ADVANCE PYTHON PROGRAMMING -ELA
LAB-10

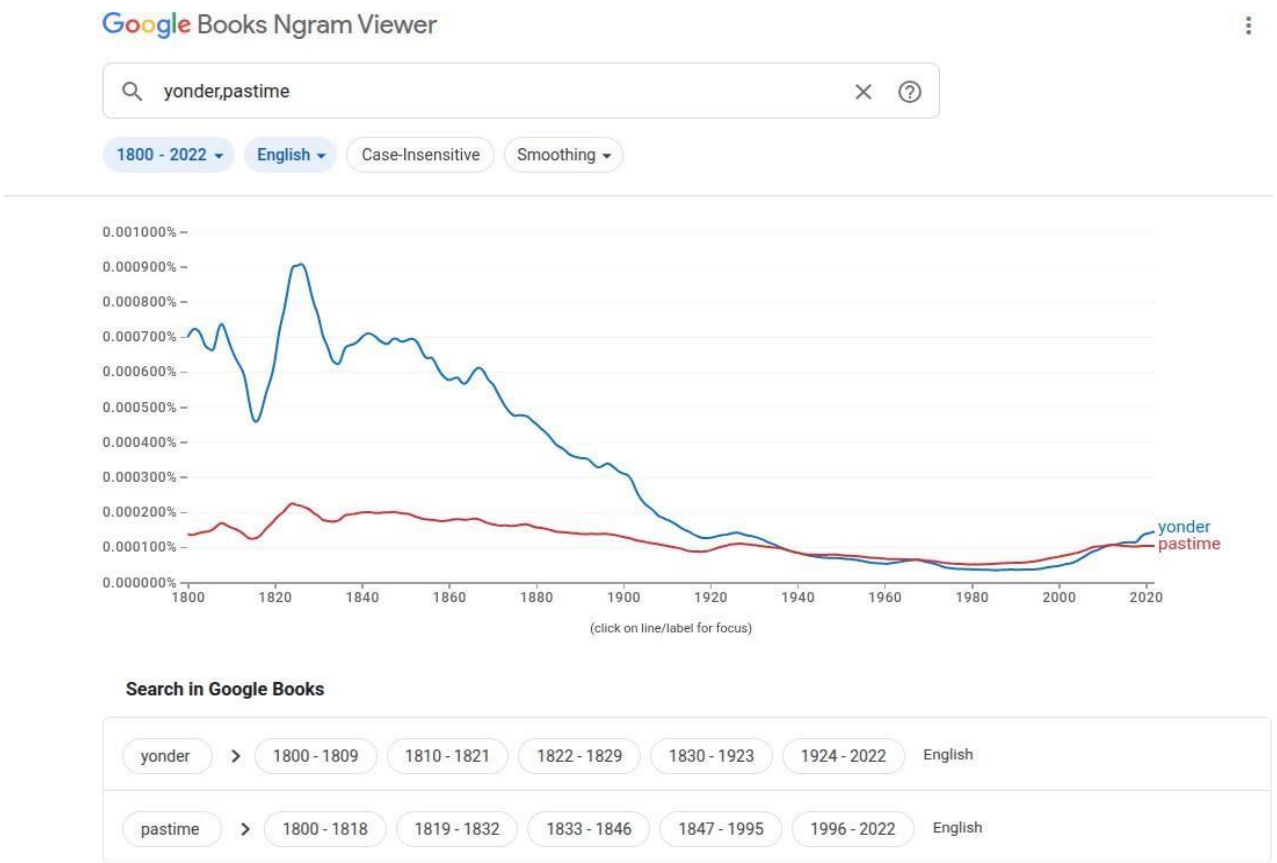
29-01-25

Examples of some missing trends in the lives of millennials and Genzs :

YONDER -at some distance in the direction indicated; over there.
PASTIME-something that you enjoy doing when you are not working.

Today's lab problem statement:

1.Find any trend of Forgetting in any interesting school of thought that made lives better in the past two centuries (using Google Books Ngram Viewer)



2.Collect the plots of these trends and extract the data (using an online tool);

- We tired using graph reader for fetching data initially. Later we tried , to fetch data using LLM with prompts.

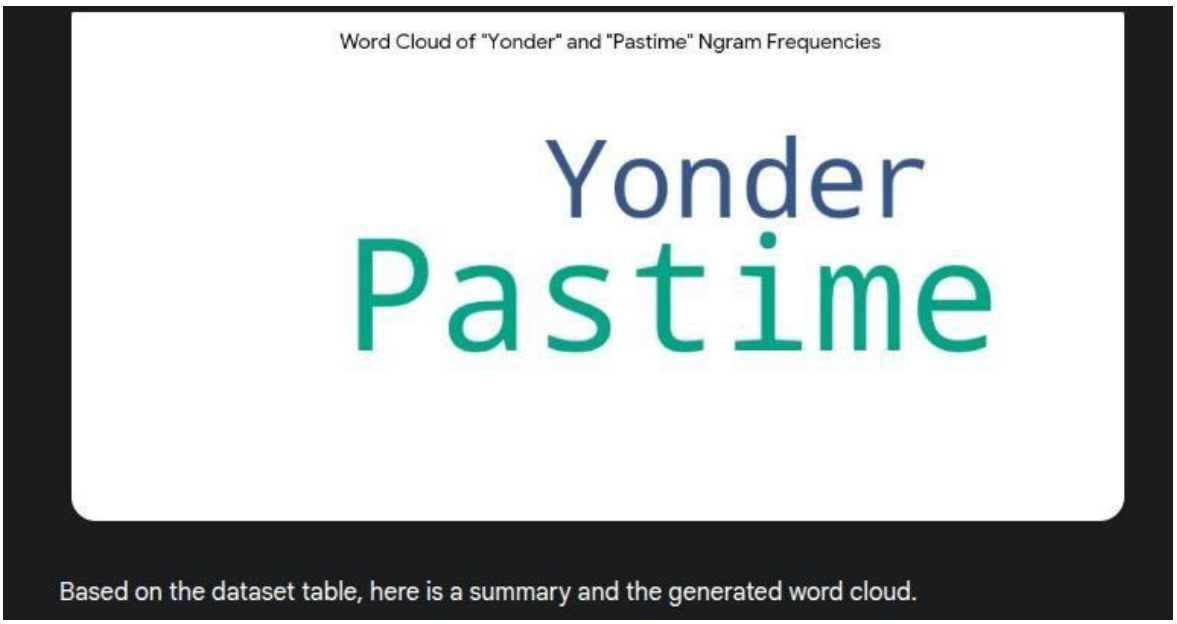
Dataset Table

Here is a dataset table with approximate values that would correspond to the simulated Ngram graph. The values are an estimation of the relative frequency per million words.

Year	Yonder (Frequency per million)	Pastime (Frequency per million)
1800	0.000045	0.000030
1820	0.000040	0.000040
1840	0.000032	0.000055
1860	0.000028	0.000060
1880	0.000020	0.000065
1900	0.000015	0.000062
1920	0.000010	0.000050
1940	0.000008	0.000045
1960	0.000005	0.000040
1980	0.000003	0.000035
2000	0.000002	0.000028
2019	0.000001	0.000025

Export to Sheets

3.Pass the data along with a prompt to an LLM to generate a summary and word cloud.



Based on the dataset table, here is a summary and the generated word cloud.

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Summary of the Dataset

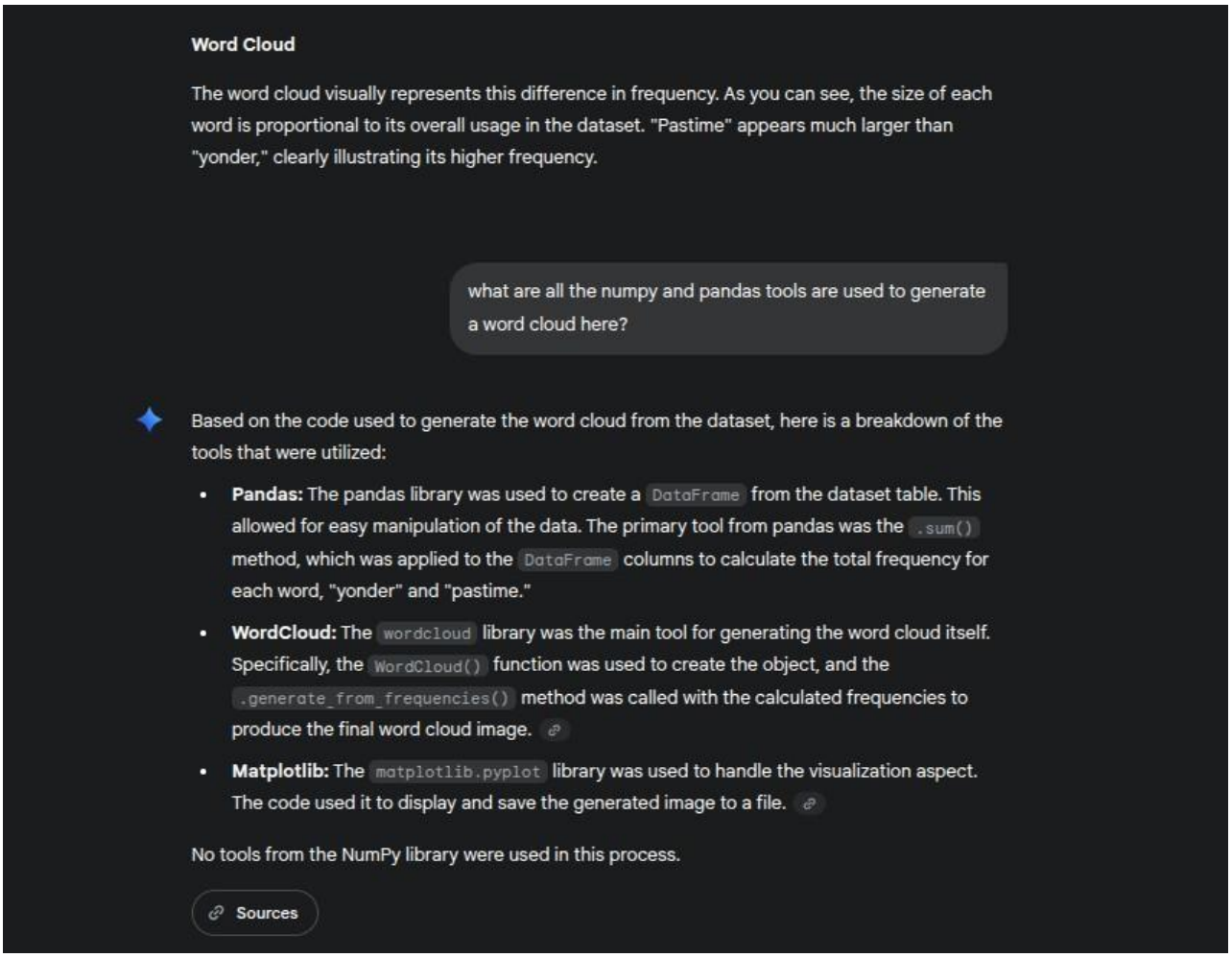
The dataset shows the change in usage frequency for the words "yonder" and "pastime" over two centuries. The overall trend for both words is a decline in usage, which is a common pattern for many words as language evolves.

- **"Pastime"** has a consistently higher frequency than "yonder" throughout the years. Its total frequency across the dataset is approximately 0.000535. The word's usage seems to have peaked in the late 19th and early 20th centuries before starting a gradual decline.
- **"Yonder"** shows a much sharper and steeper decline. Its total frequency is approximately 0.000209, significantly lower than that of "pastime." This reflects its shift from common usage to a more archaic or literary term.

We find that the LLM not gives us the appropriate or expected outcome (note , which is common pattern for many words). LLM hallucinates.

Conclusion: Make a better prompt for better results.

4.Note the Numpy and Pandas functions that LLM would use to generate the summary and word cloud (you can prompt the LLM for this response)



5. Note on a business that you can build around such workflows.

- Google Ngram trends can be used to identify shifts in public interest, emerging technologies, and cultural movements.
- By leveraging these patterns, the business could provide startup idea recommendations and market forecasts.
- it acts as a trend-driven startup suggestion and validation platform, using historical and linguistic data to predict what kinds of ideas are more likely to succeed in the future.

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