



**Good positions to live or
open a restaurant in
HaiKou**

Finding a popular and nice position in HomeTown

- HaiKou , China. is my hometown. It is a international tourism city which has warm weather , beautiful sea views and fast increasing economy.
- Many people would like to begin a life in Haikou or start a business, this project is aiming at finding good places for them.
- Home price , venues and salary will be played as indexes for the purpose.



Data acquisition and cleaning

- 'GDP', 'Neighborhood', 'population', 'salary' of current years are suitable parameters to figure out best location for living or opening a restaurant.
- I collected the data from the following websites (some of them are chinese and I translated them into English in my dataset)
 - [Geography](#)
 - [GDP](#)
 - [Home price](#)
 - [City introduction](#)

Salary (four districts):

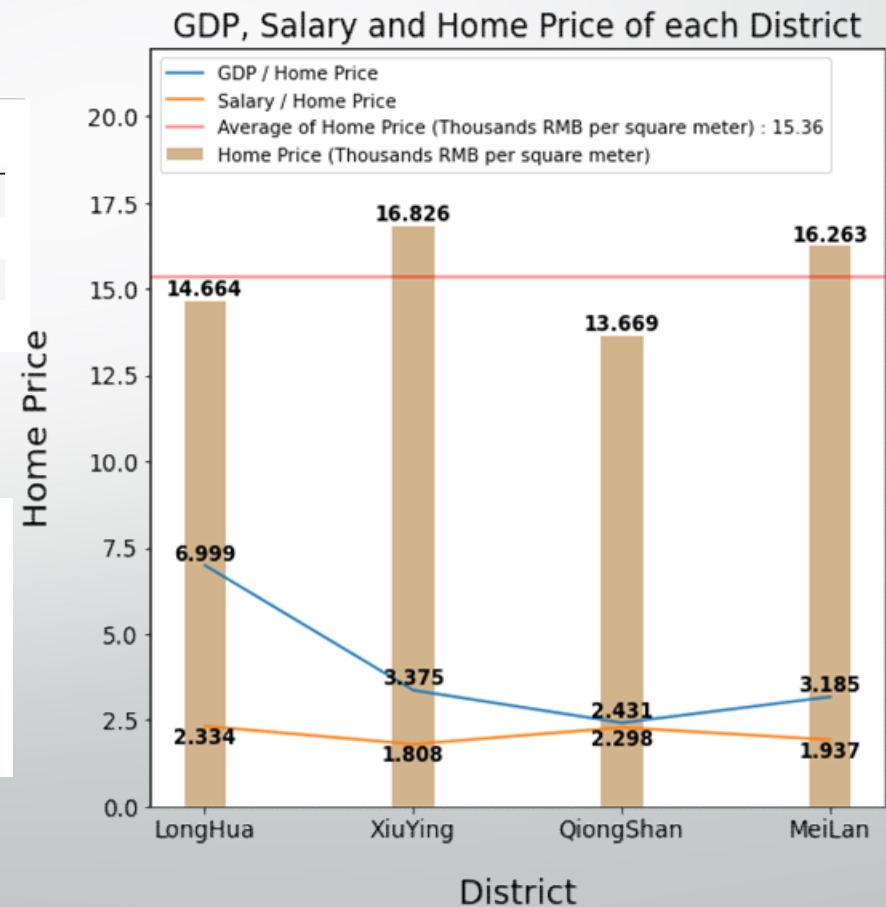
- [longhua](#)
- [XiuYing](#)
- [QiongShan](#)
- [MeiLan](#)

Duplicate, highly similar or highly correlated features were dropped.

Read and calculate the data by pandas

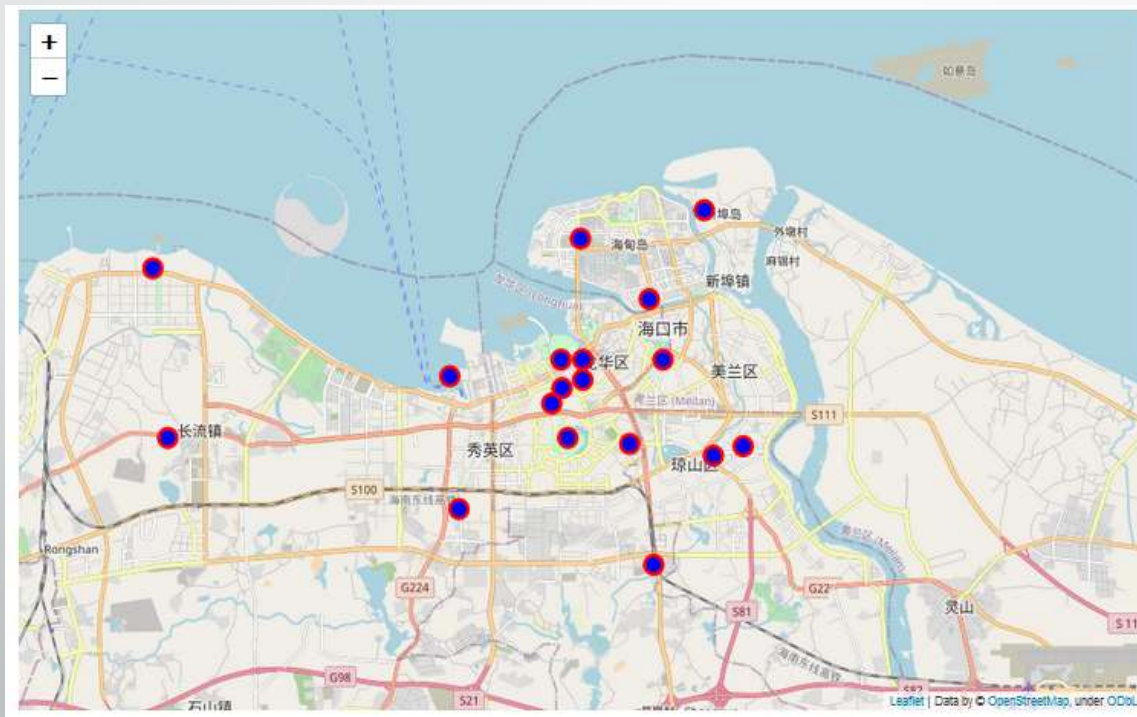
	District	Postal code	Population (Tenth of Thousands)	Area (Square Kilometres)	GDP (Tenth of Thousands RMB)	GDP Per Capital (RMB)	salary (RMB)	Home Price (RMB)
0	LongHua	570100.0	66.98	300.6	6873900.0	102626.157062	34220.0	14664
1	XiuYing	570300.0	38.78	511.5	2202000.0	56781.846313	30428.0	16826
2	QiongShan	571100.0	51.17	939.9	1700600.0	33234.316983	31405.0	13669
3	MeiLan	570200.0	70.28	552.8	3640000.0	51792.828685	31503.0	16263

	District	GDP Per Capital (RMB)	salary (RMB)	Home Price (RMB)	GDP : Home Price	Salary : Home Price
0	LongHua	102626.157062	34220.0	14664	6.99851	2.33381
1	XiuYing	56781.846313	30428.0	16826	3.37485	1.80839
2	QiongShan	33234.316983	31405.0	13669	2.43136	2.29753
3	MeiLan	51792.828685	31503.0	16263	3.1847	1.9371

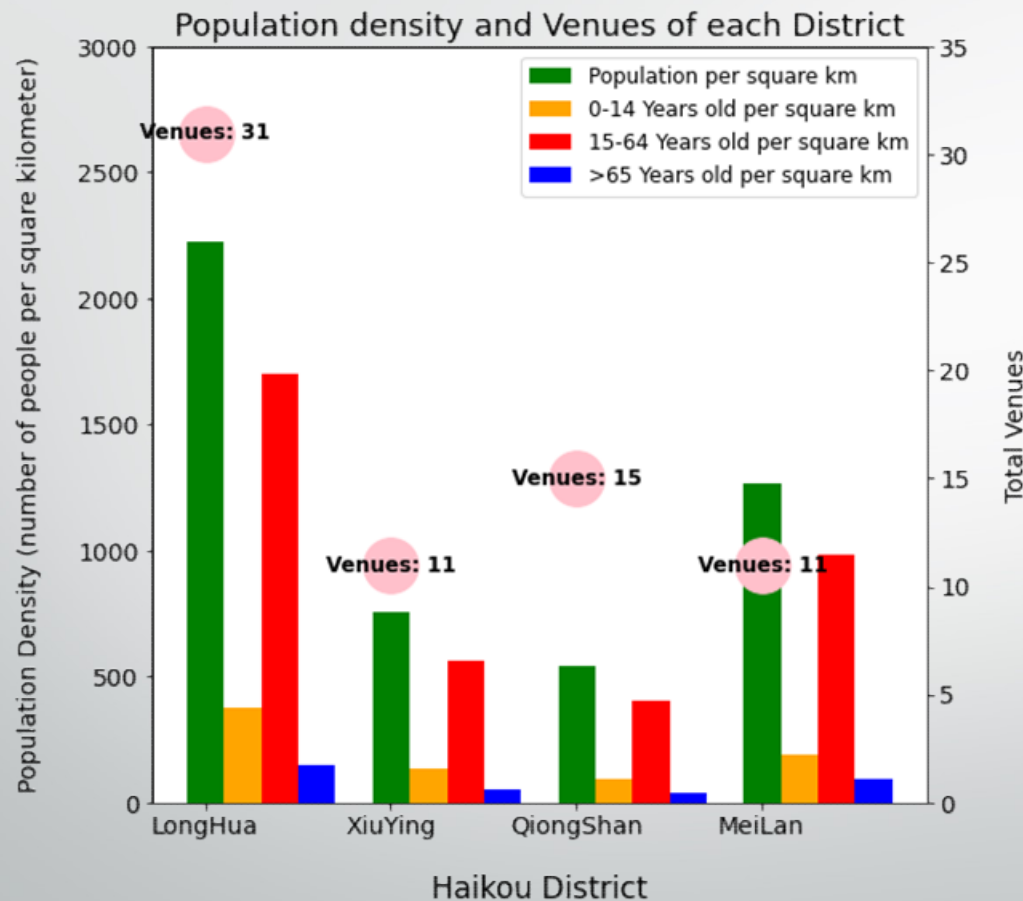


Use the FourSquare API to find venues

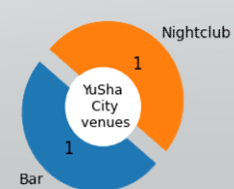
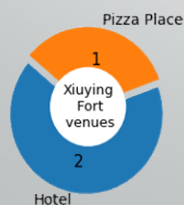
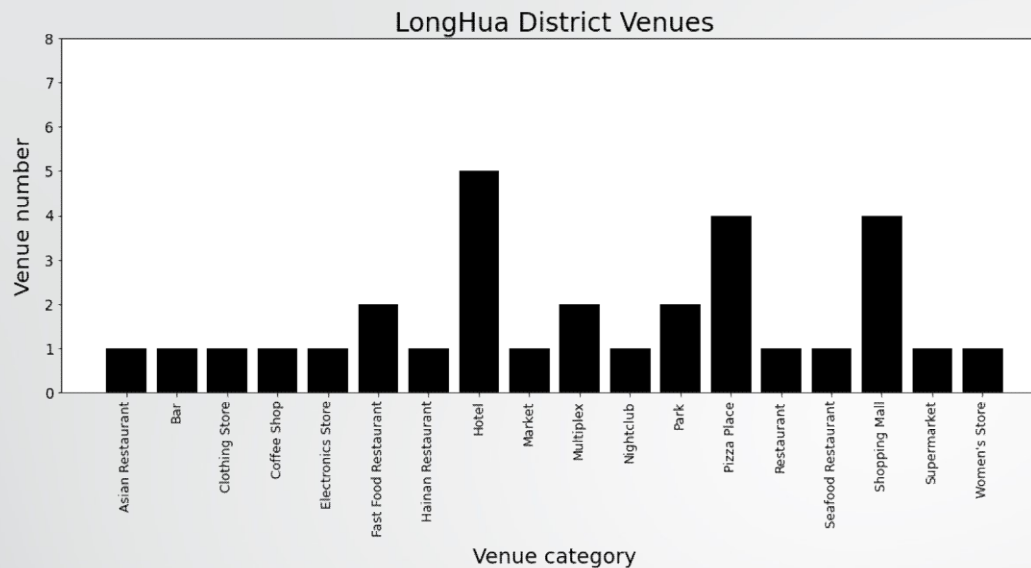
- Venue is the best indicator to find good positions to live or do business
- At first get the famous neighborhood data, and then apply FourSquare API (import folium library to mark the places) to find the venues around neighborhood.



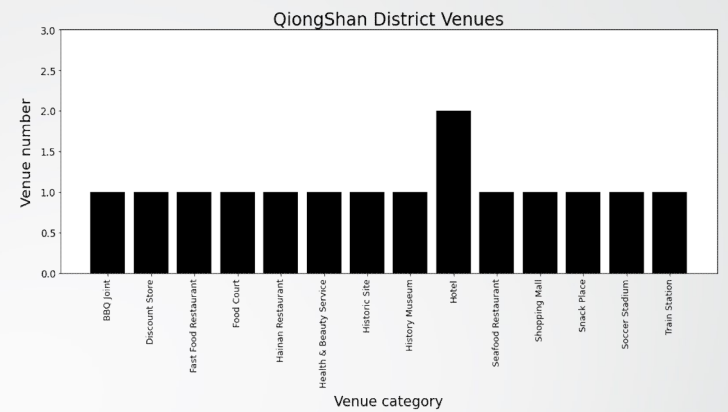
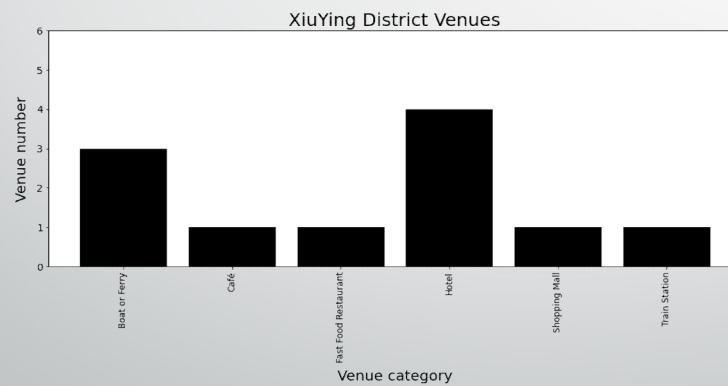
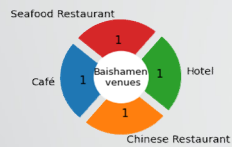
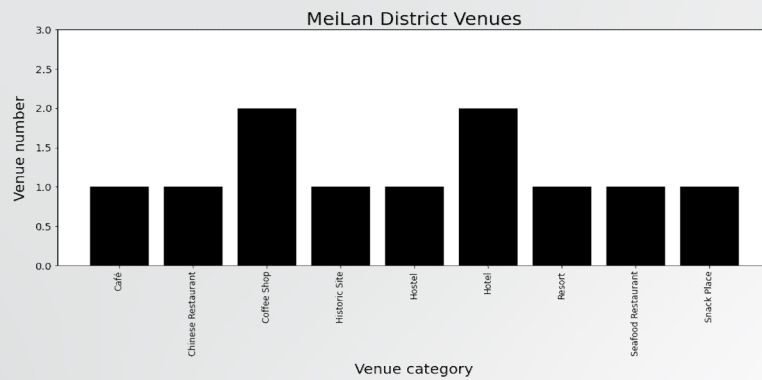
Venues	
LongHua	31
XiuYing	11
Qiong Shan	15
MeiLan	11



- Based on the data of ‘Population’, ‘Venues’, readers can find their favorite district. For example, for whom wants to get along with new friends, the one with most population is welcome; for whom wants to open a restaurant with children’s food, the places where there are a lot of young man (0-14 years) are more suitable, etc.
- For different purpose, it’s needed to generate a detailed figure and map for each individual venue.



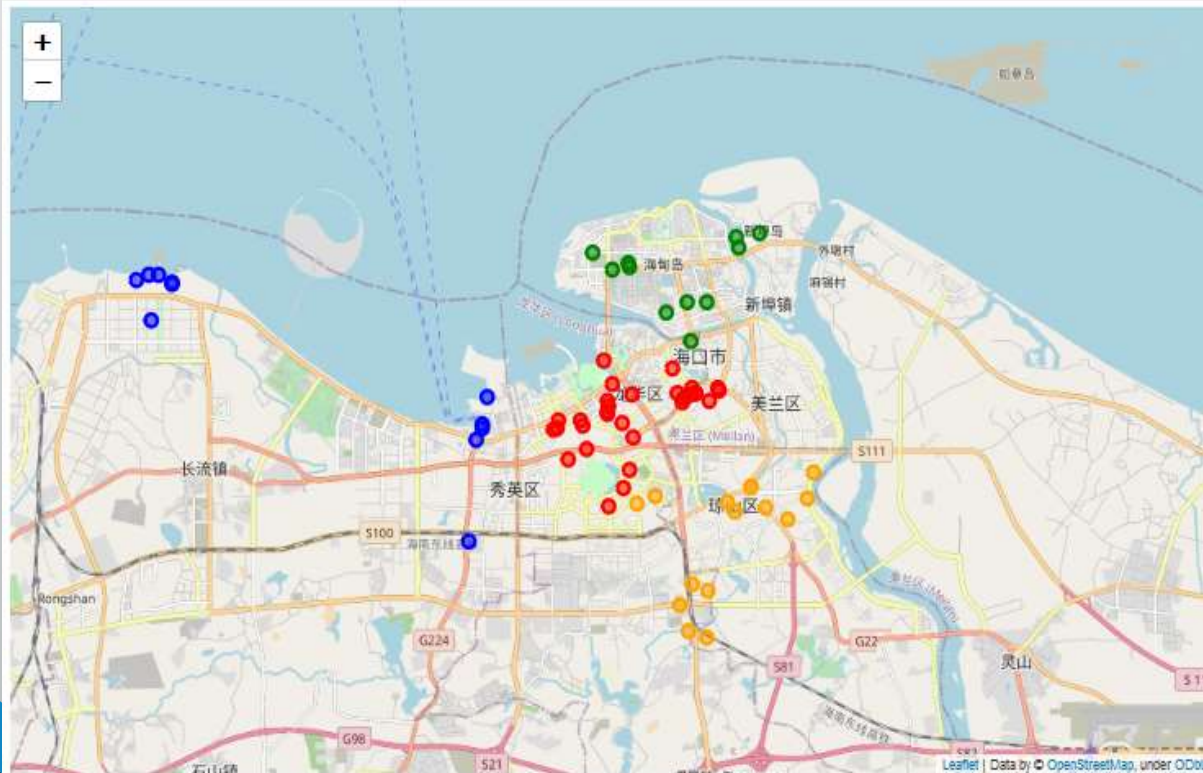
- There four districts in Haikou, the first one to show is the one with most population and venues.
- The figure show 6 most popular neighborhood and the venues around them (distance less than 1000m).
- This chart is clearly indicates what kind and how many venues in a certain place, this is good for different purpose.



- The other 3 districts are less popular, however, they may have lower land price or future increasing potentials, so they are also worth to consider.
- Bigger figures are included in my code.

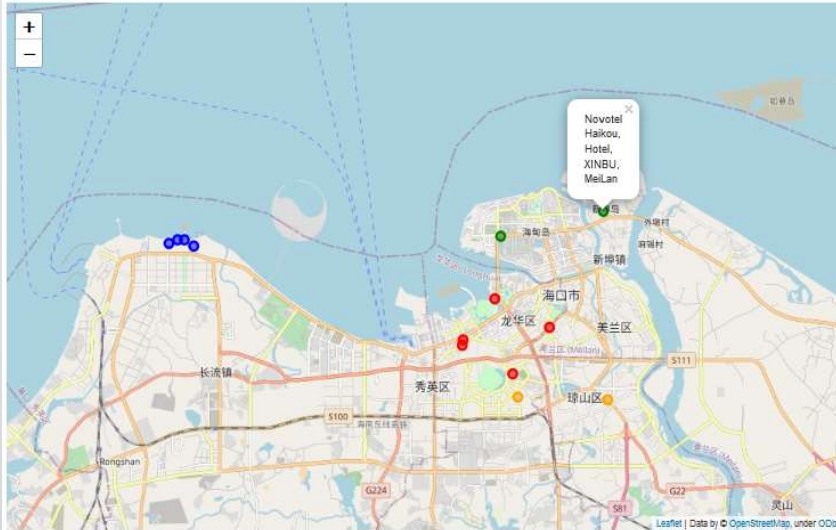
Create a program to check special venues

```
# or input 0 for the all the venues in the map:  
Haikou_check(0,12)
```

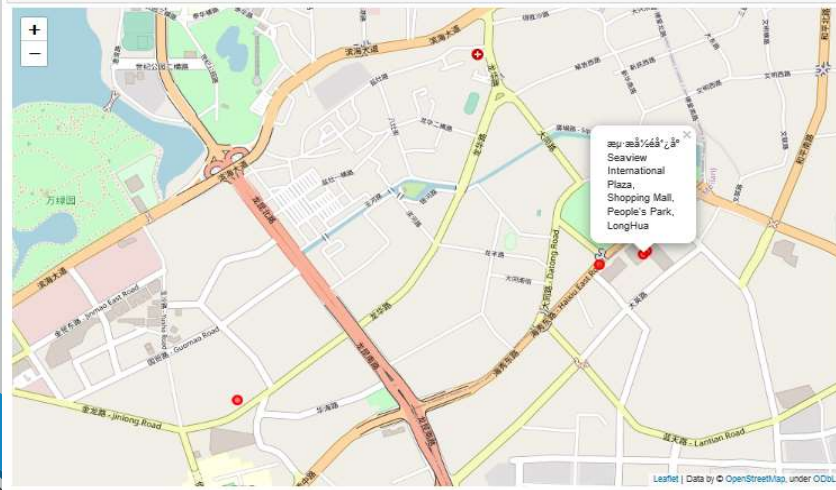


- The folium library and FourSquare API can also help to indicate individual venues.
- It is more benefit and visual-straight to find out the popular places with different categories.
- This figure use four colors to separate venues in four districts, more detailed also be able to found by the map (see next slide).

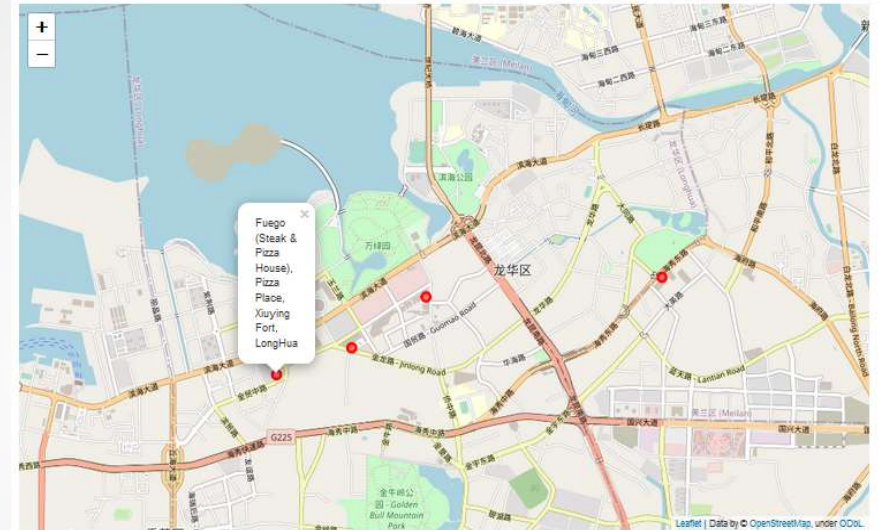
```
# Draw map using the index, input the venue type and the zoom_size of the map into the parenthesis
Haikou_check('Hotel',12)
```



```
Haikou_check('Shopping Mall',16)
```



```
# find all Pizza Place
Haikou_check('Pizza Place',14)
```



- Here are 3 examples to find special category (Hotel, Pizza Place, Shopping Mall) .
- Bigger figures are included in my code.

Conclusion and future directions

- DataFrame, Figures and Map program have been created, they clearly show the good place to live or open a restaurant in my hometown: Haikou, China.
- The libraries of python (pandas , numpy, matplotlib, folium, etc.) are very useful for data analysis. But how much they can do depends on how much data can be collected.
- If I were able to collect more data (currently this is very hard, because Haikou is not a big city, its data managed system is immature), I can do more financial prediction and improve the analysis figures.
- This project in the future could works on:
 - ● Build a more accury models to do better prediction.
 - ● Capture more information of each venue.
 - ● More data like home price increase rate, economical increase rate and income prediction.