

```
In [2]: pip install pandas matplotlib seaborn
Requirement already satisfied: pandas in c:\users\geraldine nyika\anaconda3\lib\site-packages (2.2.2)Note: you may need to restart the kernel to use updated packages.
Requirement already satisfied: matplotlib in c:\users\geraldine nyika\anaconda3\lib\site-packages (3.9.2)
Requirement already satisfied: seaborn in c:\users\geraldine nyika\anaconda3\lib\site-packages (0.13.2)
Requirement already satisfied: numpy>=1.26.0 in c:\users\geraldine nyika\anaconda3\lib\site-packages (from pandas) (1.26.4)
Requirement already satisfied: pytz==2021.3 in c:\users\geraldine nyika\anaconda3\lib\site-packages (from pandas) (2.5.0.post0)
Requirement already satisfied: python-dateutil<2.8.1,>=2.7.0 in c:\users\geraldine nyika\anaconda3\lib\site-packages (from pandas) (2.7.0)
Requirement already satisfied: tzdata==2022.1 in c:\users\geraldine nyika\anaconda3\lib\site-packages (from pandas) (2023.3)
Requirement already satisfied: contourpy>=1.0.0 in c:\users\geraldine nyika\anaconda3\lib\site-packages (from matplotlib) (1.2.0)
Requirement already satisfied: pyparsing>=2.4.2 in c:\users\geraldine nyika\anaconda3\lib\site-packages (from matplotlib) (2.4.2)
Requirement already satisfied: kivikviver>=1.3.1 in c:\users\geraldine nyika\anaconda3\lib\site-packages (from matplotlib) (1.3.1)
Requirement already satisfied: pillow>=6.2.0 in c:\users\geraldine nyika\anaconda3\lib\site-packages (from matplotlib) (8.2.0)
Requirement already satisfied: six>=1.5 in c:\users\geraldine nyika\anaconda3\lib\site-packages (from matplotlib) (3.1.2)
Requirement already satisfied: python-dateutil>=2.8.2-pandas in c:\users\geraldine nyika\anaconda3\lib\site-packages (from pandas) (1.16.0)
```

```
In [4]: import pandas as pd
# Load the dataset
file_path = "C:\\Users\\Geraldine Nyika\\Downloads\\superstore.csv"
data = pd.read_csv(file_path)
# Display the first few rows of the dataset
print(data.head(5))
```

```
-----Traceback (most recent call last)
Cell In[4], line 5
      1 # Load the dataset
      2 file_path = "C:\\Users\\Geraldine Nyika\\Downloads\\superstore.csv"
      3 data = pd.read_csv(file_path)
----> 4 # Display the first few rows of the dataset
      5 print(data.head(5))

FileNotFoundError: [Errno 2] No such file or directory: 'C:\\Users\\Geraldine Nyika\\Downloads\\superstore.csv'
```

```
In [5]: # Load the dataset
file_path = "C:\\Users\\Geraldine Nyika\\Downloads\\superstore.csv"
data = pd.read_csv(file_path)
# Display the first few rows of the dataset
print(data.head(5))
```

```
-----Traceback (most recent call last)
Cell In[5], line 5
      1 # Load the dataset
      2 file_path = "C:\\Users\\Geraldine Nyika\\Downloads\\superstore.csv"
----> 3 # Display the first few rows of the dataset
      4 print(data.head(5))

FileNotFoundError: [Errno 2] No such file or directory: 'C:\\Users\\Geraldine Nyika\\Downloads\\superstore.csv'
```

```
In [6]: # Load the dataset
file_path = "C:\\Users\\Geraldine Nyika\\Downloads\\superstore.csv"
data = pd.read_csv(file_path)
# Display the first few rows of the dataset
print(data.head(5))
```

```
-----Traceback (most recent call last)
Cell In[6], line 5
      1 # Load the dataset
      2 file_path = "C:\\Users\\Geraldine Nyika\\Downloads\\superstore.csv"
----> 3 # Display the first few rows of the dataset
      4 print(data.head(5))

FileNotFoundError: [Errno 2] No such file or directory: 'C:\\Users\\Geraldine Nyika\\Downloads\\superstore.csv'
```

```
In [7]: # Load the dataset
file_path = "C:\\Users\\Geraldine Nyika\\Downloads\\superstore.csv"
data = pd.read_csv(file_path)
# Display the first few rows of the dataset
print(data.head(5))
```

```
-----Traceback (most recent call last)
Cell In[7], line 5
      1 # Load the dataset
      2 file_path = "C:\\Users\\Geraldine Nyika\\Downloads\\superstore.csv"
----> 3 # Display the first few rows of the dataset
      4 print(data.head(5))

FileNotFoundError: [Errno 2] No such file or directory: 'C:\\Users\\Geraldine Nyika\\Downloads\\superstore.csv'
```

```
In [8]: # Load the dataset
file_path = "C:\\Users\\Geraldine Nyika\\Downloads\\superstore.csv"
data = pd.read_csv(file_path, encoding='ISO-8859-1')
# Display the first few rows of the dataset
print(data.head(5))
```

```
-----Traceback (most recent call last)
Cell In[8], line 5
      1 # Load the dataset
      2 file_path = "C:\\Users\\Geraldine Nyika\\Downloads\\superstore.csv"
----> 3 data = pd.read_csv(file_path, encoding='ISO-8859-1')
      4 # Display the first few rows of the dataset
      5 print(data.head(5))

UnicodeDecodeError: 'utf-8' codec can't decode byte 0xa0 in position 2944: invalid start byte
```

```
In [9]: # Import pandas as pd
# Load the dataset with a specified encoding
file_path = "C:\\Users\\Geraldine Nyika\\Downloads\\superstore.csv"
data = pd.read_csv(file_path, encoding='ISO-8859-1')
# Display the first few rows of the dataset
print(data.head(5))
```

```
-----Traceback (most recent call last)
Cell In[9], line 5
      1 # Import pandas as pd
      2 # Load the dataset with a specified encoding
----> 3 file_path = "C:\\Users\\Geraldine Nyika\\Downloads\\superstore.csv"
      4 data = pd.read_csv(file_path, encoding='ISO-8859-1')
      5 # Display the first few rows of the dataset
      6 print(data.head(5))

FileNotFoundError: [Errno 2] No such file or directory: 'C:\\Users\\Geraldine Nyika\\Downloads\\superstore.csv'
```

```
In [10]: # Import pandas as pd
# Load the dataset with a specified encoding
file_path = "C:\\Users\\Geraldine Nyika\\Downloads\\superstore.csv"
data = pd.read_csv(file_path, encoding='ISO-8859-1')
# Display the first few rows of the dataset
print(data.head(5))
```

```
-----Traceback (most recent call last)
Cell In[10], line 5
      1 # Import pandas as pd
      2 # Load the dataset with a specified encoding
----> 3 file_path = "C:\\Users\\Geraldine Nyika\\Downloads\\superstore.csv"
      4 data = pd.read_csv(file_path, encoding='ISO-8859-1')
      5 # Display the first few rows of the dataset
      6 print(data.head(5))

FileNotFoundError: [Errno 2] No such file or directory: 'C:\\Users\\Geraldine Nyika\\Downloads\\superstore.csv'
```

```
In [11]: # Group by Product Name to get total sales and profit
product.groupby(['Product Name']).sum()
```

```
In [12]: # Find top 10 products by sales and profit
top_sales_products = product.groupby(['Sales']).head(10)
top_profit_products = product.groupby(['Profit']).head(10)
```

```
In [13]: # Find bottom 10 products by sales and profit
lowest_sales_products = product.groupby(['Sales']).tail(10)
lowest_profit_products = product.groupby(['Profit']).tail(10)
```

```
In [14]: print("Top 10 Products by Sales: ")
print(*top_sales_products)
print("Top 10 Products by Profit: ")
print(*top_profit_products)
print("Bottom 10 Products by Profit: ")
print(*lowest_profit_products)
```

```
Top 10 Products by Sales:
Product Name           Sales          Profit
Canon ImageCLASS 2200 Advanced Copier    61599.824  2.519993e+04
Fellowes PB500 Electric Plastic Comb Bind...  27453.384  7.753039e+03
Cisco TelePresence System Body Conference...  19839.901  1.750000e+03
Hewlett Packard LaserJet 3310 Copier       16829.901  6.58436e+14
Hewlett Packard LaserJet 3300 Copier       18359.686  6.98383e+03
Hewlett Packard LaserJet 3300n Copier       18359.686  6.98383e+03
HP Designjet T520 Inkjet Large Format Printer ...  18374.935  4.094977e+03
GBC Docubind P400 Electric Binding System   19024.500  7.69500e+02
Hewlett Packard LaserJet 3300n Copier       18359.686  6.98383e+03
HP Designjet T520 Inkjet Large Format Printer ...  18374.935  4.094977e+03
GBC Docubind P400 Electric Binding System   17965.068 -1.878166e+03
High Speed Automatic Letter Opener          17030.312 -2.620048e+02
```

```
Bottom 10 Products by Sales:
Product Name           Sales          Profit
Epson ColorLaser C1100 Color Laser...  5.760  2.8224
Xerox 20             6,480  3.1104
Xerox 10             7,560  2.9848
Avery Hi-Liter Envelopes 7,700  3.1570
Avery Hi-Liter Pen Style Six-Color Fluorescent Set 7,800  3.0420
Avery Hi-Liter Comfort Grip Fluorescent Highlig... 7,800  2.0262
Xerox 1980            8,640  2.7336
Ecopac Gold Paper Clips 8,696  3.4040
Stockwell Gold Paper Clips 8,400  2.1000
```

```
Top 10 Products by Profit:
Product Name           Sales          Profit
Canon ImageCLASS 2200 Advanced Copier    61599.824  2.519993e+04
Fellowes PB500 Electric Plastic Comb Bind...  27453.384  7.753039e+03
Hewlett Packard LaserJet 3310 Copier       16829.901  6.58436e+14
Hewlett Packard LaserJet 3300 Copier       18359.686  6.98383e+03
Hewlett Packard LaserJet 3300n Copier       18359.686  6.98383e+03
HP Designjet T520 Inkjet Large Format Printer ...  18374.935  4.094977e+03
Ativa V4110M Micro-Cut Shredder          7699.890  3772.461
3D Systems Cube Printer, 2nd Generation, Magenta 14299.890  3717.7114
Plasticard Thermal Label Printer          9340.000  3240.500
Ibico EPK-21 Electric Binding System     15875.916  3345.823
Zebra ZM400 Thermal Label Printer        6965.700  3343.360
```

```
Bottom 10 Products by Profit:
Product Name           Sales          Profit
Cubify Cubed 3D Printer Double Head Print 11099.963 -879.9704
Lexmark MX410de Monochrome Laser Printer 16829.901 -4589.9730
Cubify Cubex Triple Head Print            7599.980 -3839.9904
Chromacraft Bull-Nose Wood Oval Conference Table.. 9817.640  1.750000e+03
Bush Business Furniture Lateral File Cabinet 19839.901  1.750000e+03
GBC Docubind P400 Electric Binding System   19024.500  7.69500e+02
Cisco TelePresence System EX90 Videconferencing... 22638.480 -1811.0784
Hewlett Packard LaserJet 3300n Copier       18359.686  6.98383e+03
Half Moon Round Table                 6518.754 -1201.0581
BoXOffice By Design Rectangular and Half-Moon M.. 1706.250 -1148.4375
```

```
In [15]: # Group by Region to get total sales and profit
regional_performance = data.groupby(['Region'])[['Sales', 'Profit']].sum()
```

```
In [16]: # Plotting sales by region
import matplotlib.pyplot as plt
import seaborn as sns
```

```
In [17]: sns.set(style="whitegrid")
sns.set_color_codes("blue")
sns.set_palette("Blues_d")
plt.figure(figsize=(10, 10))
plt.title("Sales by Region")
plt.xlabel("Region")
plt.ylabel("Total Sales")
plt.show()
```

```
-----C:\Users\Geraldine Nyika\AppData\Local\Temp\ipykernel_3376\4072038368.py:6: FutureWarning:
Passing 'hue' without assigning 'hue' is deprecated and will be removed in v0.14.0. Assign the 'x' variable to 'hue' and set 'legend=False' for the same effect.
```

```
C:\Users\Geraldine Nyika\AppData\Local\Temp\ipykernel_3376\4072038368.py:6: FutureWarning:
sns.set_color_codes("green")
C:\Users\Geraldine Nyika\AppData\Local\Temp\ipykernel_3376\4072038368.py:6: FutureWarning:
```

```
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```

```
C:\Users\Geraldine Nyika\AppData\Local\Temp\ipykernel_3376\4072038368.py:6: FutureWarning:
sns.set_color_codes("purple")
C:\Users\Geraldine Nyika\AppData\Local\Temp\ipykernel_3376\4072038368.py:6: FutureWarning:
```

```
Passing 'palette' without assigning 'hue' is deprecated and will be removed in v0.14.0. Assign the 'x' variable to 'hue' and set 'legend=False' for the same effect.
```

```
C:\Users\Geraldine Nyika\AppData\Local\Temp\ipykernel_3376\4072038368.py:6: FutureWarning:
sns.set_color_codes("purple_d")
C:\Users\Geraldine Nyika\AppData\Local\Temp\ipykernel_3376\4072038368.py:6: FutureWarning:
```

```
Passing 'palette' without assigning 'hue' is deprecated and will be removed in v0.14.0. Assign the 'x' variable to 'hue' and set 'legend=False' for the same effect.
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```

```
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C:\Users\Geraldine Nyika\AppData\Local\Temp\ipykernel_3376\4072038368.py:6: FutureWarning:
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C:\Users\Geraldine Nyika\AppData\Local\Temp\ipykernel_3376\4072038368.py:6: FutureWarning:
```

```
Passing 'palette' without assigning 'hue' is deprecated and will be removed in v0.14.0. Assign the '
```

