

WEEKLY PROJECT 18

Product Analysis

Importing libraries and dataset

```
In [19]: import numpy as np
import pandas as pd
import matplotlib.pyplot as plt
```

```
In [20]: df=pd.read_csv('Product.csv')
df.head()
```

| | Name | Price | Orders | Quantity | Max_quantity_per_user | Amount |
|---|----------------------------|--------|--------|----------|-----------------------|---------|
| 0 | Wired Headphones | 11.99 | 18882 | 20557 | 4 | 246478 |
| 1 | Bose SoundSport Headphones | 99.99 | 13325 | 13457 | 3 | 1345565 |
| 2 | iPhone | 700.00 | 6842 | 6849 | 2 | 4794300 |
| 3 | AA Batteries (4-pack) | 3.84 | 20577 | 27635 | 7 | 106118 |
| 4 | 34in Ultrawide Monitor | 379.99 | 6181 | 6199 | 2 | 2355558 |

1)Name and Order Analysis

```
In [24]: def data_frame(df, x1, x2):
x = list(df[x1])
y = list(df[x2])

data = []

for i in range(len(x)):
    data.append([x[i],y[i]])

df_ = pd.DataFrame(data, columns = [x1,x2])

return df_
```

```
In [37]: df_ = data_frame(df, 'Name', 'Orders')

x = list(df_.sort_values(by = 'Orders', ascending = False)['Name'])
y = list(df_.sort_values(by = 'Orders', ascending = False)['Orders'])

fig, axs = plt.subplots(figsize = (15,4))

plt.bar(x,y,color=['orange'])
fig.autofmt_xdate()

plt.title('Number of Orders for each product')
plt.xlabel('Name')
plt.ylabel('Orders')

plt.show()
```



USB-C Charging Cable has the highest number of orders and LG Dryer has the least number of orders.

2)Name and Maximum Quantity per User

```
In [38]: df_ = data_frame(df, 'Name', 'Max_quantity_per_user')

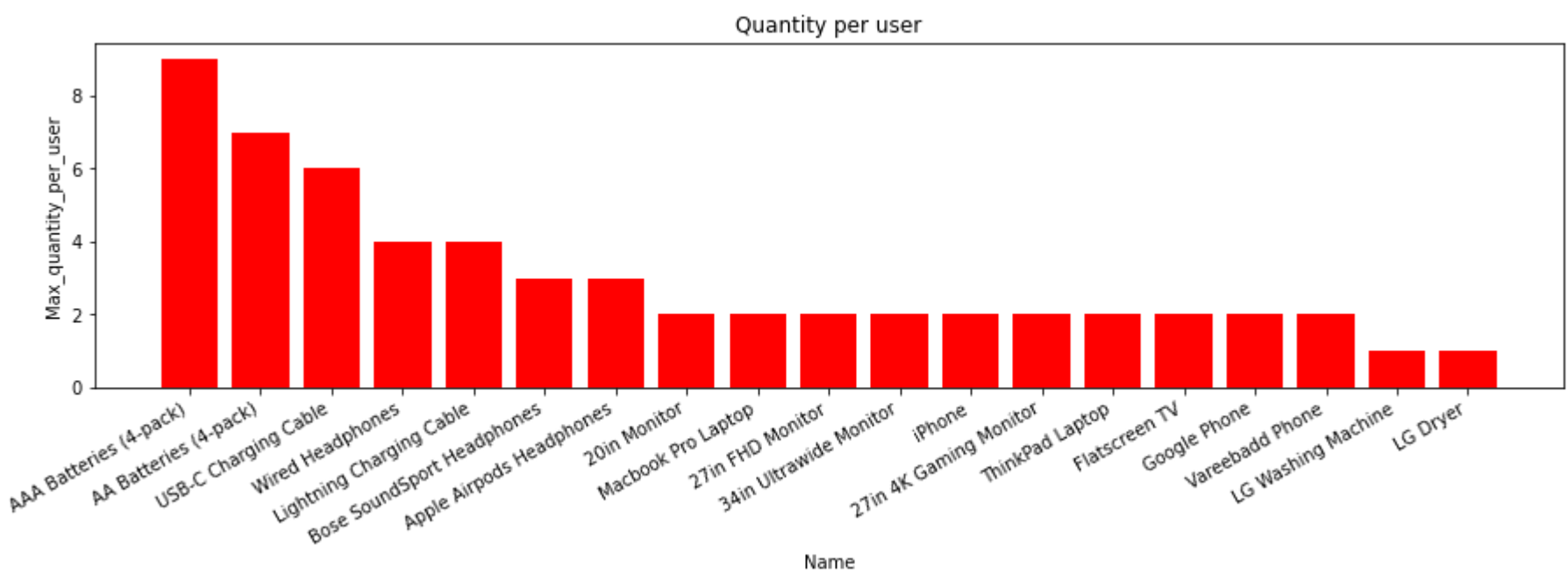
x = list(df_.sort_values(by = 'Max_quantity_per_user', ascending = False)['Name'])
y = list(df_.sort_values(by = 'Max_quantity_per_user', ascending = False)['Max_quantity_per_user'])

fig, axs = plt.subplots(figsize = (15,4))

plt.bar(x,y,color=['red'])
fig.autofmt_xdate()

plt.title('Quantity per user')
plt.xlabel('Name')
plt.ylabel('Max_quantity_per_user')

plt.show()
```



AAA Batteries is the product that has the highest number of orders per user and LG Dryers has the least number of orders per user.

3)Name and Amount Analysis

```
In [28]: df_ = data_frame(df, 'Name', 'Amount')

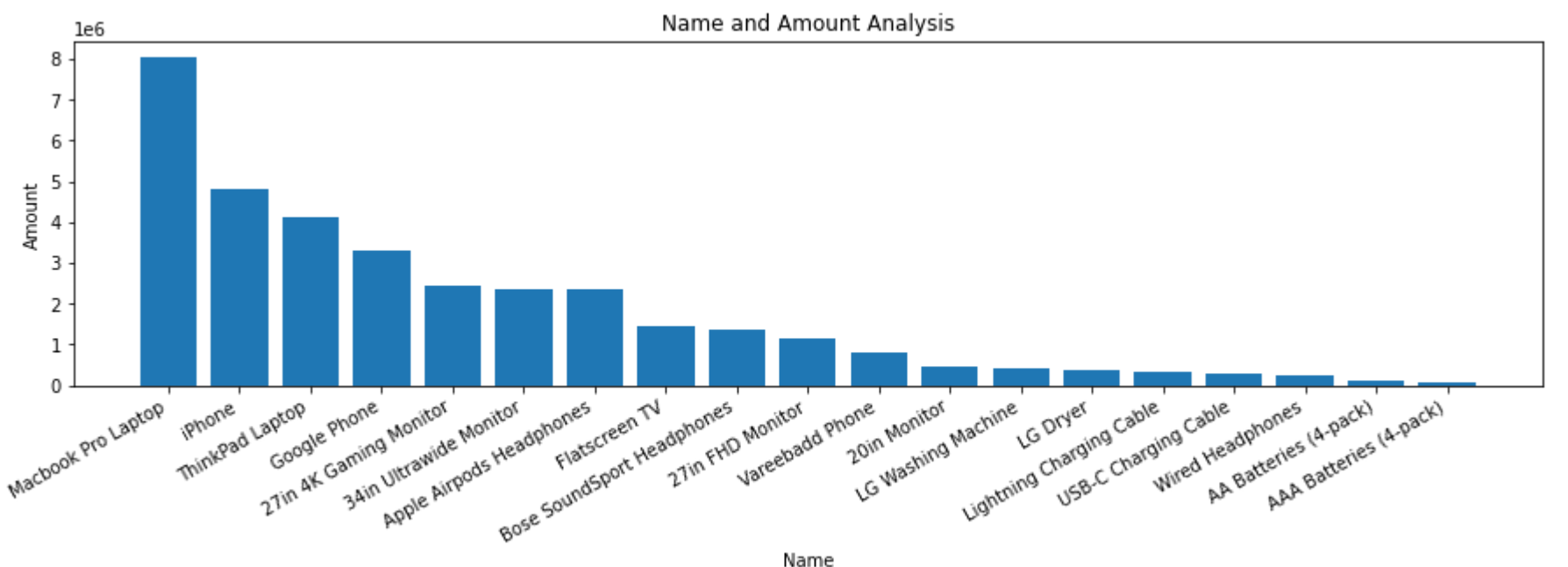
x = list(df_.sort_values(by = 'Amount', ascending = False)['Name'])
y = list(df_.sort_values(by = 'Amount', ascending = False)['Amount'])

fig, axs = plt.subplots(figsize = (15,4))

axs.bar(x,y)
fig.autofmt_xdate()

plt.title('Name and Amount Analysis')
plt.xlabel('Name')
plt.ylabel('Amount')

plt.show()
```



Macbook Pro Laptops are sold for the highest amount and AAA Batteries are sold for the least amount.

4)V2 of Product CSV file

a)Adding average price per product column

```
In [32]: temp=[]
c=len(df['Name'])
for i in range(c):
    a=df['Amount'][i]/df['Quantity'][i]
    temp.append(round(a,2))
df['Avg_Price_Per_Product']=temp
df.head()
```

| | Name | Price | Orders | Quantity | Max_quantity_per_user | Amount | Avg_Price_Per_Product |
|---|----------------------------|--------|--------|----------|-----------------------|---------|-----------------------|
| 0 | Wired Headphones | 11.99 | 18882 | 20557 | 4 | 246478 | 11.99 |
| 1 | Bose SoundSport Headphones | 99.99 | 13325 | 13457 | 3 | 1345565 | 99.99 |
| 2 | iPhone | 700.00 | 6842 | 6849 | 2 | 4794300 | 700.00 |
| 3 | AA Batteries (4-pack) | 3.84 | 20577 | 27635 | 7 | 106118 | 3.84 |
| 4 | 34in Ultrawide Monitor | 379.99 | 6181 | 6199 | 2 | 2355558 | 379.99 |

b)Adding average price per orders column

```
In [34]: temp=[]
c=len(df['Name'])
for i in range(c):
    a=df['Amount'][i]/df['Orders'][i]
    temp.append(round(a,2))
df['Avg_Price_Per_Orders']=temp
df.head()
```

| | Name | Price | Orders | Quantity | Max_quantity_per_user | Amount | Avg_Price_Per_Product | Avg_Price_Per_Orders |
|---|----------------------------|--------|--------|----------|-----------------------|---------|-----------------------|----------------------|
| 0 | Wired Headphones | 11.99 | 18882 | 20557 | 4 | 246478 | 11.99 | 13.05 |
| 1 | Bose SoundSport Headphones | 99.99 | 13325 | 13457 | 3 | 1345565 | 99.99 | 100.98 |
| 2 | iPhone | 700.00 | 6842 | 6849 | 2 | 4794300 | 700.00 | 700.72 |
| 3 | AA Batteries (4-pack) | 3.84 | 20577 | 27635 | 7 | 106118 | 3.84 | 5.16 |
| 4 | 34in Ultrawide Monitor | 379.99 | 6181 | 6199 | 2 | 2355558 | 379.99 | 381.10 |

c)Converting Dataframe to V2 of Product CSV file

```
In [39]: df.to_csv('Product_2.csv')
```

```
In [41]: df=pd.read_csv('Product_2.csv')
df.head()
```

| | Name | Price | Orders | Quantity | Max_quantity_per_user | Amount | Avg_Price_Per_Product | Avg_Price_Per_Orders |
|---|----------------------------|--------|--------|----------|-----------------------|---------|-----------------------|----------------------|
| 0 | Wired Headphones | 11.99 | 18882 | 20557 | 4 | 246478 | 11.99 | 13.05 |
| 1 | Bose SoundSport Headphones | 99.99 | 13325 | 13457 | 3 | 1345565 | 99.99 | 100.98 |
| 2 | iPhone | 700.00 | 6842 | 6849 | 2 | 4794300 | 700.00 | 700.72 |
| 3 | AA Batteries (4-pack) | 3.84 | 20577 | 27635 | 7 | 106118 | 3.84 | 5.16 |
| 4 | 34in Ultrawide Monitor | 379.99 | 6181 | 6199 | 2 | 2355558 | 379.99 | 381.10 |

```
In [ ]:
```