Senty: Corporate Sentiment Analysis Software

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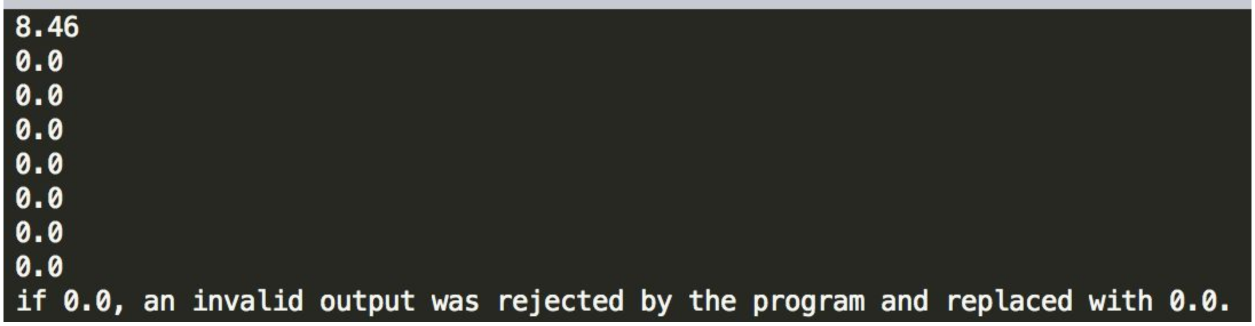
Automated Testing

User Input

As our program takes user input, it is important that we account for users not behaving as expected. A portion of our program allows users to enter a company they want to see analysis run on regarding the public perception of the company. This test ensures that our program correctly identifies useless inputs for company requests and returns the proper result.

https://github.com/grilam14/senty/tree/master/testing/User%20Input

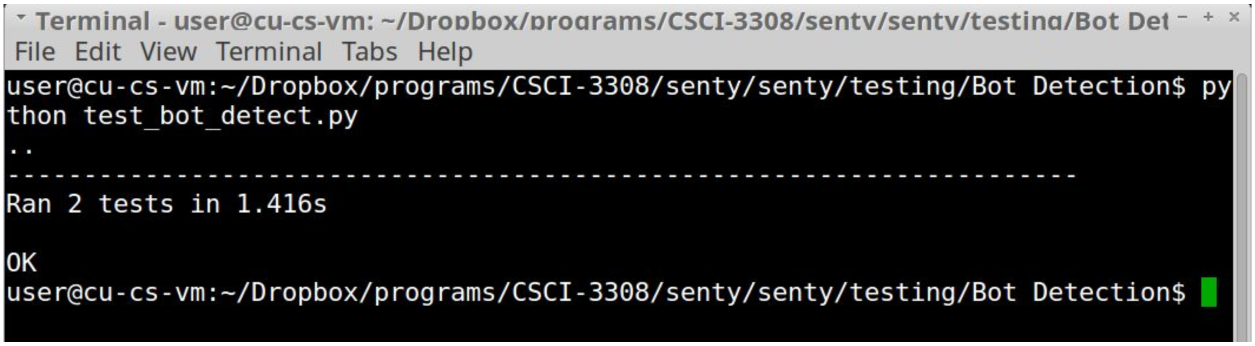


```
8.46
0.0
0.0
0.0
0.0
0.0
0.0
0.0
if 0.0, an invalid output was rejected by the program and replaced with 0.0.
```

Bot Detection

Our software identifies the accounts of twitter users that are most likely bots in order to ignore their posts so as not to unfairly sway the calculations when doing sentiment analysis. This test ensures that the scores given for companies are reliable and useful.

https://github.com/grilam14/senty/tree/master/testing/Bot%20Detection


Terminal - user@cu-cs-vm: ~/Dropbox/programs/CSCI-3308/senty/senty/testing/Bot Det
File Edit View Terminal Tabs Help

```
user@cu-cs-vm:~/Dropbox/programs/CSCI-3308/senty/senty/testing/Bot Detection$ py
thon test_bot_detect.py
..
----------------------------------------------------------------------
Ran 2 tests in 1.416s

OK
user@cu-cs-vm:~/Dropbox/programs/CSCI-3308/senty/senty/testing/Bot Detection$
```

User Acceptance Testing

Sentiment Analysis

Sentiment analysis is the principal component of our software. As the service we provide focuses around determining the public standing of a company based on news articles and twitter posts, being able to accurately access, scan and assess these documents is of the utmost importance. By the end of the project, this feature will be fully integrated with the website and it will be very easy to test. Testing will simply involve typing in stock names for companies and making sure logical results are turned. As it is incredibly difficult to perfect sentiment analysis, even to the point where humans have difficulty in some cases, the scores received will not be and are not expected to be 100% accurate. However, by typing in companies that have been in the news recently or for whom public opinion is well known, we can match the scores given to what the expected value should logically be. So long as the expected and actual values are somewhat comparable, we will know our software works at least to the degree required.

Bot Detection

Bot detection is an important component of this software. This is because in order to correctly assess public opinion of a company, we must ensure that it is not falsely inflated by bots designed to post the same information, positive or negative, over and over. This is especially important as we are using twitter posts, and twitter bots are beginning to gain infamy for their effects on public opinion. Testing for this component is quite simple. All we will do is feed the program twitter accounts, both of known bots and known humans, and ensure that it properly categorizes them. The testing will likely start with more obvious bots, for example those that post weather information, and then moving on to bots that post more varied information to determine if our program works in more complex and less obvious cases.

Website Navigability

Having a navigable website is a key component to providing any online service. Though not a fundamental part of the actual service we will be providing, it is absolutely crucial that we know our users will be able to access our software. In order to execute this testing, we will draft people we know who are not familiar with the website to assist us. Having people who did not work on the website test it is extremely important as we will, likely, already have a high degree of familiarity with it and all of its components, so our ability to navigate it will not accurately reflect that of our users. The testers will be allowed free reign to first navigate and acquaint themselves with the user interface. In doing this, they will provide us any feedback, good or bad, that comes to mind. Once they are able to find their way around the website, we will ask them to make use of it for a short time. This will include signing up to it and accessing its sentiment analysis feature. Once this has been completed, they will be tasked with ‘breaking’ the website. Though, by this point, we will already have made attempts to locate queries, inputs or other things the user could do to cause the website to stop working, it is highly unlikely that we will have located every fundamental flaw. Additionally, as our testers will not have been involved in the making of the website, their impression of what may or may not negatively affect its performance may be drastically different than ours, opening the testing up to areas we may not have anticipated. In addition to any testing that may be done of their own volition, the testers will be given specific instruction to enter in bogus stock acronyms, usernames above or below the requirement and passwords that do not meet the requirements, as well as attempting to login with incorrect credentials.