

Problem of Hospital location

Introduction

- My native country is Morocco with **HDI (Human developpement index) value** for 2018 is 0.676, which put the country in the medium human development category positioning it at 121 out of 189 countries and territories. Between 1990 and 2018, Morocco's **HDI value** increased from 0.458 to 0.676, an increase of 47.7 percent.

Problem

- The problem to solve is to find the place where to build a hospital, so to find the neighbor where there is less hospital, I will do this for only one city as an example but we can do the same for all cities.

Data section

- We will need data about hospital in Marrakech city, in order to do our analysis about neighbors, to know the ones that have less hospitals and one with less hospitals.
- So we will use Foursquare location data to solve the problem in combination with other data from official institute in Morocco.
- -Data about health in Morocco : www.Hcp.ma

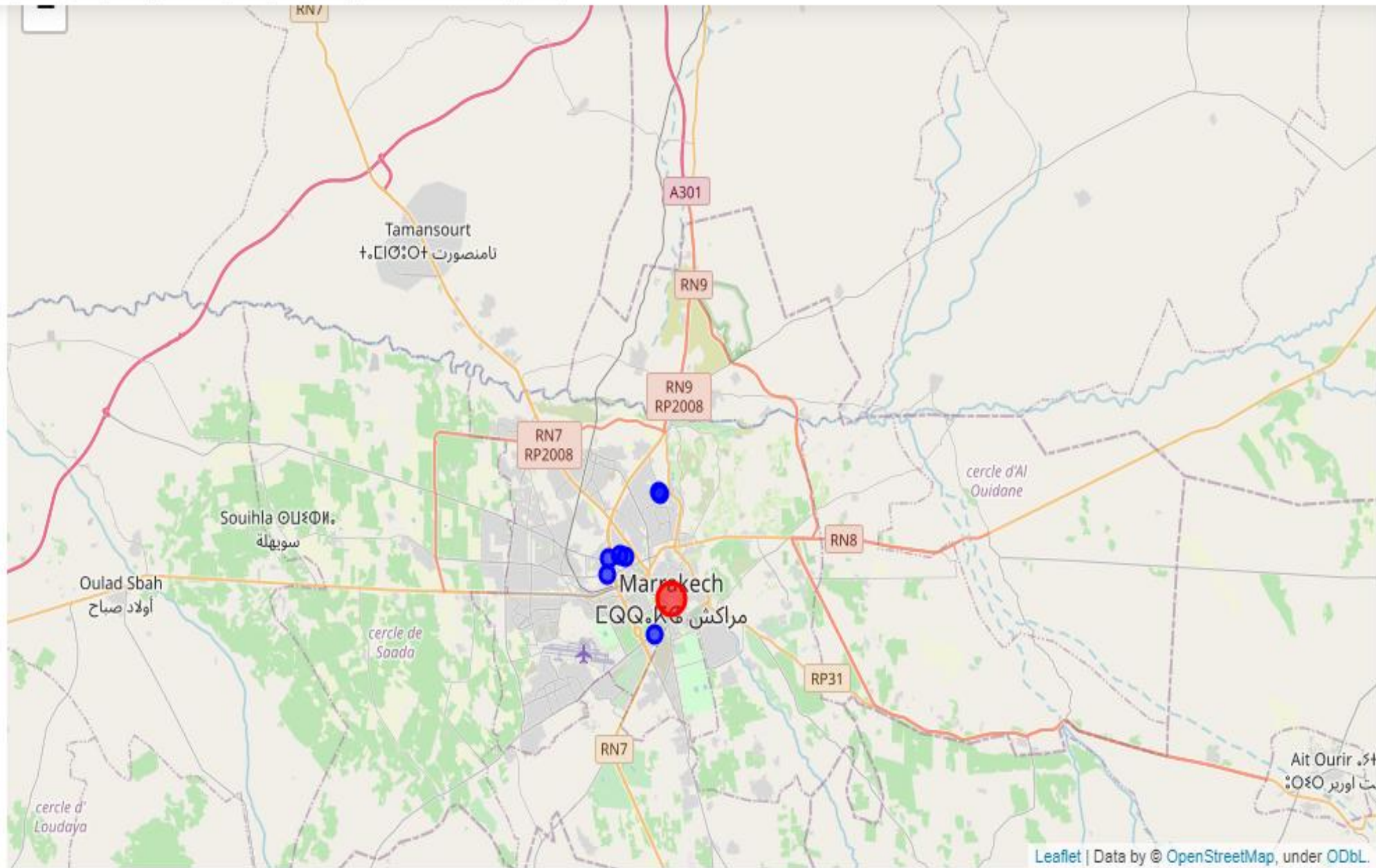
Getting hospital location from foursquare

- This category Id is used for URLs in foursquare in order to extract hospitals
- Our URL become like this
- “https://api.foursquare.com/v2/venues/explore?&categoryId=4bf58dd8d48988d196941735&client_id={} &client_secret={} &v={} &ll={},{} &radius={} &limit={}”
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Get the revelant part of JSON

```
In [116]: items = results['response']['groups'][0]['items']  
items[0]
```

```
Out[116]: {'reasons': {'count': 0,  
  'items': [{'summary': 'This spot is popular',  
    'type': 'general',  
    'reasonName': 'globalInteractionReason'}]},  
  'venue': {'id': '4eda7f4846907c1b42ca6a1d',  
    'name': 'Clinique internationale de Marrakech',  
    'location': {'lat': 31.612849983026603,  
      'lng': -7.997056748535957,  
      'labeledLatLngs': [{'label': 'display',  
        'lat': 31.612849983026603,  
        'lng': -7.997056748535957}]},  
    'distance': 1626,  
    'cc': 'MA',  
    'city': 'مراكش',  
    'state': 'Marrakech-Tensift-Al Haouz',  
    'country': 'المغرب',  
    'formattedAddress': ['مراكش', 'المغرب'],  
    'categories': [{'id': '4bf58dd8d48988d196941735',  
      'name': 'Hospital',  
      'pluralName': 'Hospitals',
```



Leaflet | Data by © OpenStreetMap, under ODbL.

Show all



DISCUSSION

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- Different epsilon parameters in the DBSCAN Model return different number of clusters with similar results. The best result is as presented. However I believe that the results are quite satisfying

Conclusion

- To sum up, the adventurer can go to purple cities such as Marrakech with a lot of theater opportunities at the center of the city.