In [ ]:
```
import pandas as pd
import matplotlib.pyplot as plt
import seaborn as sns
import numpy as np

csv_file_path='UScereal - UScereal.csv'
csv_read=pd.read_csv(csv_file_path)
print(csv_read)



#Bar Chart with 2 Variables
plt.figure(figsize=(12, 6))
sns.barplot(x='mfr', y='calories', data=csv_read, ci=None)
plt.title('Bar Chart of Calories for Cereal Manufacturers')
plt.xlabel('Manufacturer')
plt.ylabel('Calories')
plt.show()

#Bar Chart with 3 Variables
plt.figure(figsize=(14, 6))
sns.barplot(x='mfr', y='calories', hue='shelf', data=csv_read)
plt.title('Bar Chart of Calories for Cereal Manufacturers with Shelf Information
plt.xlabel('Manufacturer')
plt.ylabel('Calories')
plt.show()

# Scatter Plot with 2 Variables
plt.figure(figsize=(10, 6))
sns.scatterplot(x='calories', y='protein', data=csv_read, hue='mfr', palette='vi
plt.title('Scatter Plot of Calories vs Protein with Manufacturer')
plt.xlabel('Calories')
plt.ylabel('Protein')
plt.legend(title='Manufacturer')
plt.show()
# Scatter Plot with 3 Variables
plt.figure(figsize=(12, 8))
sns.scatterplot(x='calories', y='protein', hue='mfr', size='fat', data=csv_read,
plt.title('Scatter Plot of Calories vs Protein with Manufacturer and Fat Size')
plt.xlabel('Calories')
plt.ylabel('Protein')
plt.legend(title='Manufacturer')
plt.show()

# Histogram with 2 variables
plt.figure(figsize=(10, 6))
sns.histplot(data=csv_read, x='calories', kde=True)
plt.title('Histogram of Calories')
plt.show()

# Histogram with 3 variables
plt.figure(figsize=(12, 8))
sns.histplot(data=csv_read, x='calories', hue='mfr', kde=True)
plt.title('Histogram of Calories with Manufacturer')
plt.show()

# Pie chart
plt.figure(figsize=(8, 8))
```

```
csv_read['mfr'].value_counts().plot.pie(autopct='%1.1f%%')
plt.title('Pie Chart of Manufacturer Distribution')
plt.show()

# Pair plot
sns.pairplot(csv_read.drop(['Name', 'mfr', 'vitamins'], axis=1), height=2.5)
plt.suptitle('Pair Plot of Cereal Dataset', y=1.02)
plt.show()

# Bubble Plot
plt.figure(figsize=(12, 8))
sns.scatterplot(x='protein', y='sugars', size='calories', data=csv_read, hue='mf
plt.title('Bubble Plot of Protein vs Sugars with Calories')
plt.show()

# Box Plot
plt.figure(figsize=(12, 8))
sns.boxplot(x='mfr', y='calories', data=csv_read)
plt.title('Box Plot of Calories for Cereal Manufacturers')
plt.show()

# Violin Plot
plt.figure(figsize=(12, 8))
sns.violinplot(x='mfr', y='calories', data=csv_read)
plt.title('Violin Plot of Calories for Cereal Manufacturers')
plt.show()

# Area Plot
csv_read.drop(['Name', 'vitamins'], axis=1).plot.area(stacked=False, figsize=(12
plt.title('Area Plot of Cereal Features')
plt.show()
```

```
                        Name mfr  calories  protein   fat  sodium  fibre  \
0                  100% Bran   N    212.12    12.12  3.03  393.94  30.30
1                   All-Bran   K    212.12    12.12  3.03  787.88  27.27
2   All-Bran with Extra Fiber   K    100.00     8.00  0.00  280.00  28.00
3     Apple Cinnamon Cheerios   G    146.67     2.67  2.67  240.00   2.00
4                 Apple Jacks   K    110.00     2.00  0.00  125.00   1.00
..                        ...  ..       ...      ...   ...     ...    ...
60                    Triples   G    146.67     2.67  1.33  333.33   0.00
61                       Trix   G    110.00     1.00  1.00  140.00   0.00
62                 Wheat Chex   R    149.25     4.48  1.49  343.28   4.48
63                   Wheaties   G    100.00     3.00  1.00  200.00   3.00
64        Wheaties Honey Gold   G    146.67     2.67  1.33  266.67   1.33

    carbo  sugars  shelf  potassium  vitamins
0   15.15   18.18      3     848.48  enriched
1   21.21   15.15      3     969.70  enriched
2   16.00    0.00      3     660.00  enriched
3   14.00   13.33      1      93.33  enriched
4   11.00   14.00      2      30.00  enriched
..    ...     ...    ...        ...       ...
60  28.00    4.00      3      80.00  enriched
61  13.00   12.00      2      25.00  enriched
62  25.37    4.48      1     171.64  enriched
63  17.00    3.00      1     110.00  enriched
64  21.33   10.67      1      80.00  enriched

[65 rows x 12 columns]
```

```
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g:

The `ci` parameter is deprecated. Use `errorbar=None` for the same effect.

  sns.barplot(x='mfr', y='calories', data=csv_read, ci=None)
```
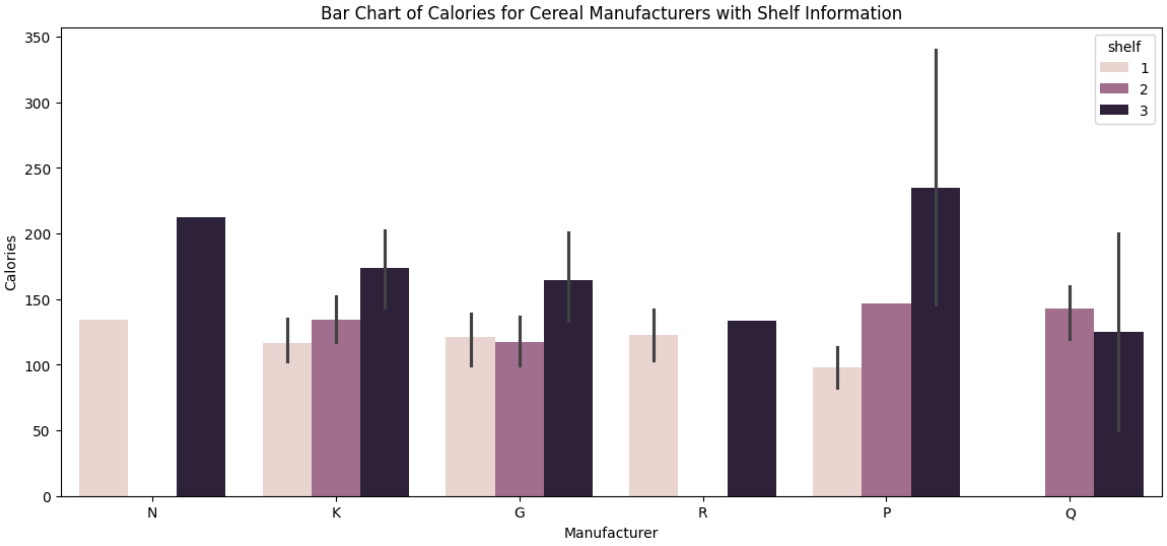
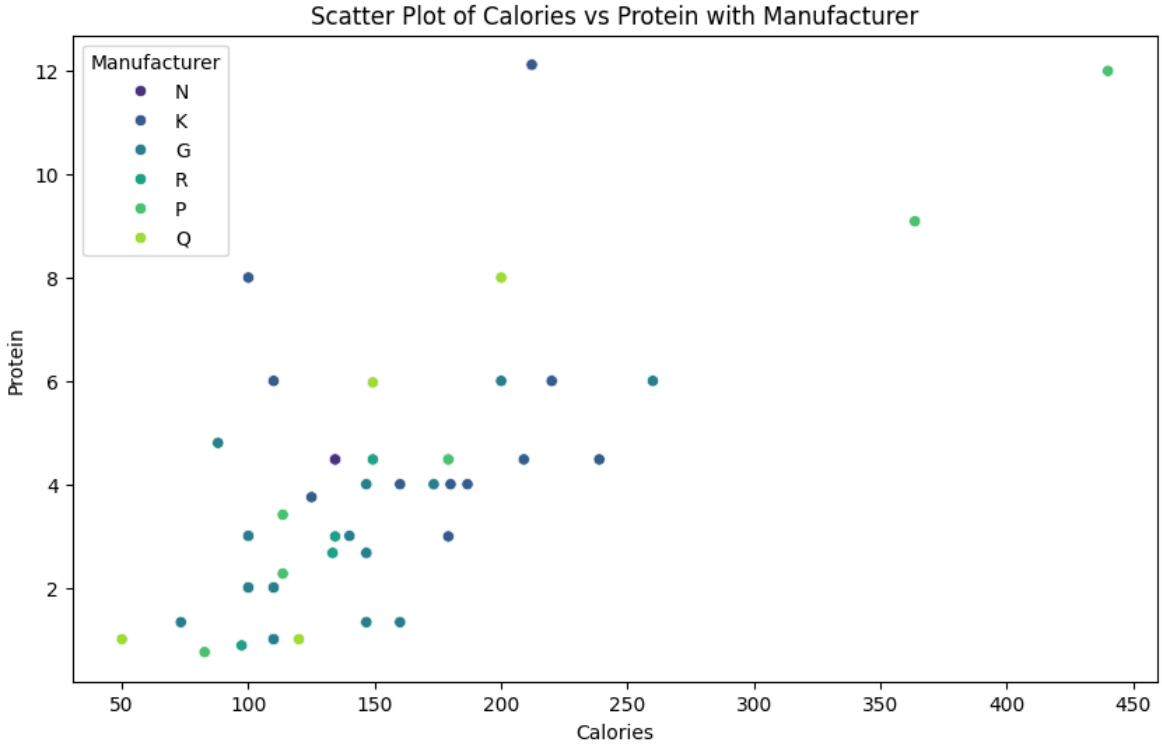
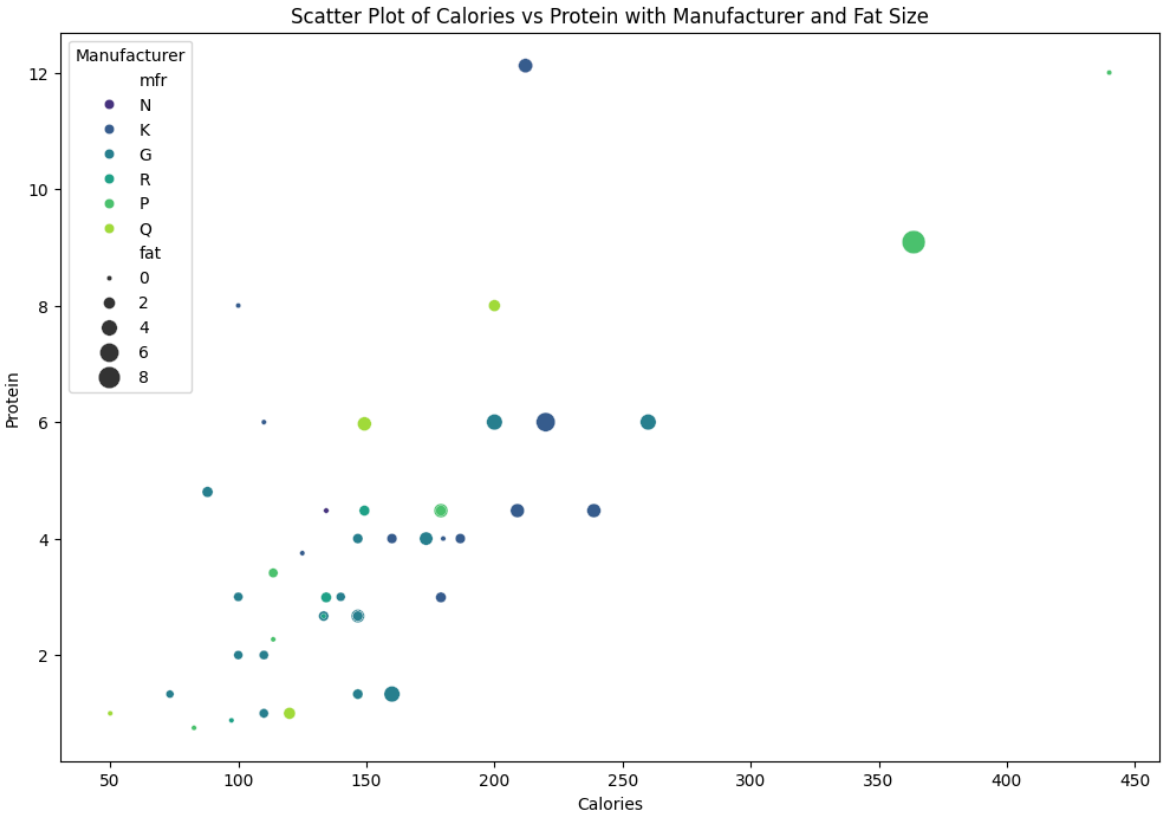
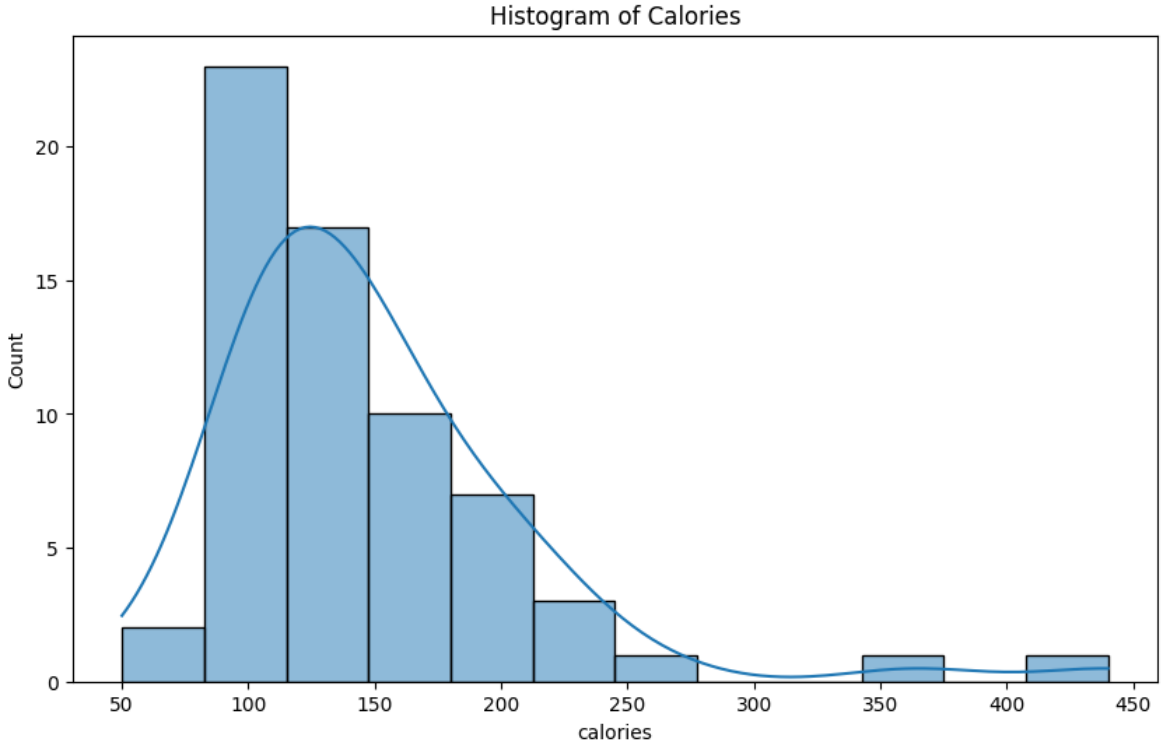
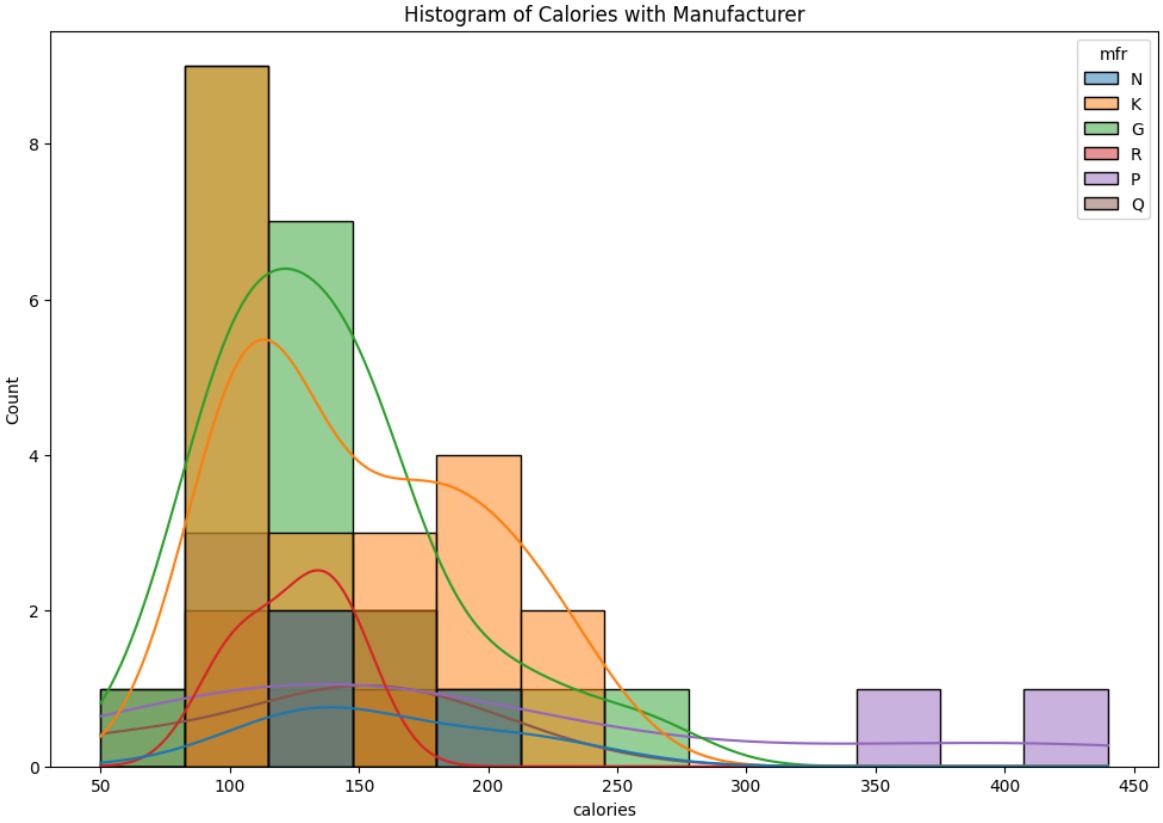
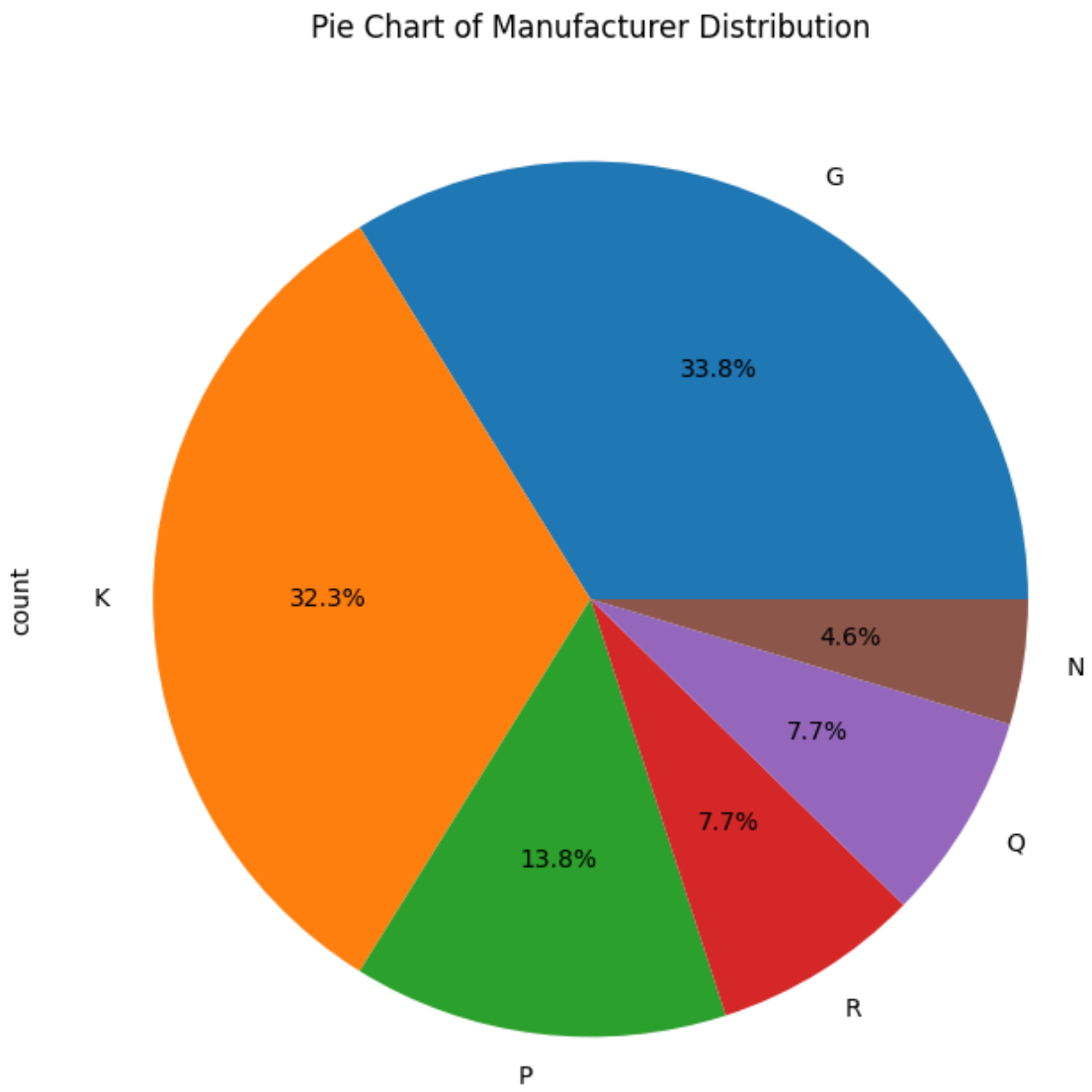



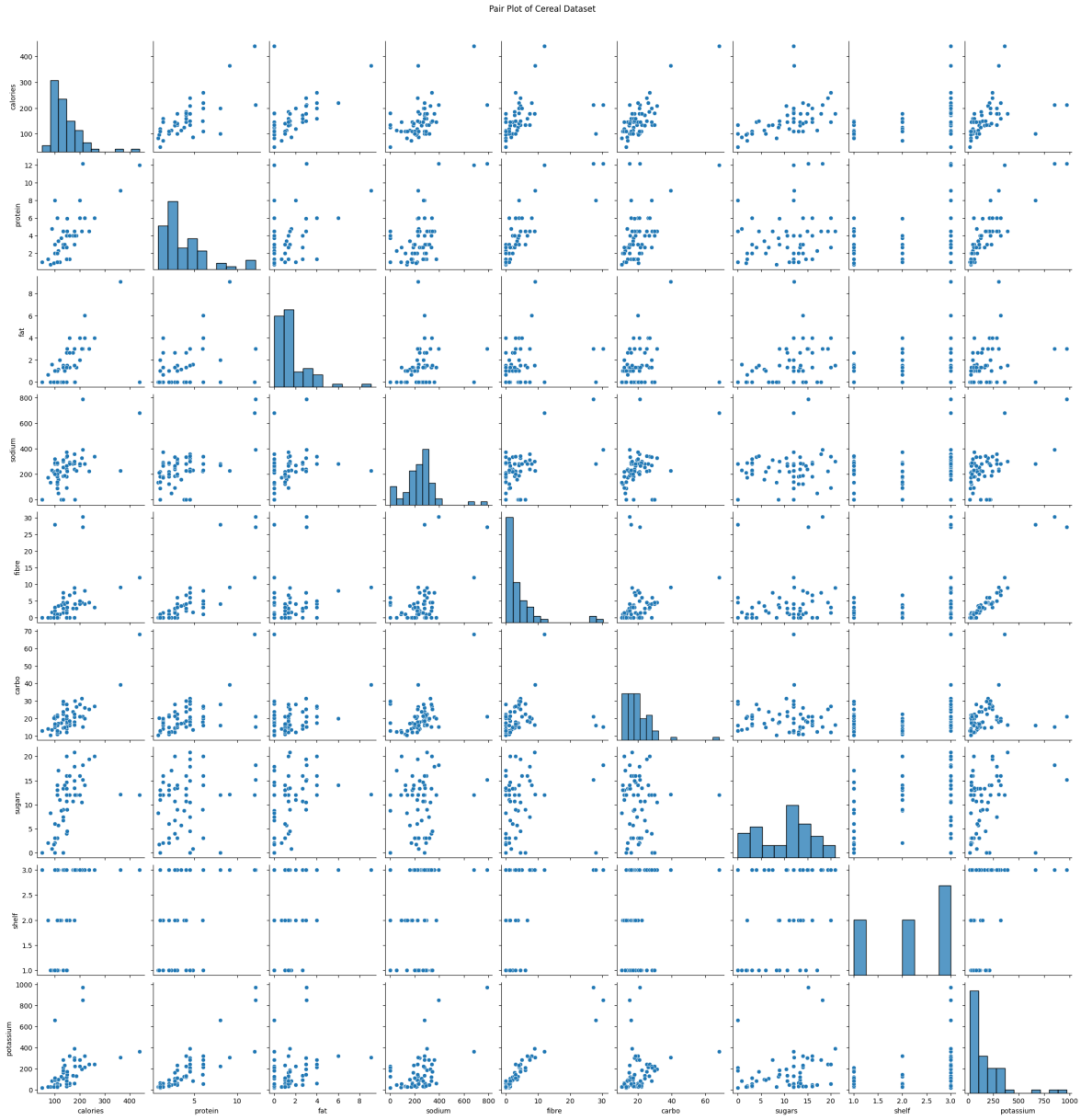

Scatter Plot of Calories vs Protein with Manufacturer
Manufacturer
N
K
G
R
P
Q
Protein
Calories
12
10
8
6
4
2
50
100
150
200
250
300
350
400
450

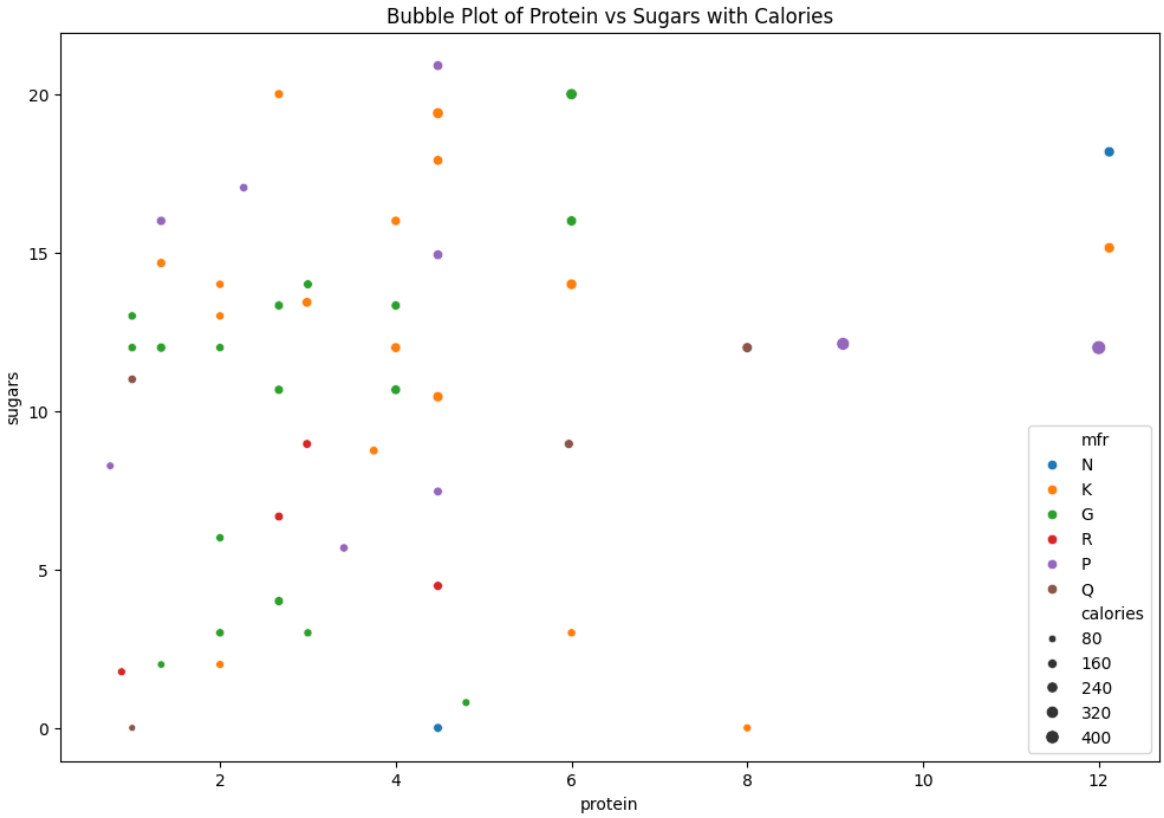

Scatter Plot of Calories vs Protein with Manufacturer and Fat Size
Manufacturer
mfr
N
K
G
R
P
Q
fat
0
2
4
6
8
Protein
Calories
12
10
8
6
4
2
50
100
150
200
250
300
350
400
450

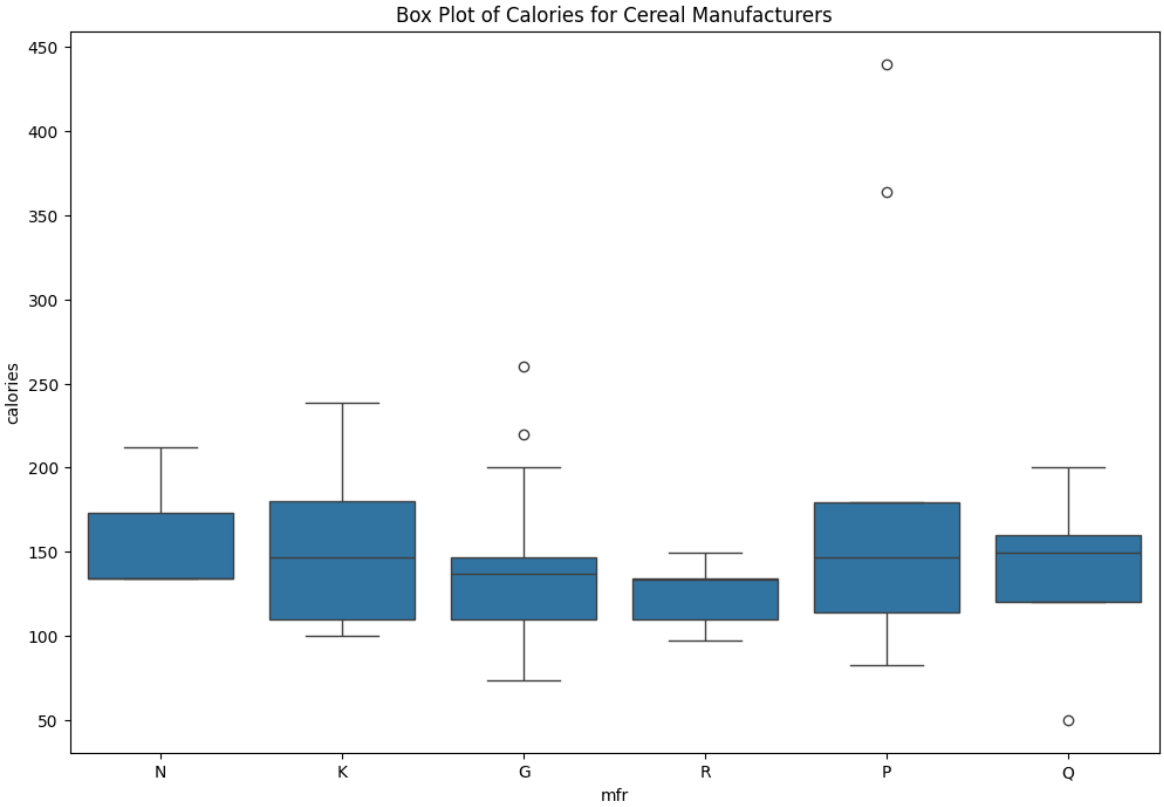

Histogram of Calories
Count
calories
0
5
10
15
20
50
100
150
200
250
300
350
400
450

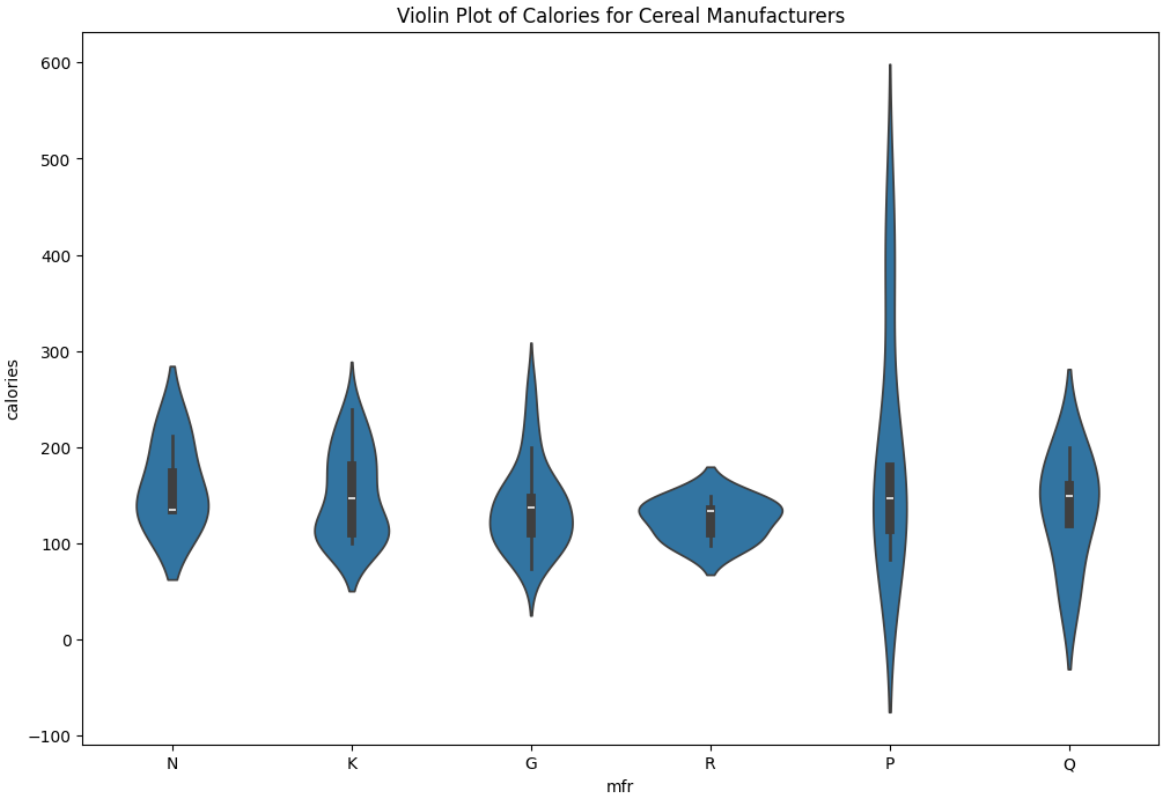

Histogram of Calories with Manufacturer
mfr
N
K
G
R
P
Q
Count
calories
0
2
4
6
8
50
100
150
200
250
300
350
400
450

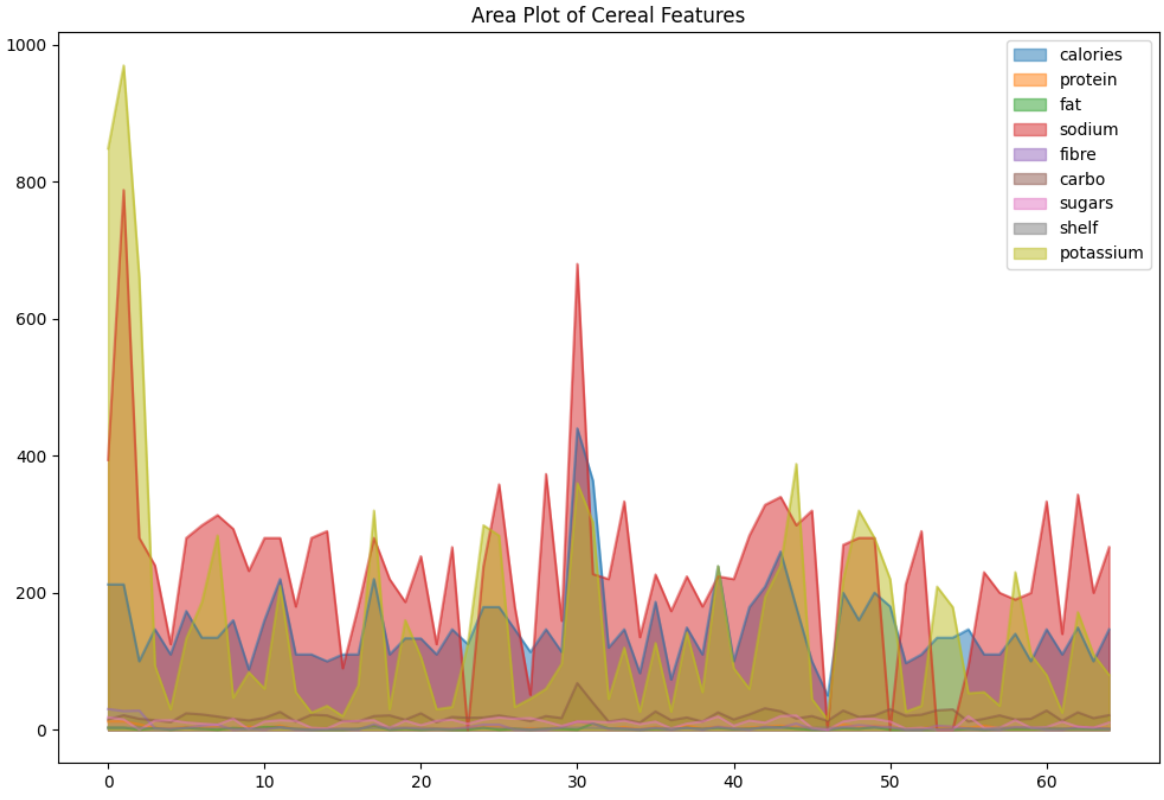

Pie Chart of Manufacturer Distribution
G
33.8%
count
K
32.3%
4.6%
N
7.7%
Q
7.7%
13.8%
R
P


Pair Plot of Cereal Dataset
calories
protein
fat
sodium
fibre
carbo
sugars
shelf
potassium


Bubble Plot of Protein vs Sugars with Calories
sugars
protein
mfr
N
K
G
R
P
Q
calories
80
160
240
320
400


Box Plot of Calories for Cereal Manufacturers
calories
mfr
N
K
G
R
P
Q


Violin Plot of Calories for Cereal Manufacturers
calories
600
500
400
300
200
100
0
−100
N
K
G
R
P
Q
mfr


Area Plot of Cereal Features
1000
800
600
400
200
0
0
10
20
30
40
50
60
calories
protein
fat
sodium
fibre
carbo
sugars
shelf
potassium