



Beers & Breweries

AN ANALYSIS OF US CRAFT BEER AND US BREWERY OFFERINGS:
GEOGRAPHY, ALCOHOL CONTENT, AND BITTERNESS

<https://github.com/fikramulla/6306-TeamStars-B-B.git>

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Introduction

Provided raw market data,
we will provide an analysis of:

Breweries

- ❑ Geography

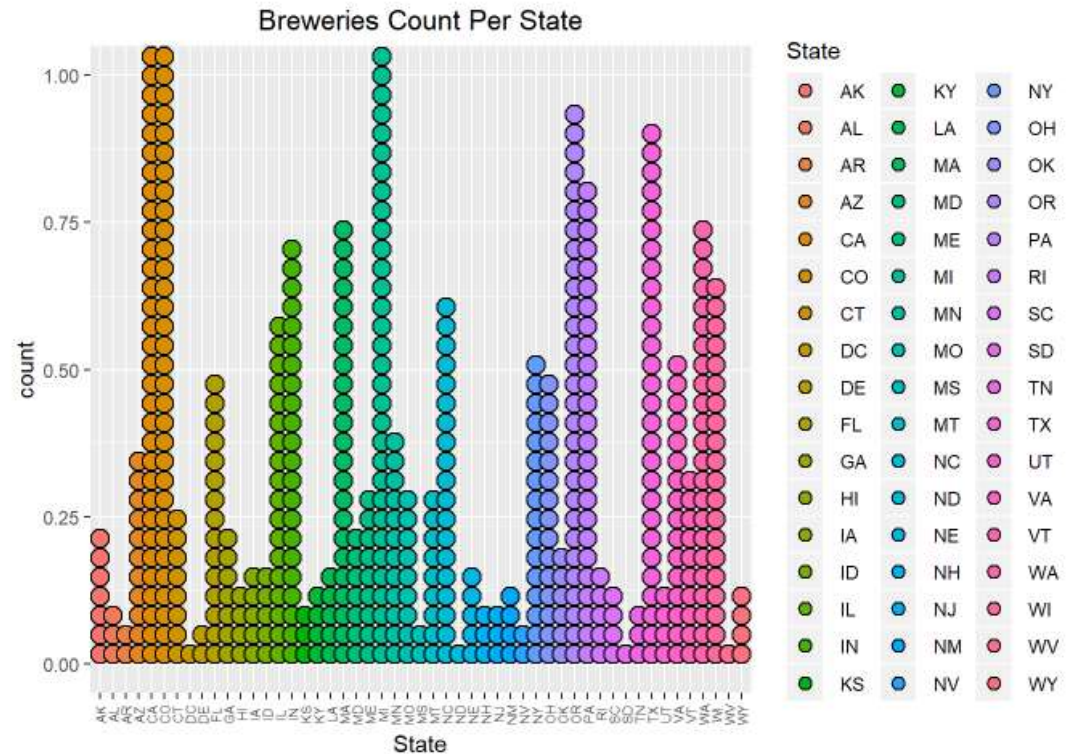
Craft beers

- ❑ Types
- ❑ Alcohol Content (ABV)
- ❑ Bitterness (IBU)

- ▶ Number of breweries per state
- ▶ Median ABV/IBU per state
- ▶ State with highest ABV beer offering
- ▶ State with highest IBU beer offering
- ▶ Summary statistics for ABV
- ▶ Correlation in ABV & IBU

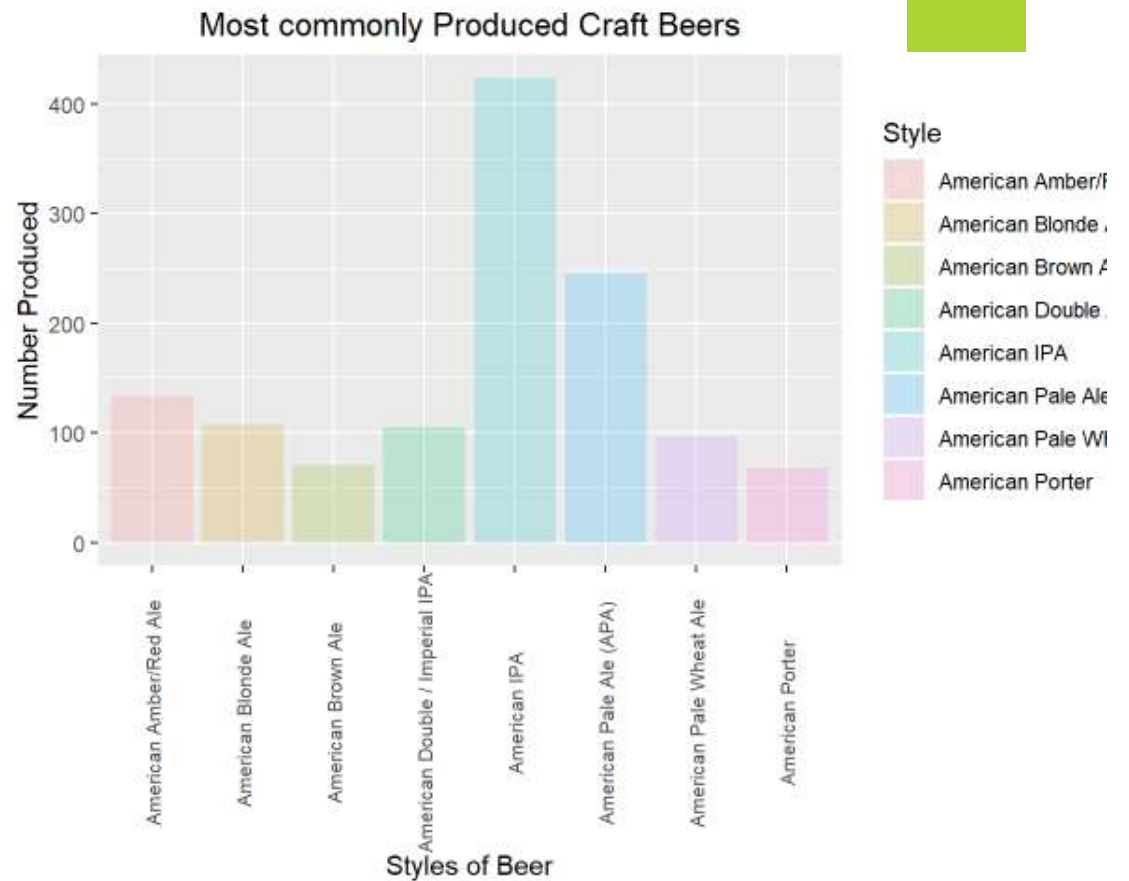
Breweries: Top 10 States

- ▶ Colorado (47)
- ▶ California (39)
- ▶ Michigan (32)
- ▶ Oregon (29)
- ▶ Texas (28)
- ▶ Pennsylvania (25)
- ▶ Massachusetts (23)
- ▶ Washington (23)
- ▶ Indiana (22)
- ▶ Wisconsin (22)



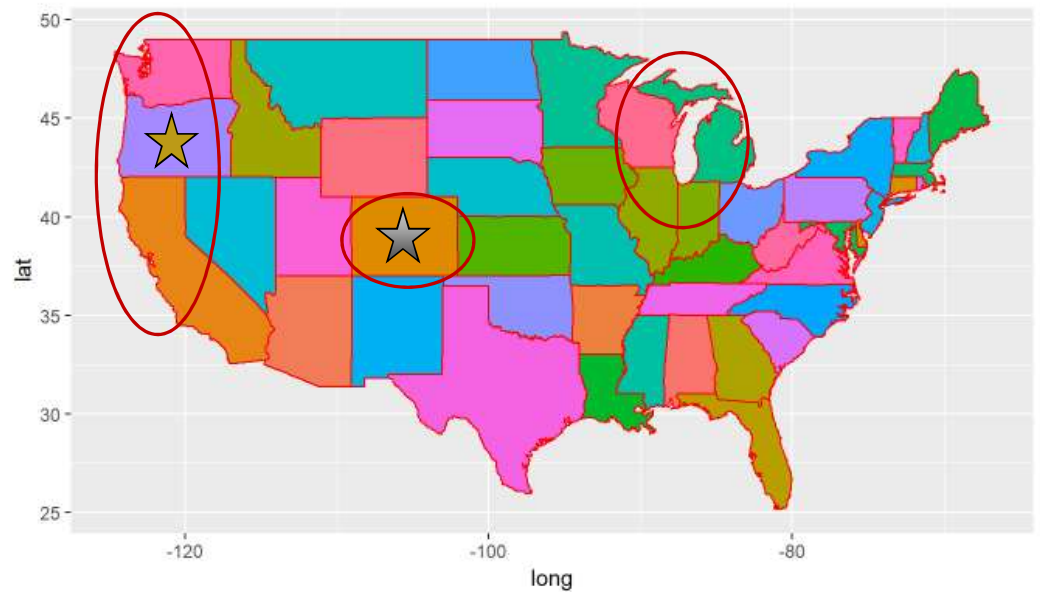
Types of Beers

- ▶ Most common beers:
 - ▶ American IPAs
 - ▶ American APAs
- ▶ ABV Stats:
 - ▶ Mean – 0.060
 - ▶ Median – 0.056
 - ▶ σ – 0.014
- ▶ IBU Stats:
 - ▶ Mean – 55
 - ▶ Median – 55
 - ▶ σ – 26



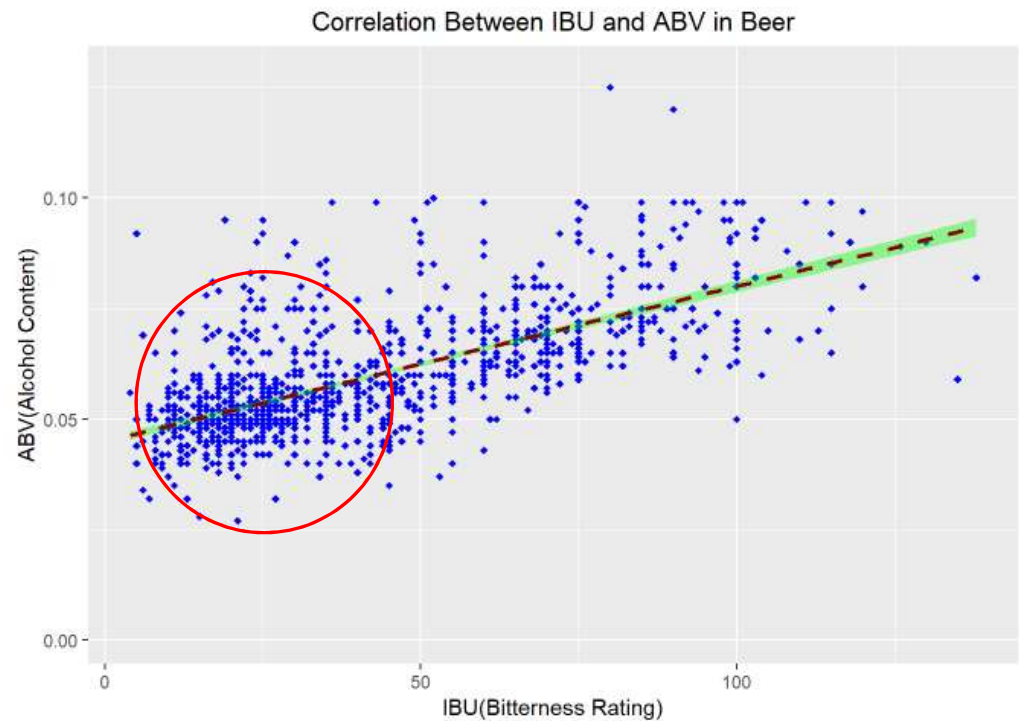
State ABV/IBU Ratings

- ▶ Highest ABV Beer – **Colorado**
 - ▶ “Lee Hill Series V5” – 0.128
- ▶ Highest IBU Beer – **Oregon**
 - ▶ “Bitter IPA” - 138



Correlation Analysis

- ▶ ABV vs. IBU
 - ▶ Scatter Plot
- ▶ Local polynomial regression fitting
 - ▶ “line-of-best-fit” approach
- ▶ There appears to be an overall linear correlation between ABV and IBU.
- ▶ Too much variance across the range to conclude a “direction correlation”
- ▶ Cluster near low end



Conclusions

Provided raw market data,
we provided an analysis of:

- ❑ Breweries per state
- ❑ Median ABV/IBU per state
- ❑ State with highest ABV beer - Colorado
- ❑ State with highest IBU beer - Oregon
- ❑ Summary statistics for ABV
 - ❑ Mean – 0.060
 - ❑ Median – 0.056
- ❑ Correlation in ABV & IBU
 - ❑ Linearly correlated
 - ❑ High variance

- ▶ The Pacific Northwest has a high concentration of breweries.
- ▶ The Upper Midwest has a high concentration of breweries.
- ▶ Colorado – “The State of Craft Beer”
 - ▶ <https://coloradobeer.org/why-colorado-is-a-breeding-ground-for-craft-beer/>
- ▶ Americans tend to prefer lower levels of bitterness and alcohol content.
- ▶ ABV and IBU are apparently linearly, but not directly, correlated.
- ▶ Americans love beer!