Group 1 | Assignment 4 - Jupyter Notebook

localhost:8888/notebooks/Akanksha/Assignment%204.ipynb#

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Run Code

In [1]:
```
#Jaypal Rajput
#202201090109
#743 G

import numpy as np
import pandas as pd
```

In [3]:
```
all_data=pd.read_csv("D:\743_Jaypal\\all_data.csv")
```

In [4]:
```
all_data.head()
```

Out[4]:

	Order ID	Product	Quantity Ordered	Price Each	Order Date	Purchase Address
0	176558	USB-C Charging Cable	2	11.95	04/19/19 8:46	917 1st St, Dallas, TX 75001
1	NaN	NaN	NaN	NaN	NaN	NaN
2	176559	Bose SoundSport Headphones	1	99.99	04/07/19 22:30	682 Chestnut St, Boston, MA 02215
3	176560	Google Phone	1	600	04/12/19 14:38	669 Spruce St, Los Angeles, CA 90001
4	176560	Wired Headphones	1	11.99	04/12/19 14:38	669 Spruce St, Los Angeles, CA 90001

CLEAN UP THE DATA!

In [5]:
```
# Find NAN
nan_df = all_data[all_data.isna().any(axis=1)]
display(nan_df.head())

all_data = all_data.dropna(how='all')
all_data.head()
```

	Order ID	Product	Quantity Ordered	Price Each	Order Date	Purchase Address
1	NaN	NaN	NaN	NaN	NaN	NaN
356	NaN	NaN	NaN	NaN	NaN	NaN
735	NaN	NaN	NaN	NaN	NaN	NaN
1433	NaN	NaN	NaN	NaN	NaN	NaN

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Run Code

356	NaN	NaN	NaN	NaN	NaN	NaN
735	NaN	NaN	NaN	NaN	NaN	NaN
1433	NaN	NaN	NaN	NaN	NaN	NaN
1553	NaN	NaN	NaN	NaN	NaN	NaN

Out[5]:

	Order ID	Product	Quantity Ordered	Price Each	Order Date	Purchase Address
0	176558	USB-C Charging Cable	2	11.95	04/19/19 8:46	917 1st St, Dallas, TX 75001
2	176559	Bose SoundSport Headphones	1	99.99	04/07/19 22:30	682 Chestnut St, Boston, MA 02215
3	176560	Google Phone	1	600	04/12/19 14:38	669 Spruce St, Los Angeles, CA 90001
4	176560	Wired Headphones	1	11.99	04/12/19 14:38	669 Spruce St, Los Angeles, CA 90001
5	176561	Wired Headphones	1	11.99	04/30/19 9:27	333 8th St, Los Angeles, CA 90001

Get rid of text in order date column

In [7]:
```
all_data = all_data[all_data['Order Date'].str[0:2]!='Or']
```

Make columns correct type

In [8]:
```
all_data['Quantity Ordered'] = pd.to_numeric(all_data['Quantity Ordered'])
all_data['Price Each'] = pd.to_numeric(all_data['Price Each'])
```

Augment data with additional columns

In [9]:
```
all_data['Month'] = all_data['Order Date'].str[0:2]
all_data['Month'] = all_data['Month'].astype('int32')
all_data.head()
```

Out[9]:

	Order ID	Product	Quantity Ordered	Price Each	Order Date	Purchase Address	Month
0	176558	USB-C Charging Cable	2	11.95	04/19/19 8:46	917 1st St, Dallas, TX 75001	4
2	176559	Bose SoundSport Headphones	1	99.99	04/07/19 22:30	682 Chestnut St, Boston, MA 02215	4

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Out[9]:

	Order ID	Product	Quantity Ordered	Price Each	Order Date	Purchase Address	Month
0	176558	USB-C Charging Cable	2	11.95	04/19/19 8:46	917 1st St, Dallas, TX 75001	4
2	176559	Bose SoundSport Headphones	1	99.99	04/07/19 22:30	682 Chestnut St, Boston, MA 02215	4
3	176560	Google Phone	1	600.00	04/12/19 14:38	669 Spruce St, Los Angeles, CA 90001	4
4	176560	Wired Headphones	1	11.99	04/12/19 14:38	669 Spruce St, Los Angeles, CA 90001	4
5	176561	Wired Headphones	1	11.99	04/30/19 9:27	333 8th St, Los Angeles, CA 90001	4

Add month column

In [10]:
```
all_data['Month 2'] = pd.to_datetime(all_data['Order Date']).dt.month
all_data.head()
```

Out[10]:

	Order ID	Product	Quantity Ordered	Price Each	Order Date	Purchase Address	Month	Month 2
0	176558	USB-C Charging Cable	2	11.95	04/19/19 8:46	917 1st St, Dallas, TX 75001	4	4
2	176559	Bose SoundSport Headphones	1	99.99	04/07/19 22:30	682 Chestnut St, Boston, MA 02215	4	4
3	176560	Google Phone	1	600.00	04/12/19 14:38	669 Spruce St, Los Angeles, CA 90001	4	4
4	176560	Wired Headphones	1	11.99	04/12/19 14:38	669 Spruce St, Los Angeles, CA 90001	4	4
5	176561	Wired Headphones	1	11.99	04/30/19 9:27	333 8th St, Los Angeles, CA 90001	4	4

Add City Column

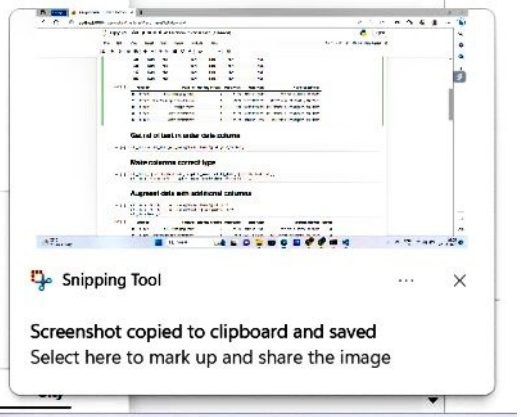
In [11]:
```
def get_city(address):
    return address.split(",")[1].strip(" ")

def get_state(address):
    return address.split(",")[2].split(" ")[1]

all_data['City'] = all_data['Purchase Address'].apply(lambda x: f"{get_city(x)}  ({get_state(x)})")
all_data.head()
```

Out[11]:

	Order ID	Product	Quantity Ordered	Price Each	Order Date	Purchase Address	Month	Month 2



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Out[11]:

	Order ID	Product	Quantity Ordered	Price Each	Order Date	Purchase Address	Month	Month 2	City
0	176558	USB-C Charging Cable	2	11.95	04/19/19 8:46	917 1st St, Dallas, TX 75001	4	4	Dallas (TX)
2	176559	Bose SoundSport Headphones	1	99.99	04/07/19 22:30	682 Chestnut St, Boston, MA 02215	4	4	Boston (MA)
3	176560	Google Phone	1	600.00	04/12/19 14:38	669 Spruce St, Los Angeles, CA 90001	4	4	Los Angeles (CA)
4	176560	Wired Headphones	1	11.99	04/12/19 14:38	669 Spruce St, Los Angeles, CA 90001	4	4	Los Angeles (CA)
5	176561	Wired Headphones	1	11.99	04/30/19 9:27	333 8th St, Los Angeles, CA 90001	4	4	Los Angeles (CA)

In [12]:
```
all_data['Sales'] = all_data['Quantity Ordered'].astype('int') * all_data['Price Each'].astype('float')
```

In [13]:
```
all_data.groupby(['Month']).sum()
```

```
C:\Users\Omkar\AppData\Local\Temp\ipykernel_28816\2666040485.py:1: FutureWarning: The default value of numeric_only in DataFram
eGroupBy.sum is deprecated. In a future version, numeric_only will default to False. Either specify numeric_only or select only
columns which should be valid for the function.
  all_data.groupby(['Month']).sum()
```

Out[13]:

Month	Quantity Ordered	Price Each	Month 2	Sales
4	17739	2899439.68	63088	2918954.40
5	26	8851.62	125	8855.46

In [14]:
```
city_max=all_data.groupby(['City']).sum()
print(max(city_max))
```

```
Sales
C:\Users\Omkar\AppData\Local\Temp\ipykernel_28816\801093808.py:1: FutureWarning: The default value of numeric_only in DataFrame
GroupBy.sum is deprecated. In a future version, numeric_only will default to False. Either specify numeric_only or select only
columns which should be valid for the function.
  city_max=all_data.groupby(['City']).sum()
```

In [17]:
```
product_group = all_data.groupby('Product')
quantity_ordered = product_group.sum()['Quantity Ordered']
```

```
C:\Users\Omkar\AppData\Local\Temp\ipykernel_28816\1112885426.py:2: FutureWarning: The default value of numeric_only in DataFram
eGroupBy.sum is deprecated. In a future version, numeric_only will default to False. Either specify numeric_only or select only
```

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Run | Code

```
quantity_ordered = product_group.sum()['Quantity Ordered']
```

In [18]:
```
print(quantity_ordered)
```

```
Product
20in Monitor                 345
27in 4K Gaming Monitor       491
27in FHD Monitor             633
34in Ultrawide Monitor       563
AA Batteries (4-pack)       2446
AAA Batteries (4-pack)      2559
Apple Airpods Headphones    1303
Bose SoundSport Headphones  1110
Flatscreen TV                398
Google Phone                 497
LG Dryer                      69
LG Washing Machine            56
Lightning Charging Cable    2027
Macbook Pro Laptop           400
ThinkPad Laptop              329
USB-C Charging Cable        1938
Vareebadd Phone              185
Wired Headphones            1823
iPhone                       593
Name: Quantity Ordered, dtype: int64
```

In [19]:
```
prices = all_data.groupby('Product').mean()['Price Each']
```

```
C:\Users\Omkar\AppData\Local\Temp\ipykernel_28816\1171195910.py:1: FutureWarning: The default value of numeric_only in DataFrameGroupBy.mean is deprecated. In a future version, numeric_only will default to False. Either specify numeric_only or select only columns which should be valid for the function.
  prices = all_data.groupby('Product').mean()['Price Each']
```

In [20]:
```
print(prices)
```

```
Product
20in Monitor                 109.99
27in 4K Gaming Monitor       389.99
27in FHD Monitor             149.99
34in Ultrawide Monitor       379.99
AA Batteries (4-pack)          3.84
AAA Batteries (4-pack)         2.99
```

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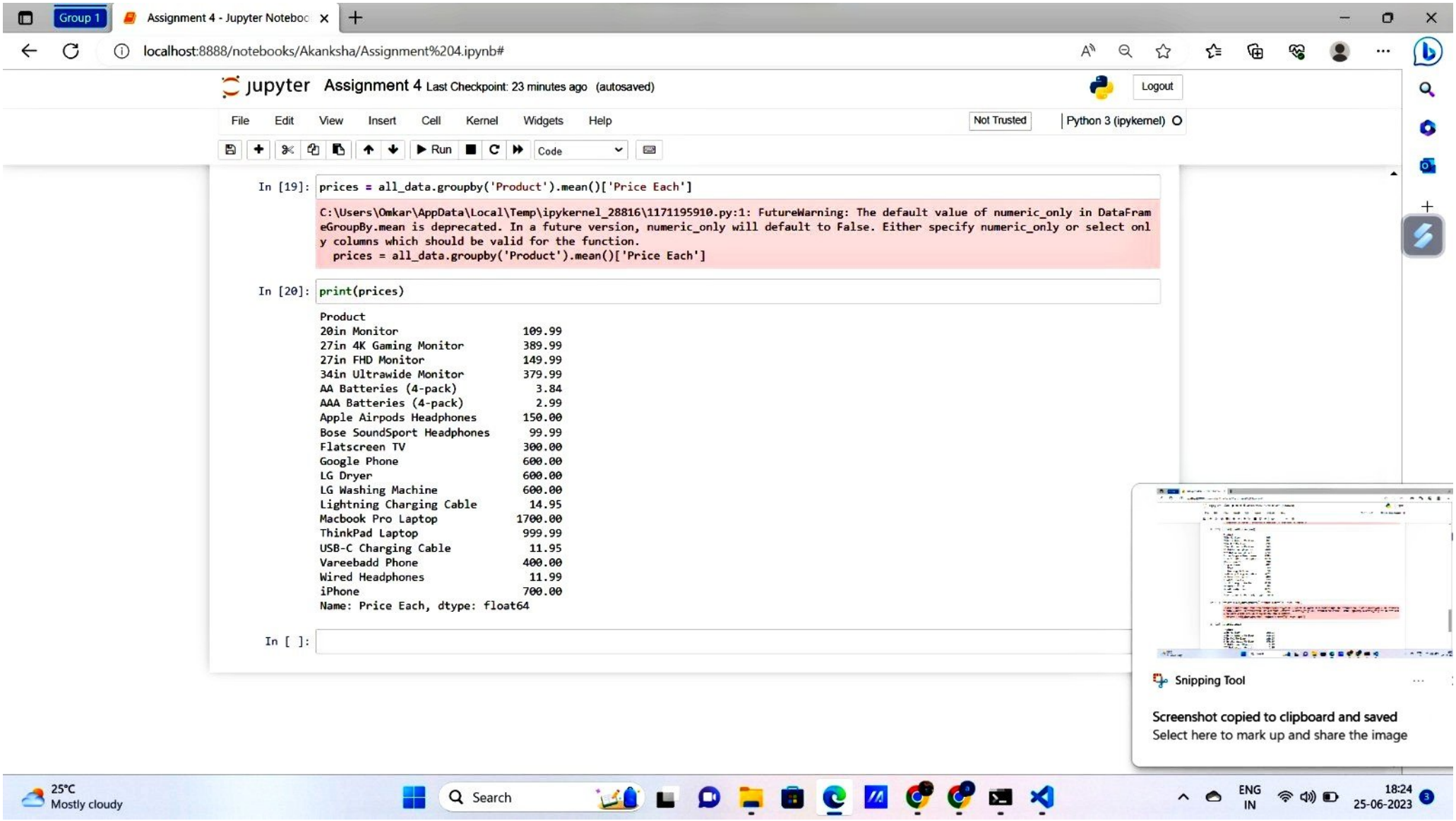
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Code
In [19]: prices = all_data.groupby('Product').mean()['Price Each']
C:\Users\Omkar\AppData\Local\Temp\ipykernel_28816\1171195910.py:1: FutureWarning: The default value of numeric_only in DataFrameGroupBy.mean is deprecated. In a future version, numeric_only will default to False. Either specify numeric_only or select only columns which should be valid for the function.
prices = all_data.groupby('Product').mean()['Price Each']
In [20]: print(prices)
Product
20in Monitor 109.99
27in 4K Gaming Monitor 389.99
27in FHD Monitor 149.99
34in Ultrawide Monitor 379.99
AA Batteries (4-pack) 3.84
AAA Batteries (4-pack) 2.99
Apple Airpods Headphones 150.00
Bose SoundSport Headphones 99.99
Flatscreen TV 300.00
Google Phone 600.00
LG Dryer 600.00
LG Washing Machine 600.00
Lightning Charging Cable 14.95
Macbook Pro Laptop 1700.00
ThinkPad Laptop 999.99
USB-C Charging Cable 11.95
Vareebadd Phone 400.00
Wired Headphones 11.99
iPhone 700.00
Name: Price Each, dtype: float64
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