

POLARIZED SUMMARIZATION OF ONLINE PRODUCT REVIEWS

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OBJECTIVE

In the world of e-commerce, online product reviews play a crucial role in shaping consumer decisions. The abundance of reviews often poses a challenge for consumers to extract meaningful insights.

This project aims to develop a Extractive Polarized *Summarization* System for Online Product Reviews, leveraging information retrieval (IR) techniques to provide concise and insightful summaries.

DESCRIPTION

- **DATA PRE-PROCESSING**

- Handled missing values (NA)

- Handled different encodings (UTF-8 & UTF-16)

- Removed stop words with the help of NLTK Lib

- Tokenized and Stemmed the titles

- Removed all unnecessary HTML tags and meaningless reviews in product-review-mapping.csv before-hand

- **PRODUCT - REVIEW MAPPING**

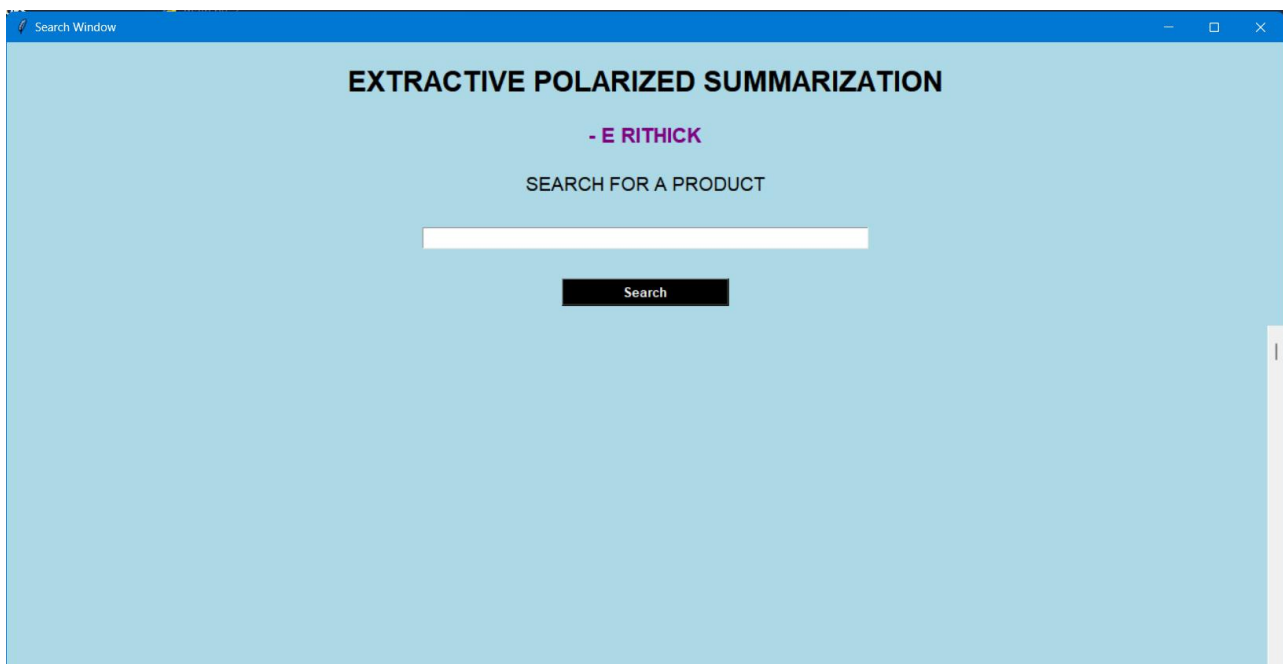
- Created a product-review mapping CSV file for future use of retrieving reviews faster and efficiently.

- **INVERTED INDEXING**

- Used inverted-indexing with the help of a dictionary to store a set of product IDs with corresponding terms for efficient retrieval of products with respect to query.

- **USER QUERY**

- Received the user input query, tokenized it, stemmed it.

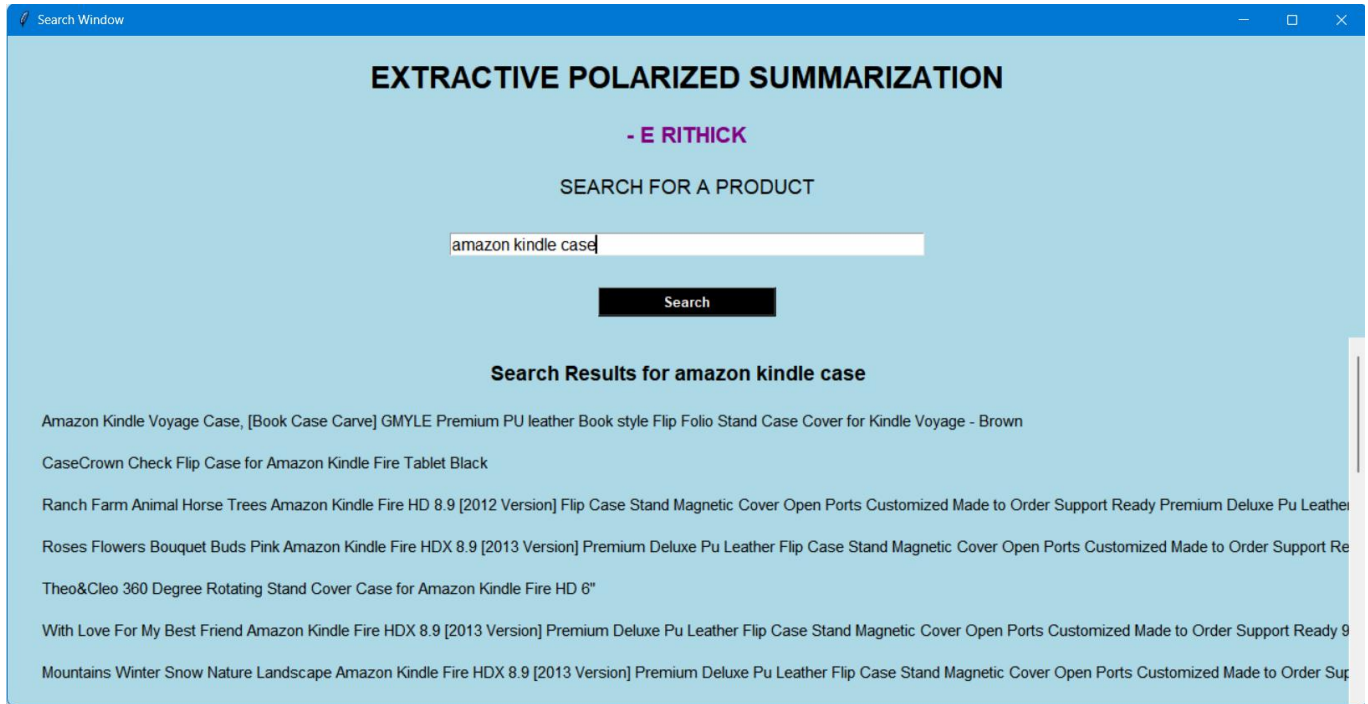


- **RETRIEVING (PRODUCTS)**

Tokenized the query and fetched all the posting lists of the tokens and merged them to get the final list of products.

- **RANKING (PRODUCTS) -**

Used **LOG-TERM-FREQUENCY** to rank the products in the results page accordingly. Once, when the user clicks on any of those following products. A window will pop-up with the polarized *summarization* of its online reviews.



- **RETRIEVING (REVIEWS)**

This is why I have created the **product-review mapping CSV file**. The code searches for a particular product in this mapping which has all the respective reviews in a single place rather than searching for all the reviews in the dataset itself (which is scattered)

- **SUMMARIZATION**

Used ***sentimentIntensityAnalyzer*** from NLTK Lib to obtain the sentiment of a review and thereby classifying it as either positive, neutral or negative and stored it in a dictionary.

NOTE

the sentiment intensity of a string ranges between [-1, 1].

So,

classified those strings which has intensity score greater than 0.35 as **positive**

classified those strings which has intensity score lesser than -0.35 as **negative**

And the rest as **neutral**

● RANKING (REVIEWS)

Ranked the reviews based on the *intensity* of the sentiments to get the most relevant polarized reviews on top the retrieved reviews.

Search Window		
POSITIVE REVIEWS	NEUTRAL REVIEWS	NEGATIVE REVIEWS
<p>I recently was given the opportunity to try the GMYLE Vintage cover and , naturally, I had to compare it to ACcase I have been using</p> <p>I find that they are both well constructed and beautiful cases</p> <p>For anyone considering this folio style, there are a couple of major differences and the best choice depends on one's priorities</p> <p>The GMYLE case is definitely more attractive</p> <p>It does indeed look very much like a vintage book and gives that feel when holding it</p> <p>The front cover is easy to open and close on both</p> <p>The GMYLE has a hand strap built into the front cover and the ACcase does not</p> <p>This is important to a lot of readers who like the convenience of slipping their hand through the elastic while holding the book</p> <p>If you are looking for an absolutely beautiful vintage cover that actually feels like a book in your hands and has a built in hand strap too, this may be an ideal choice</p> <p>The stitching is beautiful on this case as is the embossed design</p> <p>The gold accents on the dark brown synthetic leather make this a unique and attractive case</p> <p>Disclosure: A complimentary case was sent to me for trial and evaluation</p> <p>If you are looking for an absolutely beautiful vintage cover that actually feels like a book in your hands and has a built in hand strap too, this may be an ideal choice</p>	<p>I tend to be very particular about my ereader cases and I don't think that I am in the minority of Kindle Voyage owners in that regard</p> <p>I have tried a number of different styles until I found one that suited me, the ACcase Vintage folio case</p> <p>The GMYLE cover weighs slightly more, 4 ounces compared to 3</p> <p>4 ounces for the ACcase</p> <p>I have attached pictures</p> <p>Unlike the ACcase, the detail is not only on the front but also on the back and spine</p> <p>The construction of the spines is different</p> <p>That may ease with use but it is very stiff at first</p> <p>That also prevents it from standing alone in a horizontal position if that is important to anyone</p> <p>It will stand alone in the vertical position</p> <p>The extra thickness of the GMYLE case, especially around the corners, provides a lot of protection for the Kindle if dropped</p> <p>There are features that are unique to each and worth comparing</p> <p>A feature that the ACcase has is the automatic wake/sleep feature,</p> <p>The GMYLE case does not have automatic wake/sleep when opening or closing</p> <p>If having automatic wake/sleep and using the automatic brightness</p>	<p>The GMYLE has a firm spine but that makes it a bit more difficult to bend the cover back</p> <p>Both cases have cutouts for page turning, charging and power but the GMYLE case lacks the cutout for the auto brightness light sensor and that may be a critical defect for anyone who regularly uses that feature</p>

THANK YOU !