

From Modern Tweets to Victorian Broadsheets

SENTIMENT ANALYSIS SOFTWARE FOR VICTORIAN LITERATURE



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Background

Problem One

Existing Sentiment Analysis
Tools are built on Modern
Sentiment Lexicons

Problem Two

Difficult to tailor Sentiment
Analysis to a specific
Historical Period, Literary
Genre, or Form

Problem Three

Cannot compare the results
of Sentiment Analysis using
different Lexicons on the
same dataset

Sentiment Analysis:

Used to determine whether a text is Positive, Negative, or Neutral

Sentiment Lexicon:

Term Dictionaries containing corresponding Positive/ Negative sentiment scores

Requirements

User Should Have the Ability To:

- Import Textual Data and receive an Output Sentiment Score (-1 to +1)
- Import One or More Custom Sentiment Lexicons for Comparative Analysis
- Generate Data Visualisations
- Access the Software through a Graphical User Interface



Programming Language: *Python*

Victorian Lexicon

SENTENCE-LEVEL

you're the works of shakespeare in comparison with myself.,0.04411764705882353
"down in the buildings, you know, my love.--student.""",-0.02050415071554513
""student?""",0.0
"repeated mr. redlaw, raising his head.",-0.11666666666666667
""that's what i say, sir!""",0.03866046113172479
"cried mr. william, in the utmost animation of assent.",-0.0440126050420168
""if it wasn't the poor student down in the buildings, why should you wish to hear it from mrs. william's lips?",
"mrs. william, my dear-buildings.""",0.08823529411764706
""i didn't know,"" said milly, with a quiet frankness, free from any haste or confusion, ""that william had said
i asked him not to.,0.008099998066617388
"it's a sick young gentleman, sir--and very poor, i am afraid--who is too ill to go home this holiday-time, and live
"that's all, sir.""",0.04803023413923462
""why have i never heard of him?""",-0.0655060329277093
"said the chemist, rising hurriedly.",0.013888888888888888
""why has he not made his situation known to me?",-0.05801532783956354
sick!--give me my hat and cloak.,-0.42425194870505406
"poor!--what house?--what number?""",-0.09987668023184115
""oh, you mustn't go there, sir,"" said milly, leaving her father-in-law, and calmly confronting him with her col
""not go there?""",0.0015922065743695507
""oh dear, no!""",-0.008164545020115847
"said milly, shaking her head as at a most manifest and self-evident impossibility.",0.023696075500425563
""it couldn't be thought of!""",-0.029069514134895596
""what do you mean?",0.031791406791406795
"why not?""",-0.00804012099984079
""why, you see, sir,"" said mr. william swidger, persuasively and confidentially, ""that's what i say.",0.1051641
"depend upon it, the young gentleman would never have made his situation known to one of his own sex.",-0.04037968
"mrs. williams has got into his confidence, but that's quite different.",0.05242948282091561
they all confide in mrs. william; they all trust her.,0.12576661162998923
"a man, sir, couldn't have got a whisper out of him; but woman, sir, and mrs. william combined--!""",-0.00100977888
""there is good sense and delicacy in what you say, william,"" returned mr. redlaw, observant of the gentle and c

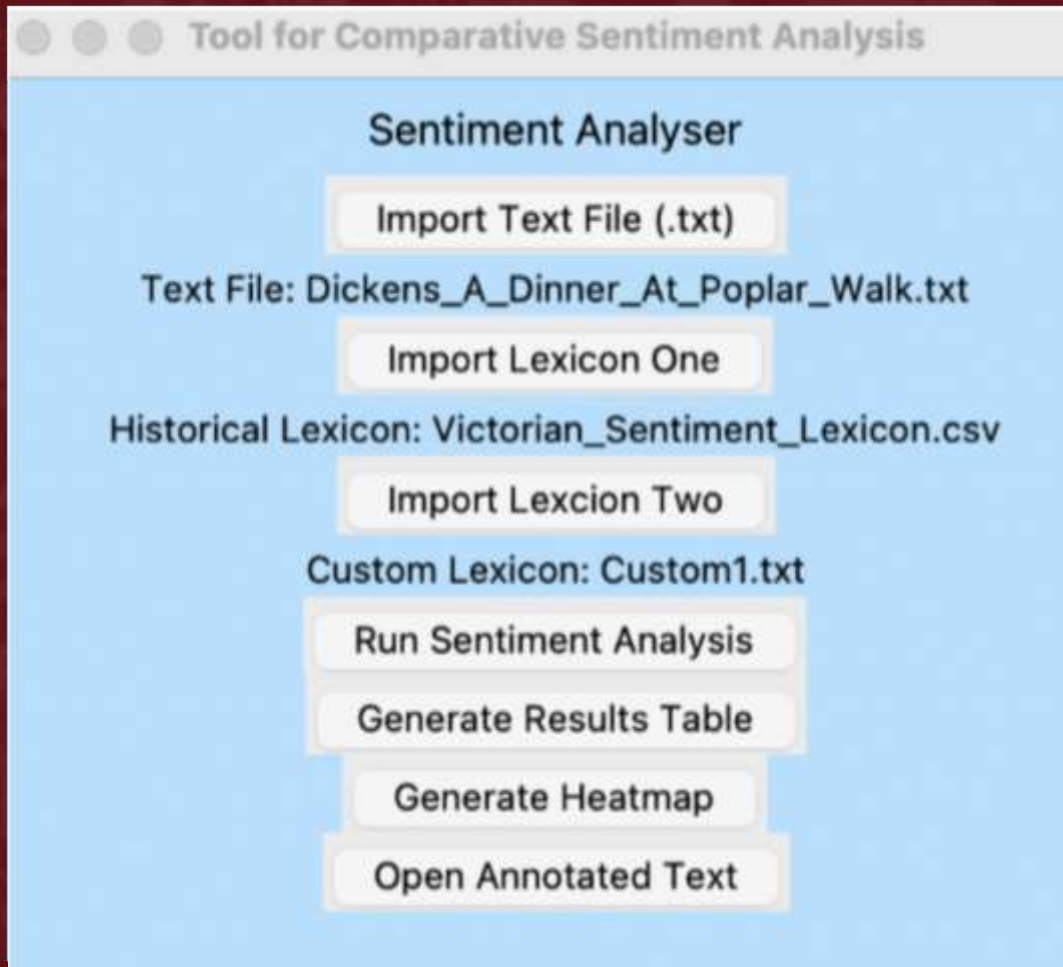
WORD-LEVEL

15	abuse	-0.21429	2266	resent	-0.175	2868	unaccounti	-0.25
16	abused	-0.75	2267	resentful	-0.8	2869	unacquaint	-0.25
17	accepted	0.5	2268	reserve	0.033406	2870	unattainab	-0.33333
18	accessible	0.333333	2269	reserved	0.625	2871	unavailing	0.071429
19	accommod	0.305556	2270	reside	-0.00068	2872	unavenged	-0.75
20	accomplish	0.391304	2271	resign	-0.15789	2873	unaware	0.166667
21	accomplish	0.4	2272	resigned	-0.25	2874	unbecomir	0.083333
22	accordant	1	2273	resignedly	0.5	2875	unbidden	-0.21572
23	accurate	0.583333	2274	resist	-0.0746	2876	unboundec	-0.25
24	accurately	0.18083	2275	resolute	0.25	2877	unbroken	0.006332
25	accuse	-0.5	2276	resolutely	-0.2	2878	unburden	0.333333
26	accursed	-0.375	2277	resolve	-0.09333	2879	uncalled	-0.5
27	accuse	-0.58824	2278	resolved	0.333333	2880	uncertain	-0.40279
28	ache	-0.52381	2279	resort	-0.3125	2881	unchangea	-0.66667
29	achieve	0.19887	2280	resound	-0.1	2882	uncomfort	-0.24286
30	admirable	0.359988	2281	resounding	0.5	2883	uncommor	0.069469
31	admirably	0.5	2282	respect	0.124226	2884	uncommor	0.154775
32	admire	0.328579	2283	respectable	0.325581	2885	uncomplai	-0.5
33	admired	-0.125	2284	respectabl	0.5	2886	uncompro	-0.57143
34	admiring	0.5	2285	respectful	0.2	2887	unconcern	0.5
35	admiringly	0.5	2286	respectful	0.439711	2888	unconditio	-0.5
36	adorable	0.666667	2287	respective	0.5	2889	unconscior	-0.5
37	adore	0.166667	2288	respond	0.126516	2890	unconsciol	0.033516
38	advanced	0.5				2891	unconsciol	0.05161

Sentiment Lexicon:

Term Dictionaries containing corresponding Positive/ Negative sentiment scores

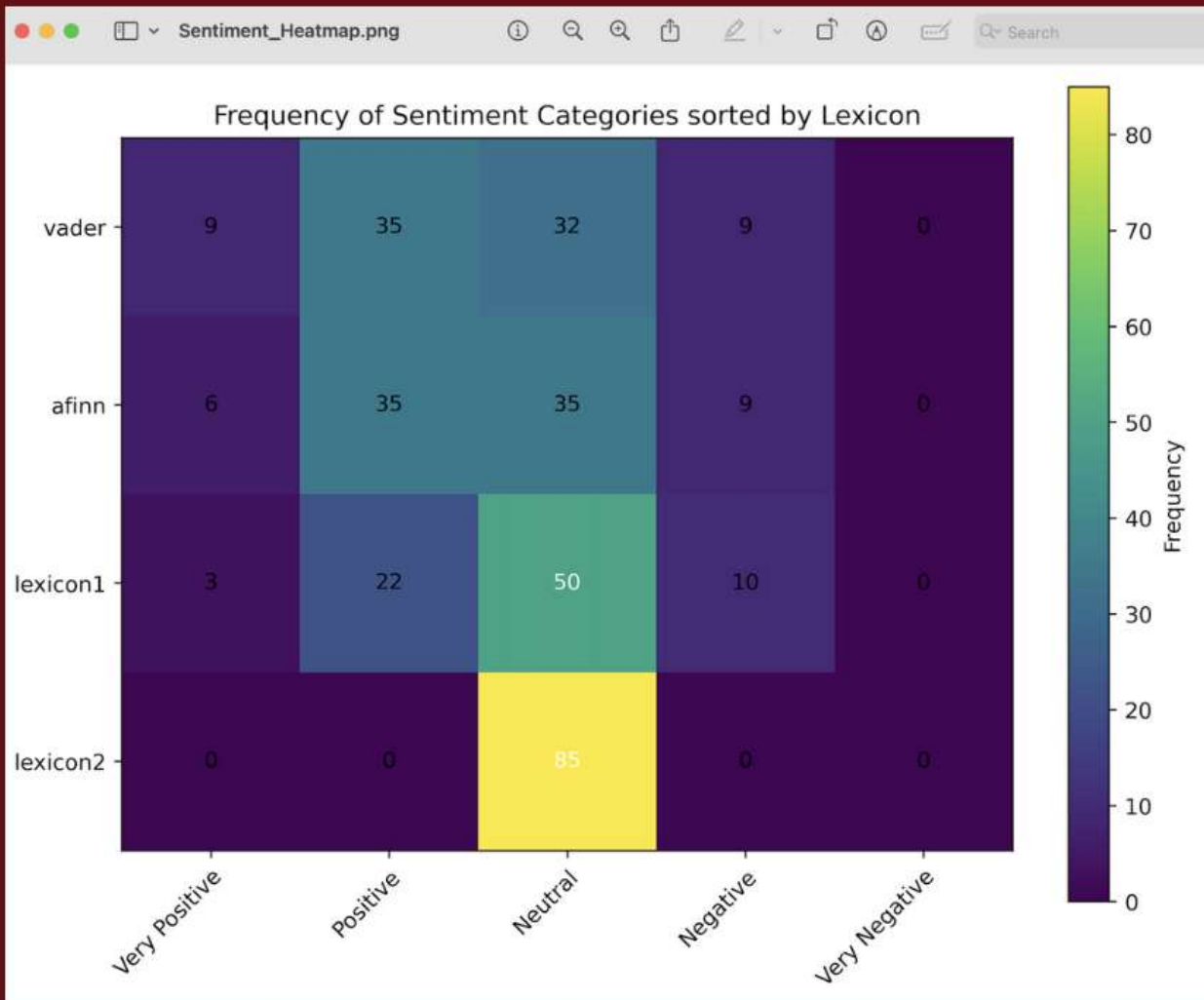
PROTOTYPE



Functions:

- Import Textual Data for Analysis
- Import Multiple Custom Sentiment Lexicons for Comparative Analysis
- Perform Sentiment Analysis on Input Text using Multiple Different Lexicons

Sentiment Heatmap



Conclusions



Findings:

- Annotated Data Required to Improve the Accuracy of a Historically-Accurate Sentiment Lexicon

Future Considerations:

- Consider the Accessibility of the Visualisations and GUI
- Allow the User to individually modify the Sentiment Scores of disputed words
- Allocate time for User Testing earlier in the process

THANK YOU FOR LISTENING



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