Code 10: Text Analysis

Part 1: Plan for data retrieval and analysis

a. To start we want to identify a few key points here; this being whether the review was positive or negative, the common occurrences of certain words, and what type of attitude the review was written with. I will use these points to help analyze how I may help improve a Ramen business or what I would need to avoid ensuring a ramen business does not fall below a certain threshold.
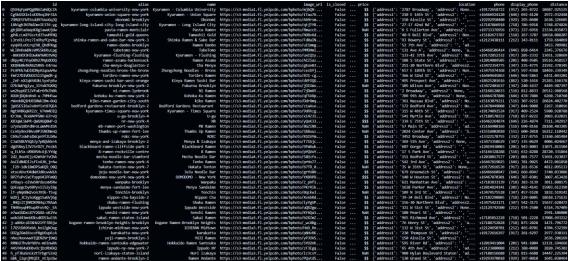
b. Parameters
   a. Term: *"ramen"*
   b. Location: *"New York, NY"*
   c. Sort Criteria: *"rating"*

c. I plan to use the parameters described above to isolate reviews based on ratings for ramen businesses in the city of New York to discover any important, useful, or interesting text that may help me provide insight to an incoming or established ramen business to the area of New York.

d. The text analysis insights I will be using include:
   a. Sentiment Analysis
   b. Frequency Analysis
   c. Tokenization
   d. POS (Part-of-speech) Tagging.

Part 2: Text Insights Analysis

a. We begin by running a YelpAPI Query and create a DataFrame for the businesses using that query which should look something like this.

b. We then decide on 5 ramen businesses in New York that we want to analyze sorted by their alias those being these were chosen with a rating range of 3.5 – 4.5:
   a. *dokodemo-new-york*
   b. *kinya-ramen-sushi-bar-west-orange*

    c. *fuyu-ramen-sunnyside-2*
    d. *jeju-noodle-bar-new-york*
    e. *nippon-cha-bayside-2*

c. We then run a for-loop that will return to us the tokens, tokens without stop words, POS Tags, and the sentiment analysis for the three reviews for each business that are returned.

    a. dokodemo-new-york

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Enter the business alias: dokodemo-new-york
Restaurant: dokodemo-new-york
Review Text: I came for takoyaki but they were out and will be for a while since one of the ingredients


Tokens: ['I', 'came', 'for', 'takoyaki', 'but', 'they', 'were', 'out', 'and', 'will', 'be', 'for', 'a',
Tokens without Stop Words: ['came', 'takoyaki', 'since', 'one', 'ingredients', 'Japan', 'stock', 'Made',
POS Tags: [('came', 'VBD'), ('takoyaki', 'NN'), ('since', 'IN'), ('one', 'CD'), ('ingredients', 'NNS'),


Sentiment - Positive: 0.0, Negative: 0.129, Neutral: 0.871, Compound: -0.6798

Restaurant: dokodemo-new-york
Review Text: Came here on a Sunday for lunch, it was very empty and quiet.
First thing, very limited menu option, there's no appetizers. There are also no water cup...


Tokens: ['Came', 'here', 'on', 'a', 'Sunday', 'for', 'lunch', 'it', 'was', 'very', 'empty', 'and', 'quie
Tokens without Stop Words: ['Came', 'Sunday', 'lunch', 'empty', 'quiet', 'First', 'thing', 'limited', 'm
POS Tags: [('Came', 'NN'), ('Sunday', 'NNP'), ('lunch', 'NN'), ('empty', 'JJ'), ('quiet', 'JJ'), ('First


Sentiment - Positive: 0.0, Negative: 0.266, Neutral: 0.734, Compound: -0.7708

Restaurant: dokodemo-new-york
Review Text: I came here for the takoyaki and okonomiyaki only to find out that they stopped serving the


Tokens: ['I', 'came', 'here', 'for', 'the', 'takoyaki', 'and', 'okonomiyaki', 'only', 'to', 'find', 'out
Tokens without Stop Words: ['came', 'takoyaki', 'okonomiyaki', 'find', 'stopped', 'serving', '3', 'month
POS Tags: [('came', 'VBD'), ('takoyaki', 'JJ'), ('okonomiyaki', 'JJ'), ('find', 'NN'), ('stopped', 'VBD'


Sentiment - Positive: 0.0, Negative: 0.064, Neutral: 0.936, Compound: -0.2263
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    b. kinya-ramen-sushi-bar-west-orange

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Enter the business alias: kinya-ramen-sushi-bar-west-orange
Restaurant: kinya-ramen-sushi-bar-west-orange
Review Text: The food is great! The service as well! Our server Tash was really helpful and friendly!


Tokens: ['The', 'food', 'is', 'great', 'The', 'service', 'as', 'well', 'Our', 'server', 'Tash', 'was'
Tokens without Stop Words: ['food', 'great', 'service', 'well', 'server', 'Tash', 'really', 'helpful'
POS Tags: [('food', 'NN'), ('great', 'JJ'), ('service', 'NN'), ('well', 'RB'), ('server', 'RB'), ('Ta


Sentiment - Positive: 0.532, Negative: 0.0, Neutral: 0.468, Compound: 0.9278

Restaurant: kinya-ramen-sushi-bar-west-orange
Review Text: great food and great service!! Celine was my server and so sweet. Javier is the manager


Tokens: ['great', 'food', 'and', 'great', 'service', 'Celine', 'was', 'my', 'server', 'and', 'so', 's
Tokens without Stop Words: ['great', 'food', 'great', 'service', 'Celine', 'server', 'sweet', 'Javier
POS Tags: [('great', 'JJ'), ('food', 'NN'), ('great', 'JJ'), ('service', 'NN'), ('Celine', 'NNP'), ('


Sentiment - Positive: 0.568, Negative: 0.0, Neutral: 0.432, Compound: 0.9767

Restaurant: kinya-ramen-sushi-bar-west-orange
Review Text: Great place for ramen and sushi, enjoyed every bit of it! Celine was our waitress and sh


Tokens: ['Great', 'place', 'for', 'ramen', 'and', 'sushi', 'enjoyed', 'every', 'bit', 'of', 'it', 'Cel
Tokens without Stop Words: ['Great', 'place', 'ramen', 'sushi', 'enjoyed', 'every', 'bit', 'Celine',
POS Tags: [('Great', 'JJ'), ('place', 'NN'), ('ramen', 'NNS'), ('sushi', 'VBP'), ('enjoyed', 'VBN'),


Sentiment - Positive: 0.381, Negative: 0.0, Neutral: 0.619, Compound: 0.9369
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c. fuyu-ramen-sunnyside-2

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Enter the business alias: fuyu-ramen-sunnyside-2
Restaurant: fuyu-ramen-sunnyside-2
Review Text: There is a lot to like about Fuyu Ramen. Don't expect trendy lounge music, hipster vibes or anything like that. What you'll find


Tokens: ['There', 'is', 'a', 'lot', 'to', 'like', 'about', 'Fuyu', 'Ramen', 'Do', "n't", 'expect', 'trendy', 'lounge', 'music', 'hipster', 'v
Tokens without Stop Words: ['lot', 'like', 'Fuyu', 'Ramen', "n't", 'expect', 'trendy', 'lounge', 'music', 'hipster', 'vibes', 'anything', 'li
POS Tags: [('lot', 'NN'), ('like', 'IN'), ('Fuyu', 'NNP'), ('Ramen', 'NNP'), ("n't", 'RB'), ('expect', 'VB'), ('trendy', 'JJ'), ('lounge', 'N
')]

Sentiment - Positive: 0.24, Negative: 0.0, Neutral: 0.76, Compound: 0.7845

Restaurant: fuyu-ramen-sunnyside-2
Review Text: Revisited again -

Food- 5/5 still unbelievable. I love the fried chicken and for the price, I'm super satisfied. I got dipping noodles this time as I'm not...


Tokens: ['Revisited', 'again', 'Food-', '5/5', 'still', 'unbelievable', 'I', 'love', 'the', 'fried', 'chicken', 'and', 'for', 'the', 'price',
Tokens without Stop Words: ['Revisited', 'Food-', '5/5', 'still', 'unbelievable', 'love', 'fried', 'chicken', 'price', "'m", 'super', 'satisf
POS Tags: [('Revisited', 'VBN'), ('Food-', 'CD'), ('5/5', 'CD'), ('still', 'RB'), ('unbelievable', 'JJ'), ('love', 'NN'), ('fried', 'VBD'), (
VBP'), ('...', ':')]

Sentiment - Positive: 0.346, Negative: 0.0, Neutral: 0.654, Compound: 0.9136

Restaurant: fuyu-ramen-sunnyside-2
Review Text: There simply is no better ramen place, the spicy pork miso is unreal.

Service wise they are very friendly and attentive!

I also love the vibe, it's not...


Tokens: ['There', 'simply', 'is', 'no', 'better', 'ramen', 'place', 'the', 'spicy', 'pork', 'miso', 'is', 'unreal', 'Service', 'wise', 'they'
Tokens without Stop Words: ['simply', 'better', 'ramen', 'place', 'spicy', 'pork', 'miso', 'unreal', 'Service', 'wise', 'friendly', 'attentiv
POS Tags: [('simply', 'RB'), ('better', 'JJR'), ('ramen', 'NNS'), ('place', 'NN'), ('spicy', 'NN'), ('pork', 'NN'), ('miso', 'NN'), ('unreal'


Sentiment - Positive: 0.296, Negative: 0.064, Neutral: 0.64, Compound: 0.8651
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d. jeju-noodle-bar-new-york

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Enter the business alias: jeju-noodle-bar-new-york
Restaurant: jeju-noodle-bar-new-york
Review Text: GET THE TORO SSAM BAP! It's been a week since my visit to JeJu, and I can't stop thinking about it.


Tokens: ['GET', 'THE', 'TORO', 'SSAM', 'BAP', 'It', "'s", 'been', 'a', 'week', 'since', 'my', 'visit', 'to', 'JeJ
Tokens without Stop Words: ['GET', 'TORO', 'SSAM', 'BAP', "'s", 'week', 'since', 'visit', 'JeJu', 'ca', "n't", 's
POS Tags: [('GET', 'NNP'), ('TORO', 'NNP'), ('SSAM', 'NNP'), ('BAP', 'NNP'), ("'s", 'POS'), ('week', 'NN'), ('sin
, ('.....', 'NN')]


Sentiment - Positive: 0.175, Negative: 0.0, Neutral: 0.825, Compound: 0.7491


Restaurant: jeju-noodle-bar-new-york
Review Text: a place worth trying for the toro ssam bap. every other dish is average.

the toro ssam bap was the highlight. u really only come here for that dish. its...


Tokens: ['a', 'place', 'worth', 'trying', 'for', 'the', 'toro', 'ssam', 'bap', 'every', 'other', 'dish', 'is', 'a
Tokens without Stop Words: ['place', 'worth', 'trying', 'toro', 'ssam', 'bap', 'every', 'dish', 'average', 'toro'
POS Tags: [('place', 'NN'), ('worth', 'IN'), ('trying', 'VBG'), ('toro', 'JJ'), ('ssam', 'NN'), ('bap', 'NN'), ('


Sentiment - Positive: 0.133, Negative: 0.0, Neutral: 0.867, Compound: 0.5106


Restaurant: jeju-noodle-bar-new-york
Review Text: My dining experience at Jeju Noodle Bar was excellent. The intimate atmosphere and Korean-inspired d


Tokens: ['My', 'dining', 'experience', 'at', 'Jeju', 'Noodle', 'Bar', 'was', 'excellent', 'The', 'intimate', 'atm
Tokens without Stop Words: ['dining', 'experience', 'Jeju', 'Noodle', 'Bar', 'excellent', 'intimate', 'atmosphere
POS Tags: [('dining', 'VBG'), ('experience', 'NN'), ('Jeju', 'NNP'), ('Noodle', 'NNP'), ('Bar', 'NNP'), ('excelle


Sentiment - Positive: 0.261, Negative: 0.0, Neutral: 0.739, Compound: 0.8126
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e. nippon-cha-bayside-2

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Enter the business alias: nippon-cha-bayside-2
Restaurant: nippon-cha-bayside-2
Review Text: I've been here one other time with a friend and both times have been a wonderful experience.

The first time, I got the curry katsu don and a yuzu lemonade....


Tokens: ['I', "'ve", 'been', 'here', 'one', 'other', 'time', 'with', 'a', 'friend', 'and', 'both', 'times', 'have
Tokens without Stop Words: ["'ve", 'one', 'time', 'friend', 'times', 'wonderful', 'experience', 'first', 'time',
POS Tags: [("'ve", 'VBP'), ('one', 'CD'), ('time', 'NN'), ('friend', 'NN'), ('times', 'NNS'), ('wonderful', 'JJ')


Sentiment - Positive: 0.198, Negative: 0.0, Neutral: 0.802, Compound: 0.7845


Restaurant: nippon-cha-bayside-2
Review Text: Delicious, fresh food with attentive service and a lovely atmosphere. Their matcha flavored desserts


Tokens: ['Delicious', 'fresh', 'food', 'with', 'attentive', 'service', 'and', 'a', 'lovely', 'atmosphere', 'Their
Tokens without Stop Words: ['Delicious', 'fresh', 'food', 'attentive', 'service', 'lovely', 'atmosphere', 'matcha
POS Tags: [('Delicious', 'NNP'), ('fresh', 'JJ'), ('food', 'NN'), ('attentive', 'JJ'), ('service', 'NN'), ('lovel
Sentiment - Positive: 0.458, Negative: 0.0, Neutral: 0.542, Compound: 0.9569
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This information here can tell us key points that make a ramen business and what they are doing right or wrong based upon the type of words or phrases a customer may use in a review. We can also analyze the sentiment score using the values provided and interpret them using compound score.

For further analysis we may make a table and determine a compound value > 0 to be positive and a value < 0 to be negative to confirm the positive and negative scores provided.

d. In the final portion of my insights, I filtered the most used words and counted their occurrences to further determine whether the review was generally positive or negative. (See pictured below)

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Review List 1: [('came', 'VBD'), ('takoyaki', 'NN'), ('since', 'IN'), ('one', 'CD'), ('ingredients', 'NNS'), ('Japan', 'NNP'),
J'), ('First', 'NNP'), ('thing', 'NN'), ('limited', 'VBD'), ('menu', 'NN'), ('option', 'NN'), ("'s", 'POS'), ('appetizers', 'NN
 ('3', 'CD'), ('months', 'NNS'), ('ago', 'RB'), ('visit', 'IN'), ('March', 'NNP'), ('2023', 'CD'), ('server', 'NN'), ('...', ':
Top words and their occurrences
One: 1 occurences
favorite: 1 occurences
restaurants: 1 occurences
Queens: 1 occurences
Food: 1 occurences

Review List 2: [('food', 'NN'), ('great', 'JJ'), ('service', 'NN'), ('well', 'RB'), ('server', 'RB'), ('Tash', 'NNP'), ('really
, 'NNP'), ('manager', 'NN'), ('great', 'JJ'), ('well', 'RB'), ('Highly', 'NNP'), ('recommend', 'VB'), ('Great', 'JJ'), ('place'
'), ('okay', 'JJ'), ('times', 'NNS'), ('10/10', 'CD'), ('...', ':')]
Top words and their occurrences
One: 1 occurences
favorite: 1 occurences
restaurants: 1 occurences
Queens: 1 occurences
Food: 1 occurences

Review List 3: [('lot', 'NN'), ('like', 'IN'), ('Fuyu', 'NNP'), ('Ramen', 'NNP'), ("n't", 'RB'), ('expect', 'VB'), ('trendy',
', ':'), ('Revisited', 'VBN'), ('Food-', 'CD'), ('5/5', 'CD'), ('still', 'RB'), ('unbelievable', 'JJ'), ('love', 'NN'), ('fried
P'), ('...', ':'), ('simply', 'RB'), ('better', 'JJR'), ('ramen', 'NNS'), ('place', 'NN'), ('spicy', 'NN'), ('pork', 'NN'), ('m
')]
Top words and their occurrences
One: 1 occurences
favorite: 1 occurences
restaurants: 1 occurences
Queens: 1 occurences
Food: 1 occurences

Review List 4: [('GET', 'NNP'), ('TORO', 'NNP'), ('SSAM', 'NNP'), ('BAP', 'NNP'), ("'s", 'POS'), ('week', 'NN'), ('since', 'IN'
NNP'), ('......', 'NN'), ('place', 'NN'), ('worth', 'IN'), ('trying', 'VBG'), ('toro', 'JJ'), ('ssam', 'NN'), ('bap', 'NN'), ('e
'...', ':'), ('dining', 'VBG'), ('experience', 'NN'), ('Jeju', 'NNP'), ('Noodle', 'NNP'), ('Bar', 'NNP'), ('excellent', 'JJ'),
Top words and their occurrences
One: 1 occurences
favorite: 1 occurences
restaurants: 1 occurences
Queens: 1 occurences
Food: 1 occurences

 'JJ'), ('food', 'NN'), ('attentive', 'JJ'), ('service', 'NN'), ('lovely', 'RB'), ('atmosphere', 'JJ'), ('matcha', 'NN'), ('fla
NP'), ('extremely', 'RB'), ('affordable', 'JJ'), ('always', 'RB'), ('super', 'VBP'), ('quick', 'JJ'), ('fresh', 'JJ'), ('upon',
Top words and their occurrences
One: 1 occurences
favorite: 1 occurences
restaurants: 1 occurences
Queens: 1 occurences
Food: 1 occurences
```

We can also discover more common words through this and gauge the general overall emotion a customer may feel regarding the restaurant.

Conclusion

In conducting this text analysis using sentiment analysis, frequency analysis, and most used words, we can uncover some very interesting prospects when it comes to ramen business in New York. Generally, people have reviewed ramen restaurants highly from the sample size I analyzed and when someone did review it negatively it seems that certain factors that would need to be analyzed come in to play here. Recommendations for prospecting or current ramen business are plentiful and come down to avoiding a few key points established through the analysis of the tokens. Variables such as limited menu options and missing ingredients should be avoided, if possible, for success and great service along with great food must be in order to maintain success where possible.

It is also important to note here that most used words here did not return the results I expected when it comes to number of occurrences so another analysis could prove to be more fruitful here.