INFORMATION VISUALIZATION FALL 2017
FINAL PROJECT

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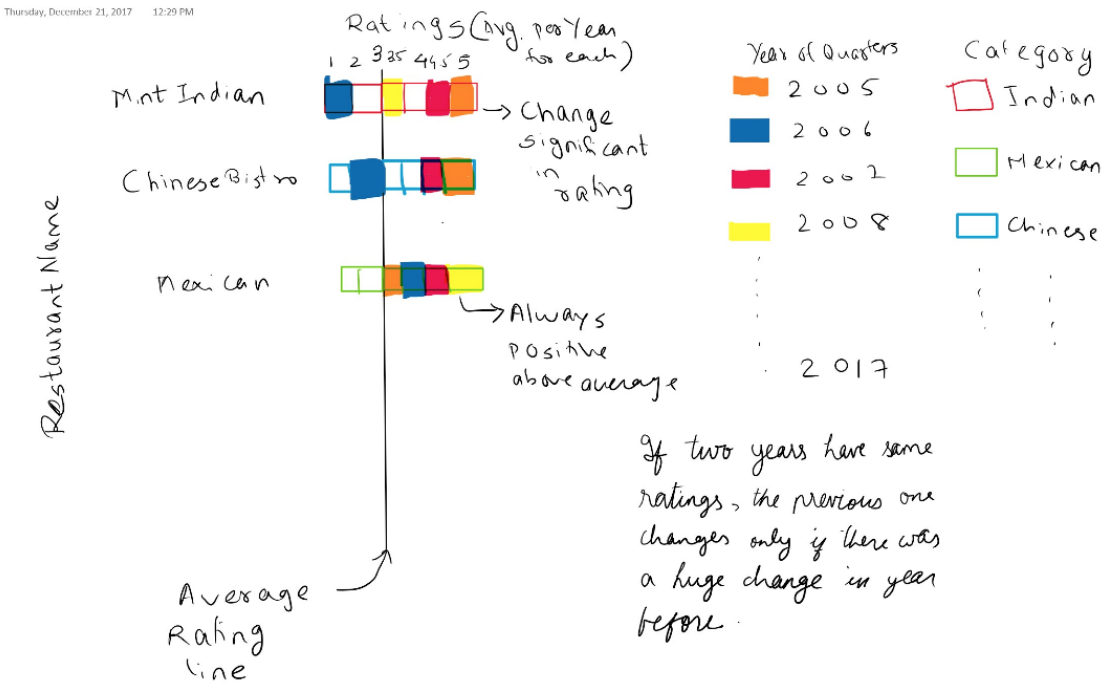
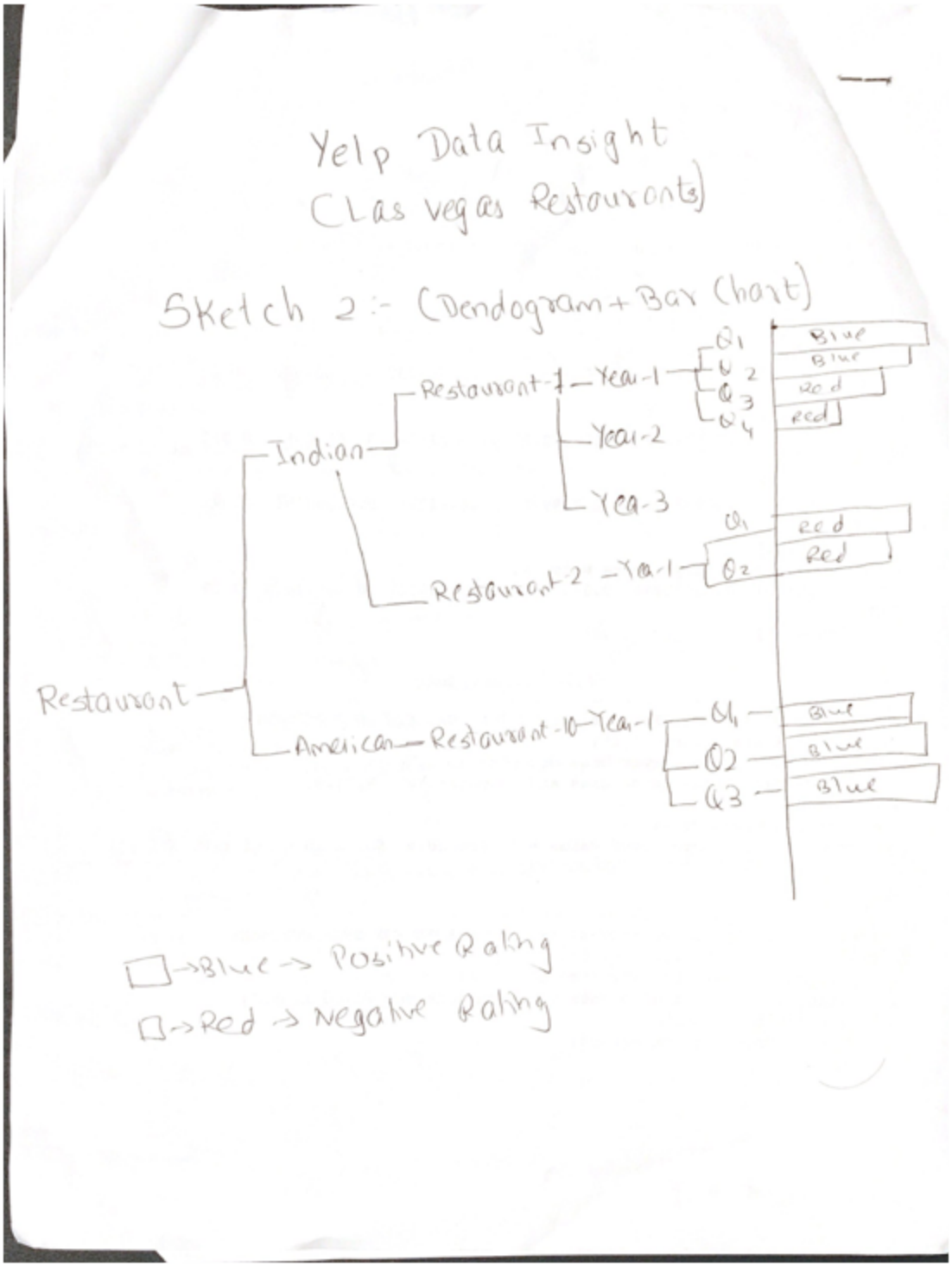
Sketches

Sketch-1: Diverging bar chart



Sketch 2: Dendogram + bar chart



Discussion

=> Sketch 1:

Advantages:

- As it is a diverging bar chart it is easy to interpret the negative and positive ratings.
- Ratings for each restaurant can be compared easily with each other.
- Visual design avoids the clutter as we have 100 data points to show only.

Disadvantages:

- Using color for separating years and cuisine is not a good level of separability.
- Although we use multiple colors for each year but it becomes hard to interpret the ups and downs in ratings over the period of time..
- Difficult to answer questions based on number of restaurants in each cuisine or each period.

Sketch-2:

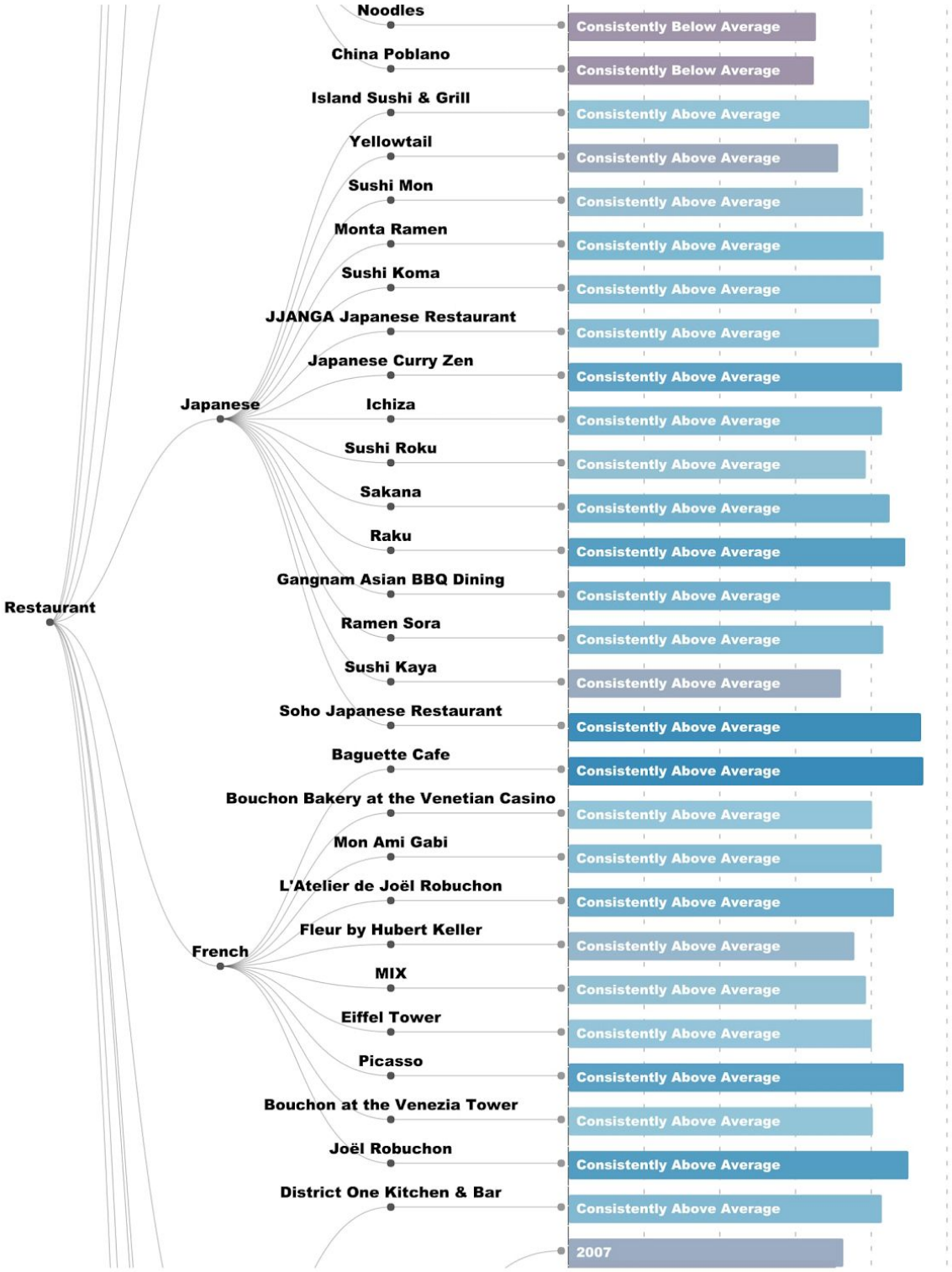
Advantages:

- Conveys more information regarding the as the data is represented in the form of clusters.
- Tree like structure helps to distinguish the categorical data and interpret data easily.
- Combining with the bar chart makes easier to visualize quantitative data for each of the categories.
- The hybrid design provides the separability as well as is not complex to extract information.
- Easy to answer questions such as which restaurants have positive ratings or even which cuisines have consistent positive ratings.

Disadvantages:

- Too much of data manipulation is required to represent the data.
- Loses the information for quarterly data , instead showing yearly data.
- Good for reasonable data points , else it is hard to render.
- Very difficult to extract detailed information for each restaurant.

Implementation:


Restaurant
Japanese
Noodles
China Poblano
Island Sushi & Grill
Yellowtail
Sushi Mon
Monta Ramen
Sushi Koma
JJANGA Japanese Restaurant
Japanese Curry Zen
Ichiza
Sushi Roku
Sakana
Raku
Gangnam Asian BBQ Dining
Ramen Sora
Sushi Kaya
Soho Japanese Restaurant
French
Baguette Cafe
Bouchon Bakery at the Venetian Casino
Mon Ami Gabi
L'Atelier de Joël Robuchon
Fleur by Hubert Keller
MIX
Eiffel Tower
Picasso
Bouchon at the Venezia Tower
Joël Robuchon
District One Kitchen & Bar
Consistently Below Average
Consistently Below Average
Consistently Above Average
Consistently Above Average
Consistently Above Average
Consistently Above Average
Consistently Above Average
Consistently Above Average
Consistently Above Average
Consistently Above Average
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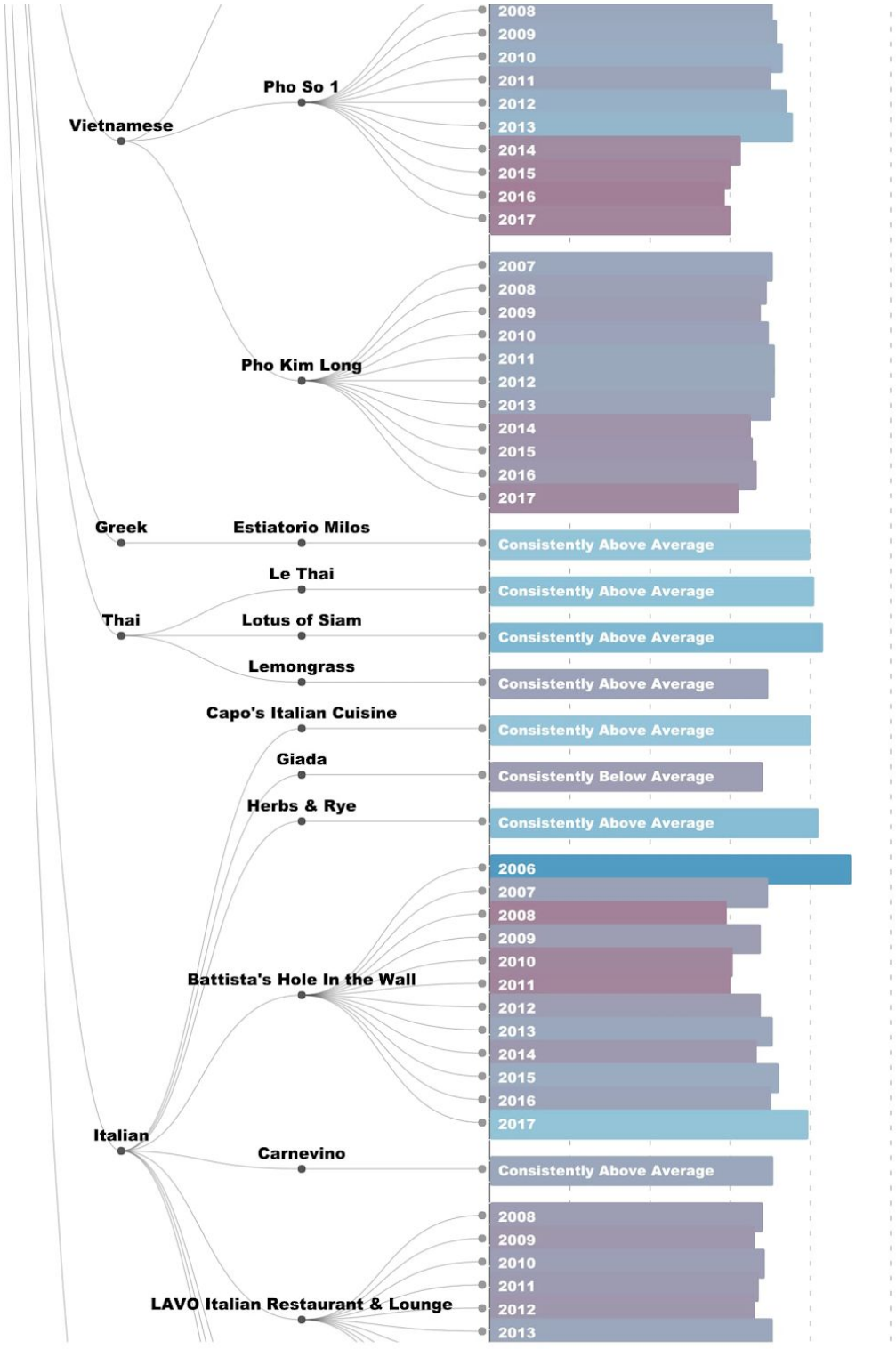
2007


Vietnamese
Pho So 1
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
Pho Kim Long
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
Greek
Estiatorio Milos
Consistently Above Average
Thai
Le Thai
Consistently Above Average
Lotus of Siam
Consistently Above Average
Lemongrass
Consistently Above Average
Italian
Capo's Italian Cuisine
Consistently Above Average
Giada
Consistently Below Average
Herbs & Rye
Consistently Above Average
Battista's Hole In the Wall
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
Carnevino
Consistently Above Average
LAVO Italian Restaurant & Lounge
2008
2009
2010
2011
2012
2013

Challenges and changes

=> Many challenges were faced while implementing the solution in D3:

- All the data was in json data and to create a dendogram a tree like structure would require a data in the form of hierarchy.
- To solve this issue I used d3.hierarchy and d3.stratify to encode the data in the formation required by the d3.cluster() .
- The initial sketch had diverging colors for bar chart with all the quarters in each year to be represented.
- After implementation it was not easily readable due to clutter , hence had to aggregate the quarter values in the form of years.
- The years data representation was also having too many data points to show. Hence, computed the ratings value and compared to see if it is consistently increasing or decreasing.
- Labeled this as consistently increasing and decreasing hence providing the required information with less data points.
- Also, calculated reliability on the basis of count for each cuisine by formula count*rating/total count for each cuisine. Hence, we can see the hovering ball which shows reliability of each rating.

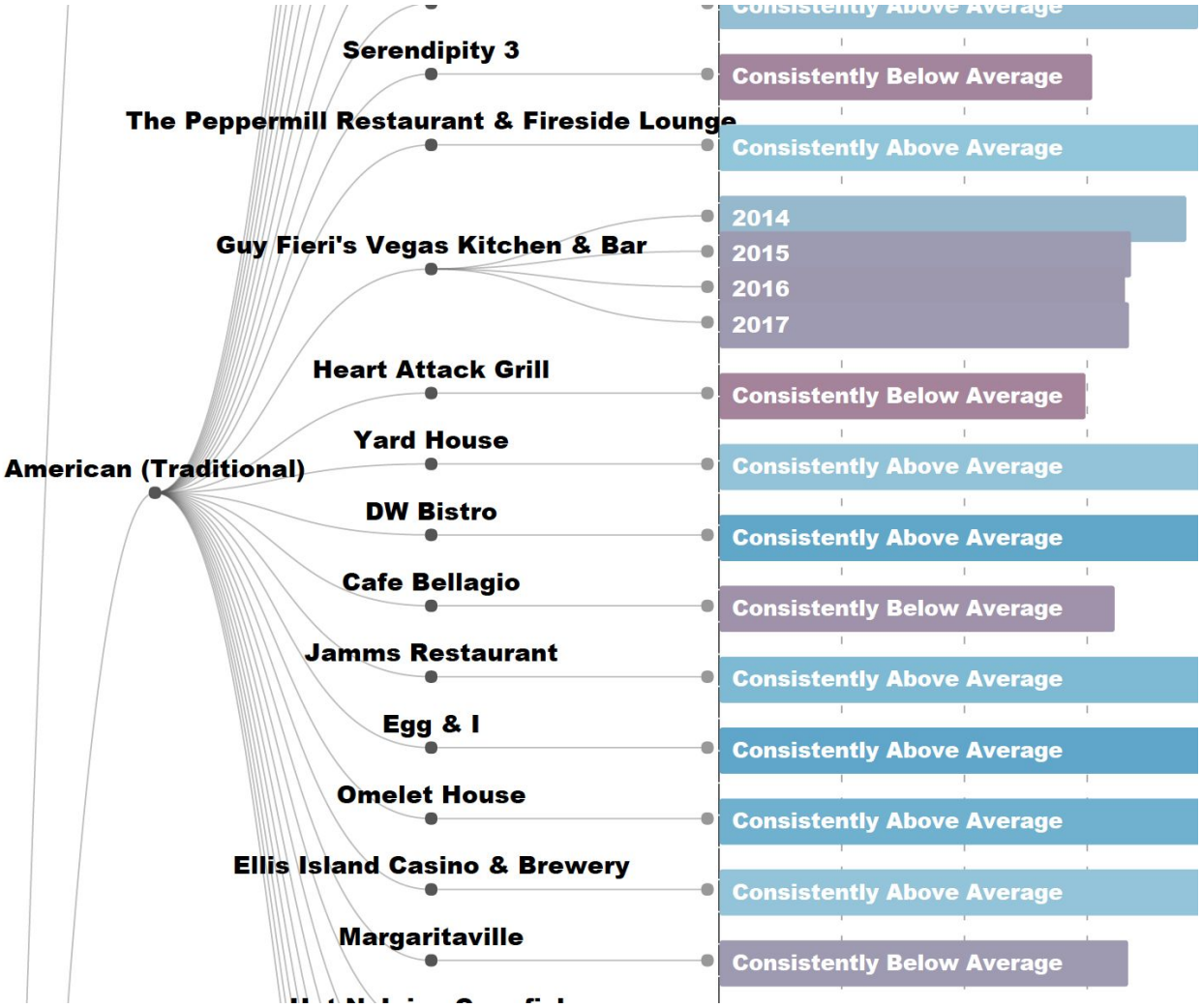
=> Implementing in D3 was an iterative process and solution evolved much more than initial but unfortunately I don't have screenshots available with me. So I have just provided the screenshot of final implementation.

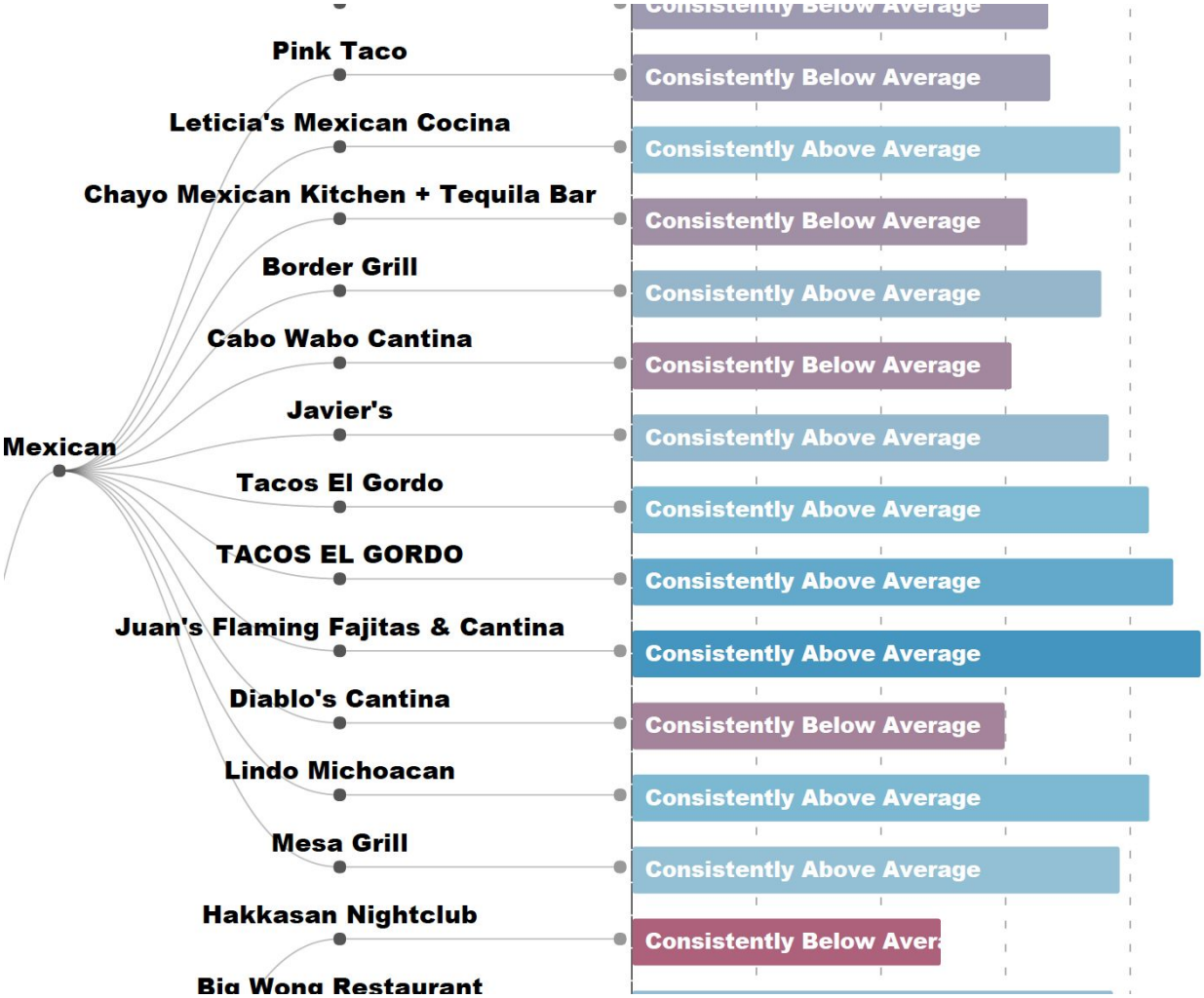
Data Analysis Question 1: “Are there restaurants that have consistently negative reviews?”

=> Yes there are restaurants that have consistently negative reviews. The reviews below the rating average are considered to be negative reviews in this case. The restaurants are:

1) Hooters Casino hotel
2) Bayside Buffet at Mandalay Bay
3) Cravings Buffet
4) Serendipity3
5) Heart Attack Grill
6) Jamms restaurant
7) Margaritaville
8) Carnegie
9) MGM Grand Buffet ……. And so on.

Few highlighted examples:


Serendipity 3
Consistently Below Average
The Peppermill Restaurant & Fireside Lounge
Consistently Above Average
2014
Guy Fieri's Vegas Kitchen & Bar
2015
2016
2017
Heart Attack Grill
Consistently Below Average
Yard House
American (Traditional)
Consistently Above Average
DW Bistro
Consistently Above Average
Cafe Bellagio
Consistently Below Average
Jamms Restaurant
Consistently Above Average
Egg & I
Consistently Above Average
Omelet House
Consistently Above Average
Ellis Island Casino & Brewery
Consistently Above Average
Margaritaville
Consistently Below Average

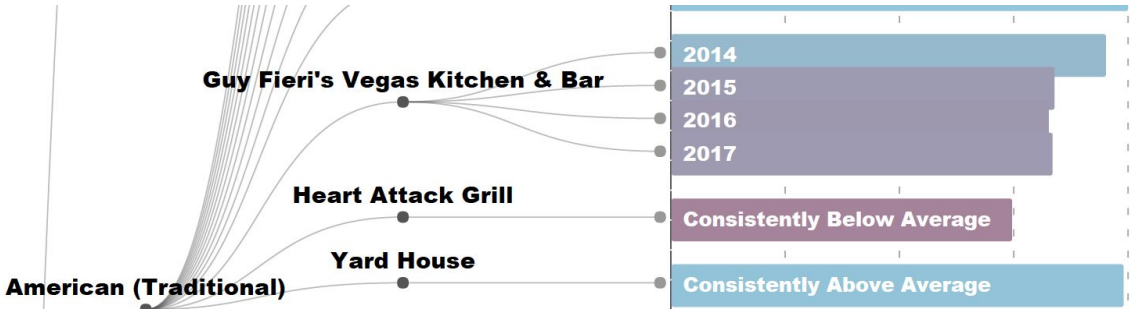

Pink Taco
Consistently Below Average
Leticia's Mexican Cocina
Consistently Above Average
Chayo Mexican Kitchen + Tequila Bar
Consistently Below Average
Border Grill
Consistently Above Average
Cabo Wabo Cantina
Consistently Below Average
Javier's
Consistently Above Average
Mexican
Tacos El Gordo
Consistently Above Average
TACOS EL GORDO
Consistently Above Average
Juan's Flaming Fajitas & Cantina
Consistently Above Average
Diablo's Cantina
Consistently Below Average
Lindo Michoacan
Consistently Above Average
Mesa Grill
Consistently Above Average
Hakkasan Nightclub
Consistently Below Aver
Big Wong Restaurant

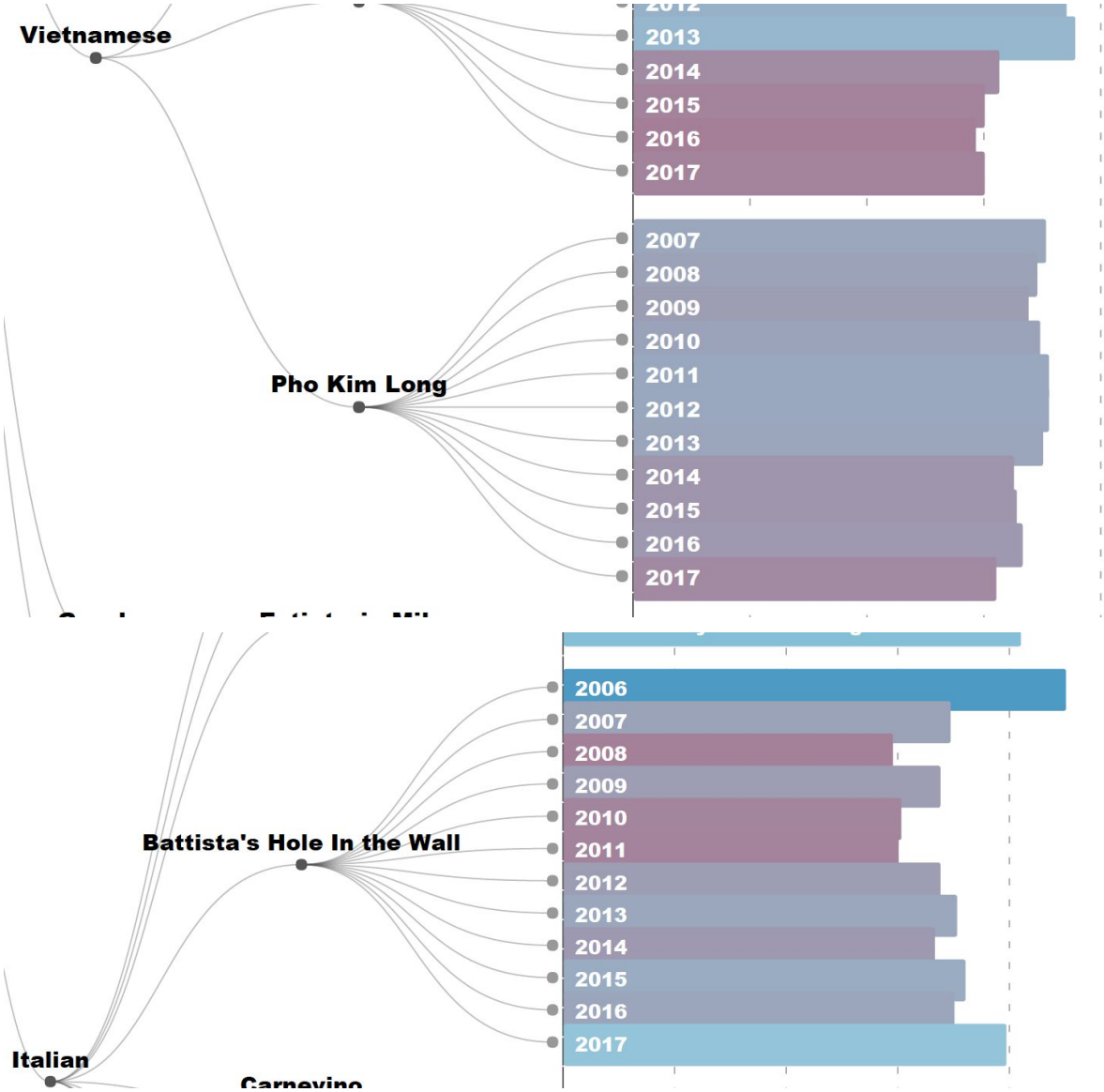
Data Analysis Question 2: Are there restaurants for which in some time periods their rating drops considerably?

=> Yeah there are restaurants for which their ratings drops considerably. The average ratings of the 4 quarters are taken here and aggregated as a yearly rating. The few of the restaurants identified are:

1) Guy Fieri's Vegas Kitchen and Bar
2) Noodle Asia
3) Pho so 1
4) Pho Kim Long
5) Battista's hole in the wall

Example from visualizations:




Vietnamese
2013
2014
2015
2016
2017
Pho Kim Long
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
Battista's Hole In the Wall
Italian