



HotMess Brewery

Group 2

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HotMess Brewery

As a new brewery, we are truly excited to start making waves, by introducing a popular new brand of beer. But what exactly does that mean?

By researching reviews of over 1.5 Million users, we hope to narrow our field of focus, and deliver a quality beverage that will garner the largest market of beer drinkers in the US.

Questions we will be asking include:

1. What is the most popular type of beer among reviewers?
2. How does alcohol content contribute to the ratings received?
3. How does the overall review correlate to the individual reviews of appearance, aroma, palate, and taste?
4. Can the complexity of the product name affect the overall rating?
5. Does the public awareness of the brewery affect the overall score?

Using these questions as a guide, we are able to determine a suitable range of values our beer should adhere to, and hopefully create a popular and profitable product.

Questions & Data



Question 1

What is the most popular type of beer among reviewers?

Analysis

To decide on what type of beer our flagship product will be, we need to determine any preference between an Ale or a Lager.

Is there a specific type of beer that we should create as our first product?

Reviews are determined from the “Overall Score” received by a beer, and compared to the “Beer Type” it is listed as.



Question 2

How does alcohol content contribute to the ratings received?

Analysis

After deciding on the type of beer to create, we now want to determine the alcohol content of our flagship product.

How does the alcohol content factor into the “Overall Rating” given to a beverage?

We analysed the highest quality reviews, and compared these to the alcohol content by volume of each beverage.



Question 3

How does the overall review correlate to the individual reviews of appearance, aroma, palate, and taste?

Analysis

So far, our data has been based on the “Overall Review” given to each beer, but how do additional review categories affect the final score?

Does one category tend to influence the overall score more than others?

- Appearance
- Aroma
- Palate
- Taste



Question 4

Can the complexity of the product name affect the overall rating?

Analysis

Now that we have narrowed our scope in deciding what type of beverage to make, what will the name of our new creation be?

How can we leverage the data provided, to help determine the best name for marketing our product?

Analyzing the complexity of the product name (character/word count), then comparing the “Overall Review” given, should help guide our decision.



Question 5

Does the public awareness of the brewery affect the overall score?

Analysis

After making a decision on what our new product should be, are there any pitfalls we may be unable to avoid as a new brewery?

Will being a new brewery not only affect the quantity of reviews as expected, but will the quality of reviews also trend lower?

We will analyze both the quality and quantity of reviews given to individual breweries, to hopefully predict any data skew from real world implementation.



Question

Question 1

Question 2

Question 3

Question 4

Question 5

Goal

Summary

Initially taking a dataset of over 1.5 Million, our goal is to establish a range of values that will describe a low risk/high gain product to invest in.

This product should appeal to the larger demographic, and hopefully provide a solid base from which we can grow and expand from.



Data Cleanup & Exploration



Never Tell Me the Odds

Question 1: Beer Type (From 1.5 Million to 1 Million)

- We started by narrowing our “Beer Type” dataset, removing any outliers and those we could not classify.
- While a majority of reviewed beers are classified as either a Lager or an Ale, at least 10% of the dataset fell outside of these two categories. Though a small percentage, this may be a future area to explore.

Question 2: Alcohol Content (From 1 Million to 0.75 Million)

- After comparing the “Overall Rating” given to a beer against its “Alcohol by Content” rating, we removed those that were rated negatively (less than a rating of 3.0).
- We then narrowed our focus to the highest density of reviews for both the Lager and Ale beer types.



Never Tell Me the Odds

Question 3: “Overall Review” Analysis (From 0.75 Million to 0.5 Million)

- Our next step was to remove any outliers from our “Overall Review” ratings. This was done by calculating the Mean value of all additional ratings (Appearance, Aroma, Palate, Taste) and removing any that were rated negatively overall (less than a rating of 3.5).
- This will hopefully remove any beers which received a poor individual rating, yet a high overall rating.

Question 4: Product Name (From 0.5 Million to 0.25 Million)

- By analyzing the name of a brand and how it affected the “Overall Review” ratings, we were able to determine a “centerpoint” between product name and overall rating, based on plot density.
- Taking a $\pm 20\%$ radius of this centerpoint should provide a suitable name structure for our new product.



Never Tell Me the Odds

Question 5: Data Skew (From 0.25 Million to 0.05 Million)

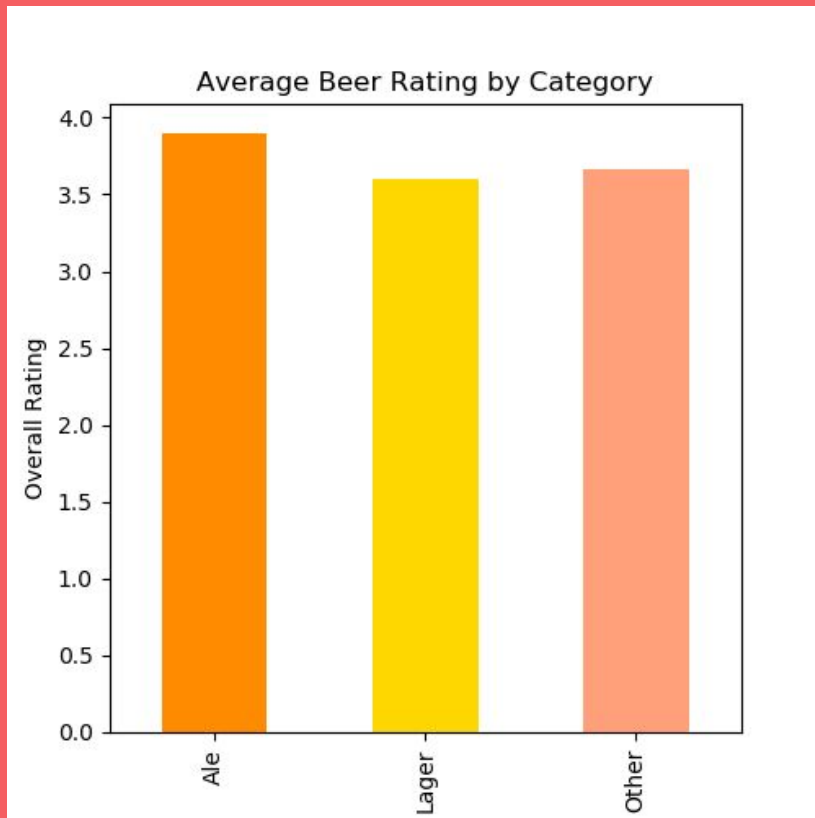
- Last of all, we needed to determine our realistic standing against other established breweries.
- We first assumed that the most well known breweries would receive the most amount of ratings, and the less established breweries would receive the least amount of ratings.
- We then created a chart displaying each individual brewery against the amount of ratings it received.
- Finally, we determine a median based on “Overall Rating” quality for the three most popular breweries. This should indicate the correlation between popularity and average score in real world data.



Data Analysis



Beer Type Comparison



Three Categories of Beer
Ale, Lager, and Other

Review Numbers

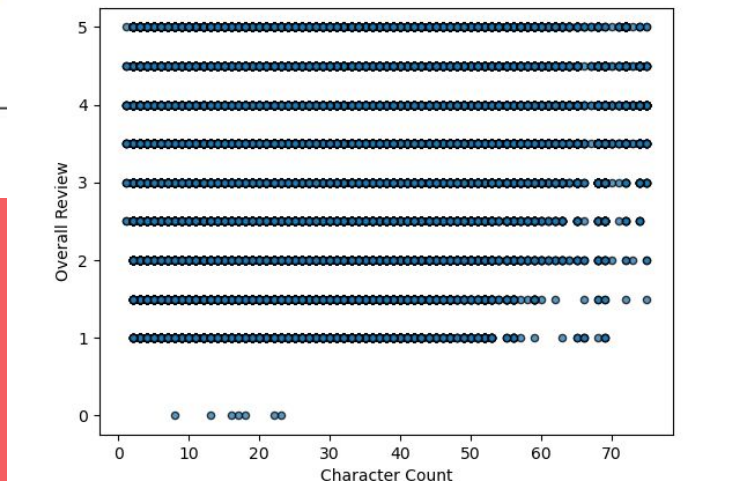
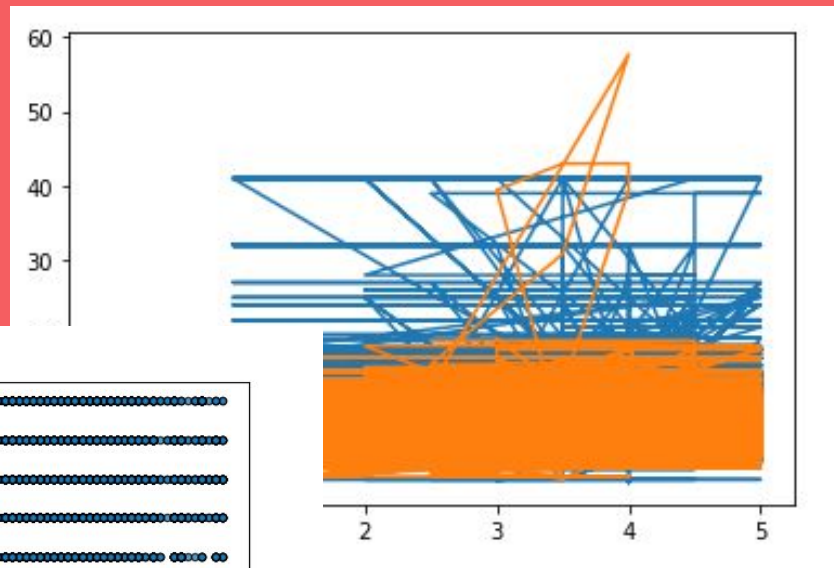
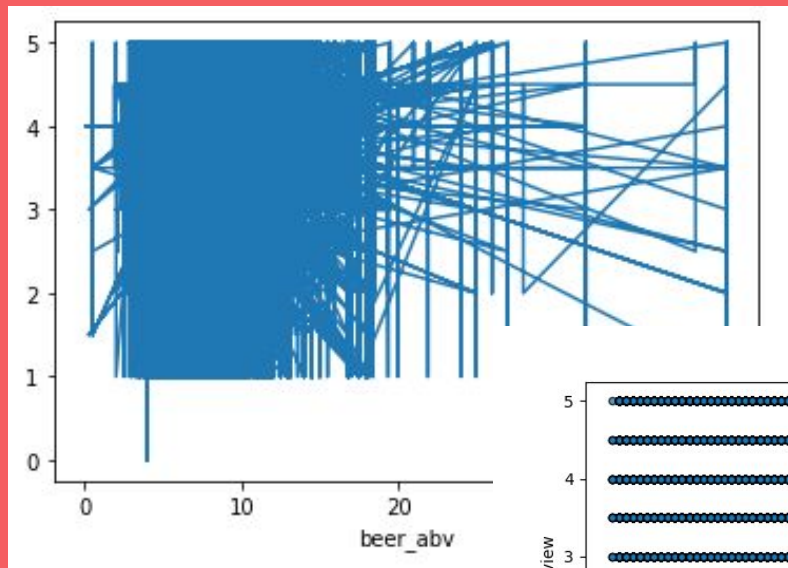
Ales	1, 123, 740
Lagers	310,340
Other	152,534

Overall Average Rating

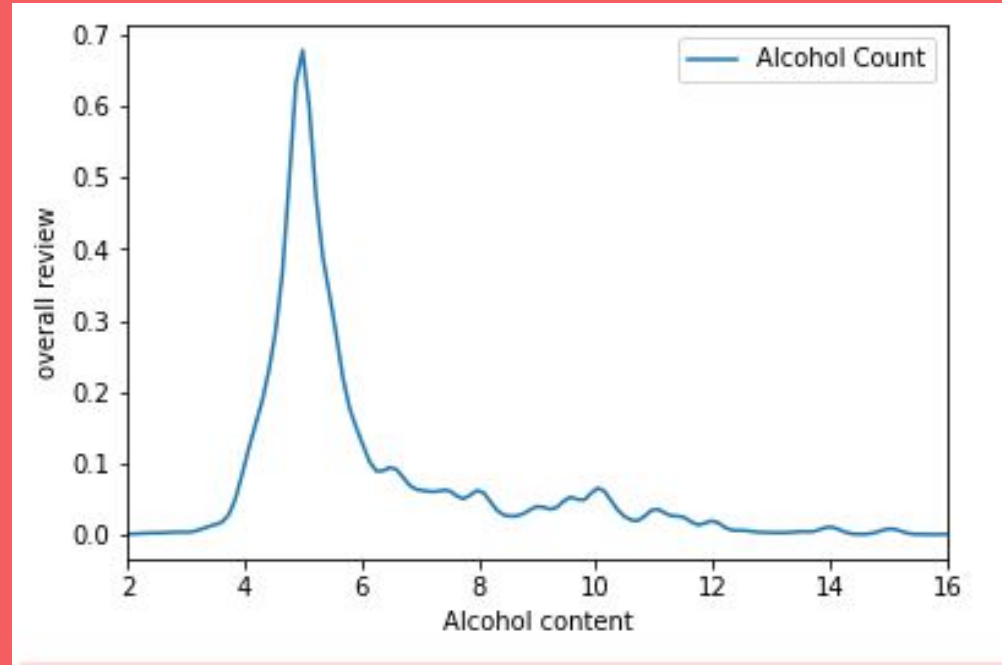
Ales	3.9
Lagers	3.6
Other	3.7



Error While Plotting Data



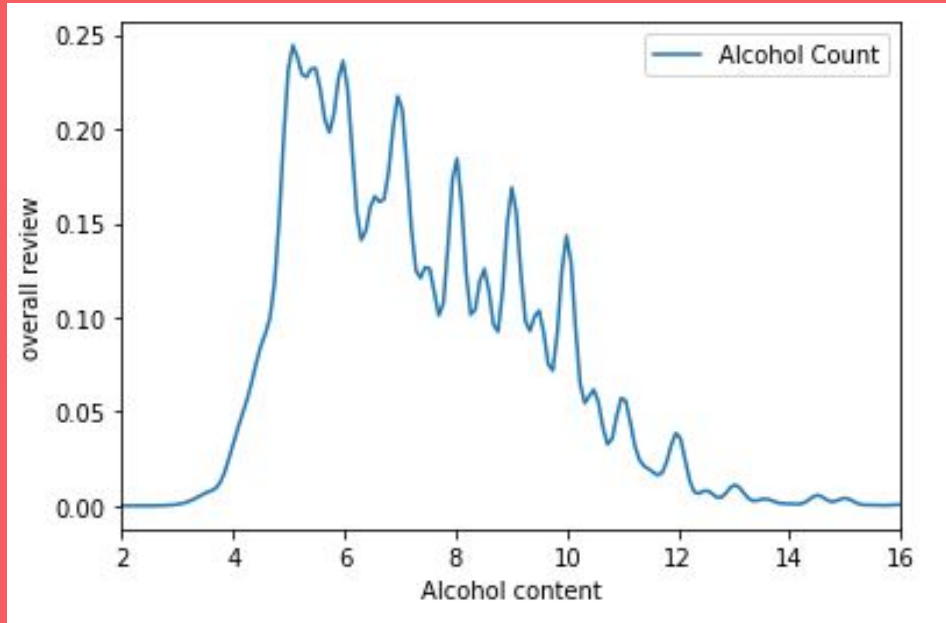
LAGER



Review
Comparison
between
overall
review score
and Alcohol
content of
Lager.



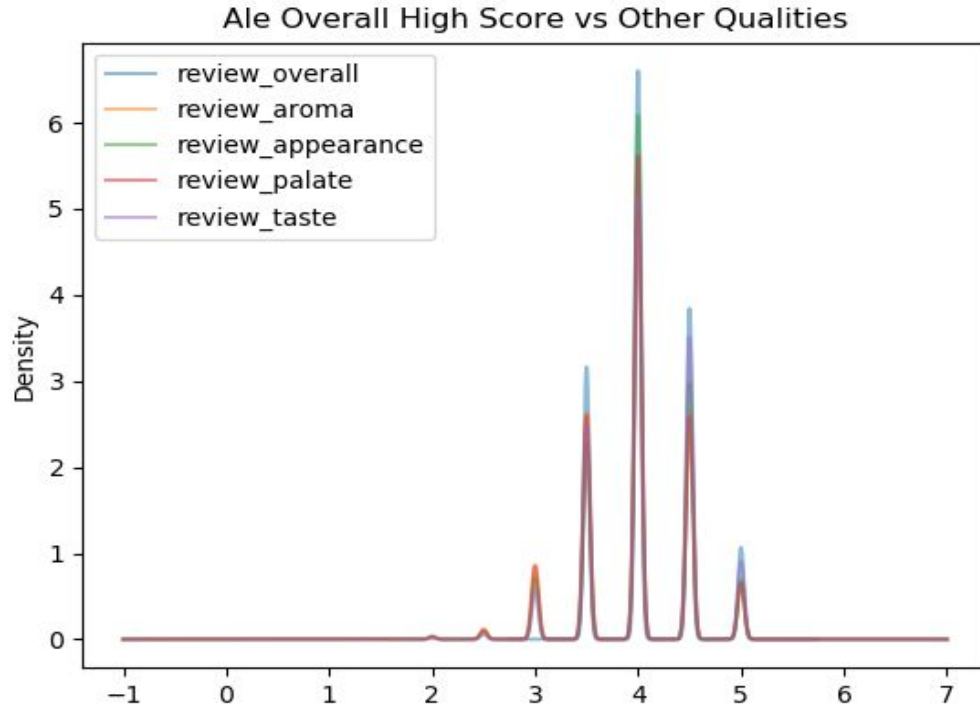
ALE



Review
Comparison
between
overall
review score
and Alcohol
content of
Ale.



Beer Qualities - Ale

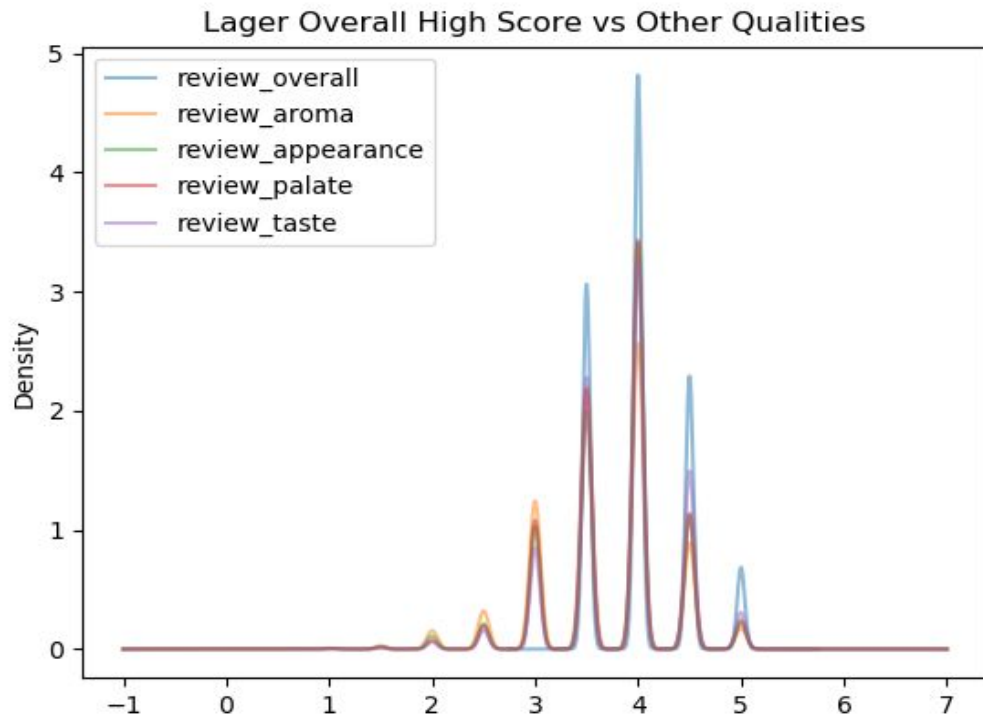


Score Density
Comparison
Overall
Aroma
Appearance
Palate
Taste

All about that taste



Beer Qualities - Lager

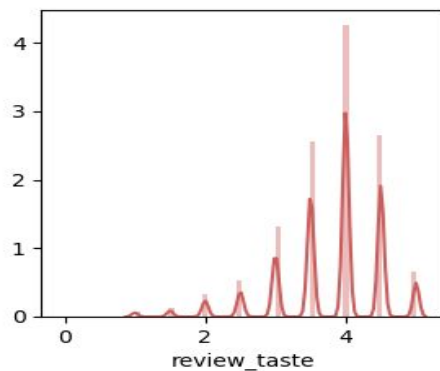
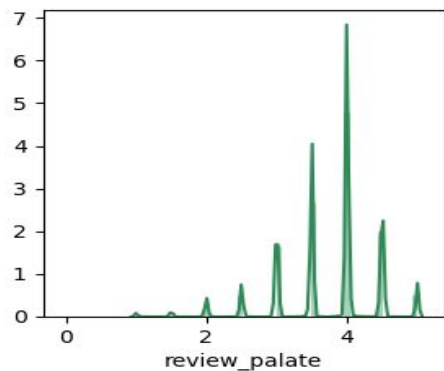
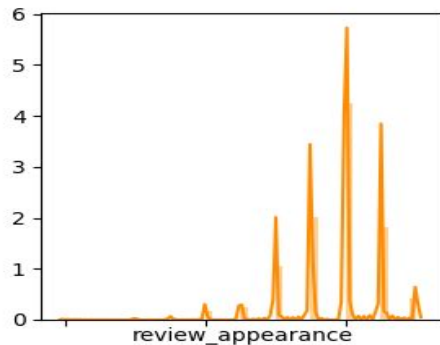
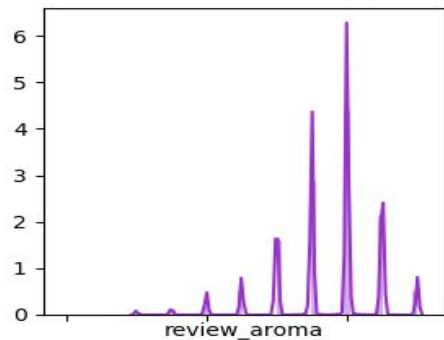


Score Density
Comparison

Overall
Aroma
Appearance
Palate
Taste



Beer Qualities - Lager



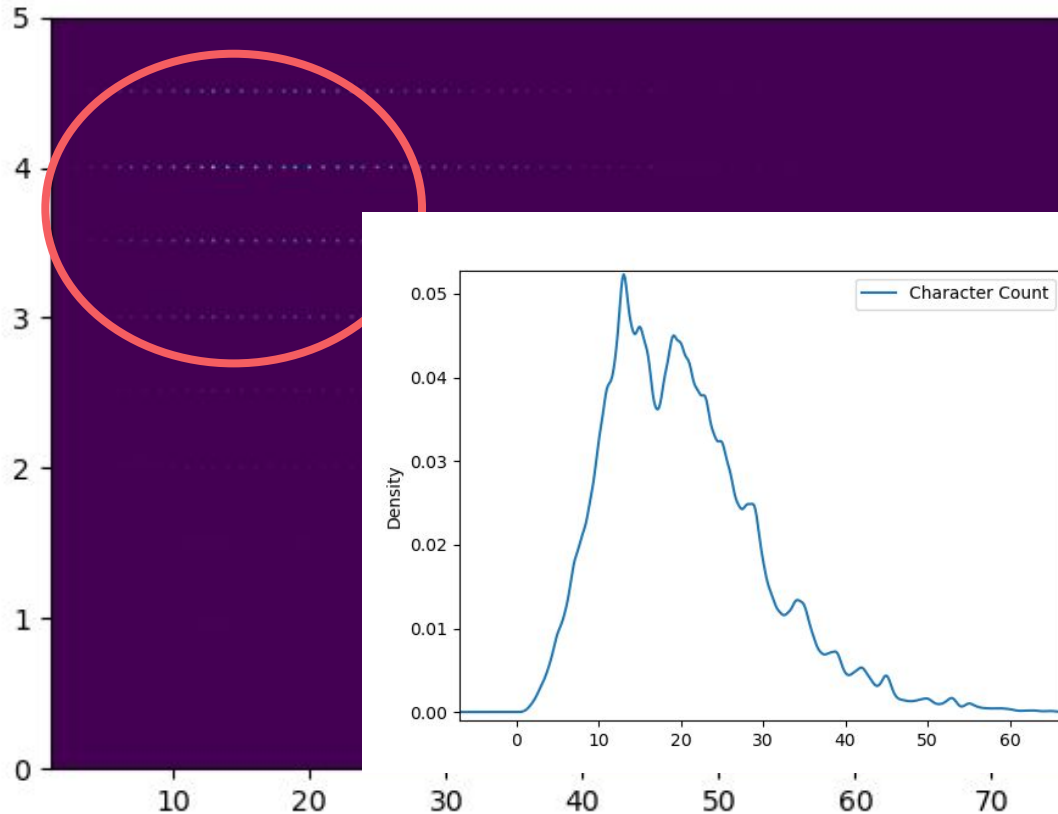
Upon further review...
Score Density
Comparison

Aroma
Appearance
Palate
Taste

Taste, not so much.



Character Count



Upon further review...
We use a density chart to
focus on our most
reviewed section.

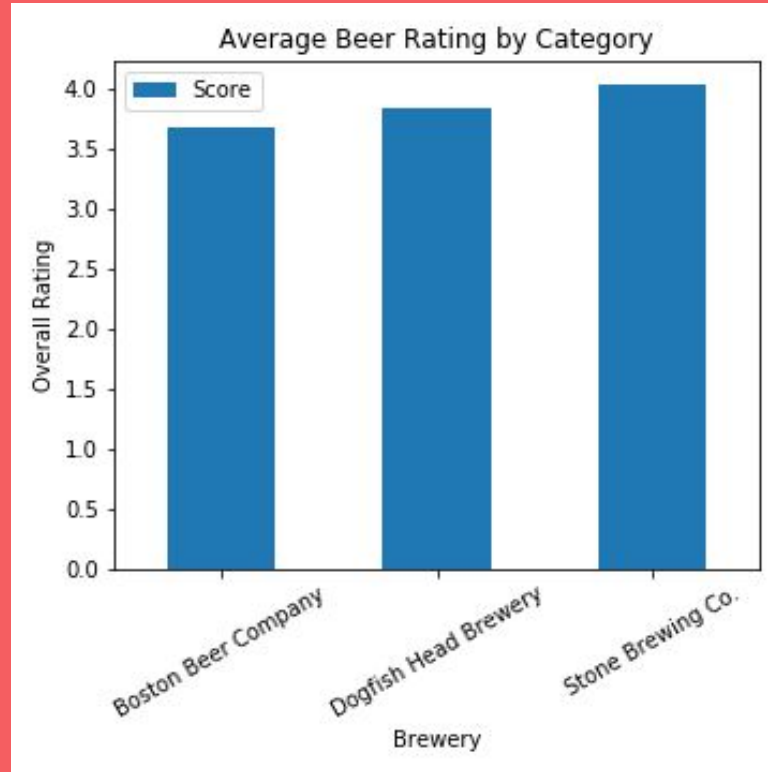
We have a dramatic loss
in review quality as the
number of characters
increase.

Assuming due to difficulty
of memory retention.

7 to 15 characters.



Top 3 Most Popular Breweries



Discussion



Question 1

What is the most popular type of beer among reviewers?

Question 2

How does alcohol content contribute to the ratings received?

Question 3

How does the overall review correlate to the individual reviews of appearance, aroma, palate, and taste?

Analysis

Ales win the popularity contest. Overall rating and quantity of styles.

Compared to Lager's people prefer Ale's with higher Alcohol content

For Ales, high overall scores are tied to appearance and taste. Lagers seemed to be tied to the aroma, then palate and appearance.



Question 4

Can the complexity of the product name affect the overall rating?

Question 5

Does the public awareness of the brewery affect the overall score?

Our Goal

- Ale
- ~5% Alcohol by Volume
- Looks Good & Tastes Good
- Easy name to remember: “FraggleRock”
- Don’t expect to use “New Business” as an excuse for poor sales.

Analysis

Based on our analysis of product naming structure, a beer having range of 7 to 15 characters, received better reviews on average.

Most Popular Breweries:

1. Boston Beer Company (Samuel Adams)
2. Dogfish Head Brewery
3. Stone Brewing Co.

Top Scoring Breweries:

1. Stone Brewing Co.
2. Dogfish Head Brewery
3. Boston Beer Company (Samuel Adams)



Post Mortem



Difficulties

The Data Set. Not much resolution when it came to the scores.

Finding the right plot.

Amount of data

Additional Questions

Ales win the popularity contest. Overall rating and quantity of styles.

What were the beer pricing and its effect on the score?

What were the demographics of the reviewers?



Q&A



BEER TIME!

