

Documentation for Amazon Product ReviewIQ

Introduction

Amazon Product ReviewIQ is a Streamlit-based web application that provides an interactive platform for analyzing sentiment in product reviews. It covers various product categories like Beauty, Gift Cards, Cell Phones, and Appliances. Users can input an Amazon Standard Identification Number (ASIN) to get detailed sentiment insights for specific products.

Key Features

- Category-based Sentiment Analysis: Choose between product categories (Beauty, Gift Cards, Cell Phones, Appliances) and analyze the sentiment data of each category.
- ASIN Search: Input a specific ASIN to view detailed sentiment scores for that product.
- Top Products by Sentiment: View the top 10 products with the highest positive and negative sentiments.
- Interactive Visualizations: Sentiment analysis is provided through various interactive charts and graphs, such as:
 - Sentiment scores over time
 - Sentiment scores by rating
 - Sentiment vs helpfulness
 - Distribution of user sentiment
 - Parent-child product sentiment comparison

Setup Guide

1. Installation

Before running the application, ensure you have the following dependencies installed in your environment:

1. Python 3.7+

Make sure you have Python installed. You can check the version by running:

```
```bash  
python --version
```
```

2. Streamlit

Streamlit is used to create the web interface for the application. Install it using:

```
```bash  
pip install streamlit
```
```

3. Pandas

Pandas is used for data manipulation and analysis. Install it using:

```
```bash  
pip install pandas
```
```

4. Plotly

Plotly is used to create interactive charts and graphs. Install it using:

```
```bash  
pip install plotly
```
```

5. CSV Files

You will need the following CSV files to analyze product reviews:

- `All_Beauty_With_Sentiment_1.csv`
- `Gift_Cards_with_sentiment.csv`
- `Cell_Phones_with_sentiment.csv`
- `Appliances_with_sentiment.csv`

Ensure these CSV files are available in the working directory.

2. Running the Application

To start the Streamlit application, navigate to the directory containing your Python script and run the following command:

```
```bash  
streamlit run app.py
```
```

Replace `app.py` with the name of your Python script.

3. Application Usage

- Sidebar Inputs:

- Select Category: Use the dropdown menu in the sidebar to choose a product category (e.g., Beauty, Gift Cards).
- Enter ASIN: Input an ASIN to search for a specific product's sentiment analysis.
- Search Button: Click the "Search" button after entering the ASIN to display product details.

Main Content:

- Sentiment Analysis Visualizations: Visualizations of average sentiment scores by rating, sentiment over time, and comparison of user sentiments are displayed based on the selected category.
- Top 10 Products: The application displays the top 10 products for both positive and negative sentiment scores.
- Product Sentiment Details: For a searched ASIN, sentiment details, rankings, and sentiment scores (positive, negative, and neutral) are shown.

Conclusion

Amazon Product ReviewIQ enables users to gain valuable insights into product reviews by analyzing sentiment across various product categories. The interactive visualizations and search functionality provide a powerful tool for reviewing trends in customer sentiment.