

# Data Visualisation Project (Jan-2024)

**Project Title:** Market Pulse: Unveiling Product Performance in E-commerce

## Project Description:

In today's fast-paced retail landscape, companies are constantly seeking ways to optimize their strategies amidst high demands and fierce competition. With aspirations to thrive in this dynamic environment, a prominent corporation acknowledges the importance of understanding the underlying factors driving product performance in e-commerce. Recognizing the transformative potential of data-driven insights, they have enlisted your team to explore the intricacies of successful businesses in this sector.

In this project, the aim is to leverage your team's expertise in data analysis and retail domain knowledge to uncover the key factors driving product performance within the e-commerce landscape. The objective is to provide your client with actionable insights derived from a comprehensive examination of consumer behavior, pricing strategies, and brand dynamics. By thoroughly exploring the data, the goal is to equip your client with the knowledge needed to make informed decisions and stay competitive in the fast-paced world of online retail.

## Key objectives:

- ★ Evaluate product performance based on sales data, consumer ratings, and pricing information.
- ★ Identify trends and patterns within product categories to uncover high-demand items and growth opportunities.
- ★ Assess brand performance to understand brand loyalty and market share.
- ★ Analyze the relationship between pricing strategies and consumer perception to optimize pricing.

- ★ Explore consumer feedback/ratings to gain insights into preferences and satisfaction levels across product categories.
- ★ Compare product performance metrics with competitors to identify strengths, weaknesses, and opportunities for improvement.

### **Deliverables:**

**Visualizations:** Produce interactive and visually captivating data visualizations for various topics and integrate these visuals into a cohesive and engaging dashboard/chart.

**Presentation:** Present your project to the class, explaining the insights gained from the visualizations.

**Code & Documentation:** Provide well-structured and documented code for data preprocessing and all visualizations.

### **Note:**

- You can use any programming language or tools you believe are suitable for this project and should be prepared to describe and explain your choices.
- We encourage the use of data visualization to effectively communicate your findings and hypotheses and create a compelling narrative.

**Datasets:** [Link](#)

**Good luck!**

Criteria	Points
<b>Approach:</b> Clear and well-reasoned approach to the problem, including appropriate analytical and coding techniques	10
<b>Data analysis &amp; Findings:</b> Effective use of data analysis techniques to extract interesting observations from data that clearly answer the questions	20
<b>Data visualization:</b> Effective use of data visualizations to communicate findings and tell a compelling story	30
<b>Implications:</b> Clear and insightful implications for the client and their research and development department	10
<b>Constraints and improvements:</b> Clear and well-supported recommendations for improving the project or addressing any constraints or limitations	5
<b>Presentation:</b> Professional and engaging presentation, with effective communication	10
<b>Technical Appendix:</b> Clear, well-documented, and readable code or pseudocode, with appropriate comments and documentation	10
<b>Consistent progress:</b> Meeting or exceeding weekly goals and targets	5

# Roadmap for completing the project in Three weeks

## Week 1

### ( Data Understanding and Preprocessing )

- Import and preprocess the dataset, handling missing values, duplicates, and outliers.
- Standardize column and data types for consistency.
- Conduct initial data exploration through descriptive statistics and basic visualizations.

## Week 2

### (Exploratory Data Analysis and Visualization)

- Evaluate product performance metrics such as sales, ratings, and pricing.
- Identify trends and patterns within product categories to uncover high-demand items and growth opportunities.
- Analyze brand performance to understand brand loyalty and market share.
- Explore consumer ratings to gain insights into preferences and satisfaction levels.

## Week 3

### (Visualization, Dashboard Development, and Presentation Preparation)

- Develop visually appealing and informative data visualizations using appropriate libraries.
- Design a cohesive dashboard integrating key visualizations to convey insights effectively. (optional)
- Refine visualizations and the dashboard based on feedback and additional insights.
- Prepare presentation slides summarizing key findings, insights, and recommendations for the client presentation.