McDonald's Menu Nutritional Analysis - Project

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McDonald's is a global fast-food chain known for its diverse menu offerings. The main objective of this project is to analyze the nutritional content of the menu items available at McDonald's outlets. This analysis will provide valuable insights into the calorie count and nutrition facts of various menu items.

https://github.com/ansh131995/McDonald-s-Menu-Nutritional-Analysis---Project.git

1. Importing Libraries & Loading the Data

To start off with the analysis project the first step is indeed to load the dataset. We do this by firstly importing the necessary libraries below, among which we will use the pandas library to load and read the dataset.

In [34]:
```
import pandas as pd
import seaborn as sns
import matplotlib.pyplot as plt
import warnings
warnings.filterwarnings("ignore")
```

In [35]:
```
mcd_df = pd.read_csv('Nutrical Dataset.csv')
```

In [36]:
```
mcd_df
```

Out[36]:

	Category	Item	Serving Size	Calories	Calories from Fat	Total Fat	Total Fat (% Daily Value)	Saturated Fat	Saturated Fat (% Daily Value)
0	Breakfast	Egg McMuffin	4.8 oz (136 g)	300	120	13.0	20	5.0	25
1	Breakfast	Egg White Delight	4.8 oz (135 g)	250	70	8.0	12	3.0	15
2	Breakfast	Sausage McMuffin	3.9 oz (111 g)	370	200	23.0	35	8.0	42
3	Breakfast	Sausage McMuffin with Egg	5.7 oz (161 g)	450	250	28.0	43	10.0	52
4	Breakfast	Sausage McMuffin with Egg Whites	5.7 oz (161 g)	400	210	23.0	35	8.0	42
...	...	...	...	...	...	...	...	...	...
255	Smoothies & Shakes	McFlurry with Oreo Cookies (Small)	10.1 oz (285 g)	510	150	17.0	26	9.0	44
256	Smoothies & Shakes	McFlurry with Oreo Cookies (Medium)	13.4 oz (381 g)	690	200	23.0	35	12.0	58
257	Smoothies & Shakes	McFlurry with Oreo Cookies (Snack)	6.7 oz (190 g)	340	100	11.0	17	6.0	29
258	Smoothies & Shakes	McFlurry with Reese's Peanut Butter Cups (Medium)	14.2 oz (403 g)	810	290	32.0	50	15.0	76
259	Smoothies & Shakes	McFlurry with Reese's Peanut Butter	7.1 oz (202 g)	410	150	16.0	25	8.0	38

	Category	Item	Serving Size	Calories	Calories from Fat	Total Fat	Total Fat (% Daily Value)	Saturated Fat	Saturated Fat (% Daily Value)
		Cups (Snack)							

260 rows × 24 columns

In [37]:
```
mcd_df.shape
```

Out[37]: (260, 24)

After loading the dataset we found the actual shape (with the .shape() function) of the dataframe which comprises of 260 different menu items spread across a range of category menu, where we will go through 22 different columns representing all the nutritional variables, which will help us with the indepth analysis.

2. Data Preprocessing

Here we will explore the dataset structure and we'll try to analyse if the datatypes are suited for the given set of datapoints. Also we'll try to identify if there are any missing values in the same.

In [38]:
```
mcd_df.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 260 entries, 0 to 259
Data columns (total 24 columns):
 #   Column                          Non-Null Count  Dtype
---  ------                          --------------  -----
 0   Category                        260 non-null    object
 1   Item                            260 non-null    object
 2   Serving Size                    260 non-null    object
 3   Calories                        260 non-null    int64
 4   Calories from Fat               260 non-null    int64
 5   Total Fat                       260 non-null    float64
 6   Total Fat (% Daily Value)       260 non-null    int64
 7   Saturated Fat                   260 non-null    float64
 8   Saturated Fat (% Daily Value)   260 non-null    int64
 9   Trans Fat                       260 non-null    float64
 10  Cholesterol                     260 non-null    int64
 11  Cholesterol (% Daily Value)     260 non-null    int64
 12  Sodium                          260 non-null    int64
 13  Sodium (% Daily Value)          260 non-null    int64
 14  Carbohydrates                   260 non-null    int64
 15  Carbohydrates (% Daily Value)   260 non-null    int64
 16  Dietary Fiber                   260 non-null    int64
 17  Dietary Fiber (% Daily Value)   260 non-null    int64
 18  Sugars                          260 non-null    int64
 19  Protein                         260 non-null    int64
 20  Vitamin A (% Daily Value)       260 non-null    int64
 21  Vitamin C (% Daily Value)       260 non-null    int64
 22  Calcium (% Daily Value)         260 non-null    int64
 23  Iron (% Daily Value)            260 non-null    int64
dtypes: float64(3), int64(18), object(3)
memory usage: 48.9+ KB
```

In [39]:
```
mcd_df.isnull()
```

Out[39]:

	Category	Item	Serving Size	Calories	Calories from Fat	Total Fat	Total Fat (% Daily Value)	Saturated Fat	Saturated Fat (% Daily Value)	Tran Fa
0	False	False	False	False	False	False	False	False	False	Fals
1	False	False	False	False	False	False	False	False	False	Fals
2	False	False	False	False	False	False	False	False	False	Fals
3	False	False	False	False	False	False	False	False	False	Fals
4	False	False	False	False	False	False	False	False	False	Fals
...	...	...	...	...	...	...	...	...	...	
255	False	False	False	False	False	False	False	False	False	Fals
256	False	False	False	False	False	False	False	False	False	Fals
257	False	False	False	False	False	False	False	False	False	Fals
258	False	False	False	False	False	False	False	False	False	Fals
259	False	False	False	False	False	False	False	False	False	Fals

260 rows × 24 columns

In [40]:
```
mcd_df.isnull().sum()
```

Out[40]:
```
Category                        0
Item                            0
Serving Size                    0
Calories                        0
Calories from Fat               0
Total Fat                       0
Total Fat (% Daily Value)       0
Saturated Fat                   0
Saturated Fat (% Daily Value)   0
Trans Fat                       0
Cholesterol                     0
Cholesterol (% Daily Value)     0
Sodium                          0
Sodium (% Daily Value)          0
Carbohydrates                   0
Carbohydrates (% Daily Value)   0
Dietary Fiber                   0
Dietary Fiber (% Daily Value)   0
Sugars                          0
Protein                         0
Vitamin A (% Daily Value)       0
Vitamin C (% Daily Value)       0
Calcium (% Daily Value)         0
Iron (% Daily Value)            0
dtype: int64
```

3. Exploratory Data Analysis

A. Analyze the distribution of calorie counts across menu items.

In [41]:
```
mcd_df.head()
```

Out[41]:

	Category	Item	Serving Size	Calories	Calories from Fat	Total Fat	Total Fat (% Daily Value)	Saturated Fat	Saturated Fat (% Daily Value)	Tr
0	Breakfast	Egg McMuffin	4.8 oz (136 g)	300	120	13.0	20	5.0	25	
1	Breakfast	Egg White Delight	4.8 oz (135 g)	250	70	8.0	12	3.0	15	
2	Breakfast	Sausage McMuffin	3.9 oz (111 g)	370	200	23.0	35	8.0	42	
3	Breakfast	Sausage McMuffin with Egg	5.7 oz (161 g)	450	250	28.0	43	10.0	52	
4	Breakfast	Sausage McMuffin with Egg Whites	5.7 oz (161 g)	400	210	23.0	35	8.0	42	

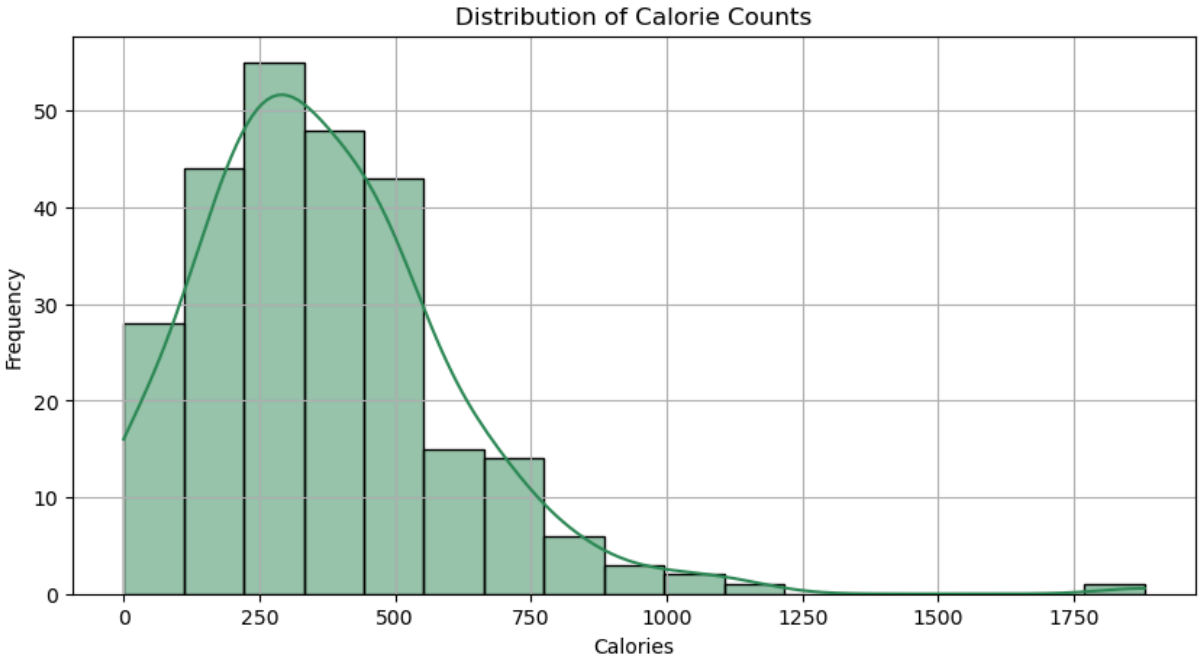
5 rows × 24 columns

Calories

In [42]:
```
Calories=mcd_df['Calories'].describe()
Calories
```

Out[42]:
```
count     260.000000
mean      368.269231
std       240.269886
min         0.000000
25%       210.000000
50%       340.000000
75%       500.000000
max      1880.000000
Name: Calories, dtype: float64
```

In [43]:
```
plt.figure(figsize=(10,5))
sns.histplot(data=mcd_df,x='Calories',kde=True,bins=17,color="seagreen")
plt.title('Distribution of Calorie Counts')
plt.xlabel('Calories')
plt.ylabel('Frequency')
plt.grid()
plt.show()
```



Descriptive Statistics -

-

The distribution of calorie counts in the dataset is heavily skewed towards the right side, with the majority of items falling within the 125-500 calorie range. However, there are a few outliers on both the lower and higher ends.

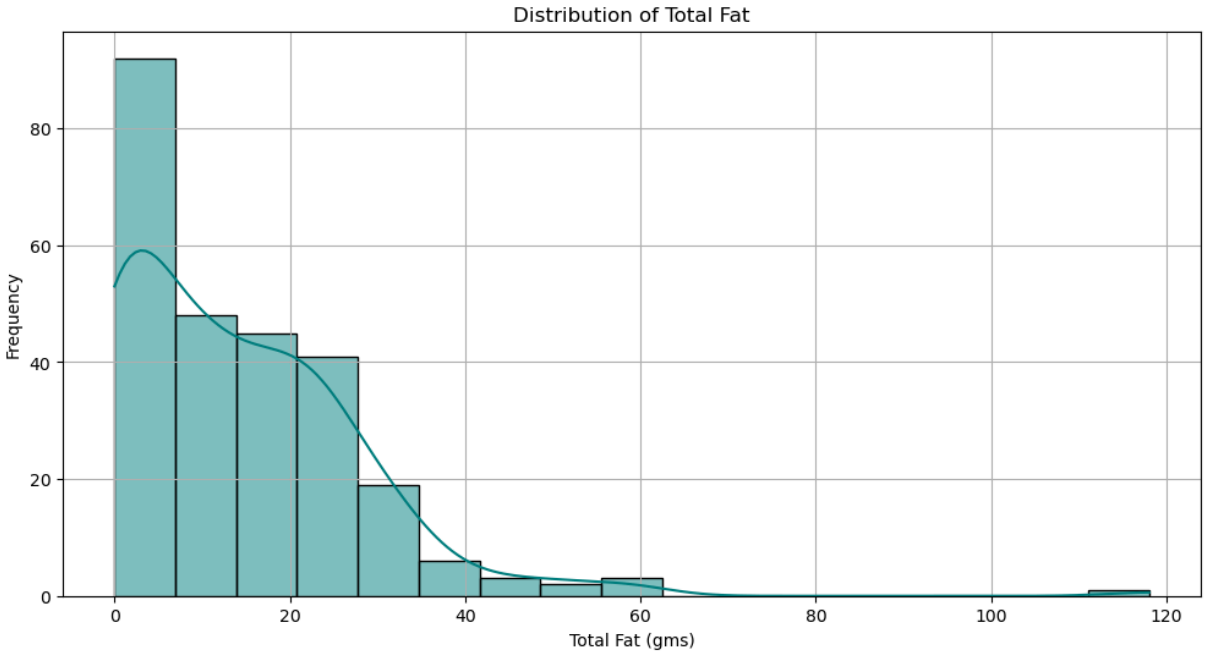
B. Explore the nutritional content (e.g., fat, protein, carbohydrates) of different items.

B.1] Total Fat (grams)

In [44]:
```
Total_fat=mcd_df['Total Fat'].describe()
Total_fat
```

Out[44]:
```
count    260.000000
mean      14.165385
std       14.205998
min        0.000000
25%        2.375000
50%       11.000000
75%       22.250000
max      118.000000
Name: Total Fat, dtype: float64
```

In [45]:
```
plt.figure(figsize=(12,6))
sns.histplot(data=mcd_df, x='Total Fat',bins=17, kde = True,color='teal')
plt.title('Distribution of Total Fat')
plt.xlabel('Total Fat (gms)')
plt.ylabel('Frequency')
plt.grid()
plt.show()
```



Descriptive Statistics -

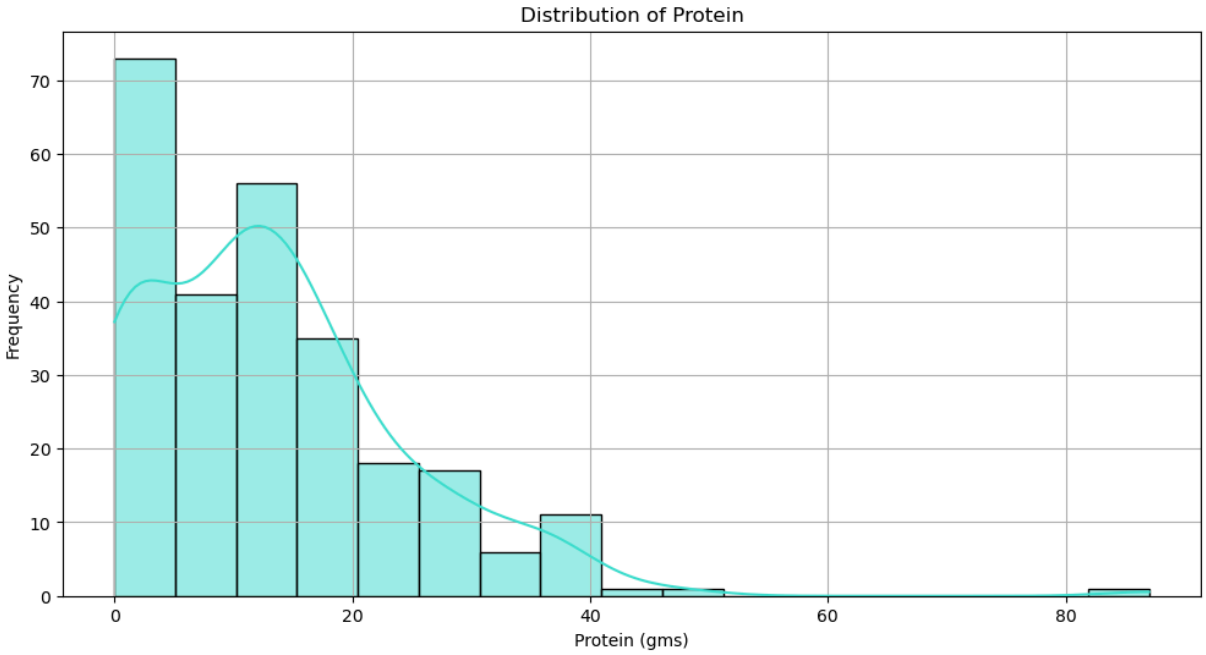
The distribution of total fat content in the dataset has a mean of 14.16 grams and a standard deviation of 14.2 grams, indicating a moderate spread in the total fat values. Twenty-five percent of the items have 2.37 grams or less total fat, 50% have 11 grams or less, and 75% have 22.25 grams or less.

B.2] Proteins (grams)

In [46]:
```
Proteins =mcd_df['Protein'].describe()
Proteins
```

Out[46]:
```
count    260.000000
mean      13.338462
std       11.426146
min        0.000000
25%        4.000000
50%       12.000000
75%       19.000000
max       87.000000
Name: Protein, dtype: float64
```

In [47]:
```
plt.figure(figsize=(12, 6))
sns.histplot(data=mcd_df, x='Protein', bins=17, kde=True, color='turquoise')
plt.title('Distribution of Protein')
plt.xlabel('Protein (gms)')
plt.ylabel('Frequency')
plt.grid()
plt.show()
```



Descriptive Statistics -

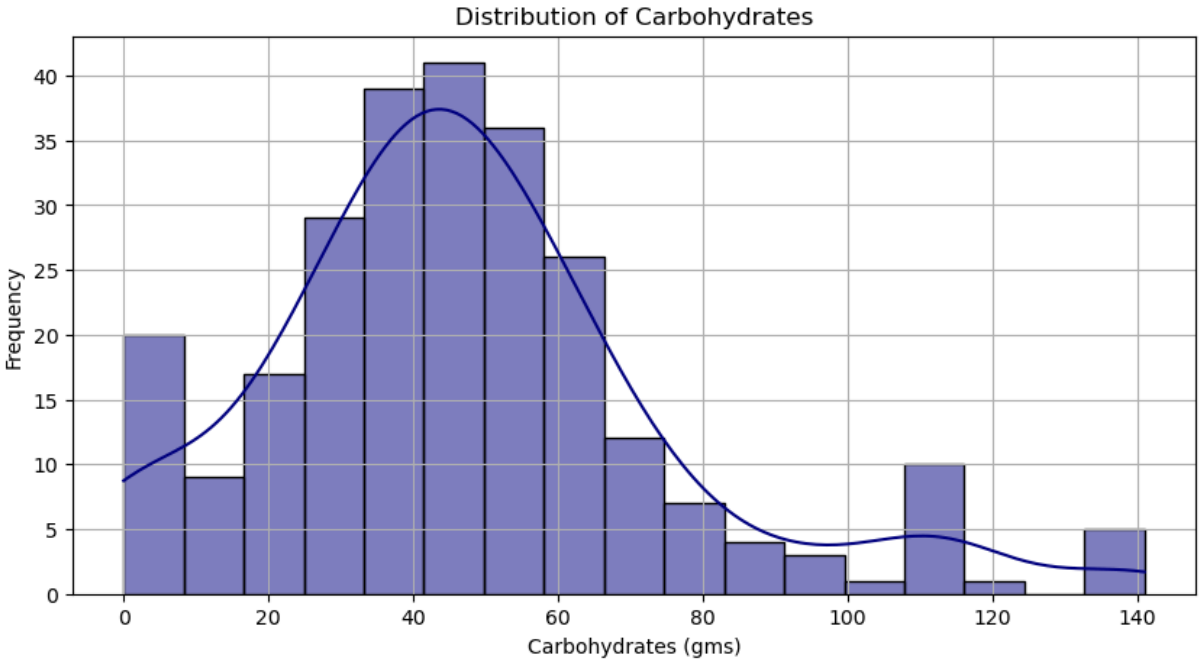
The distribution of protein content in the dataset has a mean of 13.33 grams and a standard deviation of 11.43 grams, indicating a moderate spread in the protein values. Twenty-five percent of the items have 12 grams or less protein, 50% have 19 grams or less, and 75% have 87 grams or less.

B.3] Carbohydrates (grams)

In [48]:
```
Carbohydrates= mcd_df['Carbohydrates'].describe()
Carbohydrates
```

Out[48]:
```
count    260.000000
mean      47.346154
std       28.252232
min        0.000000
25%       30.000000
50%       44.000000
75%       60.000000
max      141.000000
Name: Carbohydrates, dtype: float64
```

In [49]:
```
plt.figure(figsize=(10,5))
sns.histplot(data=mcd_df, x='Carbohydrates',bins=17, kde = True, color= 'navy')
plt.title('Distribution of Carbohydrates')
plt.xlabel('Carbohydrates (gms)')
plt.ylabel('Frequency')
plt.grid()
plt.show()
```



Descriptive Statistics -

The distribution of carbohydrate content in the dataset has a mean of 47.34 grams and a standard deviation of 28.25 grams, indicating a widespread in the carbohydrate values. Twenty-five percent of the items have 30 grams or less carbohydrates, 50% have 44 grams or less, and 75% have 60 grams or less.

C. Identify trends and patterns in the dataset.

In this particular step we will analyze how different nutritional variables across the items correlate to each other through visualizing the correlation with the help of pairplots and heatmaps.

In [50]:
```
nutritional_vars = ['Calories','Total Fat', 'Cholesterol','Carbohydrates','Proteins
nutritional_vars
```

Out[50]:
```
['Calories', 'Total Fat', 'Cholesterol', 'Carbohydrates', 'Proteins']
```

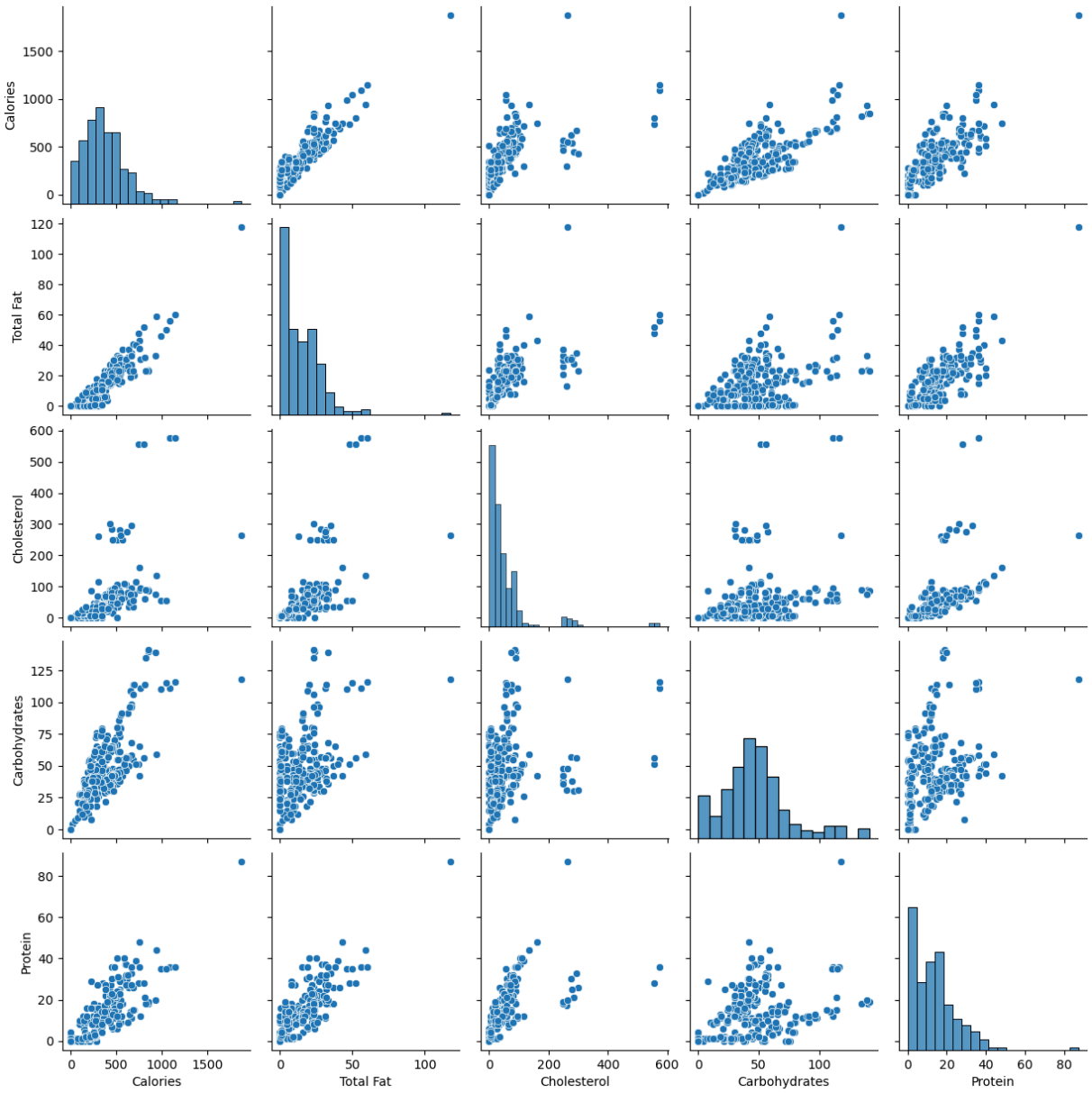
In [51]:
```
calories_vs_nutrients = mcd_df[['Calories','Total Fat', 'Cholesterol','Carbohydrate
print(calories_vs_nutrients)
```

```
              Calories  Total Fat  Cholesterol  Carbohydrates   Protein
Calories      1.000000   0.904409     0.596399       0.781539  0.787847
Total Fat     0.904409   1.000000     0.680547       0.461213  0.807773
Cholesterol   0.596399   0.680547     1.000000       0.270977  0.561561
Carbohydrates 0.781539   0.461213     0.270977       1.000000  0.352122
Protein       0.787847   0.807773     0.561561       0.352122  1.000000
```

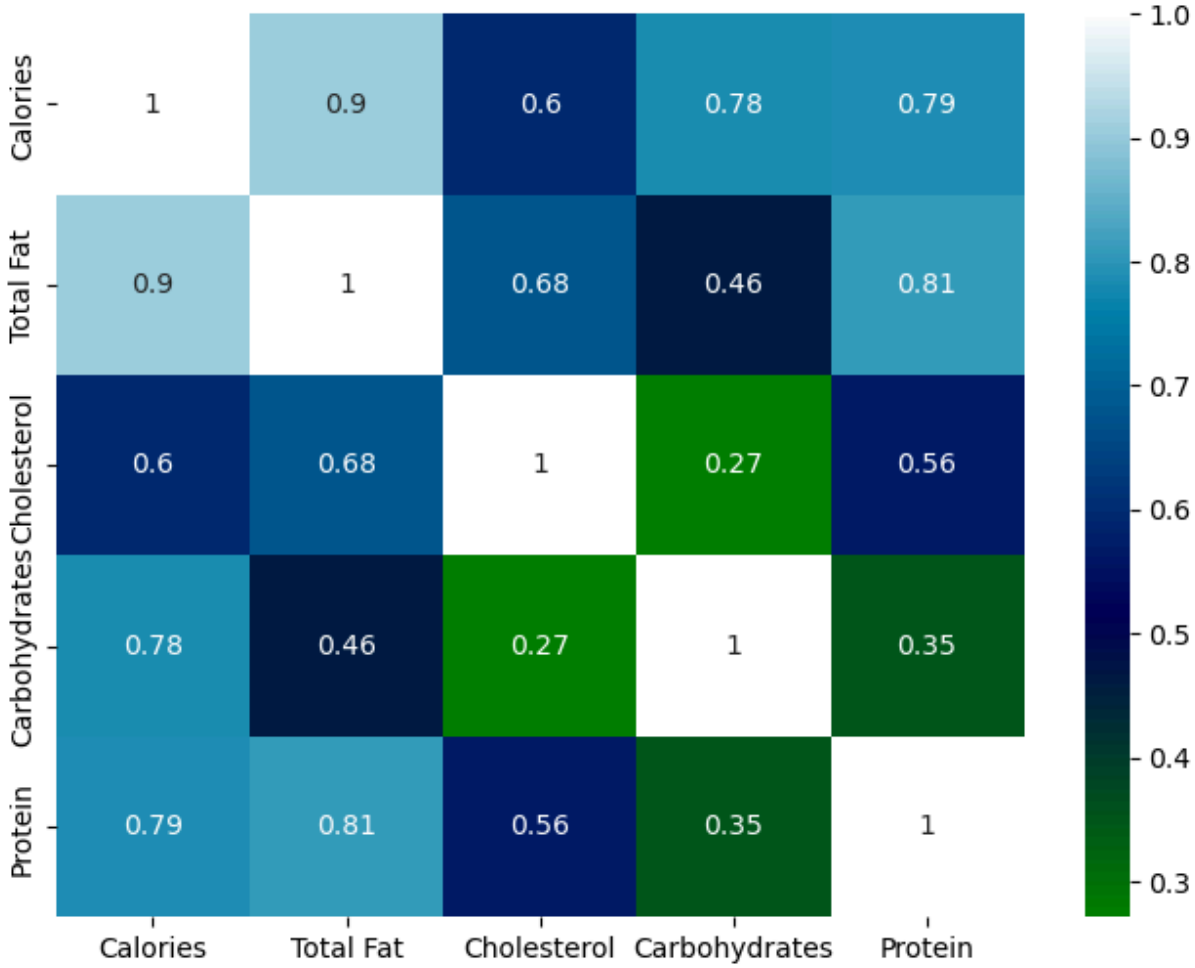
Above code gives us a numerical matrix of how the other nutrients correlate with the Calories, but not necessarily can give us a proper idea. So we rather rely on the visual of the matrix and plot the correlations as well.

In [52]:
```
sns.pairplot(mcd_df[['Calories','Total Fat', 'Cholesterol','Carbohydrates','Protein
```

Out[52]: <seaborn.axisgrid.PairGrid at 0x195eee059d0>



In [53]:
```
plt.figure(figsize=(8,6))
sns.heatmap(calories_vs_nutrients, annot=True, cmap='ocean')
plt.show()
```



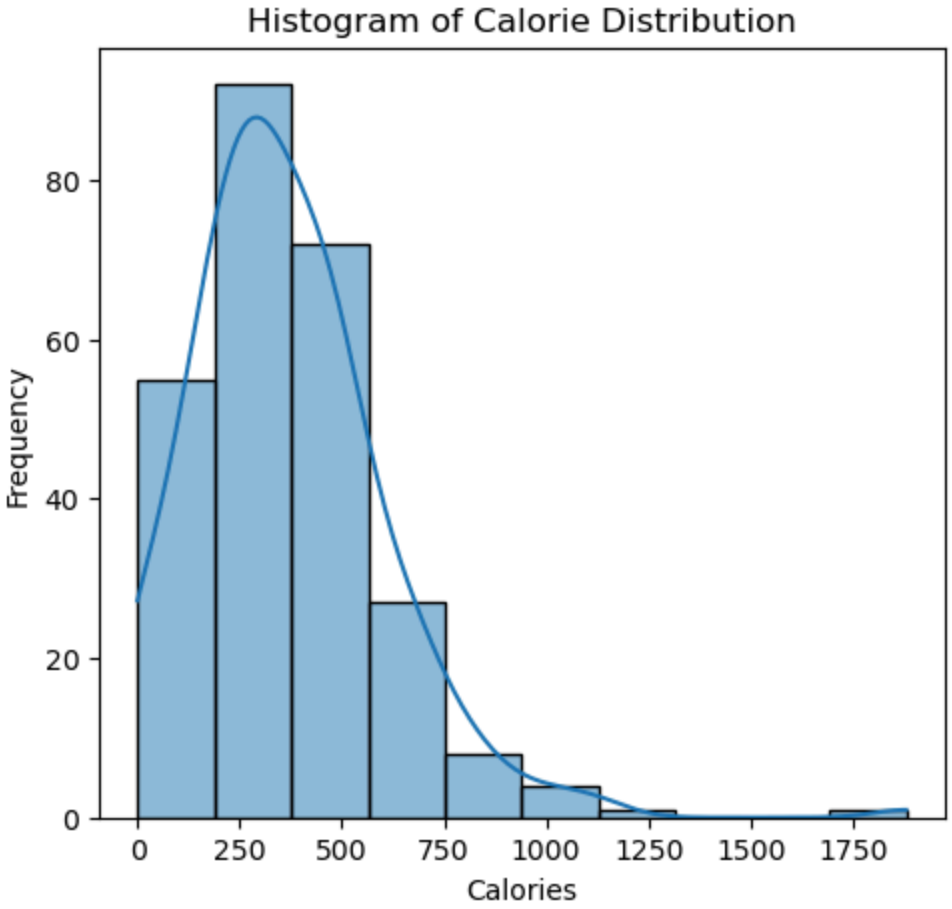
4. Data Visualization

To gain insights into the calorie distribution and nutritional content of these items, I will create several data visualizations. First, I will generate a histogram and a box plot to visualize the distribution of calorie counts across the menu items. This will allow us to understand the range of calorie values, identify any outliers or skewness in the data, and get a sense of the overall calorie distribution. Next, I will create a series of bar charts to compare the nutritional characteristics (total fat, saturated fat, carbohydrates, and protein) of different food categories, such as burgers, salads, and desserts. This will help identify any significant differences in the nutrient profiles of these food groups. Through these visualizations, we can gain a comprehensive understanding of the calorie and nutrient composition of the menu items, which can inform consumer choices and guide menu development efforts.

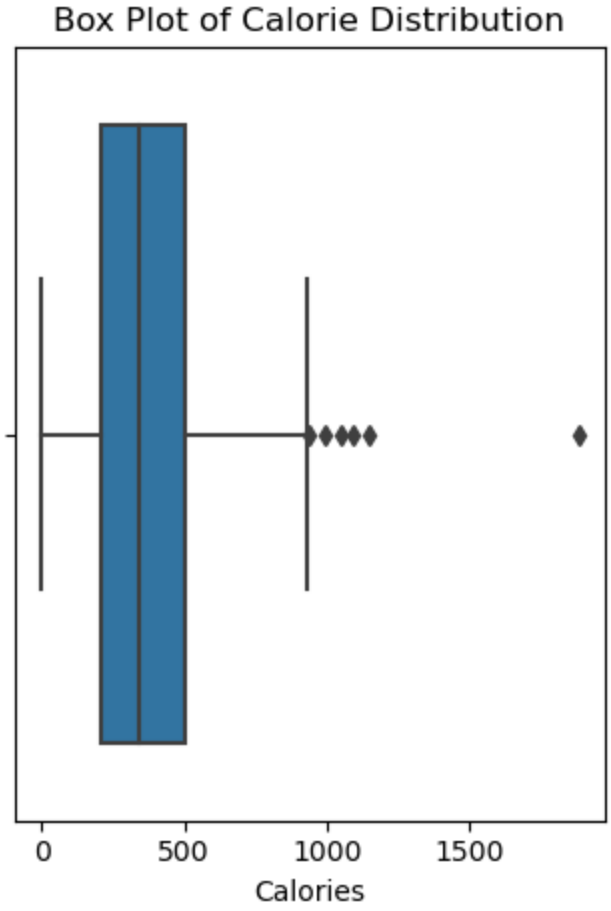
A. Distribution of Calories

The histogram and boxplot for the said distribution can be plotted together with the help of a subplot, so that we can compare both the visuals side by side to get more comprehensive insights about the distribution as well as the outliers.

In [54]:
```
plt.figure(figsize=(12, 5))
plt.subplot(1, 2, 1)
sns.histplot(mcd_df['Calories'], bins=10, kde=True)
plt.title('Histogram of Calorie Distribution')
plt.xlabel('Calories')
plt.ylabel('Frequency')
plt.show()
```



In [55]:
```
plt.subplot(1, 2, 2)
sns.boxplot(x=mcd_df['Calories'])
plt.title('Box Plot of Calorie Distribution')
plt.xlabel('Calories')
plt.tight_layout()
plt.show()
```



The shape of the histogram is right-skewed, with a peak at approximately 125-500 calories and a long tail towards the higher values of calories. The majority of menu items fall on the lower end of the calorie count, and there are only a few high-calorie outliers. The observations are confirmed by the box plot, where the median is approximately 340 calories and the 25th and 75th percentiles are 210 and 500, respectively. The box plot reveals the presence of several outliers, some of which are associated with high calories, starting from the "McFlurry with Reese's Peanut Butter Cups (Medium)" at 810 calories.

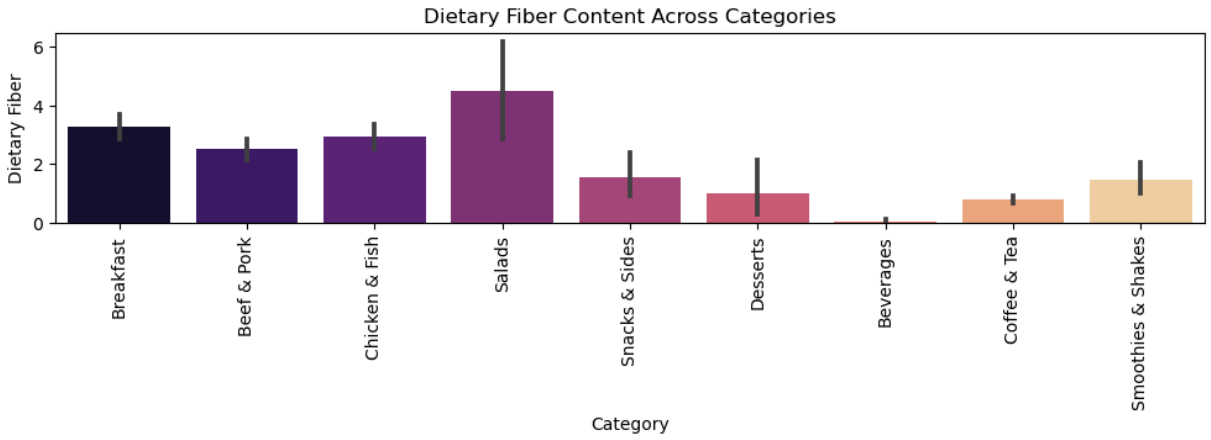
B. Nutritional Content Comparison

With the help of several bar-charts and boxplots we compare the nutritional characteristics of different food categories. As the count of nutrients is 22(which will not be as feasible), we create the visualizations for 4 selected list of nutrients namely,

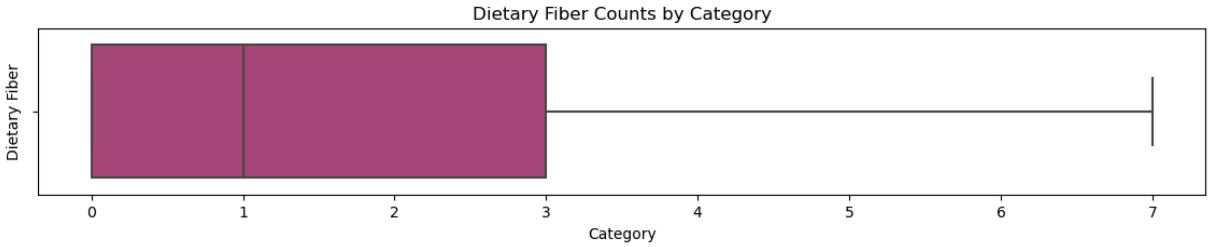
1. Dietary Fiber
2. Cholesterol (% Daily Value)
3. Sodium
4. Calcium (% Daily Value)

Dietary Fiber

In [56]:
```
plt.figure(figsize=(12,2))
sns.barplot(data= mcd_df, x='Category',y='Dietary Fiber',palette = 'magma' )
plt.title('Dietary Fiber Content Across Categories')
plt.xlabel('Category')
plt.ylabel('Dietary Fiber')
plt.xticks(rotation=90)
plt.show()
```

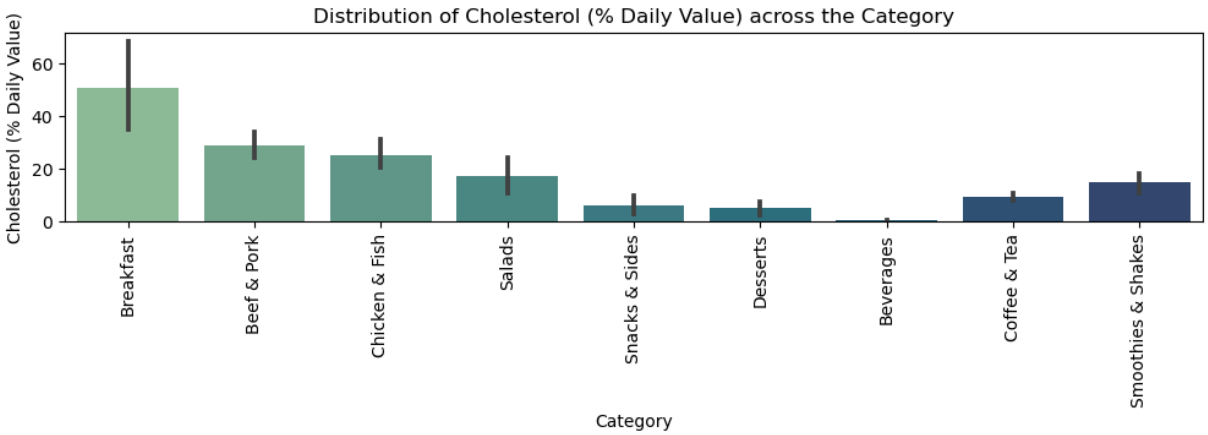


In [57]:
```
plt.figure(figsize=(14, 2))
sns.boxplot(data= mcd_df, x= 'Dietary Fiber',palette = 'magma')
plt.title('Dietary Fiber Counts by Category')
plt.xlabel('Category')
plt.ylabel('Dietary Fiber')
plt.show()
```

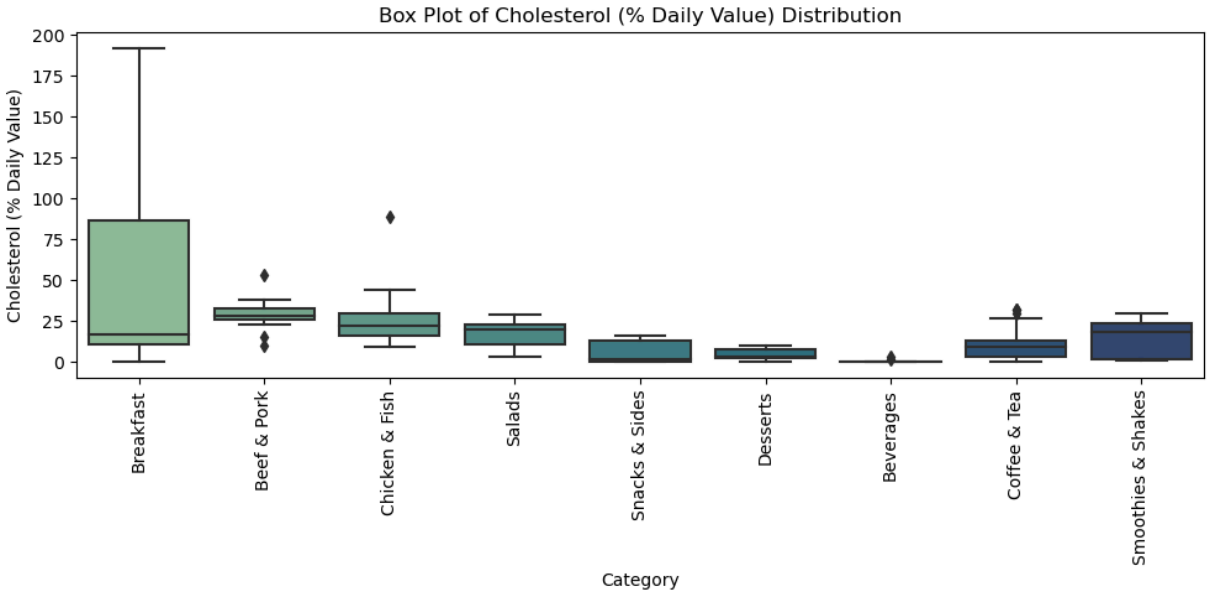


B.2 Cholesterol (% Daily Value)

In [58]:
```
plt.figure(figsize=(12,2))
sns.barplot(data= mcd_df, x= 'Category', y= 'Cholesterol (% Daily Value)', palette=
plt.title('Distribution of Cholesterol (% Daily Value) across the Category')
plt.xlabel('Category')
plt.ylabel('Cholesterol (% Daily Value)')
plt.xticks(rotation= 90)
plt.show()
```

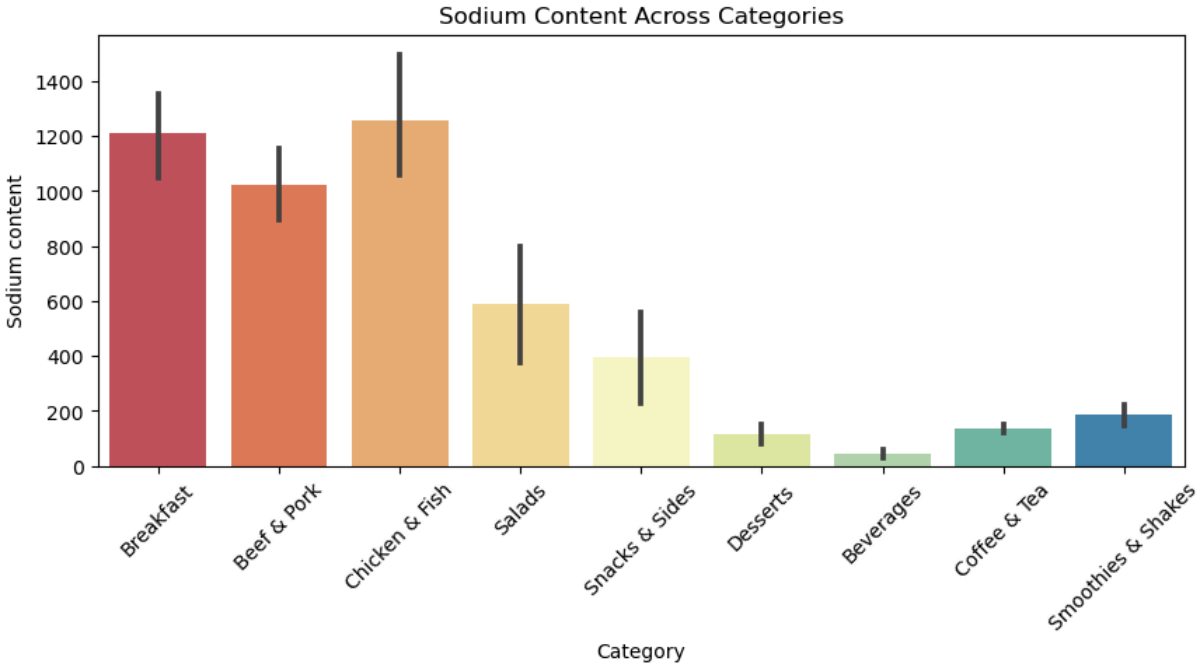


In [59]:
```
plt.figure(figsize=(10,5))
sns.boxplot(data= mcd_df, x= 'Category', y='Cholesterol (% Daily Value)',palette= '
plt.title('Box Plot of Cholesterol (% Daily Value) Distribution')
plt.xlabel('Category')
plt.ylabel('Cholesterol (% Daily Value)')
plt.xticks(rotation= 90)
plt.tight_layout()
plt.show()
```

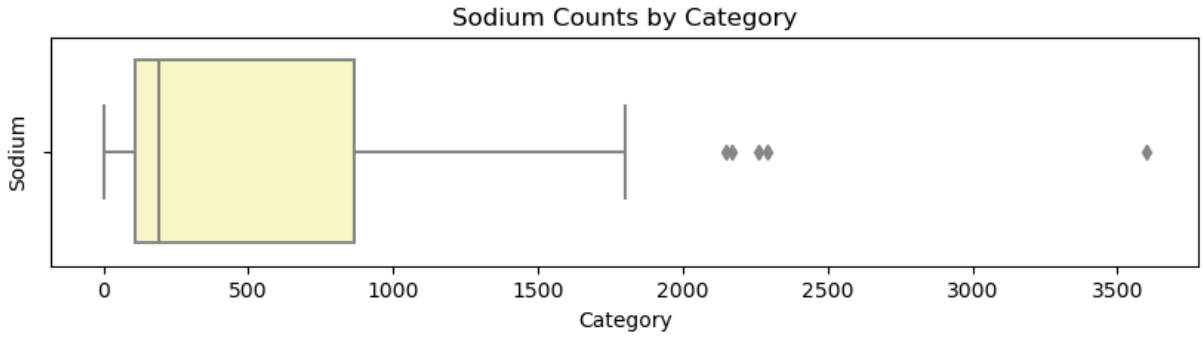


B.3 sodium

In [60]:
```
plt.figure(figsize=(10, 4))
sns.barplot(data=mcd_df, x='Category',y='Sodium',palette= 'Spectral')
plt.title('Sodium Content Across Categories')
plt.xlabel('Category')
plt.ylabel('Sodium content')
plt.xticks(rotation=45)
plt.show()
```

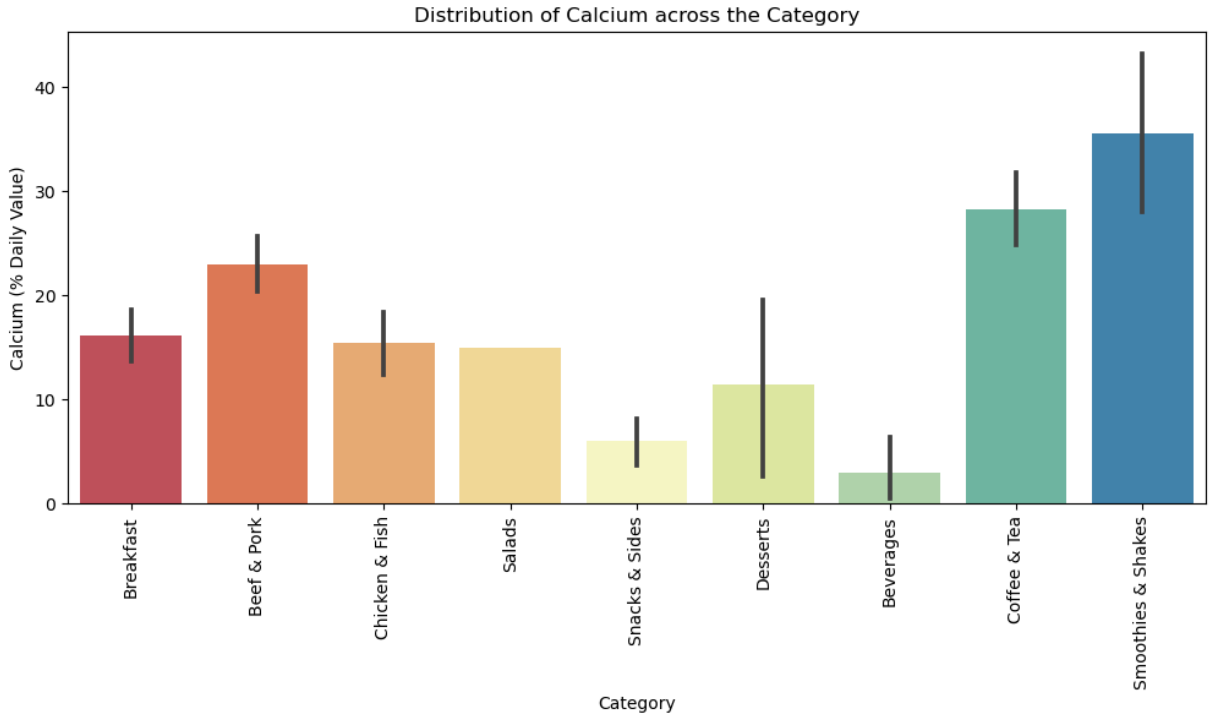


In [61]:
```
plt.figure(figsize=(10, 2))
sns.boxplot(data= mcd_df, x= 'Sodium',palette= 'Spectral')
plt.title('Sodium Counts by Category')
plt.xlabel('Category')
plt.ylabel('Sodium')
plt.show()
```

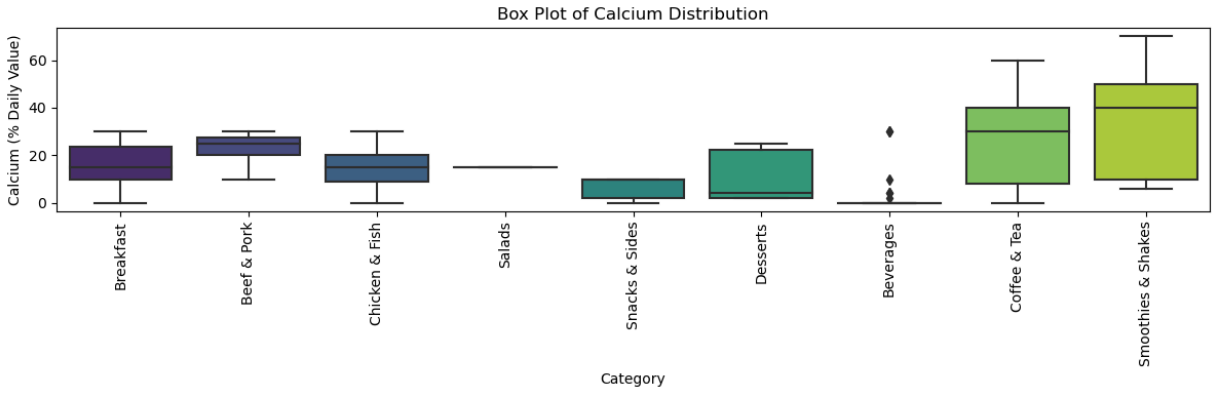


B. Calcium (% Daily Value)

In [62]:
```
plt.figure(figsize=(12, 5))
sns.barplot(data= mcd_df, x= 'Category', y= 'Calcium (% Daily Value)',palette= 'Spe
plt.title('Distribution of Calcium across the Category')
plt.xlabel('Category')
plt.ylabel('Calcium (% Daily Value)')
plt.xticks(rotation= 90)
plt.show()
```



In [63]:
```
plt.figure(figsize=(12, 4))
sns.boxplot(data= mcd_df, x= 'Category', y='Calcium (% Daily Value)',palette= 'viri
plt.title('Box Plot of Calcium Distribution')
plt.xlabel('Category')
plt.ylabel('Calcium (% Daily Value)')
plt.xticks(rotation= 90)
plt.tight_layout()
plt.show()
```



1. From barplot-

- smoothies & shakes has highest calcicum & Bevrages has the lowest calcium

2. From boxplot-

- salads has no calcium according to box plot

5. Nutrition-Based Insights

The main motto is to analyze the data to identify the menu items with the highest and lowest values specifically focused towards the calorie counts, as well as determine the average nutritional content of popular menu categories. To achieve this we will use the .idxmax() & .idxmin() functions to determine the highest and lowest values, and to determine the average nutritional content we'll use the .describe() function.

A. Identify menu items with the highest and lowest calorie counts.

In [64]:
```
highest_calorie_item = mcd_df.loc[mcd_df['Calories'].idxmax()]
print(f"The item with the highest calorie count: \n\t Item - {highest_calorie_item[
```

```
The item with the highest calorie count:
        Item - Chicken McNuggets (40 piece)
        Calorie Count- 1880
```

In [65]:
```
lowest_calorie_item = mcd_df.loc[mcd_df['Calories'].idxmin()]
print(f"The item with the lowest calorie count: \n\t Item - {lowest_calorie_item['I
```

```
The item with the lowest calorie count:
        Item - Diet Coke (Small)
        Calorie Count- 0
```

B. Determine the average nutritional content of popular menu categories.

In [66]:
```
columns_to_drop = ['Item', 'Serving Size']
df_new = mcd_df.drop(columns_to_drop, axis=1)
df_new.head()
```

Out[66]:

	Category	Calories	Calories from Fat	Total Fat	Total Fat (% Daily Value)	Saturated Fat	Saturated Fat (% Daily Value)	Trans Fat	Cholesterol	Ch
0	Breakfast	300	120	13.0	20	5.0	25	0.0	260	
1	Breakfast	250	70	8.0	12	3.0	15	0.0	25	
2	Breakfast	370	200	23.0	35	8.0	42	0.0	45	
3	Breakfast	450	250	28.0	43	10.0	52	0.0	285	
4	Breakfast	400	210	23.0	35	8.0	42	0.0	50	

5 rows × 22 columns

In [67]:
```
average_nutritional_content = df_new.groupby('Category').mean()
average_nutritional_content
```

Out[67]:

Category	Calories	Calories from Fat	Total Fat	Total Fat (% Daily Value)	Saturated Fat	Saturated Fat (% Daily Value)	Trans Fat
Beef & Pork	494.000000	224.666667	24.866667	38.600000	10.466667	52.000000	1.100000
Beverages	113.703704	0.740741	0.092593	0.148148	0.055556	0.296296	0.000000
Breakfast	526.666667	248.928571	27.690476	42.666667	10.654762	53.428571	0.107143
Chicken & Fish	552.962963	242.222222	26.962963	41.333333	6.166667	31.111111	0.129630
Coffee & Tea	283.894737	71.105263	8.021053	12.357895	4.921053	24.368421	0.142105
Desserts	222.142857	64.285714	7.357143	11.142857	4.285714	21.285714	0.000000
Salads	270.000000	108.333333	11.750000	18.333333	3.750000	18.500000	0.000000
Smoothies & Shakes	531.428571	127.678571	14.125000	21.714286	8.375000	41.785714	0.535714
Snacks & Sides	245.769231	94.615385	10.538462	16.230769	2.692308	13.384615	0.000000

9 rows × 21 columns

6.Documentation & Reporting

Findings and Insights:

Menu Item Analysis:

The dataset includes various menu items categorized into Breakfast, Beef & Pork, Chicken & Fish, Coffee & Tea, etc. Items like "Chicken McNuggets (40 pieces)" from the Chicken & Fish category have the highest calorie counts, while "Diet Coke (small)" from the Beverages category has the lowest. The Beef & Pork category tends to have higher protein content, while the Breakfast category often has higher fat and carbohydrate levels. Other categories like Beverages, Smoothies & Shakes, Coffee & Tea, although they have comparatively lower calorie, total fats, and carbohydrates values, show a significant spike in their sugar levels, and notably, a very low average of protein values as well. Average Nutritional Content:

Average Calories: The average calorie count for chicken & fish items is 552, making it a calorie-rich dietary option compared to other categories. Average Total Fat: Both the breakfast and chicken & fish categories show various items with higher total fat values, averaging at 27.69 and 26.9 grams, respectively. Average Protein: The chicken and fish

category items have the highest average protein values, amounting to 29.11 grams. Average Cholesterol: The breakfast category has a very high average cholesterol level calculated at 153 grams compared to other categories. Average Carbohydrates: Despite categories rich in protein such as chicken, fish, beef, and pork, the smoothies and shakes category has much higher carbohydrate levels across their variety of items, averaging at 90.5 grams.

Conclusions

Healthier Options:

Access to the nutritional content of the menu items enables customers to identify and choose healthier options, such as the Egg White Delight, Premium Grilled Chicken Classic Sandwich, and Fruit & Maple Oatmeal without Brown Sugar, which have lower calorie, fat, and sodium levels. This promotes better eating habits and supports customers in maintaining a balanced diet.

Unhealthy Side of the table

Based on the detailed analysis of the nutritional information provided some of the unhealthy food categories include:

1. Breakfast Category:

This category contains items that are high in calories, total fat, saturated fat, cholesterol, and sodium. For example, the "Big Breakfast with Hotcakes (Large Biscuit)" has 1,150 calories, 60 grams of total fat, 20 grams of saturated fat, and 2,260 mg of sodium. Many breakfast sandwiches and biscuits in this category are also high in these unhealthy nutrients. 2. Beef & Pork Category: This category includes items like burgers and sandwiches that are high in calories, total fat, saturated fat, and sodium. For instance, the "Bacon Clubhouse Burger" has 720 calories, 40 grams of total fat, 15 grams of saturated fat, and 1,470 mg of sodium. Other items in this category, such as the "Double Quarter Pounder with Cheese," also have high levels of these unhealthy nutrients. 3. The Chicken & Fish category generally has lower levels of these unhealthy nutrients compared to the Breakfast and Beef & Pork categories, but some items in this category can still be considered less healthy due to their calorie, fat, and sodium content. 4. Overall, the Breakfast and Beef & Pork categories stand out as the most unhealthy based on the nutritional information provided in the dataset.

Advice for the customers:

Breakfast Category: Exercise caution with items in the Breakfast category, as many are high in calories, fat, and sodium. Consider lighter options like "Fruit & Maple Oatmeal" or "Hash Brown," which have significantly lower calorie and fat content.

Beef & Pork Category: Opt for leaner protein sources in the Beef & Pork category, as burgers and sandwiches can be high in calories, fat, and sodium. Choose options like the

"Hamburger" or "Cheeseburger" for a healthier choice in this category.

Chicken & Fish Category: Prioritize the Chicken & Fish category for healthier choices, as it generally has lower calorie, fat, and sodium content compared to the Breakfast and Beef & Pork categories. Consider options like the "Premium Crispy Chicken Classic Sandwich" or "Premium Grilled Chicken Ranch BLT Sandwich."

Portion Sizes: Be mindful of portion sizes, as many menu items come in different serving sizes. Opt for smaller portions to limit your intake of unhealthy nutrients.

Supplement with Side Items: Consider adding a side item like "Hash Brown" or "Fruit & Maple Oatmeal" to your meal to balance out the nutritional profile and increase your intake of healthier options.

Recommendations to Improve McDonald's Menu Nutritional Profile:

Increase Healthy Options:

Introduce a wider variety of low-calorie, low-fat, and low-sodium menu items to cater to health-conscious customers. Expand the selection of salads, grilled chicken options, and fruit-based sides to offer more nutritious alternatives. Nutritional Information Transparency:

Enhance transparency by prominently displaying detailed nutritional information, including calories, fat, sodium, and sugar content, on menus and packaging. Include comprehensive allergen information to assist individuals with dietary restrictions or food allergies in making informed choices. Reduce Added Sugars:

Decrease the use of added sugars in menu items, particularly in beverages, desserts, and breakfast items, to adhere to dietary guidelines and promote healthier choices. Promote Balanced Meals:

Develop meal deals that feature balanced options such as lean protein, whole grains, and vegetables to encourage healthier eating habits among customers. Offer combo meals that include side salads or fruit as alternatives to fries to provide more nutritious choices and promote balanced meals.

Benefit of Nutritional Analysis

Benefit for Customers:

Informed Food Choices:

Detailed nutritional information provided in the dataset empowers customers to make informed decisions about their food choices. Understanding the calorie, fat, protein, and other nutrient contents of menu items helps customers select options that align with their dietary preferences and health goals. Health-Conscious Decisions:

The availability of nutritional analysis enables customers to be more health-conscious when choosing items from the menu. Customers can identify healthier options with lower calorie, fat, and sodium content, promoting better eating habits and overall well-being.
Accommodating Dietary Restrictions and Preferences:

Customers with specific dietary restrictions or preferences, such as low-fat, low-sodium, or high-protein diets, can easily find menu items that meet their nutritional needs. This information empowers customers to tailor their meal choices to suit their individual dietary requirements, enhancing their dining experience.

Benefit for Organization:

Menu Development: The nutritional analysis provides valuable insights for McDonald's in developing a more diverse and balanced menu that caters to a wider range of customer preferences. By understanding the nutritional profiles of menu items, McDonald's can introduce healthier options and adjust existing recipes to meet customer demands for nutritious and delicious choices.

Customer Satisfaction: Providing transparent and detailed nutritional information demonstrates McDonald's commitment to customer well-being and transparency. Customers appreciate having access to this information, which can enhance their overall dining experience and satisfaction with the brand.

Health and Wellness Initiatives: Utilizing the nutritional analysis data, McDonald's can align with health and wellness trends by promoting and highlighting healthier menu options. This proactive approach can position McDonald's as a health-conscious brand and attract customers who prioritize nutritious eating habits, contributing to the overall health and wellness of its customer base. In conclusion, the nutritional analysis benefits both McDonald's customers and the organization by promoting informed food choices, health-conscious decisions, and menu development strategies that cater to diverse dietary needs and preferences.

In [ ]: