Cmpe 493 Introduction to Information Retrieval, Fall 2021 Assignment 1
A Simple Search System for Boolean Queries
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1. Data Preprocessing

I created a file preprocess.py. This code handles the initial processing of data. It reads the reutx-xxx.sgm files and the stopwords.txt file. It extracts the necessary content from the sgm files. Then with the helper functions, it performs case-fold, punctuation removal and stop-word removal operations on the extracted texts. It keeps the normalized, tokenized text using a dictionary, with new_id as the key.

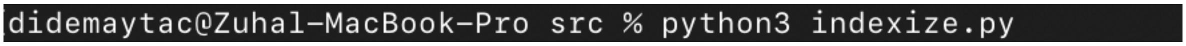
This preprocess module is not run by itself, it is called by the indexing module.

2. The Inverted Index

The indexize module calls the preprocess module described in part 1. The preprocess module returns a dictionary (normalized) with new_id as key and list of tokens as value. The indexize module traverses that dictionary (normalized) and builds a new dictionary (index) with token as keys and list of new_ids as value. This dictionary (index) is a defaultdict, with the default value being set so that no new_ids are duplicated.

After that, the defaultdict (index) is copied into another dictionary (inverted_index) with values being sorted. Finally, the inverted_index dictionary is dumped to a json file (index.json) with token as key and sorted list of new_ids as value.

3. The Indexing Module



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didemaytac@Zuhal-MacBook-Pro src % python3 indexize.py
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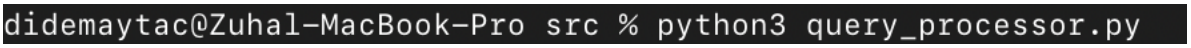
4. Query Processing

You don’t have to specify the query type. Type python3 query_processor.py, then type the query and press enter. The output will be shown at the command line.



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didemaytac@Zuhal-MacBook-Pro src % python3 query_processor.py
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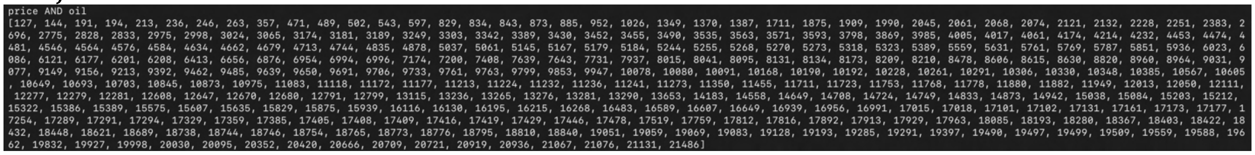
Conjuction:



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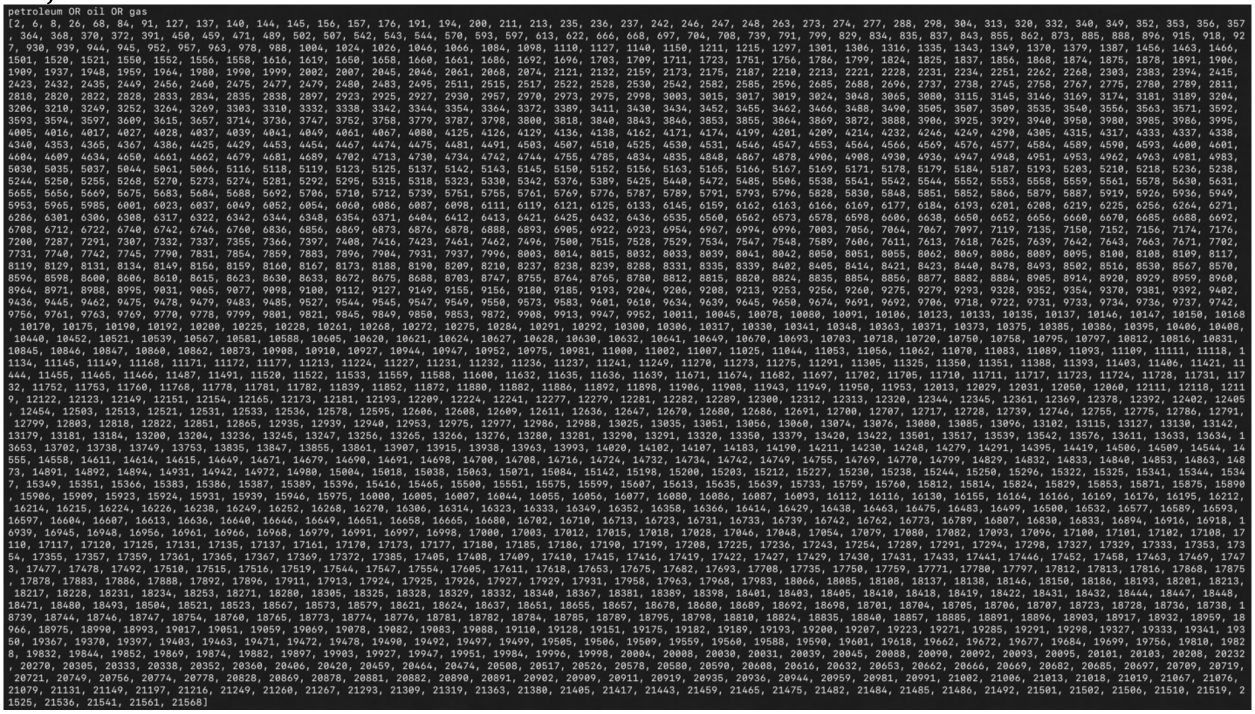
Disjunction:



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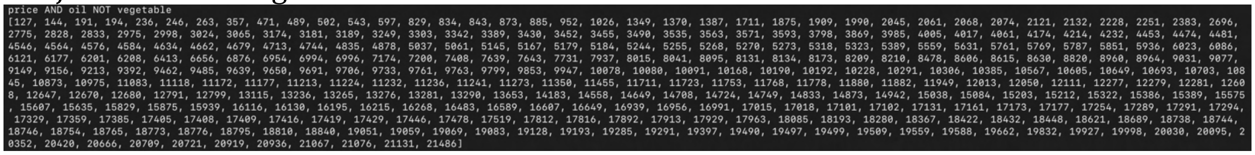

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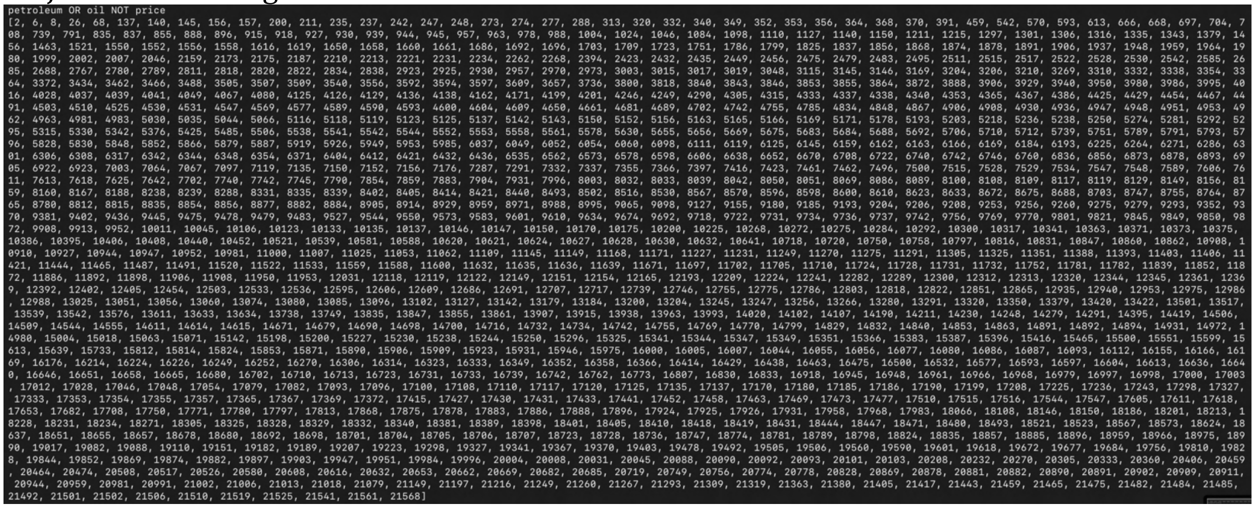

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