The Travellers’ Planner

By Bryant

Before we start

- List out the initiative of developing the project
- Quick walk through of the usage
- Explain the acquisition of the data
- Describe the simulation methodology
- Some investigation of the future development

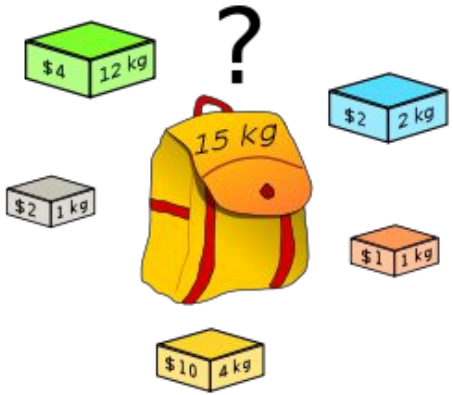
Why Travel?

Where are the attractions in Hong Kong?

https://public.tableau.com/profile/bryant5992#!/vizhome/WheretoGoMaps/HKDashboard

Why so Difficult??

Hardness = Knapsack problem + Travelling Salesman Problem



https://en.wikipedia.org/wiki/Knapsack_problem
https://en.wikipedia.org/wiki/Travelling_salesman_problem
http://www.math.uwaterloo.ca/tsp/data/usa/

What does that thing do?

User Selection

	A	B	C	D
1		**Locations**	**Duration**	**Score**
2	**0**	Hong Kong City Hall	40	20
3	**1**	Lui Seng Chun	50	17
4	**2**	Tin Hau Temple	60	14
5	**3**	King Yin Lei	45	13
6	**4**	Hong Kong Heritage Museu	180	11
7	**5**	Cattle Depot Artist Village	150	25
8	**6**	Morrison Building	30	100
9	**7**	Hong Kong Park	120	50
10	**8**	Police Museum	120	50
11	**9**	Sam Tung Uk Museum	180	33
12	**10**	Peak Tram	300	25
13	**11**	Sun Hing Building Kowloon	Hotel	Hotel

Trip Optimisation

jupyter WorkingSimulation Last Checkpoint: an hour ago (unsaved changes)

File Edit View Insert Cell Kernel Help Python [Root]

Code CellToolbar

In [102]:
```
attractions = pd.read_excel('assets/datasets/ShortAttractions.xlsx')
paths, days, durations, utilities, keep_run = simulation(attractions, stay = None, runs = 1000)
```

```
100%|██████████| 1000/1000 [00:17<00:00, 63.87it/s]
```

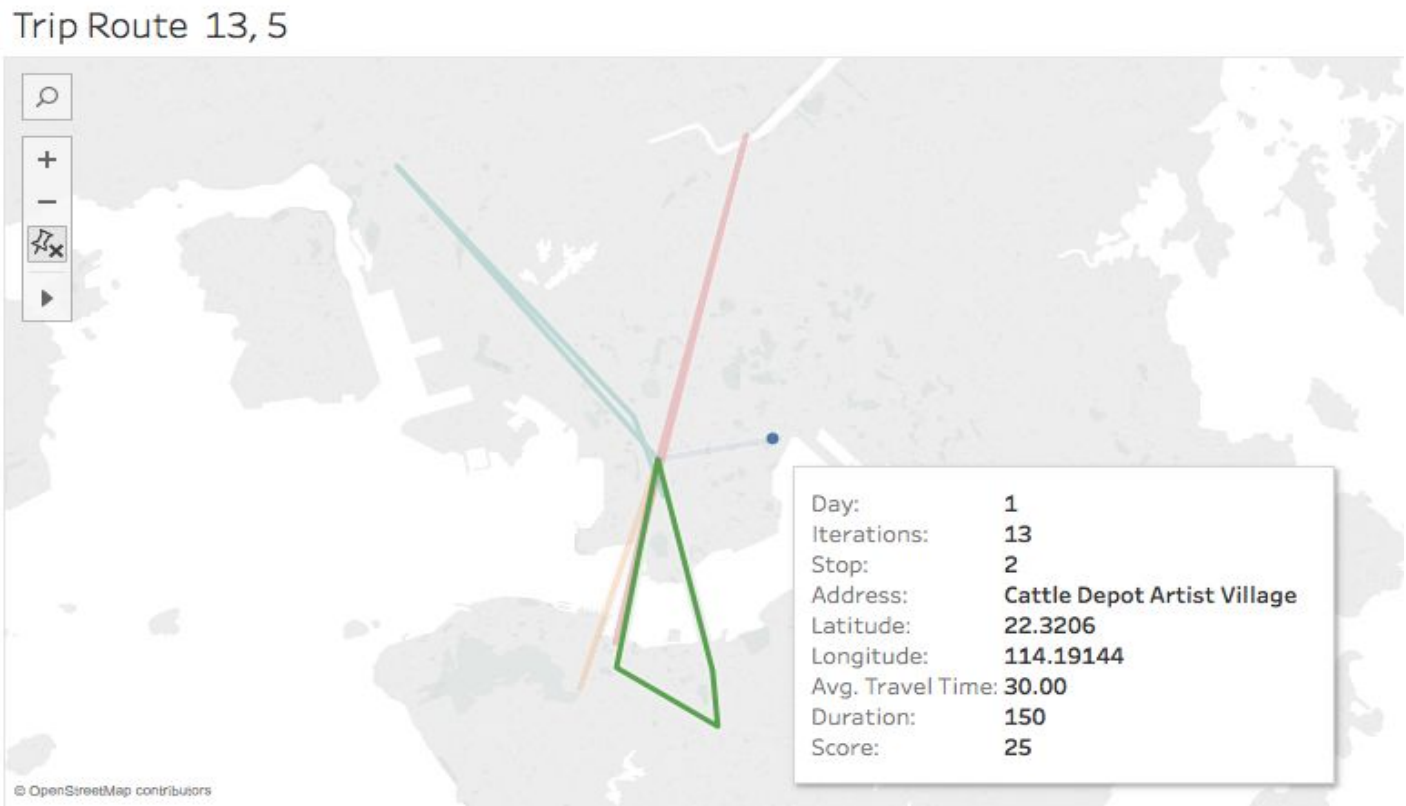
In [114]:
```
# show_path(paths, days, durations, utilities)
# itinerary = paths[-1]
# trip = trip_mapper(paths[-1])
# trip
```

In [115]:
```
show_route_df(paths)
```

10	4	1	22.316837	114.169628	Sun Hing Building Kowloon	5.0	0	0	13
11	4	2	22.309919	114.170696	Tin Hau Temple	10.0	60	14	13
12	4	3	22.324936	114.165056	Lui Seng Chun	25.0	50	17	13
13	4	4	22.371947	114.120281	Sam Tung Uk Museum	35.0	180	33	13
14	4	5	22.316837	114.169628	Sun Hing Building Kowloon	0.0	0	0	13
15	5	1	22.316837	114.169628	Sun Hing Building Kowloon	35.0	0	0	13
16	5	2	22.277763	114.161812	Hong Kong Park	20.0	120	50	13
17	5	3	22.266720	114.180930	King Yin Lei	15.0	45	13	13
18	5	4	22.277194	114.179937	Morrison Building	20.0	30	100	13
19	5	5	22.316837	114.169628	Sun Hing Building Kowloon	0.0	0	0	13

264 rows × 9 columns

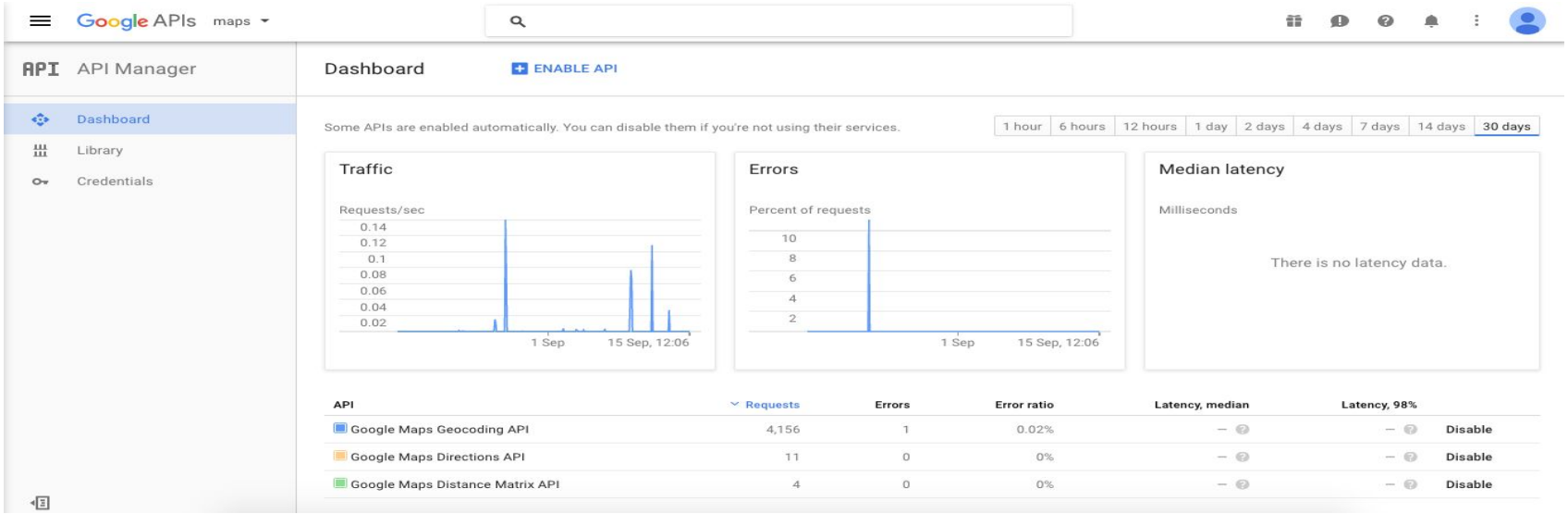
Looking at the “Optimum” Path



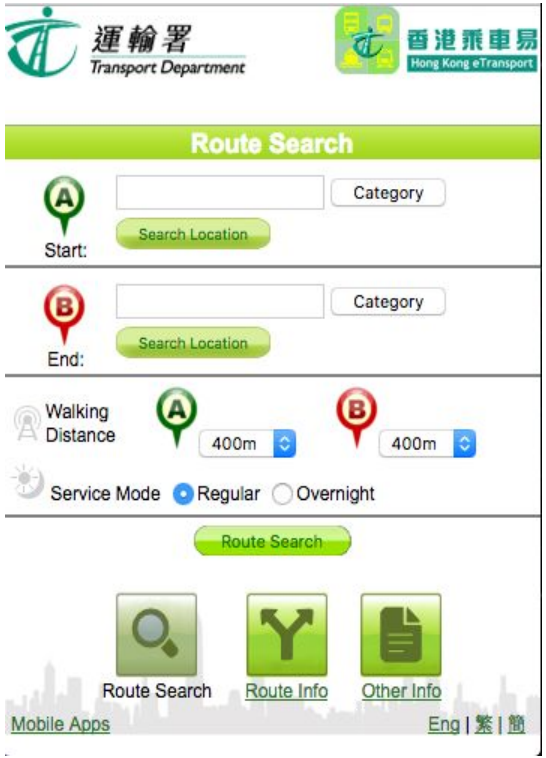
Where does the data come from?

Getting List of Attractions in Hong Kong

Getting Geo-location Data from Google

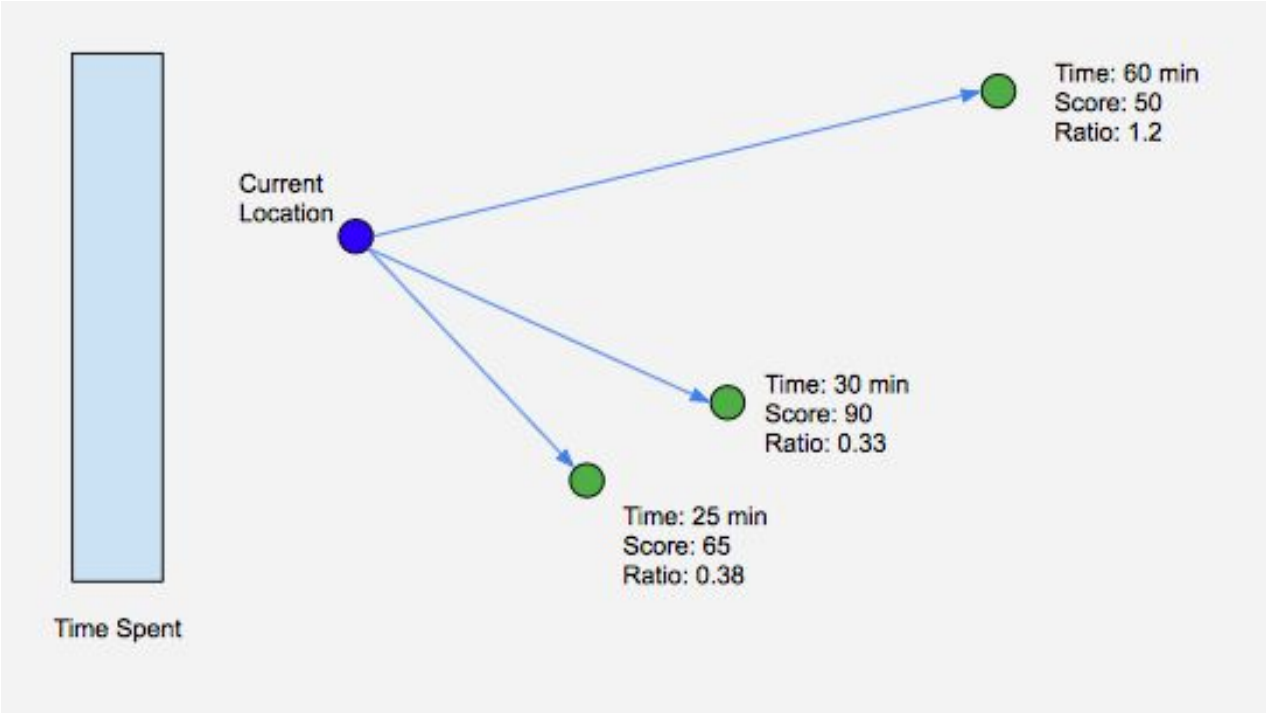


The Mobile App by HK Gov that Actually Worked

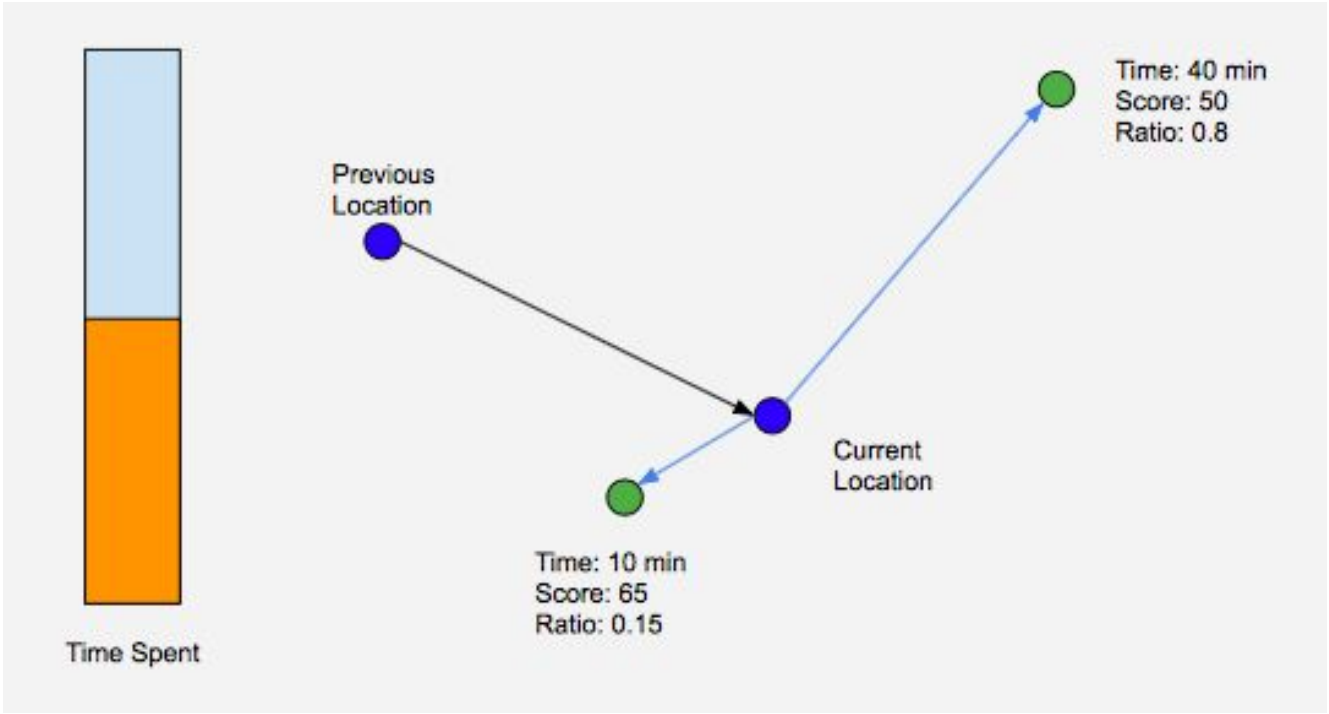


How does the Simulation Work?

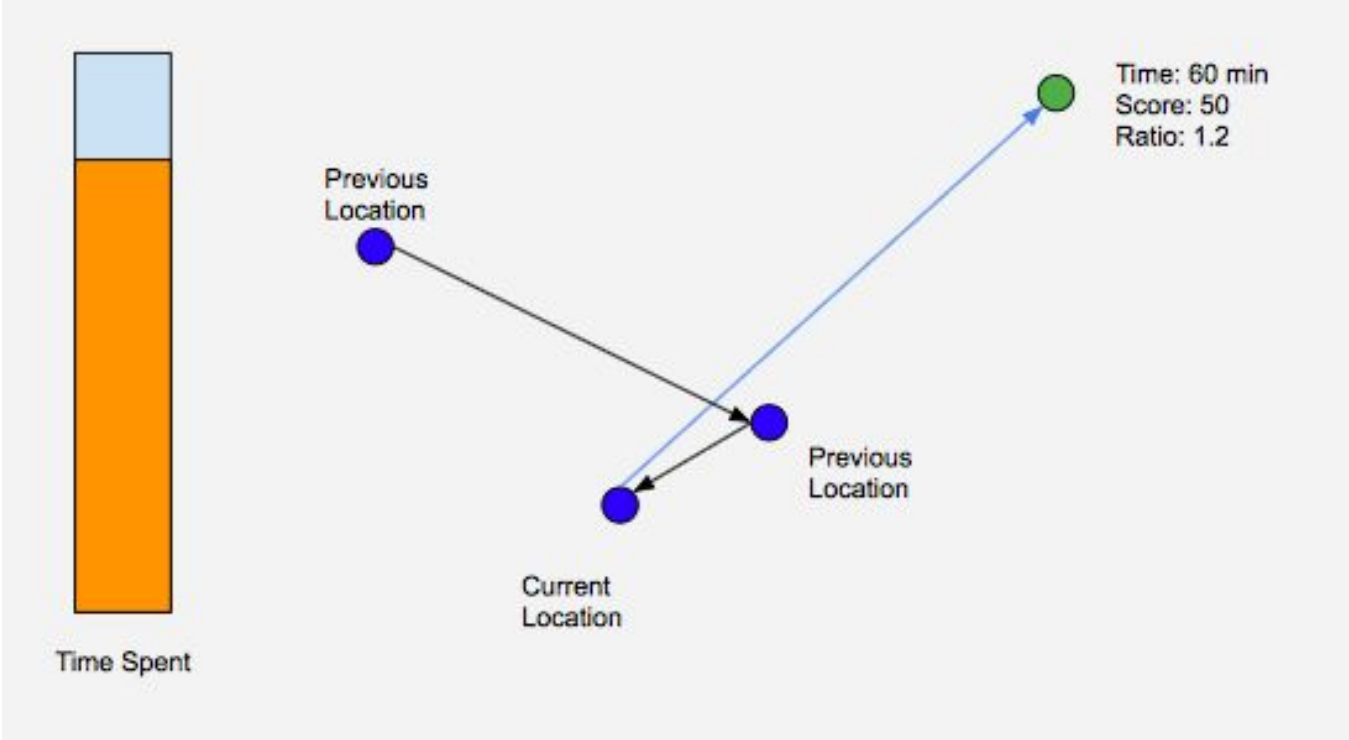
Day Trip Step 1



Day Trip Step 2

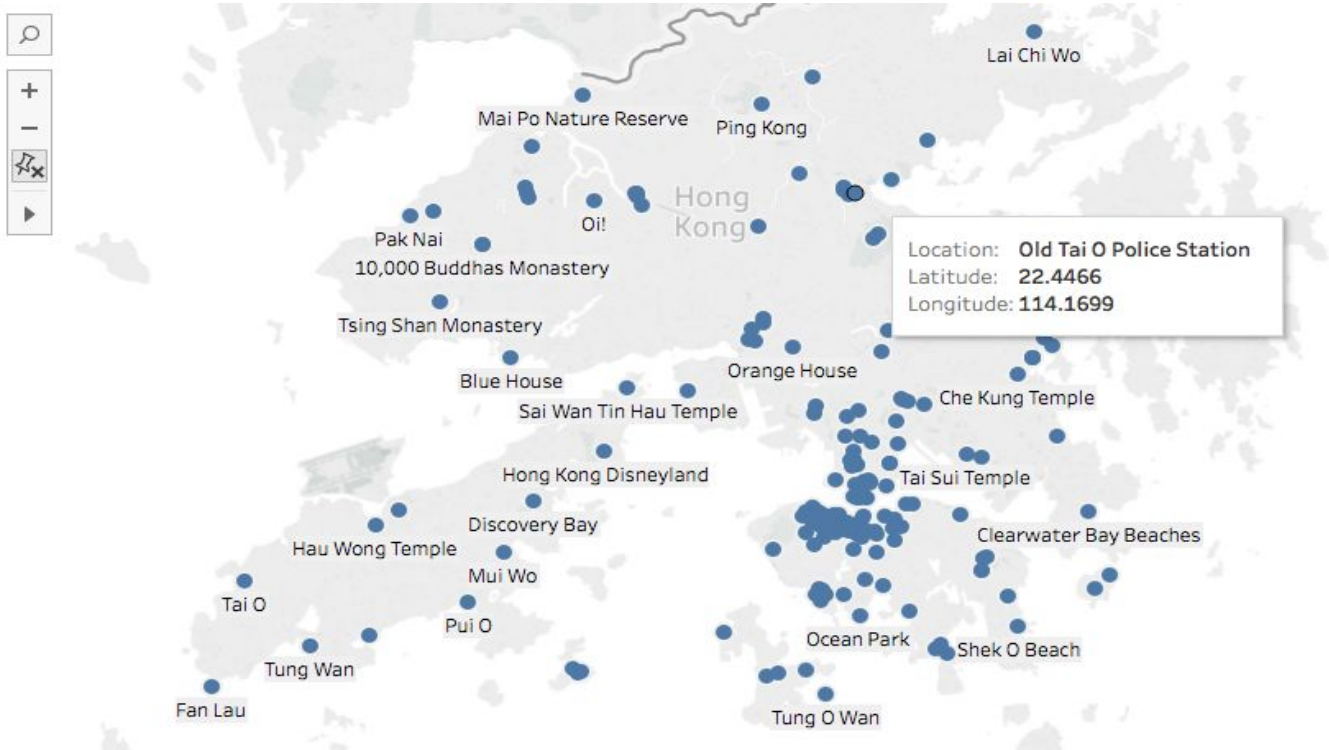


Day Trip Step 3

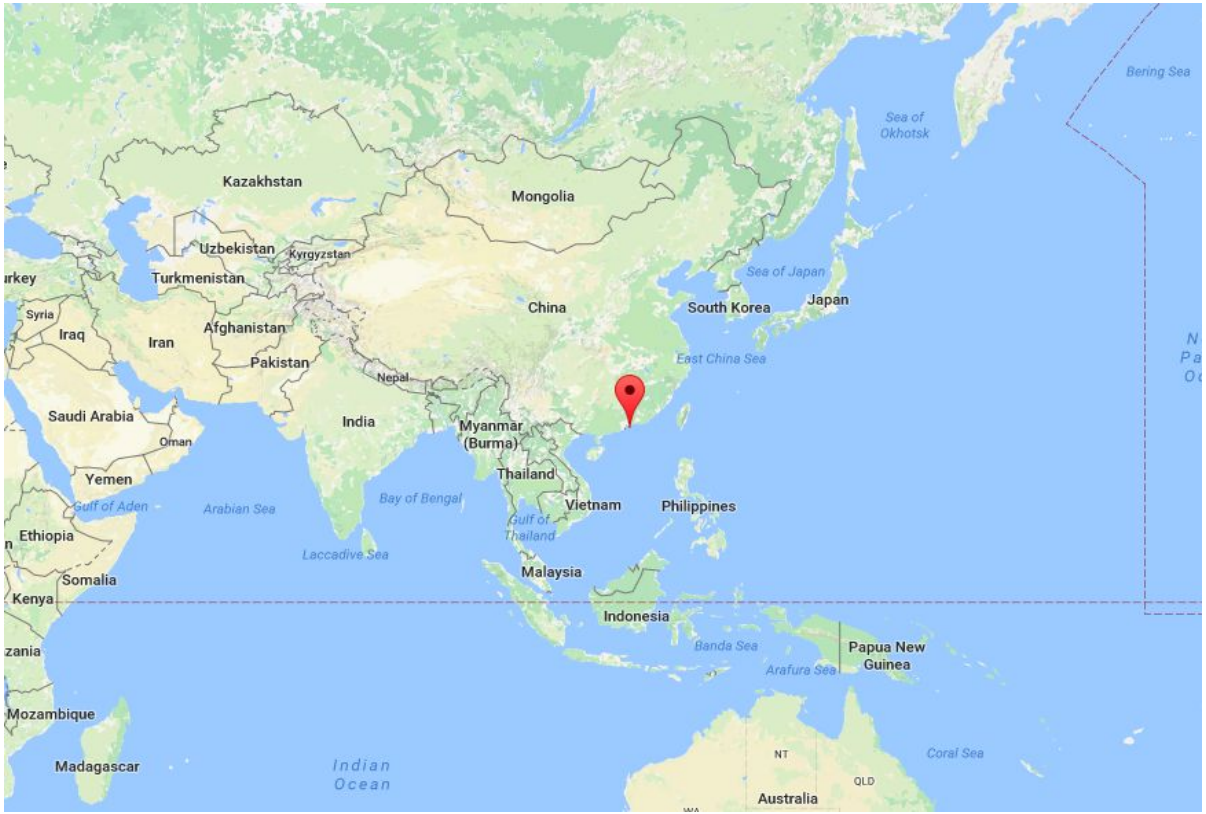


What’s Next?

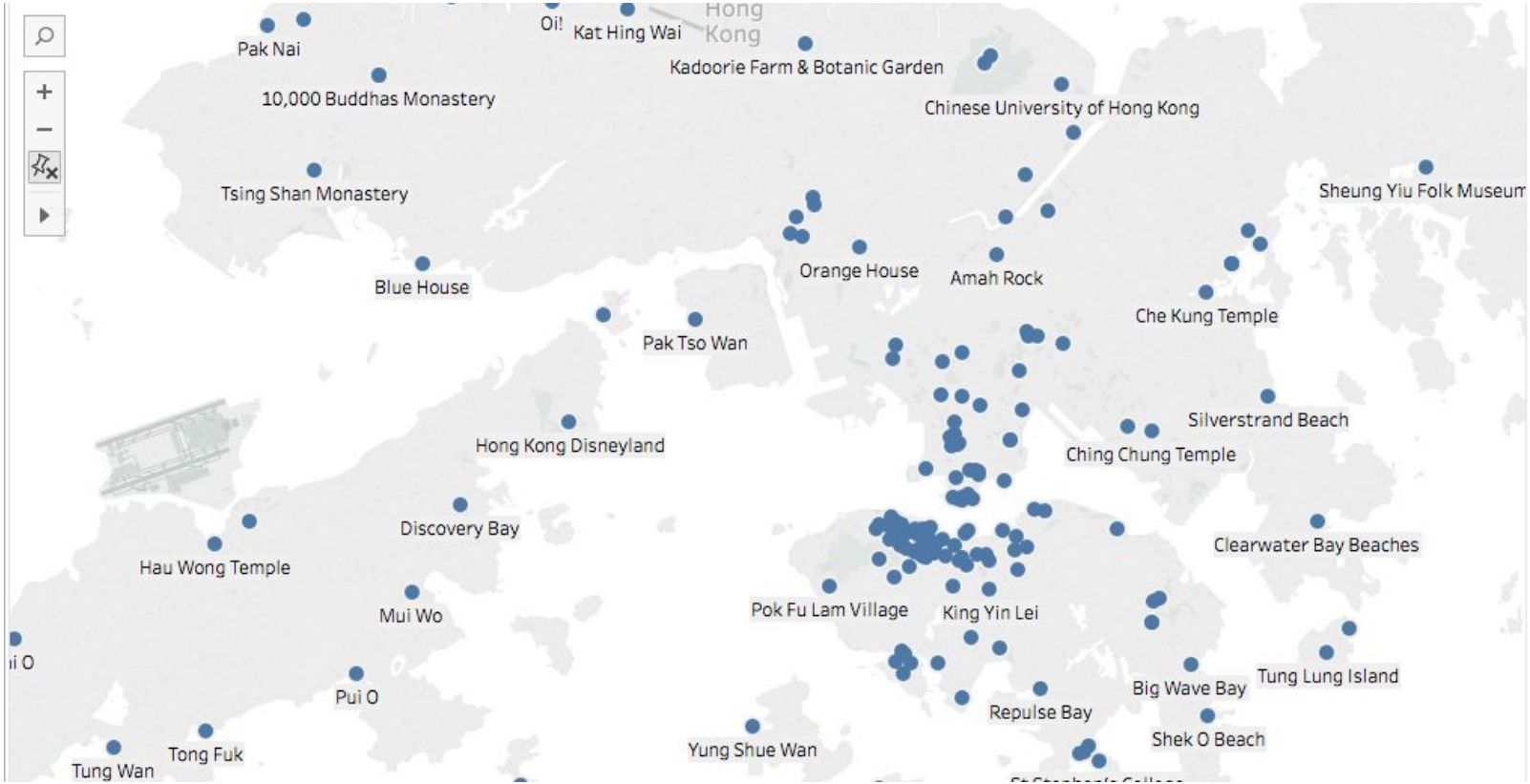
Oops Google was wrong!!



Why not other places?



Which Hotel should I book?



Who wants a little detour?

Maybe it is possible to make suggestions based on user preferences??

End

Links to other resources

Project Folder:
https://drive.google.com/drive/folders/0B6fqpdiOwJNOZ0IyRFpNb0xadm8?usp=sharing

Link to Obtain Data Notebook:
https://github.com/RandomEvent/RandomEvent.GitHub.io/blob/master/Projects/project-capstone-final/Obtain_Data.ipynb

Link to Simulation Notebook:
https://github.com/RandomEvent/RandomEvent.GitHub.io/blob/master/Projects/project-capstone-final/WorkingSimulation.ipynb