python-project-3-blinkit-analysis

April 24, 2025

0.0.1 DATA ANALYSIS PYTHON PROJECT - BLINKIT ANALYSIS

IMPORT LIBRARIES

[2]:
```
import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
import seaborn as sns
```

IMPORT RAW DATA

[3]:
```
from google.colab import drive
drive.mount('/content/drive')
```

```
Mounted at /content/drive
```

[6]:
```
path = '/content/drive/MyDrive/data sets /blinkit_data.csv'
df= pd.read_csv(path)
```

[91]:
```
df
```

[91]:
```
     item_fat_content item_identifier              item_type  \
0             Regular           FDX32  Fruits and Vegetables
1             Low Fat           NCB42      Health and Hygiene
2             Regular           FDR28           Frozen Foods
3             Regular           FDL50                 Canned
4             Low Fat           DRI25            Soft Drinks
…                   …               …                     …
8518          Low Fat           NCT53      Health and Hygiene
8519          Low Fat           FDN09            Snack Foods
8520          Low Fat           DRE13            Soft Drinks
8521          Regular           FDT50                  Dairy
8522          Regular           FDM58            Snack Foods

      outlet_establishment_year outlet_identifier outlet_location_type  \
0                          2012            OUT049               Tier 1
1                          2022            OUT018               Tier 3
2                          2010            OUT046               Tier 1
3                          2000            OUT013               Tier 3
4                          2015            OUT045               Tier 2
```

```
…                         …               …                 …
8518                       1998          OUT027               Tier 3
8519                       1998          OUT027               Tier 3
8520                       1998          OUT027               Tier 3
8521                       1998          OUT027               Tier 3
8522                       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
…            …                  …                …           …        …
8518      Medium  Supermarket Type3         0.000000          NaN  164.5526
8519      Medium  Supermarket Type3         0.034706          NaN  241.6828
8520      Medium  Supermarket Type3         0.027571          NaN   86.6198
8521      Medium  Supermarket Type3         0.107715          NaN   97.8752
8522      Medium  Supermarket Type3         0.000000          NaN  112.2544

      rating
0        5.0
1        5.0
2        5.0
3        5.0
4        5.0
…        …
8518     4.0
8519     4.0
8520     4.0
8521     4.0
8522     4.0

[8523 rows x 12 columns]
```

0.0.2 Size of data

```
[7]: print("Size of data :",df.shape)
```

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

0.1 Changing Heading

```
[8]: df.columns=df.columns.str.lower()
     df.columns=df.columns.str.replace(' ','_')
```

Data Info

[23]:

```
df.columns
```

[23]:

```
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')
```

Data types

[9]:

```
df.dtypes
```

[9]:

```
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
```

Identification and cleaning of Item Fat Content

[10]:

```
df['item_fat_content'].unique()
```

[10]:

```
array(['Regular', 'Low Fat', 'low fat', 'LF', 'reg'], dtype=object)
```

[11]:

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

[12]:

```
df['item_fat_content'].groupby(df['item_fat_content']).count()
```

[12]:

```
item_fat_content
Low Fat    5517
Regular    3006
Name: item_fat_content, dtype: int64
```

0.1.1 Business Requiremennts

0.1.2 KPI’s REQUIREMENTs

[29]:

```
#Total_Sales
total_sales=df['sales'].sum().round(2)
print("total_sales:",total_sales)

#average sales
avg_sales=df['sales'].mean().round()
print("avg_sales:",avg_sales)


#no of items sold
no_of_items_sold=df['sales'].count()
print("no_of_items_sold:",no_of_items_sold)

#average ratings

avg_rating=df['rating'].mean().round(0)
print("avg_rating:",avg_rating)
```

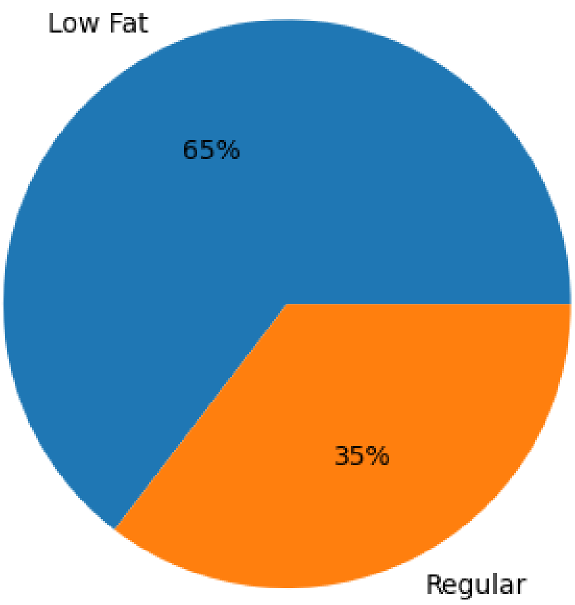
```
total_sales: 1201681.48
avg_sales: 141.0
no_of_items_sold: 8523
avg_rating: 4.0
```

0.1.3 CHARTS REQUIREMENTS

total sales by fat content

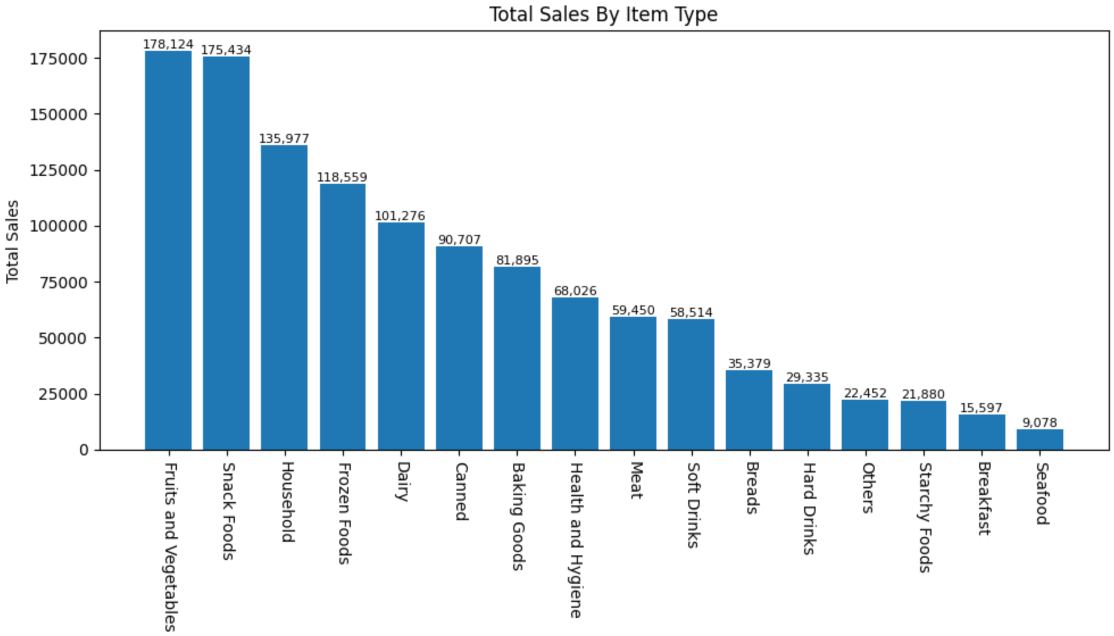
[33]:

```
sales_by_fat=df.groupby('item_fat_content')['sales'].sum().round(2)
sales_by_fat

plt.pie(sales_by_fat,labels=sales_by_fat.index,autopct='%0.0f%%')
plt.show()
```



Total Sales By Item Type

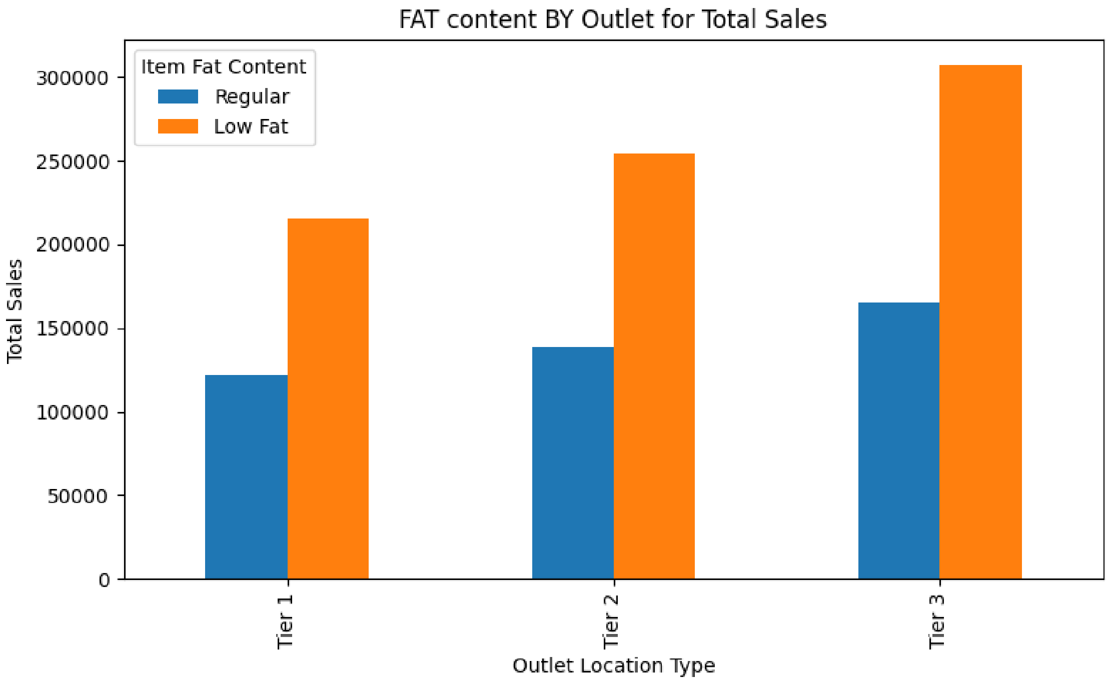
```
[67]: sales_by_type=df.groupby('item_type')['sales'].sum().
        ↪sort_values(ascending=False).round()
      sales_by_type

      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()
```



FAT content BY Outlet for Total Sales

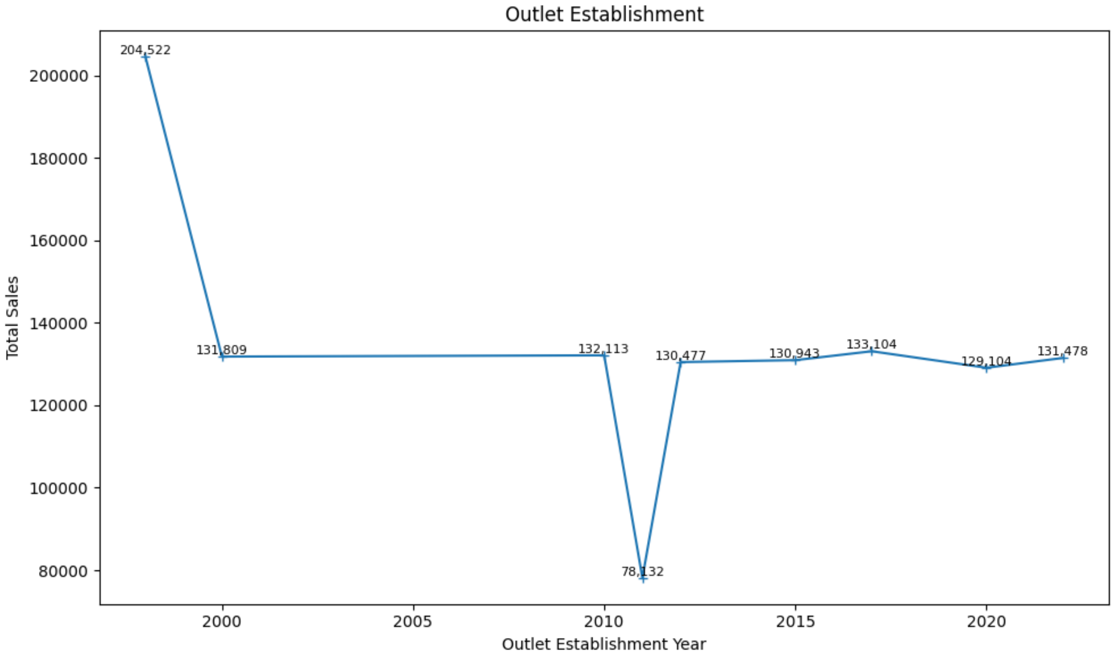
[72]:

```
grouped=df.groupby(['outlet_location_type','item_fat_content'])['sales'].sum().
 ↪unstack().round()
grouped=grouped[['Regular','Low Fat']]

bx= grouped.plot(kind='bar',figsize=(8,5),title='FAT content BY Outlet for␣
 ↪Total Sales')
bx.set_xlabel('Outlet Location Type')
bx.set_ylabel('Total Sales')
plt.legend(title='Item Fat Content')
plt.tight_layout()
plt.show()
```



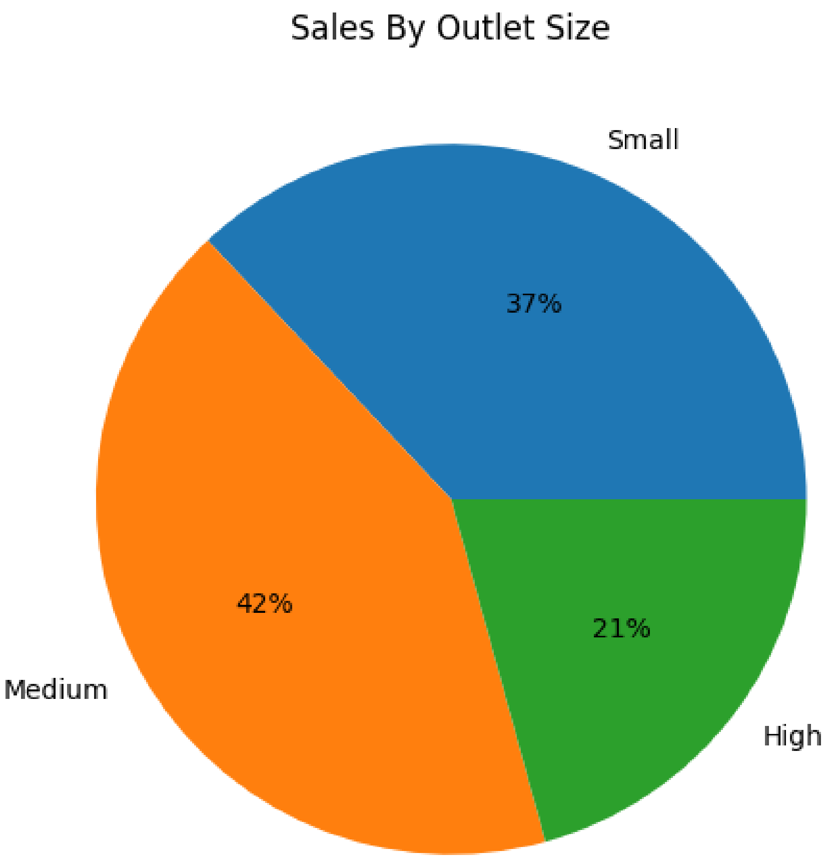
Total Sales by Outlet Establishment

[90]:
```
sales_by_year=df.groupby('outlet_establishment_year')['sales'].sum().
 ↪sort_index(ascending=False).round()
sales_by_year

plt.figure(figsize=(10,6))
plt.plot(sales_by_year.index,sales_by_year.values,marker='+',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()
```



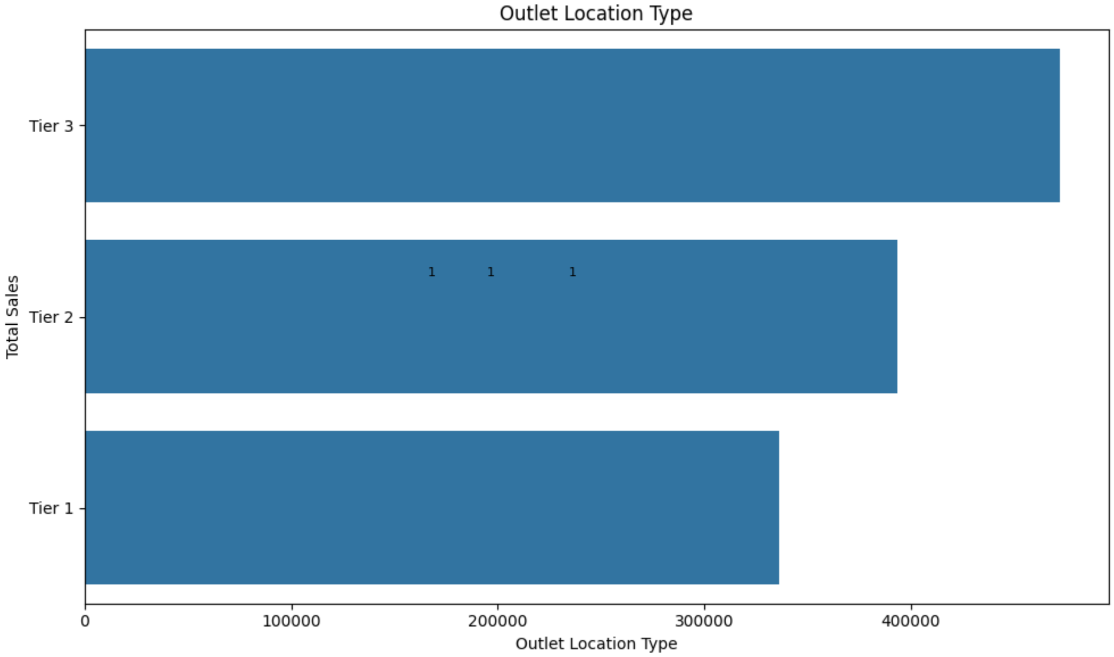
Sales By Outlet Size

[94]:
```
sales_by_outlet_size=df.groupby('outlet_size')['sales'].sum().
 ↪sort_index(ascending=False).round()
sales_by_outlet_size

plt.figure(figsize=(10,6))
plt.pie(sales_by_outlet_size,labels=sales_by_outlet_size.index,autopct='%0.
 ↪0f%%')
plt.title('Sales By Outlet Size')
plt.show()
```



Sales By Outlet Location

```
[104]: sales_by_outlet_location = df.groupby('outlet_location_type')['sales'].sum().
         ↪sort_index(ascending=False).round().reset_index()
       # Convert the Series to a DataFrame using reset_index()

       plt.figure(figsize=(10,6))
       ax = sns.barplot(x='sales', y='outlet_location_type',␣
         ↪data=sales_by_outlet_location, orient='h') # Now, sales_by_outlet_location␣
         ↪is a DataFrame
       plt.xlabel('Outlet Location Type')
       plt.ylabel('Total Sales')
       plt.title('Outlet Location Type')

       for bar in ax.patches:
         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()
```


Outlet Location Type
Tier 3
Tier 2
Tier 1
Total Sales
Outlet Location Type