

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?

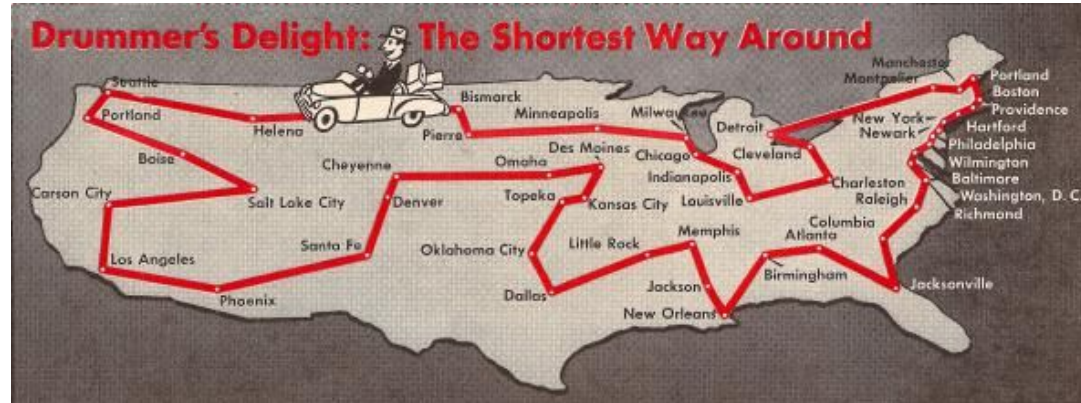
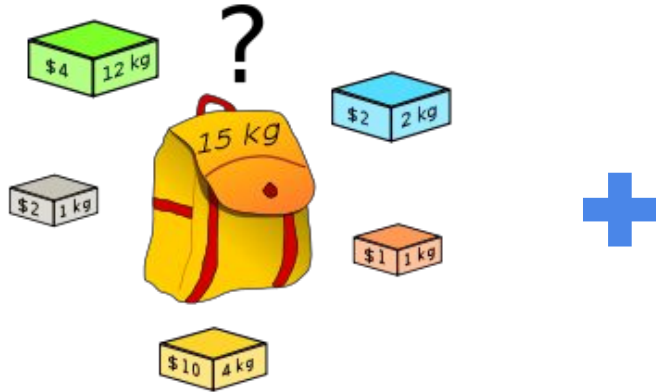
Where are the attractions in Hong Kong?



<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 Museum	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]

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]:

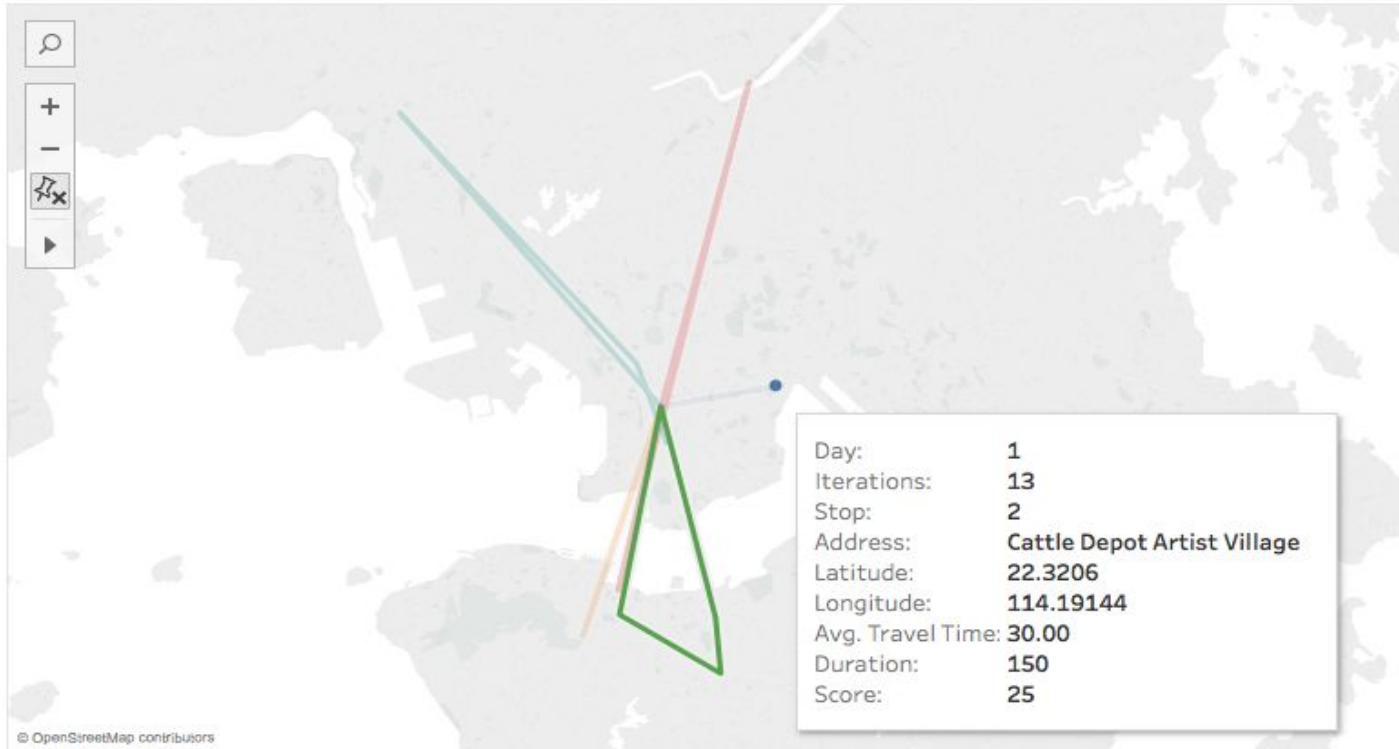
```
show_route_df(paths)
```

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

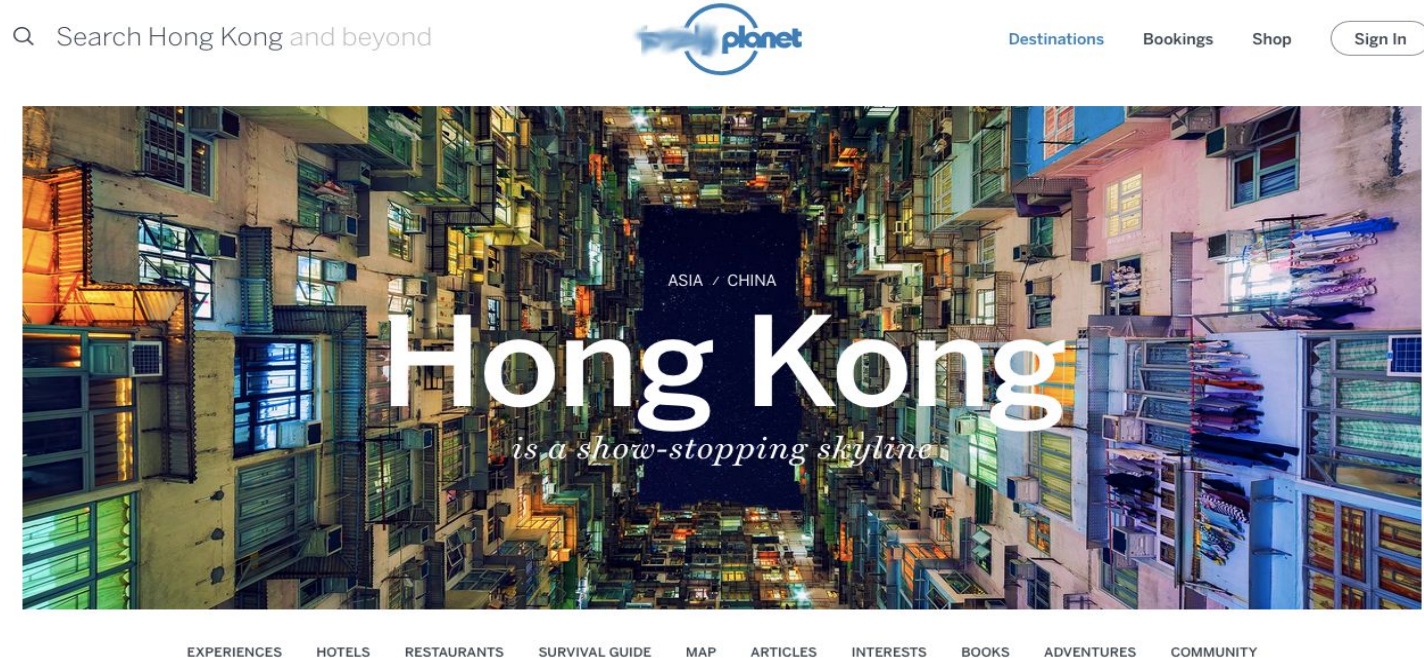
Looking at the “Optimum” Path

Trip Route 13, 5

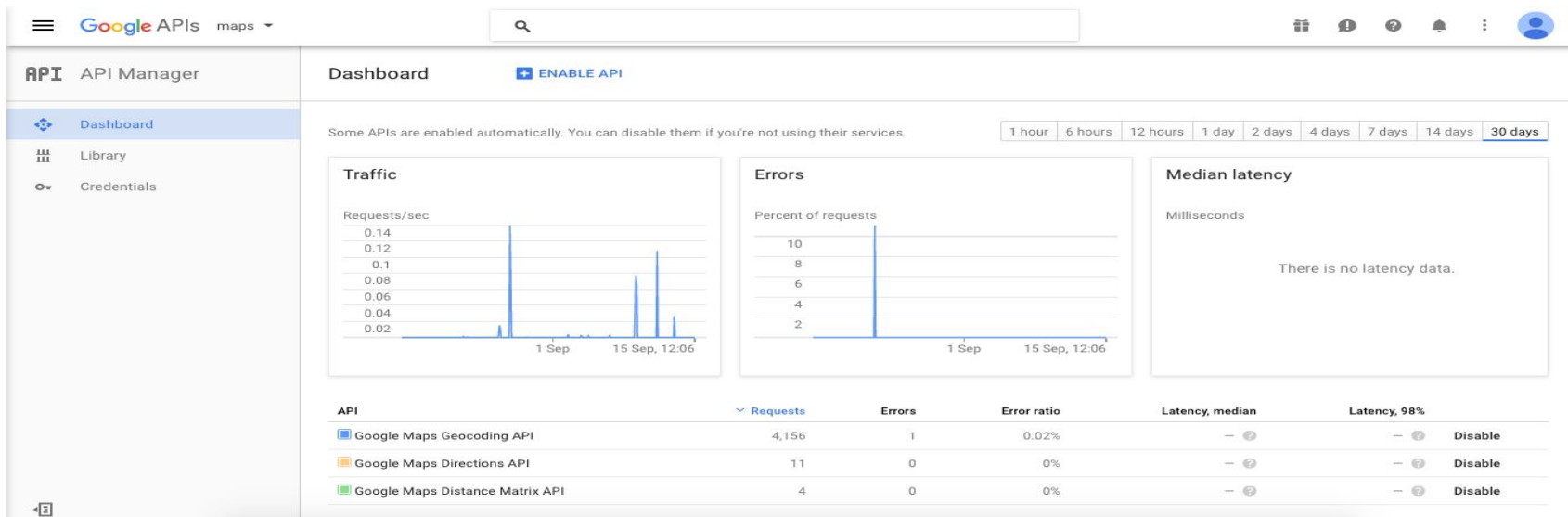


Where does the data
come from?

Getting List of Attractions in Hong Kong



Getting Geo-location Data from Google



The Mobile App by HK Gov that Actually Worked

The screenshot displays the 'Route Search' interface of the Hong Kong eTransport mobile app. At the top, the 'Transport Department' logo and 'Hong Kong eTransport' branding are visible. The main section is titled 'Route Search' in a green header. Below this, there are two input fields for 'Start' and 'End' locations, each with a 'Search Location' button and a 'Category' dropdown. The 'Start' field is marked with a green 'A' icon, and the 'End' field is marked with a red 'B' icon. Below the location fields, there are two 'Walking Distance' sliders, both set to '400m'. A 'Service Mode' section includes radio buttons for 'Regular' (selected) and 'Overnight'. A green 'Route Search' button is positioned below these options. At the bottom, there are three icons: a magnifying glass for 'Route Search', a Y-junction for 'Route Info', and a document for 'Other Info'. The footer includes links for 'Mobile Apps', 'Eng | 繁 | 簡', and a small city skyline graphic.

運輸署
Transport Department

香港乘車易
Hong Kong eTransport

Route Search

Start: Category

End: Category

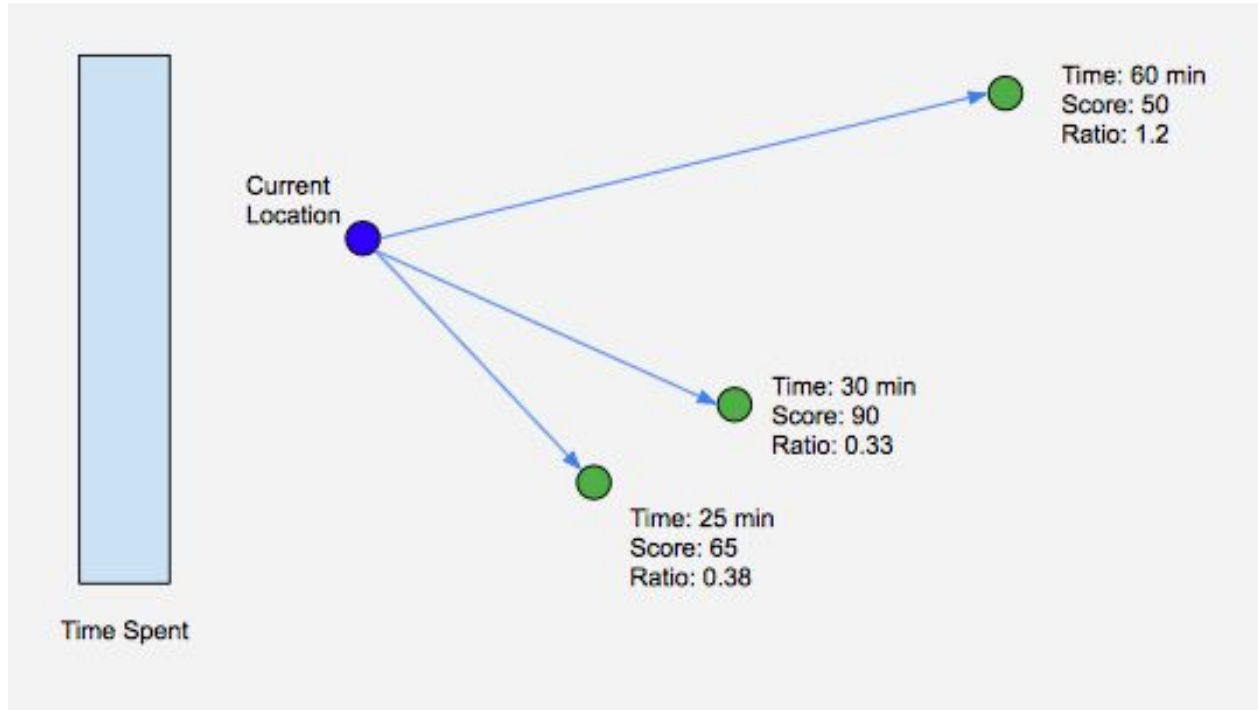
Walking Distance

Service Mode ☒ Regular ☐ Overnight

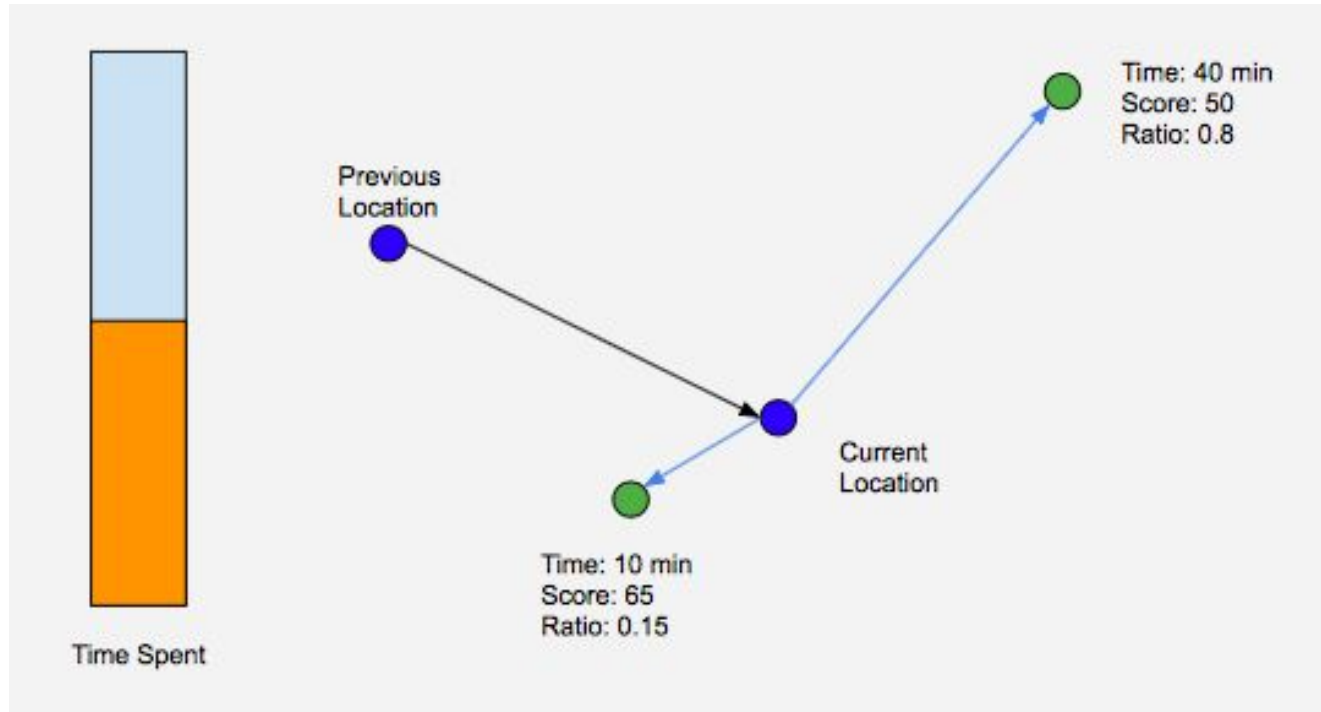
Mobile Apps Eng | 繁 | 簡

How does the Simulation Work?

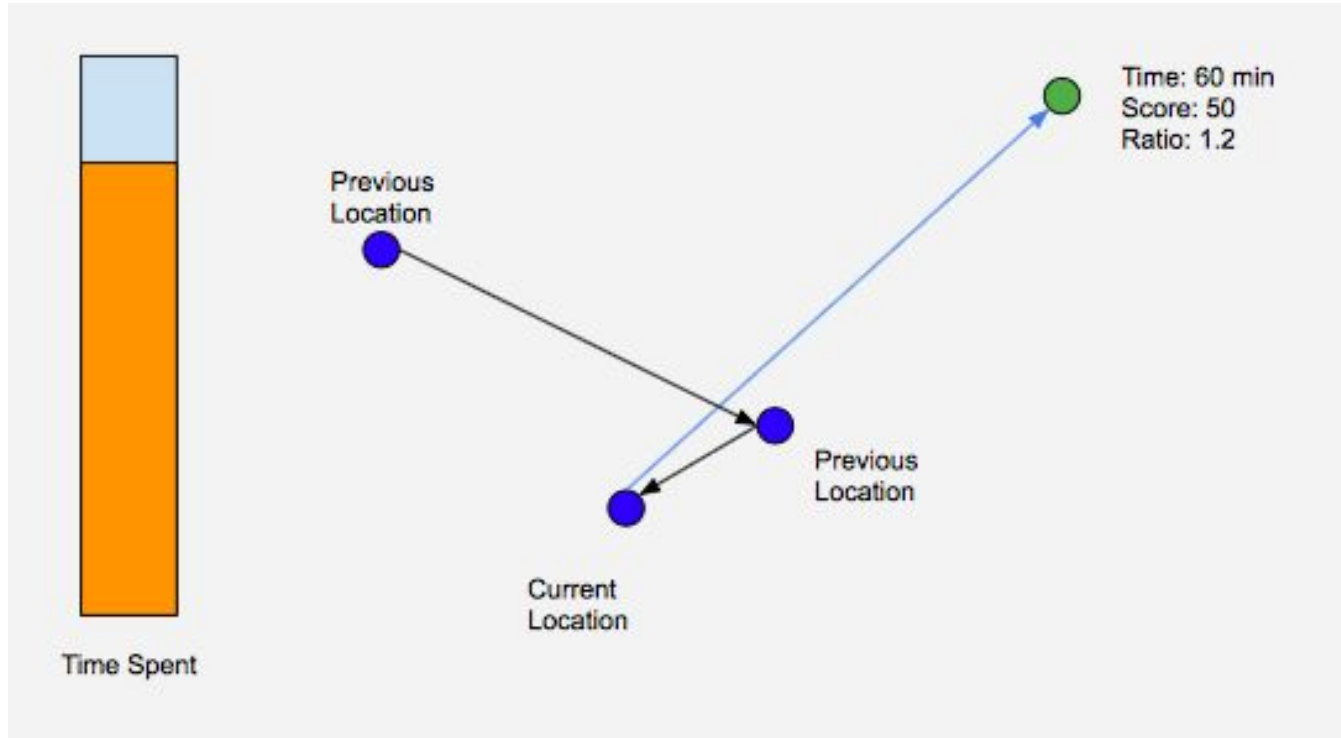
Day Trip Step 1



Day Trip Step 2

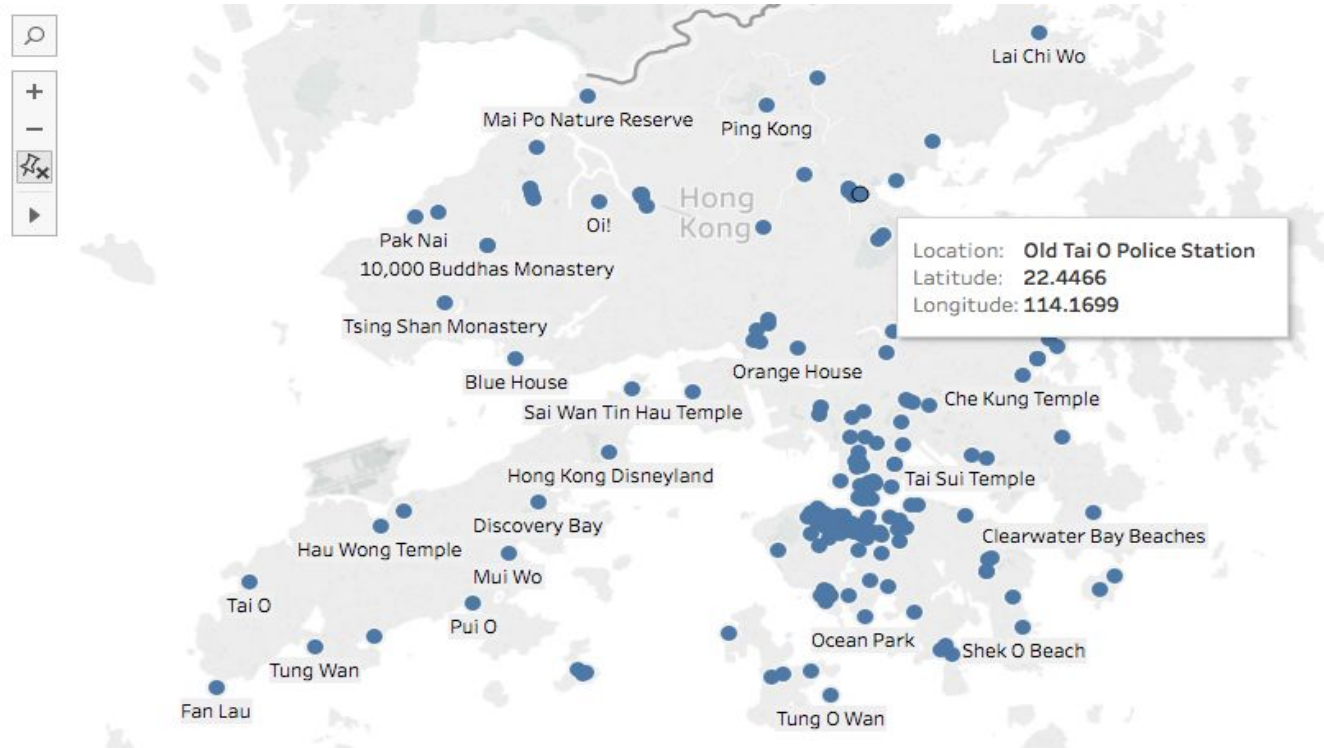


Day Trip Step 3



What's Next?

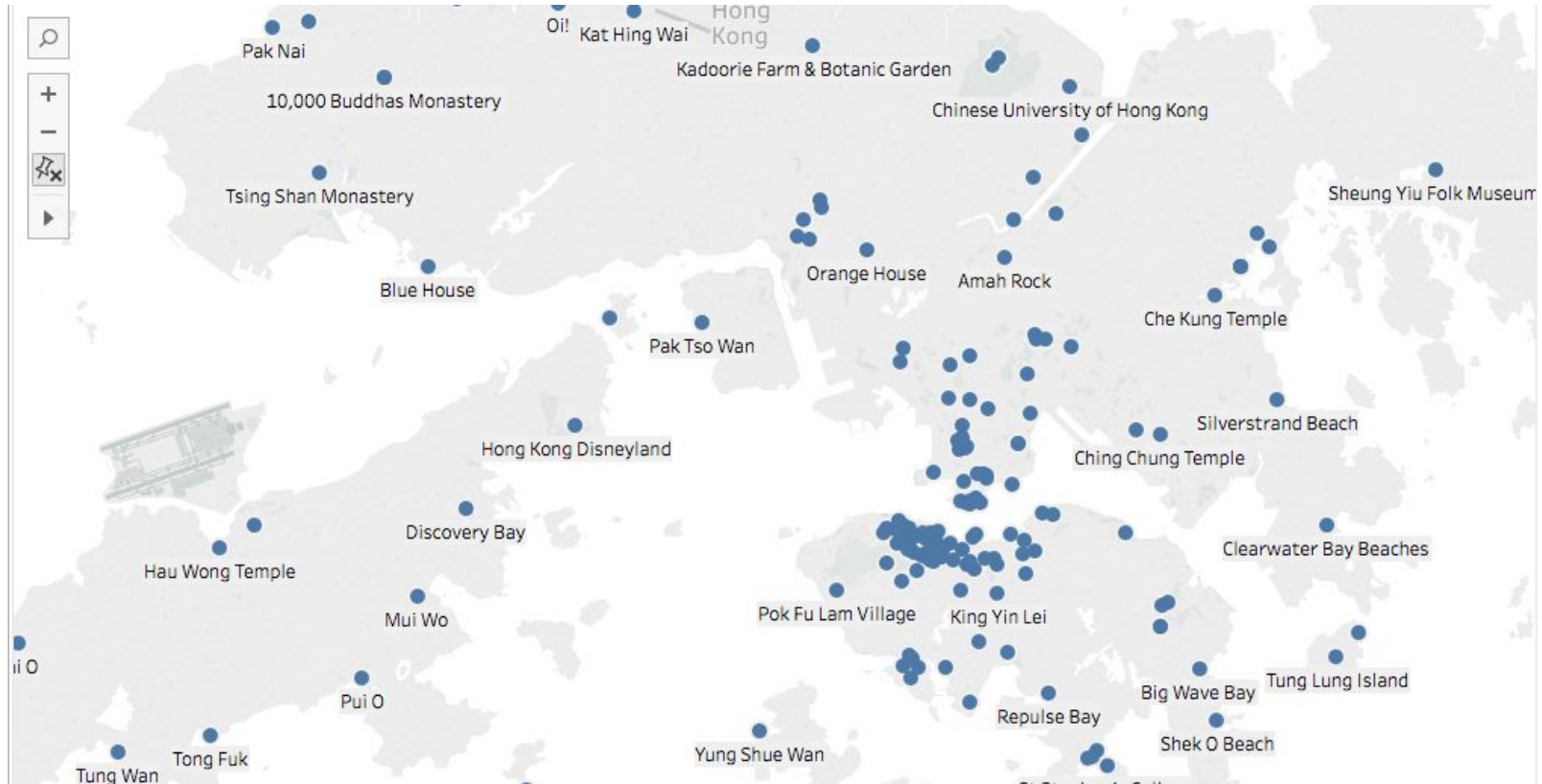
Oops Google was wrong!!



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??

The screenshot shows the OpenRice website homepage. The top navigation bar is yellow and contains the OpenRice logo, icons for '餐廳' (Restaurant) and '飲食誌' (Food Magazine), and links for '香港' (Hong Kong), 'ENG', '寫食評' (Write a review), '登入' (Login), and '新會員登記' (New member registration). There is also a '商戶專區' (Merchant Special Area) link. Below the navigation bar is a search bar with the text '搜尋餐廳名稱、菜式、食品' and a dropdown menu for '地區、地標、街道、大廈...'. The main content area features a large banner for 'YAHOO! 購物 慶祝香港回歸 10週年 搵香港人! 感謝節 2016' with a date range of 9月12日-10月3日. To the right of the banner are two promotional boxes: 'Ruby Tuesday 超級優惠券套裝 \$328' and '72折購夏麵館 \$100現金券 \$72'. Below the banner is a section for '收工左! 唔知食咩好?' (Work is over! Don't know what to eat?). To the right of this section is a grid of icons for various food-related activities: '新餐廳' (New restaurant), '優惠' (Discount), '開飯遊蹤' (Dining out), '商場巡禮' (Mall tour), '自助餐' (Buffet), '火鍋' (Hot pot), '包場Party' (Private party), and '中秋特集' (Mid-Autumn Festival special). Below the grid is a section for '餐廳資訊' (Restaurant information) with a grid of restaurant photos and names: 'Bostonian Seafood', 'Oliver's Super', '玉桃軒 活力不絕的', 'Tavior Shellfish', and '美國手工漢堡與環境'. To the right of the restaurant grid is a section for '黃浩然微電影『真正的意義是分享』' (Yellow Ho's micro-movie 'The real meaning is sharing').

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>