



Sales Analysis for electronic store



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Introduction:

In today's rapidly evolving market landscape, data-driven insights play a pivotal role in informing strategic decisions and driving business growth. As a data analyst tasked with exploring sales data from an electronic store spanning 12 months, our objective is to extract actionable insights that will empower our organization to optimize sales performance, enhance customer satisfaction, and capitalize on emerging opportunities.

Problem Statement :

 giant electronic store with over 9 branches in USA, In the face of intensifying competition and changing consumer preferences, the electronic store aims to leverage its sales data to gain a deeper understanding of key market dynamics and unlock untapped revenue potential. The following questions have been posed to guide our analysis and inform decision-making 

tools i used:

1. Python:

- **Primary programming language for data analysis.**
- **Versatile and efficient environment for handling and manipulating datasets.**

2. Pandas:

- **Powerful data manipulation library in Python.**
- **Enables efficient loading, cleaning, and transformation of datasets.**

3. Matplotlib:

- **Essential for creating insightful visualizations to interpret and communicate data.**

4. Jupyter Notebook:

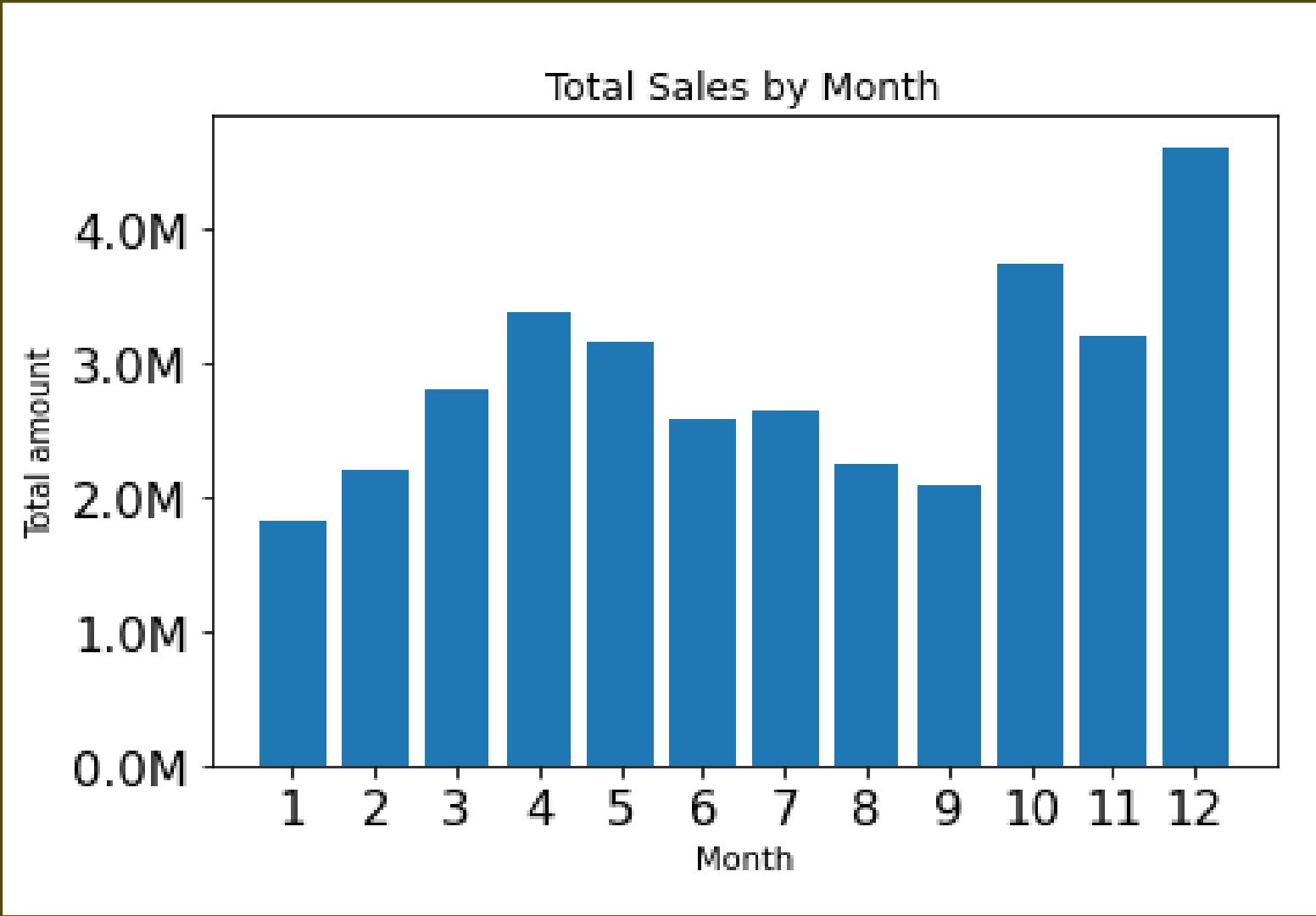
- **Interactive computing environment for data analysis and visualization.**

5. Git & GitHub:

- **Version control system for tracking changes in project files.**

Question #1: What was the best month for sales? how much was earned this month?

**we can see that the sales in 12 is very high compared to other months that because New Year's Holiday all people exchange gifts with each other
in months of jan,feb,mar isn't so well bec the segmentation of student is still studying**



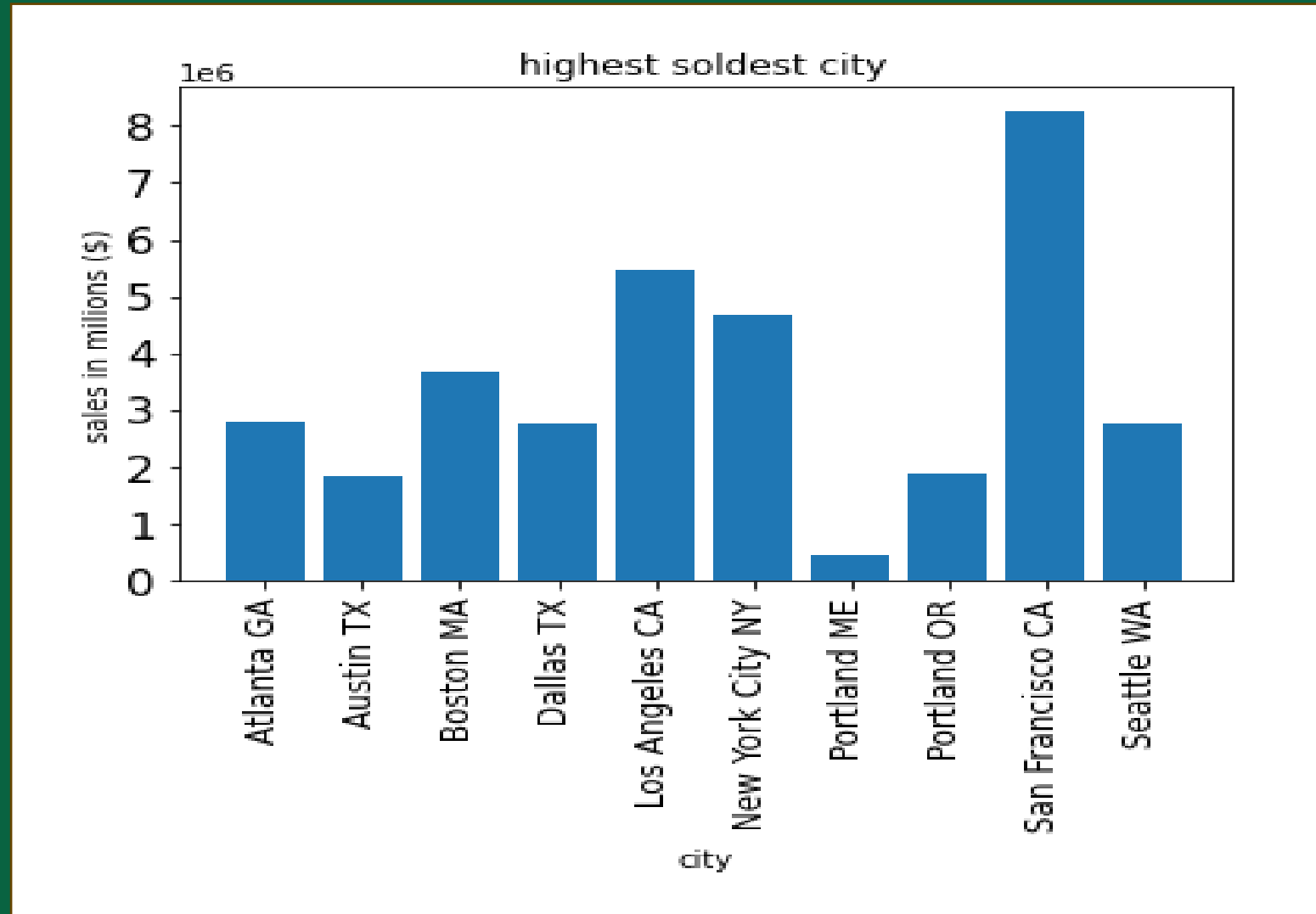
Question #2: What city sold the most product?

as we see san francisco is highest sold city because it has highest paid salaries in us on the other hand

portland is lowest sold city because it has lowest salaries in us San Francisco's tech-oriented population and strong presence of technology companies likely drive higher sales for tech-related products

#while Portland's market may be less focused on these types of goods

This resource support our assumption [US News: The 10 US cities with the highest average salaries \(cnbc.com\)](#)

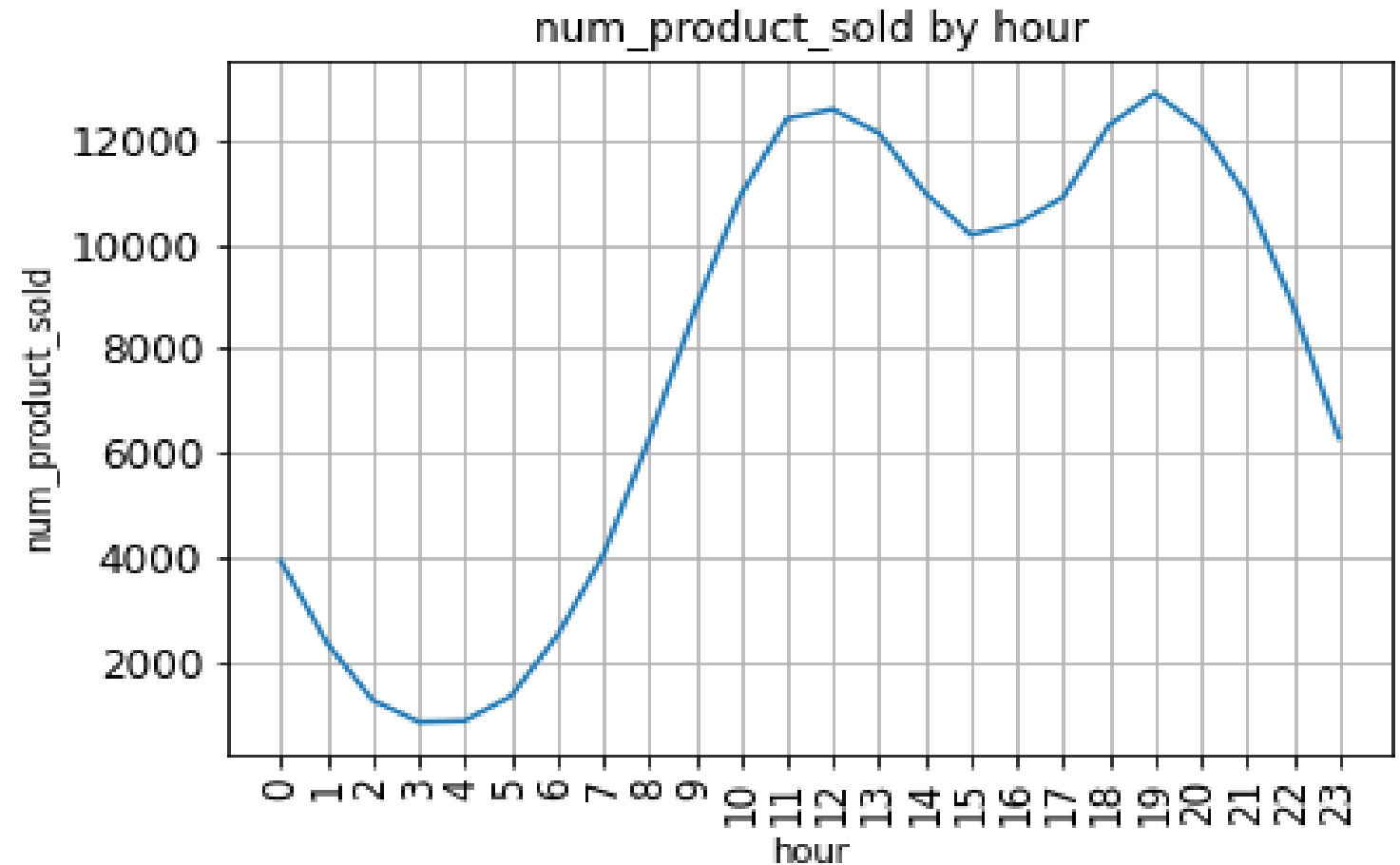


Question #3: What time should we display advertisements to maximize the likelihood of purchases?

At 11 AM, many people are typically settled into their workday, taking breaks or making purchases during lunchtime.

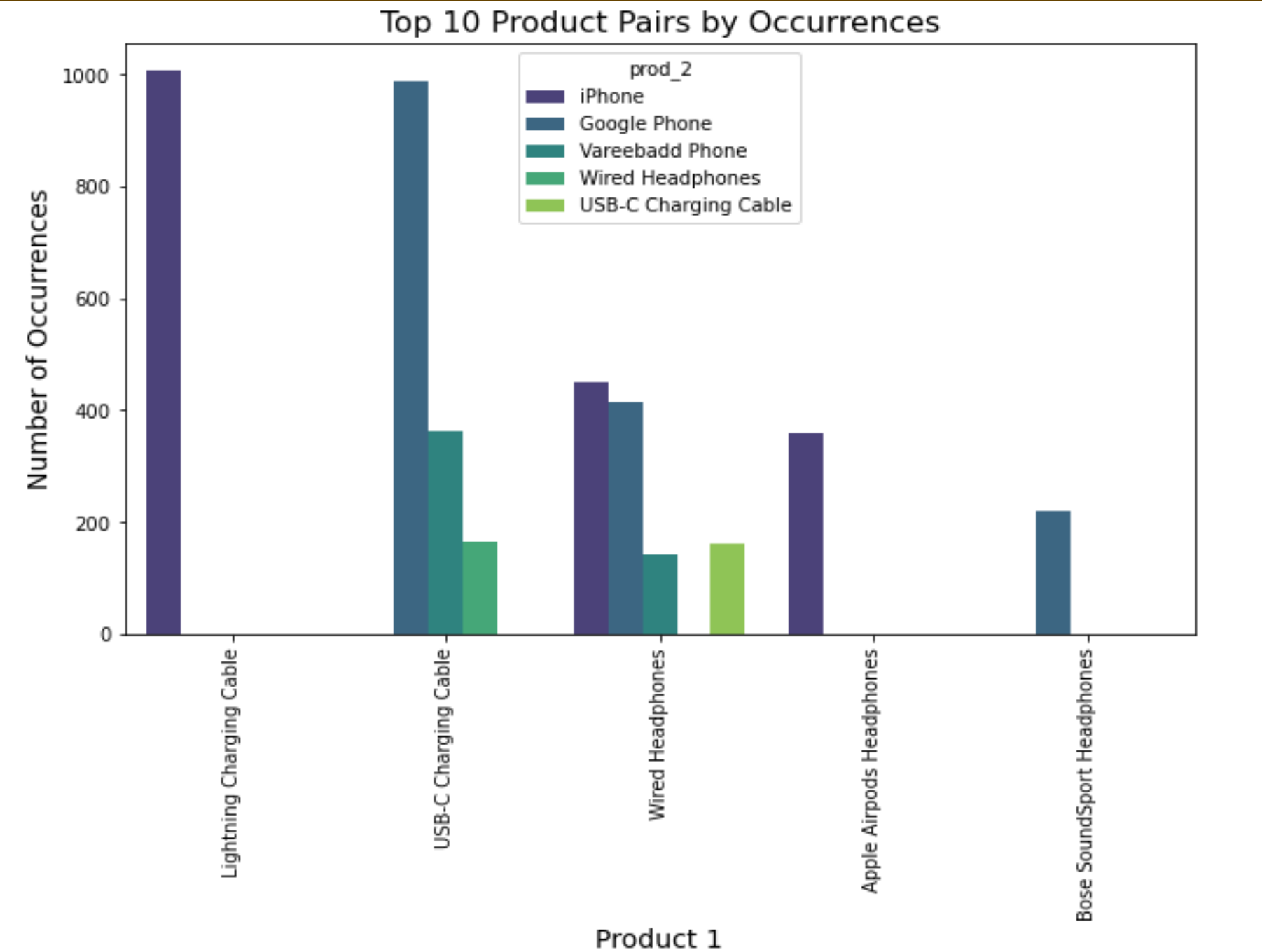
At 7 PM, after finishing work or school, individuals often engage in leisure activities, including shopping or running errands before dinner.
so i reccomend around 11 am and 7 pm

Resources that support my point of view [When Are People Most Likely to Buy Online? - SaleCycle](#)



Question #4: What products are most often sold together?

The explanation with next page



so we have observation that products are most often sold together are phones with Headphones and charging cables

from examples of that [[Lightning Charging Cable,iPhone]:1006,[USB-C Charging Cable,Google Phone]:987,[Wired Headphones,iPhone]:449]

so we can make several suggestions to increase sales:

Bundle Deals: Offer bundle deals or package discounts for the frequently co-purchased products.

This strategy encourages customers to buy both products together, increasing the overall sales value while providing perceived value to the customers

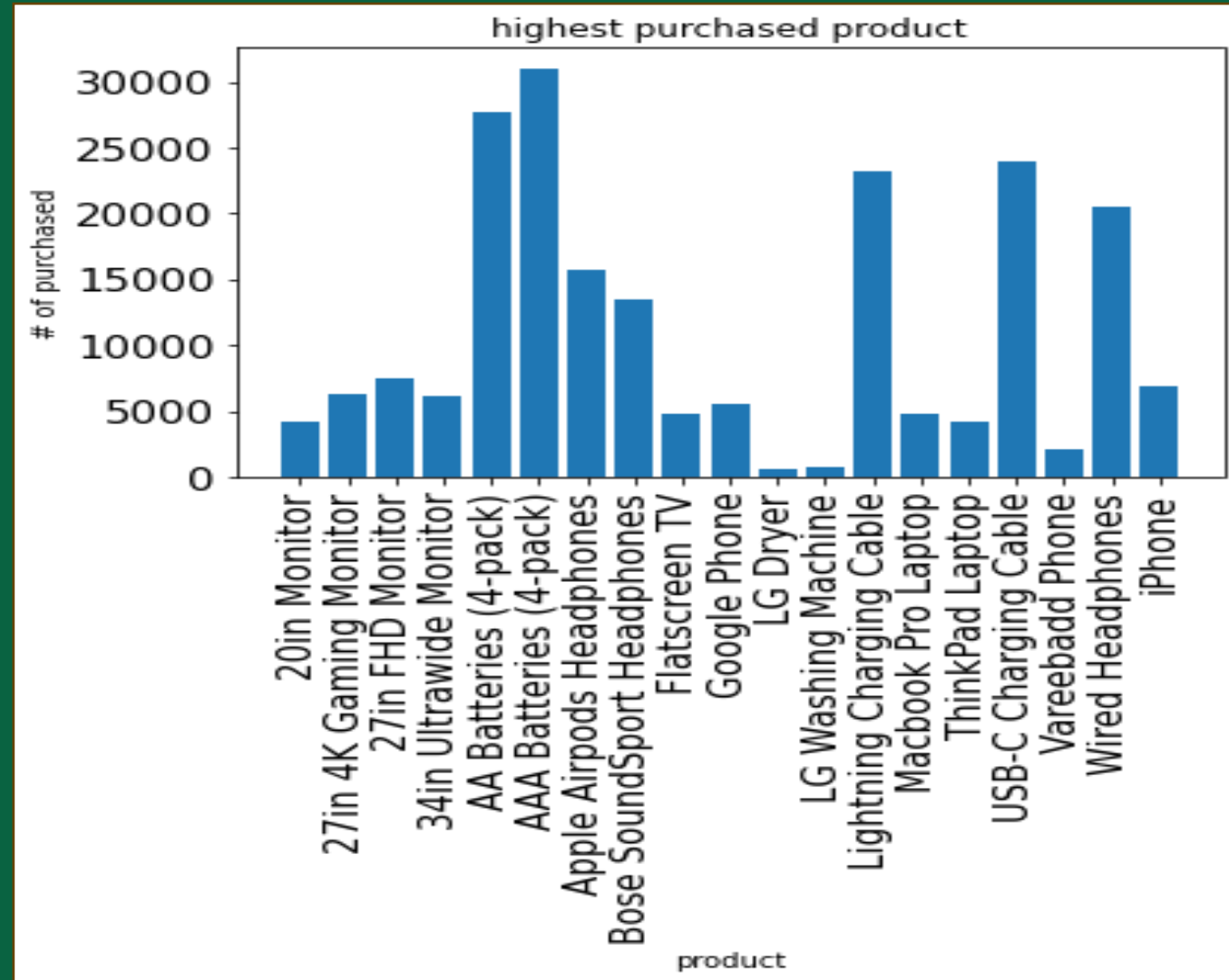
Cross-Selling: Implement cross-selling strategies by recommending complementary products during the checkout process or on product pages.

For example, if customers are buying a camera, suggest related accessories like memory cards, tripods, or camera cases.

if you have two related products you must have the same # in the inventory because it is likely to sold together

Question #5: What product sold the most? Why do you think it did?

as we see [AA Batteries (4-pack),AAA Batteries (4-pack),USB-C Charging Cable,Lightning Charging Cable] are the most sold product as we know this products are cheaper than iphone,monitors,washing machine so we can say that product sold most because it is cheaper ? we must check this assumption by comparing the price and num_purchased for every product



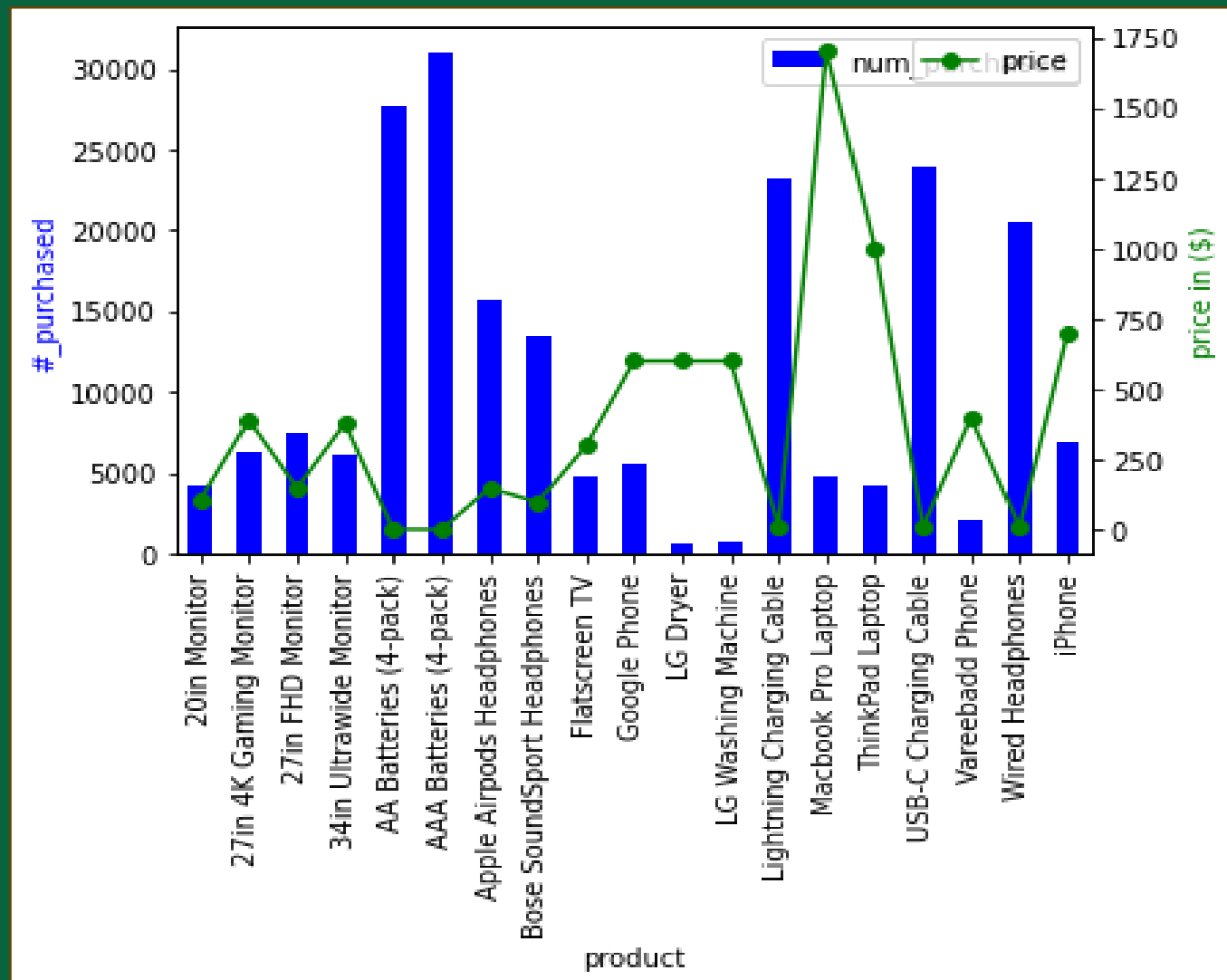
our assumption is slightly right because are commonly used in various household electronics such as remote controls, toys, and small appliances.

They are considered essential items for powering everyday devices.

Unlike durable goods such as laptops or TVs,[batteries,USB-C Charging Cable,Lightning Charging Cable] are consumable items that need to be replaced regularly as they are depleted.

This leads to more frequent purchases, resulting in higher sales volume.

but in some products it seems not very right like gaming ,ultrawide and 4k monitors as it used in many jobs like (graphic design ,motion graphic,Video Editors and 3D Artists and Animators)and many other jobs so it make sense



Insights (conclusoins)

1. ****Best Month for Sales:**** December stands out as the best month, likely due to increased holiday spending, particularly around New Year's. This insight suggests focusing marketing efforts and inventory planning around seasonal peaks to capitalize on higher consumer demand.
2. ****Top Selling City:**** San Francisco leads in sales, driven by its tech-oriented population and higher income levels. Understanding regional demographics and preferences can help tailor marketing strategies and product offerings to specific markets for improved sales performance.
3. ****Optimal Ad Display Times:**** Displaying advertisements around 11 AM and 7 PM can maximize the likelihood of purchases, aligning with common break times and leisure periods. Targeted ad placement during these times can enhance customer engagement and drive sales.
4. ****Frequently Sold Together Products:**** Products like phones with headphones and charging cables are frequently purchased together. Offering bundle deals or cross-selling strategies for these product pairs can boost sales and enhance customer satisfaction by providing value-added offerings.
5. ****Top Selling Products:**** Essential items like batteries and charging cables top the sales charts, driven by their frequent need for replacement and widespread usage across various devices. Understanding the demand for essential items can inform inventory management and marketing strategies to meet customer needs effectively.