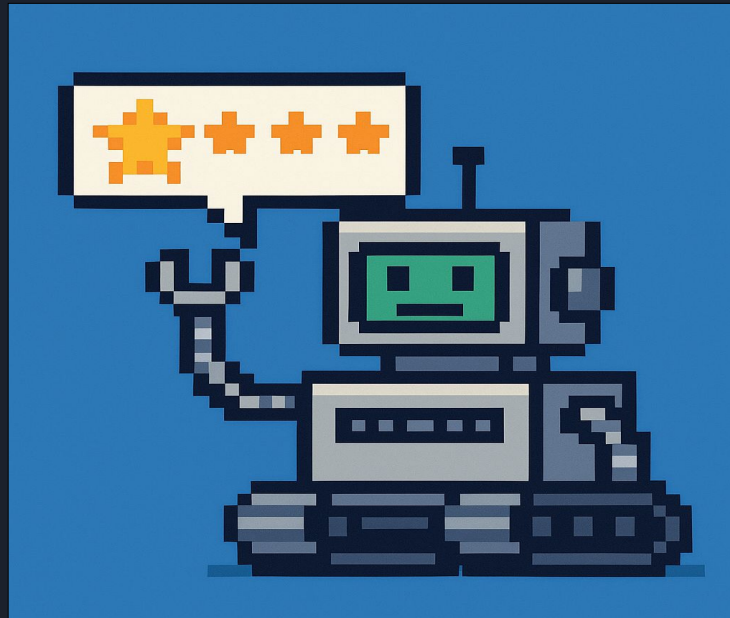# Group 6

Jef, Alejandro, Darius

Robotic Review Feedback Generator

The Pitch

Imagine being out there trying to archive a senseful purchase, but with the ever fast changing times you are completely lost in what is worth to seek after and what won't meet your expectations.

We are here to help!

With the RRF Generator you will stay on top of your game knowing what will work best for you, having all the relevant infos in reach and knowing what to go after.
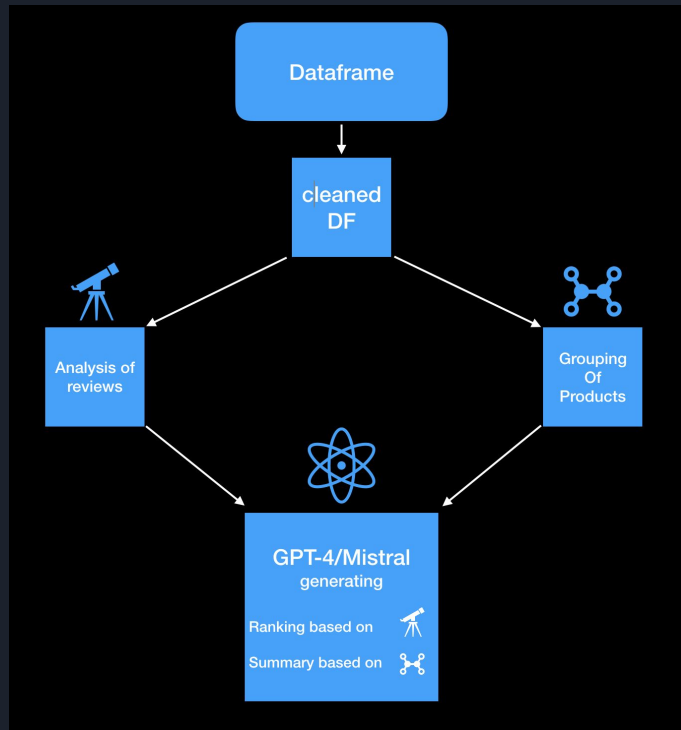
Introduction

- In a modern, worldwide connected environment it can be difficult to navigate through the mass of options for consumers

- A centrified hub to gather and administer information is efficient and saves time

- Each model within the generator builds a foundation the next model works with to create cohesive, insightful information

- We focused on stripping down and understanding the essentials, then building up a well connected network of reliable information

Methods
Dataframe: <u>Consumer Reviews of Amazon Products</u>

Dataset with reviews,names,rating scores etc. →

Preprocessing of the data →
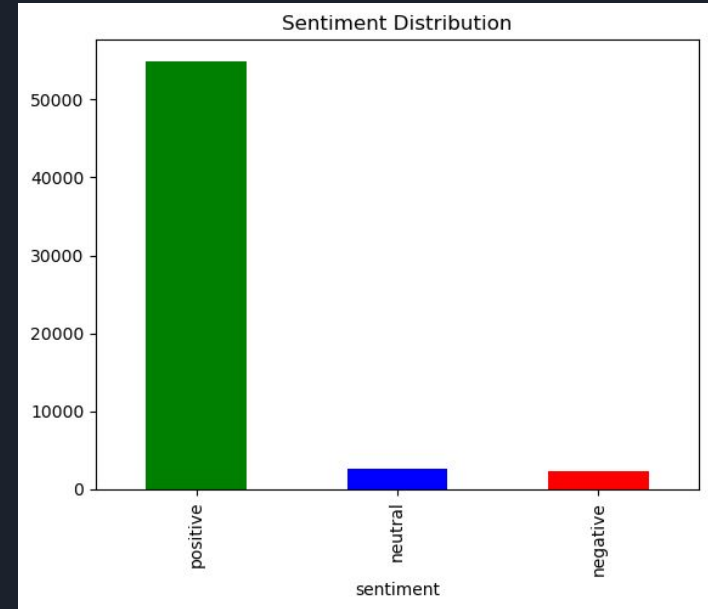
Creating review score (Model 1) →

Cluster the different products from the dataset into categories (Model 2) →

Write blog entry for each category, highlighting the top/worst 3 products

Model 1

- The dataset needed intensive cleaning and understanding
- 2 options: using sentiment analysis to figure out whether a review was +/- OR taking the rating score into account

  -> Ended up using the review ratings to generate a score since it was more detailed(1-5) then a sentiment analysis (1-3)

Model 1 - Evaluation

- Creating a column for the sentiment, using the trained model for prediction
- Sentiment values:
  Positive, Neutral, Negative
- Review score rating: 1-5 (used to obtain the sentiment for training data)
- Sentiment essential for ranking later top 3 and worst product by category

```
Best sentiment model: Logistic Regression with F1-macro = 0.7467
              precision    recall  f1-score   support

    negative       0.89      0.74      0.81       463
     neutral       0.79      0.49      0.60       516
    positive       0.97      0.99      0.98     10981

    accuracy                           0.96     11960
   macro avg       0.88      0.74      0.80     11960
weighted avg       0.96      0.96      0.96     11960
```
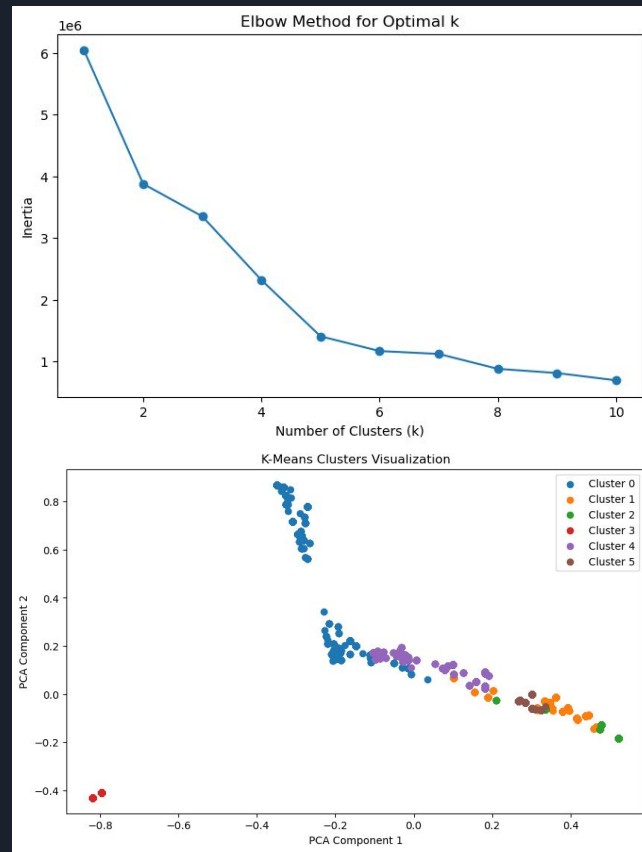
```
Confusion Matrix:
[[  343    23    97]
 [   19   252   245]
 [   22    45 10914]]
```

Model 2 - Categories clustering

- Categories clustered were not distinct
- Elbow methods suggest 4-6 clusters
  -> 4 clusters created the most reasonable groups
- KMeans Clustering
- "name" and "categories" columns as the target to find similarities
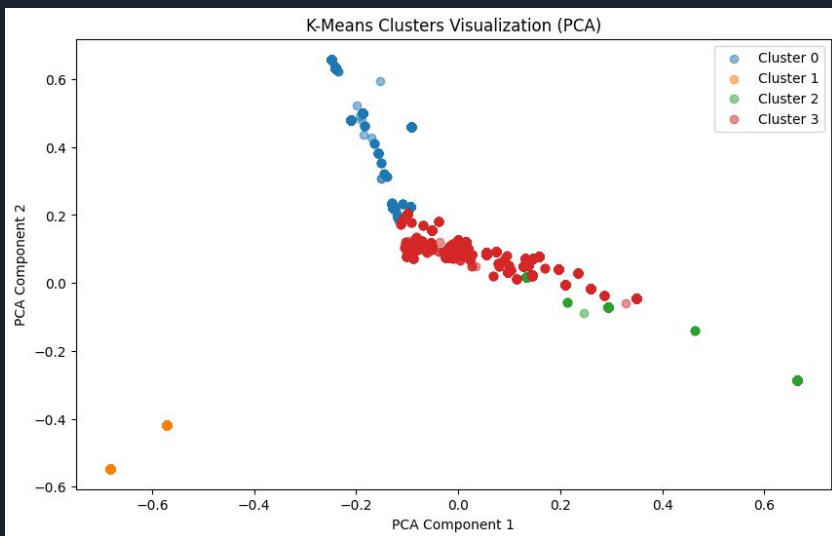
Cluster Names: Used OpenAI API, by sending list of unique products in each category and get a representative category name.

example of 6 cluster grouping

Model 2 - Evaluation

Biggest impact here was thorough preprocessing and removal of any unnecessary Information before creating the clusters (stopwords removal / removal of repetitive terms as "Amazon")

K-Means Clusters Visualization (PCA)

```
Clusters generated by the model:
Cluster Electronics and Entertainment:
Number of items: 23725
Sample items: ['fire tablet 7 display wifi 8 gb includes special offers magenta electronics ipad tablets tablets computerstablets netw

Cluster Home Technology:
Number of items: 15171
Sample items: ['kindle oasis ereader leather charging cover merlot 6 highresolution display 300 ppi wifi includes special offers ebook

Cluster Household:
Number of items: 10858
Sample items: ['amazonbasics aaa performance alkaline batteries 36 count aa aaa health electronics health household camcorder batteri

Cluster Portable Devices:
Number of items: 10042
Sample items: ['allnew fire hd 8 tablet 8 hd display wifi 16 gb includes special offers magenta electronics ipad tablets tablets fire
```
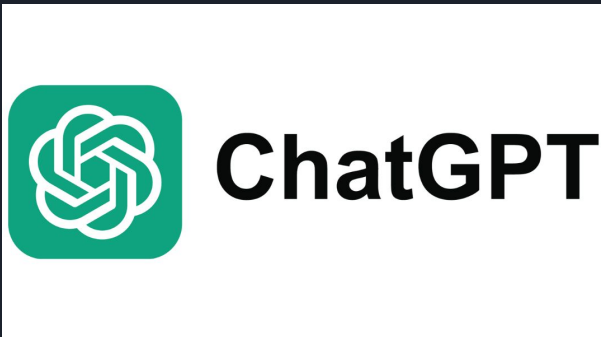
Model 3

- ❖ Key to have the previous 2 models working properly, as the 3rd model is dependent.
- ❖ GPT 4 very capable vs. smaller models (not trained with instructions) hallucinating or creating incoherent output
- ❖ After selecting Mistral 7B Instruct model, we applied quantization (8-bit) to tackle GPU memory issues, and later applied prompt tunning with n-shots.

Recap

- Logistic Regression (Sentiment classifications) → K-means (Clustering products into categories) → Mistral 7B Instruct and GPT 4 (Blog creation for each category)

- Sentiment analysis helps quantify customer opinions for product comparison.

- Clustering enables automatic grouping of similar products into meaningful categories.

- Big LLMs (like GPT 4) can generate coherent, user-friendly blog content when given structured prompts. Smaller models (trained with instructions) also give decent results.

- Combining multiple models into a pipeline creates powerful, real-world applications.

Demo (Static version)

Welcome to AI Blog Showcase

Select a blog version below:

Blog generated using ChatGPT 4   Blog generated using Mistral

Demo (Static version)

Blog Generated with Mistral

--- Blogpost for E-Readers ---

Hello bookworms! If you're in the market for an e-reader, you've come to the right place. Today, I'll share my top three recommendations and a word of caution about a less-than-stellar product.

First up, let me introduce you to the All-New Kindle Oasis E-reader. With its 7-inch high-resolution display (300 ppi), waterproof design, built-in Audible, and 8GB storage capacity, it's no wonder this e-reader has an impressive average rating of 4.59 based on 22 reviews. Users love its sleek design and long battery life. Few complaints have been reported.

Next, the Kindle Voyage E-reader boasts a 6-inch high-resolution display (300 ppi) with adaptive built-in light and pagepress sensors. Its average rating of 4.94, based on 16 reviews, speaks for itself. Customers rave about its adjustable light feature and comfortable grip. Again, very few complaints have surfaced.

Lastly, the Fire HD 8 Tablet with Alexa is a versatile device that doubles as an e-reader. It sports an 8 HD display, 32GB storage, and comes in a stylish tangerine color. With an average rating of 4.86 based on 14 reviews, users appreciate its affordability and wide range of functions.

Now, a word of warning. While shopping for accessories, be cautious of the Oem Amazon Kindle Power USB Adapter Wall Travel Charger & Fire/DX/+Micro USB Cable. Despite its low price, it has an abysmal average rating of 1.00 based on 1,356 reviews. Users report issues with the cable not charging their devices properly or breaking quickly. To ensure a satisfying experience, invest in a reputable brand for your charging needs.

Happy reading, and stay tuned for more product recommendations!

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--- Blogpost for Tablet Devices ---

Hello, tech enthusiasts! If you're in the market for a new tablet device, you've come to the right place. Today, we'll be discussing three popular options that have received rave reviews from customers. Let's dive in!

Blog Generated with ChatGPT 4

--- Blogpost for E-readers ---

If you're on the market for a new e-reader, then you are in the right place! We've collated all the recent customer reviews and ratings to give you a quick roundup of the top e-readers out there. Let's dive in:

1. All-New Kindle Oasis E-reader: (Avg. Rating: 4.59, 22 reviews)
   Placed first on our list is the All-New Kindle Oasis. With its 7" high-resolution display and a groundbreaking waterproof design, you can now enjoy your reading time in a pool, bathtub, or on a rainy day without any hesitation. With Wi-fi and an 8 GB storage, it has got space for all your books. Users have minor complaints, emphasizing on its overall outstanding performance.

2. Kindle Voyage E-reader: (Avg. Rating: 4.94, 16 reviews)
   The Kindle Voyage is another excellent choice. Its 6" high-resolution display with adaptive light technology adjusts the brightness to your environment offering a smooth reading experience without straining your eyes. It gets a whopping average rating of 4.94, which speaks volumes about user satisfaction.

3. Fire HD 8 Tablet with Alexa: (Avg. Rating: 4.86, 14 reviews)
   If you are looking for something more than just an e-reader, the Fire HD 8 Tablet could be a great choice. Apart from its excellent performance as an e-reader with an 8" HD Display and 32 GB storage, it also incorporates Alexa, Amazon's voice assistant, expanding its usability far beyond reading.

While these are our top picks, we also thought it'd be worthwhile to highlight one product that didn't make the cut. The Oem Amazon Kindle Power USB Adapter Wall Travel Charger has the lowest rating in the pack with an average rating of 1.00. Due to constant complaints about its poor performance, we recommend steering clear from this product and opting for a more reliable option.

We hope that our top picks guide you towards the e-reader that suits your needs! Choose wisely and happy reading!

==

--- Blogpost for Tablet Devices ---

In search of a top-notch tablet? We've honed in on two excellent options based on customer reviews:

1. Undisclosed Top Tablet (Avg. Rating: 5.00, 1 review)

Demo (Dynamic version)

Product Review Blog Generator

Upload a CSV of product reviews and get blog posts for each product category! Make sure that the uploaded file contains at least the following columns: 'asins', 'name', 'categories', 'reviews.rating', 'reviews.title', 'reviews.text'.

📄 Upload your product reviews CSV

⬆

Coloque el archivo aquí

- o -

Haga clic para cargar

Generated Blog Posts

Flag

Clear

Submit

Demo (Dynamic version)

Product Review Blog Generator

Upload a CSV of product reviews and get blog posts for each product category! Make sure that the uploaded file contains at least the following columns: 'asins', 'name', 'categories', 'reviews.rating', 'reviews.title', 'reviews.text'.

Upload your product reviews CSV

combined_reviews.csv   33.7 MB

Clear   Submit

Generated Blog Posts

Flag

Demo (Dynamic version)

Demo (Dynamic version)

Upload your product reviews CSV   ✕

combined_reviews.csv   33.7 MB ↓

| Clear | Submit |

Generated Blog Posts

--- Blogpost for E-readers ---

Title: **E-Reader Showdown: Which One Should You Choose?**

Hey there bookworms and tech enthusiasts! If you're in the market for an E-reader, you've come to the right place. Today, we'll be taking a closer look at three popular options and discussing why one of them might not be worth your time or money.

First up, we have the **Kindle Voyage**. This sleek device boasts a high-resolution display with adaptive built-in light and pagepress sensors. Customers seem to love its thin design and long battery life. With an average rating of 2.0 stars, it has few reported issues. Some users mentioned that they wished the device came with more storage space, but overall, it's a solid choice for avid readers.

Next, let's talk about the **Fire HD 8 Tablet**. While technically an E-reader, this tablet also offers access to apps, movies, and music. Its 8 HD display and Alexa compatibility make it a versatile option for those who want more than just books. With the same average rating as the Kindle Voyage, it too has minimal complaints. However, some customers noted that the tablet's speakers could be improved.