GRIYA JITRI PABUTUNGAN

PORTO FOLIO

DATA AND ANALYST

HI, I'M JITRI !!

I am currently working as IT Strategy & Governance at PT Pupuk Kalimantan Timur. My responsibilities include assisting in the development of the company's Long-Term IT Strategic Plan (IT Master Plan), monitoring IT investment projects to ensure timely completion in accordance with the plan, and preparing comprehensive monthly and annual IT reports.
Also I have experience as data science intern at Alfagift.

EDUCATION

Satya Wacana Christian University | Aug 2019 – Jul 2023
Informatics Engineering (Data Science)
GPA : 3.90 / 4.00

- Assistant Lecturer of Database System
- Assistant Lecturer of Statistics and Probability

PT Berpikir Revolusioner Indonesia (Narasio Data) | Feb 2023 - Jul 2023
Studi Independent
Data Analyst

- Comprehended business problems in the company and the steps to resolve them.
- Explored SQL and Python for data manipulation and organizing data.
- Created data visualizations from project analysis results to gain insights into data overview and performance.
- Achieved successful outcomes on two projects: a group project involving real-world data with a score of 86, and an individual project using dummy data with a score of 85.

EDUCATION

PT Digitalisasi Pemuda Indonesia (DigitalSkola) | Aug 2021 - Jan 2022
Studi Independent
Data Analyst

- Built business insights and business processes from the case study that has been provided.
- Explored Python programming language and SQL, and used Colab and Anaconda for data management.
- Learned and comprehended the fundamental principles of statistics in data science.
- Established machine learning models to identify future business opportunities.
- We collaborated with a team to solve our final projects, utilizing classification and regression methods.

WORK EXPERIENCE

IT Strategy & Governance
PT Pupuk Kalimantan Timur
Jul 2024 - Present

- Assisted in the development of the Corporate Long-Term Plan (RJPP) or IT Master Plan to ensure alignment between business needs and IT strategy.
- Prepared monthly and annual reports to evaluate IT performance and ensure optimal operations.
- Monitored IT investments to ensure projects were executed according to the established timeline.
- Developed Enterprise Architecture (EA) reports to align business strategy with IT.
- Assisted in the preparation and execution of the COBIT 2019 assessment to enhance IT governance, achieving a score of 4.

Data Science Intern
PT Global Loyalty Indonesia (Alfagift)
sept 2022 - jun 2023

- Developed Python and SQL scripts to analyze large datasets from diverse data sources.
- Created data visualizations to help identify trends and patterns in data.
- Performing data exploration and data cleaning on raw datasets.
- Analyzed the shopping behavior and made 8 member segmentation based on their transactions

Assistant Lecturer of Database System
Universitas Kristen Satya Wacana
Jan 2021 - Apr 2021

- Explained and provided Oracle database learning materials to 51 students.
- Created tasks and quizzes to assess the comprehension capacity of 51 students.
- Assigned project topics for the implementation of each acquired material to 51 students.

MY PROJECTS

FERTILIZER
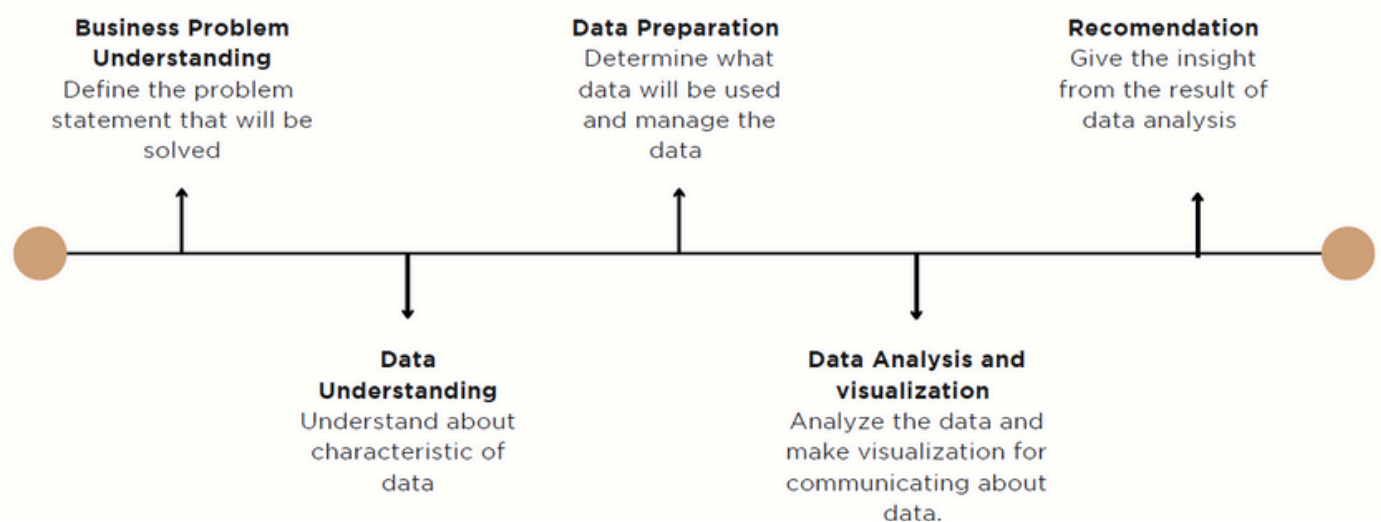RECOMENDATIOAN

BUNDLING PRODUCT
RECOMENDATION

COFFEE SHOP
ANALYSIS

FERTILIZER RECOMENDATION

Business Backround

PT ABC is an agribusiness company that produces and distributes high-quality fertilizers to help farmers increase their crop yields. With growing demand, many farmers struggle to choose the right fertilizer based on soil conditions, humidity, and other environmental factors. To solve this issue, what should PT ABC do to help farmers achieve the best harvest possible?

Methodology

Business Problem Understanding
Define the problem statement that will be solved

Data Preparation
Determine what data will be used and manage the data

Recomendation
Give the insight from the result of data analysis

Data Understanding
Understand about characteristic of data

Data Analysis and visualization
Analyze the data and make visualization for communicating about data.

Business Problem

Many farmers struggle to choose the right fertilizer due to varying soil conditions, humidity, and environmental factors. This can lead to inefficient fertilizer use, lower crop yields, and reduced customer satisfaction. As demand increases, PT ABC needs a solution to guide farmers in selecting the best fertilizer, ensuring optimal crop production while maintaining customer trust and business growth.

Recommendation

Based on the identified business problem and the results of data exploration and analysis, a recommendation system using the K-Means algorithm has been developed to suggest the best fertilizer based on historical data.

FERTILIZER RECOMMENDATION

The Process

Soil_Type	Soil_Type_encode	Crop_Type	Crop_Type_encode	Nitrogen	Potassium	Phosphorous	Fertilizer_Name
Sandy	4	Maize	3	37	0	0	Urea
Loamy	2	Sugarcane	8	12	0	36	DAP
Black	0	Cotton	1	7	9	30	14-35-14
Red	3	Tobacco	9	22	0	20	28-28
Clayey	1	Paddy	6	35	0	0	Urea

The image above shows the structure of the data that will be used in this recommendation project.

	Temparature	Humidity	Moisture	Soil Type	Crop Type	Nitrogen	Potassium	Phosphorous	Fertilizer Name
0	26	52	38	Sandy	Maize	37	0	0	Urea
1	29	52	45	Loamy	Sugarcane	12	0	36	DAP
2	34	65	62	Black	Cotton	7	9	30	14-35-14
3	32	62	34	Red	Tobacco	22	0	20	28-28
4	28	54	46	Clayey	Paddy	35	0	0	Urea

The picture shows that data with an object type must be encoded to integers so that it can be used in the K-Means algorithm.

```
input_baru = [[26,52,38,4,3,37,0,0]]
prediksi = model.predict(input_baru)
print("Pupuk yang direkomendasikan:", prediksi)
```

Input the data as needed to see fertilizer recommendations that can be used on our land based on the given parameters.

```
pupuk = enconder.inverse_transform(prediksi)
print("Pupuk yang direkomendasikan:", pupuk)

Pupuk yang direkomendasikan: ['Urea']
```

From the previous input, we can see that the suitable type of fertilizer for our land or needs is Urea.
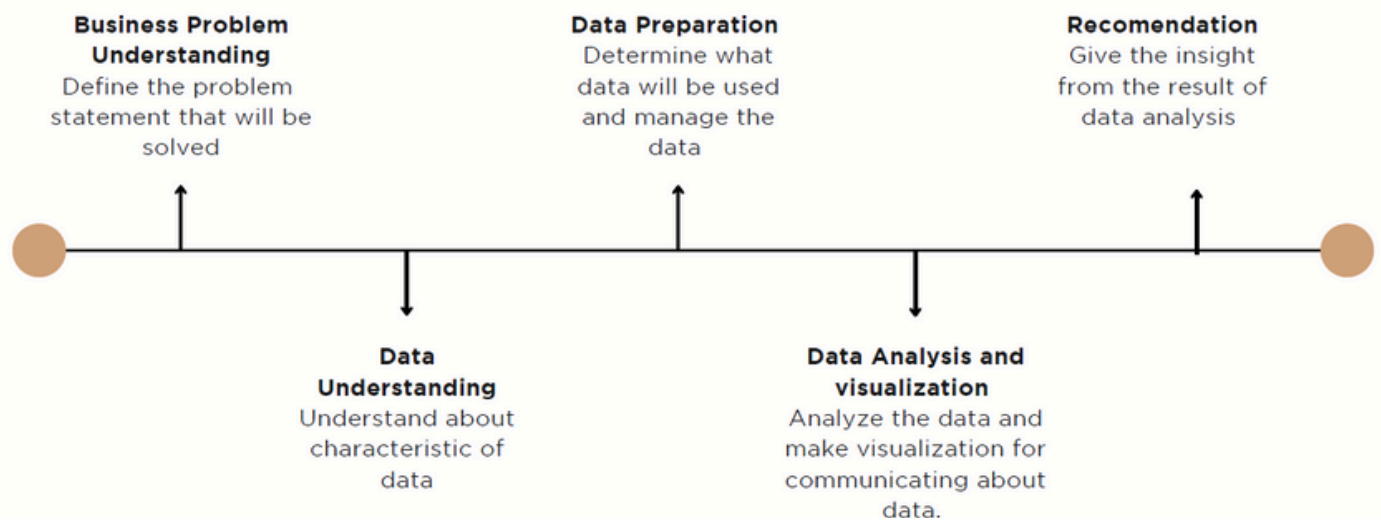
The Result

To solve the previously defined business problem, we can develop a recommendation system using the K-Means algorithm to predict the most suitable type of fertilizer for the customer's needs.

BUNDLING PRODUCT RECOMENDATION

Business Backround

Pizza is a food that is popular with people. Currently, one of the pizza shops namely the ACB company, wants to sell products in bundling. However, the company faces a challenge as they are not aware of which products are frequently purchased together by customers. You are tasked with solving this issue and identifying the products that can be paired as part of a bundling program.

Methodology

Business Problem Understanding
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Recomendation
Give the insight from the result of data analysis

Data Understanding
Understand about characteristic of data

Data Analysis and visualization
Analyze the data and make visualization for communicating about data.

Business Problem

Find out what products can be sold in bundling

Based on the business background, the company faces a challenge as they are not aware of which products are frequently purchased together by customers. So, as a data analyst you have to Find out what products can be sold in bundling

Problem Statement

Is there a correlation between products that are often purchased together by customers?
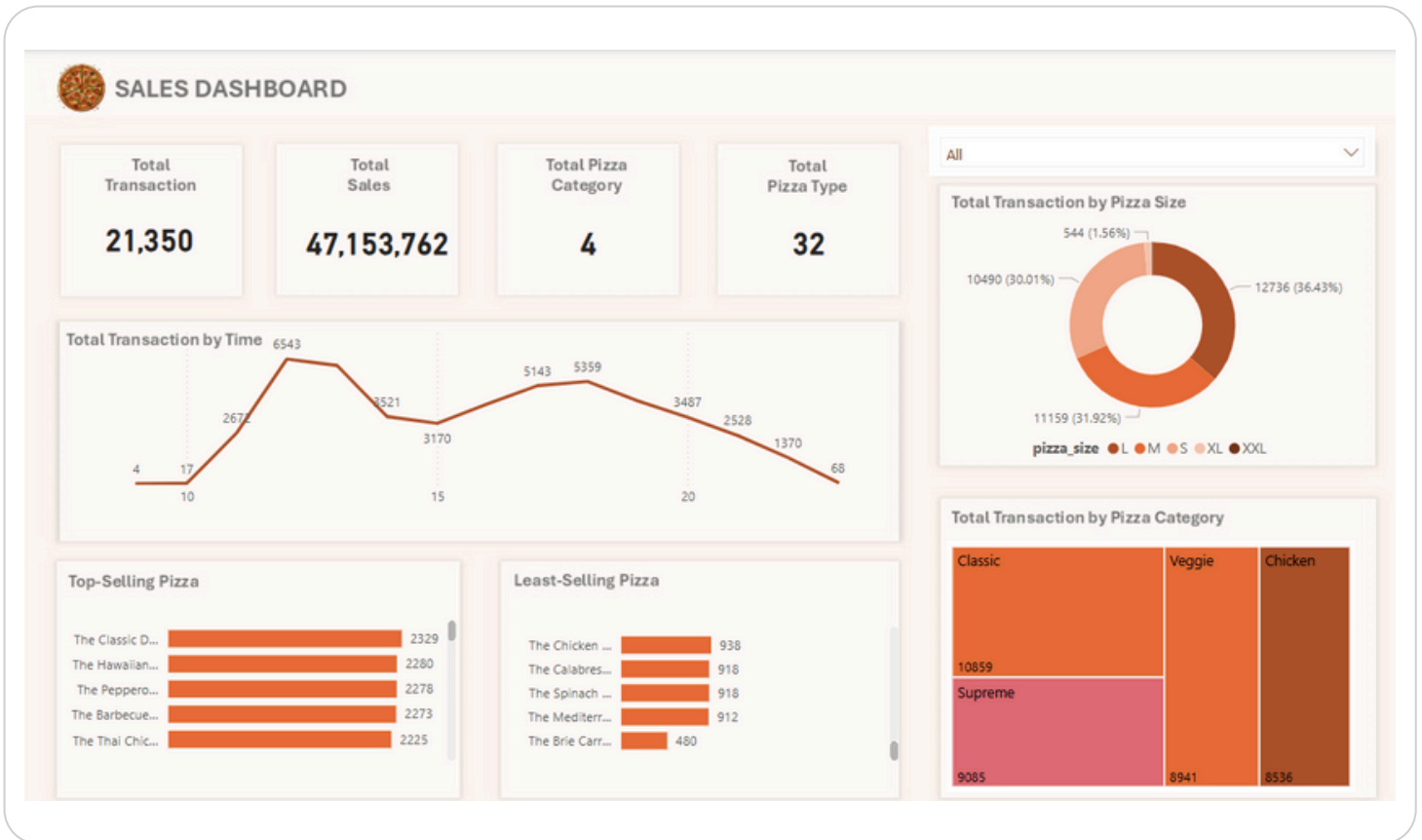
BUNDLING PRODUCT RECOMMENDATION

The Results

	antecedents	consequents	support	confidence	lift
0	(and Peppers Pizza)	(Mushroom)	0.061639	1.0	16.223404
1	(Mushroom)	(and Peppers Pizza)	0.061639	1.0	16.223404
60	(and Peppers Pizza)	(The Pepperoni, Mushroom)	0.061639	1.0	16.223404
59	(The Pepperoni)	(and Peppers Pizza, Mushroom)	0.061639	1.0	16.223404
58	(and Peppers Pizza, Mushroom)	(The Pepperoni)	0.061639	1.0	16.223404
57	(The Pepperoni, Mushroom)	(and Peppers Pizza)	0.061639	1.0	16.223404
56	(The Pepperoni, and Peppers Pizza)	(Mushroom)	0.061639	1.0	16.223404
61	(Mushroom)	(The Pepperoni, and Peppers Pizza)	0.061639	1.0	16.223404
2	(The Pepperoni)	(Mushroom)	0.061639	1.0	16.223404
3	(Mushroom)	(The Pepperoni)	0.061639	1.0	16.223404

Based on the sales history data of the pizza store, it was found that certain types of pizza are frequently purchased together, as shown by a lift value greater than 1. This indicates a strong relationship between these items. By implementing a recommendation system using the Apriori algorithm, we can identify products that are often bought together and use this insight for a product bundling strategy, ultimately increasing sales and enhancing customer satisfaction.

BUNDLING PRODUCT RECOMMENDATION

SALES DASHBOARD

Total Transaction	Total Sales	Total Pizza Category	Total Pizza Type
21,350	47,153,762	4	32

Total Transaction by Time

Total Transaction by Pizza Size
- 544 (1.56%)
- 10490 (30.01%)
- 12736 (36.43%)
- 11159 (31.92%)
- pizza_size ● L ● M ● S ● XL ● XXL

Top-Selling Pizza
- The Classic D... — 2329
- The Hawaiian... — 2280
- The Peppero... — 2278
- The Barbecue... — 2273
- The Thai Chic... — 2225

Least-Selling Pizza
- The Chicken ... — 938
- The Calabres... — 918
- The Spinach ... — 918
- The Mediterr... — 912
- The Brie Carr... — 480

Total Transaction by Pizza Category
- Classic — 10859
- Supreme — 9085
- Veggie — 8941
- Chicken — 8536

Data Analysis

Based on the sales dashboard, we found several insights:
- The peak transaction times are between 11 AM - 12 PM (before lunch) and 5 PM - 6 PM (after work hours).
- The most purchased pizza sizes are L (largest) in first place, followed by M (medium) and S (small) in third place.
- The top 5 best-selling items are: The Classic Deluxe Pizza, The Hawaiian Pizza, The Pepperoni Pizza, The Barbecue Chicken Pizza and The Thai Chicken Pizza.
- The 5 least purchased items are: The Brie Carre Pizza, The Mediterranean Pizza, The Spinach Supreme Pizza, The Calabrese Pizza and The Chicken Pesto Pizza.
- Classic and Supreme are the most popular pizza categories among customers.

Recommendation

To boost sales beyond the bundling program, other promotions can be offered, such as:
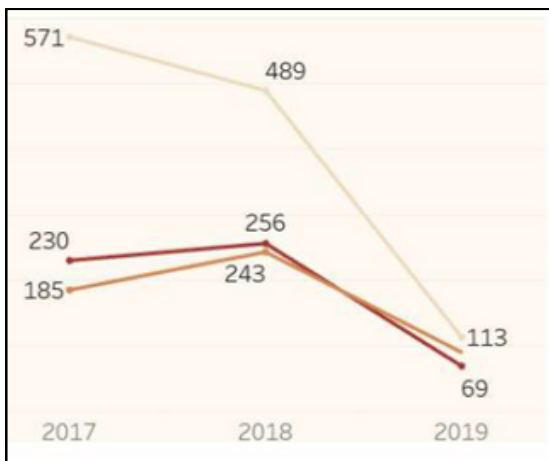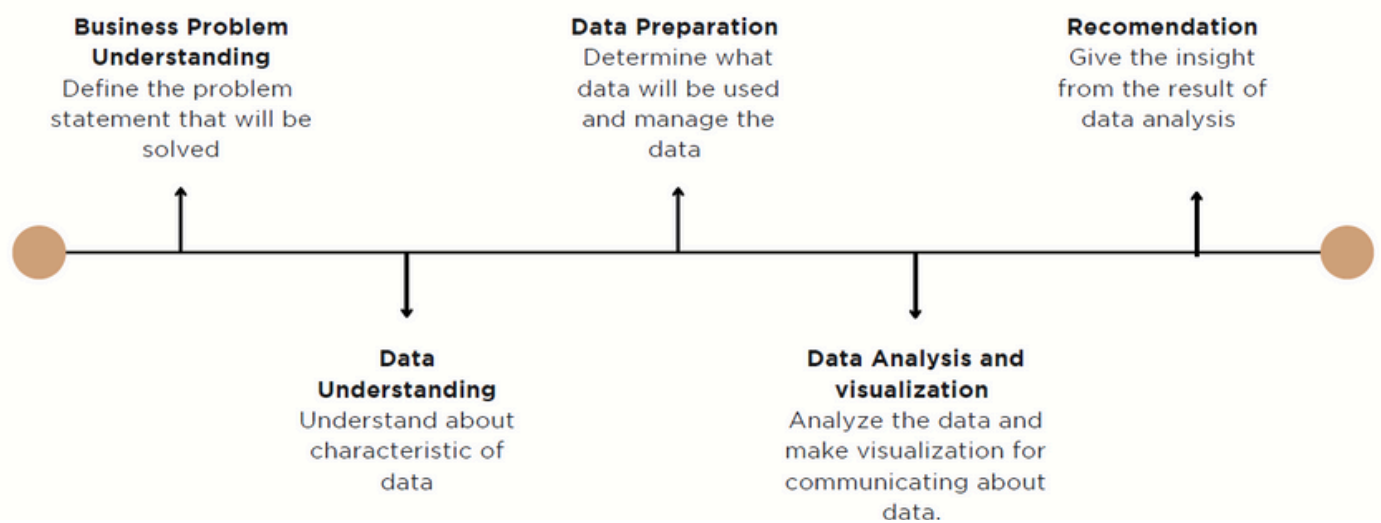- Providing bundle promos during peak transaction hours or offering discounts during low-traffic times to attract more customers.
- Offering promos on specific items, categories, or sizes to encourage customers to make purchases.

COFFEE SHOP ANALYSIS

Business Backround

You are an employee candidate for data analyst who will apply to the coffee shop company. The company provides you with sample data about coffee sales, The Data you get is about profiling from each customer, data transactions, inventory of some products, and a list of outlets. The company user gives you information that the company members from the store 3 decreased so that, as a data analyst you must be able to find insight from data and give recommendations to the company.

Methodology

Business Problem Understanding
Define the problem statement that will be solved

Data Understanding
Understand about characteristic of data

Data Preparation
Determine what data will be used and manage the data

Data Analysis and visualization
Analyze the data and make visualization for communicating about data.

Recomendation
Give the insight from the result of data analysis

571
489
256
230
243
185
113
69
2017   2018   2019

Business Problem

Increase the number of people who register to be a new member and do the transaction.

Based on the business background, the number of members of a coffee shop at store 3 decreased from 2019. So, the goal of this project is to increase the number of members who register in the company application.

Problem Statement

- Increase the number of people who register to be a new member and do the transaction.

Problem Discovery

- What types of promotions can attract customers' attention and encourage them to become members?

COFFEE SHOP ANALYSIS

COFFEE DASHBOARD ANALYSIS

Total Customer
2,246

81
Total Product

3,258
Total Transaction

Total Transactions based on Generation

Baby Boomers 2163	Gen Z 1795
Gen X 2134	Younger Millenni... 1576
Older Millennials 2032	
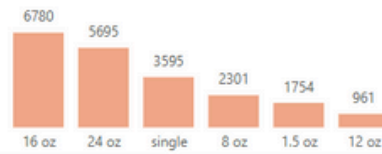
Total Transactions per Unit of Measure

- 16 oz: 6780
- 24 oz: 5695
- single: 3595
- 8 oz: 2301
- 1.5 oz: 1754
- 12 oz: 961

Total Transactions per Hour

- 347
- 1041
- 995
- 1101
- 1060
- 1084
- 46
- (x-axis: 10, 15, 20)

Top-Selling Product

- Morning Sunr... — 468
- Brazilian Sm — 455
- Columbian M... — 447
- English Breakf... — 445
- Traditional Ble... — 444

Total Transactions by Group

- Beverages — 3257
- Food — 1739
- Add-ons — 519
- Whole Bean/T... — 349
- Merchandise — 73
- — 1

Total Transactions per Gender

- 4331 (23.69%)
- 7836 (42.86%)
- 6116 (33.45%)

gender
- F
- M
- N

Total Transactions per Category

- Coffee — 2814
- Tea — 2601
- Bakery — 1739
- Drinking Choc... — 1270
- Flavours — 519
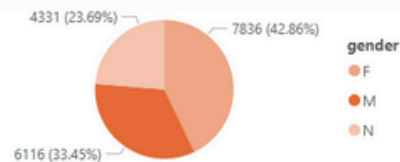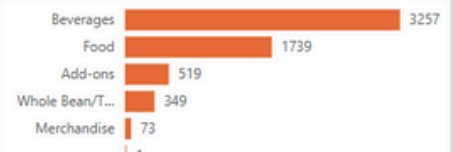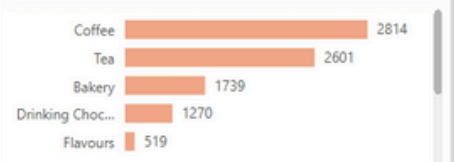
Summary All of Store

COFFEE DASHBOARD ANALYSIS

sales_outlet_id
30

Total Customer
800

79
Total Product

3,052
Total Transaction

Total Transactions based on Generation
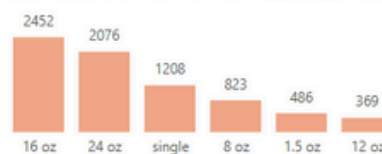
| Baby Boomers 1345 | Older Millennials 1018 |
| Gen X 1317 | Gen Z 706 | Younger... 553 |

Total Transactions per Unit of Measure

- 16 oz: 2452
- 24 oz: 2076
- single: 1208
- 8 oz: 823
- 1.5 oz: 486
- 12 oz: 369

Total Transactions per Hour

- 312
- 316
- 551
- 488
- 532
- 474
- 516
- (x-axis: 10, 15, 20)

Top-Selling Product

- Dark chocolat... — 176
- Traditional Ble... — 175
- Morning Sunr... — 172
- Spicy Eye Ope... — 172
- Dark chocolat... — 171

Total Transactions by Group

- Beverages — 3052
- Food — 893
- Add-ons — 124
- Whole Bean/T... — 95
- Merchandise — 25

Total Transactions per Gender

- 833 (12.84%)
- 3233 (49.82%)
- 2423 (37.34%)

gender
- F
- M
- N

Total Transactions per Category

- Coffee — 1958
- Tea — 1680
- Bakery — 893
- Drinking Choc... — 596
- Flavours — 124
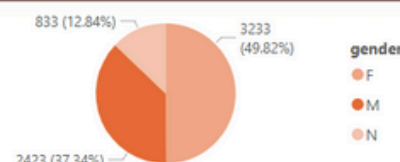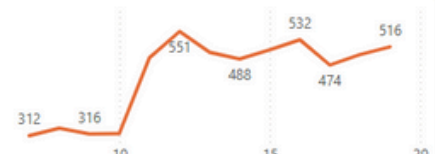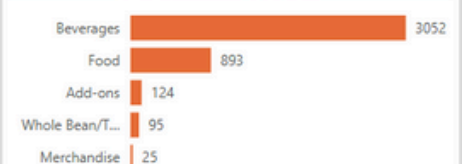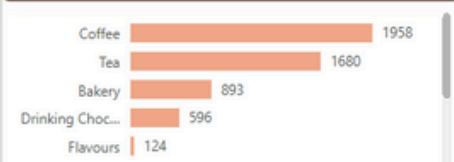
Store 3

COFFEE SHOP ANALYSIS

Data Analysis

- Gen X was the generation with the highest transactions, followed by Baby Boomers and Gen X. Meanwhile, Gen Z and Younger Millennials were the generations that made the fewest transactions.
- Based on Unit of Measure the most measure that buy by customer are 16 oz, 24 oz, Single, 8 oz and 1.5 oz.
- Based on transaction hours, the highest transactions were at 11.00 - 10.00, then at 15.00 and 16.00.
- The product with the highest number of transactions are Dark Chocolate Rg, Traditional Blend Chai Rg, Morning Sunrise Chai Rg and Spicy Eye Opener Chai Lg
- The product group with the highest number of transactions are Beverages, Food, Add-ons, Whole Bean/Teas and Merchandise.
- The majority of transactions in this company were conducted by females.
- Coffee, Tea, and Bakery were the best-selling products at Store 3, while the least-sold product was packaged Chocolate.

Recommendation

Based on the existing problem, to increase the number of people registering as new members and making transactions in the application, the company can take the following actions:

- Increasing the number of members can be achieved by awarding points to members in application for every transaction and these points can be redeemed for shopping.
- Rewarding individuals who successfully refer their friends to register as new members.
- Providing discounts to customers who register as new members.
- Providing promotions based on analyzed transaction data, for example, users who use the app and purchase items in the coffee category will receive a 10% discount.

COFFEE SHOP ANALYSIS

Evidence Query Process

```python
data_cus_join = pd.read_sql_query('''
                            select b.customer_id, home_store, customer_since, birthdate, gender,
                            birth_year, generation, transaction_id, transaction_date,
                            transaction_time, sales_outlet_id, instore_yn, b.product_id,
                            quantity, unit_price, promo_item_yn, product_group, product_category,
                            product_type, product, unit_of_measure, current_wholesale_price,
                            current_retail_price, new_product_yn, promo_yn
                            From
                                 (select sr.customer_id, home_store,
                                  customer_since, birthdate, gender, birth_year, generation,
                                  transaction_id, transaction_date, transaction_time, sales_outlet_i
                                  instore_yn, product_id, quantity, unit_price, promo_item_yn
                                  from
                                        (select customer_id, home_store,
                                         customer_since, birthdate, gender, cus.birth_year, generatio
                                         from customer cus
                                         left join generations gen
                                         on gen.birth_year = cus.birth_year) a
                                  left join
                                  "sales reciepts" sr on sr.customer_id = a.customer_id) b
                            left join
                            Product pr on pr.product_id = b.product_id

                    ''' ,conn)
```

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