Blinkit Analysis

February 23, 2026

1 Data Analysis Python Project

1.1 Import Libraries

[1]:
```
import pandas as pd
import numpy as np
import seaborn as sns
import matplotlib.pyplot as plt
```

1.2 Importing Raw Data

[3]:
```
df = pd.read_csv("blinkit_data.csv")
```

[4]:
```
df.head(10)
```

[4]:

	Item Fat Content	Item Identifier	Item Type	Outlet Establishment Year	Outlet Identifier	Outlet Location Type
0	Regular	FDX32	Fruits and Vegetables	2012	OUT049	Tier 1
1	Low Fat	NCB42	Health and Hygiene	2022	OUT018	Tier 3
2	Regular	FDR28	Frozen Foods	2010	OUT046	Tier 1
3	Regular	FDL50	Canned	2000	OUT013	Tier 3
4	Low Fat	DRI25	Soft Drinks	2015	OUT045	Tier 2
5	low fat	FDS52	Frozen Foods	2020	OUT017	Tier 2
6	Low Fat	NCU05	Health and Hygiene	2011	OUT010	Tier 3
7	Low Fat	NCD30	Household	2015	OUT045	Tier 2
8	Low Fat	FDW20	Fruits and Vegetables	2000	OUT013	Tier 3
9	Low Fat	FDX25	Canned	1998	OUT027	Tier 3

```
  Outlet Size        Outlet Type  Item Visibility  Item Weight     Sales  \
0      Medium  Supermarket Type1         0.100014        15.10  145.4786
1      Medium  Supermarket Type2         0.008596        11.80  115.3492
2       Small  Supermarket Type1         0.025896        13.85  165.0210
3        High  Supermarket Type1         0.042278        12.15  126.5046
4       Small  Supermarket Type1         0.033970        19.60   55.1614
5       Small  Supermarket Type1         0.005505         8.89  102.4016
6       Small      Grocery Store         0.098312        11.80   81.4618
7       Small  Supermarket Type1         0.026904        19.70   96.0726
8        High  Supermarket Type1         0.024129        20.75  124.1730
9      Medium  Supermarket Type3         0.101562          NaN  181.9292

   Rating
0     5.0
1     5.0
2     5.0
3     5.0
4     5.0
5     5.0
6     5.0
7     5.0
8     5.0
9     5.0
```

[5]:
```
print("Size of Data: ",df.shape)
```

```
Size of Data:  (8523, 12)
```

[6]:
```
df.columns
```

[6]:
```
Index(['Item Fat Content', 'Item Identifier', 'Item Type',
       'Outlet Establishment Year', 'Outlet Identifier',
       'Outlet Location Type', 'Outlet Size', 'Outlet Type', 'Item Visibility',
       'Item Weight', 'Sales', 'Rating'],
      dtype='object')
```

[7]:
```
df.dtypes
```

[7]:
```
Item Fat Content              object
Item Identifier               object
Item Type                     object
Outlet Establishment Year      int64
Outlet Identifier             object
Outlet Location Type          object
Outlet Size                   object
Outlet Type                   object
Item Visibility              float64
```

```
Item Weight                  float64
Sales                        float64
Rating                       float64
dtype: object
```

[9]:
```
df.describe()
```

[9]:
```
       Outlet Establishment Year  Item Visibility  Item Weight        Sales  \
count                8523.000000      8523.000000  7060.000000  8523.000000
mean                 2010.831867         0.066132    12.857645   140.992782
std                     8.371760         0.051598     4.643456    62.275067
min                  1998.000000         0.000000     4.555000    31.290000
25%                  2000.000000         0.026989     8.773750    93.826500
50%                  2012.000000         0.053931    12.600000   143.012800
75%                  2017.000000         0.094585    16.850000   185.643700
max                  2022.000000         0.328391    21.350000   266.888400

            Rating
count  8523.000000
mean      3.965857
std       0.605651
min       1.000000
25%       4.000000
50%       4.000000
75%       4.200000
max       5.000000
```

1.3 Data Cleaning

[10]:
```
print(df['Item Fat Content'].unique())
```

```
['Regular' 'Low Fat' 'low fat' 'LF' 'reg']
```

[11]:
```
df['Item Fat Content'] = df['Item Fat Content'].replace({'LF':'Low Fat',
                                                         'low fat':'Low Fat',
                                                         'reg':'Regular'})
```

[12]:
```
print(df['Item Fat Content'].unique())
```

```
['Regular' 'Low Fat']
```

1.4 KPI's Requirement

[15]:
```
# Total Sales
total_sales = df['Sales'].sum()

# Average Sales
avg_sales = df['Sales'].mean()
```

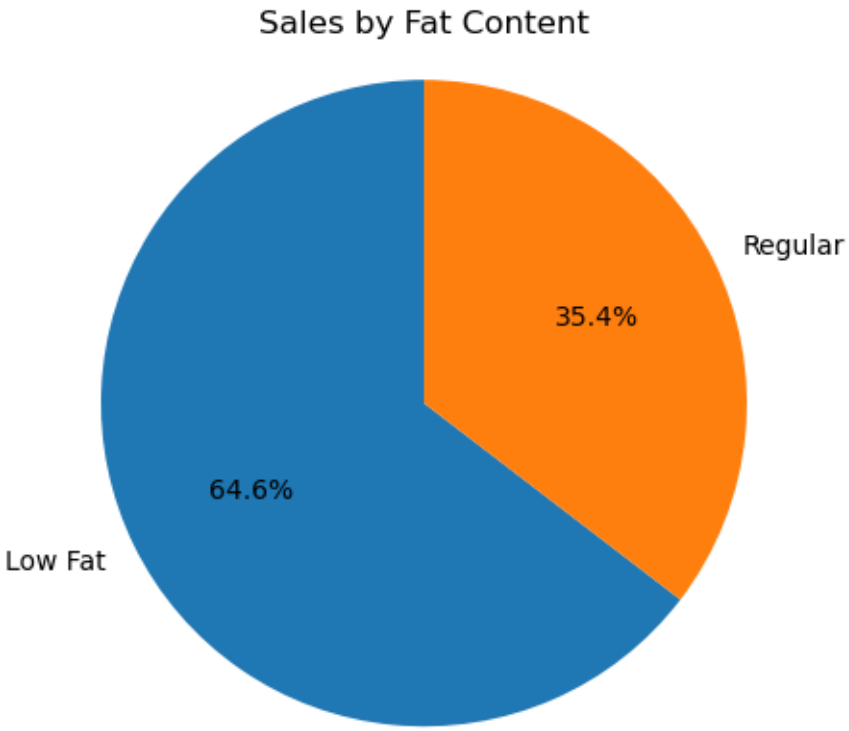
```
# No. of Itmes Sold
no_of_items_sold = df['Sales'].count()

# Average Rating
avg_ratings = df['Rating'].mean()

# Display
print(f'Total Sales: ${total_sales: ,.0f}')
print(f'Average Sales: ${avg_sales: ,.0f}')
print(f'No of Items Sold: {no_of_items_sold: ,.0f}')
print(f'Average Rating: {avg_ratings: ,.1f}')
```

```
Total Sales: $ 1,201,681
Average Sales: $ 141
No of Items Sold:  8,523
Average Rating:  4.0
```

1.5 Charts Requirement

1.5.1 Total Sales by Fat Content

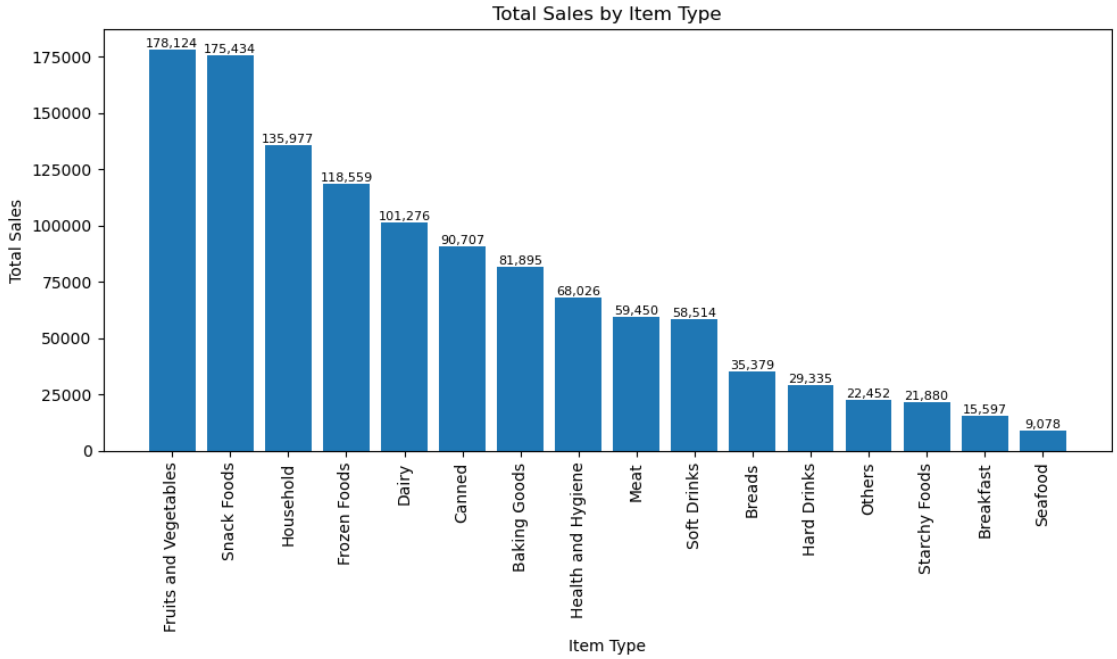
[19]:
```
sales_by_fat = df.groupby('Item Fat Content')['Sales'].sum()

plt.pie(sales_by_fat,labels = sales_by_fat.index,
                        autopct = '%.1f%%',
                        startangle= 90)
plt.title('Sales by Fat Content')
plt.axis('equal')
plt.show()
```



1.5.2 Total Sales by Item Type

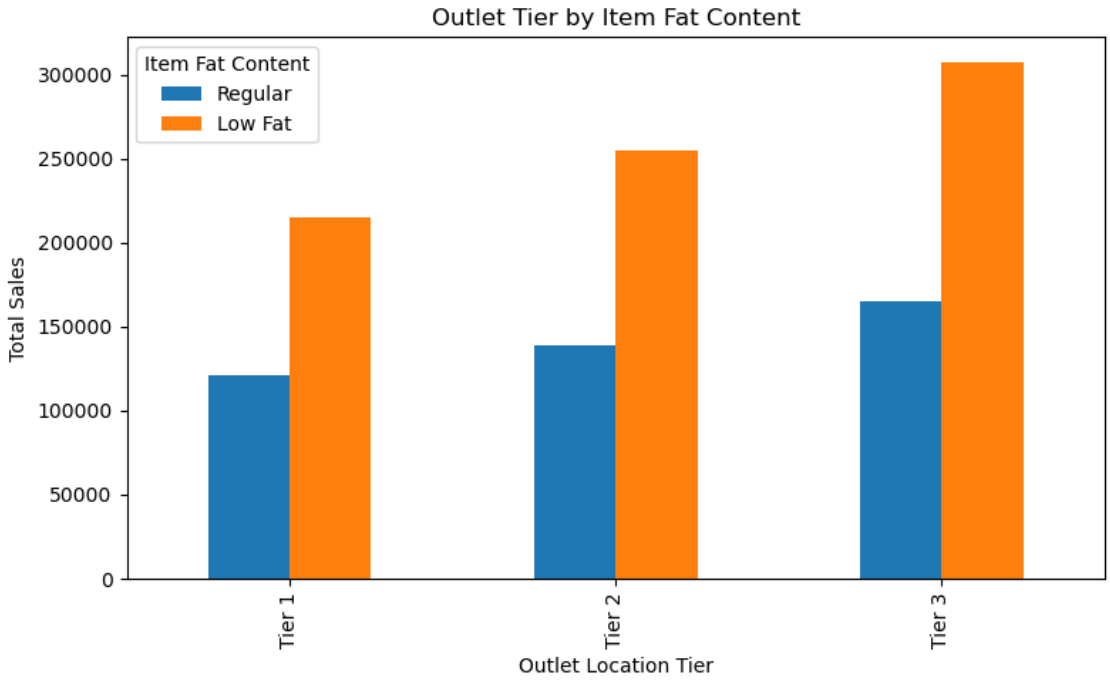
[23]:
```
sales_by_type = df.groupby('Item Type')['Sales'].sum().
 ↪sort_values(ascending=False)

plt.figure(figsize=(10, 6))
bars = plt.bar(sales_by_type.index, sales_by_type.values)
plt.xticks(rotation=90)
plt.xlabel("Item Type")
plt.ylabel("Total Sales")
plt.title('Total Sales by Item Type')

for bar in bars:
    plt.text(
        bar.get_x() + bar.get_width() / 2,
        bar.get_height(),
        f'{bar.get_height():,.0f}',
        ha='center',
        va='bottom',
        fontsize=8
    )
```

```
plt.tight_layout()
plt.show()
```



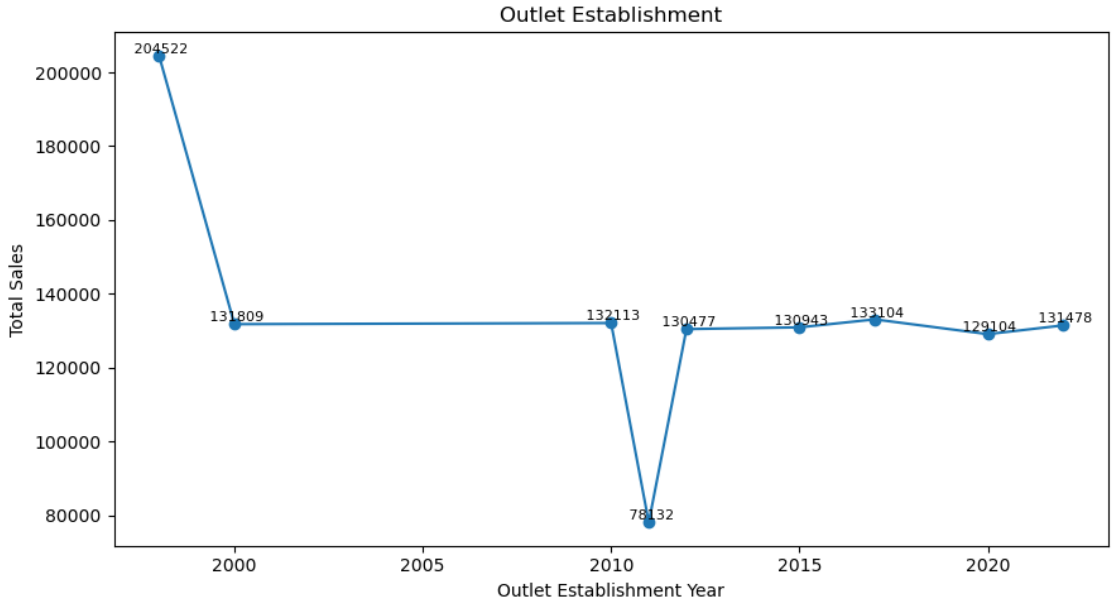
1.5.3 Fat Content by Outlet for Total Sales

[24]:
```
grouped = df.groupby(['Outlet Location Type','Item Fat Content'])["Sales"].
  ↪sum().unstack()
grouped = grouped[['Regular', 'Low Fat']]

ax = grouped.plot(kind="bar", figsize=(8, 5), title = 'Outlet Tier by Item Fat␣
  ↪Content')
plt.xlabel('Outlet Location Tier')
plt.ylabel('Total Sales')
plt.legend(title='Item Fat Content')
plt.tight_layout()
plt.show()
```



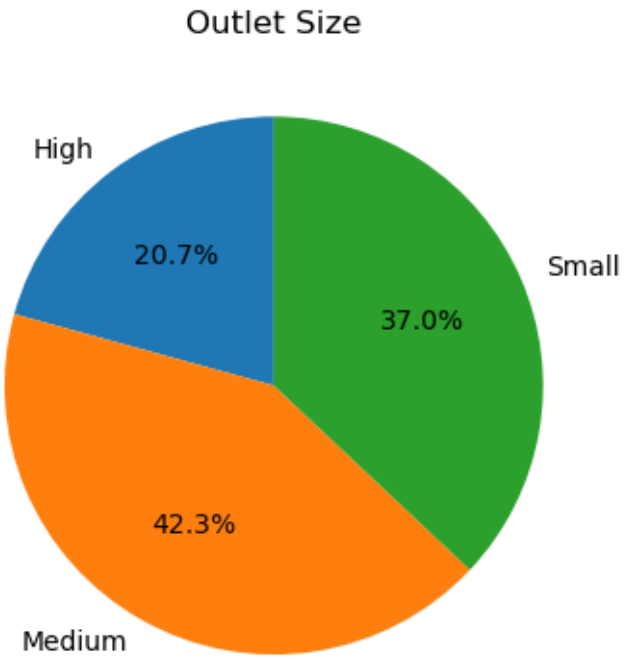
1.5.4 Total Sales by Outlet Establishment

[27]:
```
sales_by_year = df.groupby('Outlet Establishment Year')['Sales'].sum().
↪sort_index()
plt.figure(figsize = (9,5))
plt.plot(sales_by_year.index, sales_by_year.values, marker= "o", linestyle =␣
↪"-")
plt.xlabel("Outlet Establishment Year")
plt.ylabel('Total Sales')
plt.title('Outlet Establishment')

for x, y in zip(sales_by_year.index, sales_by_year.values):
    plt.text(x, y, f'{y: .0f}', ha='center', va='bottom', fontsize=8)
plt.tight_layout()
plt.show()
```



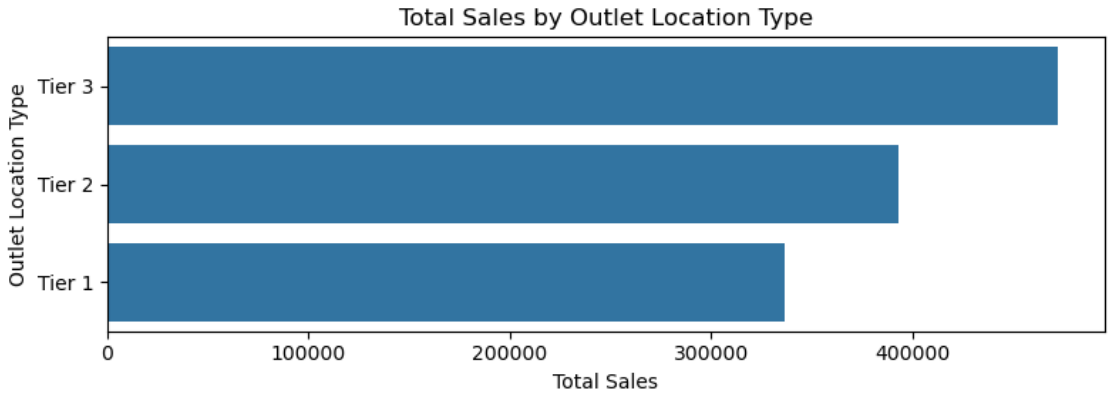
1.5.5 Sales by Outlet Size

[28]:
```
sales_by_size = df.groupby("Outlet Size")["Sales"].sum()
plt.figure(figsize=(4, 4))
plt.pie(sales_by_size, labels=sales_by_size.index, autopct='%1.1f%%',␣
 ↪startangle=90)
plt.title("Outlet Size")
plt.tight_layout()
plt.show()
```



1.5.6 Sales by Outlet Location

[29]:
```
sales_by_location = df.groupby('Outlet Location Type')["Sales"].sum().
  ↪reset_index()
sales_by_location = sales_by_location.sort_values('Sales', ascending=False)

plt.figure(figsize=(8, 3))
ax = sns.barplot(x="Sales", y='Outlet Location Type', data = sales_by_location)
plt.title('Total Sales by Outlet Location Type')
plt.xlabel('Total Sales')
plt.ylabel("Outlet Location Type")
plt.tight_layout()
plt.show()
```


Total Sales by Outlet Location Type
Outlet Location Type
Tier 3
Tier 2
Tier 1
0
100000
200000
300000
400000
Total Sales

[ ]: