Ex.No.8 Mini Project
15.10.2025 BlinkIt Grocery Sales Analysis

AIM:

To analyze Blinkit sales data using Python, Power BI, and Tableau. The purpose is to identify trends, preference and performance and to visualize key insights for data-driven decision making.

ALGORITHM:

Data Import and Cleaning:

- Import the Blinkit sales Dataset into Python.
- Handle missing values and remove duplicates.

Data Analysis:

- Use Python to analyze key metrics such as total sales and item visibility.

Visualization and Reporting:

- Once the data is cleaned and formatted, export it.
- Create a dashboard showing sales by using Tableau.
- Develop interactive reports for visualization using Power BI.

PROGRAM:

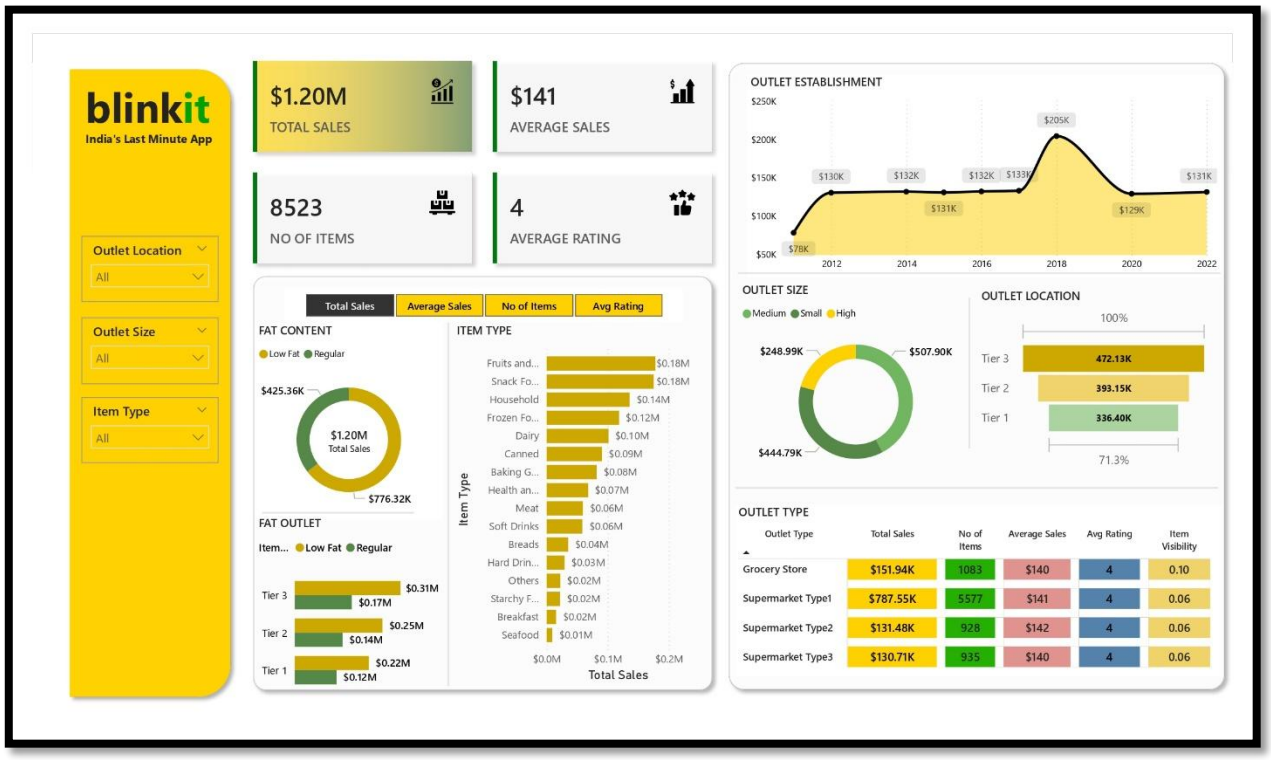
```
import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
import seaborn as sns

df = df.drop(['Item Weight'], axis=1)

df['Item Visibility'].replace(0, np.nan, inplace=True)
df['Item Visibility'] = df.groupby('Item Identifier')['Item
Visibility'].transform(lambda x: x.fillna(x.mean()))
df['Item Visibility'].fillna(df['Item Visibility'].mean(), inplace=True)
```

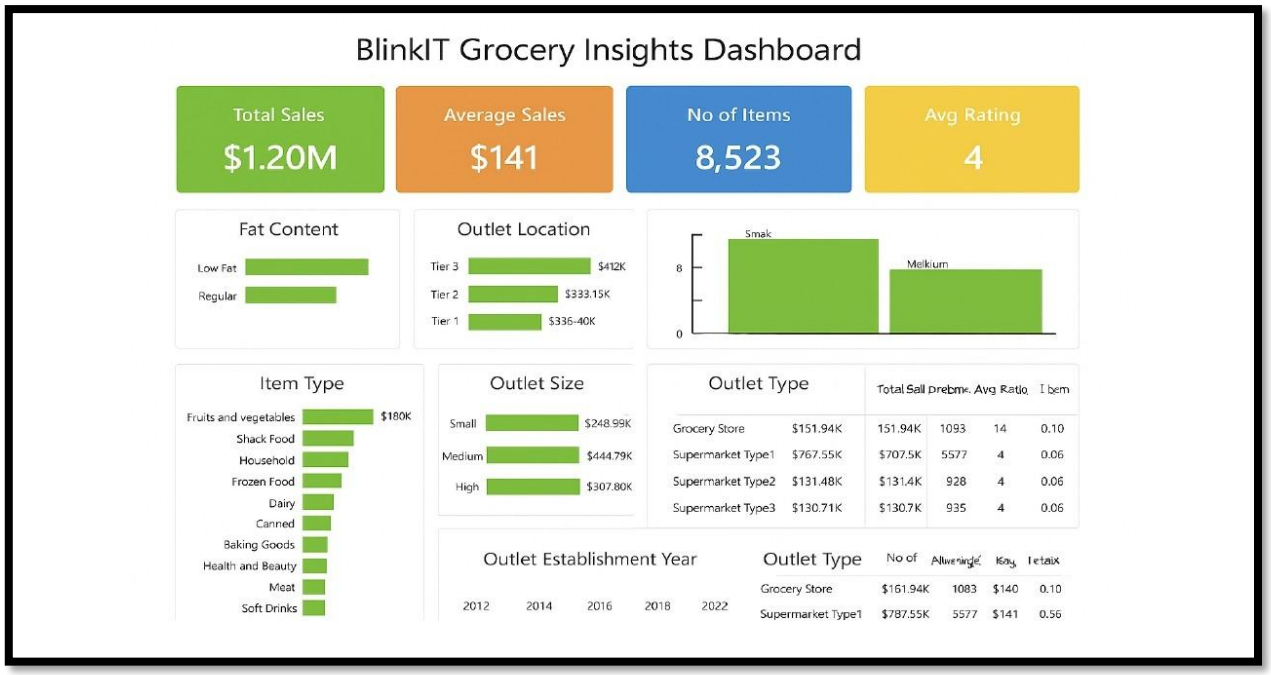
```
df["Item Fat Content"] = df["Item Fat Content"].str.strip().str.lower()
df["Item Fat Content"] = df["Item Fat Content"].replace({
    "lf": "low fat",
    "low fat": "low fat",
    "lowfat": "low fat",
    "reg": "regular",
    "regular": "regular"
})

import plotly.express as px
import ipywidgets as widgets
from IPython.display import display, clear_output

# Separate categorical & numeric columns
categorical_cols = df.select_dtypes(include=['object', 'category']).columns.tolist()
numeric_cols = df.select_dtypes(include=['int64', 'float64']).columns.tolist()

# Widgets
plot_type = widgets.Dropdown(options=['Bar', 'Line', 'Scatter', 'Histogram'],
description='Plot:')
x_axis = widgets.Dropdown(description='X:')
y_axis = widgets.Dropdown(options=numeric_cols, description='Y:')
btn = widgets.Button(description='Show Plot', button_style='success')
out = widgets.Output()

# Function to update x_axis options based on plot type
def update_x_options(*args):
    if plot_type.value == 'Bar':
        x_axis.options = categorical_cols
    elif plot_type.value in ['Line', 'Scatter']:
        x_axis.options = numeric_cols
    elif plot_type.value == 'Histogram':
        x_axis.options = []  # x-axis not needed
        y_axis.description = 'Column:'
    else:
        x_axis.options = categorical_cols

plot_type.observe(update_x_options, 'value')
update_x_options()  # initialize options
```

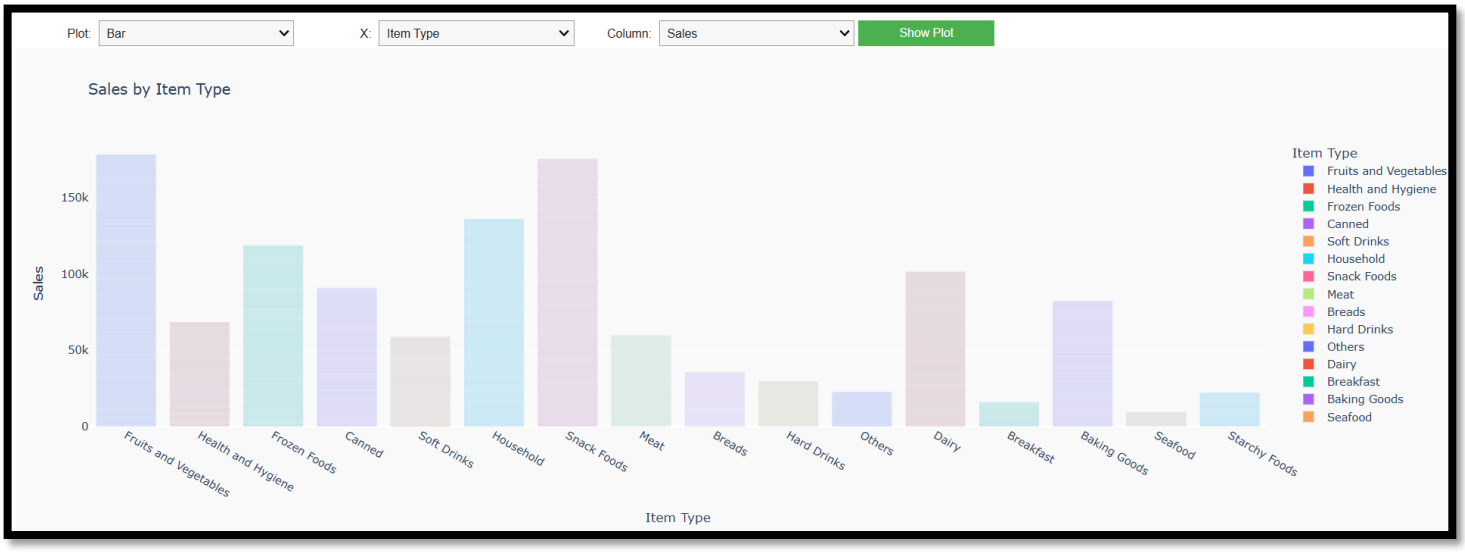
```
# Plot function
def on_click(b):
    with out:
        clear_output()
        if plot_type.value == 'Bar':
            fig = px.bar(df, x=x_axis.value, y=y_axis.value, color=x_axis.value,
                         title=f'{y_axis.value} by {x_axis.value}')
        elif plot_type.value == 'Line':
            fig = px.line(df, x=x_axis.value, y=y_axis.value, markers=True,
                          title=f'{y_axis.value} over {x_axis.value}')
        elif plot_type.value == 'Scatter':
            fig = px.scatter(df, x=x_axis.value, y=y_axis.value, color=y_axis.value,
                             title=f'{y_axis.value} vs {x_axis.value}')
        elif plot_type.value == 'Histogram':
            fig = px.histogram(df, x=y_axis.value, nbins=30,
                               title=f'Distribution of {y_axis.value}',
                               color_discrete_sequence=['#636EFA'])
        fig.update_layout(title_font=dict(size=16),
                          plot_bgcolor='#f9f9f9', paper_bgcolor='#f9f9f9')
        fig.show()

btn.on_click(on_click)

# Layout
ui = widgets.VBox([widgets.HBox([plot_type, x_axis, y_axis, btn]), out])
display(ui)
```

RESULT:

The Mini project has been implemented successfully


blinkit
India's Last Minute App
Outlet Location
All
Outlet Size
All
Item Type
All
$1.20M
TOTAL SALES
$141
AVERAGE SALES
8523
NO OF ITEMS
4
AVERAGE RATING
Total Sales
Average Sales
No of Items
Avg Rating
FAT CONTENT
Low Fat
Regular
$425.36K
$1.20M
Total Sales
$776.32K
FAT OUTLET
Item...
Low Fat
Regular
Tier 3
$0.31M
$0.17M
Tier 2
$0.25M
$0.14M
Tier 1
$0.22M
$0.12M
ITEM TYPE
Fruits and...
$0.18M
Snack Fo...
$0.18M
Household
$0.14M
Frozen Fo...
$0.12M
Dairy
$0.10M
Canned
$0.09M
Baking G...
$0.08M
Health an...
$0.07M
Meat
$0.06M
Soft Drinks
$0.06M
Breads
$0.04M
Hard Drin...
$0.03M
Others
$0.02M
Starchy F...
$0.02M
Breakfast
$0.02M
Seafood
$0.01M
Item Type
$0.0M
$0.1M
$0.2M
Total Sales
OUTLET ESTABLISHMENT
$250K
$200K
$150K
$100K
$50K
$130K
$132K
$131K
$132K
$133K
$205K
$129K
$131K
$78K
2012
2014
2016
2018
2020
2022
OUTLET SIZE
Medium
Small
High
$248.99K
$507.90K
$444.79K
OUTLET LOCATION
100%
Tier 3
472.13K
Tier 2
393.15K
Tier 1
336.40K
71.3%
OUTLET TYPE
Outlet Type
Total Sales
No of Items
Average Sales
Avg Rating
Item Visibility
Grocery Store
$151.94K
1083
$140
4
0.10
Supermarket Type1
$787.55K
5577
$141
4
0.06
Supermarket Type2
$131.48K
928
$142
4
0.06
Supermarket Type3
$130.71K
935
$140
4
0.06


BlinkIT Grocery Insights Dashboard
Total Sales
$1.20M
Average Sales
$141
No of Items
8,523
Avg Rating
4
Fat Content
Low Fat
Regular
Outlet Location
Tier 3
$412K
Tier 2
$333.15K
Tier 1
$336.40K
Item Type
Fruits and vegetables
$180K
Shack Food
Household
Frozen Food
Dairy
Canned
Baking Goods
Health and Beauty
Meat
Soft Drinks
Outlet Size
Small
$248.99K
Medium
$444.79K
High
$307.80K
Outlet Type
Grocery Store
$151.94K
Supermarket Type1
$767.55K
Supermarket Type2
$131.48K
Supermarket Type3
$130.71K
Outlet Establishment Year
2012
2014
2016
2018
2022


Plot:
Bar
X:
Item Type
Column:
Sales
Show Plot
Sales by Item Type
Sales
150k
100k
50k
0
Fruits and Vegetables
Health and Hygiene
Frozen Foods
Canned
Soft Drinks
Household
Snack Foods
Meat
Breads
Hard Drinks
Others
Dairy
Breakfast
Baking Goods
Seafood
Starchy Foods
Item Type
Item Type
Fruits and Vegetables
Health and Hygiene
Frozen Foods
Canned
Soft Drinks
Household
Snack Foods
Meat
Breads
Hard Drinks
Others
Dairy
Breakfast
Baking Goods
Seafood