

João Fonseca | Leid Zejnilovic | Miguel Neto | Lénia Mestrinho

Data-driven Planning for Sustainable Tourism in Portugal

DATA SCIENCE FOR HOSPITALITY AND TOURISM CONFERENCE



MOTIVATION

So what's happening with tourism?

Tourist per citizen ratio



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

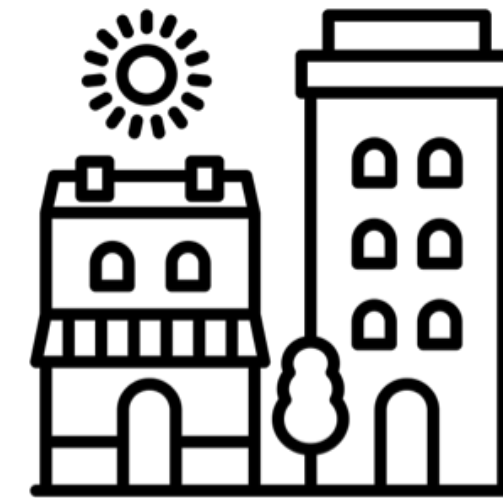
It has its benefits



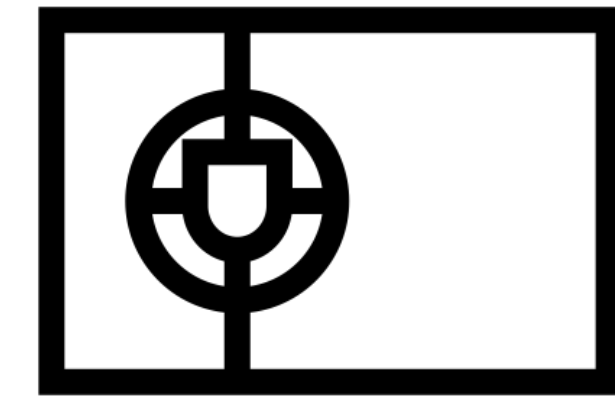
Economic Growth



Employment

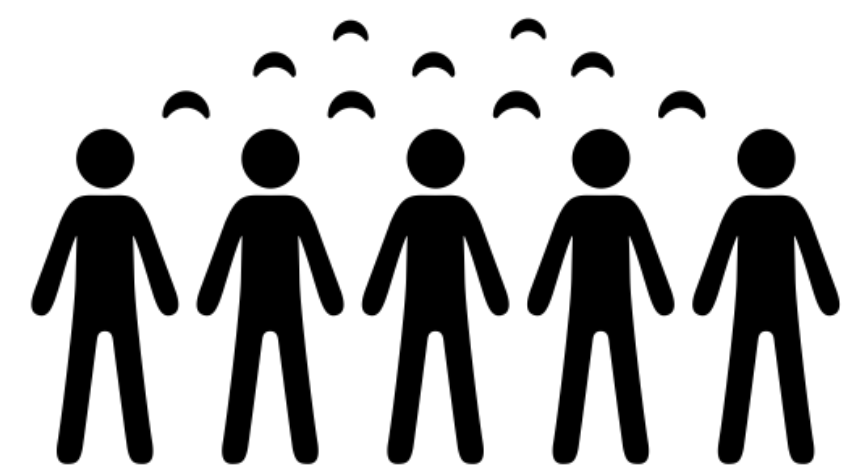


Conservation of the
urban landscape



Revival of traditions

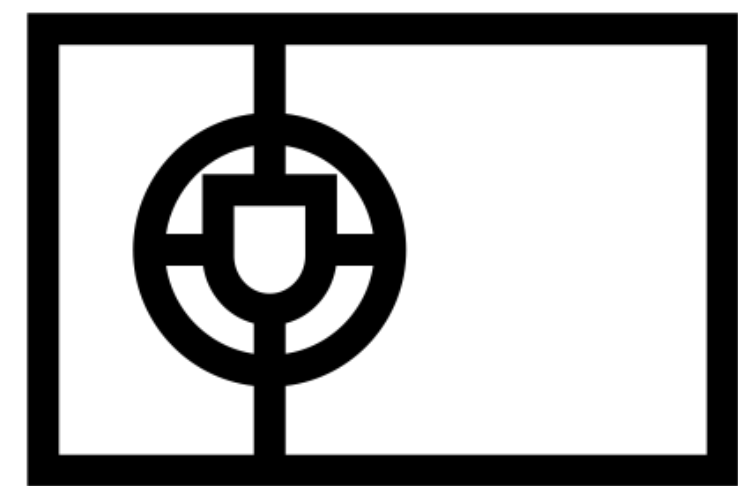
But also its downfalls



Overcrowding



Coexistence conflicts



Loss of culture authenticity



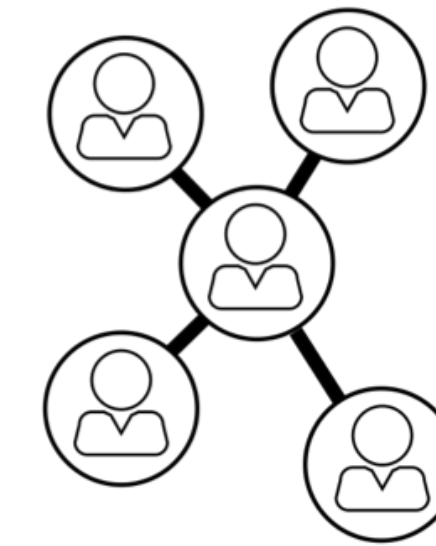
Gentrification and Speculation



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

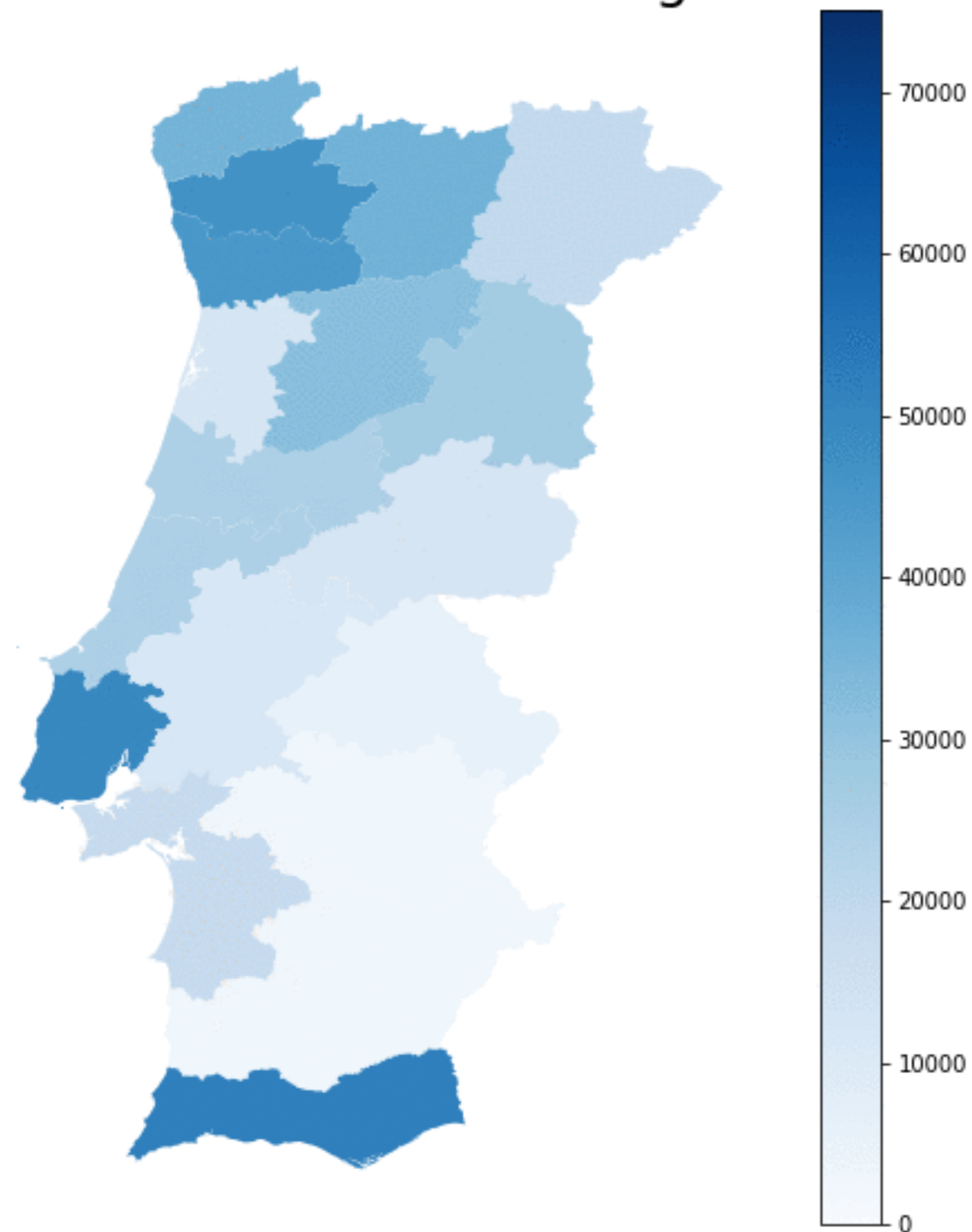


The date and time of the
event



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

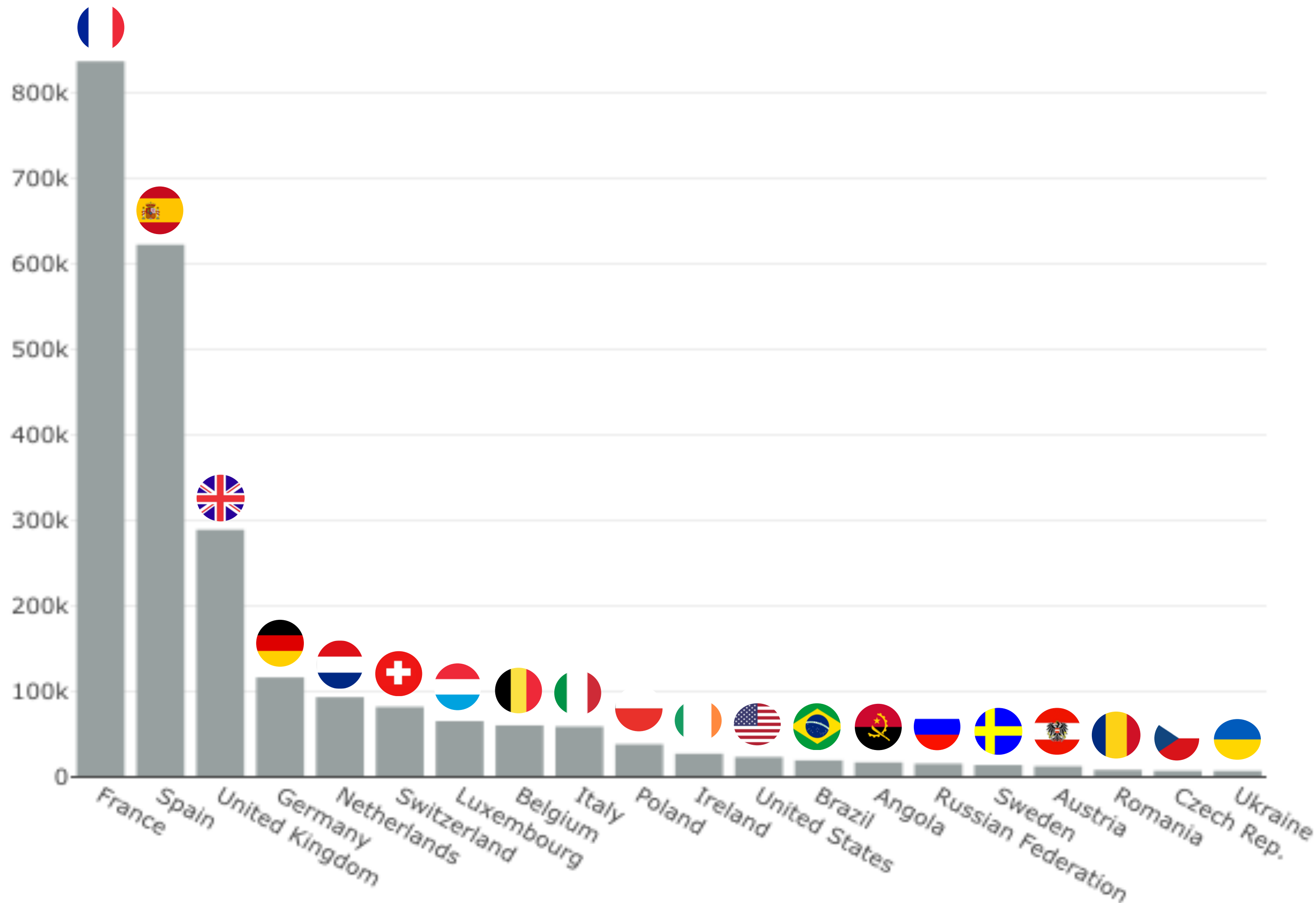
NOS DATA | AUGUST 2017

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

Number of Tourists per Country of Origin

NOS DATA | AUGUST 2017

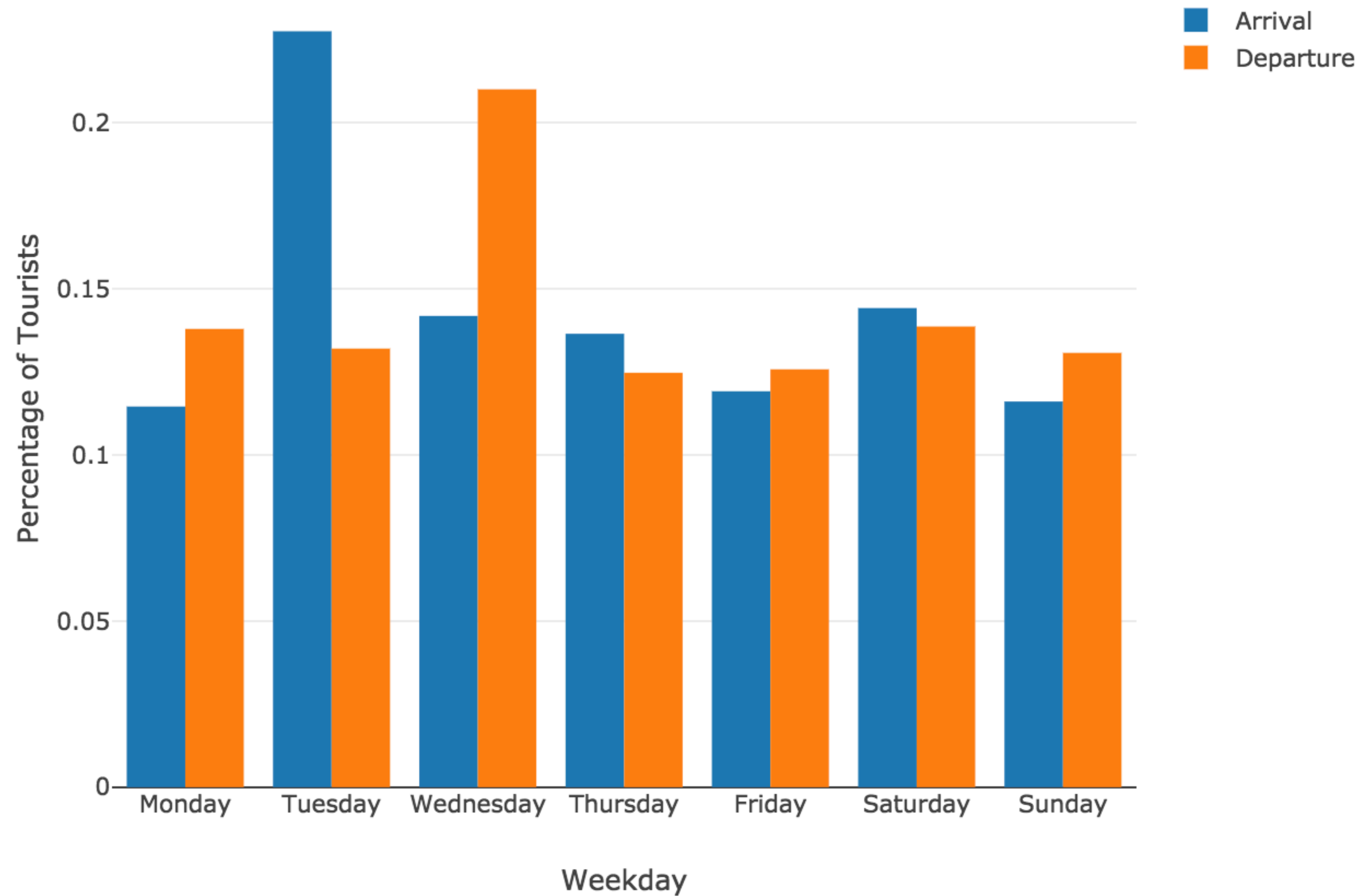
TOP 20 COUNTRIES



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



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

WHAT DO TOURISTS VISIT?

Data Story: The Typical Tourist

AUGUST 2017

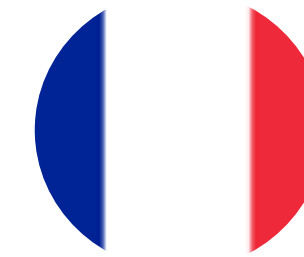
Tue	Wed	Thu	Fri	Sat
1	2	3	4	5

Sun	Mon	Tue	Wed	Thu	Fri	Sat
6	7	8 th	9	10	11	12

Sun	Mon	Tue	Wed	Thu	Fri	Sat
13	14	15	16 th	17	18	19

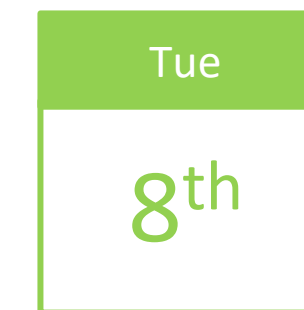
Sun	Mon	Tue	Wed	Thu	Fri	Sat
20	21	22	23	24	25	26

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)

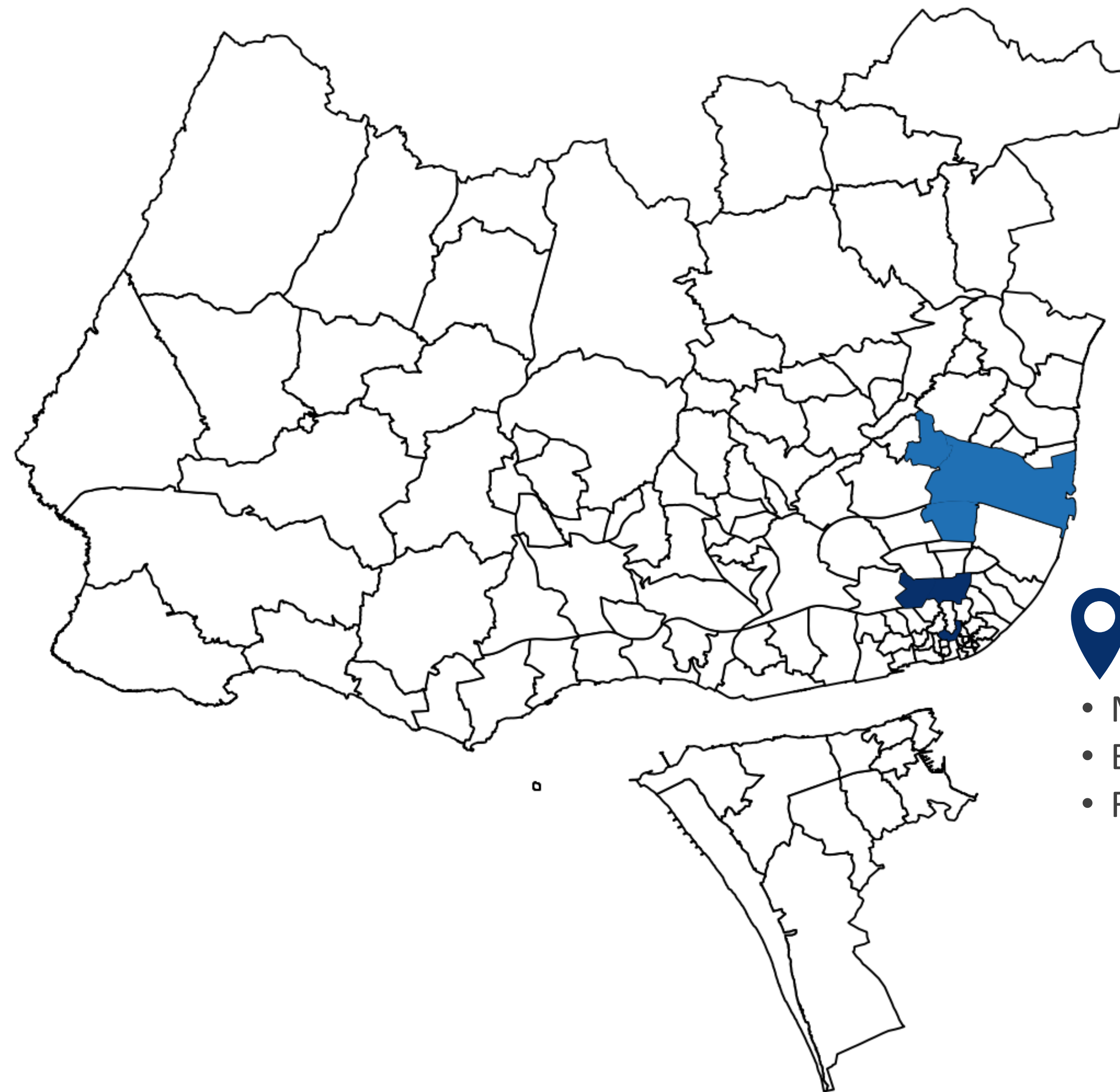


ARRIVES BY PLANE

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

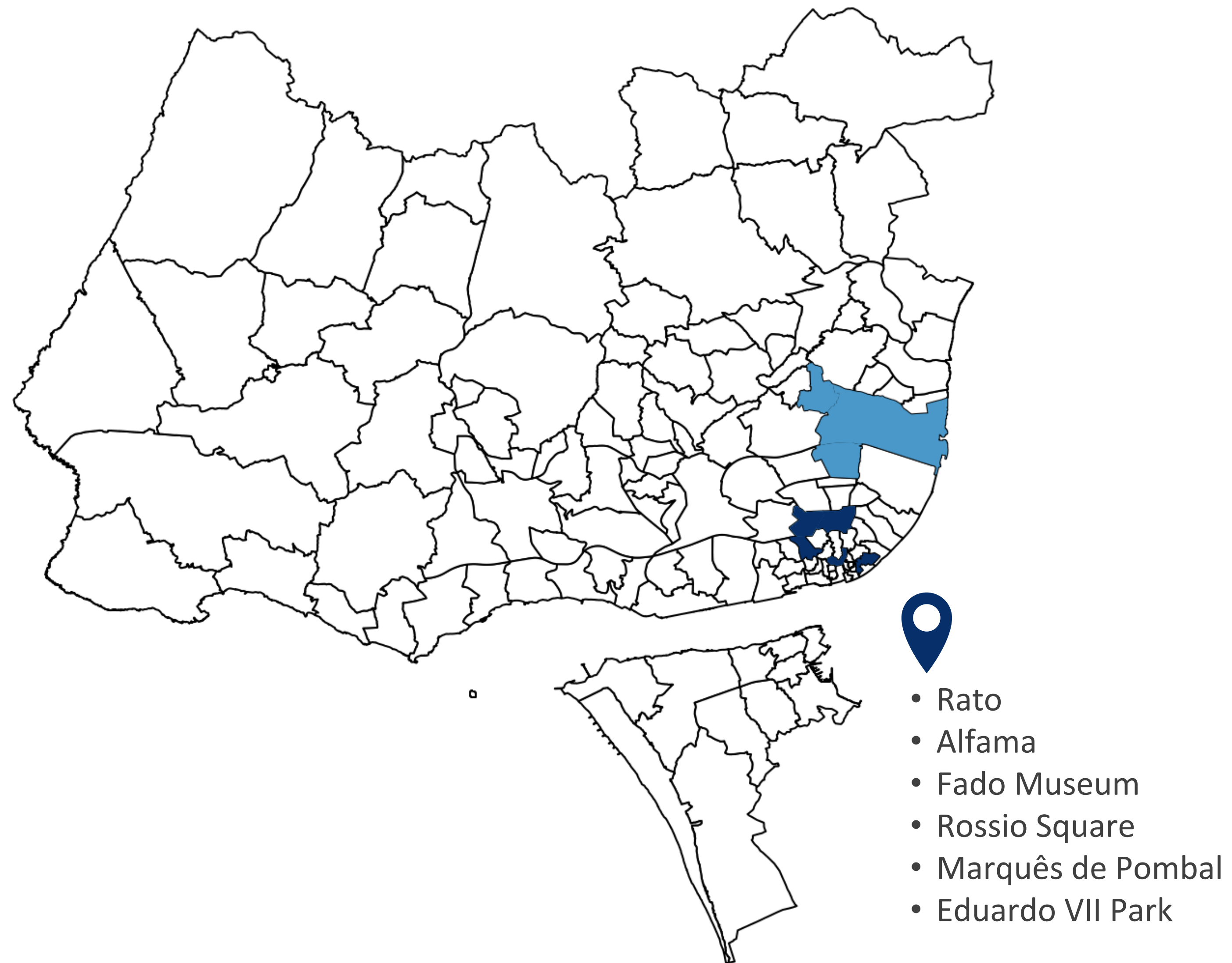


Day 1



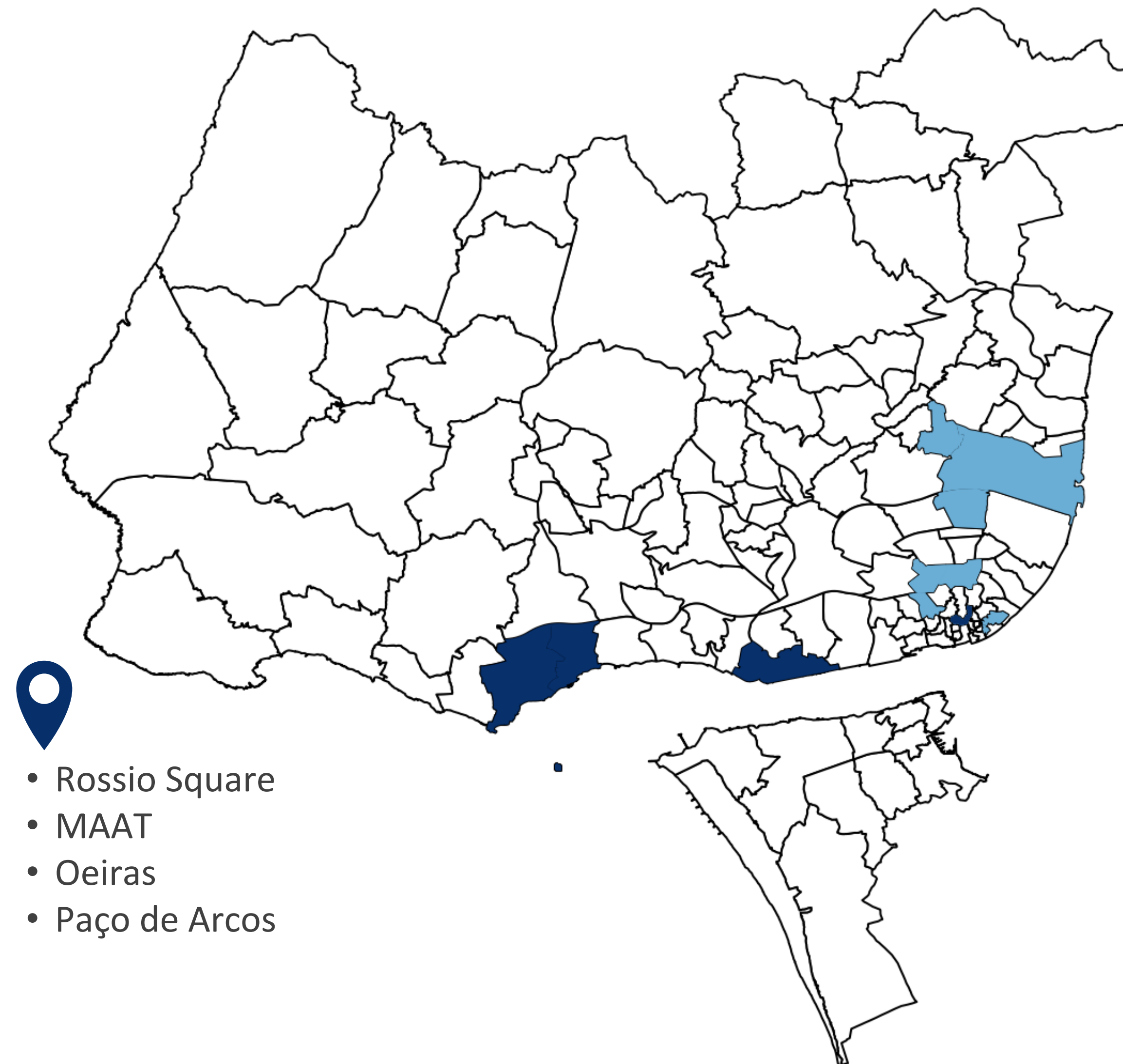
- Marquês de Pombal
- Eduardo VII Park
- Rossio Square

Day 2



- Rato
- Alfama
- Fado Museum
- Rossio Square
- Marquês de Pombal
- Eduardo VII Park

Day 3

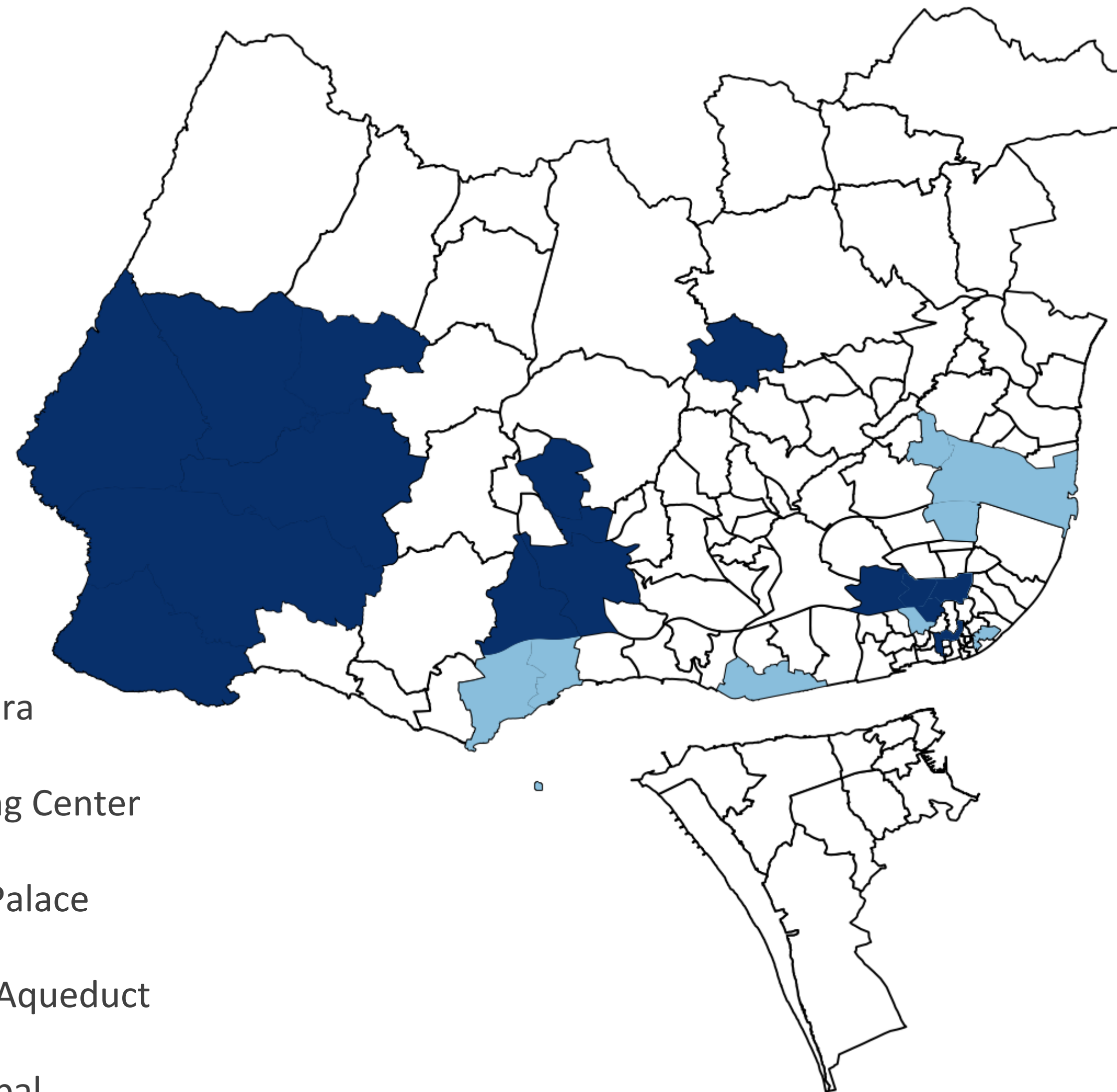


- Rossio Square
- MAAT
- Oeiras
- Paço de Arcos

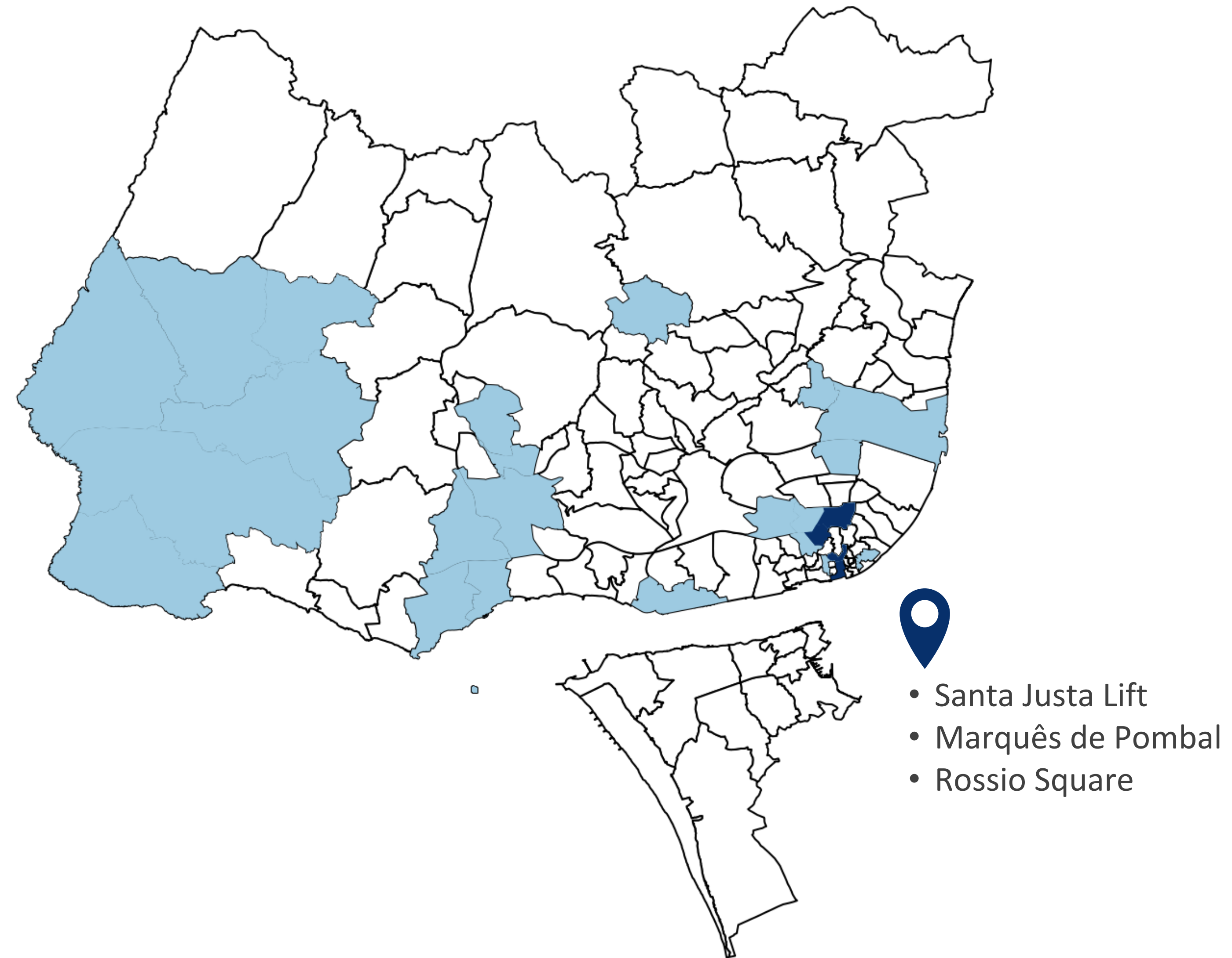
Day 4



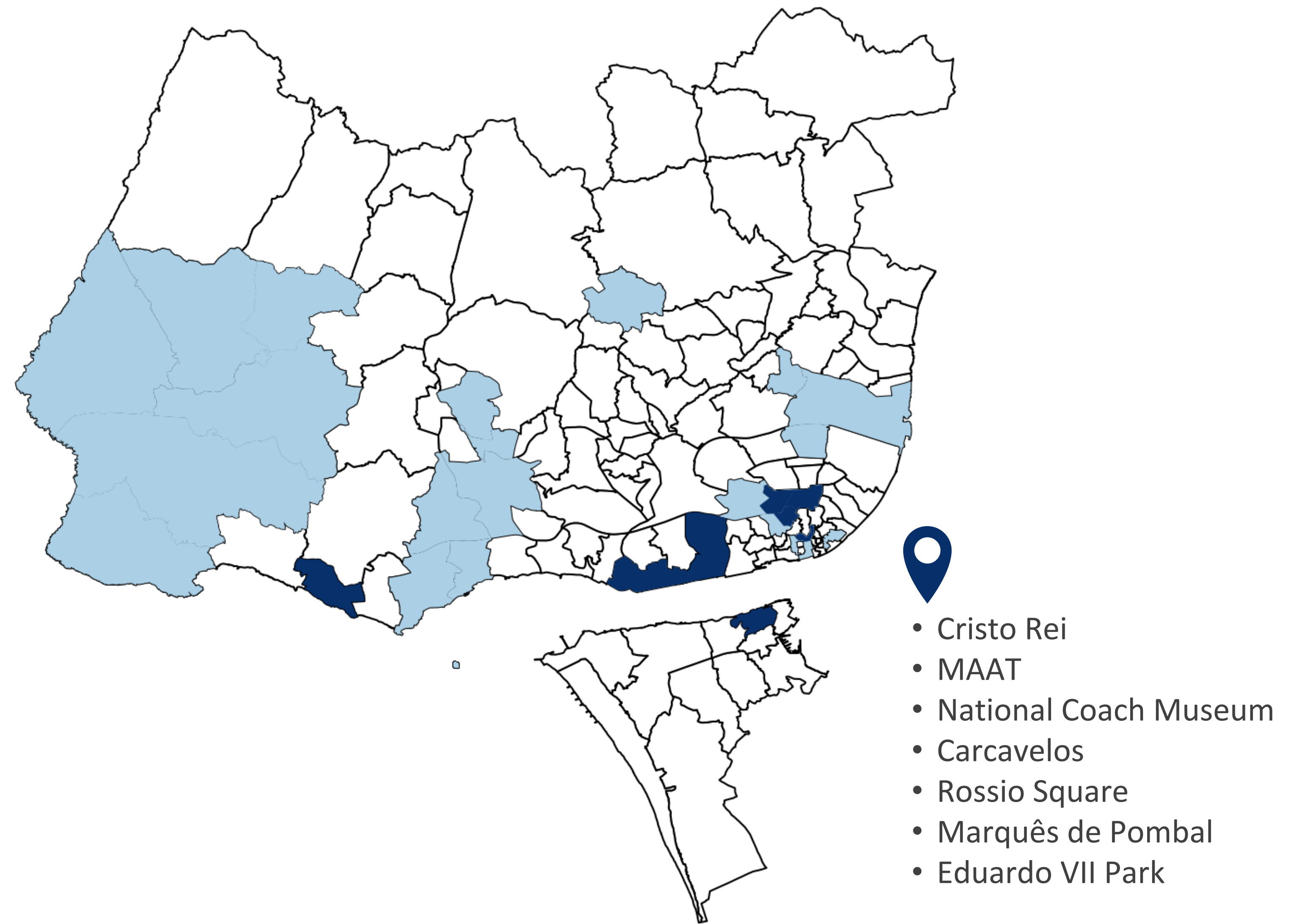
- Quinta da Regaleira
- Sintra
- Colombo Shopping Center
- Guincho
- Queluz National Palace
- Oeiras
- The Águas Livres Aqueduct
- Rossio Square
- Marquês de Pombal
- Eduardo VII Park
- Luís de Camões Square



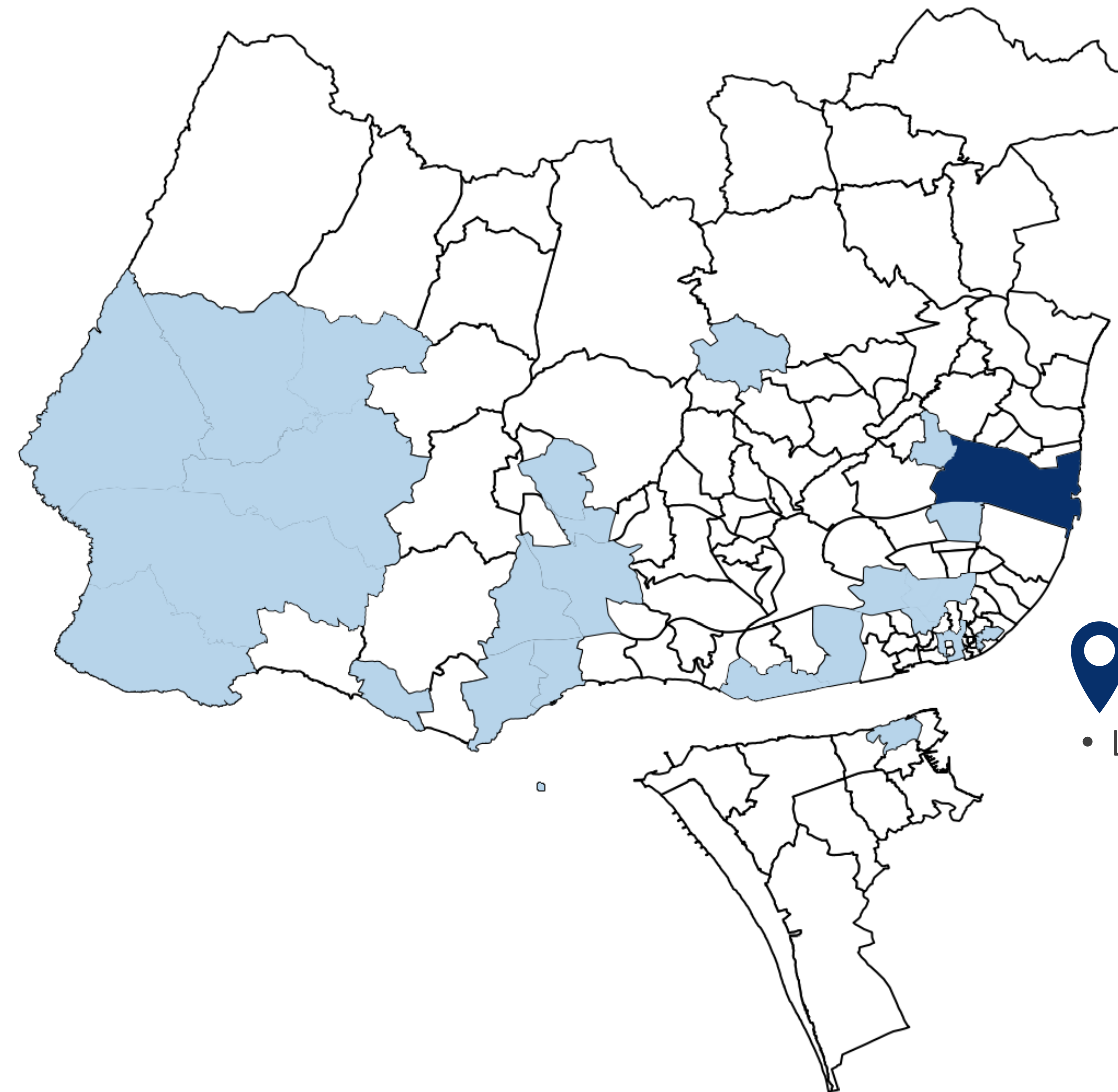
Day 5



Day 6



Day 7



• Lisbon Airport

Day 8

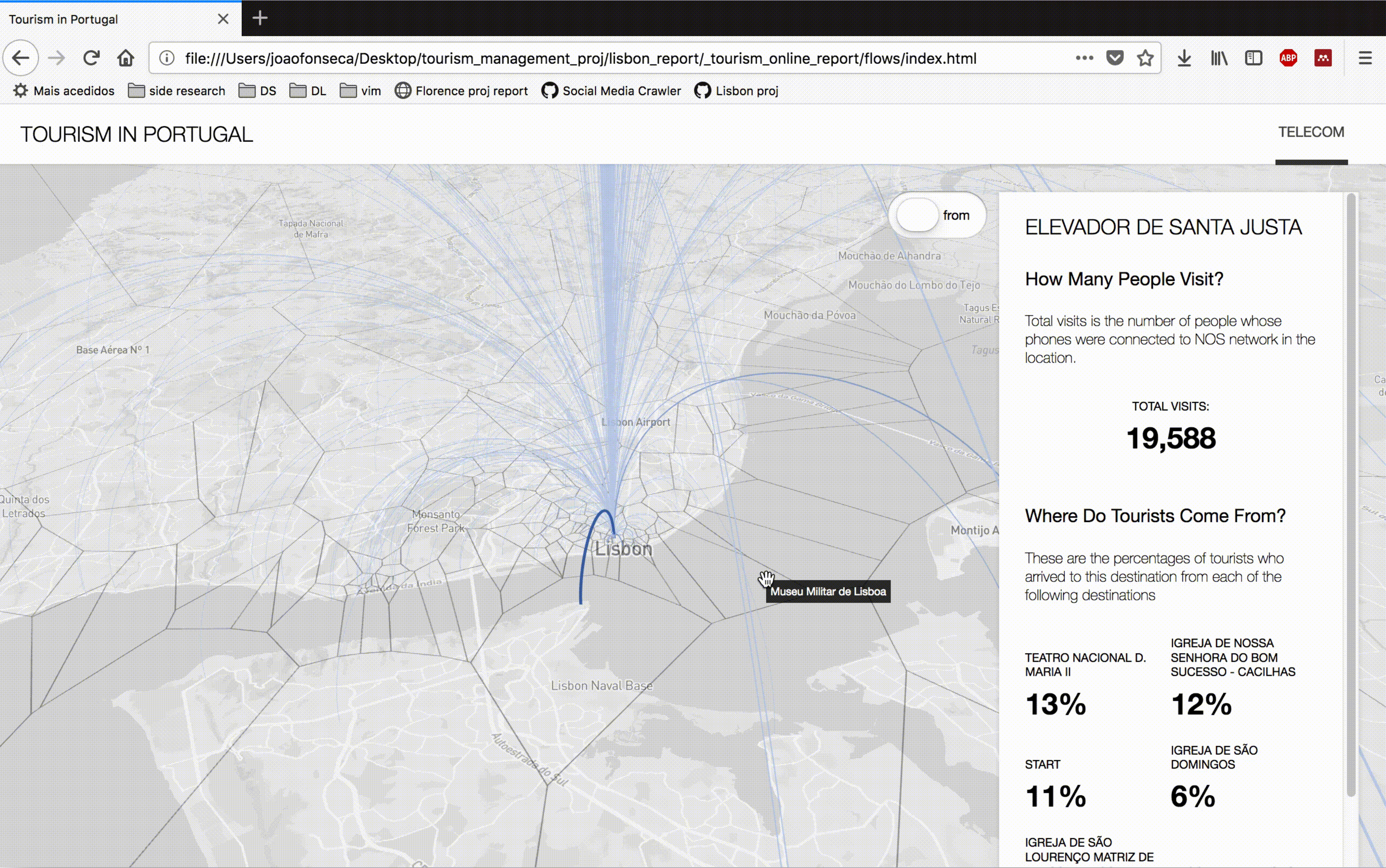
Data Story: A tourist in Lisbon

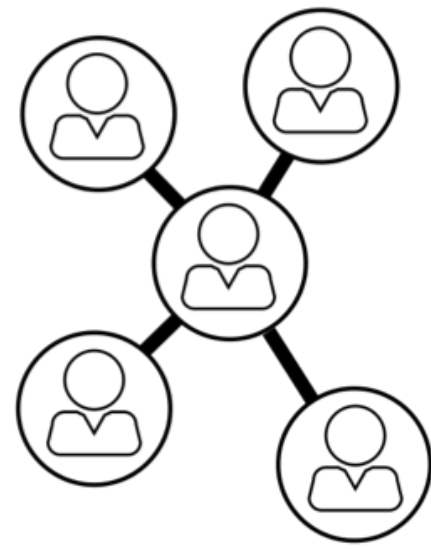


09 August 2017, 07h05m

WHERE DO THEY GO?

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!

João Fonseca

| joao.fonseca@novasbe.pt

Leid Zejnilovic

| leid.zejnilovic@novasbe.pt

Miguel Neto

| mneto@novaims.unl.pt

Lénia Mestrinho

| lenia.mestrinho@novasbe.pt

