Homework

The most important features of a good text (the discursive dimension) are coherence, ease of reading, and attractivity (aesthetics), features related to musicality, between text and music being strong relations. Musicality of texts is important for practical reasons considered in two related domains: rhetoric – how to have an impact on the reader/listener - (see https://strangeandcuriousthings.blogspot.com/2015/11/what-james-joyce-taught-me-about.html) and aesthetics – how to make enjoyment to the reader/listener - (*J. R. R. Tolkien*, the author of *The Hobbit* and *The Lord of the Rings* is credited to have used the term ***phonaesthetics***, see https://www.thoughtco.com/phonaesthetics-word-sounds-1691471).

Musical discourse in texts is characterized by rhythm, melody, harmony, and polyphony (especially in complex compositions). ***In the homework you will need to do an analysis of repetitions***, which are the substratum for ***rhythm and polyphony***. Therefore, **you must develop a computer program (preferably in Python) that has a text as input and outputs the results of the analysis of at least 6 repetition dimensions**. **An optional part is to also do a polyphonic analysis**. You must show the results (the outputs) of the musicality analysis of 2 texts, first the ***Sirens*** chapter in ***James Joyce's Ulysses*** (https://www.gutenberg.org/files/4300/4300-h/4300-h.htm#chap11, see also the text in the uploaded archive) and, second, a text at your choice.

The *Ulysses* novel by *James Joyce* (awarded with the Nobel Prize) is recognized as one of the outstanding novels of the 20th century. The *Sirens* chapter in *Ulysses* is widely considered as containing many devices related to musicality. Even the author, James Joyce himself said of this chapter that it is like a "*fuga per canonem*". A fugue is a polyphonic discourse with origins in music in which independent several threads of ideas/concepts/words ("voices" in music) occur in parallel entering in divergences/dissonances and convergences/consonances.

You must detect repetitions in *Sirenes* and in the second text, selected by you, both at word/phrase (phrase=group of words) and vowel/consonant (sound) levels, **in total at least three types of each of the word and sound levels from below:**

Repetition at word level

See also the "Automatic Extraction of Rhythm Figures.pdf" paper in the uploaded archive and the details from the below links.

https://literarydevices.com/repetition/

https://literarydevices.com/anaphora/

https://literarydevices.com/anadiplosis/

https://literarydevices.com/epistrophe/ or https://literarydevices.com/epiphora/

https://literarydevices.com/epizeuxis/

https://literarydevices.com/polyptoton/

Repetition at sound level

https://www.litcharts.com/literary-devices-and-terms/euphony

https://www.litcharts.com/literary-devices-and-terms/euphony

https://www.thoughtco.com/what-is-euphony-in-prose-1690581

- Alliteration, https://www.litcharts.com/literary-devices-and-terms/alliteration
- Consonance, https://www.litcharts.com/literary-devices-and-terms/consonance
- Assonance, https://theedge.com.hk/blog/sound-advice-alliteration-consonance-assonance/
  https://www.litcharts.com/literary-devices-and-terms/assonance
  https://www.twinkl.ch/teaching-wiki/assonance
  https://www.microsoft.com/en-us/microsoft-365-life-hacks/writing/understanding-assonance
  https://www.edulyte.com/english/assonance/#lms
- Sibilance, https://www.litcharts.com/literary-devices-and-terms/sibilance

You can find some related facts about using NLP for analyzing *James Joyce's Ulysses* (the whole text of the novel is at https://www.gutenberg.org/files/4300/4300-h/4300-h.htm) in the following places:

https://medium.com/swlh/using-nlp-to-visualize-ulysses-8a953c27aca

https://medium.com/swlh/using-nlp-to-visualize-ulysses-part-two-8ead745f320c

https://github.com/bphall/ulysses_map

https://www.youtube.com/watch?v=oP3c1h8v2ZQ

https://towardsdatascience.com/james-joyce-and-machine-learning-3948e55270c0

https://github.com/seanjudelyons/Ulysses

The homework is supposed to be done, as a rule, individually. However, it can also be done in teams of two or three but, in this case, a polyphonic analysis should be done. You can *find*

details about the polyphonic analysis in the paper "Analysis of Polyphonic Interanimation in Novels", included in the uploaded archive.

You should upload, each of you, an archive at

https://curs.upb.ro/2023/mod/assign/view.php?id=170295 with:

- A description of the types of repetitions and the processing techniques that you used.
- The source code (Python preferred).
- The second text that you selected for the analysis, in addition to Sirens.
- The results (the output) in a file containing the type of repetitions followed by the examples from the text in which are highlighted the repeated words/phrases or vowels/consonants.
- The contribution of each member of the team if more than one author. In this case, of teams, in addition to the repetitions, a second output file should contain the description of the polyphonic weaving.

The deadline is 15 May 23:59 hours. For any questions you may write on Teams in the course chat.

In the uploaded archive I included the text of *Sirens* and some papers that may help you understand the problem you have to do.

Best,

Stefan Trausan-Matu