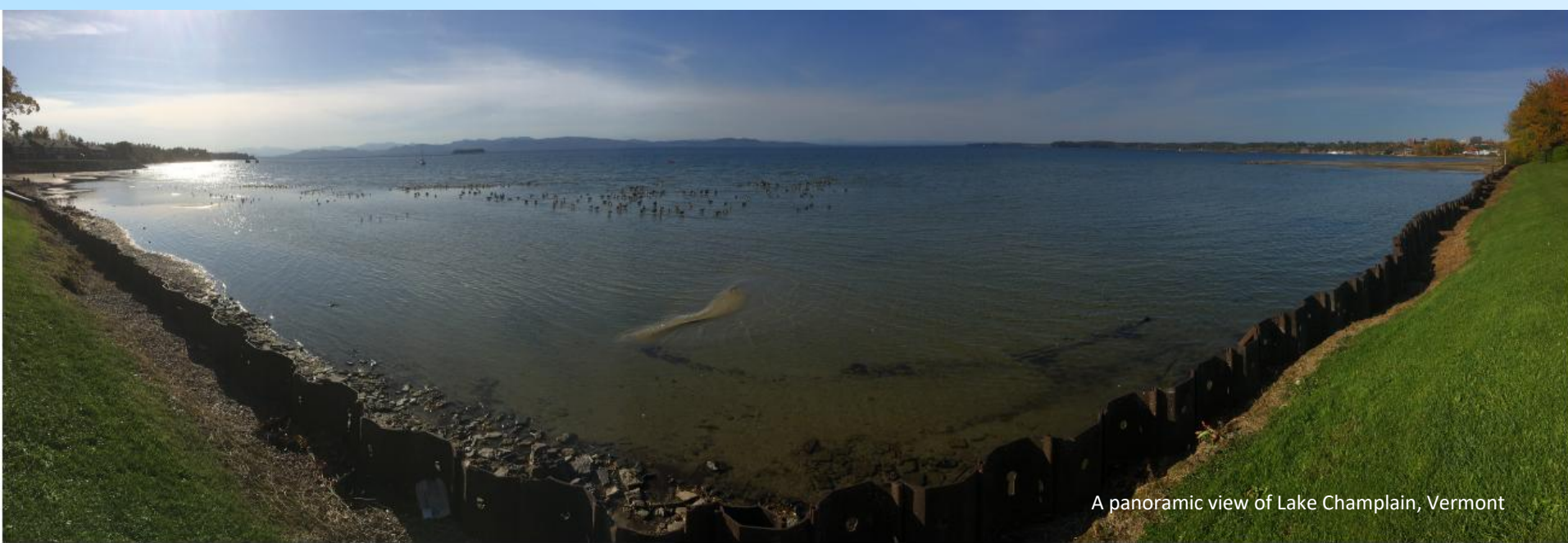


# ***Applied Data Science Capstone***



A panoramic view of Lake Champlain, Vermont

Final Project:  
Relocating to Chittenden County, Vermont

Author: M.Yu

# Introduction

- In this final project, we'd like to use data science to help with community issues. Lately, a client contacted us. The client's family wanted to relocate to Chittenden County, Vermont.
- This client need to buy a house in Chittenden County
- Our mission is to find a house-for-sale with following requirement
  - 1) No real estate agent fees.
  - 2) Price range \$350,000 to \$450,000.
  - 3) Need to have 3 or 4 bedrooms.
  - 4) Need to have minimum 2 baths.
  - 5) Need to have a reputable supermarket or grocery store within an mile from the candidate location.
  - 6) Need to have a reputable pizza restaurant within a mile from the candidate location.

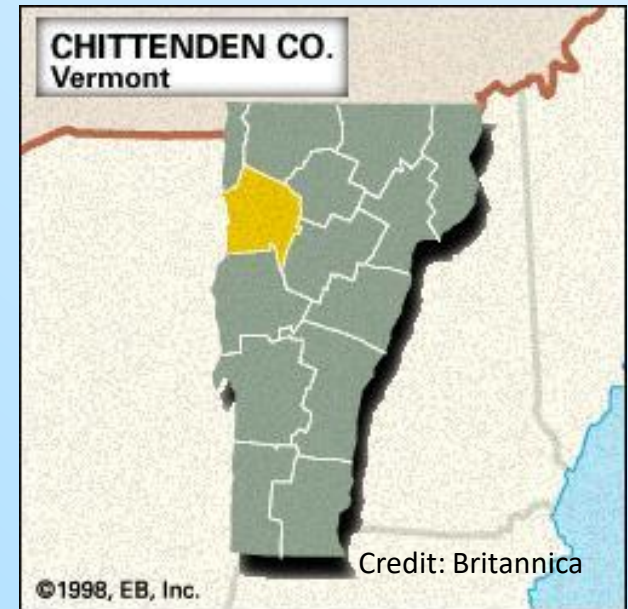
# Data

Here are the sources of our data.

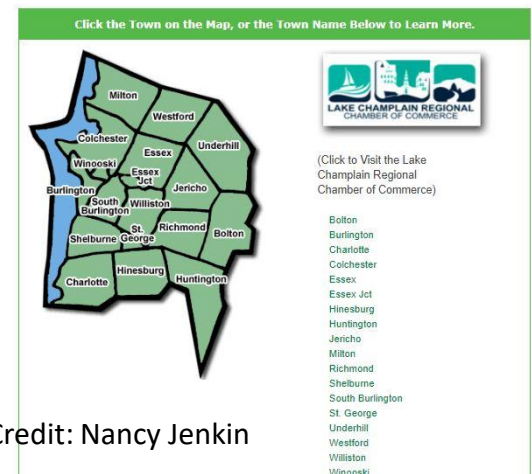
1. No commission for buyer-seller website for home-for-sale data (address, price, bedrooms, baths) in Chittenden Count, Vermont from website <https://www.picketfencepreview.com/buy-a-home/homes-for-sale-by-county/state/VT/county/Chittenden>
2. Geo-location data (latitude and longitude) for each house for sale.
3. Foursquare API (<https://developer.foursquare.com/>) to obtain Foursquare data of nearby venues for name, category, location, and ratings, and tips

# Chittenden County, Vermont

- Chittenden County is located the east of Lake Champlain and the west of Green Mountains.
- It consists of 18 cities, towns, and villages, and has population of nearly 150,000.



## CHITTENDEN COUNTY COMMUNITY PAGE



Credit: Nancy Jenkin

# House-For-Sale-By-Owner

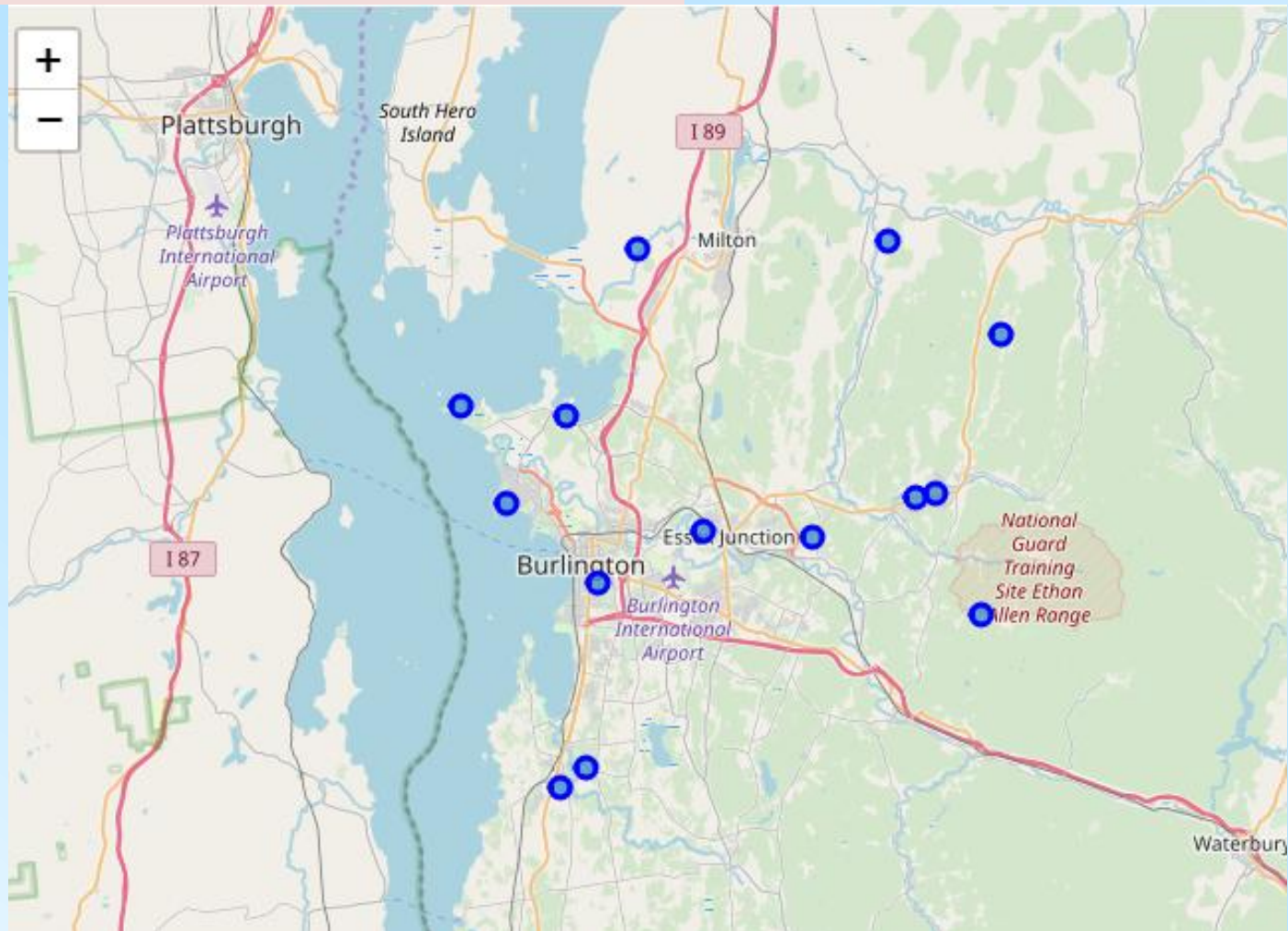
Scrape *Picket Fence Preview* site and obtained address, Price, Bedrooms, and Baths.

	Neighborhood	Price (\$)	Bedrooms	Baths
0	51 Cumberland Road Burlington, VT	319900	3	2.5
1	74 Overlake Park Burlington, VT	1400000	5	4
2	558 West Lakeshore Drive Colchester, VT	408000	2	1
3	208 Whitecap Rd Colchester, VT	469800	4	2
4	7 Saxonhollow Drive Essex, VT	250000	3	2.5
5	7 Wilkinson Dr Essex Junction, VT	410000	4	2.5
6	7 G Raceway Rd Jericho, VT	197900	2	1.5
7	192 Nashville Road Jericho, VT	295000	3	1.5
8	140A VT Route 15 Jericho, VT	433000	5	3.5
9	65 Bear Trap Road Milton, VT	449900	3	2.5
10	420 Thompson Rd Shelburne, VT	289000	0	0
11	113 Covington Lane Shelburne, VT	379000	3	2.5
12	444 Poker Hill Road Underhill, VT	417000	3	2.5
13	339 Huntley Rd Westford, VT	289900	3	2.5



# House-For-Sale-By-Owner

Map showing house locations



# Narrow Down the Choice

We now apply client's requirement for

1. Price range \$350,000 to \$450,000.
2. Need 3 or 4 bedrooms.
3. Need to have minimum 2 baths.

	Neighborhood	Price (\$)	Bedrooms	Baths	Latitude	Longitude
0	7 Wilkinson Dr Essex Junction, VT	410000	4	2.5	44.492927	-73.129137
1	65 Bear Trap Road Milton, VT	449900	3	2.5	44.631695	-73.174255
2	113 Covington Lane Shelburne, VT	379000	3	2.5	44.365679	-73.227978
3	444 Poker Hill Road Underhill, VT	417000	3	2.5	44.589250	-72.922501

**The choice reduced to 4 neighborhoods**

# Foursquare Data on Nearby Venues of a Neighborhood

Using Foursquare explore option for a given neighborhood, we can obtain nearby venues with their respective information on *'Venue, Venue\_Latitude, Venue\_Longitude, Category, ID'*

	Neighborhood	Latitude	Longitude	Venue	Venue_Latitude	Venue_Longitude	Venue_Category	Venue_ID
0	7 Wilkinson Dr Essex Junction, VT	44.492927	-73.129137	Firebird Cafe	44.498618	-73.128575	Café	4bb4a2b05148d13a6
1	7 Wilkinson Dr Essex Junction, VT	44.492927	-73.129137	Fleet Feet Sports	44.493895	-73.119493	Sporting Goods Shop	4d4b0d555129a35dc
2	7 Wilkinson Dr Essex Junction, VT	44.492927	-73.129137	The Grand Buffet	44.492912	-73.118337	Chinese Restaurant	4cdd6eaf99026dcb8l
3	7 Wilkinson Dr Essex Junction, VT	44.492927	-73.129137	Quality Bake Shop	44.494884	-73.119824	Bakery	4d580446380ab1f76
4	7 Wilkinson Dr Essex Junction, VT	44.492927	-73.129137	Pearl St Pub	44.496896	-73.125038	Pub	4bde2259ffdec928bc



# Venue Category Requirement

1. Our client requires “Supermarket (or Grocery Store)” and “ Pizza Place” within a mile.
2. The candidate neighborhood narrows down further to **two**:
  - **7 Wilkinson Dr Essex Junction, VT**
  - **113 Covington Lane Shelburne, VT**

	Neighborhood	Latitude	Longitude	Venue	Venue_Latitude	Venue_Longitude	Venue_Category	Venue_ID
0	7 Wilkinson Dr Essex Junction, VT	44.492927	-73.129137	Domino's Pizza	44.492539	-73.117932	Pizza Place	4d41f112aed77
1	7 Wilkinson Dr Essex Junction, VT	44.492927	-73.129137	Rocky's NY Pizza & Ice Cream	44.487667	-73.113181	Pizza Place	4bd5fa0c5631c
2	7 Wilkinson Dr Essex Junction, VT	44.492927	-73.129137	Mac's Market	44.495415	-73.121111	Grocery Store	4bbd10b3a8cf7
3	113 Covington Lane Shelburne, VT	44.365679	-73.227978	Folino's	44.366115	-73.232755	Pizza Place	4f5bd308e4b0c
4	113 Covington Lane Shelburne, VT	44.365679	-73.227978	Shelburne Supermarket	44.379091	-73.225406	Supermarket	4b954960f964a

# Venue Rating Comparison

## 1. Compare “Supermarket (or Grocery Store)” ratings.

- Winner: **Shelburne Supermarket**, near neighborhood **113 Covington Lane Shelburne, VT**

Neighborhood	Latitude	Longitude	Venue	Venue_Latitude	Venue_Longitude	Venue_Category	Venue_ID	Rating
7 Wilkinson Dr Essex Junction, VT	44.492927	-73.129137	Mac's Market	44.495415	-73.121111	Grocery Store	4bbd10b3a8cf76b0ca5bb1fd	5.6
113 Covington Lane Shelburne, VT	44.365679	-73.227978	Shelburne Supermarket	44.379091	-73.225406	Supermarket	4b954960f964a520459a34e3	7.0

## 2. Compare “Pizza Place” ratings.

- Winner: **Folino's**, near neighborhood **113 Covington Lane Shelburne, VT**

Neighborhood	Latitude	Longitude	Venue	Venue_Latitude	Venue_Longitude	Venue_Category	Venue_ID	Rating
7 Wilkinson Dr Essex Junction, VT	44.492927	-73.129137	Domino's Pizza	44.492539	-73.117932	Pizza Place	4d41f112aed776eb5bde6997	6.6
7 Wilkinson Dr Essex Junction, VT	44.492927	-73.129137	Rocky's NY Pizza & Ice Cream	44.487667	-73.113181	Pizza Place	4bd5fa0c5631c9b66615a530	6.0
113 Covington Lane Shelburne, VT	44.365679	-73.227978	Folino's	44.366115	-73.232755	Pizza Place	4f5bd308e4b0c4b68927c05d	8.8

# Tips

## 1. Tips for **Shelburne Supermarket** , near neighborhood **113 Covington Lane Shelburne, VT**

	text	agreeCount	disagreeCount
0	Pre made dinner options are very good as well as the soups and chili if you are in a rush.	1	0
1	Ask for Jim when you're ordering meats here. He's the butcher and he's the man!	0	0

## 2. Tips for **Folino's**, near neighborhood **113 Covington Lane Shelburne, VT**

	text	agreeCount	disagreeCount
0	Great pizza. Everything is serve yourself: order/pay at the counter, get your own plates, cups, napkins, etc. If you're tipping, it's for awesome pizza and the person who drops it off at your table.	2	0
1	The aroma of the herbs & wood fired pizza makes the restaurant smell wonderful inside. The pizzas w/the olive oil base are great! Be sure to try the "Fungi" & the "Italian" pizzas	2	0

These are great tips. It tells us that customers really enjoy these venues.

# Conclusion

Our final recommendation is neighborhood **113 Covington Lane Shelburne, VT**



Credit: picket fence preview

