**Data Analysis Project (iPhone\_Sale\_Analaysis)**

* **Project Overview**

Since its global launch, the iPhone has set new standards in technology and design with its innovative features. The iPhone holds a significant market share worldwide, approximately 28.58%. In the United States, Apple dominates with a market share of 55.91%, meaning more than half of all smartphones are iPhones. In contrast, the iPhone’s market share in India stands at 4.1%.

This project utilizes data from Flipkart, where various models of iPhones were listed and sold at different prices. The aim is to analyze and visualize iPhone sales in the Indian market using Python and its libraries, such as pandas and NumPy, along with Plotly for data manipulation and visualization. This analysis will provide insights into sales trends and patterns of iPhones in the Indian market.

**Key Objectives**

1. **Data Loading and Cleaning:**
   * Utilize Pandas to load and clean the iPhone sales dataset, ensuring data consistency and integrity.
2. **Filtering Sales Data for India:**
   * Extract and filter sales data specifically for the Indian market, focusing on relevant metrics such as units sold, revenue generated, and popular iPhone models.
3. **Sales Trend Analysis:**
   * Use Matplotlib and Plotly to create line charts illustrating the sales trend of iPhones in India over time. Identify peak sales periods and observe any seasonal variations.
4. **Top-selling Models:**
   * Employ bar charts and interactive plots to showcase the top-selling iPhone models in India. Highlight key features contributing to their popularity.
5. **Revenue Analysis:**
   * Use NumPy and Pandas for numerical analysis to calculate total revenue, average revenue per unit, and other relevant financial metrics. Visualize these

**Tools and Libraries:**

* **NumPy and Pandas:** For data manipulation, cleaning, and numerical analysis.
* **Matplotlib:** For creating static visualizations such as line charts, bar charts, and histograms.
* **Plotly:** For interactive and dynamic visualizations, including line charts and geographical maps.

**Key Takeaway from the analysis:**

* The most highly rated iPhone on Flipkart in the Indian market is the **iPhone 11 Pro Max (Midnight Green, 64 GB)**, while the least rated is the **iPhone 12 (Blue, 128 GB)**.
* The **iPhone 8 Plus (Gold, 64 GB)** has the highest number of ratings (3431) from Indian customers, whereas the **iPhone 12 Pro Max (Graphite, 128 GB)** has the least (580).
* Higher-rated iPhones tend to have lower selling prices with higher discount percentages. This indicates that iPhones with lower prices and higher discounts receive more reviews and sell better in the Indian market.