**Project 2 - “The Rise of Craft Breweries in the United States”**

Team Members:

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Project Objective

* Our team will review trends in US beer production over the last 10 years and rise of microbreweries or craft breweries

Basic Project Deliverables

* Analysis of US beer production trends for the last 10-years, looking at overall production, the number of breweries, and production by brewery size
* Review of microbreweries by state
* Interactive mapping function displaying location of each state’s microbreweries; initially, we will limit to North Carolina but may expand functionality to other states

Expanded Project Deliverable

* Add microbrewery review information from Yelp or other data sources

Project Architectures

* Data gathering and storage:
  + Download national production data by year as separate CSV files
    - Clean and join key fields into single national database
  + Scrape state level data using Python and Beautiful Soup
    - Clean and join data into state level database
* Database:
  + Develop data tables for national and state level data using SQL or Mongo
  + Potentially rely on CSV files to read-in data for Plotly and Leaflet
* Website:
  + Deploy information to website using Python / Flask API
  + Data graphing and deployment using Javascript
  + Interactive mapping using JavaScript / D3 and GooglePlaces API or other source of geo-mapping information

Primary Datasets and Datasources:

* US Dept of the Treasury -- Alcohol and Tobacco Tax and Trade Bureau
  + For years 2008-2019, Annual production data and number of breweries by brewery size
  + <https://www.ttb.gov/beer/statistics>
* Brewers Association
  + For 2019, information on number of craft breweries, breweries per capita, and craft barrels produced
  + <https://www.brewersassociation.org/statistics-and-data/state-craft-beer-stats>
* Github: Openbrewrydb/data/us for brewery information by state
  + <https://github.com/openbrewerydb/openbrewerydb/tree/master/data/us>

Web Site Layout:

* Introduction – US Beer Consumption or Production Trends
  + Graphs of the following:
    - Total US Beer Production, last 10-years
      * Compilation of annual data from US Dept of Treasury
      * <https://www.ttb.gov/beer/statistics>
    - Historical Craft Brewery Production Category
      * Data from Brewers Association
      * <https://www.brewersassociation.org/statistics-and-data/national-beer-stats>
    - Number of Craft Breweries by Production Category
      * Same as above
* Current State Level Detail of Current Production
  + Number of breweries by state bar chart
  + Breweries per Capita by state bar chart
  + Total Barrels produced by state bar chart
  + All data scraped form Brewers Association
* State Level Directory
  + Mabox plot of breweries in the state
  + List of breweries in the state with selected information
    - Data from Openbrewerydb site on github
  + Initial focus on North Carolina, but time permitting may expand to national directory

Sample Directory Data Info:

* For NC, 316 locations; also includes address, website, lat / long info

