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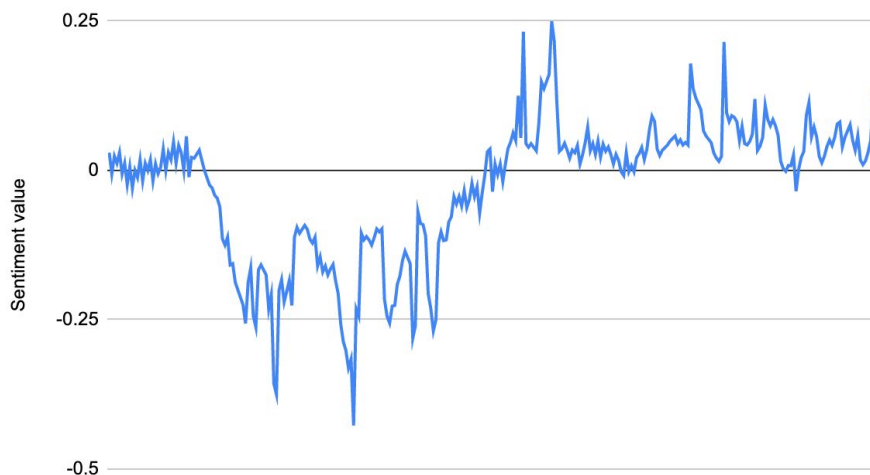
Data Structures

22, December, 2019

### Twitter Sentiment Analysis

The program analyzes the sentiment surrounding opioids and drugs in Delray Beach, FL. It was analyzed in the urban southern region of America. In recent times, areas in the rural Northeast have been known to be debilitated by high rates of opioid abuse. These regions are often low-income, and lacking mental health support, as well as better employment opportunities. For many people, opioid addiction first develops among individuals who are prescribed opioid medication for pain. Many patients develop opioid dependence, which continues long after their prescription ends. They seek alternate forms of opioids. Recently, fentanyl laced heroin has made a resurgence as it is smuggled in from Mexico through states like Florida. A wide topic such as drugs is used to indicate the overall level of sentiment of such substances including prescription drugs, marijuana, and legislation surrounding those topics.

Sentiment of Drugs



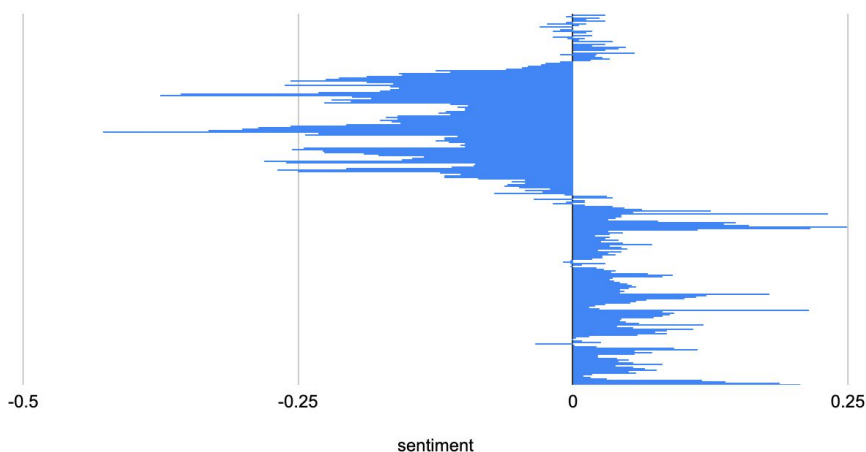
The sentiment surrounding opioid was mainly negative in this region. The positive sentiment could be due to a

combination of people who enjoy using opioids, those who need opioids in order to function in their everyday life because of pain, or positive response from increased regulation of the drug. The sentiment was on average negative ( $M = -0.02622843825$ ). It had a Max sentiment value of .25 and a minimum of -.427. The sentiment values had a standard deviation of .11 and had a variance of .01.

SearchTweets is responsible for saving and loading the tweets that are gathered onto a file. The save method saves all tweets to a file by directing them through a fileoutputstream. The result is then taken through an Objectoutputstream. These results are read and the Objectoutput stream is closed once the file reaches its end. The load method loads tweets from a saved file and only appends to the list the unique tweets not already stored. It checks to make sure the tweets from twitter are not the same as the tweets from the old list and only adds when they are unique. The sentiment in the file of tweets is analyzed in the class AnalyzeSentiment. The csv file of sentiments is read and contains a value attached to the sentiment of certain words. It uses a scanner object that scans this file and loads it. The tweets are then analyzed by taking the average sentiment value from a tweet and calculating that as the total sentiment. The csv file contains phrases as well as individual words, so even though a word such as drugs has a negative sentiment value, the context with which it is expressed can change the sentiment of the tweet.

The results show greater negative sentiment in Delray Beach, FL, when examining drugs, than positive sentiment. There is sentiment expressed regarding the legislation,

Histogram of Drug Sentiment



which is sometimes negative, and sometimes positive. The analysis did not specify on which types of drugs to examine, however, Delray Beach has been affected by the opioid crisis due to high rates of fentanyl being trafficked through the area. The sentiment expressed can be a reflection of experience with the use of drugs, or with a relative's drug use.