IBM CAPSTONE PROJECT

Introduction & Audience

- create a traveller map of Tokyo

→ Show the key hotels around
The palace and the restaurants nearby

- Travellers who intend to visit
  Japan may find the map handy

Data & Methodology

Foursquare data with details on Tokyo.. Data are then cleaned to provide only the name, categories, address, lat, lng, postal Code of the desired areas.

The following actions are taken to create the map for the travellers.

- import libraries.
- get the geogrphaical details of singapore.
- search for hotels and clean the dataframe.
- search for restaurants and clean the dataframe.
- generate the traveller map.

Code

```python
clean_columns = ['name', 'categories'] + [col for col in dataframe.columns if col.startswith('location.')]+ ['id']
clean_dataframe = dataframe.loc[:,clean_columns]
def get_category_type(row):
    try:
        categories_list = row['categories']
    except:
        categories_list = row['venue.categories']

    if len(categories_list) == 0:
        return None
    else:
        return categories_list[0]['name']

clean_dataframe['categories'] = clean_dataframe.apply(get_category_type, axis=1)
clean_dataframe.columns = [column.split('.')[-1] for column in clean_dataframe.columns]
clean_dataframe.head()
```

	name	categories	address	cc	city	country	crossStreet	distance	formattedAddress	labeledLatLngs	lat	lng	postalCode	state	
0	Palace Hotel Tokyo (パレスホテル東京)	Hotel	丸の内 1-1-1	JP	東京	日本	NaN	261	[丸の内1-1-1, 千代田区, 東京都, 100-0005, 日本]	[{'label': 'display', 'lat': 35.684644, 'lng':...	35.684644	139.761302	100-0005	東京都	4b05879af964a520ac9b2
1	Hotel Arcade (ホテルアーケー	Shopping Mall	丸の内 1-1-1	JP	東京	日本	パレスホテル B1F	253	[丸の内1-1-1 (パレスホテル B1F), 千代田区, 東京都, 日本]	[{'label': 'display', 'lat': 35.684539726631, ...	35.684540	139.761320	NaN	東京都	50b58b02e4b0be8d47ad6

Code

```python
Restaurant_clean_columns = ['name', 'categories'] + [col for col in Restaurant_dataframe.columns if col.startswith('location.')]+
clean_Restaurant_dataframe = Restaurant_dataframe.loc[:,Restaurant_clean_columns]
def get_category_type(row):
    try:
        categories_list3 = row['categories']
    except:
        categories_list3 = row['venue.categories']

    if len(categories_list3) == 0:
        return None
    else:
        return categories_list3[0]['name']
clean_Restaurant_dataframe['categories'] = clean_Restaurant_dataframe.apply(get_category_type, axis=1)
clean_Restaurant_dataframe.columns = [column.split('.')[-1] for column in clean_Restaurant_dataframe.columns]
clean_Restaurant_dataframe
```

	name	categories	address	cc	city	country	crossStreet	distance	formattedAddress	labeledLatLngs	lat	lng	postalCode	state	
0	Coca Restaurant x mango tree cafe	Thai Restaurant	有楽町 1-11-1	JP	東京	日本	ビックカメラ有楽町店 6F	877	[有楽町1-11-1 (ビックカメラ有楽町店 6F), 千代田区, 東京都, 100-000...	[{'label': 'display', 'lat': 35.67554834466681...	35.675548	139.763153	100-0006	東京都	4ba75
1	MOTIF RESTAURANT & BAR	Restaurant	丸の内 1-11-1	JP	千代田区	日本	フォーシーズンズホテル丸の内 東京 7F	838	[丸の内1-11-1 (フォーシーズンズホテル丸の内 東京 7F), 千代田区, 東京都, ...	[{'label': 'display', 'lat': 35.678271, 'lng':...	35.678271	139.766827	100-6277	東京都	55482b

Code

Results

```python
hotel_map = folium.Map(location=[latitude, longitude], zoom_start=14)

for lat, lng, name, categories, address in zip(hotel_neighbourhood_df['lat'], hotel_neighbourhood_df['lng'],
                                               hotel_neighbourhood_df['name'], hotel_neighbourhood_df['categories'],
                                               hotel_neighbourhood_df['address']):
    label = '{}, {}'.format(name, address)
    label = folium.Popup(label, parse_html=True)
    folium.CircleMarker(
        [lat, lng],
        radius=5,
        popup=label,
        color='blue',
        fill=True,
        fill_color='blue',
        fill_opacity=0.7,
        parse_html=False).add_to(hotel_map)

hotel_map
```
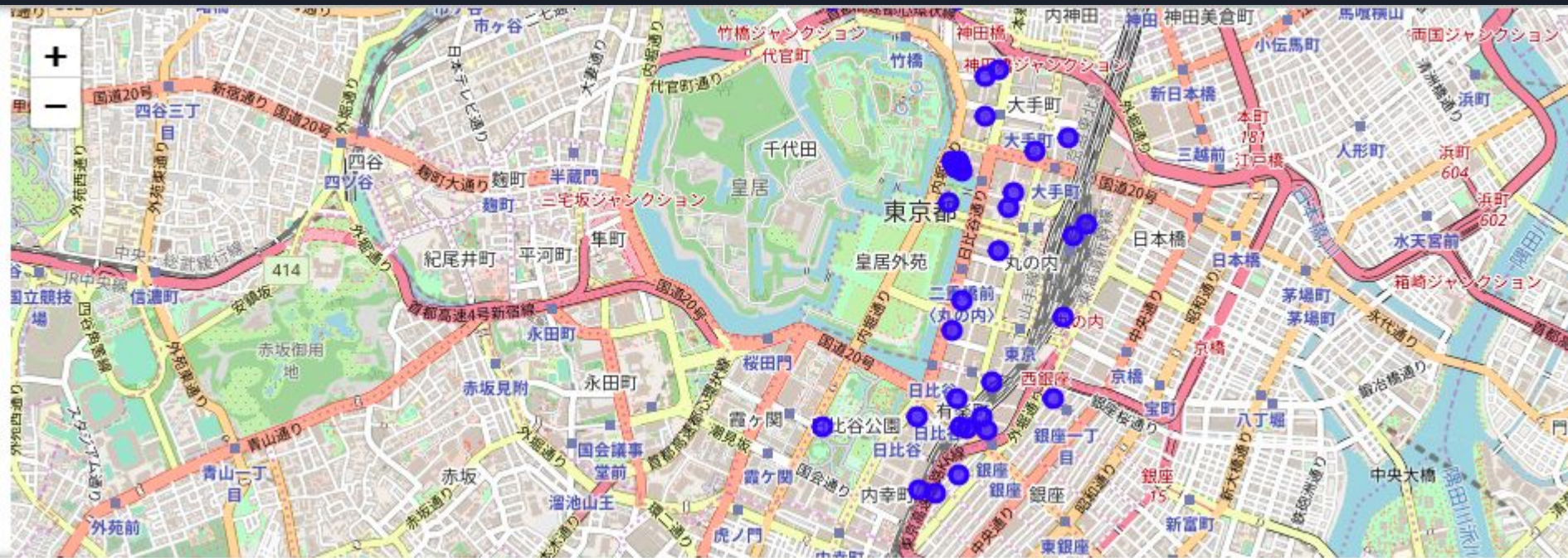
Results

Discussion

The codes successfully show the key hotels around the palace in Tokyo and the restuarants nearby.

I wanted to include the following details in the project but was unable to scarpe the data from yelp or trip advisor:

- the specific cuisine it serves
- self-service or table service (casual or fine dining)
- restaurat atmosphere and dress code
- budget and average spending
- reviews and ratings

The map would be much more comprehensive and informative if I have access to such these datasets.

Conclusion

It was my first attempt to create a data-project of this scale. I have some diffculties in obtaining all the data I intended to get. As a result I was unable to build a more comprehensive map.

if there data are available, the traveller map would definitely be more useful to travellers.