

*Exploring the Relationship between Beer Styles, Flavor Profiles, Brewery, and Consumer Reviews***Break down of the goal, and visual objectives**

This project aims to create a user-friendly structure that enables users to explore various aromatic and tasting profiles of different beer styles, as well as understand what makes a great beer within each style. Once the user has identified their preferred aromatic profile, our system will use regression to predict the quality of the beer that can be created to match their preference, and also suggest similar beer styles based on the aroma profile. Additionally, users will have access to information about where in the world the preferred beer style is commonly produced, as well as the best times of year to enjoy it.

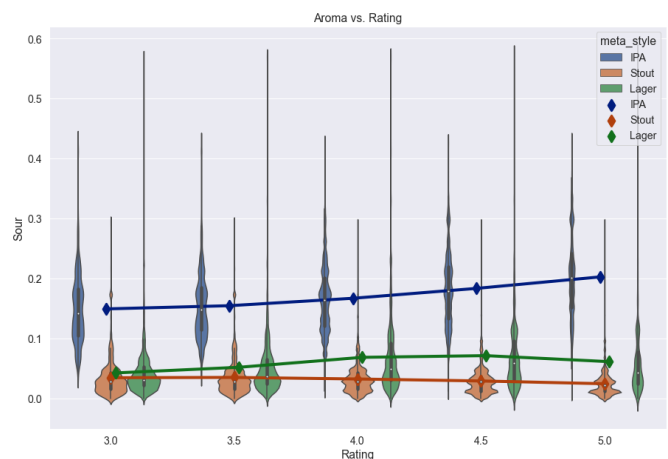
Overall, our goal is to provide a comprehensive beer discovery experience that helps users better understand and appreciate the nuances of different beer styles while also empowering them to make informed decisions about their beer preferences.

1. Discovering the World of Beer: A Comprehensive Guide to Aromatic Profiles, Quality, and Styles• **Violin Plot**

- Goal : The goal of this visualization is to plot the aroma distribution of a beer type, for beers with the same rating. This shows us the aroma trend in the best and worst rated beers, seeing if this aroma is a wanted trait .

- Structure :

- x\_axis : [Categorical] Closest average rating of the beer. Meaningful increment (0.25 or 0.5)
- y\_axis : [Linear] Aroma score



- Add-on idea : We could add multiple beer styles and have multiple violin charts (see Figure above) for different beer types. We could therefore see more easily the difference in aroma preferences.
- How : We can do the violin charts using the d3 histogram function. This will use part of what we have seen in lab6 histograms.

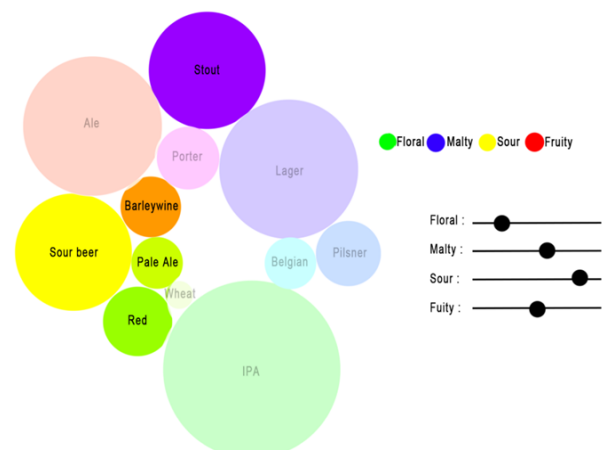
2. Brewing Better Beer: Using Regression to Predict Quality

Here we would explain the regression we are using on the data and present what parameters have a higher impact on the quality of the beer. We will also present the dataset we are working with.

- How : The regression will be done in python. We will use sliders of flavors to show how many stars a beer would get.

3. Aroma to Glass: Predicting Quality and Suggesting Similar Styles in the World of Beer• **Bubble chart**

- Goal : The goal of this visualization is to see which beer styles are similar aromatically. To see what beer styles are more famous. But also get an idea of the key aromatic notes of each style.

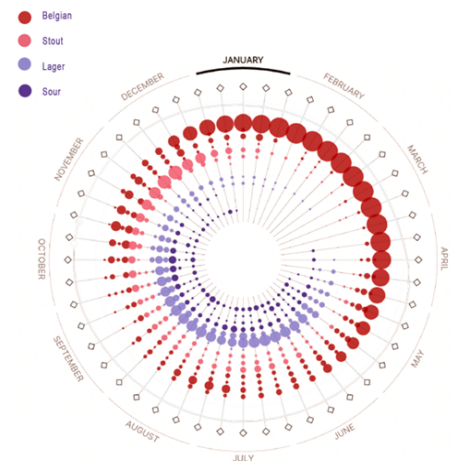


- **Structure :**
  - o Size of the Bubbles: Number of beers in the dataset
  - o Colour hue : Main aromatic notes
  - o Closeness: Aromatic similarity between bubbles
- **Add-on ideas :** We could add sliders with each aroma. The chart would then lower the opacity of the styles that don't correspond to our aroma profile. This could allow us to see which styles correspond best to our taste.
- **How :** Use d3 circles and sliders. We will use the lectures about color perception

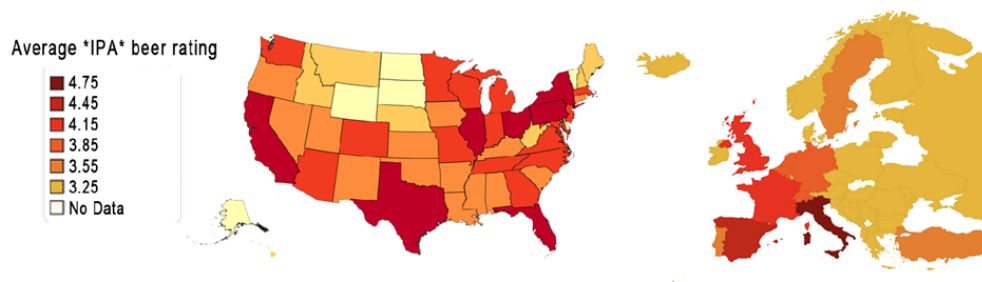
#### 4. From Hops to Glass: Exploring Regional and Seasonal Variations of Beer Styles

##### • Circular bubble chart

- **Goal :** The goal of this visualization is to see, for different beer styles, the season consumption. We can therefore see if some beer styles are preferred in specific times of the year, and subsequently see if people prefer certain aromas depending on the season.
- **Structure :**
  - o Size of the Bubbles: Number of reviews that week
- **Add-on ideas :** We could also compute the average rating each week to see if the consumption trends are equal to rating bias.
- **How :** We will get the circular part of the chart by using d3.arc which will allow us to place our points using polar coordinates. We will draw the bubbles using circles and scale their radius.



##### • Regional Heat Map (USA & Europe)



- **Goal :** The goal of this visualization is to see which Regions produce the best beer for a certain type.
- **Structure :** Colour gradient : average score per region
- **Add-on ideas :** We could add an option to see the difference in aroma production instead of style production. Multiple aromas could be seen by using a primary color mix
- **How :** We will use d3 geoPath and use the lecture about maps

## Initial Website

The first draft of our website can be found in the following link, the code can be found on github :  
<https://com-480-data-visualization.github.io/project-2023-viz-ionaries/>