

Michelin One-star Restaurants Analysis

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Introduction

- Business Problem: As we encountered pandemic situation, small business including restaurants are having trouble with keeping their business. However, I believe that we will get through this situation and will be able to overcome this situation. When we are able to travel around the world after the COVID-19 situation, it would be the great time for people to go around the world freely. So, analysis of 'Michelin one-star Restaurants would be the one of the ways we could pick to try some great food and enjoy sightseeing around the world.
- Data Source: <https://www.kaggle.com/jackywang529/michelin-restaurants>
- Methodology: This analysis was conducted mainly United Kingdom, California, New York City, and South Korea. United Kingdom, California, New York City have a lot of Michelin star restaurants. I also put South Korea as well since I want to show how their Michelin one-star restaurants are placed in capital. I visualized with mainly using pandas and folium.

Read the One-Star Michelin Restaurants from csv file

1.2 Read the One-Star Michelin Restaurants from csv file

```
df = pd.read_csv('one-star-michelin-restaurants.csv')
```

```
df_counts = df["region"].value_counts()  
df_counts
```

United Kingdom	138
California	69
New York City	55
Hong Kong	44
Singapore	34
Denmark	22
Thailand	22
South Korea	19
Chicago	18
Taipei	18
Sweden	16
Ireland	13
Washington DC	13
Austria	12
Macau	11
Sao Paulo	10
Norway	7
Finland	6
Croatia	5
Rio de Janeiro	5
Hungary	5
Greece	3
Poland	2
Czech Republic	2

Name: region, dtype: int64

United Kingdom's Michelin One-star Restaurants list

1.3 United Kingdom's Michelin One Star Restaurants

```
df_onestar_uk = df[df["region"] == "United Kingdom"].copy()
df_onestar_uk
```

	name	year	latitude	longitude	city	region	zipCode	cuisine	price	url
411	Loch Bay	2019	57.514870	-6.571140	Waternish	United Kingdom	IV55 8GA	Modern cuisine	NaN	https://guide.michelin.com/gb/en/highland/waternish
412	Braidwoods	2019	55.694740	-4.742500	Dalry	United Kingdom	KA24 4LN	Classic cuisine	NaN	https://guide.michelin.com/gb/en/north-ayrshire/braidwoods
413	Eipic	2019	54.595898	-5.932242	Belfast	United Kingdom	BT1 6PF	Modern cuisine	NaN	https://guide.michelin.com/gb/en/belfast/belfast
414	OX	2019	54.598910	-5.921980	Belfast	United Kingdom	BT1 3LA	Modern British	NaN	https://guide.michelin.com/gb/en/belfast/belfast
415	The Peat Inn	2019	56.278610	-2.884580	Peat Inn	United Kingdom	KY15 5LH	Classic cuisine	NaN	https://guide.michelin.com/gb/en/fife/peat-inn
...
544	The Sportsman	2019	51.343920	0.958850	Seasalter	United Kingdom	CT5 4BP	Modern British	NaN	https://guide.michelin.com/gb/en/kent/seasalter
545	West House	2019	51.115210	0.642150	Biddenden	United Kingdom	TN27 8AH	Modern British	NaN	https://guide.michelin.com/gb/en/kent/biddenden
546	Fordwich Arms	2019	51.295284	1.126187	Fordwich	United Kingdom	CT2 0DB	Modern cuisine	NaN	https://guide.michelin.com/gb/en/kent/fordwich
547	Samphire	2019	49.184880	-2.105700	Saint Helier/Saint-Hélier	United Kingdom	JE2 4TQ	Modern cuisine	NaN	https://guide.michelin.com/gb/en/saint-helier
548	Bohemia	2019	49.181225	-2.102417	Saint Helier/Saint-Hélier	United Kingdom	JE2 4UH	Modern cuisine	NaN	https://guide.michelin.com/gb/en/saint-helier

138 rows × 10 columns

Cleaning the dataset to visualize

```
uk_name = df_onestar_uk.groupby(["city", "cuisine"])["name"].count()
uk_name
```

```
city      cuisine
Anstruther Modern cuisine    1
Ascot      Modern cuisine    1
Bagshot    Modern cuisine    1
Baslow     Modern cuisine    1
Bath       Modern cuisine    1
..
Waternish  Modern cuisine    1
Westminster Modern British    1
Whitebrook Modern British    1
Winchester Modern cuisine    1
Winteringham Modern cuisine    1
Name: name, Length: 128, dtype: int64
```

```
cols_uk = df_onestar_uk.columns
cols_uk
```

```
Index(['name', 'year', 'latitude', 'longitude', 'city', 'region', 'zipCode',
      'cuisine', 'price', 'url'],
      dtype='object')
```

```
cols_code_uk = cols_uk[cols_uk.str.contains("zipCode|url")]
cols_code_uk
```

```
Index(['zipCode', 'url'], dtype='object')
```

```
df_onestar_uk = df_onestar_uk.drop(cols_code_uk, axis=1)
```

```
df_onestar_uk
```

Getting latitude, longitude to visualize in folium

```
uk_long = df_onestar_uk["longitude"].mean()
uk_lat = df_onestar_uk["latitude"].mean()
print('Latitude and longitude values of United Kingdom are {}, {}'.format(uk_lat, uk_long))
```

Latitude and longitude values of United Kingdom are 52.11519519565217, -1.3619043362318835.

```
import folium
uk = folium.Map(location=[52.11519519565217, -1.3619043362318835])
```

uk

Getting a list of restaurants in United Kingdom with latitude and longitude

```
for i in df_onestar_uk.index:
    popup = df_onestar_uk.loc[i, "name"] + "-" + df_onestar_uk.loc[i, "cuisine"]
    lat = df_onestar_uk.loc[i, "latitude"]
    long = df_onestar_uk.loc[i, "longitude"]

    print(popup, lat, long)
```

```
Loch Bay-Modern cuisine 57.51486999999995 -6.57114
Braidwoods-Classic cuisine 55.69474 -4.7425
Eipic-Modern cuisine 54.595898 -5.932242400000001
OX-Modern British 54.59891 -5.9219800000000005
The Peat Inn-Classic cuisine 56.27861 -2.8845797
Kitchin-Modern cuisine 55.976967 -3.1728419999999997
Martin Wishart-Modern cuisine 55.975519999999996 -3.1701900000000003
Number One-Modern cuisine 55.952980000000004 -3.18966
21212-Creative 55.95674 -3.18018
The Cellar-Modern cuisine 56.222126 -2.6963209999999997
Forest Side-Modern British 54.46396 -3.0157998
HRiSHi-Modern cuisine 54.350130000000001 -2.91172
Rogan & Co-Creative British 54.20074 -2.95464
House of Tides-Modern cuisine 54.967580000000005 -1.61127
Sosban & The Old Butchers-Modern cuisine 53.225925 -4.163006
Northcote-Modern British 53.80933 -2.4476
Yorke Arms-Modern cuisine 54.13435 -1.8183095
Fraiche-Creative 53.381830000000001 -3.04307
White Swan-Modern British 53.83916 -2.25097
Tyddyn Llan-Classic cuisine 52.92405 -3.44329
```

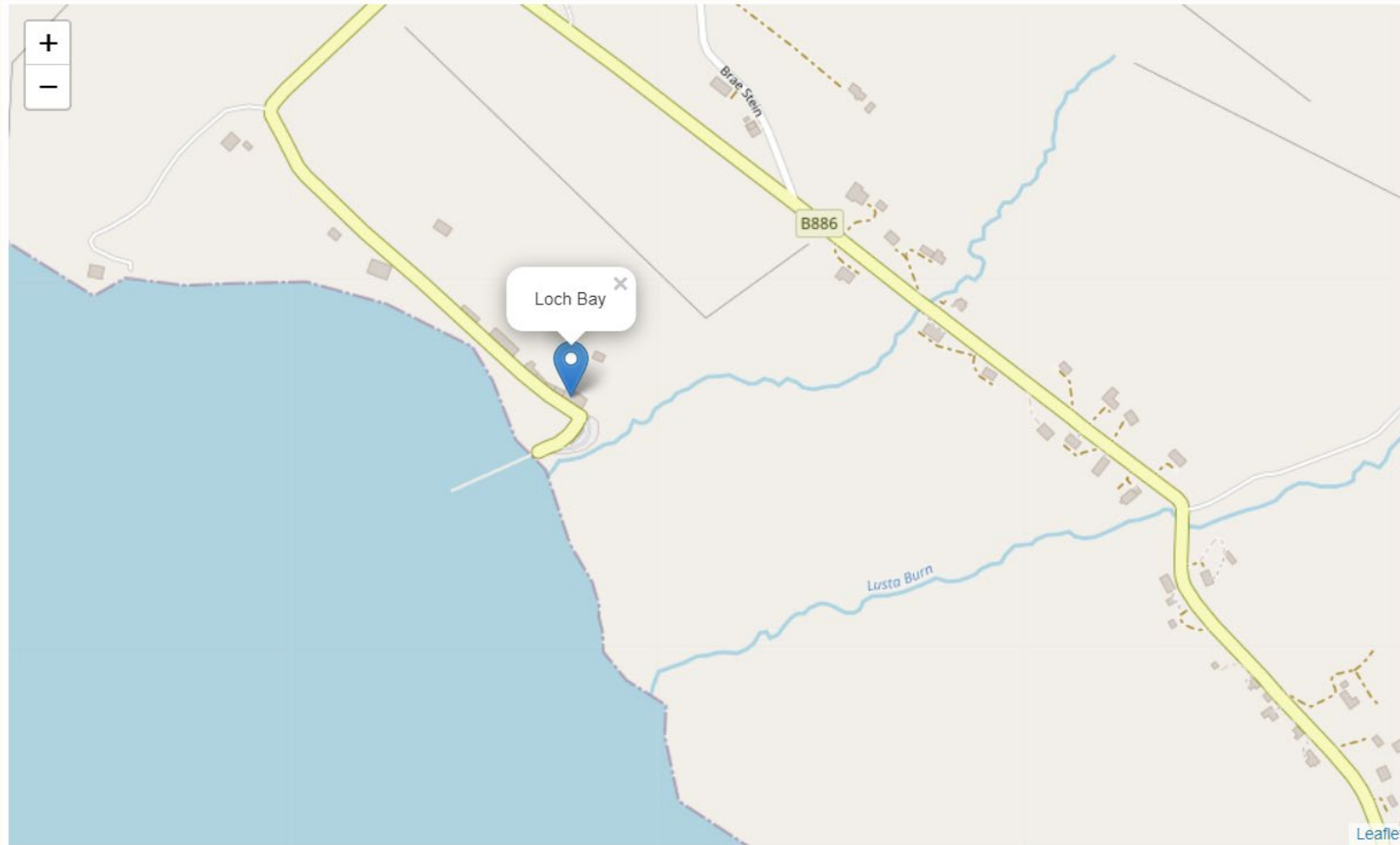
```
import folium

j = folium.Map(location=[57.51486999999995, -6.57114], zoom_start=12)

folium.Marker([57.51486999999995, -6.57114], popup="Loch Bay").add_to(j)

j
```

Output-one of the restaurants using a folium



Using folium to visualize all the one-star Michelin restaurants in the United Kingdom

```
j = folium.Map(location=(lat, long), zoom_start=5)

for i in df_onestar_uk.index[:20]:
    popup = df_onestar_uk.loc[i, "name"] + "-" + df_onestar_uk.loc[i, "cuisine"]
    lat = df_onestar_uk.loc[i, "latitude"]
    long = df_onestar_uk.loc[i, "longitude"]

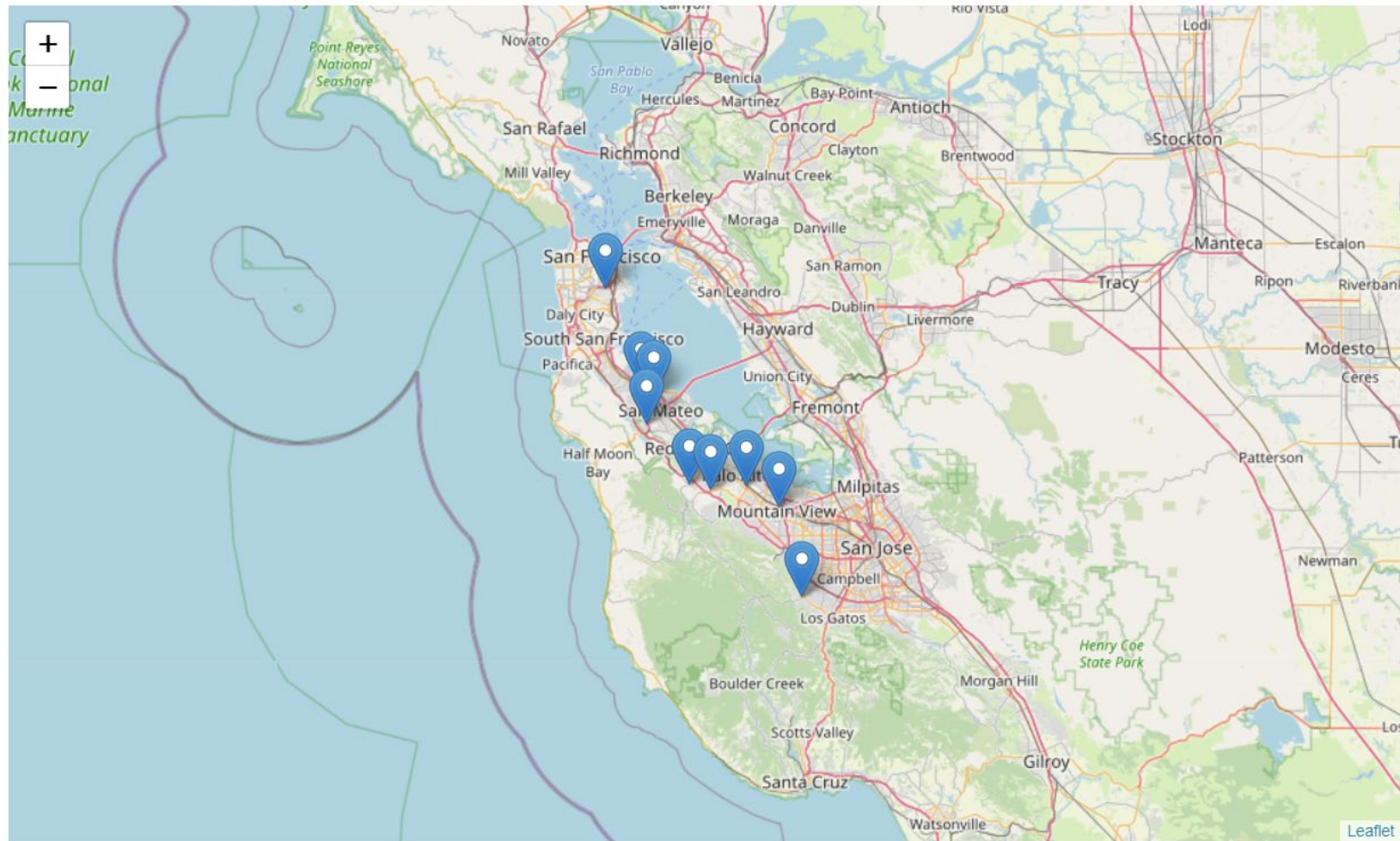
    folium.Marker([lat, long], popup=popup).add_to(j)

j
```

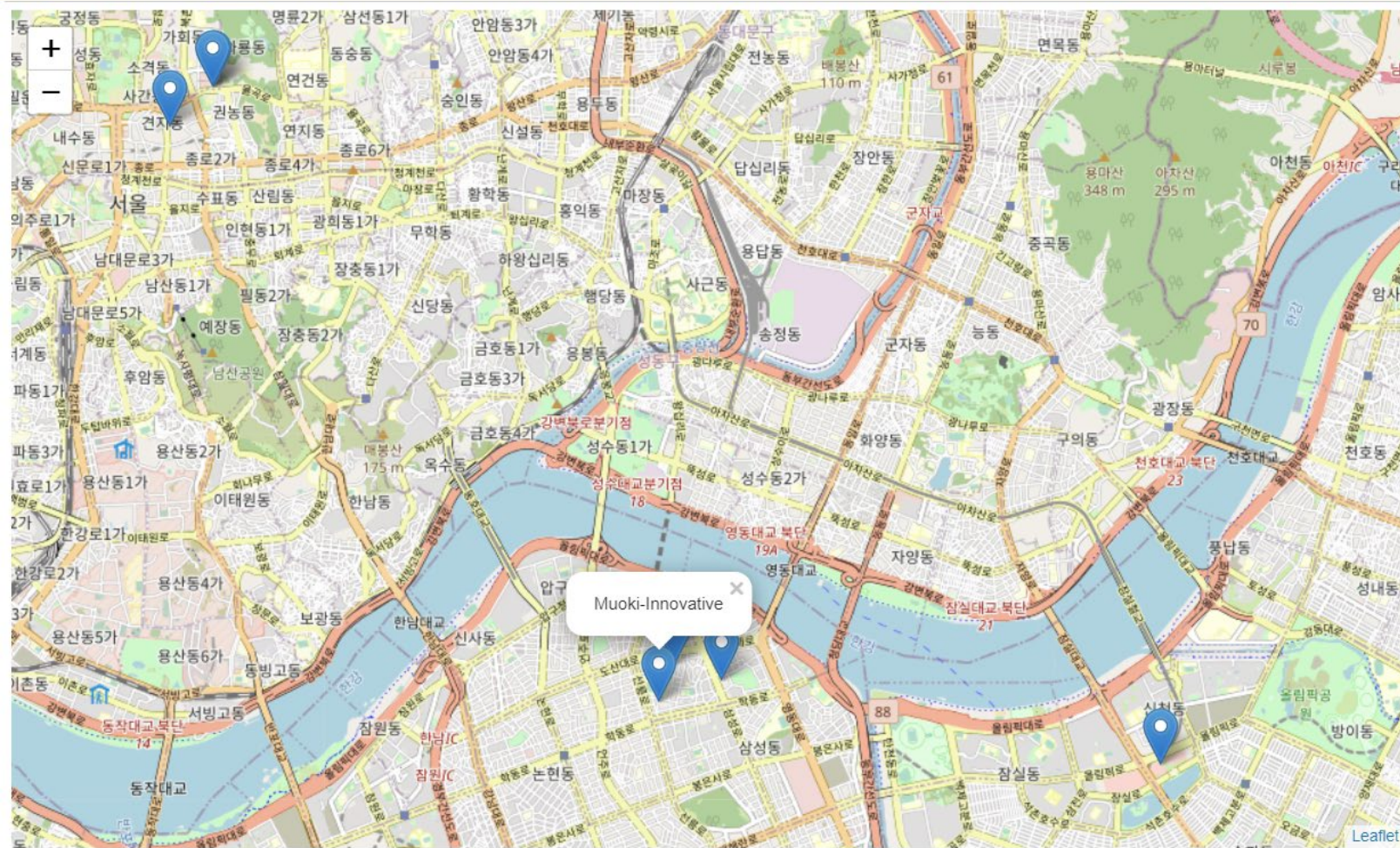
United Kingdom-Output



California-Output



South Korea-Output





Result & Conclusion

- Result: Top 3 region(United Kingdom, California, and New York City) are having their Michelin one-star restaurants in the city. However, as you can see at the United Kingdom case, they are also having Michelin one-star restaurants in the suburb area. So, if Michelin star restaurants are placed in the suburb area, it would bring more tourists in certain county and make more profit in those area.
- Conclusion: After looking at this analysis, it would be helpful for people who want to travel and try some new food. Also, it would be helpful for city developer to know this information since great restaurants could bring more tourists and profit.