# Nutritional Analysis of McDonald’s Menu

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**1. Objective**

The primary goal of this analysis was to provide insights into McDonald’s menu items based on their nutritional content. By analyzing the dataset, we aimed to:

* Identify high-calorie menu items.
* Understand the distribution of nutritional components across different categories.
* Provide actionable insights for health-conscious customers or menu optimization.

**2. Dataset Overview**

**Source:** [Specify dataset source, e.g., Kaggle, McDonald’s Official Website]  
**Key Features:**

* Total 260 menu items with attributes like Calories, Fat, Protein, Carbohydrates, etc.
* Categorized into Coffee & Tea, Breakfast, Chicken, Desserts, and more.

**Data Cleaning:**

* Handled missing values using forward-fill imputation.
* Verified data types and ensured consistency.
* Saved cleaned data into cleaned\_mcdonalds\_data.csv.

**3. Workflow**

**Step 1: Data Preparation with Python**

* Loaded the dataset using Pandas.
* Performed missing value imputation and basic exploratory data analysis (EDA).
* Exported cleaned data for Power BI visualization.

**Step 2: Visualization in Power BI**

* Designed dynamic dashboards using cleaned data.
* Focused on visualizing calorie distribution, nutritional breakdown, and key metrics.

**Step 3: Insights Generation**

* Used visual analytics to derive actionable insights.

**4. Visuals Overview**

**4.1 Total Menu Items**

* **Title:** Total Menu Items
* Visual Type: Card
* Insight: The dataset consists of 260 menu items.

**4.2 Total Calories Breakdown by Category**

* **Title:** Total Calories Breakdown by Category
* Visual Type: Stacked Bar Chart
* Insight: Breakfast and Coffee & Tea categories have the highest caloric contributions.

**4.3 Menu Items with Highest Caloric Content**

* **Title:** Menu Items with Highest Caloric Content
* Visual Type: Table
* Insight: Top 10 menu items like Vanilla Shake (Large) and Big Breakfast with Hotcakes contribute the most calories.

**4.4 Average Caloric Density by Category**

* **Title:** Average Caloric Density by Category
* Visual Type: Bar Chart
* Insight: Chicken items have the highest average calorie density.

**4.5 Nutritional Composition by Category**

* **Title:** Nutritional Composition by Category
* Visual Type: Clustered Column Chart
* Insight: Breakfast items have a balanced distribution of macronutrients.

**5. Key Insights**

1. The menu has a total of 260 items, with Coffee & Tea and Breakfast categories being the highest contributors to overall calories.
2. Top caloric items include shakes and breakfast meals, with Vanilla Shake (Large) leading at 820 calories.
3. Chicken items are the densest in calories per gram compared to other categories.
4. Nutritional distribution shows breakfast items as the most diverse in macronutrient composition.
5. Desserts and Salads have the lowest calorie contributions but lack diversity in macronutrients.

**6. Exit Criteria**

* All objectives were achieved:
  + Key caloric contributors were identified.
  + Nutritional insights for each category were derived.
  + A dashboard with intuitive and actionable visuals was created.

**Improvements Made:**

* Improved visualization by applying diverging color schemes for better readability.
* Added conditional formatting in the table for quick insights.
* Focused on top 10 highest-calorie menu items to highlight relevant data.

**7. Future Scope**

1. Incorporate customer feedback data to analyze menu preferences.
2. Perform sentiment analysis based on nutritional perception.
3. Extend analysis to compare McDonald’s menu with competitors for market benchmarking.
4. Automate data refresh to update dashboards with the latest menu information.