Sentiment Analysis Assignment
with Virtual Threads

This is a java API that uses virtual Threads to process a set of tweets using lexicons and reports the overall sentiment of the tweets file provided, giving the user a rating of “Positive”, “Negative” and “neutral”. This involves communication across a Runner.java class, a Lexicon.java class and a TweetProcessor.java class.

Runner Class:

Provides the user with a menu interface where they can select 4 different options or exit program.

Option 1: Allows user to specify (or change on repeat) the file path for a lexicon to load into system for use in the sentiment analysis process. Creates Lexicon object to do this.

Option 2: Allows user to specify (or change on repeat) the file path for a tweet file to load into system from the list of tweets present in file makeup for use in the sentiment analysis process. Creates TweetProcessor object to do this.

Option 3: Executes sentiment analysis process, displays a progress bar, and displays results to screen with the rating of the tweets File. Uses the TweetProcessor class to do this.

Option 4: Outputs the results of the sentiment analysis along with rating, lexicon used, and tweets file used to a txt. Allows for appending when a txt file already exists.

Lexicon Class:

Takes in a supplied lexicon from user and generates a Concurrent Skip List Map based of the Lexicons words and their associated sentiment scores. Includes methods for loading the lexicon in from the file path and for retrieving the sentiment score of particular words in the map.

TweetProcessor Class:

Processes tweets from the tweets file based on the supplied file and Lexicon map. Sentiment is calculated asynchronously using Virtual Threads and Executor functionality across tweets. Includes methods for processing sentiment analysis and returning the overall sentiment Score.