

SUMMARY OF CATEGORICAL STARBUCKS BEVERAGE DATA

Assembled using "print(df['Column_Name'].unique())"

Ninety-four (94) Unique Product Names:

- | | |
|---|---|
| 1. Brewed Coffee - Dark Roast | 51. Mint Majesty Brewed Tea |
| 2. Brewed Coffee Traveler - Dark Roast | 52. Oprah Chai Herbal Brewed Tea |
| 3. Brewed Coffee - Decaf Pike Place® Roast | 53. Oprah Cinnamon Chai Brewed Tea |
| 4. Brewed Coffee Traveler - Decaf Pike Place® Roast | 54. Oprah Cinnamon Chai Latte |
| 5. Brewed Coffee - Medium Roast | 55. Iced Oprah Cinnamon Chai Latte |
| 6. Brewed Coffee Traveler - Medium Roast | 56. Passion Tango Brewed Tea |
| 7. Brewed Coffee - True North Blend Blonde Roast | 57. Iced Passion Tango Tea |
| 8. Caffè Misto | 58. Iced Passion Tango Tea Lemonade |
| 9. Clover® Brewed Coffee - Dark Roast | 59. Peach Iced Green Tea |
| 10. Clover® Brewed Coffee - Light Roast | 60. Peach Iced Green Tea Lemonade |
| 11. Clover® Brewed Coffee - Medium Roast | 61. Peach Tranquility Brewed Tea' |
| 12. Iced Coffee | 62. Youthberry Brewed Tea |
| 13. Iced Coffee with Milk | 63. Cool Lime Starbucks Refreshers TM Beverage |
| 14. Cold Brewed Coffee | 64. Very Berry Hibiscus Starbucks Refreshers TM Beverage |
| 15. Vanilla Sweet Cream Cold Brew | 65. Chocolate Smoothie |
| 16. Caffè Americano | 66. Orange Mango Smoothie |
| 17. Iced Caffè Americano | 67. Strawberry Smoothie |
| 18. Caffè Latte | 68. Caffè Vanilla Frappuccino® Blended Beverage |
| 19. Iced Caffè Latte | 69. Caramel Frappuccino® Blended Beverage |
| 20. Caffè Mocha | 70. Coffee Frappuccino® Blended Beverage |
| 21. Iced Caffè Mocha | 71. Espresso Frappuccino® Blended Beverage |
| 22. Cappuccino | 72. Java Chip Frappuccino® Blended Beverage |
| 23. Caramel Macchiato | 73. Mocha Frappuccino® Blended Beverage |
| 24. Iced Caramel Macchiato | 74. Caffè Vanilla Frappuccino® Light Blended Beverage |
| 25. Cinnamon Dolce Latte | 75. Caramel Frappuccino® Light Blended Beverage |
| 26. Flat White | 76. Coffee Frappuccino® Light Blended Beverage |
| 27. Latte Macchiato | 77. Espresso Frappuccino® Light Blended Beverage |
| 28. Skinny Cinnamon Dolce Latte | 78. Java Chip Light Frappuccino® Blended Beverage |
| 29. Iced Skinny Cinnamon Dolce Latte | 79. Mocha Light Frappuccino® Blended Beverage |
| 30. Skinny Mocha | 80. Blended Strawberry Lemonade |
| 31. Iced Skinny Mocha | 81. Chai Crème Frappuccino® Blended Beverage |
| 32. Starbucks Double Shot on Ice | 82. Double Chocolate Chip Crème Frappuccino® Blended Beverage |
| 33. White Chocolate Mocha | 83. Green Tea Crème Frappuccino® Blended Beverage |
| 34. Iced White Chocolate Mocha | 84. Oprah Cinnamon Chai Crème Frappuccino® Blended Beverage |
| 35. Iced Black Tea | 85. Strawberries & Crème Frappuccino® Blended Beverage |
| 36. Iced Black Tea Lemonade | 86. Vanilla Bean Crème Frappuccino® Blended Crème |
| 37. Chai Tea Latte | 87. Caramel Apple Spice |
| 38. Iced Chai Tea Latte | 88. Hot Chocolate |
| 39. Earl Grey Brewed Tea | 89. Lemonade' 'Milk |
| 40. Emperor's Clouds and Mist Brewed Tea | 90. Skinny Hot Chocolate |
| 41. English Breakfast Black Brewed Tea | 91. Steamed Apple Juice |
| 42. English Breakfast Black Tea Latte | 92. Steamed Milk |
| 43. Green Tea Latte | 93. Vanilla Steamer |
| 44. Iced Green Tea Latte | 94. White Hot Chocolate |
| 45. Iced Green Tea | |
| 46. Iced Green Tea Lemonade | |
| 47. Jade Citrus Mint Brewed Tea | |
| 48. London Fog Tea Latte | |
| 49. Iced Mango Black Tea | |
| 50. Iced Mango Black Tea Lemonade | |

Six (6) Serving Sizes:

- | | |
|----------------------------------|-----------------------------------|
| 1. Kids (236 mL or 8 oz) | 5. Venti (591 or 20 oz) |
| 2. Short (236 mL or 8 oz) | 6. Traveler (709 or 24 oz) |
| 3. Tall (354 or 12 oz) | 7. Trente (887 or 30 oz) |
| 4. Grande (473 or 16 oz) | |

Seven (7) Milks

- | | |
|------------|------------|
| 1. No Milk | 4. Whole |
| 2. Nonfat | 5. Soy |
| 3. 2% | 6. Coconut |

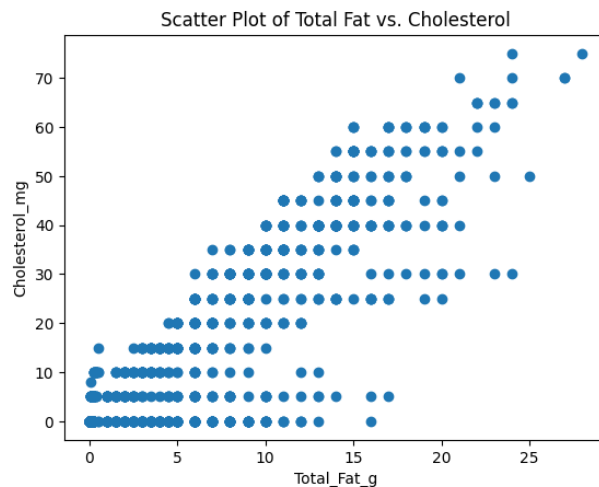
Two (2) Whips

- | |
|------------|
| 1. No Whip |
| 2. Whip |

CONTINUOUS VARIABLE OBSERVATIONS

	Serv. Size (ml)	Calories	Total Fat (g)	Sat. Fat (g)	Trans Fat (g)	Cholesterol (mg)	Sodium (mg)	Carb. (g)	Dietary Fiber (g)	Sugar (g)	Protein (g)	Vitamin A (%DV)	Vitamin C (%DV)	Calcium (%DV)	Iron (%DV)	Caffeine (mg)
count	1203.00	1203.00	1203.00	1203.00	1203.00	1203.00	1203.00	1203.00	1203.00	1203.00	1203.00	1203.00	1203.00	1203.00	1203.00	1203.00
mean	464.70	230.83	6.37	3.98	0.12	15.55	142.82	37.59	0.86	34.95	5.99	10.20	3.01	18.01	7.77	82.00
std	159.72	132.05	5.89	3.99	0.15	17.96	89.91	22.47	1.51	21.64	4.84	8.69	14.12	15.59	13.30	76.48
min	236.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25%	354.00	140.00	1.50	0.30	0.00	0.00	75.00	20.00	0.00	19.00	2.00	2.00	0.00	2.00	0.00	20.00
50%	473.00	220.00	5.00	3.00	0.00	5.00	135.00	35.00	0.00	33.00	5.00	10.00	0.00	15.00	0.00	75.00
75%	591.00	310.00	10.00	7.00	0.20	30.00	200.00	53.00	1.00	48.00	9.00	15.00	0.00	25.00	10.00	130.00
max	887.00	640.00	28.00	20.00	0.50	75.00	370.00	96.00	8.00	89.00	25.00	50.00	240.00	90.00	90.00	475.00

- The minimum size for any drink is **236 ml**, which is about 8 ounces, or the '**Kids**' and '**Short**' sized beverage.
- The mean size for any drink is **464 ml**, which is about 16 ounces, or the '**Grande**' sized beverage.
- The max size for any drink is **887 ml**, which is about 30 ounces, or the '**Trente**' sized beverage.
- There are opportunities to serve **smaller beverages**: espresso shots. The Starbucks Beverage data does not make mention of these; Starbucks does currently serve Espresso shots in three variations:
 - Solo (.75 oz), Doppio (1.5 oz), Triple (2.25 oz), and Quad (3 oz).
- There are opportunities to serve **larger beverages**: catering carafes. Typical carafes can see sizes on average of 96 ounces.
- Starbucks likely chooses these drink sizes for two reasons: one to stay on brand with their Italian size names (venti for 20, and trenta for 30) and also because most drink sizes are served in increments of 8, because there are 8 oz in a cup.
- Every nutritional measure has a minimum zero count; this zero count comes from a handful of products, a majority of which are teas.
- Drinks with milks or whips contribute to higher fats, and in turn cholesterol.

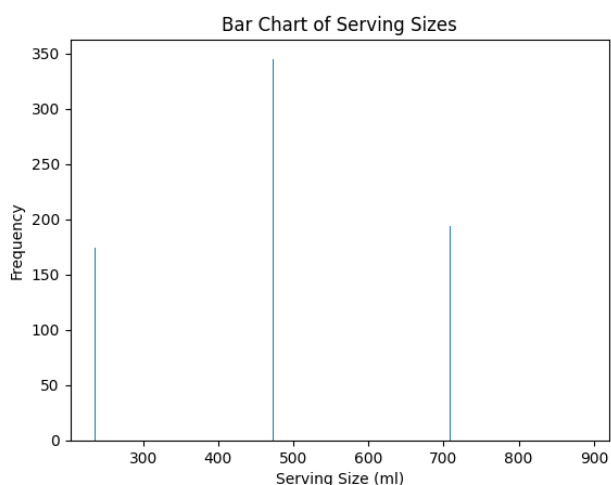


- Higher caffeine counts from beverages that are coffee based and larger portion sizes contribute further to larger caffeine contents.
- Drinks with higher protein contents are milk-based (e.g. milk, smoothies).
- The smoothie line of beverages contribute the most to the Dietary Fiber max.

CATEGORICAL OBSERVATIONS

	Product Name	Size	Milk	Whip
count	1203	1203	1203	1203
unique	94	7	6	2
top	White Hot Chocolate	Grande	Nonfat	No Whip
freq	50	345	240	910

- There are 1,203 different drink combinations and there are 94 unique products (7.8%). What should be noted is that many drinks are similar in nature but differ in their customization options.
- Some 'unique' products are simply the same drink but with ice.
- I believe that for categorization purposes, there should be an additional column that specifies Iced or Hot.
- To know their products, employees likely need to only know key ingredients and then the customization options.
- White Hot Chocolate is the Product Name that is repeated most often (50 times or 4.2%). This is because White Hot Chocolate is offered in 5 sizes, 5 milk options and 2 whip options.
- Customers appear to prefer Nonfat milk and do not prefer Whip cream for drinks that have that option.
- Nonfat is the most used milk with 240 occurrences (20%).
- No Whip is the most used whip option with 910 occurrences (76%).
- Grande is the most popular size with 345 occurrences (29%), followed by Tall with 333 occurrences (28%). Below is a bar chart of the serving sizes as well as the counts of each size in a DataFrame.



Serving Size (ml)	Frequency
354	333
236	174
887	21
473	345
709	194
591	137

- Serving sizes are your vehicles for your product, effective cost analysis and price per oz. served would be important to consider when considering how to market products or phasing out a size.

COURSE REFLECTION

I've expressed to both the Professor when signing up and to the class in the Introduction: I was extremely excited for this course (and still am!). I apologize for not being able to participate any Zoom calls, most conflicted with my work schedule but if we have another opportunity to connect, I'd certainly look forward to it. I have recently entered a honeymoon with data and my career, much of my work has been dedicated to innovating some of our more manual processes by partnering with our Business Intelligence team and opportunities like taking this class are exactly what I was looking for to elevate my skillset and my understanding of data and the BI team's work.

1. Did DataCamp help you?

DataCamp was great, I'll admit I had some frustrations. At times the AI assistant was helpful, other times it was completely off the mark, and I had a dollar for mistakes that were my own! If I could make one suggestion and that would be to reconsider perhaps the order in which some of the material is presented. This was a lot to take in for a three-week course. I felt some later materials would have been more beneficial to know earlier on but I think I took a lot away from the "into the frying pan" approach. That GitHub/Git course was rough and assumes you're familiar with the terminal and command prompt (fortunately I'm a little familiar). I'm looking forward to continuing what I've learned in DataCamp after the class has concluded!

2. What would you have like to have learned that was not covered?

I think you covered this in some of your Zoom calls, but more time with the set up process would be great! What I mean by that is I'm still a little lost as to what things like Conda/Anaconda are. I know Jupyter a little better now, a better understanding of all the software and programs for dummies would be helpful.

I bought a book on Python called "*Head First Python*" by Paul Barry to help me out, and it was really helpful in understanding IDEs and basic Python syntax that went a little quickly for me in DataCamp.

3. What I would like to know about the Signature Term Project. Were the directions clear? If I did not give you hints, do you think that you could have completed it timely?

Your instructional document was very thorough! Thank you for all the hints – but I think they were too on the nose for the most part. I don't want to make the course harder for anyone of course. If I didn't have the hints it might have taken me a few more hours to complete but I would have to more heavily use the resources you've given us. Hints could be made more vague – something like the below?

Your original:

```
Hint: new_dataframe_name.rename(columns = {'old_column_name': 'new_column_name'})
df3 = df2.rename(columns = {'Caffiene_milligrams': 'Caffiene_mg'})
```

Proposed revision:

Hint: use the `rename()` function, refer to **Streamlined Data Ingestion with Pandas – Importing Data from Flat Files**

4. Did you think that understanding GitHub was important?

Absolutely, this goes along with what I mentioned above re learning Python IDE's, Anaconda, Jupyter and others. Some more time learning the systems we interface with in using Python should be helpful for future students.

Thanks so much for allowing me to take this course although and bypassing the class year requirement. This has been such a resource for me. Although juggling school and work is exhausting, one of the things I appreciate the most is being able to apply my coursework directly to my work – and that's exactly what this course did for me. Like many organizations, the law firm I work for is paying close attention to office utilization and real estate. I made the following chart using my newfound Python abilities - when I saw the swarm plot I knew exactly what I wanted to use it for.

Cheers, Prof. Foy!

Robert Struble

Swarm Plot of Total Visits by Department and Personnel Type

