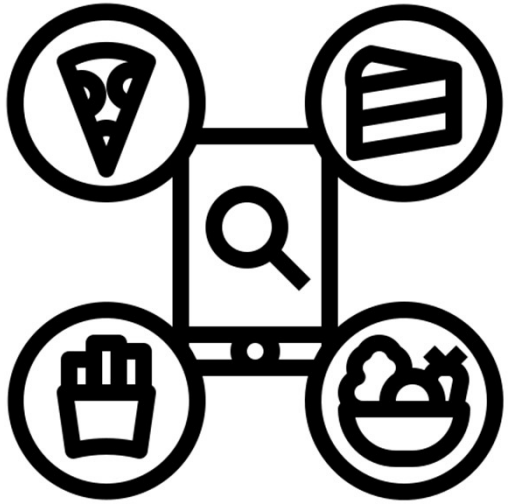
Fast Food Analysis

Diagnostic Dashboard



PTID-CDA-MAY-25-491
CDACL-004-FASTFOOD ANALYSIS
VINAY KUMAR JAISWAL

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OBJECTIVE

Goal: Analyze Nutritional & Healthy data from fast food chains

Deliverables:

- Diagnostic insights.
- Interactive Power BI dashboard.
- Recommendations.

DATA COLLECTION

Data collection is crucial for making informed decisions, conducting research, and analyzing trends.

```
[9]: import pandas as pd

[13]: data = pd.read_csv("C:/Users/ramvi/Desktop/Food_Analysis(CDACL004).csv")
print(data)
```

```
    restaurant                                item  calories  cal_fat  \
0    Mcdonalds          Artisan Grilled Chicken Sandwich       380       60
1    Mcdonalds            Single Bacon Smokehouse Burger       840      410
2    Mcdonalds            Double Bacon Smokehouse Burger      1130      600
3    Mcdonalds  Grilled Bacon Smokehouse Chicken Sandwich       750      280
4    Mcdonalds   Crispy Bacon Smokehouse Chicken Sandwich       920      410
..         ...                                       ...       ...      ...
507  Taco Bell            Spicy Triple Double Crunchwrap       780      340
508  Taco Bell               Express Taco Salad w/ Chips       580      260
509  Taco Bell                    Fiesta Taco Salad-Beef       780      380
510  Taco Bell                 Fiesta Taco Salad-Chicken       720      320
511  Taco Bell                   Fiesta Taco Salad-Steak       720      320

     total_fat  sat_fat  trans_fat  cholesterol  sodium  total_carb  fiber  \
0            7      2.0        0.0           95    1110          44    3.0
1           45     17.0        1.5          130    1580          62    2.0
2           67     27.0        3.0          220    1920          63    3.0
3           31     10.0        0.5          155    1940          62    2.0
4           45     12.0        0.5          120    1980          81    4.0
..         ...      ...        ...          ...     ...         ...    ...
507         38     10.0        0.5           50    1850          87    9.0
508         29      9.0        1.0           60    1270          59    8.0
509         42     10.0        1.0           60    1340          74   11.0
510         35      7.0        0.0           70    1260          70    8.0
511         36      8.0        1.0           55    1340          70    8.0

     sugar  protein  vit_a  vit_c  calcium  salad
0       11     37.0    4.0   20.0     20.0  Other
1       18     46.0    6.0   20.0     20.0  Other
2       18     70.0   10.0   20.0     50.0  Other
3       18     55.0    6.0   25.0     20.0  Other
```

DATA PREPROSSING

The process of transforming raw data into a format that is suitable for analysis and modeling.

- To Check Data Structure.

```
17]: print(data.info())
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 512 entries, 0 to 511
Data columns (total 17 columns):
 #   Column       Non-Null Count  Dtype
---  ------       --------------  -----
 0   restaurant   512 non-null    object
 1   item         512 non-null    object
 2   calories     512 non-null    int64
 3   cal_fat      512 non-null    int64
 4   total_fat    512 non-null    int64
 5   sat_fat      512 non-null    float64
 6   trans_fat    512 non-null    float64
 7   cholesterol  512 non-null    int64
 8   sodium       512 non-null    int64
 9   total_carb   512 non-null    int64
 10  fiber        500 non-null    float64
 11  sugar        512 non-null    int64
 12  protein      511 non-null    float64
 13  vit_a        298 non-null    float64
 14  vit_c        302 non-null    float64
 15  calcium      302 non-null    float64
 16  salad        512 non-null    object
dtypes: float64(7), int64(7), object(3)
memory usage: 68.1+ KB
None
```

- Describe Data.

```
[23]: print(data.describe())
```

```
          calories      cal_fat  total_fat     sat_fat   trans_fat  \
count   512.000000   512.000000  512.00000  512.000000  512.000000
mean    531.875000   239.138672   26.62500    8.152344    0.467773
std     282.968608   166.821648   18.45797    6.435989    0.841346
min      20.000000     0.000000    0.00000    0.000000    0.000000
25%     330.000000   120.000000   14.00000    4.000000    0.000000
50%     490.000000   210.000000   23.00000    7.000000    0.000000
75%     690.000000   310.000000   35.00000   11.000000    1.000000
max    2430.000000  1270.000000  141.00000   47.000000    8.000000

       cholesterol       sodium  total_carb       fiber       sugar  \
count   512.000000   512.000000  512.000000  500.000000  512.000000
mean     72.597656  1247.812500   45.742188    4.154000    7.261719
std      63.311968   691.752645   24.931608    3.038544    6.768311
min       0.000000    15.000000    0.000000    0.000000    0.000000
25%      35.000000   800.000000   28.750000    2.000000    3.000000
50%      60.000000  1110.000000   44.000000    3.000000    6.000000
75%      95.000000  1550.000000   57.000000    5.000000    9.000000
max     805.000000  6080.000000  156.000000   17.000000   87.000000

          protein       vit_a       vit_c     calcium
count  511.000000  298.000000  302.000000  302.000000
mean    27.976517   19.006711   20.344371   24.980132
std     17.699325   31.503727   30.693977   25.610284
min      1.000000    0.000000    0.000000    0.000000
25%     16.000000    4.500000    4.000000    8.000000
50%     25.000000   10.000000   10.000000   20.000000
75%     36.000000   20.000000   30.000000   33.750000
max    186.000000  180.000000  400.000000  290.000000
```

Checking a Null Values

- Replacing missing value with Mean of each column.

BEFORE

```
[21]: print(data.isnull().sum())

restaurant       0
item             0
calories         0
cal_fat          0
total_fat        0
sat_fat          0
trans_fat        0
cholesterol      0
sodium           0
total_carb       0
fiber           12
sugar            0
protein          1
vit_a          214
vit_c          210
calcium        210
salad            0
dtype: int64
```

AFTER

```
[15]: print(data.isnull().sum())

restaurant     0
item           0
calories       0
cal_fat        0
total_fat      0
sat_fat        0
trans_fat      0
cholesterol    0
sodium         0
total_carb     0
fiber          0
sugar          0
protein        0
vit_a          0
vit_c          0
calcium        0
salad          0
dtype: int64
```

Add New Column

- By using the help of New column (POWER BI).

1.NUTRITION STATUS

```
1 Nutrition Status = IF('Food_Analysis(CDACL004)'[total_fat]<=78 && 'Food_Analysis(CDACL004)'[sat_fat]<=20 && 'Food_Analysis(CDACL004)'[cholesterol]<=300 &&
  'Food_Analysis(CDACL004)'[sodium]<=2300 && 'Food_Analysis(CDACL004)'[total_carb]<=100 ,"Nutrition", "Low Nutrition")
```

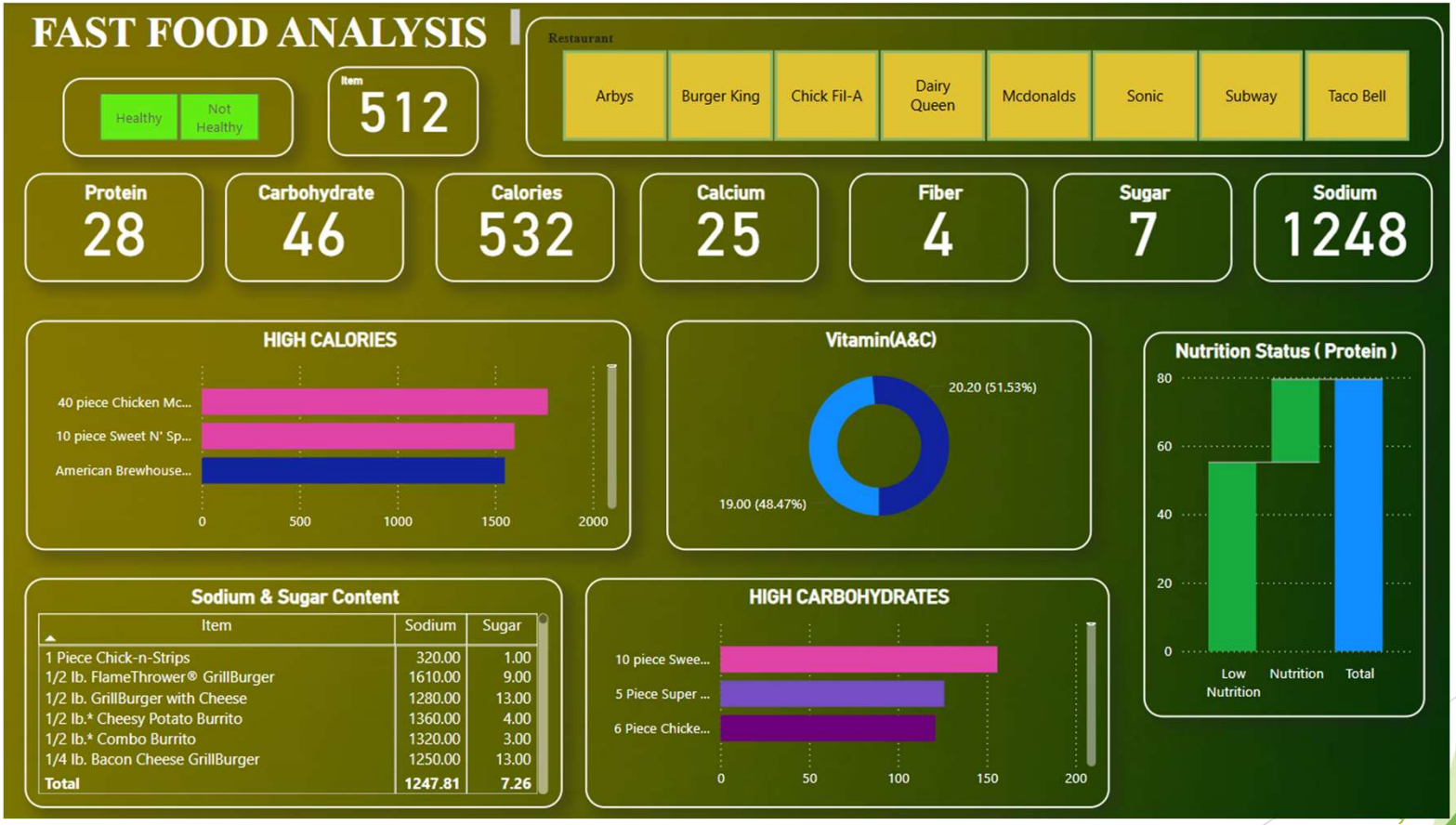
total_fat	sat_fat	trans_fat	cholesterol	sodium	total_carb	fiber	sugar	protein	vit_a	vit_c	calcium	salad	Healthy Status	Nutrition Status
19	7	0	20	1090	68	11	4	16	19	20	25	Other	Not Healthy	Nutrition

2.HEALTHY STATUS

```
Healthy Status = IF('Food_Analysis(CDACL004)'[calories]<= 500 && 'Food_Analysis(CDACL004)'[total_fat]<=20 && 'Food_Analysis(CDACL004)'[sat_fat]<=5 && 'Food_Analysis
(CDACL004)'[sodium]<=600 && 'Food_Analysis(CDACL004)'[sugar]<=10,"Healthy","Not Healthy" )
```

total_fat	sat_fat	trans_fat	cholesterol	sodium	total_carb	fiber	sugar	protein	vit_a	vit_c	calcium	salad	Healthy Status	Nutrition Status
19	7	0	20	1090	68	11	4	16	19	20	25	Other	Not Healthy	Nutrition

DATA VISUALIZATION



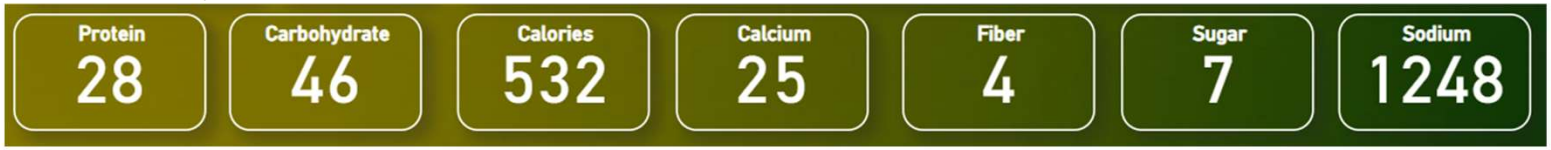
- Data visualization is the graphical representation of information and data.

Slicer Card

- It is a visual tool that allows users to filter report data interactively by selecting values displayed as individual cards or tiles.

Card

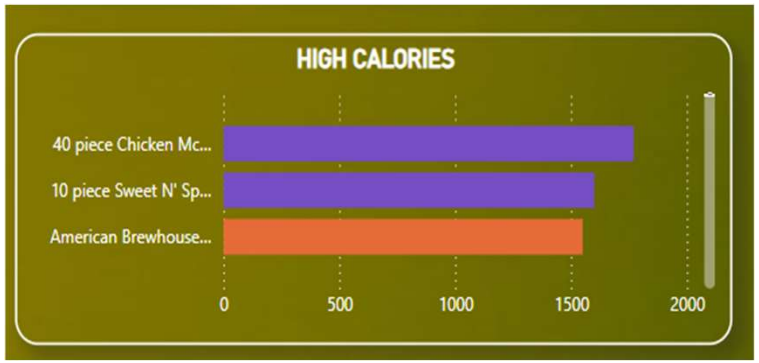
A Card in Power BI is a simple visual used to display a single value typically a key metric, such as total sales, profit, count, or average. It's designed to highlight important figures in a clean and easy-to-read format.

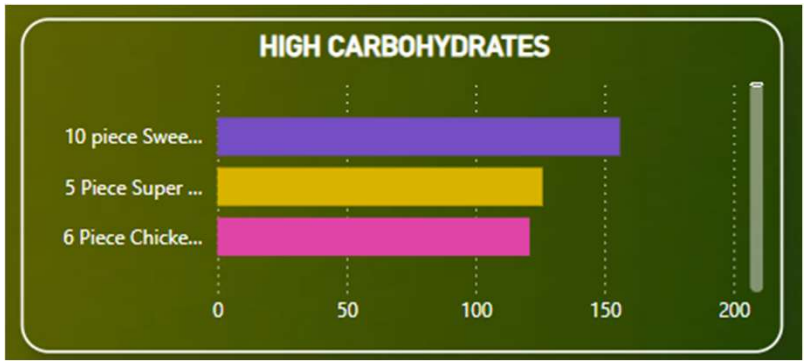


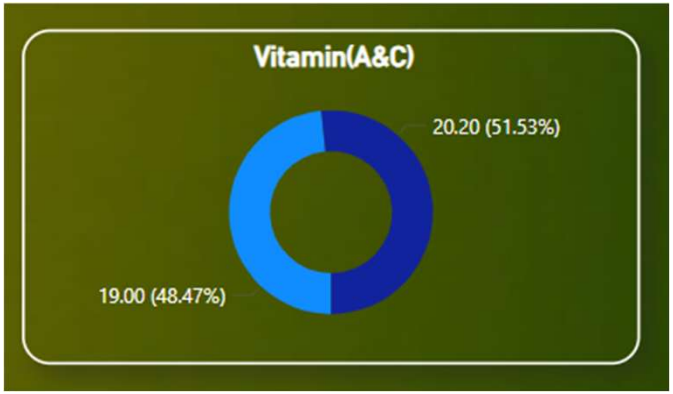
- Average of Protein.
- Average of Carbohydrate.
- Average of Calories.
- Average of Calcium.
- Average of Fiber.
- Average of Sugar.
- Average of Sodium.

Bar chart

- It is a graphical representation of data that uses rectangular bars to display categorical data.
- This bar chart highlights food items with the highest carbohydrate content, allowing quick comparison to identify items with the greatest carb load.





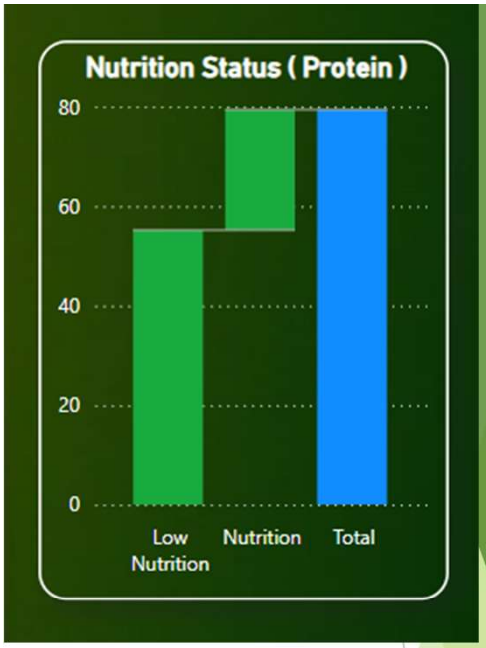


Donut Chart

- It is used to show proportional data or percentage contribution of categories to a whole.

Waterfall chart

- It is a type of visualization that shows how an initial value is affected by a series of intermediate positive or negative values, leading to a final result.
- The green bars represent incremental changes, while the blue bar represents the final total protein level.



Matrix Table

Sodium & Sugar Content

Item	Sodium	Sugar
1 Piece Chick-n-Strips	320.00	1.00
1/2 lb. FlameThrower® GrillBurger	1610.00	9.00
1/2 lb. GrillBurger with Cheese	1280.00	13.00
1/2 lb.* Cheesy Potato Burrito	1360.00	4.00
1/2 lb.* Combo Burrito	1320.00	3.00
1/4 lb. Bacon Cheese GrillBurger	1250.00	13.00
Total	**1247.81**	**7.26**

- It is visual table that allows you to display data in a pivot-table format, similar to an Excel PivotTable.
- This matrix table displays the sodium and sugar content of various food items, enabling easy comparison and highlighting total intake values for better nutritional insights.

Conclusion & Recommendation

- This diagnostic analysis reveals clear nutritional imbalances in many fastfood items.
- These insights support data-driven improvements in menu planning and public health awareness.
- Reduce Excess Nutrients.
- Expand Healthy Offerings.
- Reduce Sodium & Saturated Fat.


THANK YOU
FOR YOUR ATTENTION