Data Analytics Process: Real World Application

Shopping & Use of 6 Step Data Analytics Process

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UTLIZATION OF DATA-ANALYTICS PROCESS IN OUR DAILY LIFE APPLICATION

CASE STUDY

Planning to buy house-holds items required in day to day life by us till next weekend.
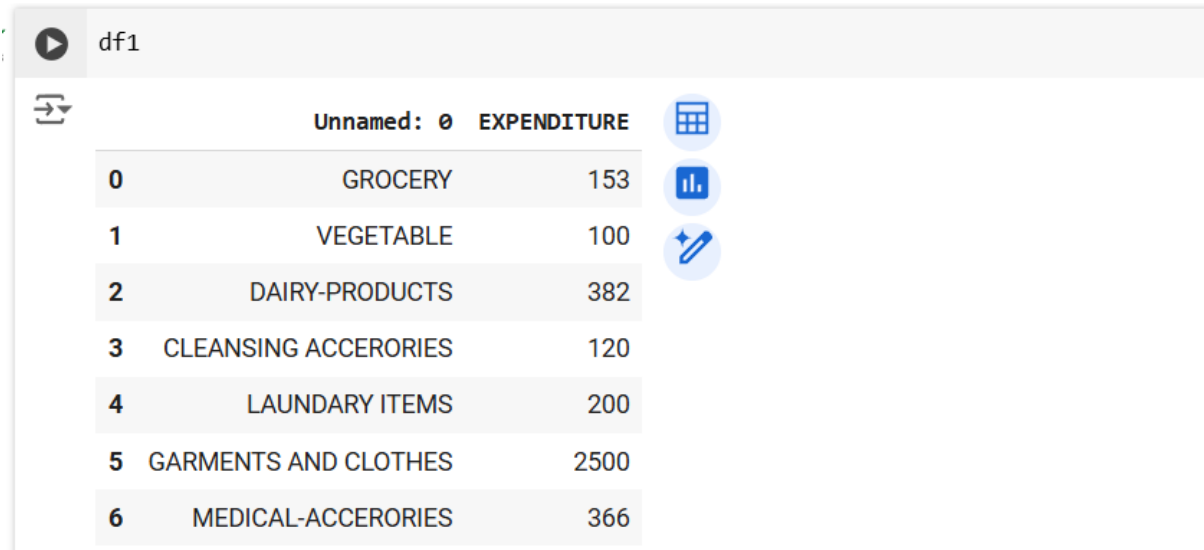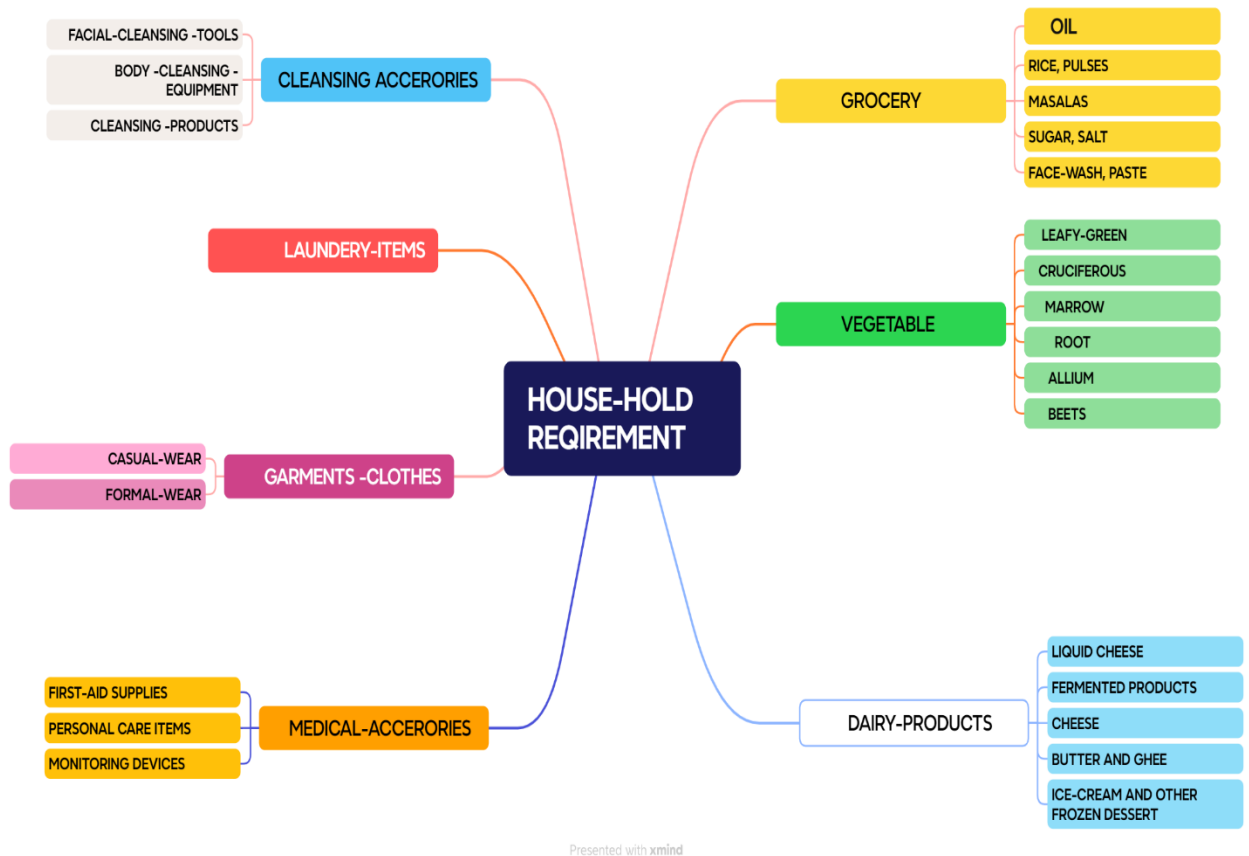
CONTENT

PLAN

Fig-1: House-Hold requirement plan

- The image presents a structured overview of household requirements divided into various categories like cleansing accessories, grocery items, vegetables, garments, medical accessories, and dairy products.

- Each category is further broken down into subcategories, detailing specific types of items needed, such as types of vegetables, cleaning tools, and medical supplies.

PREPARE

Based on this plan, we will create a cost expenditure sheet to help determine the expenses required for household items.

	Unnamed: 0	EXPENDITURE
0	GROCERY	153
1	VEGETABLE	100
2	DAIRY-PRODUCTS	382
3	CLEANSING ACCERORIES	120
4	LAUNDARY ITEMS	200
5	GARMENTS AND CLOTHES	2500
6	MEDICAL-ACCERORIES	366

Fig 2: This Represent House-Hold category expenditure

	CATEGORIES	COST
0	OIL	320
1	RICE,PULSES	120
2	MASALAS	40
3	SUGAR-SALT	85
4	FACEWASH, TOOTH-PASTE	200
5	LEAFY-GREEN	100
6	CRUCIFEROUS	100
7	MARROW	100
8	ROOT	100
9	ALLUM	100
10	BEETS	100
11	LIQUID-CHEESE	600
12	FERMENTED PRODUCTS	50
13	CHEESE	600
14	BUTTER AND GHEE	560
15	ICE-CREAM AND OTHER FROZEN DESERT	100
16	FACIAL-CLEANSING TOOL	100
17	BODY-CLEANSING EQUPMENT	200
18	CLEANSING PRODUCTS	300
19	CASUAL WEAR	3000

Fig 3: Represent The Items category under house-hold expenditure

.PROCESS

Based on the preparation as per the plan now we will analyze the rate of expenses of each category along with the items provided as per its expenditure estimated.

- In the household expenditure analysis, we calculated the mean value of the products listed in Figure 2, based on which we plotted the household expenditure charts.
- For the listed items, we collected data from a recent survey of each household over the current month.
- We used a pie chart to represent the cost estimation of household expenses, helping to identify the areas of maximum expenditure within a household.
- We used a bar chart to represent item categories, providing insight into the items with the highest costs under household expenditure.
- We have also provided the pie chart for a better visualization of the items' expenditure.
- We utilized a histogram to determine the frequency of goods needed, allowing us to see which items are most frequently required in our households.

ANALYZE

Based on above processing which include collection , plotting, dtetemining of items we will provide a brief analysis of the reports generated for analzing cost-estimation of House-Holds goods.
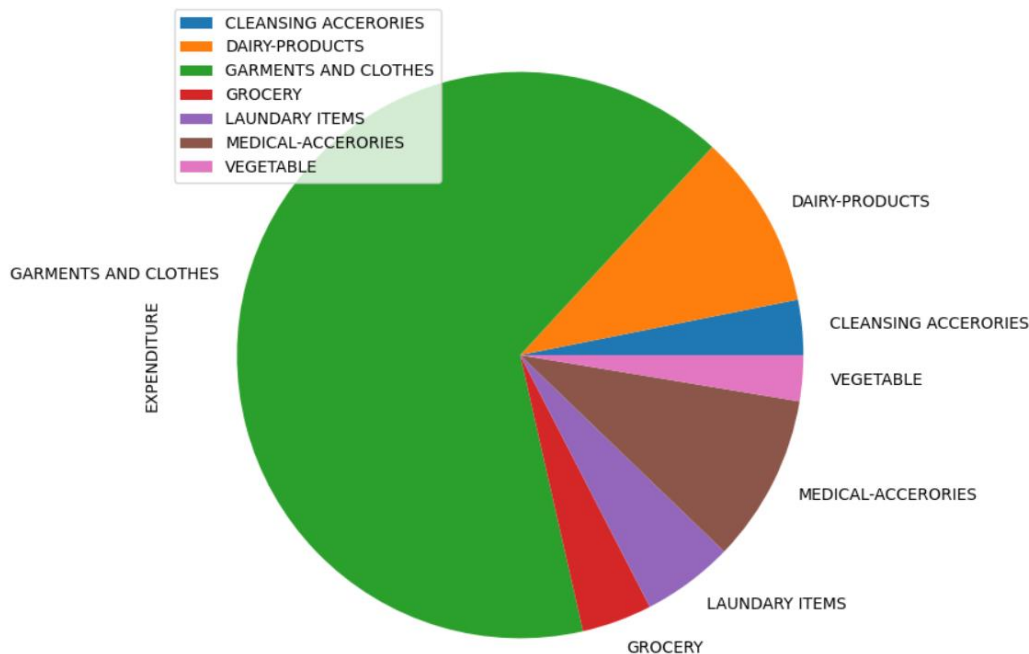

Fig 3: Rate of expenses in House-hold categories.

The pie chart displays the distribution of household expenditure across different categories.

- The largest portion of spending is allocated to **Garments and Clothes** (in green).
- clothing expenses are the highest among the categories.
- **Dairy Products** (in orange) also represent a significant share of the expenditure.
- Other categories like **Medical Accessories** (brown), **Grocery** (purple), and **Laundry Items** (red) have moderate portions, while **Cleansing Accessories** (blue) and **Vegetables** (pink) account for smaller shares.

  This breakdown helps to identify the most and least costly categories in household spending, with garments and dairy products being the primary expenses.
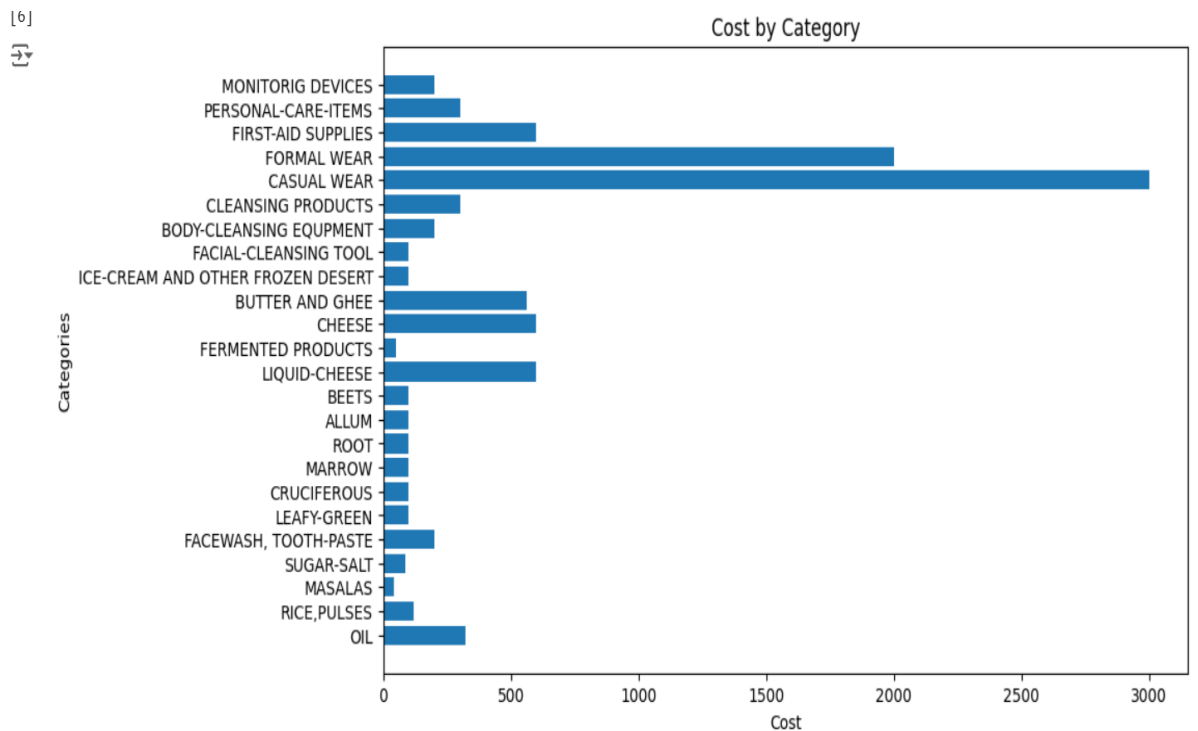
Fig 4: Rate of Expenses of House-holds items in the list.

- The bar chart shows the cost distribution across various household item categories.

- **Casual Wear** and **Formal Wear** have the highest costs, indicating significant spending on clothing items.

- Categories like **Body-Cleansing Equipment**, **Cleansing Products**, **Oil**, and **Rice/Pulses** have moderate costs.

- Minor expenses are seen in items such as **Monitoring Devices**, **Personal Care Items**, and various types of vegetables (e.g., **Beets**, **Allium**, **Marrow**).

- The chart helps identify which specific items contribute the most to household expenses, with clothing and food-related items being the main expenditure areas.
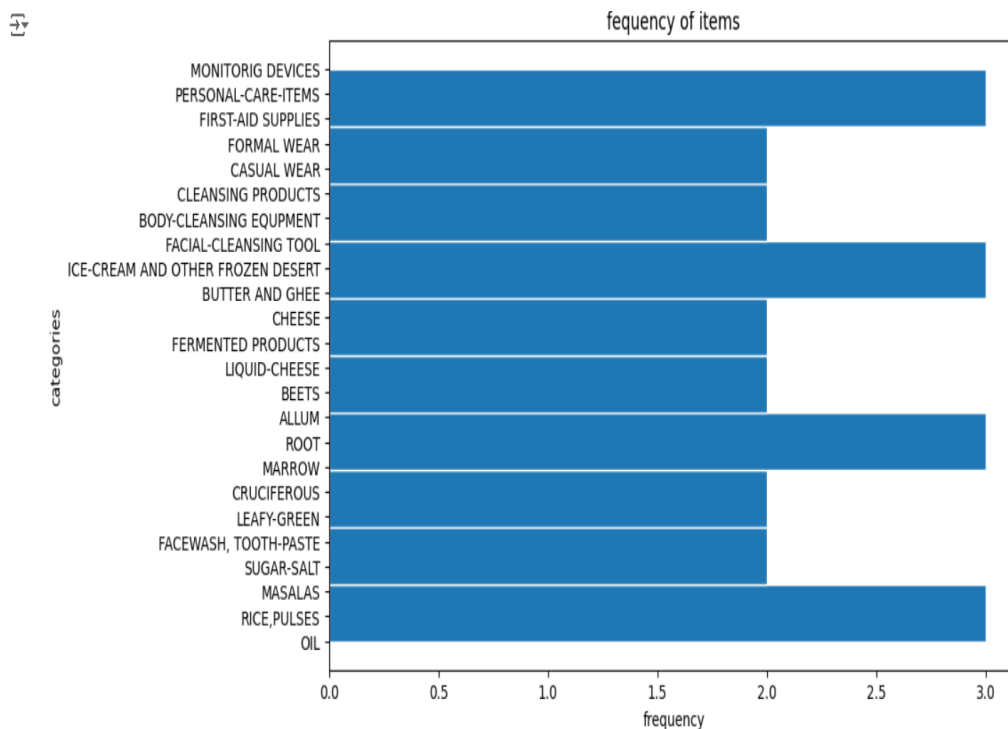
Fig 4: Frequency of House-holds items

- The bar chart displays the frequency of various household item categories, indicating how often each category is utilized.
- **Body-Cleansing Equipment**, **Cleansing Products**, and **Facewash/Toothpaste** appear frequently, suggesting they are essential and regularly used items.
- Items like **Casual Wear**, **Formal Wear**, and **Butter/Ghee** also show higher frequencies, reflecting regular usage or high demand within households.
- Categories such as **Monitoring Devices**, **Personal Care Items**, and specific vegetables (e.g., **Beets**, **Allium**) have lower frequencies, indicating they are used less often or on a need basis.
- This analysis helps in identifying essential household items and distinguishing between high-frequency necessities and lower-frequency, occasional-use items

looking for items that we use regularly in our household, and I'd like your help to find the best deals and quality options for these essentials.

1. **Frequently Needed Essentials:** Our highest priority is on items we need often, such as **cleansing products**, **body-cleansing equipment**, and **facewash/toothpaste**. Could you recommend reliable, cost-effective brands for these? We use them daily, so I'd like to ensure they're both affordable and high quality.

2. **Regularly Used Food Items:** We also need a good supply of **rice, pulses, oil, dairy products (like butter and ghee)**, and **fermented items**. These are staples in our diet, so I'm interested in bulk options or discounts that might help save on these recurring costs.

3. **Garments and Clothing:** Casual wear is another frequent purchase, along with some formal wear. Do you have any recommendations for durable yet affordable clothing options that would be suitable for daily use?

4. **Occasional Items:** For items we don't need as frequently, like **monitoring devices**, **personal care items**, and specific vegetables (like beets and allium),appreciate options that are reasonably priced without sacrificing quality.

5. **High-Quality Food Options:** For some specific dairy products like **cheese** and **ice-cream**, as well as select vegetables, I'm interested in exploring any premium brands you might carry that are worth the investment due to their quality and flavor.

<u>ACTION</u>

Based on the analysis and prioritization, we can create a list of items to buy, focusing on those with high frequency of use and staple requirements. Here's a summary of the items to purchase:

Items to Buy (Based on Analysis)

1. **Essential Daily Items (High Frequency)**

   o **Cleansing Products**

   o **Body-Cleansing Equipment**

   o **Facewash/Toothpaste**

2. **Staple Food Items**

   o **Rice, Pulses, and Oil**

   o **Butter and Ghee** (Dairy)

   o **Fermented Products**

3. **Clothing Needs**

   o **Casual Wear**

   o **Some Formal Wear**

4. **Occasional Food and Health Items**

   o **Cheese**

   o **Specific Vegetables** (e.g., beets, allium)

   o **Ice Cream and Frozen Desserts**

The pie chart to visually represent the relative weight of each category based on this prioritization. Divide it into four main categories: Essential Daily Items, Staple Food Items, Clothing, and Occasional Items.

Household Item Purchase Prioritization Based on Analysis

Occasional Items

Clothing Needs

15.0%

20.0%

35.0%

30.0%

Essential Daily Items

Staple Food Items
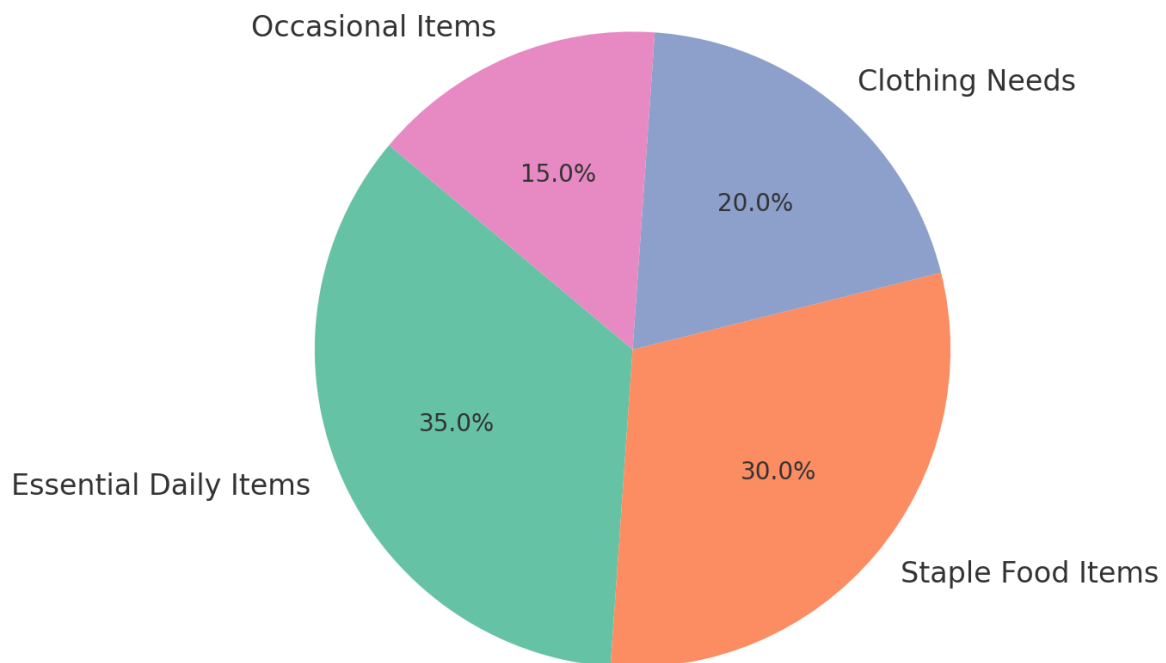
Here's the final decision on items to purchase, visualized in the pie chart above:

1. **Essential Daily Items (35%)** - Items for regular hygiene and self-care, such as cleansing products, body-cleansing equipment, and facewash/toothpaste, take the largest share due to their daily necessity.

2. **Staple Food Items (30%)** - Core food supplies including rice, pulses, oil, butter, and fermented products are crucial, forming the next priority due to their frequent use in meals.

3. **Clothing Needs (20%)** - Includes both casual and formal wear to meet daily clothing requirements.

4. **Occasional Items (15%)** - Items such as cheese, select vegetables, and ice cream that are used less frequently but are good to have on hand.

This distribution helps ensure a balanced purchase based on necessity, frequency, and cost-effectiveness