

The trending venues in Lisbon and Rio de Janeiro.

Case study, application of clustering to find similarities between trending places

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Introduction

Going to holidays and choose places to stay and enjoy might be a challenge. Sometimes places were made for tourists and we can't enjoy local culture. and some trending places are too fancy and expensive, at the end have poor quality, as many restaurants we can see that food isn't fresh and all customers are foreign people. Maybe all tourists were fooled .

Data and Source



FOURSQUARE

We used data from Foursquare in order to collect some characteristics from each spot.

Such as categories, number of reviews, rating, average cost, name and location.

For that we have created a loop-for to collect all information, these types of information is consider premium call in FOURSQUARE API.

```
for i in range(0,len(df)):

    venue_id=df['id'][i]

    url = 'https://api.foursquare.com/v2/venues/{}?client_id={}&client_secret={}&v={}'.format(venue_id,
CLIENT_ID, CLIENT_SECRET, VERSION)

    results = requests.get(url).json()

    try:

        count.append(results['response']['venue']['likes']['count'])

    except:

        count.append('empty')


    try:

        message.append(results['response']['venue']['price']['message'])

    except:

        message.append('empty')


    try:

        rating.append(results['response']['venue']['rating'])

    except:

        rating.append('empty')


    try:

        verified.append(results['response']['venue']['verified'])

    except:

        verified.append('empty')


    try:

        ok.append(results['response']['venue']['ok'])

    except:

        ok.append('empty')
```

After collected all data, We had to normalize continuous data in order apply K-means Clustering

For that we applied “from sklearn import preprocessing”, StandardScaler()

After that we applied algorithm K-means, with K=5.

Let's check each cluster:

1)

	name	categories	rating	Average_cost	nr_of_reviews	location
19	Igreja de Santo António da Sé	Church	8.8	empty	402	Lisbon
31	Igreja de Santa Maria Maior de Lisboa	Church	8.6	empty	187	Lisbon
37	The George	Gastropub	8.4	Expensive	96	Lisbon
87	Palácio Chiado	Food Court	8.9	empty	264	Lisbon
90	Sama Sama- Crêpe And Juice Bar	Creperie	8.5	Moderate	11	Lisbon
102	Boteco do Peixe	Dive Bar	8.5	Cheap	12	Rio de Janeiro
109	Noo Cachaçaria	Cocktail Bar	8.2	Expensive	63	Rio de Janeiro
123	Aussie Coffee	Coffee Shop	7.6	Cheap	8	Rio de Janeiro
125	Estádio Figueira de Melo	Football Stadium	7.7	empty	11	Rio de Janeiro
128	Bar Madrid	Dive Bar	8.2	Cheap	78	Rio de Janeiro
133	Dom Barcelos Galeteria & Grill	Fried Chicken Joint	7.5	Moderate	97	Rio de Janeiro
136	Kopenhagen	Chocolate Shop	7.3	empty	53	Rio de Janeiro
154	Polo Têxtil	Fabric Shop	7.2	empty	66	Rio de Janeiro
155	Bar e Lanchonete Rex	Fried Chicken Joint	6.6	Cheap	7	Rio de Janeiro
156	Soho	Coffee Shop	7.0	Cheap	26	Rio de Janeiro
160	AM/PM - Posto Lobinho	Convenience Store	6.8	empty	106	Rio de Janeiro
172	Boteco do Divino	Food	6.5	empty	6	Rio de Janeiro
181	Mineirart	Furniture / Home Store	6.4	empty	7	Rio de Janeiro
182	Americanas Express	Department Store	6.0	empty	0	Rio de Janeiro
183	Feira Livre de Domingo	Farmers Market	6.5	empty	37	Rio de Janeiro
189	Tortamania Cidade Nova	Coffee Shop	6.1	Cheap	4	Rio de Janeiro
195	Sabor Arretado	Comfort Food Restaurant	6.1	empty	6	Rio de Janeiro
197	Mag's Lanches	Food	5.9	empty	10	Rio de Janeiro

2)

	name	categories	rating	Average_cost	nr_of_reviews	location
0	Praça do Comércio (Terreiro do Paço)	Plaza	9.4	empty	2518	Lisbon
2	Cais das Colunas	Plaza	9.0	empty	123	Lisbon
4	Da Prata 52	Portuguese Restaurant	8.8	Moderate	170	Lisbon
5	Basilio	Restaurant	9.4	Moderate	35	Lisbon
11	Maria Catita	Portuguese Restaurant	8.6	Moderate	241	Lisbon

3)

	name	categories	rating	Average_cost	nr_of_reviews	location
13	Outro Lado	Bar	8.7	Moderate	12	Lisbon
23	Taberna Moderna	Bar	8.4	Expensive	162	Lisbon
25	Queijaria Nacional	Cheese Shop	8.3	empty	21	Lisbon
33	Fábrica Lisboa	Bakery	8.5	Cheap	277	Lisbon
41	Mesa Kreol	African Restaurant	8.2	Moderate	14	Lisbon
...
180	Polo Mix	Brazilian Restaurant	6.5	Moderate	23	Rio de Janeiro
186	Restaurante Caminho da Roça	Brazilian Restaurant	6.4	Moderate	3	Rio de Janeiro
187	Canteiro Bistrô	Bistro	6.1	empty	23	Rio de Janeiro
194	Padaria e Confeitaria Milú	Bakery	6.1	Cheap	21	Rio de Janeiro
196	Joaquim e Terezinha	Brazilian Restaurant	6.3	Moderate	14	Rio de Janeiro

62 rows × 6 columns

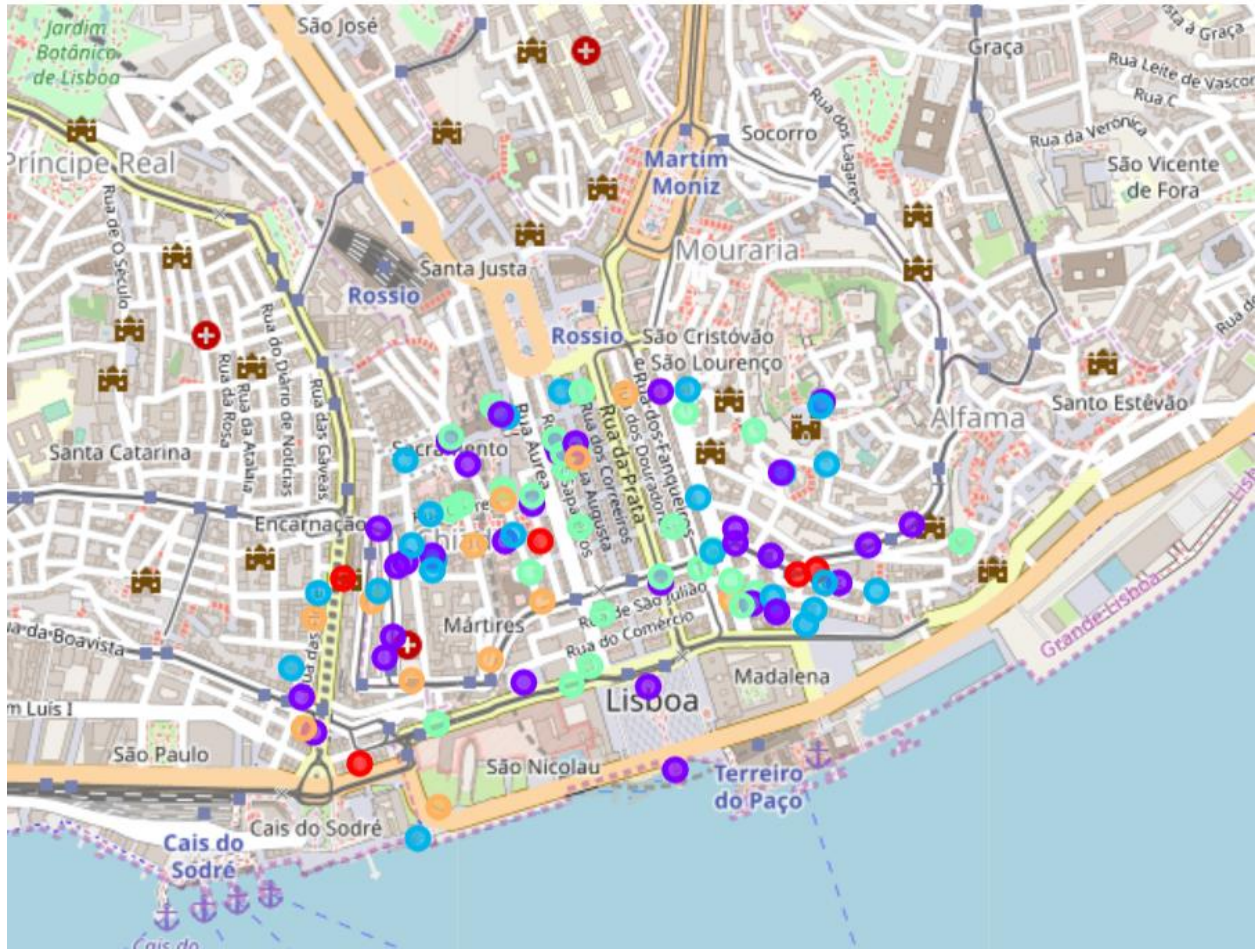
4)

	name	categories	rating	Average_cost	nr_of_reviews	location
1	Yes! Lisbon Hostel	Hostel	9.2	empty	94	Lisbon
3	Pousada de Lisboa, Terreiro do Paço	Hotel	8.8	empty	33	Lisbon
7	India Gate	Indian Restaurant	8.9	Moderate	14	Lisbon
8	Home Lisbon Hostel	Hostel	9.3	empty	60	Lisbon
9	Lisbon Shop - Pátio da Galé	Gift Shop	8.4	empty	20	Lisbon
10	Fragoleto	Ice Cream Shop	8.4	Cheap	48	Lisbon
15	Conserveira de Lisboa	Gourmet Shop	8.3	empty	73	Lisbon
16	Napoleão Wine Shop	Liquor Store	8.4	empty	35	Lisbon
18	Brown's Downtown	Hotel	8.7	empty	57	Lisbon
20	Tasca Kome	Japanese Restaurant	8.3	Moderate	79	Lisbon

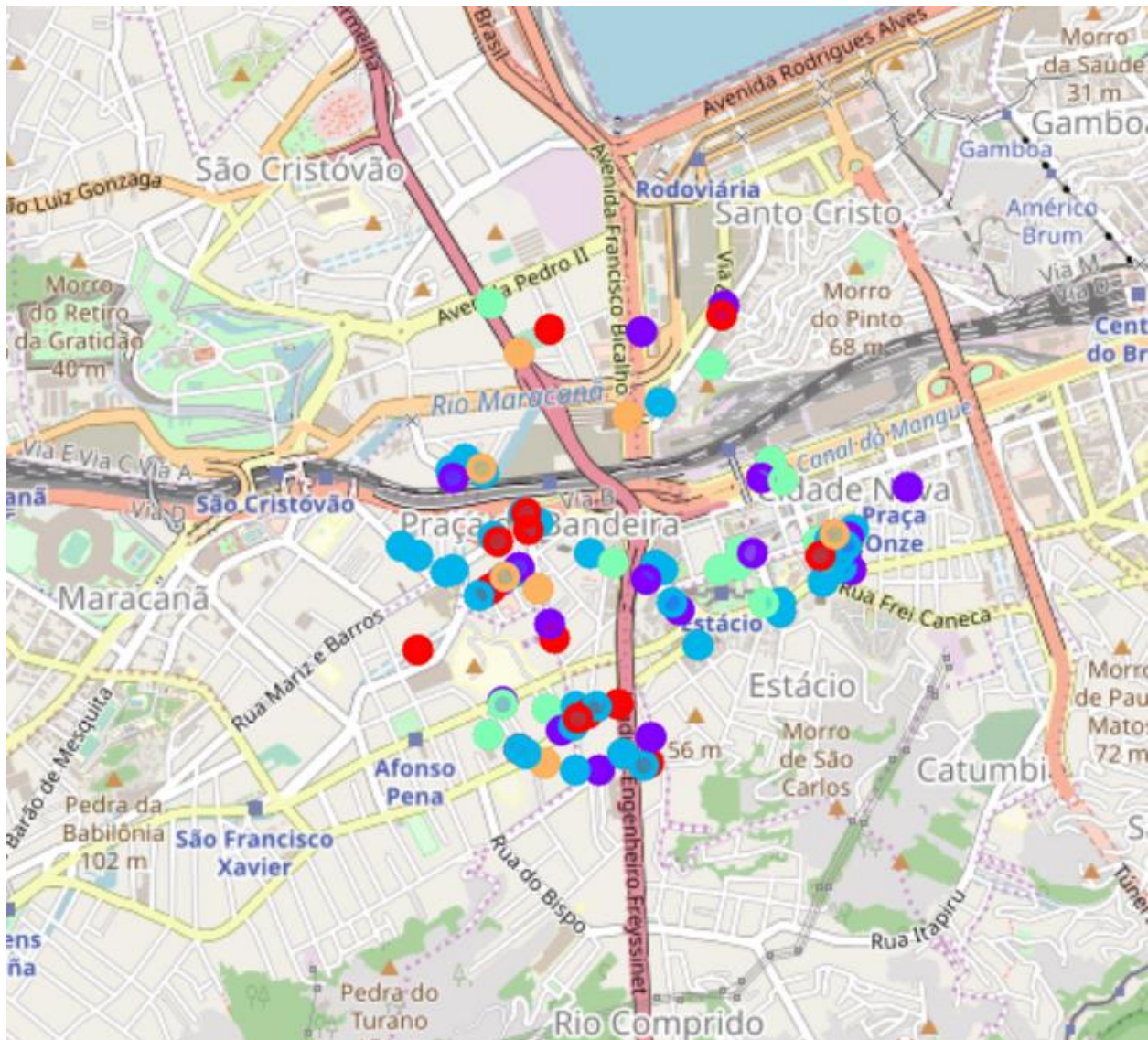
5)

	name	categories	rating	Average_cost	nr_of_reviews	location
6	Nova Pombalina	Snack Place	8.8	Cheap	89	Lisbon
14	Nova	Wine Bar	8.5	Moderate	14	Lisbon
17	Tágide Wine & Tapas Bar	Tapas Restaurant	8.6	Expensive	136	Lisbon
32	Ao 26 – vegan food project	Vegetarian / Vegan Restaurant	8.9	Moderate	116	Lisbon
36	Ribeira das Naus	Waterfront	8.9	empty	209	Lisbon
52	São Luiz Teatro Municipal	Theater	9.3	empty	113	Lisbon
67	Wine Not?	Tapas Restaurant	8.2	Expensive	26	Lisbon
79	Garrafeira Nacional	Wine Shop	8.7	empty	74	Lisbon
81	By the Wine - José Maria da Fonseca	Wine Bar	9.5	Moderate	536	Lisbon
82	Armazéns do Chiado	Shopping Mall	8.2	empty	1010	Lisbon
83	Lisbon Art Stay	Wine Bar	8.2	Moderate	8	Lisbon
92	Sol e Pesca	Tapas Restaurant	9.0	Cheap	258	Lisbon
138	São Cristóvão Futebol e Regatas	Soccer Field	7.4	empty	16	Rio de Janeiro
144	All In Sports Bar	Sports Bar	6.9	Cheap	12	Rio de Janeiro
148	Poró Restaurante	Vegetarian / Vegan Restaurant	7.0	Moderate	12	Rio de Janeiro
150	Casa Vila da Feira e Terras de Santa Maria	Sports Club	7.4	empty	39	Rio de Janeiro
162	Boulevard Cidade Nova	Shopping Plaza	6.7	empty	57	Rio de Janeiro
190	SuperVia - Estação Leopoldina	Train Station	5.8	empty	40	Rio de Janeiro
191	Vila Mimosa	Strip Club	6.0	Expensive	48	Rio de Janeiro
193	Mundial Supermercados	Supermarket	5.8	empty	82	Rio de Janeiro
198	MegaMatte	Snack Place	6.0	Cheap	15	Rio de Janeiro

Projecting all cluster over the map -Lisboa



Projecting all cluster over the map – Rio de Janeiro



Conclusion:

If we are interested in looking for a moment to entertainment: we can use 5th cluster and search for a place that are similar in Lisbon and Rio.

See an example: if you love nova pombalina when you stay in Lisbon, perhaps when you go to Rio de Janeiro you might like to know Megamatte. It's a nice cluster so look at when you are looking for entertainment.

If you are interested in other places like hotels you can see in another cluster. And so on.