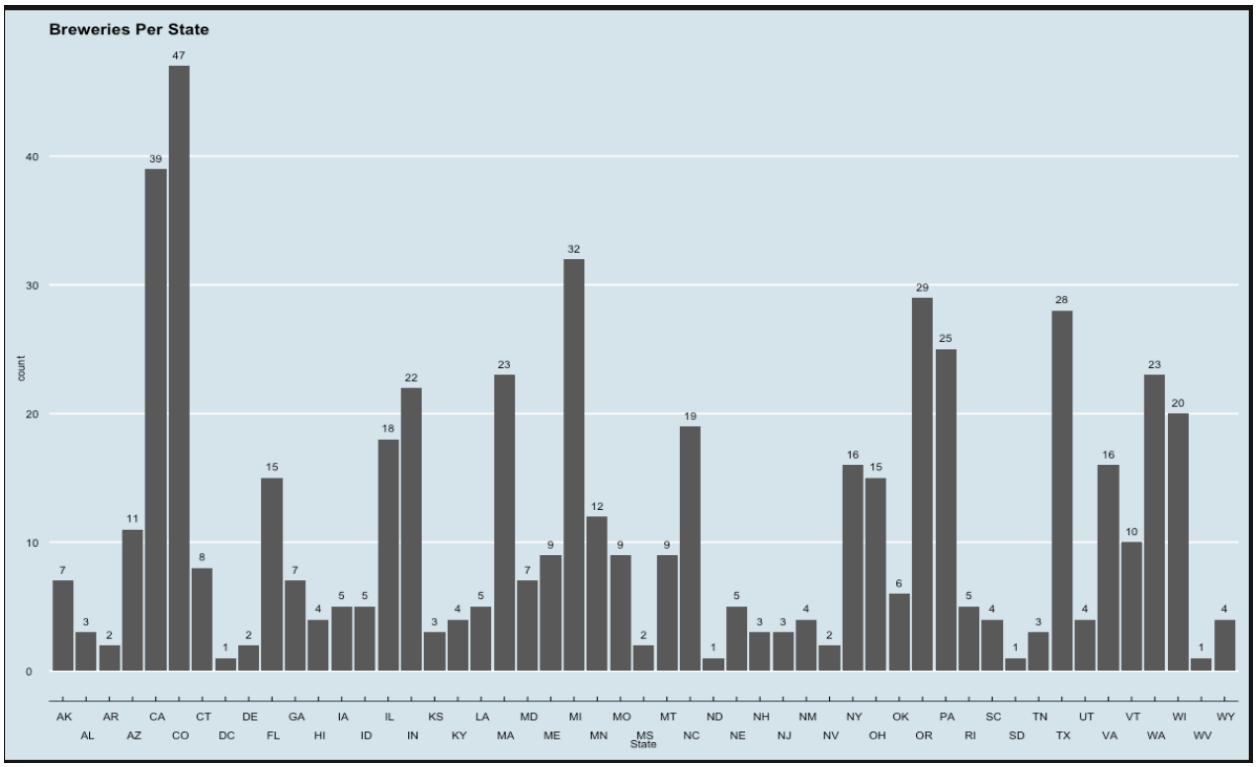
Beer Case Study Outputs

1.



2.

```
head(Brew,10)
tail(Brew, 10)
```

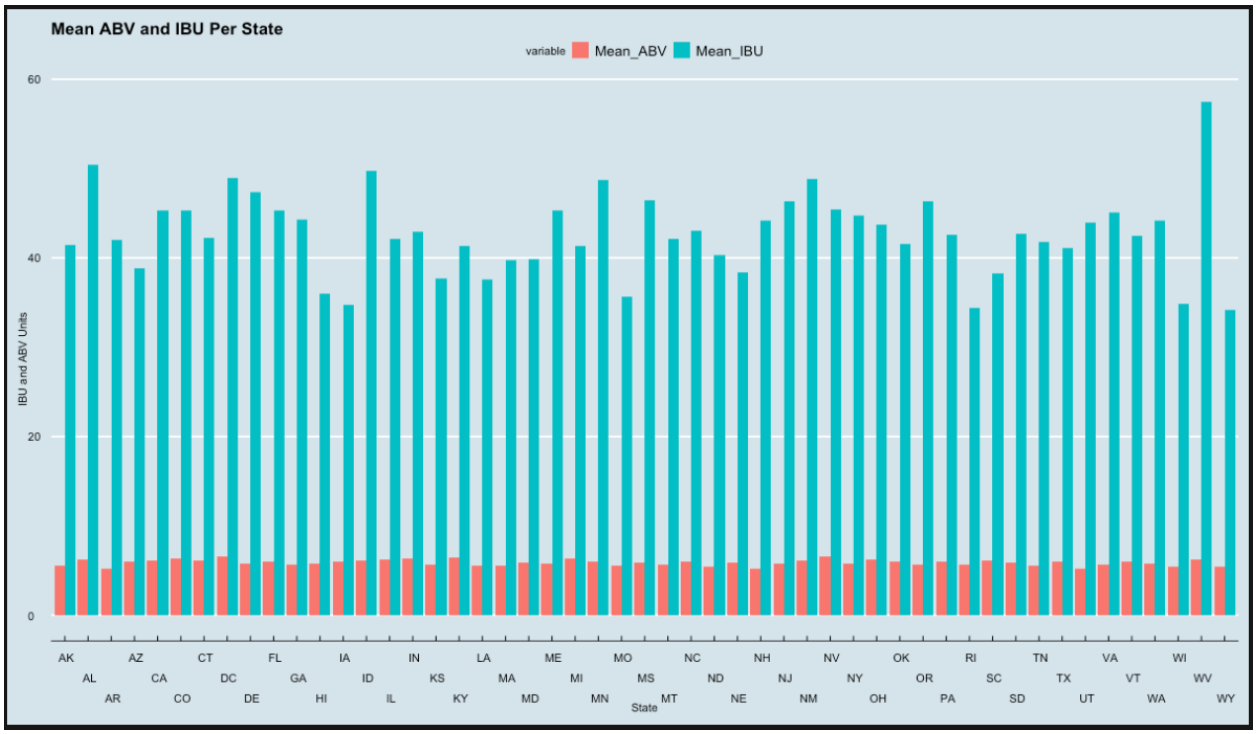
Description: df [10 × 10]

	Brew_ID <int>	Brewery <chr>	City <chr>	State <chr>	Beer <chr>	Beer_ID <int>	ABV <dbl>	IBU <dbl>	Style <chr>
2401	552	Silverton Brewery	Silverton	CO	Red Mountain Ale	161	6.0	42.71317	American Amber / Red Ale
2402	553	Mickey Finn's Brewery	Libertyville	IL	Mickey Finn's Amber Ale	174	5.6	42.71317	American Amber / Red Ale
2403	554	Covington Brewhouse	Covington	LA	Heiner Brau Kölsch	129	5.0	42.71317	Kölsch
2404	555	Dave's Brewfarm	Wilson	WI	BrewFarm Select Golden Lager	110	5.5	42.71317	American Pale Lager
2405	556	Ukiah Brewing Company	Ukiah	CA	Pilsner Ukiah	98	5.5	42.71317	German Pilsener
2406	557	Butternuts Beer and Ale	Garrattsville	NY	Porkslap Pale Ale	49	4.3	42.71317	American Pale Ale (APA)
2407	557	Butternuts Beer and Ale	Garrattsville	NY	Snapperhead IPA	51	6.8	42.71317	American IPA
2408	557	Butternuts Beer and Ale	Garrattsville	NY	Moo Thunder Stout	50	4.9	42.71317	Milk / Sweet Stout
2409	557	Butternuts Beer and Ale	Garrattsville	NY	Heinnieweisse Weissebier	52	4.9	42.71317	Hefeweizen
2410	558	Sleeping Lady Brewing Company	Anchorage	AK	Urban Wilderness Pale Ale	30	4.9	42.71317	English Pale Ale

1–10 of 10 rows | 1–10 of 10 columns

3. No outputs

4.



5.

```
State_Mean<-Brew %>%
  group_by(State) %>%
  summarise(Mean_IBU=mean(IBU),Mean_ABV=mean(ABV))
arrange(State_Mean, desc(Mean_ABV))#Nevada has the highest average ABV
arrange(State_Mean, desc(Mean_IBU))#West Virginia has highest average IBU
```

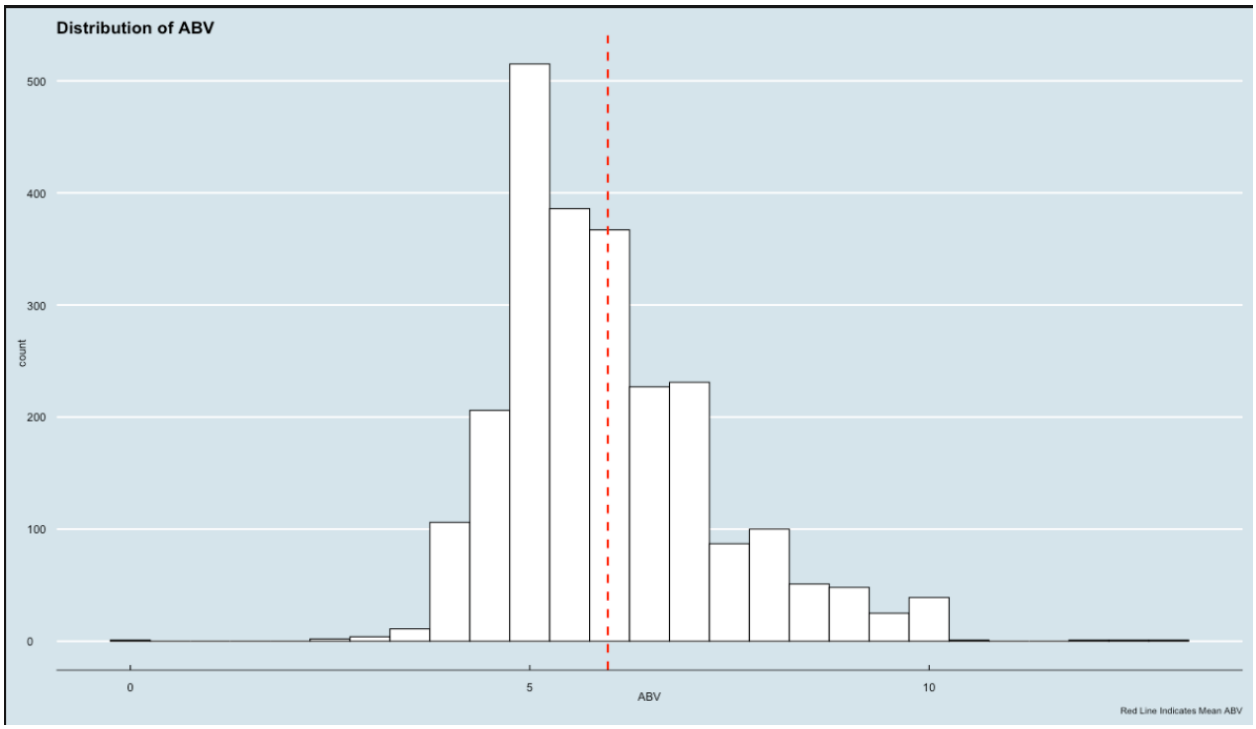
A tibble: 51 × 3

State <chr>	Mean_IBU <dbl>	Mean_ABV <dbl>
NV	45.46723	6.627273
DC	48.98158	6.562500
KY	41.38058	6.438095
IN	42.89376	6.334532
CO	45.31271	6.318113
MI	41.31131	6.314815
IL	42.17675	6.202198
AL	50.37132	6.200000
WV	57.50000	6.200000
OH	43.67600	6.195918

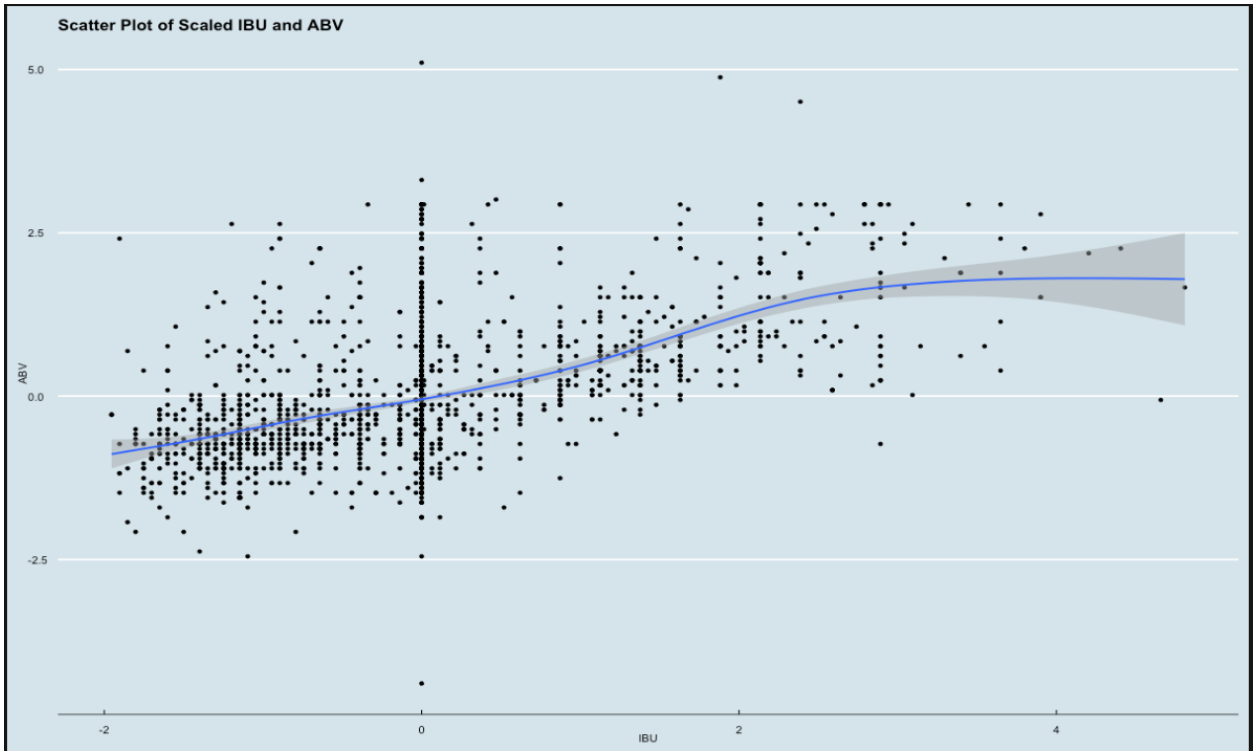
1–10 of 51 rows

Previous 1 2 3 4 5 6 Next

6.


Distribution of ABV
500
400
300
200
100
0
count
0
5
10
ABV
Red Line Indicates Mean ABV

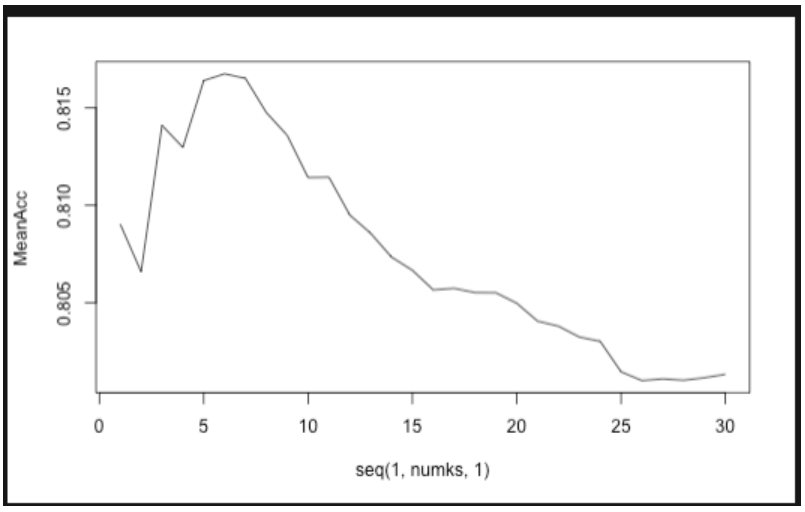
7.


Scatter Plot of Scaled IBU and ABV
5.0
2.5
0.0
-2.5
ABV
-2
0
2
4
IBU

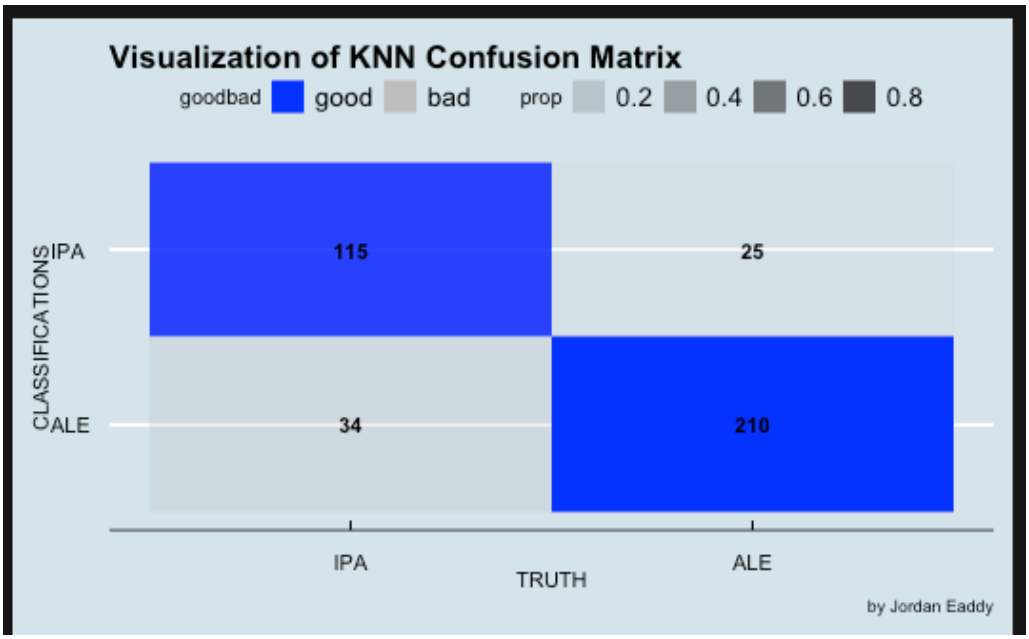
8.

Description: df [1,534 × 10]

Brew_ID <int>	Brewery <chr>	City <chr>	State <chr>	Beer <chr>	Beer_ID <int>	ABV <dbl>	IBU <dbl>	Style <chr>	Ounces <dbl>
1	NorthGate Brewing	Minneapolis	MN	Pumpion	2689	6.0	38.00000	ALE	16.0
1	NorthGate Brewing	Minneapolis	MN	Get Together	2692	4.5	50.00000	IPA	16.0
1	NorthGate Brewing	Minneapolis	MN	Wall's End	2690	4.8	19.00000	ALE	16.0
2	Against the Grain Brewery	Louisville	KY	A Beer	2683	4.2	42.00000	ALE	16.0
2	Against the Grain Brewery	Louisville	KY	Citra Ass Down	2686	8.0	68.00000	IPA	16.0
2	Against the Grain Brewery	Louisville	KY	Flesh Gourd'n	2681	6.6	21.00000	ALE	16.0
2	Against the Grain Brewery	Louisville	KY	Sho'nuff	2680	4.0	13.00000	ALE	16.0
2	Against the Grain Brewery	Louisville	KY	Pile of Face	2675	6.0	65.00000	IPA	16.0
2	Against the Grain Brewery	Louisville	KY	The Brown Note	2674	5.0	20.00000	ALE	16.0
2	Against the Grain Brewery	Louisville	KY	Rico Sauvin	2678	7.6	68.00000	IPA	16.0




```
Confusion Matrix and Statistics


classifications ALE IPA
           ALE 210  34
           IPA  25 115

               Accuracy : 0.8464
                 95% CI : (0.8063, 0.8809)
    No Information Rate : 0.612
    P-Value [Acc > NIR] : <2e-16

                  Kappa : 0.6729

 Mcnemar's Test P-Value : 0.2976

            Sensitivity : 0.8936
            Specificity : 0.7718
         Pos Pred Value : 0.8607
         Neg Pred Value : 0.8214
             Prevalence : 0.6120
         Detection Rate : 0.5469
   Detection Prevalence : 0.6354
      Balanced Accuracy : 0.8327

       'Positive' Class : ALE
```



9. **Was originally a plotly graph** Can be found in the HTML that worked before it crashed on me.

file:///Users/jordaneaddy/Desktop/Beer%20Case%20Study.nb.html