



SAN FRANCISCO
Academy Tour Scheduler

Background and Introduction



Assume that you represent an education organization which aims to improve the education system by collecting and analyzing information on different universities.

This mission involves paying visits to universities in different cities.

In order to make the best use of the limited time and budget, it might be helpful have a scheduler that allows you to visit universities in the same areas each time.

In this case, I'll use the universities in ***San Francisco*** as an example.

Data used in the Project



The location data used in this project is provided by Foursquare API.

Foursquare is a local search-and-discovery service mobile app which provides search results for its users. The app provides personalized recommendations of places to go to near a user's current location based on users' "previous browsing history, purchases, or check-in history".

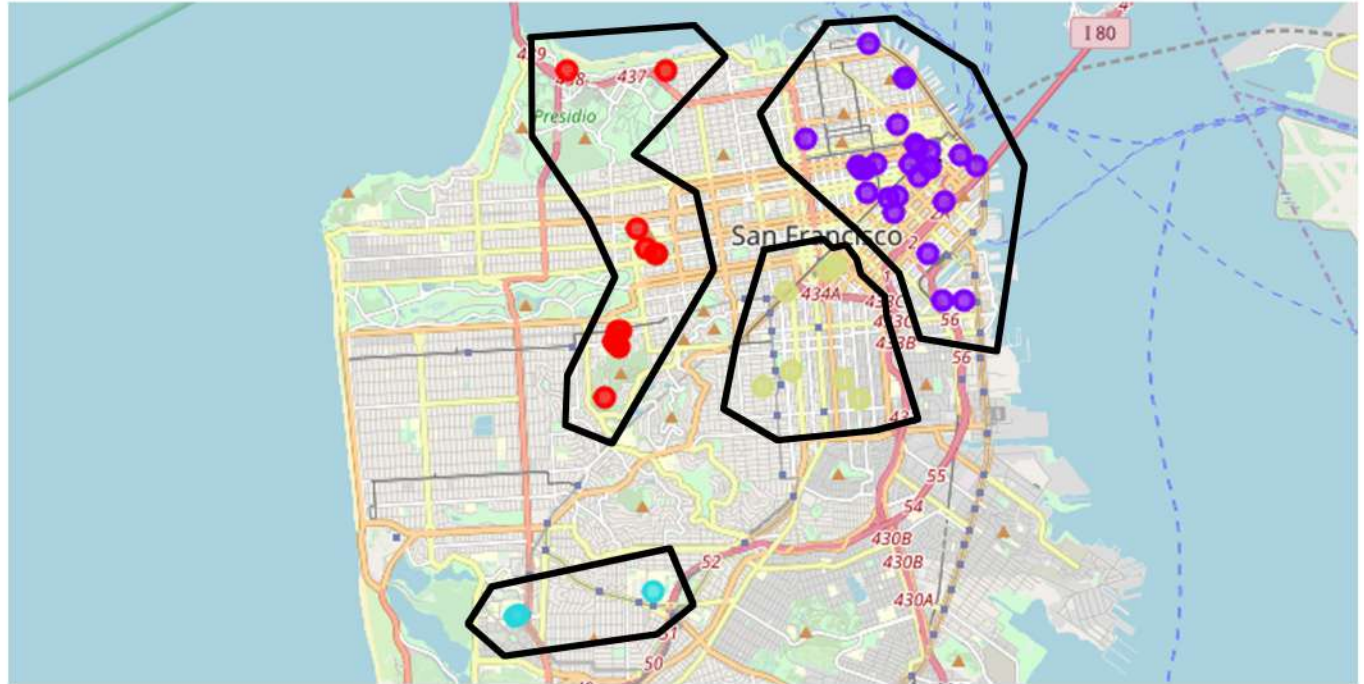
Aside from Foursquare, I'll also be using python libraries like Geocoders to obtain coordinate information of the city.

Methodology

- 1 Setting the key parameters of this task, for example target city, in this case San Francisco.
- 2 Using Geocoders to obtain the coordinates of the target city.
- 3 Fetching the university data through the FOURSQUARE API
- 4 Pre-processing the data with Pandas.
- 5 Applying k-means algorithm to cluster the visiting targets into 4 groups.

Results

- The map on the right shows where the universities are located, grouped by the distance from one another with different color. Visiting one group a day should be the best time-optimized solution.
- From the next page we will list out the detail of the 4-day tour.



Map of San Francisco

Results

Day 1

	Name	Category
0	UCSF Parking Garage - P5	University
1	UCSF - School Of Nursing	University
2	University of California, San Francisco (UCSF)	University
3	UCSF Department of Pathology	University
4	Eli and Edythe Broad Center of Regeneration Me...	University
11	I see you lil' punk ass	University
15	Academy Of Art University - Palace Of Fine Arts	University
17	USF Presidio Campus	University
25	USF - University of San Francisco	University
27	UCSF Parking Garage P8 Purple	University
29	UC Berkeley Course On Advanced Tantra. Level 5	University
39	USF - Learning & Writing Center	College Arts Building
42	USF - Student Disability Services	College Administrative Building

Day 2

	Name	Category
6	UCSF Mission Bay	Medical School
8	Northwestern University San Francisco	University
9	Academy of Art University - Powell	Art Gallery
12	UCSF Mission Bay - Sandler Neurosciences Bldg	University
16	University of the Pacific, Dugoni School of De...	Medical School
18	USF - Downtown Campus	University
19	Academy of Art University - Brannan	College Arts Building
20	Wharton San Francisco	University
21	RocketSpace Innovation Campus	University
22	INSEEC	University
23	AAU Edgar Degas Building	University
24	Academy of Art University-625 Sutter	College Arts Building
26	SFSU Downtown Campus	College Academic Building
28	Golden Gate University School of Law	University
30	Academy of Art University - 79NM	University
32	Akamai University	University
33	CCSF Campus	University
34	The Green Office	University
36	Zipfian Academy	University
38	Plein de Cran	University
41	Techweb HQ	General Travel
43	Alliant International University: CSPP	University
44	Academy of Art University	University
45	Hult International Business School	University
46	Sephora University	Office
48	Golden Gate University	General College & University
49	City College of San Francisco Downtown Campus	College Academic Building

Day 3

	Name	Category
7	California Institute of Integral Studies	College Academic Building
10	Santa Clara University	University
13	Make School	University
14	Stoop	University
31	Alliance Health Project	Medical Center
35	Zac Citte	University
40	CTI Coaching Certification Call	University

Day 4

	Name	Category
5	San Francisco State University (SFSU)	University
37	SFSU Anthropology Student Lounge	University
47	City College of San Francisco, Ocean Campus	Community College

Discussion & Conclusion

It's probably because Foursquare's data is crowdsourced, some of the results are very interesting, like result 11, which is obviously not a university, but classified as university.

Further data preprocessing can be applied to improve accuracy of the results.

This short Notebook should serve its purpose well. The results are clustered with the coordinates, so targets with close distance are grouped together, which should save the user the time to go back and forth. The list of visiting targets and a map with their location should provide a clear guide to the audience.

Thanks for reviewing my report!