

Applied Data Science Capstone

Peer-graded Assignment: Capstone Project - The Battle of Neighborhoods

Introduction/Business Problem

Clearly define a problem or an idea of your choice, where you would need to leverage the Foursquare location data to solve or execute. Remember that data science problems always target an audience and are meant to help a group of stakeholders solve a problem, so make sure that you explicitly describe your audience and why they would care about your problem.

Lehi in Utah is the one of the fastest growing cities in the United State of America. Lehi's nickname, Silicon Slope, is an attractive place for companies such as Adobe, Microsoft, and Oracle, which have built campuses. Additionally, new startups are growing rapidly in this area. Lehi is close to Salt Lake City International airport and Sundance - where the Sundance film festival is held every winter. Lehi is also famous for it's beautiful mountains and forest which attracts hikers and outdoor enthusiasts.

However, these various advantages and the increasing number of business travelers and tourists in Lehi face one challenge. One of the problems in this area is public transportation. Lehi's rapid growth has highlighted an extreme need for improved public transportation - that is not as readily available as places like New York or San Francisco. A tourist wanting to visit the various sites around Lehi would find it difficult to hail a taxi or find a bus to reach their destination. Luckily, we have car sharing systems like Uber and Lyft, and we can also explore the area by utilizing the information from Google map or FourSquare before traveling.

As a travel agency manager, I am going to present this report to one of my clients who is going to visit Lehi for a tech conference in October. This client has never visited Lehi before and plans to stay 3 days. She is participating in the conference on the first day of the trip, and has already booked the hotel - Hyatt Place in Lehi. During her business trip, she wants to go hiking in the mountains or trails to experience the natural fall landscape. She is also planning to go shopping to get souvenirs for her friends and family. I was given the draft planner and charging on completing the planner. In order for her to have a successful business trip, I need to make a plan for the second and third day.

Data

Describe the data that you will be using to solve the problem or execute your idea. Remember that you will need to use the Foursquare location data to solve the problem or execute your idea. You can absolutely use other datasets in combination with the Foursquare location data. So make sure that you provide adequate explanation and discussion, with examples, of the data that you will be using, even if it is only Foursquare location data.

1. I have researched Google to outline my plan, and was able to reach [this website](https://www.tripadvisor.com/Attractions-g57044-Activities-Lehi_Utah.html) (https://www.tripadvisor.com/Attractions-g57044-Activities-Lehi_Utah.html): This website provides general information specially top attractions that visitors can do in Lehi.
 1. I am going to add climate data in Lehi which can help her pack her luggage: As per [Wikipedia data](https://en.wikipedia.org/wiki/Lehi,_Utah) (https://en.wikipedia.org/wiki/Lehi,_Utah), I am going to create a climate data in October. This data will provide some tips like what clothes she needs to prepare.
 1. Using FourSquare's API, I am going to make a map for recommendation [restaurant](https://foursquare.com/explore?mode=url&near=Lehi%20UT%20United%20States&nearGeoid=72057594043705160&q=Restaurant) (<https://foursquare.com/explore?mode=url&near=Lehi%20UT%20United%20States&nearGeoid=72057594043705160&q=Restaurant>) [shopping areas](https://foursquare.com/explore?mode=url&near=Lehi%20UT%20United%20States&nearGeoid=72057594043705160&q=shopping) (<https://foursquare.com/explore?mode=url&near=Lehi%20UT%20United%20States&nearGeoid=72057594043705160&q=shopping>) [near the Hotels and hiking places](https://foursquare.com/explore?mode=url&near=Lehi%20UT%20United%20States&nearGeoid=72057594043705160&q=hiking) (<https://foursquare.com/explore?mode=url&near=Lehi%20UT%20United%20States&nearGeoid=72057594043705160&q=hiking>).
 1. I am also going to include other places where the client may consider to go like [museums or exhibition](https://foursquare.com/explore?mode=url&ne=40.436169%2C-111.817088&q=museum&sw=40.381663%2C-111.902833). (<https://foursquare.com/explore?mode=url&ne=40.436169%2C-111.817088&q=museum&sw=40.381663%2C-111.902833>).
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Methodology

1. I am given a draft planner by my client, need to find a plan, and update the NaN sections.

Out[2] :

	Day1	Day2	Day3
Morning	Arriving at Salt Lake City Airport and heading...	NaN	NaN
Evening	Participating IT conference	NaN	NaN
Night	Return to the hotel and find a restraint for d...	NaN	Heading to the airport

2. I researched the weather data in Wikipedia and organized it to data frame.

Out[3]:

Climate data for Lehi, Utah

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Se
0	Average high °F (°C)	37(3)	43(6)	52(11)	61(16)	72(22)	82(28)	90(32)	88(31)
1	Average low °F (°C)	16(-9)	19(-7)	28(-2)	34(1)	41(5)	48(9)	55(13)	54(12)
2	Average precipitation inches (mm)	0.98(24.9)	1.00(25.4)	1.12(28.4)	1.3(33)	1.40(35.6)	0.66(16.8)	0.7(17)	0.98(24.9)

Out[6]:

Climate data for Lehi, Utah**October**

Average high °F (°C)	64(18)
Average low °F (°C)	34(1)
Average precipitation inches (mm)	1.33(33.8)

Based on data, the client can expect comfortable autumn weather in Lehi. However, she may need to pack a winter jacket because the temperature could get dropped as below as 34°F.

3. I used the [first data source \(\[https://www.tripadvisor.com/Attractions-g57044-Activities-Lehi_Utah.html\]\(https://www.tripadvisor.com/Attractions-g57044-Activities-Lehi_Utah.html\)\)](https://www.tripadvisor.com/Attractions-g57044-Activities-Lehi_Utah.html) to find general traveling knowledge of Lehi, UT and organized the location data by the client's preference to data frame.

Out[7]:

	Name of the place	Category	Hours
0	Thanks Giving Point	Specialty Museums	Mon - Sat 10:00 AM - 8:00 PM
1	Museum of Natural Curiosity	Children's Museums	Mon - Sat 10:00 AM - 8:00 PM
2	Museum of Ancient Life	Natural History Museums	Mon - Sat 10:00 AM - 8:00 PM
3	Outlets at Traverse Mountain	Factory Outlets	Mon - Sat 10:00 AM - 9:00 PM, Sun 11:00 AM - 6...
4	Ashton Gardens	Scenic Walking Areas	Temporarily closed
5	Hutchings Museum	Museum	Mon - Sat 11:00 AM - 8:30 PM
6	Cornbelly's Corn Maze & Pumpkin Fest	Farms	NaN
7	Glass Art Institute at Thanksgiving Point	Art Galleries	NaN
8	Lehi Roller Mills	Historic Sites	NaN
9	Butterfly Biosphere	Science Museums	NaN
10	Pointe Meadow Park	Parks	NaN

Out[10]:

	Name of the place	Category	Hours
0	Thanks Giving Point	Specialty Museums	Mon - Sat 10:00 AM - 8:00 PM
1	Museum of Natural Curiosity	Children's Museums	Mon - Sat 10:00 AM - 8:00 PM
2	Museum of Ancient Life	Natural History Museums	Mon - Sat 10:00 AM - 8:00 PM
3	Outlets at Traverse Mountain	Factory Outlets	Mon - Sat 10:00 AM - 9:00 PM, Sun 11:00 AM - 6...
5	Hutchings Museum	Museum	Mon - Sat 11:00 AM - 8:30 PM

As per the client's request, I added 'Outlets at Traverse Mountain' to the plan. The museums such as 'Thanks Giving Point', 'Museum of Ancient Life' and 'Hutchings Museum' are the options I could consider.

4. In order to get the distances data, I used Foursquare's API and display the map of the location for visualization purpose. I also include reviews of the location by using Foursquare's API to give the client options to choose for her trip.

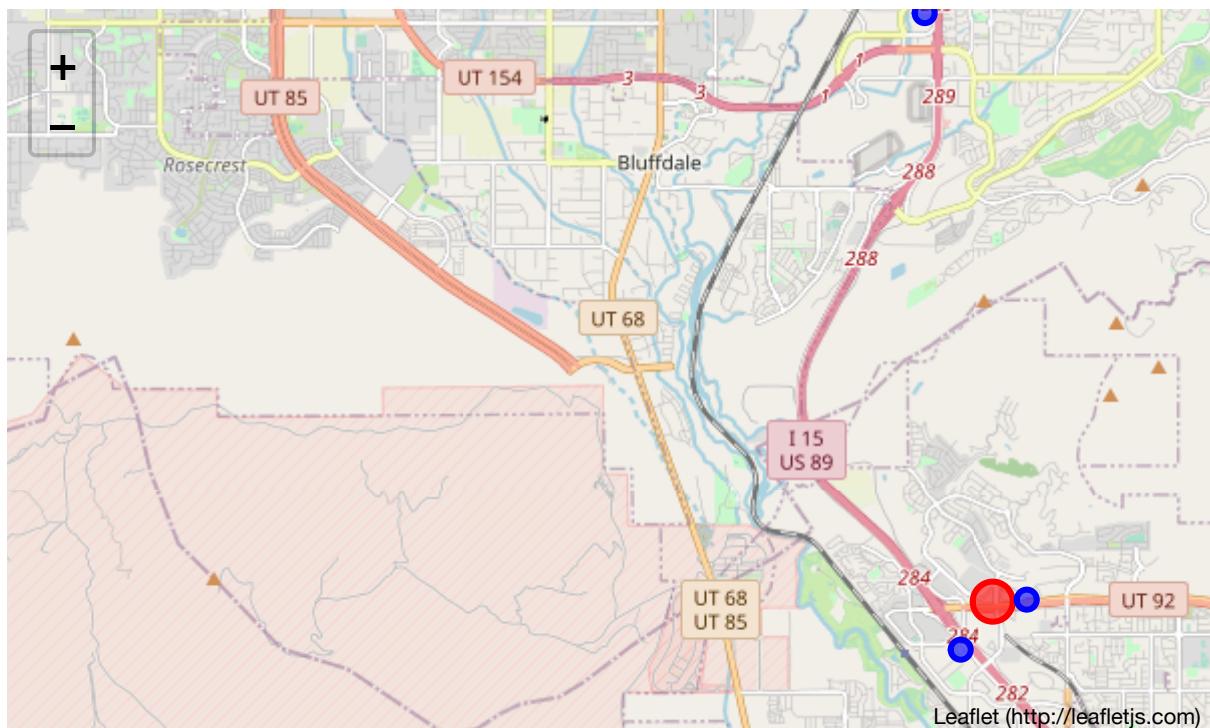
4-1. Restraunt Options:

Out[17]:

	name	categories	address	lat	lng	labeledLatLngs	distance
0	Harvest Restaurant	New American Restaurant	3003 N Thanksgiving Way	40.425914	-111.887108	[{"label": "display", "lat": 40.42591376009597, "lng": -111.887108}	81
1	Tsunami Restaurant & Sushi Bar	Sushi Restaurant	1616 W Traverse Pkwy	40.432669	-111.875990	[{"label": "display", "lat": 40.43266888450752, "lng": -111.87599}	41
2	La Fuente Restaurant	Mexican Restaurant	101 N 1200 E #A6	40.389476	-111.827382	[{"label": "display", "lat": 40.38947575958743, "lng": -111.827382}	66
3	Jim's Family Restaurant	American Restaurant	1728 W Park Ave	40.519226	-111.939243	[{"label": "display", "lat": 40.51922600067426, "lng": -111.939243}	108
4	Jim's Family Restaurant	American Restaurant	834 E State Rd	40.371173	-111.775524	[{"label": "display", "lat": 40.37117345531693, "lng": -111.775524}	112
5	A&W Restaurant	Fast Food Restaurant	439 E State St	40.374035	-111.786482	[{"label": "display", "lat": 40.37403492111159, "lng": -111.786482}	103
6	A&W Restaurant	Fast Food Restaurant	674 E 12300 S	40.526531	-111.872257	[{"label": "display", "lat": 40.526531, "lng": -111.872257}	105
7	A&W Restaurant	Fast Food Restaurant	1827 W 12600 S	40.520950	-111.940086	[{"label": "display", "lat": 40.52095, "lng": -111.940086}	110
8	Corenas Restaurant	Food	288 W Main St	40.388008	-111.853455	[{"label": "entrance", "lat": 40.387927, "lng": -111.853455}	54
9	Temptasian Restaurant	Asian Restaurant	987 W 500 N	40.388552	-111.824083	[{"label": "display", "lat": 40.38855213843044, "lng": -111.824083}	68
10	IKEA	Furniture / Home Store	67 W Ikea Way	40.509145	-111.893514	[{"label": "display", "lat": 40.50914451010241, "lng": -111.893514}	86
11	Taco Rodriguez Mexican Restaurant	Mexican Restaurant	74 N West State Rd	40.377773	-111.812496	[{"label": "display", "lat": 40.37777266009024, "lng": -111.812496}	84
12	IHOP	Breakfast Spot	925 W State Rd	40.386814	-111.822578	[{"label": "display", "lat": 40.3868141230456, "lng": -111.822578}	71
13	Mi Ranchito	Mexican Restaurant	396 E State Rd	40.374306	-111.788384	[{"label": "display", "lat": 40.37430619028417, "lng": -111.788384}	102
14	Thai Land Restaurant	Thai Restaurant	126 W 12300 S #D	40.527395	-111.894566	[{"label": "display", "lat": 40.52739467302235, "lng": -111.894566}	106
15	Guadalahonky's	Mexican Restaurant	136 E 12300 S	40.526409	-111.886976	[{"label": "display", "lat": 40.52640937179229, "lng": -111.886976}	104

	name	categories	address	lat	lng	labeledLatLngs	distance	
16	JCW's The Burger Boys	Burger Joint	580 E State Rd	40.373036	-111.783216	[{"label": "display", "lat": 40.37303584472249, "lng": -111.783216}	106	
17	Aroma Indian Cuisine	Indian Restaurant	715 E 12300 S	40.527468	-111.870776	[{"label": "display", "lat": 40.52746831517926, "lng": -111.870776}	106	
18	Walter's Restaurant	Italian Restaurant		Nan	40.322205	-111.900345	[{"label": "display", "lat": 40.322205, "lng": -111.900345}	123
19	China Isle	Chinese Restaurant	323 S 500 E	40.370530	-111.784923	[{"label": "display", "lat": 40.37053018836529, "lng": -111.784923}	107	

Out[18]:



Two restraunts near the hotel returned. One is sushi restaurant and New American Restaurant. I looked the reviews to find better option.

4-1-a. Tsunami Restaurant & Sushi Bar

The rating is 8.3

Out[24]:

	text	agreeCount	disagreeCount	id	user.firstName	user.lastName	...
0	nice.. they have many variant of sushi	2	0	58e2b9241d21ba36f262bfa0	Fathia	A	...

Based on the distance, rating, and review, I decided to add the sushi restaurant to the plan.

4-1-b. Harvest Restaurant

The rating is 6.9

Out[29]:

	text	agreeCount	disagreeCount	id	user.firstName	user.lastName	...
0	Service was impeccable. I had the pork porterhouse. Cooked to perfection with amazing sauce. Aly had the salmon. Crispy on the outside and melted like butter in the mouth. Both served searing hot!	2	0	562cd43b498e18acffd9aa7e	Darrin		...

Although the rating is lower than sushi restaurant, the review is not bad. I decided to add this restaurant for option.

4-1-c. I explored around the sushi restaurant to find out more restaurant options for the client.

Out[32]: 'There are 30 around Sushi restaurant.'

Out[36]:

		name	categories	address	lat	lng	labeledLatLngs	distar
1	Tsunami Restaurant & Sushi Bar		Sushi Restaurant	1616 W Traverse Pkwy	40.432669	-111.875990	[{"label": "display", "lat": 40.43266888450752, "lng": -111.87599013825452}]	{}
4	The Original Pancake House		Breakfast Spot	1674 W Traverse Pkwy	40.432462	-111.876887	[{"label": "display", "lat": 40.432462, "lng": -111.876887}]	{}
0	Harmons Grocery		Grocery Store	3450 N Triumph Blvd	40.433407	-111.878484	[{"label": "display", "lat": 40.43340686612135, "lng": -111.87848384934372}]	{}
19	Cafe Rio Mexican Grill		Mexican Restaurant	1851 W Traverse Parkway Suite D	40.432305	-111.880030	[{"label": "display", "lat": 40.43230458173435, "lng": -111.88002984952297}]	{}
24	Hyatt Place Salt Lake City/Lehi		Hotel	3700 N Outlet Parkway	40.432499	-111.881725	[{"label": "display", "lat": 40.432498996812626, "lng": -111.88172453970638}, {"label": "entrance", "lat": 40.432363, "lng": -111.881727}]	{}
14	Bona Vita Italian Bistro		Italian Restaurant	1820 West Traverse Parkway, Suite C	40.434983	-111.882987	[{"label": "display", "lat": 40.43498274457547, "lng": -111.88298685379614}]	{}
25	Nike Factory Store		Sporting Goods Shop	3700 N Cabelas Blvd Ste 301	40.434596	-111.884012	[{"label": "display", "lat": 40.4345955, "lng": -111.8840122}, {"label": "entrance", "lat": 40.43493, "lng": -111.88289}]	{}
11	Outlets At Traverse Mountain		Shopping Mall	3700 N Cabelas Blvd	40.434773	-111.884057	[{"label": "display", "lat": 40.43477262880914, "lng": -111.88405708602524}]	{}
17	Coach Factory Outlet		Accessories Store	3700 N Cabelas Blvd #400	40.435988	-111.884281	[{"label": "display", "lat": 40.435988166050926, "lng": -111.88428089814758}]	{}
5	Chick-fil-A	Food Service		3470 N Digital Dr	40.430977	-111.886214	[{"label": "display", "lat": 40.4309768, "lng": -111.8862139}]	{}
12	Blaze Pizza	Pizza Place		3370 N Digital Dr, #100	40.429872	-111.886280	[{"label": "display", "lat": 40.429872, "lng": -111.88628}]	{}
10	Village Baker		Sandwich Place	NaN	40.429115	-111.885889	[{"label": "display", "lat": 40.42911511965557, "lng": -111.88588891510972}]	{}

	name	categories	address	lat	lng	labeledLatLngs	distar
27	Slapfish	Seafood Restaurant	3320 N Digital Dr	40.429053	-111.886145	[{"label": "display", "lat": 40.429053, "lng": -111.886145}, {"label": "entrance", "lat": 40.429051, "lng": -111.886457}]	14
16	Cabela's	Sporting Goods Shop	2502 W Cabelas Blvd	40.437689	-111.888870	[{"label": "display", "lat": 40.4376889017244, "lng": -111.8888703022019}]	14
6	Museum of Ancient Life	History Museum	2929 N Thanksgiving Way	40.424669	-111.885937	[{"label": "display", "lat": 40.42466911851144, "lng": -111.88593655766621}]	14
2	Megaplex 8	Multiplex	3003 N Thanksgiving Way	40.423772	-111.884988	[{"label": "display", "lat": 40.42377234984366, "lng": -111.8849884095624}]	14
8	Farm Country	Museum	3003 N Thanksgiving Way	40.424153	-111.888731	[{"label": "display", "lat": 40.424153, "lng": -111.888731}]	14
7	Cornbelly's Corn Maze & Pumpkin Fest	General Entertainment	3003 N Thanksgiving Way	40.424819	-111.889933	[{"label": "display", "lat": 40.42481904954279, "lng": -111.8899334219279}]	14
13	Thanksgiving Point	Event Space	3003 N Thanksgiving Point Dr	40.429220	-111.893079	[{"label": "display", "lat": 40.42922013711716, "lng": -111.89307856125023}]	14
29	Electric Park at Thanksgiving Point	Event Space	3003 N Thanksgiving Way	40.422223	-111.887207	[{"label": "display", "lat": 40.42222344680218, "lng": -111.88720690001271}]	14
3	J Dawgs	Hot Dog Joint	3750 N Thanksgiving Way Ste B	40.434012	-111.894753	[{"label": "display", "lat": 40.43401191044417, "lng": -111.89475277171255}]	14
28	SLAB Pizza	Pizza Place	3430 N Ashton Blvd	40.430219	-111.895237	[{"label": "display", "lat": 40.430219, "lng": -111.895237}]	14
20	Starbucks	Coffee Shop	2951 W Clubhouse Lane Ste A	40.430961	-111.896157	[{"label": "display", "lat": 40.43096068, "lng": -111.8961572}, {"label": "entrance", "lat": 40.430936, "lng": -111.896179}]	14

	name	categories	address	lat	lng	labeledLatLngs	distar
26	Mo' Bettahs	Hawaiian Restaurant	2975 W Clubhouse Dr	40.430900	-111.897169	[{"label": "display", "lat": 40.43090047883428, "lng": -111.8971689716673}]	18
9	Home2 Suites by Hilton	Hotel	3051 W Clubhouse Dr	40.430501	-111.897949	[{"label": "display", "lat": 40.430501303452196, "lng": -111.8979486823082}]	18
18	Jimmy John's	Sandwich Place	3501 N Center St	40.431432	-111.850463	[{"label": "display", "lat": 40.43143159278898, "lng": -111.85046341301255}]	20
21	Beany's To Go	Coffee Shop	2020 N State St.	40.412323	-111.869362	[{"label": "display", "lat": 40.41232307887606, "lng": -111.86936180550599}]	20
23	Museum of Natural Curiosity	Science Museum	3605 N Garden Dr	40.432424	-111.908114	[{"label": "display", "lat": 40.43242386356498, "lng": -111.90811404990792}, {"label": "entrance", "lat": 40.432365, "lng": -111.908019}]	27
15	Ashton Gardens	Garden	3900 N Garden Dr	40.435576	-111.911395	[{"label": "display", "lat": 40.43557601484623, "lng": -111.91139471943653}]	30
22	Kneaders	Bakery	1384 E State Road 92	40.431432	-111.827623	[{"label": "display", "lat": 40.43143244286722, "lng": -111.82762314170077}]	40

New dataset shows there are more restaurant near the sushi place. For example, there are breakfast place 'The Original Pancake House' and mexican restaurant 'Cafe Rio Mexican Grill' . I am going to add these places for the options in case the client wants to experience variety food.

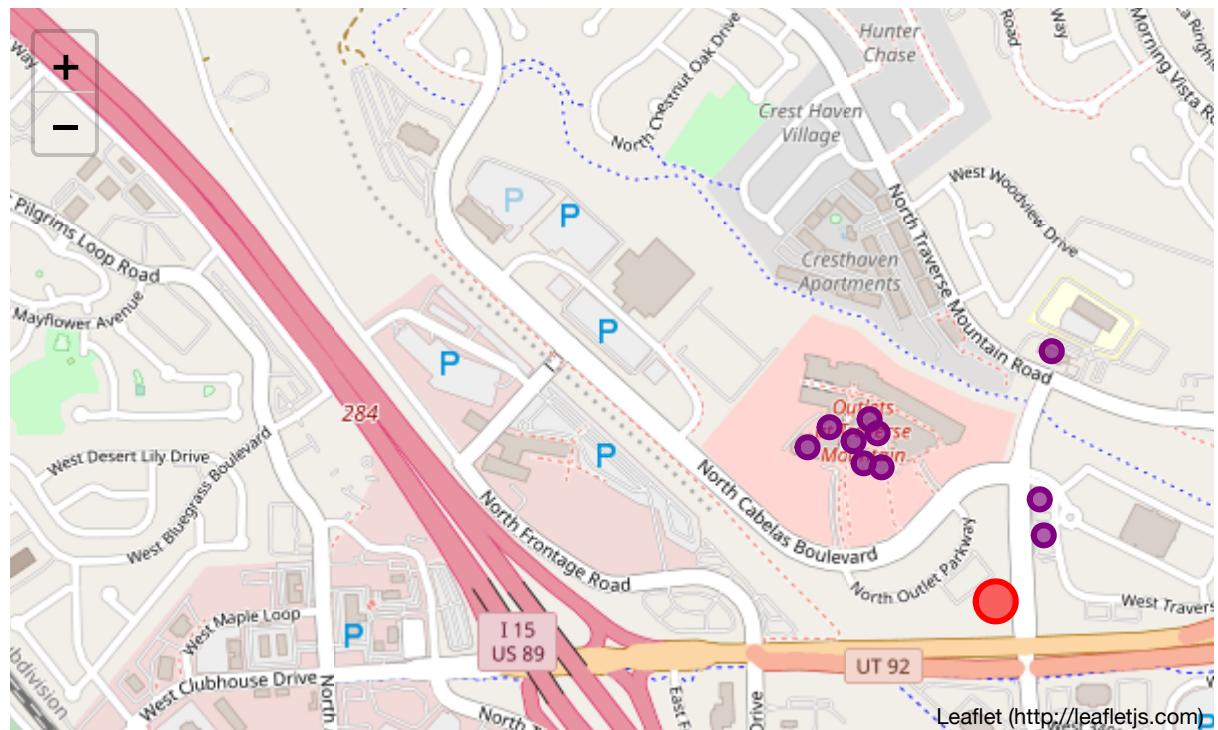
4-2 Shopping Options:

Out[40]:

	name	categories	address	crossStreet	lat	lng	labeledLatLngs	c	
0	Nike Factory Store	Sporting Goods Shop	3700 N Cabelas Blvd Ste 301	at Outlets at Traverse Mountain	40.434596	-111.884012	[{"label": "display", "lat": 40.4345955, "lng": -111.8840122}, {"label": "entrance", "lat": 40.43493, "lng": -111.88289}]		
1	The UPS Store	Shipping Store	1881 W Traverse Pkwy, Ste E		NaN	40.433490	-111.880503	[{"label": "display", "lat": 40.4334905, "lng": -111.8805034}]	
2	Polo Ralph Lauren Factory Store	Clothing Store	3700 N Cabelas Blvd	at Outlets at Traverse Mountain	40.434660	-111.884388	[{"label": "display", "lat": 40.4346596, "lng": -111.8843884}, {"label": "entrance", "lat": 40.43493, "lng": -111.88289}]		
3	Columbia Factory Store	Clothing Store	3700 North Cabelas Blvd Ste 450		NaN	40.435163	-111.884080	[{"label": "display", "lat": 40.4351634, "lng": -111.8840798}]	
4	Gap Factory Store	Clothing Store	3700 N Cabelas Blvd	at Outlets at Traverse Mountain	40.435032	-111.884605	[{"label": "entrance", "lat": 40.43493, "lng": -111.88289}, {"label": "display", "lat": 40.43503189086914, "lng": -111.88460540771484}]		
5	Levi's Outlet Store	Clothing Store	3700 N Cabelas Blvd #405	at Outlets at Traverse Mountain	40.435395	-111.884247	[{"label": "display", "lat": 40.435395, "lng": -111.884247}]		
6	T-Mobile	Mobile Phone Shop	1899 W Traverse Pkwy		NaN	40.434077	-111.880590	[{"label": "display", "lat": 40.434076786754616, "lng": -111.88059002588913}]	
7	J.Crew Factory	Clothing Store	3700 N Cabelas Blvd #258	at Outlets at Traverse Mountain	40.435259	-111.885105	[{"label": "display", "lat": 40.435259, "lng": -111.8851047}]		
8	American Eagle Outlet	Clothing Store	3700 North Cabelas Blvd, Suite 274		NaN	40.434935	-111.885587	[{"label": "display", "lat": 40.434935, "lng": -111.8855875}]	
9	AT&T	Mobile Phone Shop	3370 N Digital Dr Ste 130		NaN	40.429942	-111.886053	[{"label": "display", "lat": 40.429941881026295, "lng": -111.88605308532715}]	

	name	categories	address	crossStreet	lat	lng	labeledLatLngs	c
10	Tommy Hilfiger	Clothing Store	3940 N Traverse Mountain Blvd		NaN	40.436501	-111.880363	[{"label": "display", "lat": 40.436500549316406, "lng": -111.88036346435547}]

Out[41]:



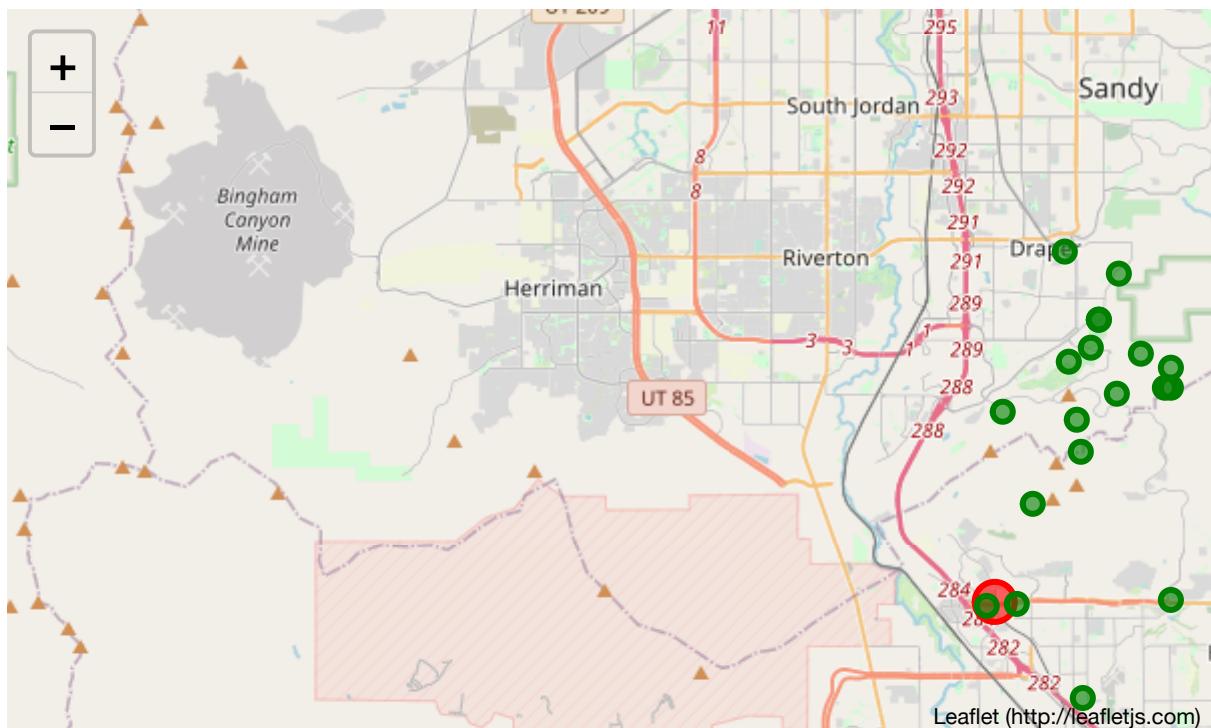
The map displays that the outlet and shopping areas are closed to the hotel. I am confident to add this shopping data to part of the planner.

4-3 Hiking area Options:

Out[48]:

	name	categories	lat	lng	labeledLatLngs	distance	postalCode	cc
0	Lehi Rail Trail	Bike Trail	40.431210	-111.883919	[{"label": "display", "lat": 40.43121, "lng": -111.883919}]	242	84043	US
1	Murdock Canal Trail - Traverse Mountain	Bike Trail	40.431730	-111.873820	[{"label": "display", "lat": 40.43173, "lng": -111.87382}]	659	NaN	US
6	Sensei Trail	Trail	40.458173	-111.867998	[{"label": "display", "lat": 40.458173, "lng": -111.867998}]	3087	84043	US
4	Dry Creek Trail Park	Park	40.407081	-111.851063	[{"label": "display", "lat": 40.40708059832424, "lng": -111.85106305965795}]	3825	84043	US
7	West Bluff Off-Leash Trail	Trail	40.471428	-111.852020	[{"label": "display", "lat": 40.471428, "lng": -111.85202}]	5010	84020	US

Out[49]:



There are three tails and one park in Lehi according to the data table. I am going to research related webpages or the pictures of each of places and suggest to the client.

4-3-a. Lehi Rail Trail

Link to [Lehi Rail Trail \(https://www.trailforks.com/trails/lehi-rail-trail-313704/\)](https://www.trailforks.com/trails/lehi-rail-trail-313704/)

4-3-b. Murdock Canal Trail - Traverse Mountain

Link to [Murdock Canal Trail \(<https://www.utahmountainbiking.com/trails/murdock.htm>\)](https://www.utahmountainbiking.com/trails/murdock.htm)

Out[50]:



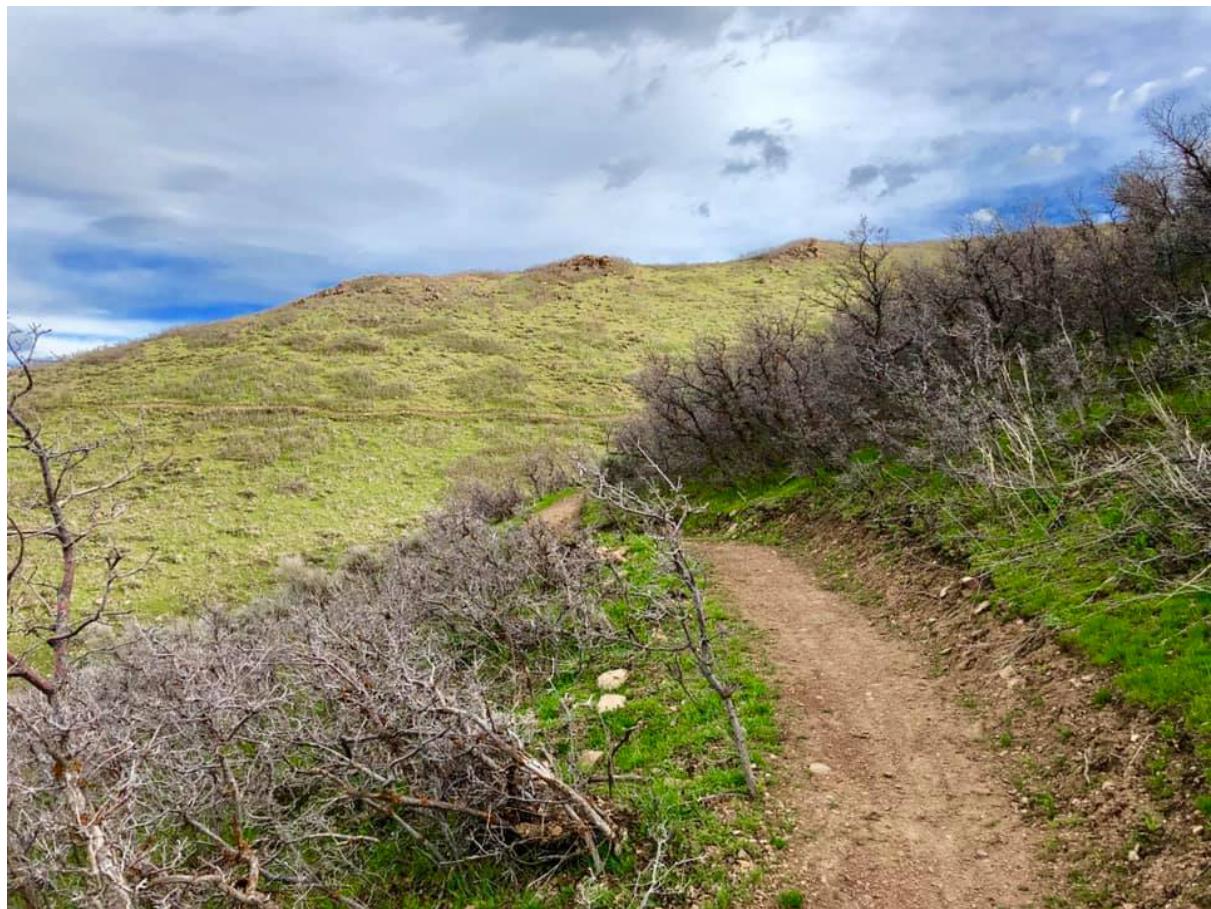
Out[51]:



4-3-c. Sensei Trail

Link to [Sensei Trail \(<https://www.trailforks.com/trails/sensei-trail/>\)](https://www.trailforks.com/trails/sensei-trail/)

Out[52]:



Out[53]:



Out[54]:



4-3-d. Dry Creek Trail Park

Link to [Dry Creek Trail Park \(https://www.lehi-ut.gov/dry-creek-park/\)](https://www.lehi-ut.gov/dry-creek-park/).

Out[55]:



Out[56]:

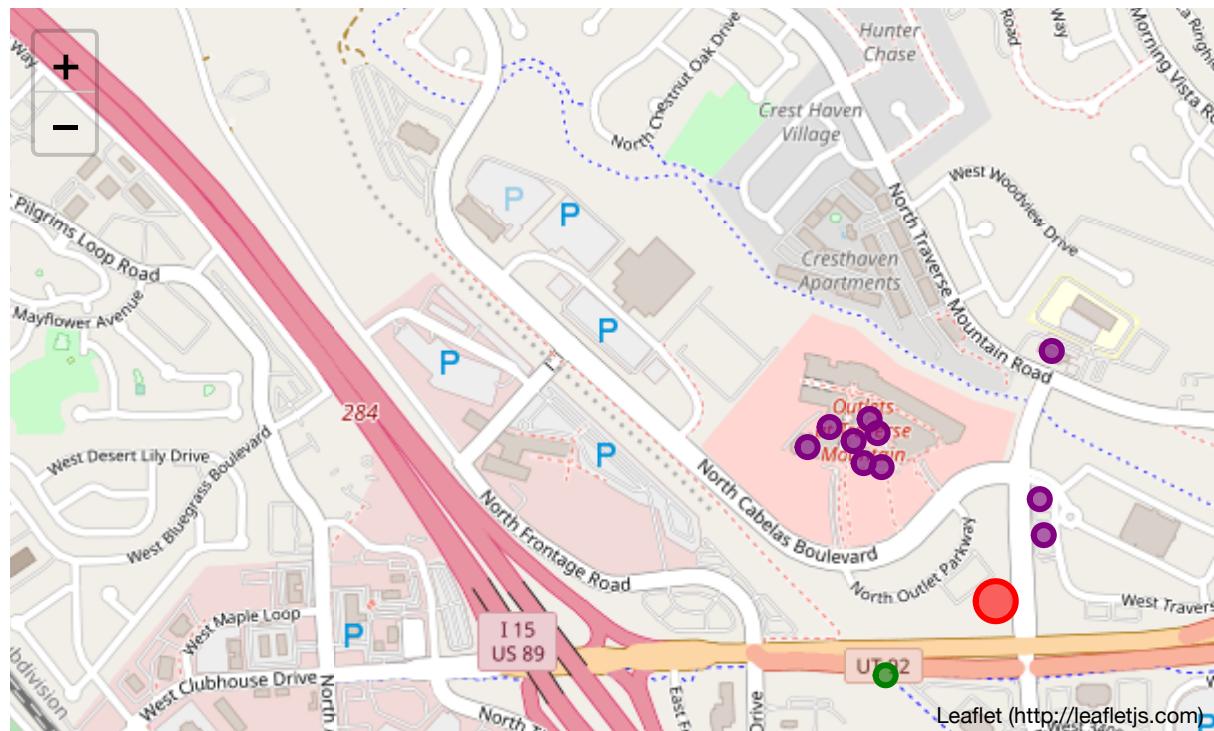


Results

Based on the researched data, I was able to create the map around the hotel and completed the planner the client may prefer.

1. Map:

Out[57]:



2. Planner

Out[58]:

	Day1	Day2	Day3
Morning	Arriving at Salt Lake City Airport and heading to the hotel	NaN	NaN
Evening	Participating IT conference	NaN	NaN
Night	Return to the hotel and find a restraunt for dinner	NaN	Heading to the airport

Out[60]:

	Day1	Day2	Day3
Morning	Arriving at Salt Lake City Airport and heading to the hotel	Have a breakfast at The Original Pancake House and go for a walk at Murdock Canal Trail - Traverse Mountain	Have a breakfast at Harvest Restaurant
Evening	Participating IT conference	Visit Thanks Giving Point museum	Go for a shopping at Outlets at Traverse Mountain
Night	Return to the hotel and have a dinner at Tsunami Restaurant & Sushi Bar	Have a dinner at Cafe Rio mexican restaurant and return to hotel	Heading to the airport

3. Weather

Like mentioned above, the temperature is expected comfortable autumn weather in Lehi, Utah. However, I am going to suggest to pack a winter jacket to the client because the temperature could get dropped as below as 34°F.

Out[61]:

Climate data for Lehi, Utah

October

Average high °F (°C)	64(18)
Average low °F (°C)	34(1)
Average precipitation inches (mm)	1.33(33.8)

Discussion

When I started this project I was expecting to measure travel time but could not find exact timing due to limited resources on public transportation. Thus, the final plan did not reflect the travel time well, which may cause errors in real time planning.

Conclusion

This project can provide guidelines for anyone who is planning to visit Lehi, Utah. Specially FourSquare provides useful information to explore various unvisited areas around Lehi. For example, it may give the distances between the places and reviews which can be helpful for a new visitor. However, despite FourSquare's usefulness, I experienced frustration gathering useful information. When trying to search various locations, I continued exceeding my daily limit which slowed down the research project.

Generally speaking, this project taught me to use various tools for data science research in future. Through this project, I plan to establish my portfolio by using and getting used to various data science tools.

Out[2]:

Click here to toggle on/off the raw code.