CAPSTONE – IBM DATA SCIENCE

OPPORTUNITY FOR OPENNING PET COFFEE SHOP IN BINH TAN DISTRICT, HO CHI MINH CITY, VIETNAM

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A. Introduction

The growth rates of Vietnam in 2018 and 2019 are 7.08% and 7.02% respectively. This is a relatively high number in Southeast Asia in particular and the world in general.

In which, Ho Chi Minh City is considered as the economic leader of the whole country when the national budget contribution is at 25%.

At the same time, Ho Chi Minh City is also a place of modern and vibrant life thanks to the relatively high young population.

Binh Tan District is the place where I live, located at the western gateway of Ho Chi Minh City. Living standards of workers have also gradually improved. Types of service and entertainment are focused.

My idea is to develop a coffee shop associated with pets like cats and dogs cafe in Binh Tan District, Ho Chi Minh City. This will be a place where young people don't just come and chat with friends, but they can also have fun with these friendly animals. Science proves

that people's moods will improve a lot after work pressure, life if they have positive experiences with cute pets.

B. Data Description

Google Cloud Platform API: I use service API called Geocoding API to find latitude and longitude; Reverse Geocoding API to find address based on latitude and longitude.

Foursquare API: I want to get nearby venues from circular places I made before. Then I filter venues that have categorie ID like Café, Cafeteria, Gaming Cafe, Pet Café,…

C. Methodology

First, I determine the longitude of Ho Chi Minh City. From there I draw the rhombus created by the small inner circle.

The main line consists of twenty circular areas of length 10000. I will access information about longitude, latitude, x y coordinates, distance. By using the Reverse Geocoding API, I found out the address information.

	latitude	longitude	distance_from_center	Address
0	10.768964	106.587490	37072.937380	63 Hẻm 55, Bình Trị Đông A, Bình Tân, Hồ Chí M...
1	10.768730	106.589336	36579.500363	3 Tây Lân, Bình Trị Đông A, Bình Tân, Hồ Chí M...
2	10.768496	106.591181	36107.021584	1087 QL1A, Bình Trị Đông A, Bình Tân, Hồ Chí M...
3	10.768262	106.593027	35656.334199	39-41, 16, Bình Trị Đông A, Bình Tân, Hồ Chí M...
4	10.768027	106.594872	35228.274573	953 HL2, Bình Trị Đông A, Bình Tân, Hồ Chí Min...

Next, I searched for nearby venues in radius 100 limit 200 for small circles on Foursquare API.

The project is looking for a first opportunity from a pet cafe in Binh Tan District, Ho Chi Minh City. Therefore, the venues above are divided into 2 groups of pet coffee and pet cafe.

```
[111] # Category IDs corresponding to cafe were taken from Foursquare web site (https://developer.foursquare.com/docs/resources/categories):
     cafe_categories = ['4bf58dd8d48988d1a1941735', '4bf58dd8d48988d128941735', '56aa371be4b08b9a8d573508', '4bf58dd8d48988d18d941735', '4bf58dd8d48988d1f0941735', '4bf58dd8d48988d1e0931735', '4bf58dd8d48988d1f9941735', '4bf58dd8d48988d124941735']
     pet_cafe = '4bf58dd8d48988d16d941735'
     def get_categories(categories):
         return [(cat['name'], cat['id']) for cat in categories]

     def format_address(location):
         address = ', '.join(location['formattedAddress'])
         return address

     def get_venues_near_location(lat, lon, category, client_id, client_secret, radius=100, limit=200):
         version = '20200518'
         url = 'https://api.foursquare.com/v2/venues/explore?client_id={}&client_secret={}&v={}&ll={},{}&categoryId={}&radius={}&limit={}'.format(
             client_id, client_secret, version, lat, lon, category, radius, limit)
         try:
             results = requests.get(url).json()['response']['groups'][0]['items']
             venues = [(item['venue']['id'],
                        item['venue']['name'],
                        get_categories(item['venue']['categories']),
                        (item['venue']['location']['lat'], item['venue']['location']['lng']),
                        format_address(item['venue']['location']),
                        item['venue']['location']['distance']) for item in results]
         except:
             venues = []
         return venues
```

Find cafe venues but not pet cafe

```
[112] cafe_results = []
     for lat, lon in zip(final_df['latitude'], final_df['longitude']):
         for cafe in cafe_categories:
             result = get_venues_near_location(lat, lon, cafe, CLIENT_ID, CLIENT_SECRET)
             cafe_results.append(final_result)
```

```
[121] pet_cafe_results = []
     for lat, lon in zip(final_df['latitude'], final_df['longitude']):
         result = get_venues_near_location(lat, lon, pet_cafe, CLIENT_ID, CLIENT_SECRET)
         pet_cafe_results.append(final_result)
```

```
[122] len(pet_cafe_results)
```

    218

```
[123] pet_cafe_results
```

But I cannot retreive any information about coffee shop venues .

D. Conclusion

I HAVE NO IDEA ABOUT WHY I CANNOT FIND ANY INFORMATION. I STILL NOT CHANGE MY CAPSTONE BEACAUSE THIS PROBLEM. I STILL SUBMIT.