

Dashboard Project: Exploring Customer Sentiment, Price, and Ratings

Objective:

Create a clean, one-page dashboard that shows how customers feel about different products and how that sentiment relates to price, category, and ratings.

You will use the dataset generated from your ETL pipeline:

`reviews_products_with_sentiment.csv`

Your dashboard should help answer key business questions visually, think of it as something a product manager or marketing team could use at a glance.

Step 1: Understand the data

Load the dataset in a jupyter notebook and explore its structure.

Step 2: Define your dashboard focus

Your one-page dashboard should include at least 4 clear insights.

Here are some ideas to explore:

Sentiment Insights

- Distribution of sentiment labels (positive, neutral, negative)
- Average sentiment score by product category
- Relationship between sentiment and rating

Price & Ratings Relationships

- Do higher-priced products tend to have better sentiment?
- Which categories have the best-rated or most-loved products?
- Correlation between price and average sentiment score

Product & Category Highlights

- Top 10 products with the most positive reviews
 - Categories with most consistent sentiment (low variability)
 - Outlier analysis, products that are expensive but disliked
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Step 3: Visualise your findings

Use the Python library of your choice for the plots:

- Plotly Express: interactive and modern (best for dashboards)
<https://plotly.com/python/plotly-express/>
- Seaborn: beautiful statistical visualisations
<https://seaborn.pydata.org/>
- Matplotlib: highly customisable and foundational
<https://matplotlib.org/>

Suggested plots:

Goal	Plot Type	Example
Sentiment distribution	Bar chart / Pie chart	Count of each sentiment label
Sentiment vs. Price	Scatter or box plot	Sentiment score vs. price
Sentiment by Category	Bar or violin plot	Average sentiment per category
Ratings vs. Sentiment	Heatmap or scatter	Correlation between sentiment and rating
Top Products	Bar chart	Top 10 positive-sentiment products

Step 4: Build the Dashboard Layout

Combine your visualisations in a single clean page using:

- A grid or subplot layout (`plt.subplots`, `plotly.subplots`)
- Clear titles and axis labels
- Light background, consistent colours
- Optional: Add interactivity with dropdowns (Plotly) or sliders (ipywidgets)

Step 5: Insights Summary

End your notebook with a short narrative answering:

- What patterns do you notice between sentiment, price, and ratings?
 - Which categories stand out as best or worst performing?
 - Are there any surprising outliers?
 - What might the business do next based on these insights?
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Bonus Challenges

- Build a correlation matrix to show relationships between numeric variables.
- Add a word cloud of most common positive and negative review words.
- Experiment with different libraries — how do Plotly, Seaborn, and Matplotlib compare?