Who's Hating On Who?

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This program processes Tweets to determine the amount of hateful opinions about a subject.

Project Overview

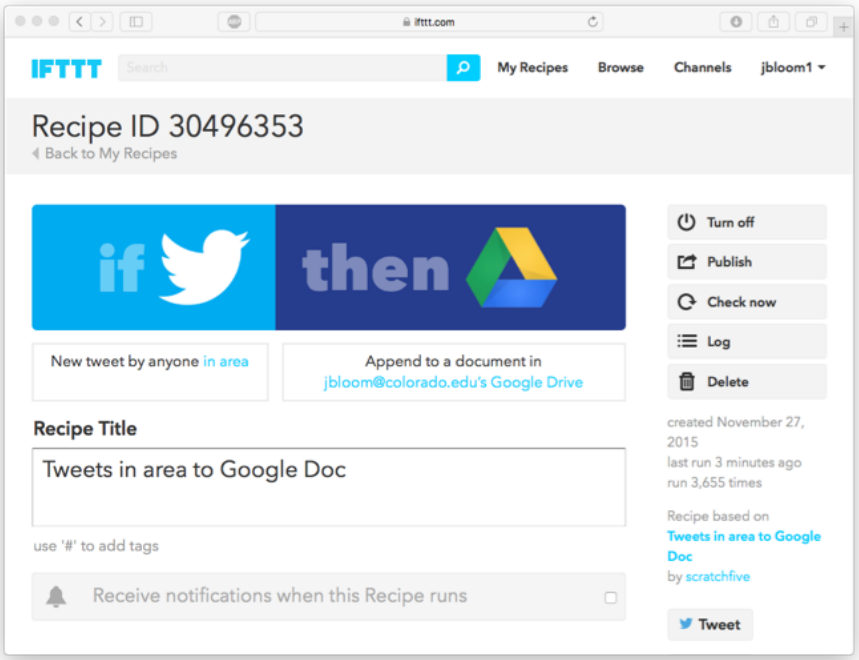
The recent shooting at a Planned Parenthood in Colorado Springs was the motivation behind this project. Rhetoric surrounding events like these are often polarizing, and persons frequently use social media as an outlet for this rhetoric. For example, persons opposed to Planned Parenthood often use Twitter to express their opinions. A person opposed to abortion at Planned Parenthood may approve of actions committed against a clinic through the expression of happiness over an event like the recent shooting, using specific words to express affirmation. These words can be analyzed using computer science methodologies. To further explore the human behavior of persons expressing themselves through extreme negative rhetoric, learning to parse and analyze text is essential.

The goal of the project was to analyze tweets searching for words expressing favorability of a negative event. Twitter data was compiled into a text file and then parsed. This parsed data was compared against user-inputted keywords. If tweets were found including these keywords, these 'pertinent tweets' were searched for words included in a modifiable dictionary file (dictionary.db). Dictionary words were selected to enable the searching for the approval of negative deeds such as the recent shooting. If the user inputs #shooting and #PlannedParenthood, tweets including these hashtags will then be searched for keywords such as "glad" and "deserve," to locate tweets that possibly show approval of a horrible event - such pertinent tweets are then deemed 'negative.' The tweets are counted, and then percentages are derived to show how many tweets are pertinent, and how many are negative in comparison to the total.

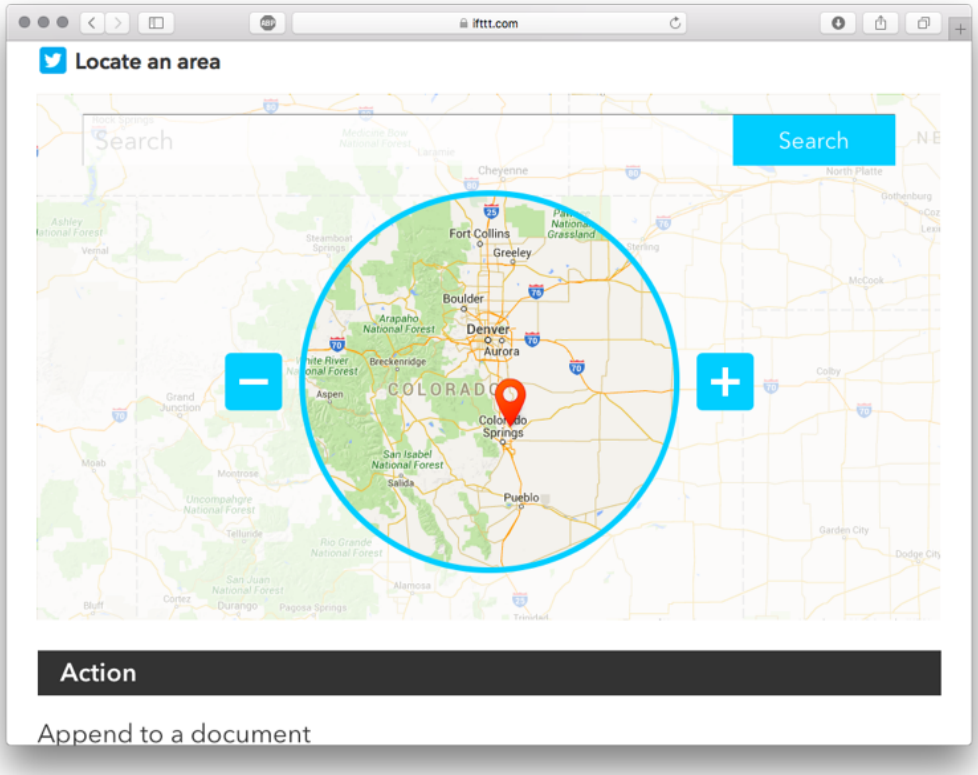
Inputs

Tweets were collected using a "recipe" built via tools at www.ifttt.com. These tools enable many different APIs to interact with one another through user-constructed recipes of "if this, then that" or "do this." The recipe built for this project interacts with the Twitter API to gather tweets in a specific area. It is unknown if all tweets were gathered, or only tweets where the twitter user had the location based service of Twitter's API turned on at time of posting. The recipe was built to gather tweets in an area including Colorado Springs as close to the day of the shooting (November 27th, 2015) as possible, drop these tweets into a Google Drive document, and then convert this list into a text file (**localtweets.txt**). Additional recipes were built for testing, to acquire tweets at different times encompassing a larger area including cities along the Colorado Front Range. The tweet was delimited from the timestamp with a '|' character, as pipes are less frequently used in tweets. Some text files (**testtweets.txt**) were seeded with negative tweets derived from real sources (Link), to determine if our program was running properly.

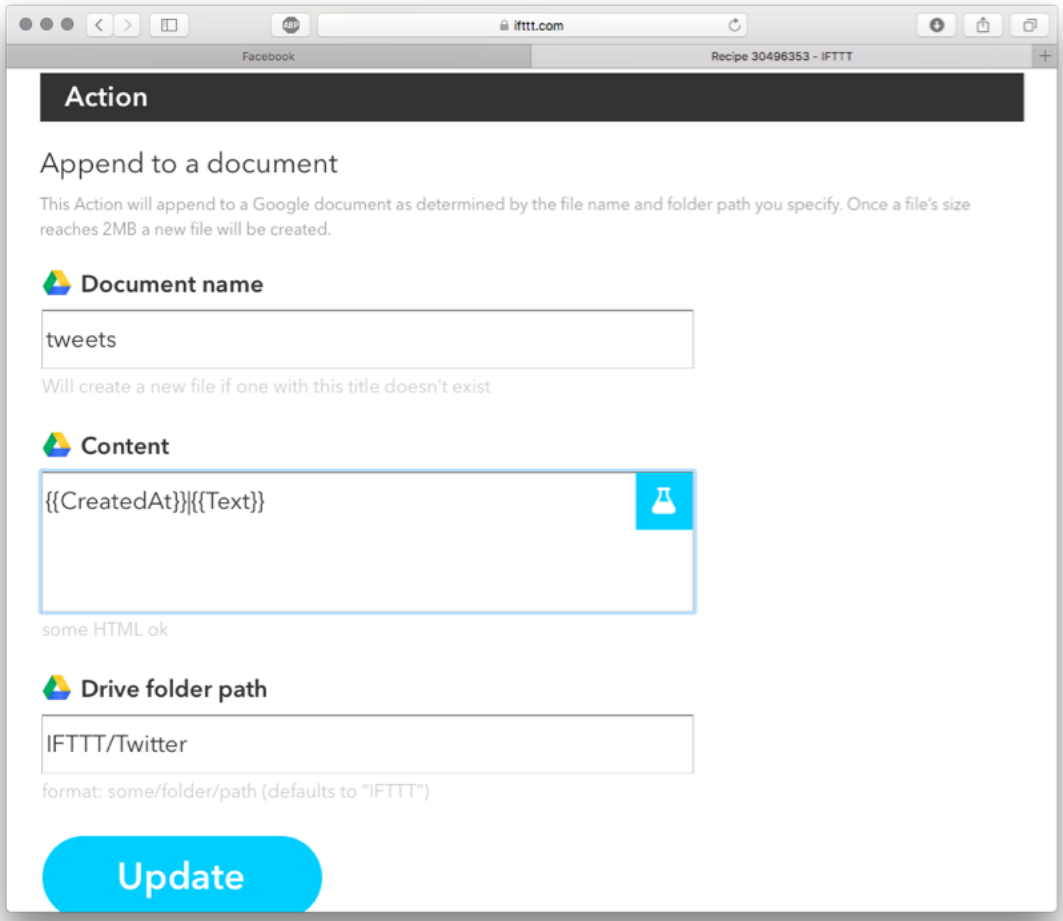
IFTTT.com Recipe Method: Recipe Button



IFTTT.com Recipe Method: Building Area



IFTTT.com Recipe Method: Content Development



Outputs

Pertinent tweets are extracted based on the keywords and hashtags the user wants the program to search for. The program lists the percentages of pertinent tweets which are considered negative. If “verbose mode” is selected, the negative tweets are listed.

Without Verbose Flag:

```
What Tweet #hashtags or keywords do want to look for? (enter one at a time or 'quit')
#Plannedparenthood
Enter another #hashtag or keyword or 'quit'
shooter
Enter another #hashtag or keyword or 'quit'
quit
The total number of tweets examined is: 50
36% (18 tweets) are pertinent, meaning they contain one or more of the user-defined keywords.
Of the pertinent tweets, 44.4444% (8 tweets) are evaluated to be negative about the topic.
```

With Verbose Flag:

```
gugg181-195-dhcp:New jnichols$ ./a.out testtweets.txt -v
What Tweet #hashtags or keywords do want to look for? (enter one at a time or 'quit')
#Plannedparenthood
Enter another #hashtag or keyword or 'quit'
shooter
Enter another #hashtag or keyword or 'quit'
quit
no sympathy for any pregnant female who was injured in the #plannedparenthood #shooting that was there to get an #abortion. she deserved it.

i wonder how many unborn babies were saved by this gunman interrupting normal #plannedparenthood activites? just looking on the bright side.

#plannedparenthood kills a million babies and no one bats an eye. but 1 brave hero tries to put a stop to that, everyone loses their minds.

i am very happy that the shooter's mother chose not to abort him. #plannedparenthood

folks upset that murderers & murder enablers died at #plannedparenthood but babies die at #plannedparenthood everyday, why shouldn't adults?

#plannedparenthood no mention of how many babies lives were saved? such a shame but good things often come from tragedy.

it's entirely possible many innocent babies were saved from #plannedparenthood butchers since incident began mid-day.

i'm thankful for that brave hero shooting up #plannedparenthood right now. he's doing the lord's work! saving babies one bullet at a time!

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```

Modules

The **MainDriver.cpp** program reads the tweets file and stores the entire file in a vector. It prompts the user to enter keywords and hashtags to search for. This generalizes the program to analyze any topics the user wants. It invokes methods which parse the tweets, analyze them for pertinence, and searches for negativity. It lists the relative percentages.

The **classTweets.cpp** program uses the **parseTweet** method which looks for a pertinent tweets and the **analyzeTweet** method which searches the tweet for negative words.

The **classMath.cpp** program contains methods to calculate percentages.