

5. Sentiment_Analysis _report for Amazon products reviews.

5.1 The dataset I utilized comprises customer reviews for various Amazon products, including the Amazon Echo, Kindle, and Fire tablet.

5.2 The Preprocessing Steps:

- I assessed the number of NaN (missing) values in the reviews column and subsequently removed the rows containing these NaN values.
- I trimmed any leading or trailing blank spaces from the reviews.
- I preprocessed the reviews using natural language processing (NLP) techniques, which involved lemmatizing the text by removing stop words and punctuation.

5.3 After applying the preprocessing functions, the results included an additional column containing the root words of the original reviews. Notably, a majority of the reviews exhibited a positive sentiment.

5.4 With this model, most of the results were accurate; however, there are a few limitations as well. For example, below is one of the results obtained using the sentiment analysis function.

```
reviews.text      processed_review      sentiment
15607   This tablet is good for kids but the battery l...
tablet good kid battery life long      Positive
29152   Fun gadget for adults and kids. Great range fo...      fun
gadget adult kid great range ask question      Positive
32860   Easy to install and use! Love it. I am tired o...      easy
install use love tired gouge cable      Positive
6074    My kids really like this tablet. It's easy to ...      kid
like tablet easy use      Positive
18928   You really can't go wrong here its exactly wha...
wrong exactly want e reader      Negative
20753   Fantastic E-Reader. Battery lasts a few weeks ...
fantastic e reader battery last week single ch...      Positive
32045   Great little device it reacts fast to the remo...
great little device react fast remote fast fir...      Positive
```

8158 I purchased this item on sale as an alternativ...
purchase item sale alternative tab android rc ... Negative
31332 Good value for the money...easy to set up and ... good
value money easy set use recommend Positive
32190 I have no idea why I did not buy this any soon... idea
buy soon work awesome Positive

| | | |
|-------|---|-----------------------|
| 18923 | Still a great device even though it's a little older than the Voyage and Oasis. Perfect for reading at night and has great resolution. Love it! | Perfect!!! |
| 18924 | Although I've always wished I read more, I never would find the time to get to it. Having the Kindle made it so practical to own and read boc | A must have |
| 18925 | Hard to find any gripes for this device. Serves its purpose brilliantly. The backlight is excellent, and the built in dictionary is great. | Perfect |
| 18926 | Sure you can get this app on all devices but try reading those screens in the sun. This reader does the trick | Pure reader |
| 18927 | I love it. Long battery life, easy to use, perfect | great reader |
| 18928 | Old kindle broke. I love the improvements of the paperwhite. It is all touch screen. The old was not. | Excellent buy |
| 18929 | Definitely easy to use, easy to download books, and navigate pages. | Love the Kindle! |
| 18930 | You really can't go wrong here its exactly what you want out of an e reader and nothing more. | Excellent e reader |
| 18931 | It is all but perfection. It's a library in the hand. Inside or out. It reads equally as beautiful in either environment. I only penalize it for its lack | E-reader Goodness |
| 18932 | It's super easy to use and lightweight!! I love my new Kindle! | I love it!! |
| 18933 | This is a very simple unit to unit reading if not strenuous at all on the eyes | Easy to read |
| 18934 | I don't like reading too many physical books because it's a bit bothersome to lug around the heavy volumes. Having everything in this device | Wonderful For Reac |
| 18935 | This is a great device is you are to read a lot of text. | Great for reading bo |
| 18936 | I love having books at my finger tips, 24/7. In addition to accessibility, my kindle white increases my vocabulary by offering word wise. | Excellent size and er |

For the record 18928 (the row 18930 in the excel sheet) the sentiment result came negative, despite the review being positive.