

PRODUCT SALES ANALYSES

Overview

For retailers, understanding the sales and customers' buying habits is highly valuable. Insights about customer satisfaction, demographics and buying price can drive decisions for marketing, sales and even inventory management.

Goals

Increase profit by optimizing the marketing efforts, increasing the number of sales and discontinue unprofitable products.

Objectives

- Increase revenue by selling higher quantity at optimal selling price

- Increase sales by improving marketing effectiveness through understanding of the customers' buying habits

- Increase profit by discontinuing products with dissatisfying revenue

Code

```
import pandas as pd
```

```
import numpy as np
```

```
import seaborn as sns
```

```
sns.set_context('notebook')
```

```
sns.set_style('white')
```

```
sns.set_palette('dark')
```

```
import matplotlib.pyplot as plt
```

```
%matplotlib inline
```

Data Reading ang Cleaning

```
months =
```

```
["January", "February", "March", "April", "May", "June", "July",  
"August", "September", "October", "November", "December"]
```

```
header = ['Order ID', 'Product', 'Quantity Ordered', 'Price  
Each', 'Order Date', 'Purchase Address']
```

```
dfs=[]
```

```
for i in months:
```

```
temp = pd.read_csv('../input/sales-product-  
data/Sales_{i}_2019.csv'.format(i), index_col = None, header  
= None, skiprows =1 )
```

```
dfs.append(temp)
```

```
df = pd.concat(dfs, axis=0, ignore_index=True)
```

```
df.dropna(inplace =True)
```

```
df.dropna(inplace =True)
```

```
df.columns= header
```

```
df.drop(df.loc[df['Order ID'] =='Order ID'].index.tolist(),  
axis=0,inplace=True)
```

```
df.info()
```

```
<class 'pandas.core.frame.DataFrame'>
```

```
Int64Index: 185950 entries, 0 to 186849
```

```
Data columns (total 6 columns):
```

#	Column	Non-Null Count	Dtype
---	-----	-----	-----
0	Order ID	185950	non-null object
1	Product	185950	non-null object
2	Quantity	185950	non-null object
3	Price Each	185950	non-null object
4	Order Date	185950	non-null object

5 Purchase Address 185950 non-null object

dtypes: object(6)

memory usage: 9.9+ MB

df.dtypes

Order ID object

Product object

Quantity Ordered object

Price Each object

Order Date object

Purchase Address object

dtype: object

```
from datetime import datetime
```

```
df['Order Date'] = pd.to_datetime(df['Order Date'], errors='coerce')
```

```
df['Purchase Address'] = df['Purchase Address'].astype(str)
```

```
df['Quantity Ordered'] = df['Quantity Ordered'].astype(int)
```

```
df['Price Each'] = df['Price Each'].astype(float)
```

In [8]:

```
df['City'] = df['Purchase Address'].str.split(',').str[1].astype(str)
```

In [9]:

linkcode

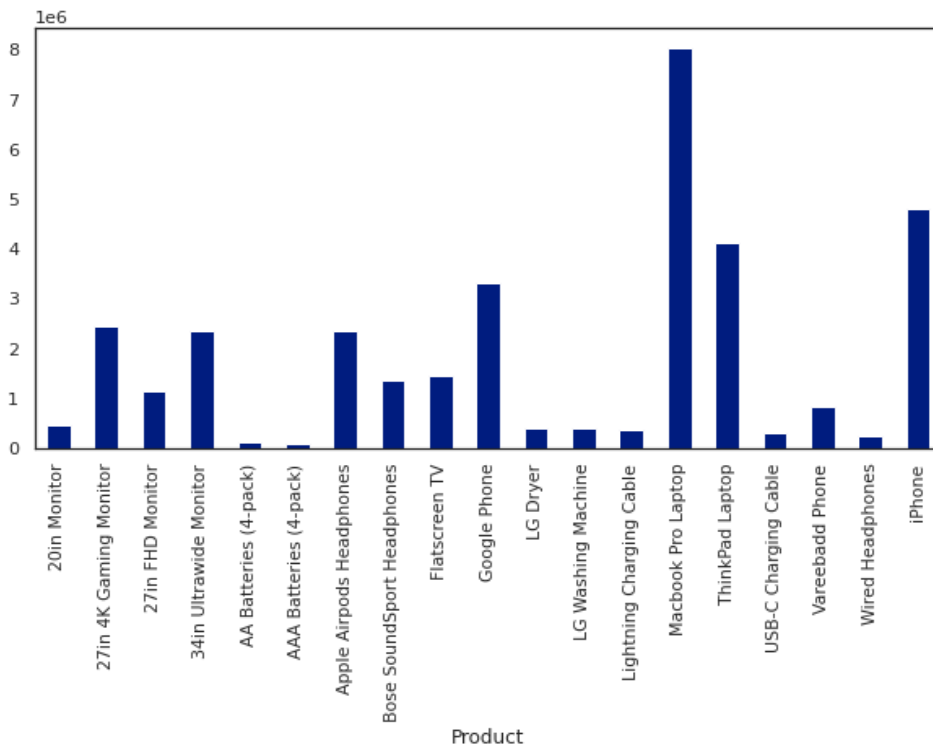
```
df['Total Price'] = df['Quantity Ordered'] * df['Price Each']
```

```
df.head()
```

	Order ID	Poduct	Order Date	Price Each	City	Total Price
0	141234	iphone	2019-01-22 21:25:00	700.00	AAE	700.00
1	141235	Light Charge cable	2019-01-28 14:15:00	14.95	AAR	14.95
2	141236	Wired Head phones	2019-01-17 13:33:00	11.99	ABJ	23.98
3	141237	27 in FHD 149.99 Monitor	2019-01-17 13:33:00	149.99	San	149.99
4	141238	iphone	2019-01-25 11:59:00	700.00	Log	11.99

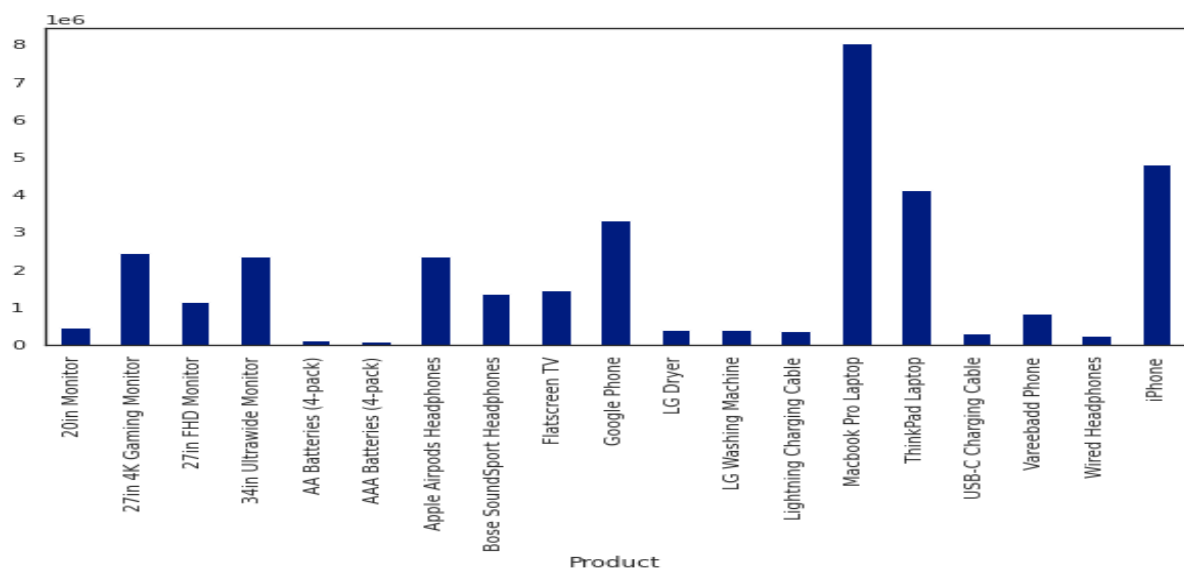
Items sold the most(quanatity)

```
ax = items['Quantity Ordered'].plot.bar(figsize = (10,5))
```



it can be seen that the most amount of sales are for batteries (AAA and AA) followed by Charging cables (USB-C and Lighting Cables). Least amount of sales are for LG washing machines and LG Dryers

Analysis Of Sales



The highest sales are for Macbook Pro Laptop, followed by iPhones. ThinkPad Laptops has third highest sales, followed by Google Phones.