按兩下 (或按 Enter 鍵) 即可編輯

Lab#1, NLP Spring 2023

This is due on 2023/03/06 15:30, commit to your github as a PDF (lab1.pdf) (File>Print>Save as PDF).

IMPORTANT: After copying this notebook to your Google Drive, please paste a link to it below. To get a publicly-accessible link, hit the *Share* button at the top right, then click "Get shareable link" and copy over the result. If you fail to do this, you will receive no credit for this lab!

LINK: paste your link here

https://colab.research.google.com/drive/1D70P_ArOV-RbLnFGyOxoo7PHUhyCFPPq?usp=sharing

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Question 1 (100 points)

Let's switch over to coding! Write some code in this cell to compute the number of unique word **tokens** in this paragraph (5 steps of Text Normalisation: 1. Lowercase Conversion, 2. Remove punctuations, 3. Stemming, 4. Lemmatisation, 5. Stopword Removal). Use a whitespace tokenizer to separate words (i.e., split the string by white space). Be sure that the cell's output is visible in the PDF file you turn in on Github.

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```
paragraph = '''Last night I dreamed I went to Manderley again. It seemed to me
that I was passing through the iron gates that led to the driveway.
The drive was just a narrow track now, its stony surface covered
with grass and weeds. Sometimes, when I thought I had lost it, it
would appear again, beneath a fallen tree or beyond a muddy pool
formed by the winter rains. The trees had thrown out new
low branches which stretched across my way. I came to the house
suddenly, and stood there with my heart beating fast and tears
filling my eyes.'''


# DO NOT MODIFY THE VARIABLES
tokens = 0
word_tokens = []

# YOUR CODE HERE! POPULATE THE tokens and word_tokens VARIABLES WITH THE CORRECT VALUES!
tokens=paragraph.lower()
#print(tokens)

import nltk
nltk.download("punkt")
```

```
def remove_punct(token):
    return[word for word in token if word.isalpha()]
sent = remove_punct(sent)

from nltk.stem import PorterStemmer,LancasterStemmer,SnowballStemmer

tokens=["the","spectators","all","stood","and","sang","the","national","anthem"]

port=portStemmer()
stemmed_port=[port.stem(token) for token in tokens]

lanc=LancasterStemmer()
stemmed_lanc=[lanc.stem(token) for token in tokens]

snow=snowballStemmer("english")
stemmed_snow=[snow.stem(token) for token in tokens]

from nltk.stem import WordNetLemmatiser
tokens=["the","spectators","all","stood","and","sang","the","national","anthem"]

lemmatiser=WordNetLemmatiser()
lemmatised=[lemmatiser.lemmatize(token) for token in tokens]

from nltk.corpus import stopwords
nltk.download("stopwords")

stop_word=set(stopwords.words("english"))
words_no_stop=[word for word in lemmatised if word not in stop_words]

# DO NOT MODIFY THE BELOW LINE!
print('Number of word tokens: %d' % (tokens))
print("printing lists separated by commas")
print(*word_tokens, sep = ", ")
```

```
last night i dreamed i went to manderley again. it seemed to me
that i was passing through the iron gates that led to the driveway.
the drive was just a narrow track now, its stony surface covered
with grass and weeds. sometimes, when i thought i had lost it, it
would appear again, beneath a fallen tree or beyond a muddy pool
formed by the winter rains. the trees had thrown out new
low branches which stretched across my way. i came to the house
suddenly, and stood there with my heart beating fast and tears
filling my eyes.
[nltk_data] Downloading package punkt to /root/nltk_data...
[nltk_data]   Package punkt is already up-to-date!
---------------------------------------------------------------------------
NameError                                 Traceback (most recent call last)
<ipython-input-3-8e1e32e03d78> in <module>
     20 def remove_punct(token):
     21   return[word for word in token if word.isalpha()]
---> 22 sent=remove_punct(sent)
     23
     24 from nltk.stem import PorterStemmer,LancasterStemmer,SnowballStemmer

NameError: name 'sent' is not defined
```

SEARCH STACK OVERFLOW