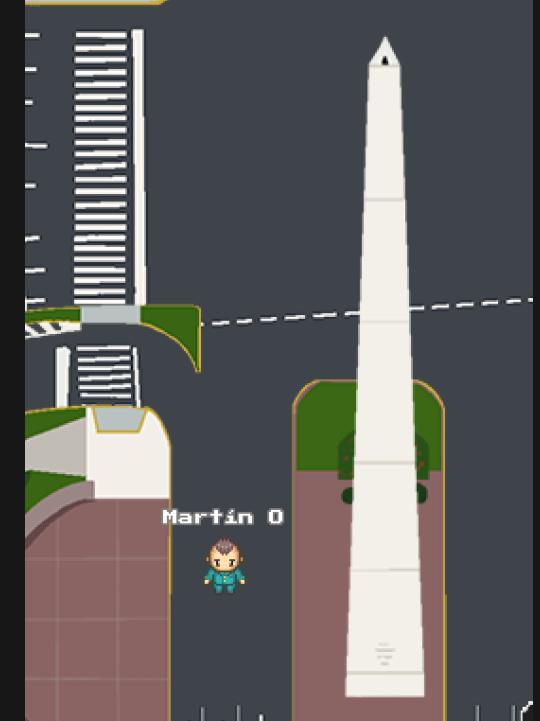


Spatial Analysis of Cultural Activities in Buenos Aires City



About me

- Geographer graduated from Buenos Aires University
- studying a MG in Statistics
- Work in Data Cultura / Ministry of Culture
- Map enthusiast
- Other things like trombonist, cyclist, etc



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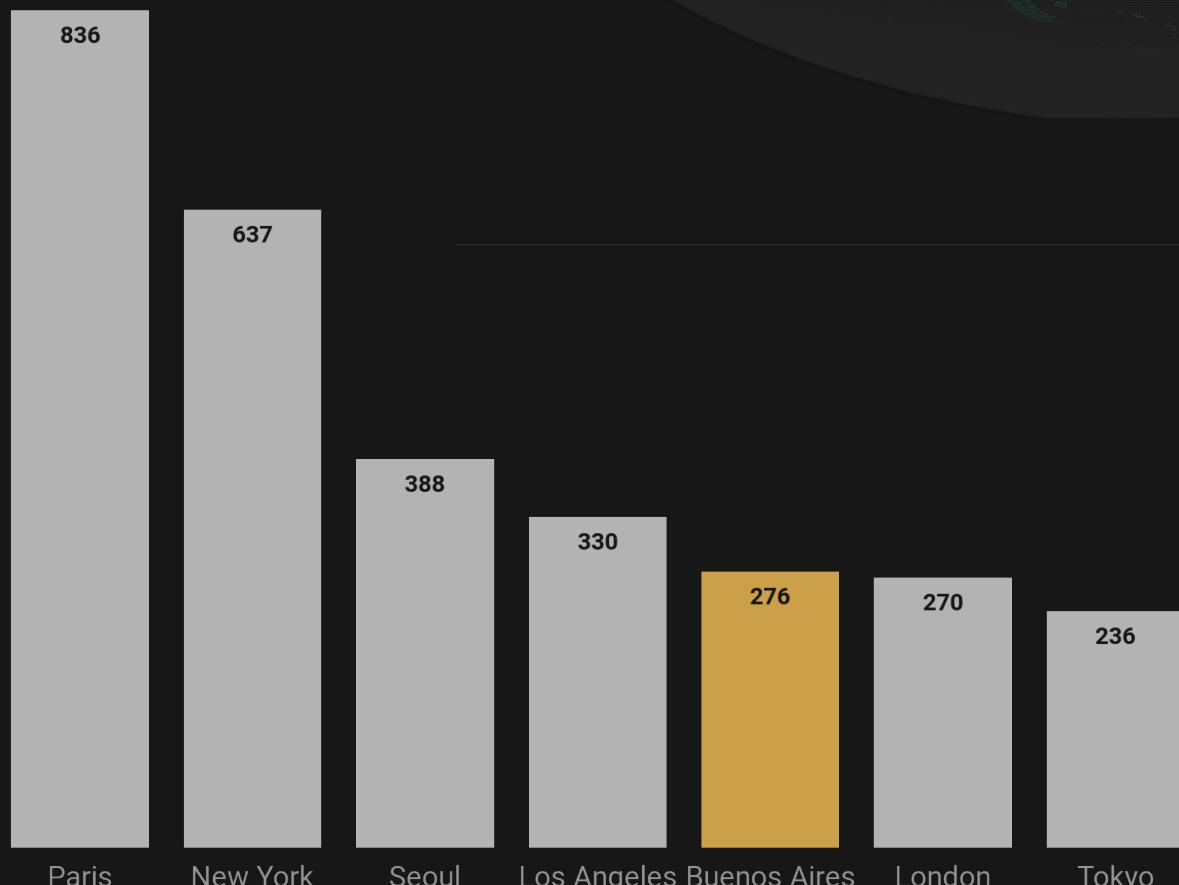
Context

Cultural and creatives industries play a relevant role in Buenos Aires economy and in the city life.

The wide cultural offer is one of the main attractions of the city.

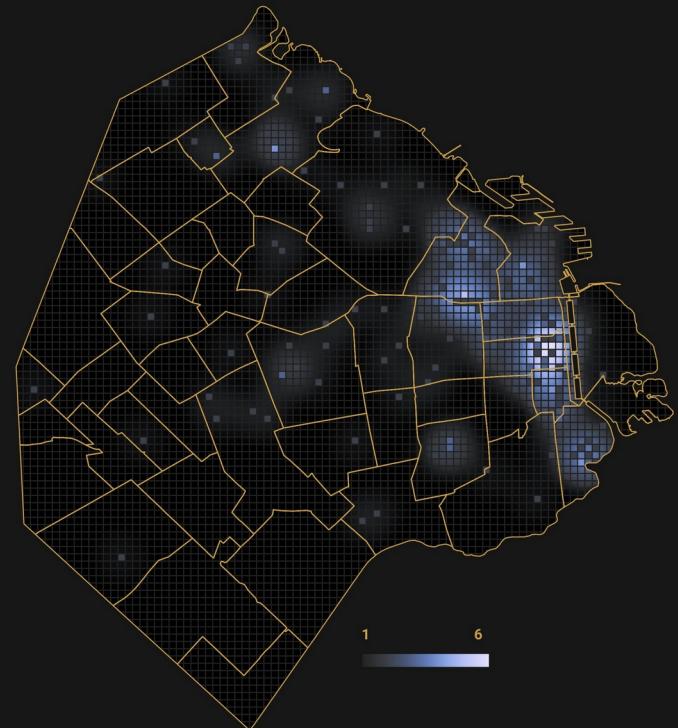
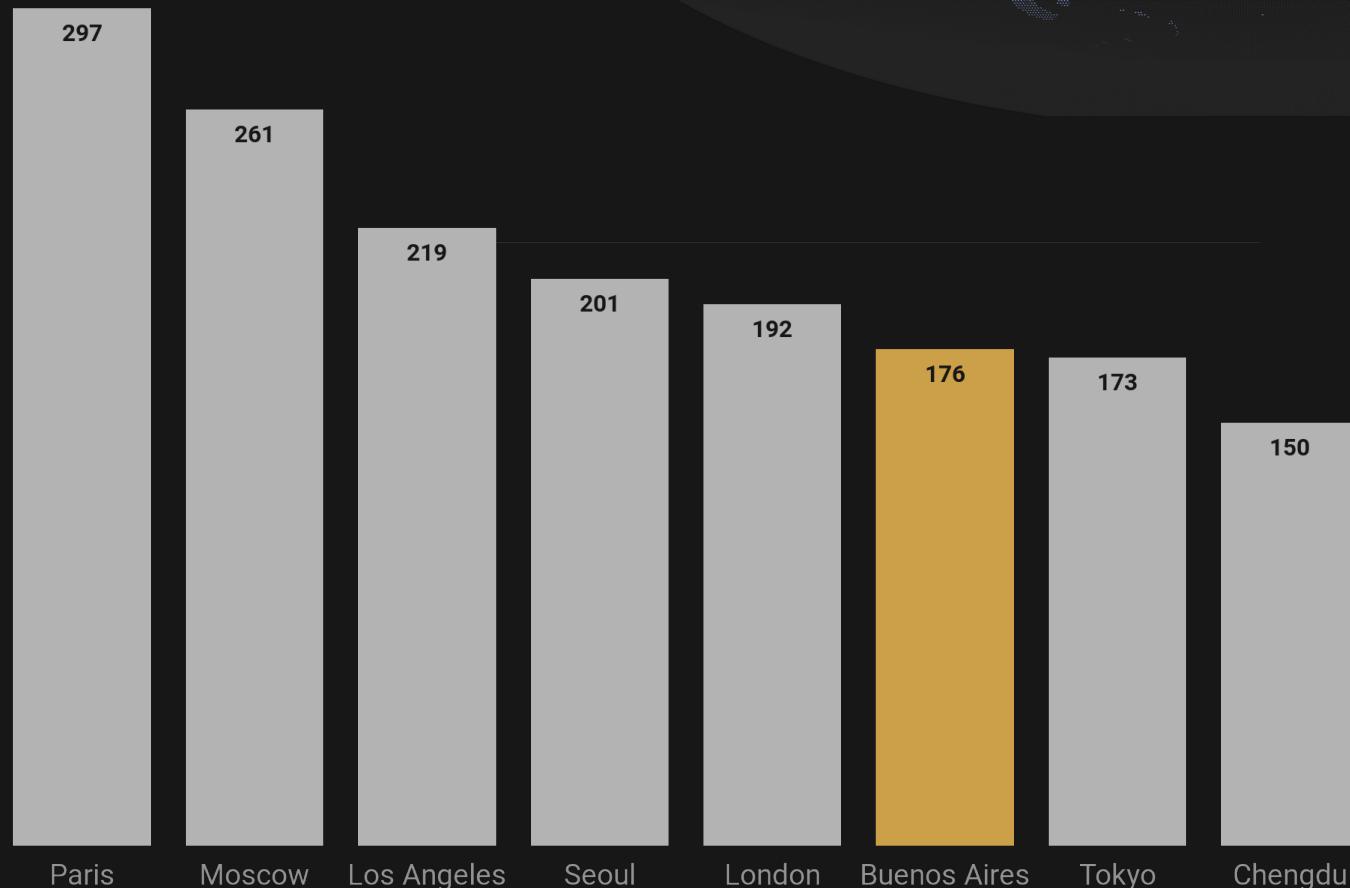
Context Data

Theaters per City



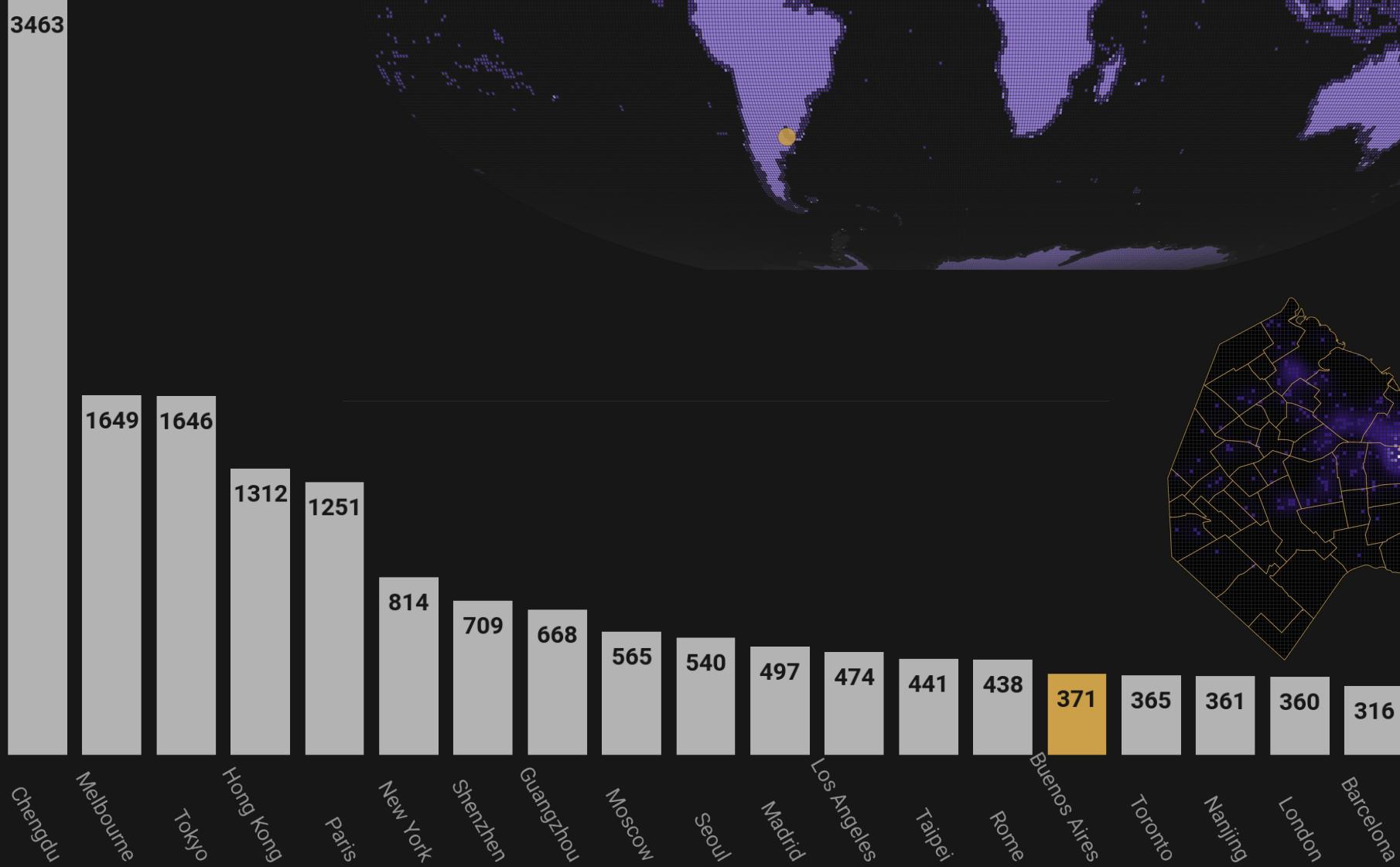
Context Data

Museums per City

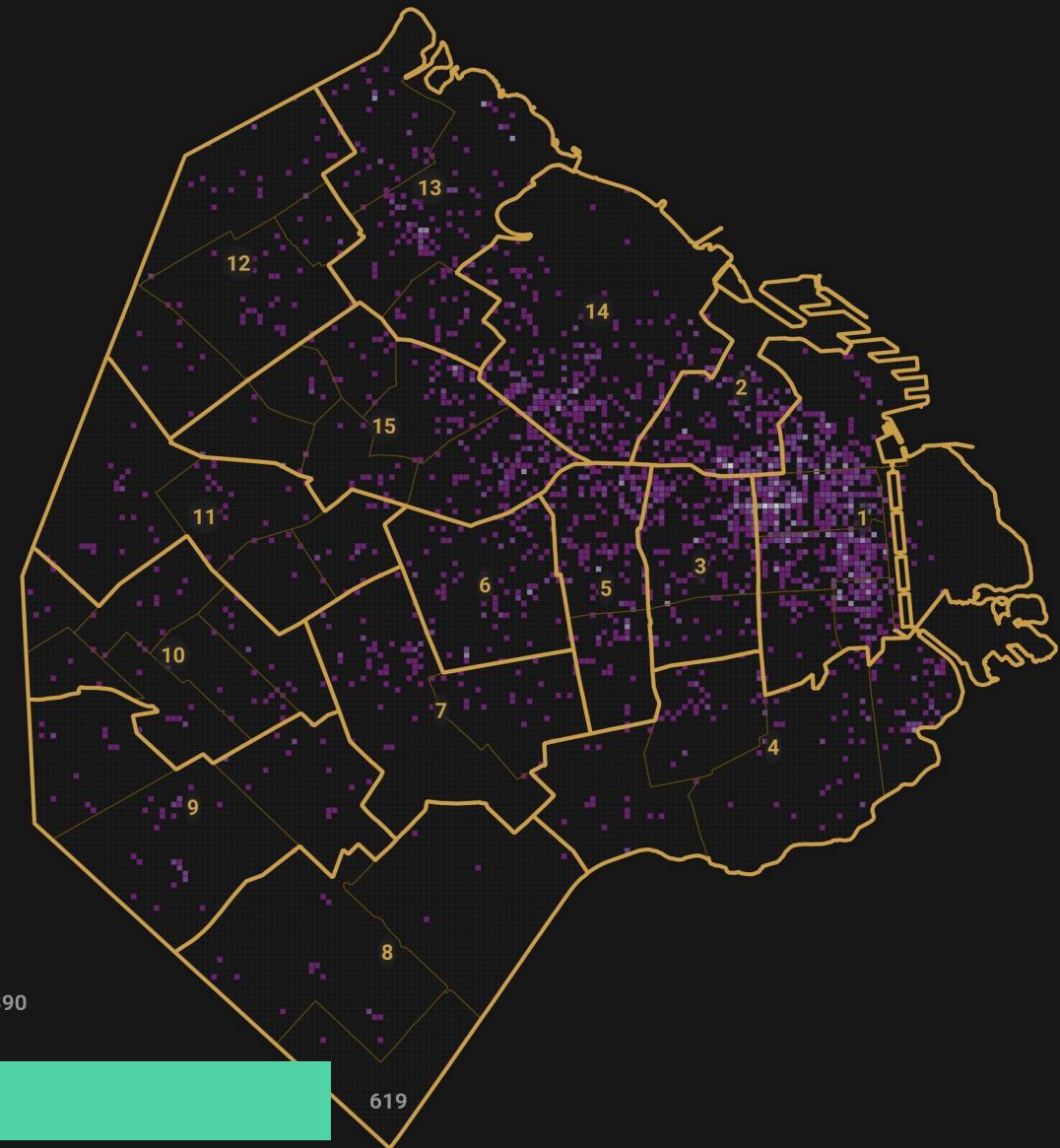
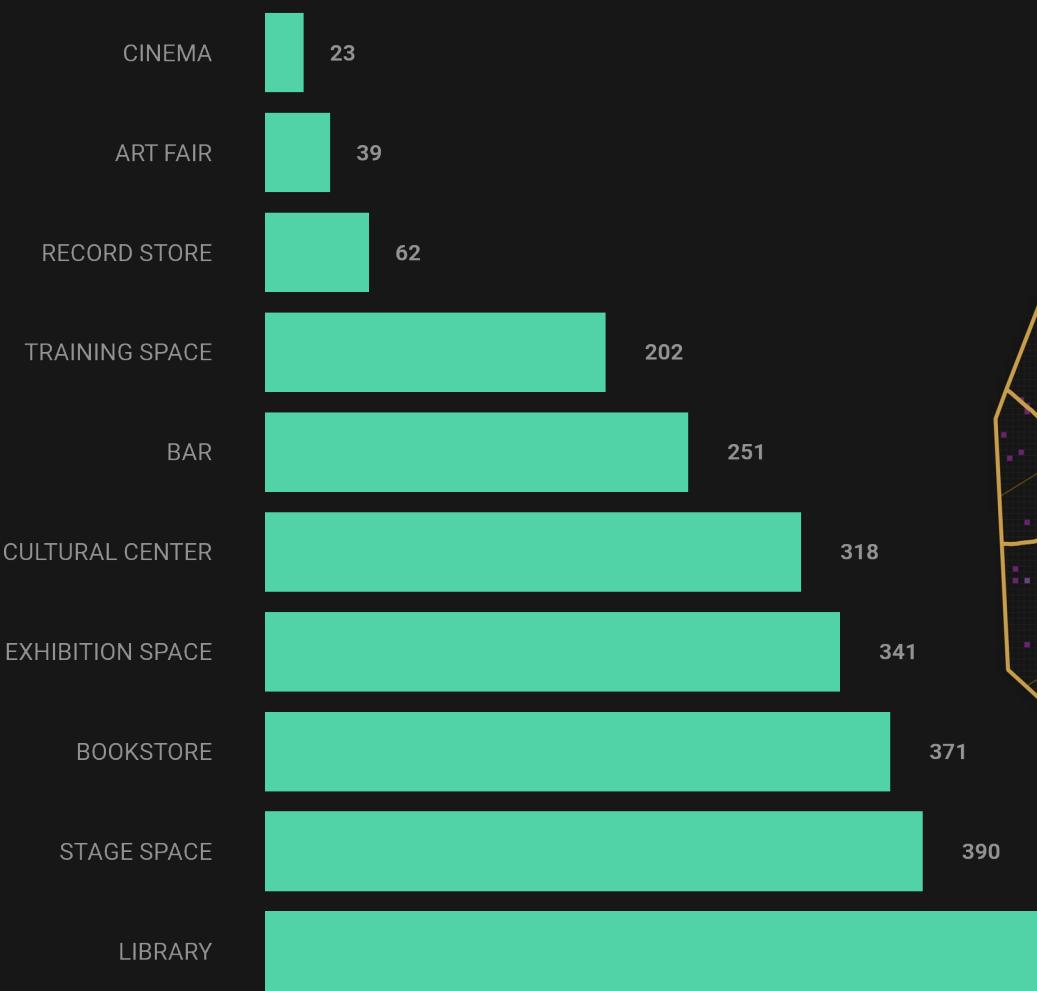


Context Data

Bookshops per City



- The city has more than 2,600 cultural spaces.
- Libraries and stage spaces (theaters and music clubs) are the most recurring spaces in the chart
- Only 10% are public spaces

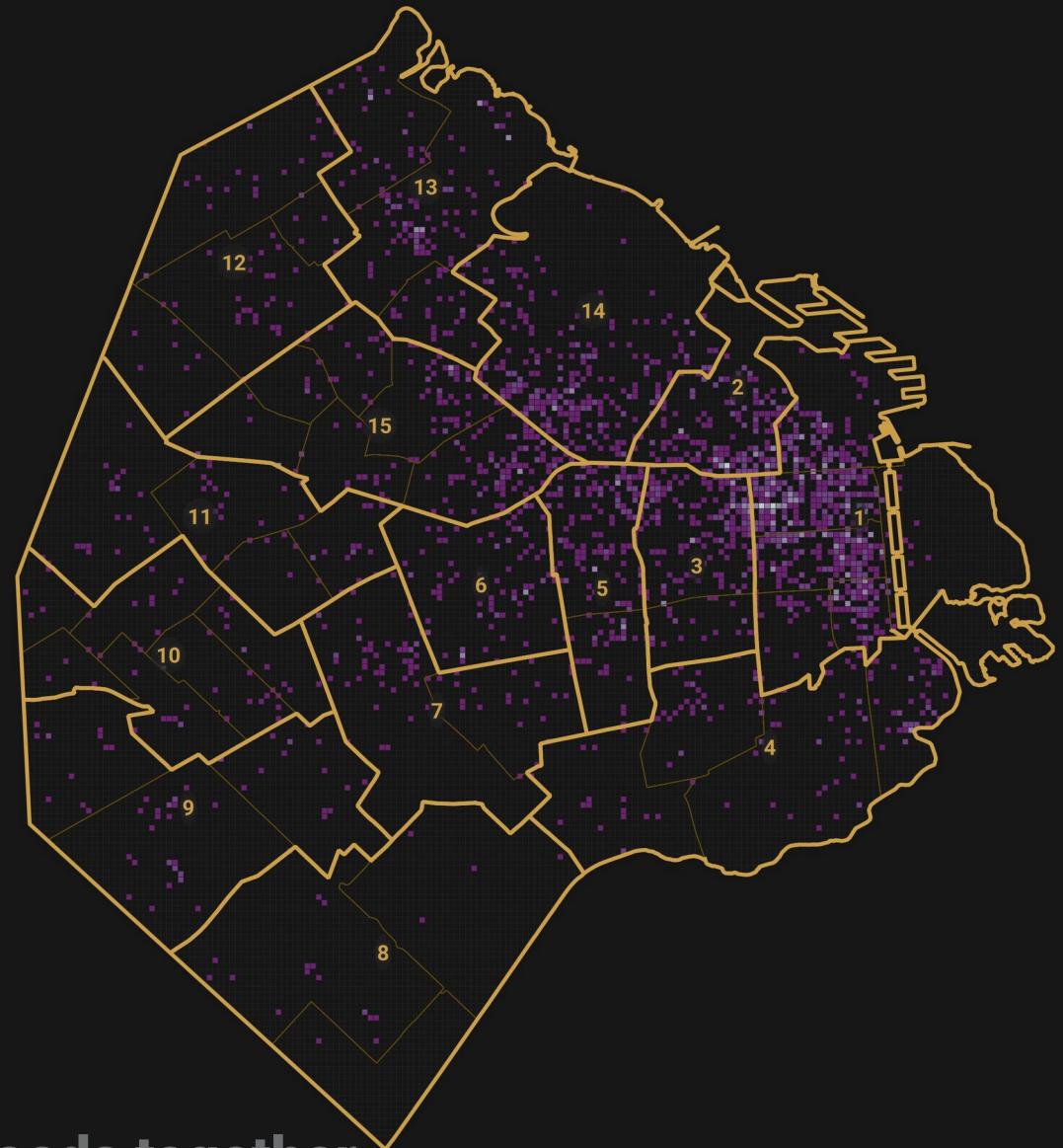


Half of the cultural infrastructure of the city is located in 3 comunas*: Comuna 1, Comuna 2, Comuna 3

How is access to culture in the city?

Which areas have less cultural infrastructure?

Does proximity influence access to cultural offerings?



***a kind of cluster of many neighborhoods together**

Work Objective

The main objective of this work was to construct an indicator that would show how access to culture is in the city.

From this, the indicator will be used to improve the localization of cultural activities organized by the ministry.

In other words, the location of cultural spaces and infrastructure depends on many factors. However, the Ministry of Culture can organize cultural activities in outdoor spaces, in its own spaces or by making agreements with the private sector

Methodology

We want to measure the average distance to the closest cultural space considering what type of space it is.

We consider theaters, museums, cinemas, libraries, culturales centers, art academies / training spaces, and music Clubs

We take this distance from every street corner to this spaces

After that, we translate into different territorial units like hexagons, neighborhoods and Comunas

Sources of information

All the datasets that we used are available in the open data portal* of the city.

We used:

Espacios Culturales / Cultural spaces

Actividades Culturales / Cultural activities

Callejero / Street links of the city

Barrios / Neighborhoods

Comunas

The routing algorithm uses OSM data

*<https://data.buenosaires.gob.ar/>

Tools



- Create streets intersections
Line Intersections + Delete duplicates geometries
- Align street intersections with neighborhoods boundaries
Snap Geometries to layer

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- Calculate routing distance

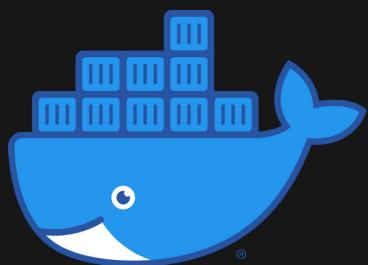
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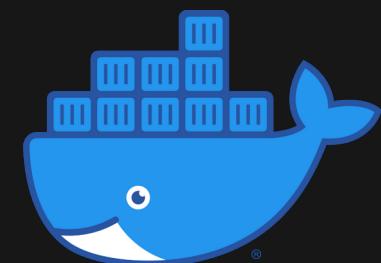


- Local OSRM instance

Tools



- Create streets intersections
Line Intersections + Delete duplicates geometries
- Align street intersections with neighborhoods boundaries
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- Calculate routing distance
- Local OSRM instance



- Programming side
OSRM queries, iterations, data wrangling, improve processing time, etc

Some considerations about OSRM:

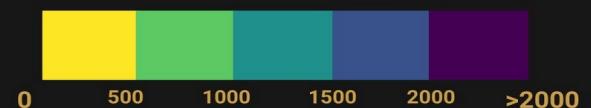
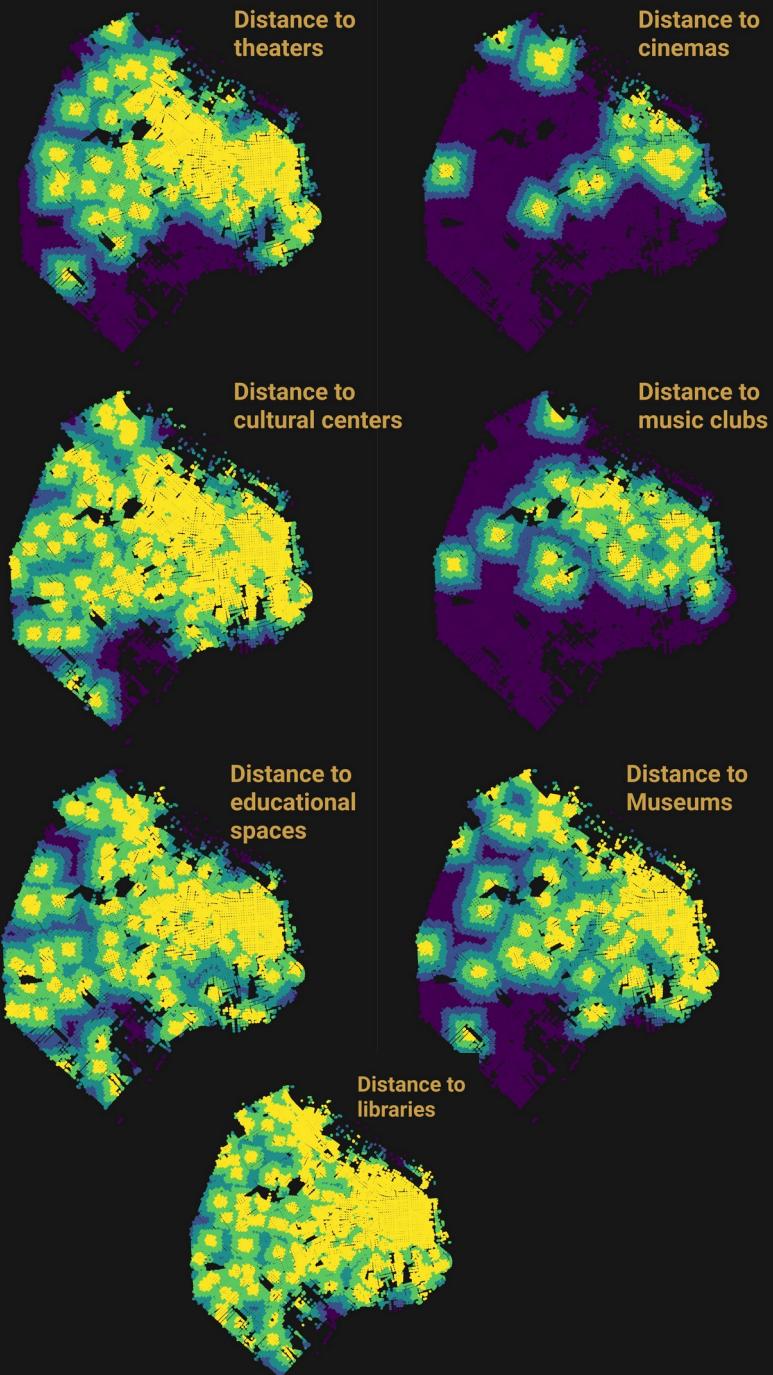
- It supports car, bycicle or foot
- It's based on Open Street Data
- It's written in C++ but you can use easily in R
- Using it in R, you can get travel time matrices, Shortest path, Isochrones and travel trips with multiple points
- Ease of installing a server on docker

Usefull links: <https://github.com/riatelab/osrm> , <http://project-osrm.org/>

Results

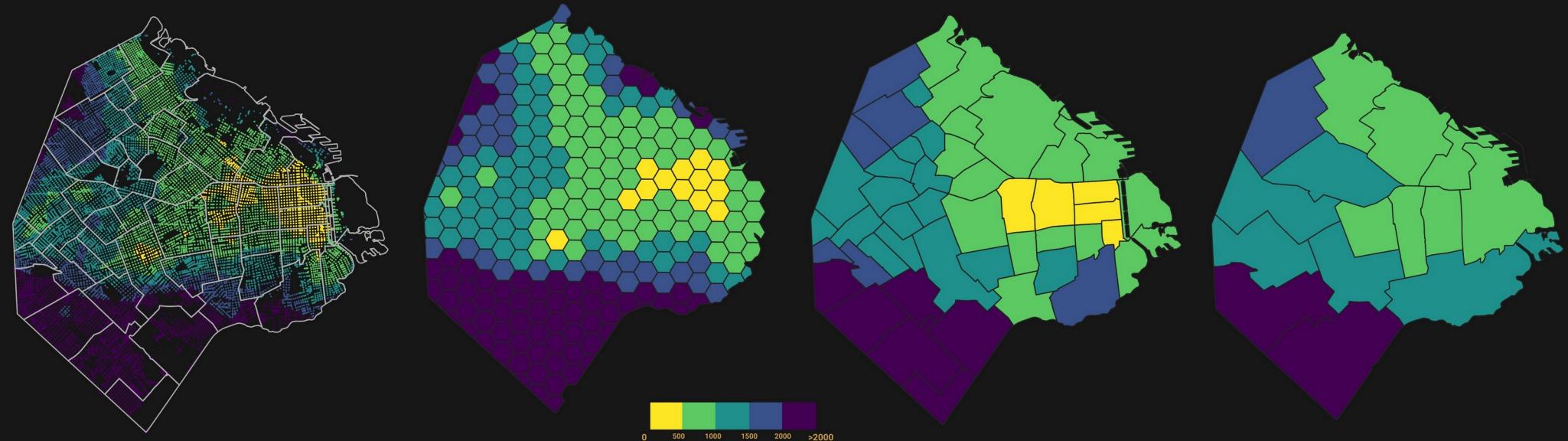
- The average distance to the closest cultural space in the city is 322 meters
- The 80% of the corners are within than 500 meters
 - A resident of San Nicolas has to walk an average of 205 meters while a resident of Villa Riachuelo has to walk almost 5,000 meters.
 - Or a resident of Villa Soldati has to walk more than 2500 meters on average to access a Cultural Center.

But these numbers do not tell us about the variety of cultural offerings or the frequency of such offerings.



Results

- Our indicator not only accounts for distance but also for a variety of cultural offerings.
- We can see that only a small part of the city has a variety of cultural offering at a distance less than 500 meters
- Most parts are within than 1000 meters
- Which locations needs more activities
- What kind of activities need each part
- show this information on a dashboard to bridge the gap between the planning area and the statistical area.



GRACIAS!!!

Thanks!!!

Obrigado!!!

Danke!!!

