

# Data-driven Planning for Sustainable Tourism in Portugal

DATA SCIENCE FOR SOCIAL GOOD EUROPE





MOTIVATION

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# So what's happening with tourism?



# Tourist per citizen ratio



Source: Instituto de Planeamento e Desenvolvimento do Turismo (IPDT)

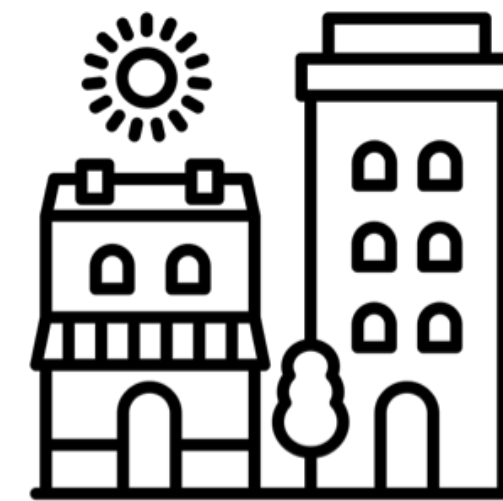
# It has its benefits



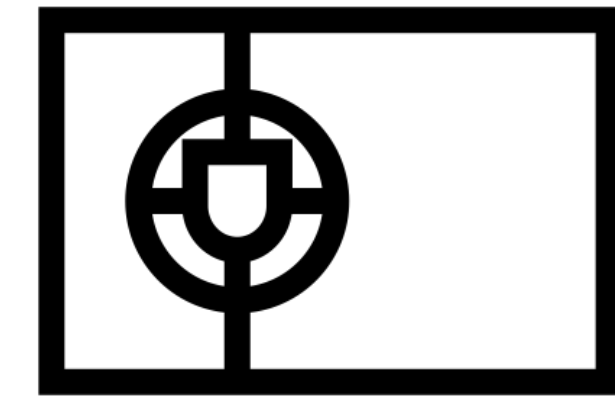
Economic Growth



Employment



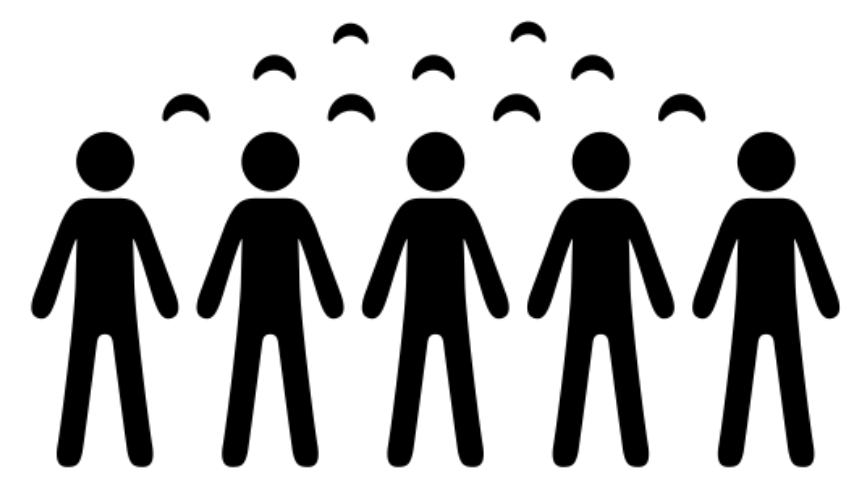
Conservation of the  
urban landscape



Revival of traditions



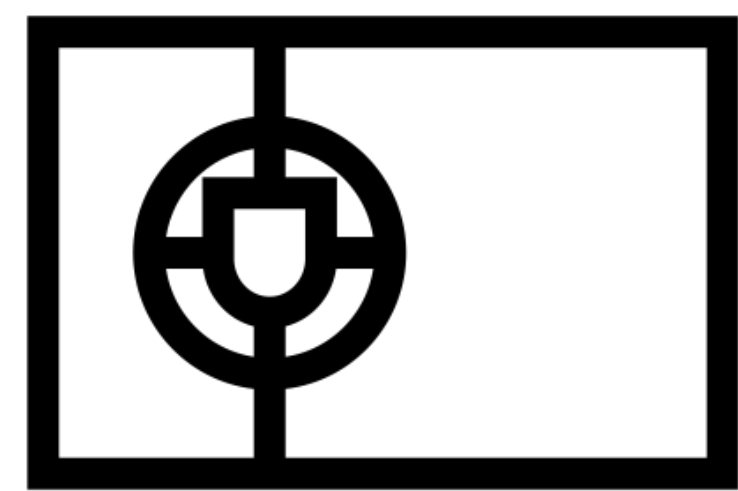
# But also its downfalls



Overcrowding



Coexistence conflicts



Loss of culture authenticity



Gentrification and Speculation

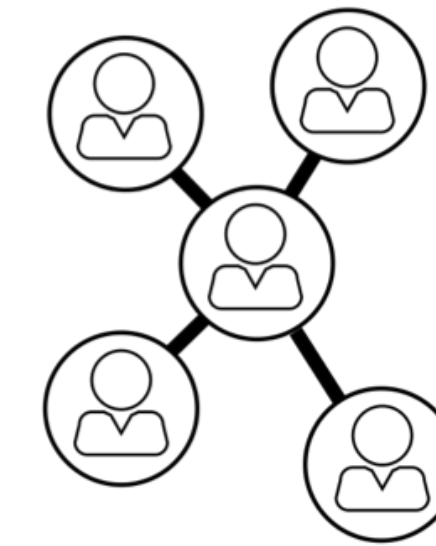




TELECOM DATA



SOCIAL MEDIA DATA



ANALYSIS

So what can we do?



# Our partners

PROJECT PARTNER:



DATA PARTNER:







# Tourism Flows in Portugal

ANALYZING TELECOM DATA  
NOS DATA FROM AUGUST 2017



# Telecom Data | Scope

Data contains information regarding Network Events for individuals connected to NOS' network with a foreign SIM card for Portugal between August 1st and 30th of 2017



The anonymized user  
identifier for the  
customer



The nationality of the  
user's SIM Card



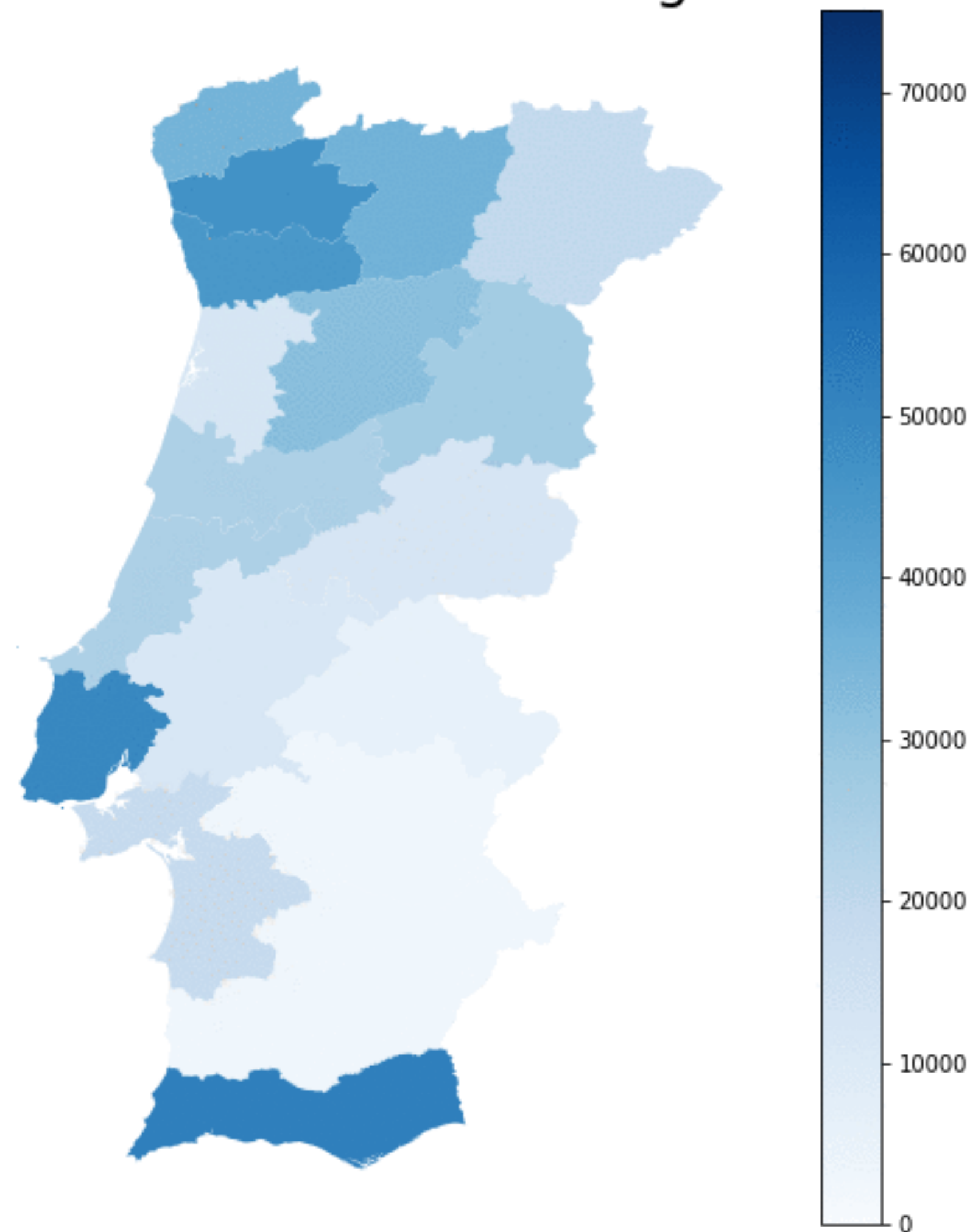
The date and time of the  
event



Coordinates of the Network  
Tower's cell associated to the  
Network Event



## Number of Tourists in August



1 August 2017

# Number of Tourists per Region

NOS DATA | AUGUST 2017

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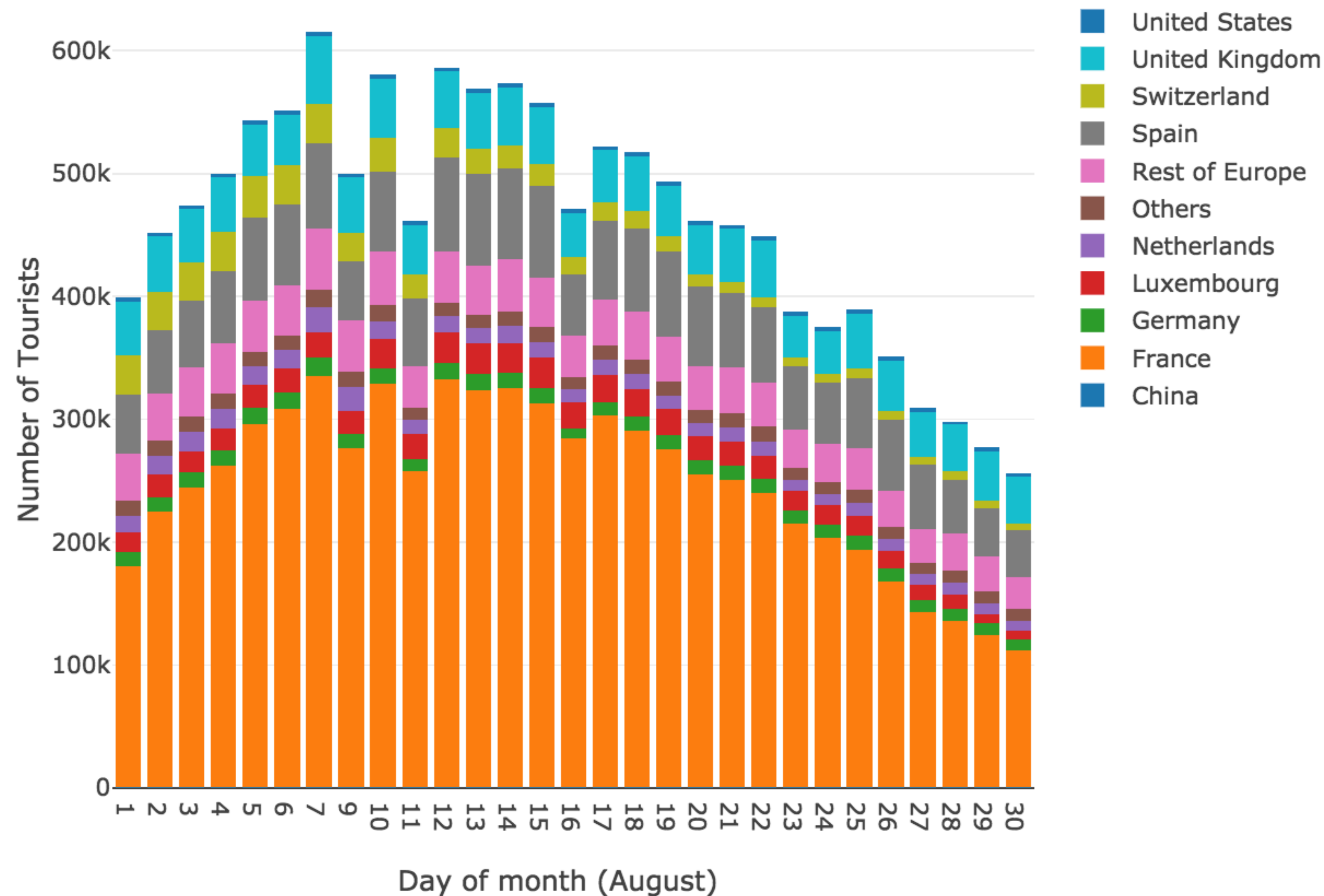
Tourism reaches its **peak in the 12<sup>th</sup> of August**, when the number of tourist starts to fade out



# Number of Tourists per Day and Country of Origin

NOS DATA | AUGUST 2017

Second week of August seems to be the most popular for tourism

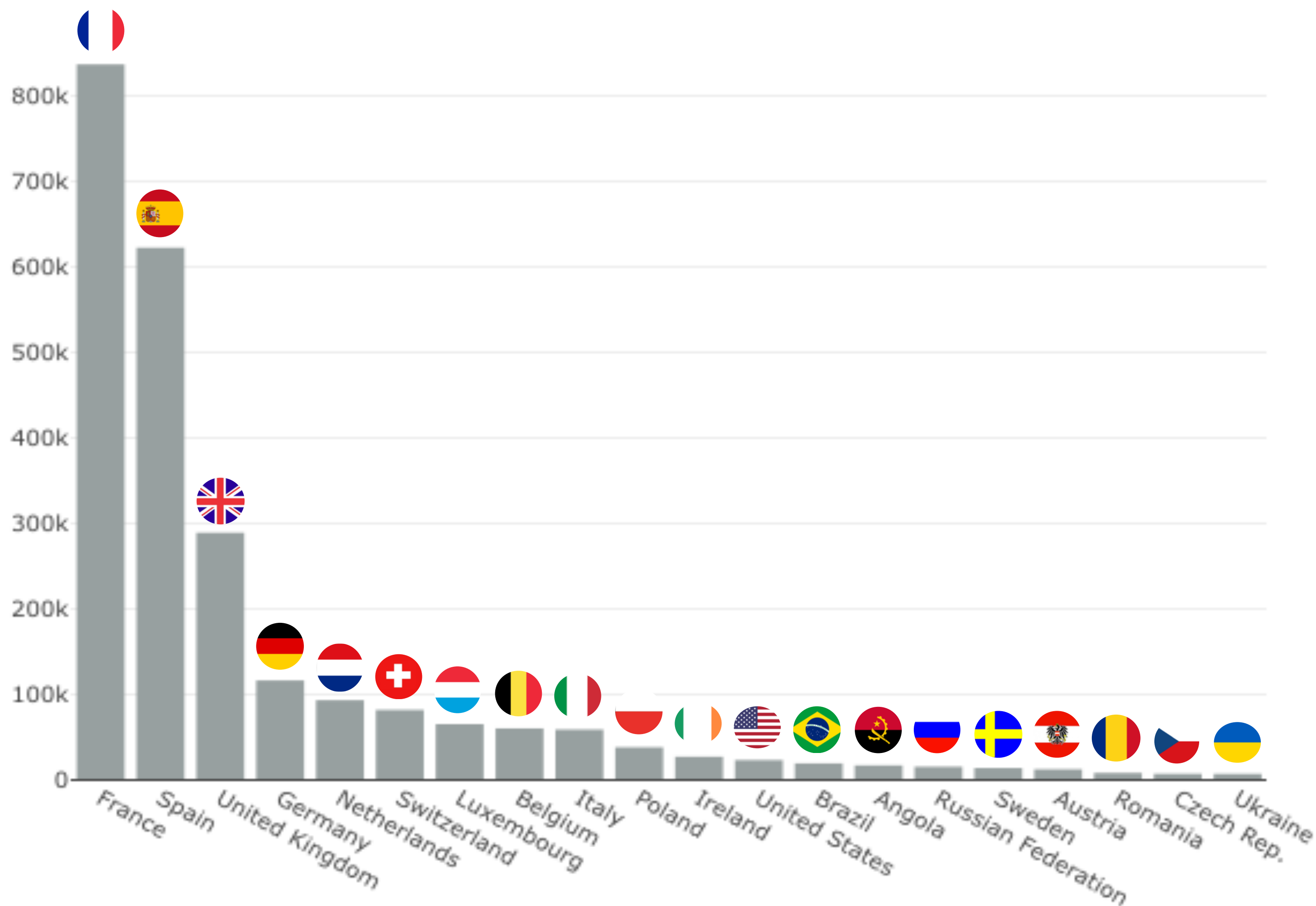




# Number of Tourists per Country of Origin

NOS DATA | AUGUST 2017

TOP 20 COUNTRIES

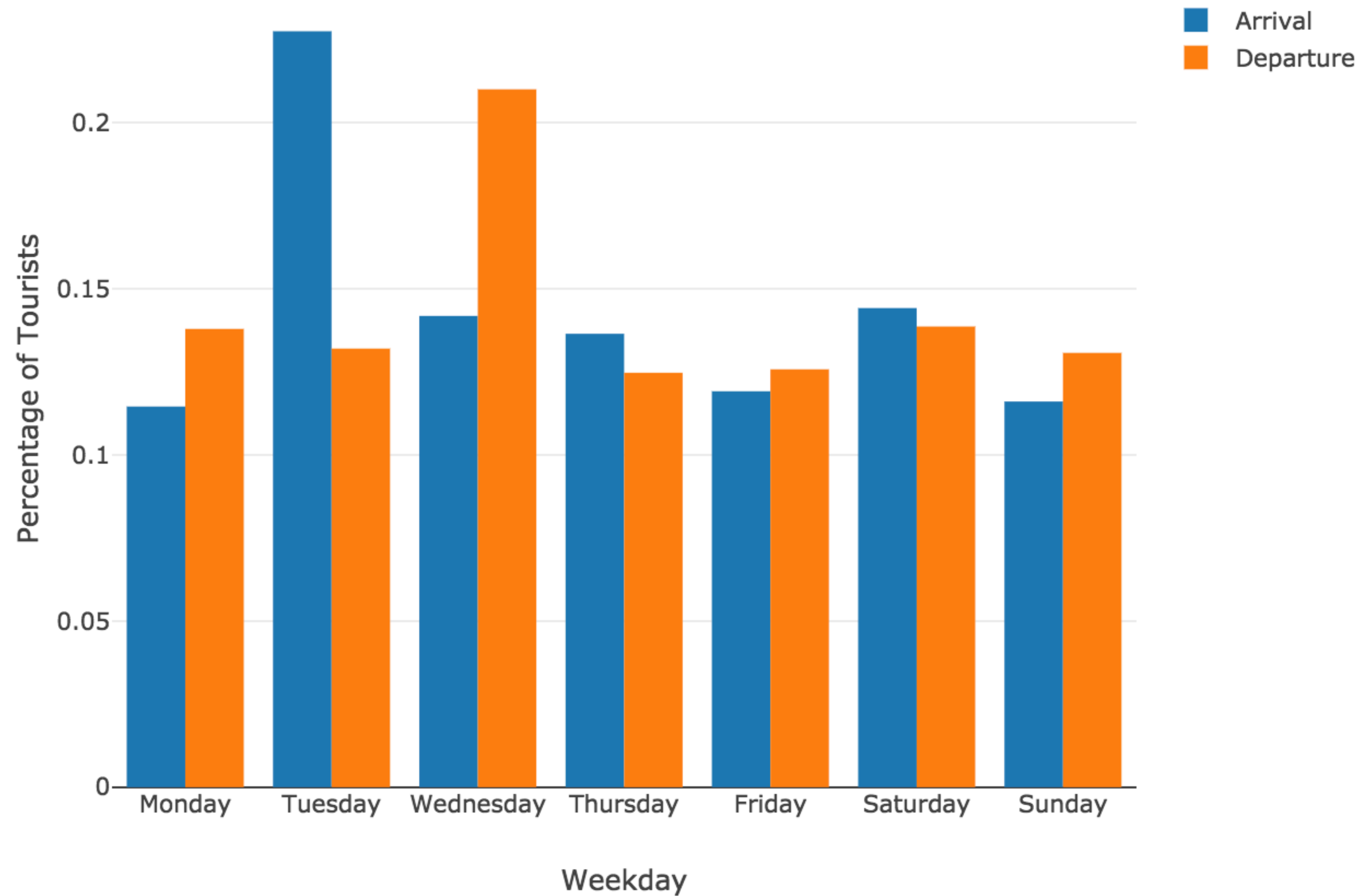


**French** tourists are the ones who most visited Portugal during the analyzed period, followed by tourists from **Spain** and the **United Kingdom**



# Tourists per Weekday

NOS DATA | AUGUST 2017



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**Tuesdays** are the favorite weekday for arrivals, while **Wednesdays** are the most common weekdays for departures



WHAT DO TOURISTS VISIT?

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# Data Story: The Typical Tourist



## AUGUST 2017

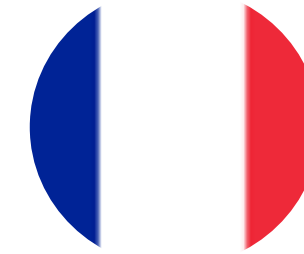
Tue	Wed	Thu	Fri	Sat
1	2	3	4	5

Sun	Mon	Tue	Wed	Thu	Fri	Sat
6	7	8 <sup>th</sup>	9	10	11	12

Sun	Mon	Tue	Wed	Thu	Fri	Sat
13	14	15	16 <sup>th</sup>	17	18	19

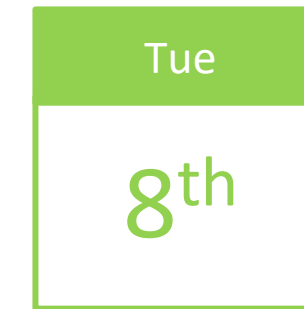
Sun	Mon	Tue	Wed	Thu	Fri	Sat
20	21	22	23	24	25	26

Sun	Mon	Tue	Wed	Thu
27	28	29	30	31



## 1 FRENCH TOURIST

(We know from the basic data analysis that the most common tourist visiting Lisbon in the month of August is French)



**ARRIVES ON TUESDAY**

(23% of tourists arrive on a Tuesday)



## STAYS FOR 8 DAYS

(The average length of stay of these tourists is of 8 days)



## DEPARTS ON WEDNESDAY

(The most common day of week of departure for our tourist is Wednesday)



## ARRIVES BY PLANE

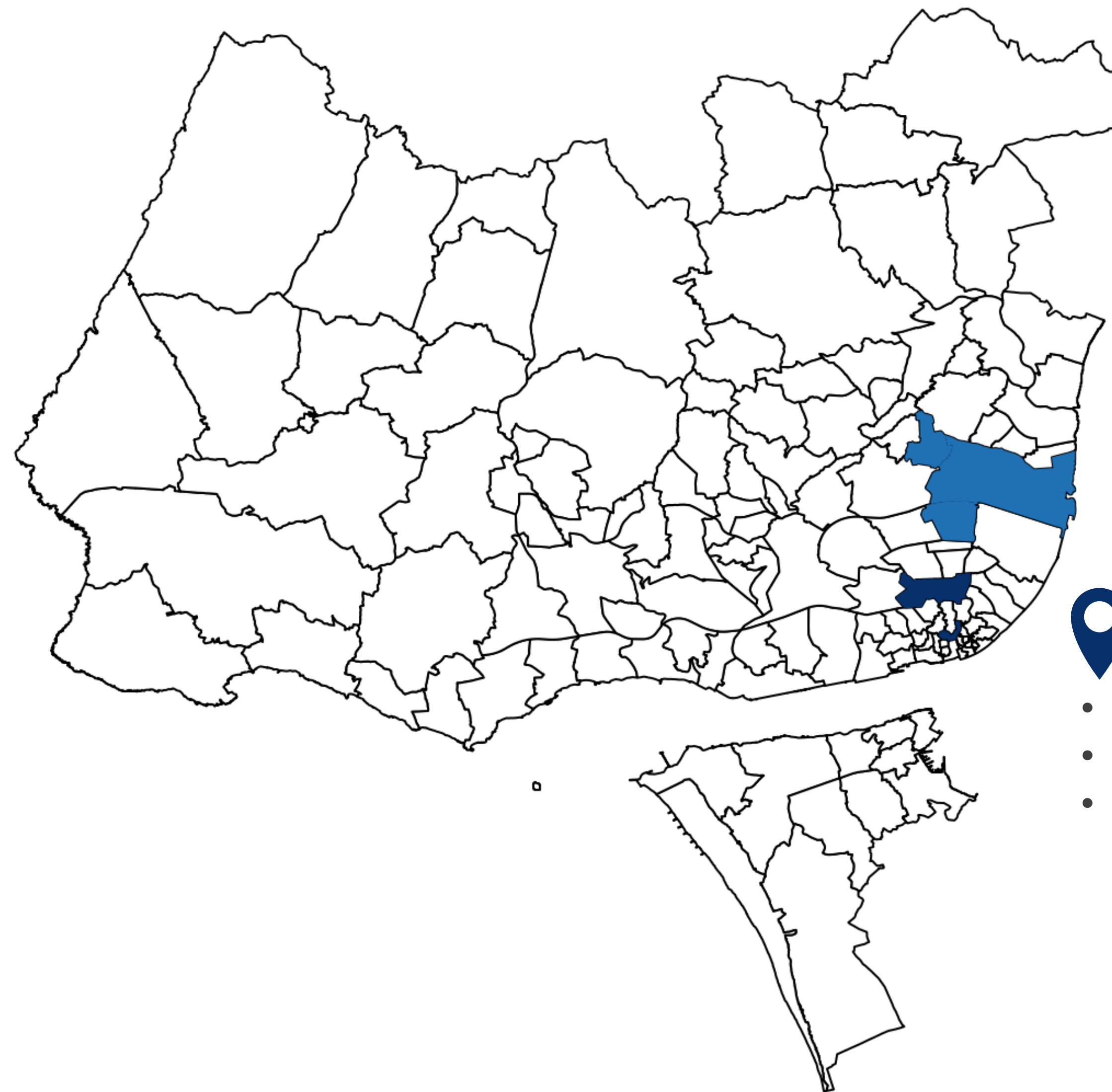
(First contact was in Lisbon Airport, suggesting this person came by plane)





Day 1





- Marquês de Pombal
- Eduardo VII Park
- Rossio Square

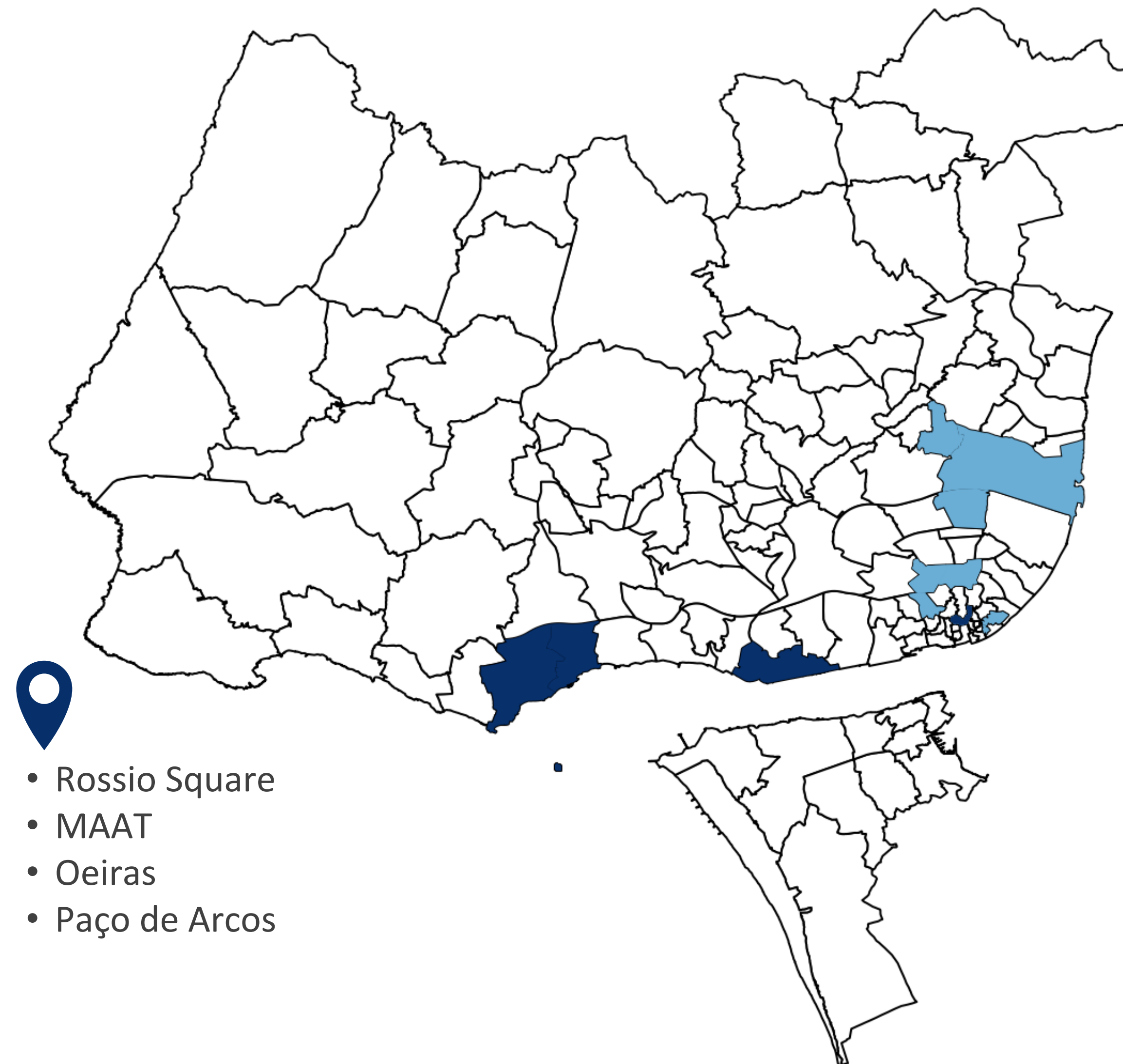
Day 2





Day 3





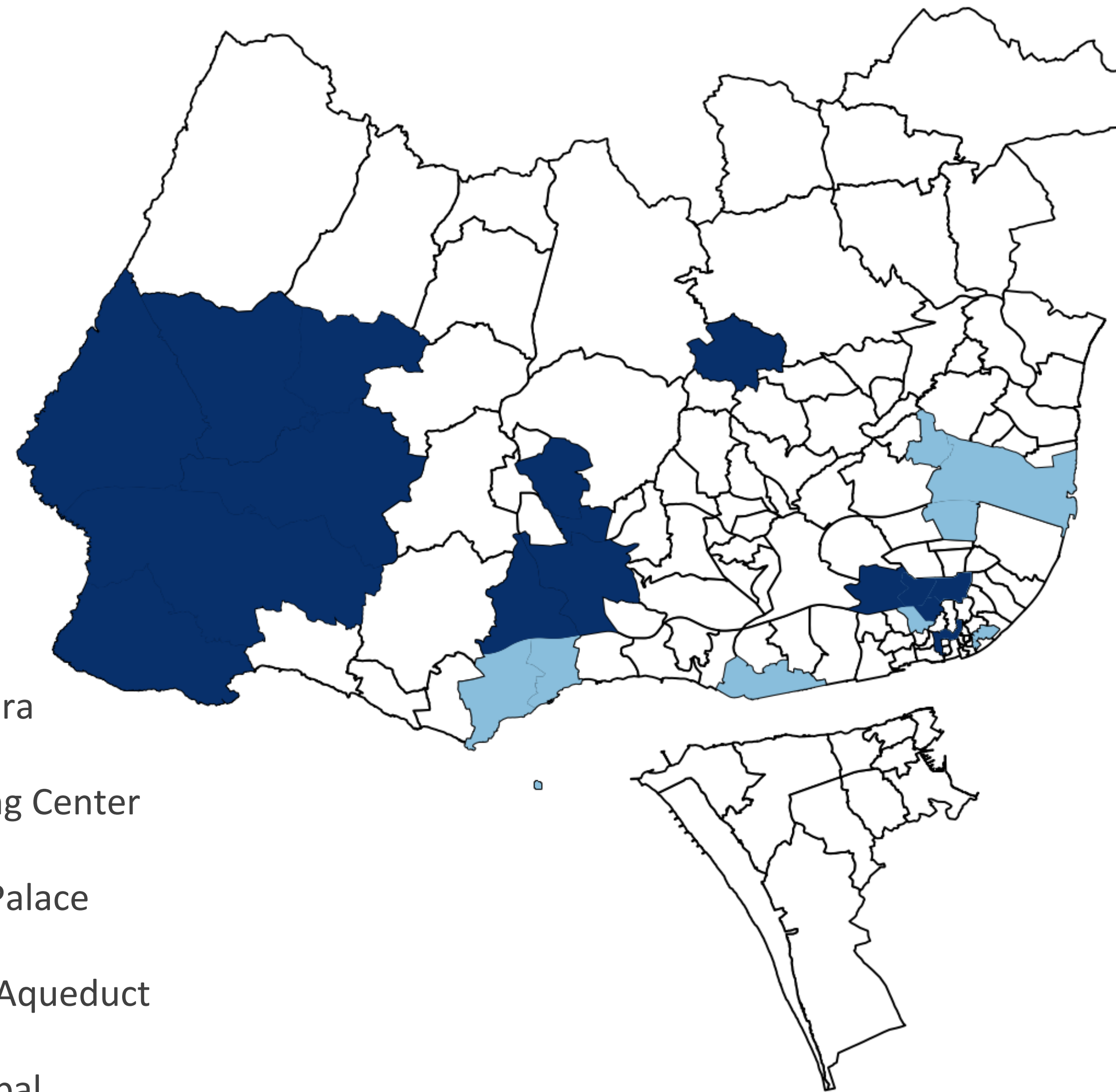
- Rossio Square
- MAAT
- Oeiras
- Paço de Arcos

Day 4



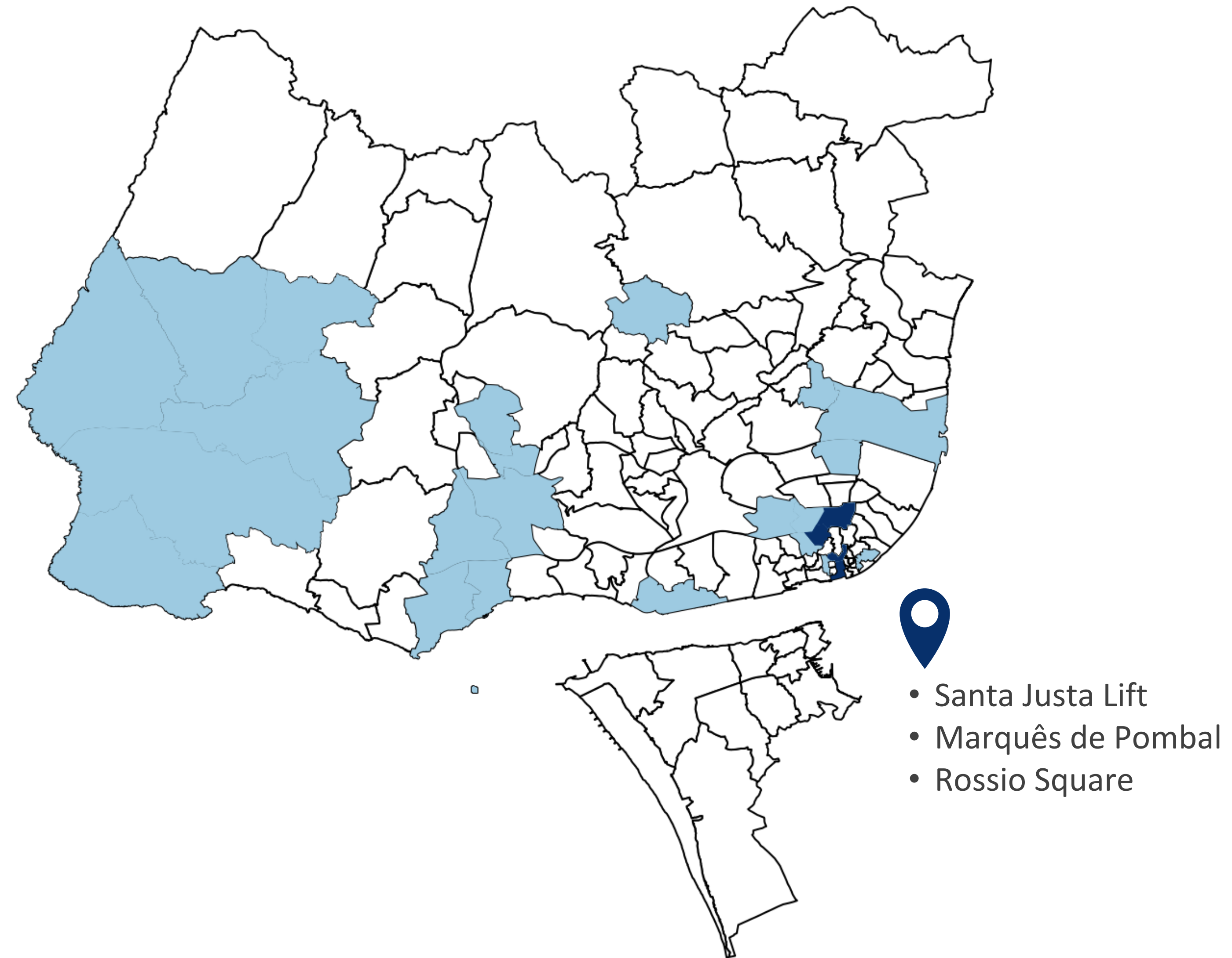


- Quinta da Regaleira
- Sintra
- Colombo Shopping Center
- Guincho
- Queluz National Palace
- Oeiras
- The Águas Livres Aqueduct
- Rossio Square
- Marquês de Pombal
- Eduardo VII Park
- Luís de Camões Square



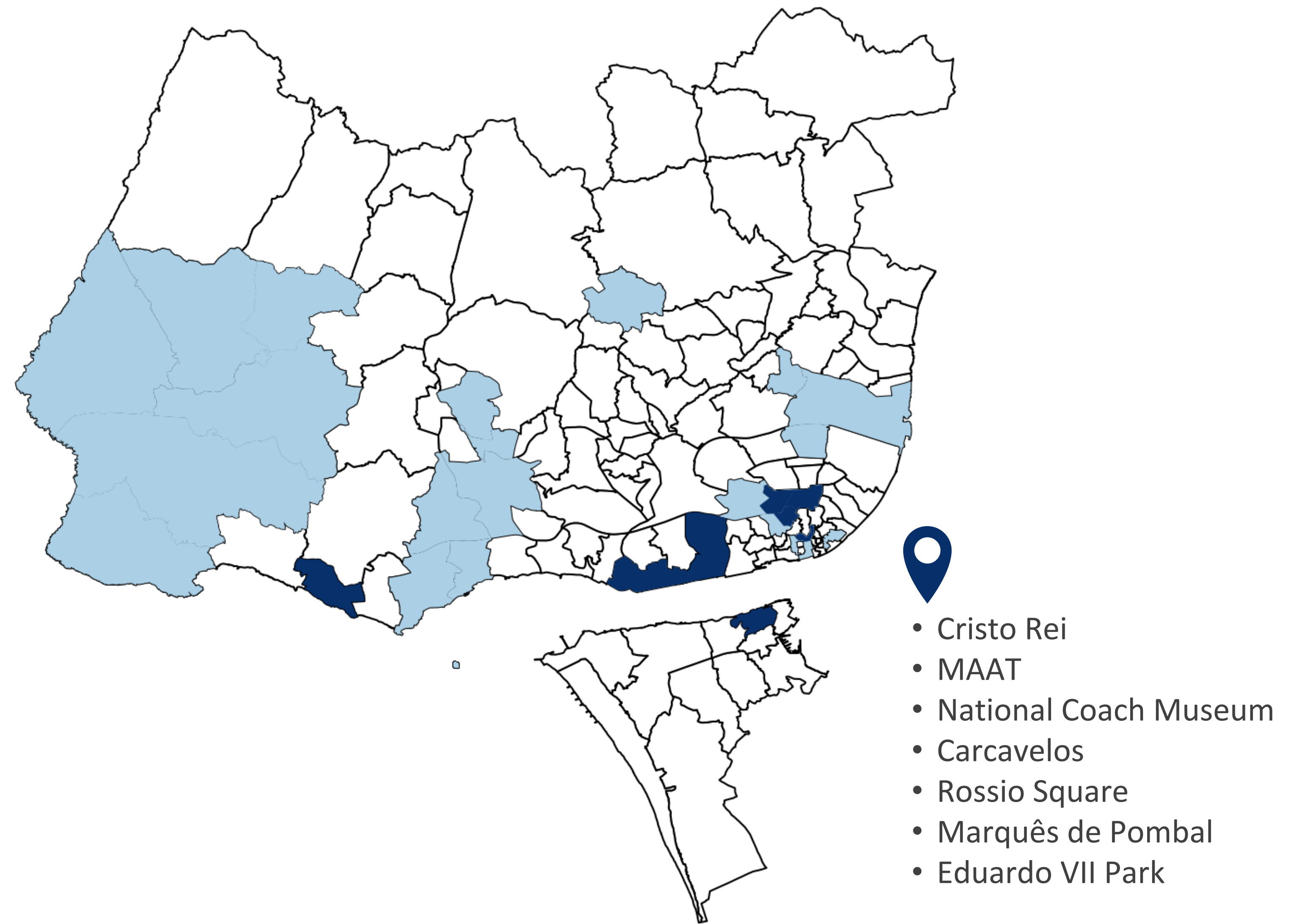
Day 5





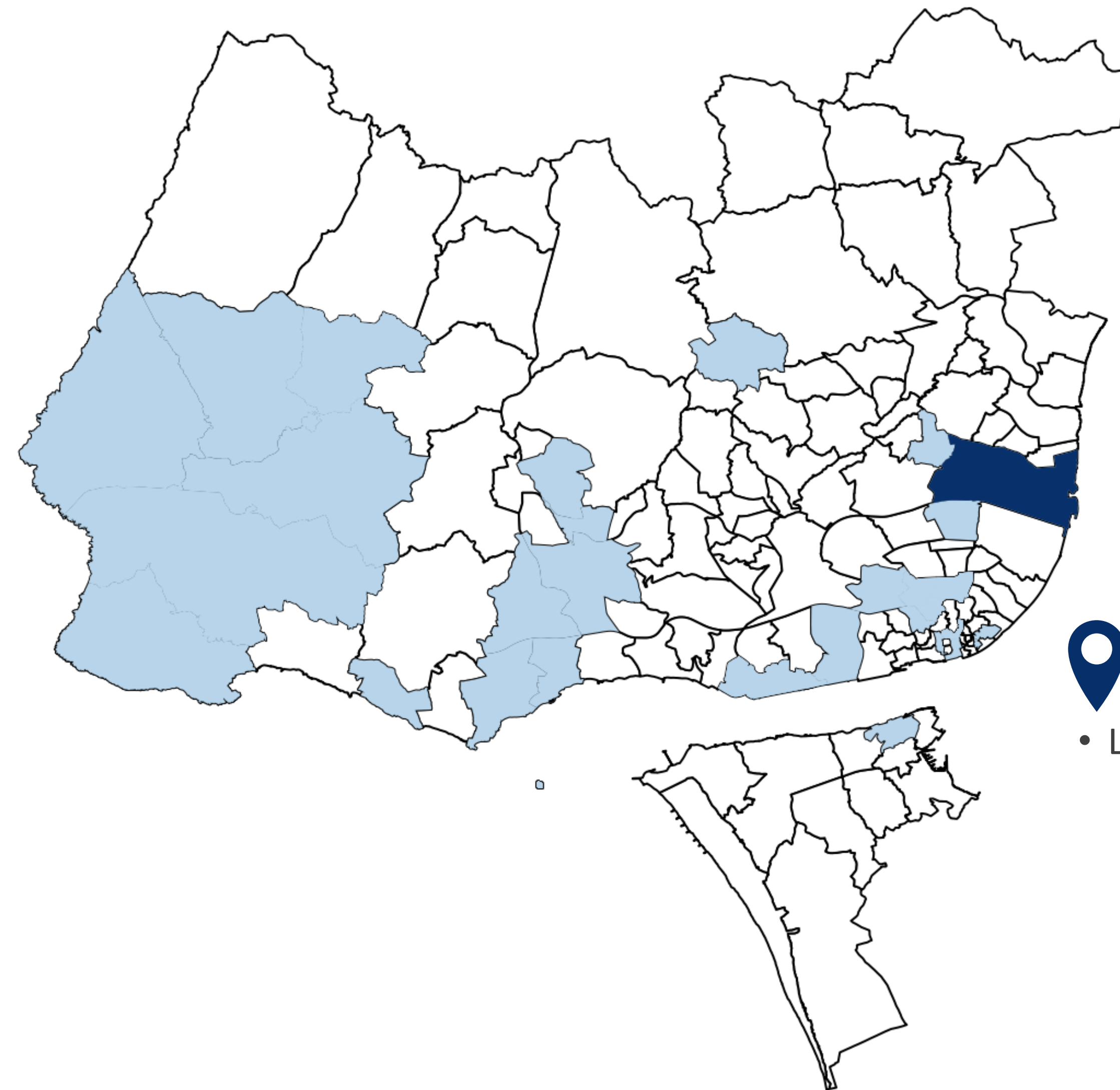
Day 6





Day 7





• Lisbon Airport

Day 8



## Data Story: A tourist in Lisbon



09 August 2017, 07h05m

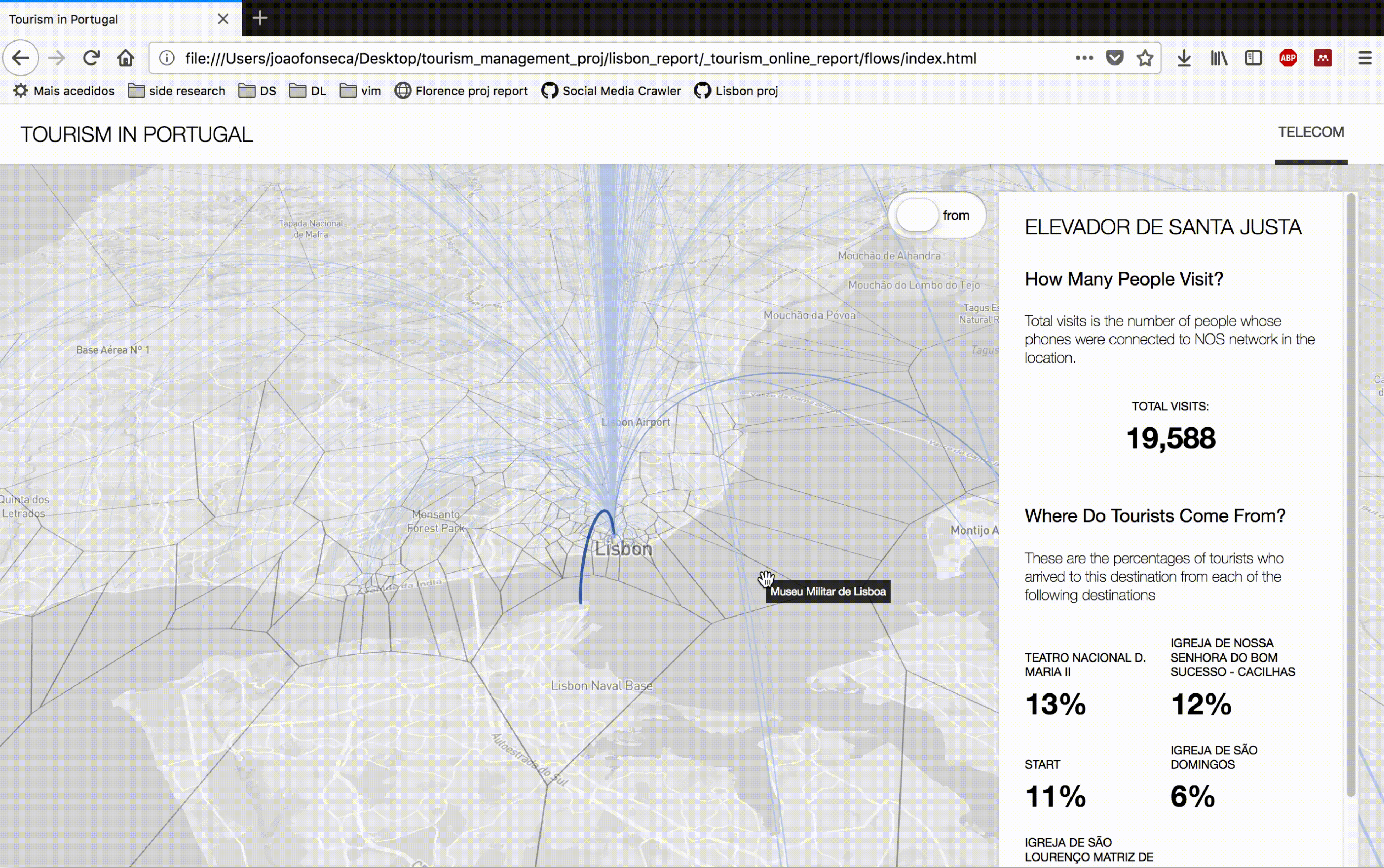


WHERE DO THEY GO?

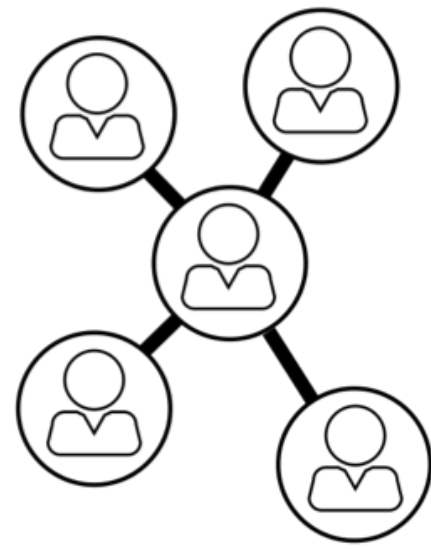
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# Data visualization using Deck GL









# Social Media Crawler

GATHERING UNSTRUCTURED DATA FROM THE SOCIAL MEDIA PLATFORMS  
ANALYZE SOCIAL MEDIA IMPACT ON TOURISM FLOWS



# Purpose: Get data!







# Thank you!

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