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In [ ]: # -*- coding: utf-8 -*-
        """
        Created on Fri May 22 16:13:14 2020

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        """

        ###necessary libraries###
        import re
        import nltk
        nltk.downloader.download('vader_lexicon')
        from nltk.sentiment.vader import SentimentIntensityAnalyzer
        import pandas as pd
        import glob
        import os
        from datetime import datetime

        # file where csv files lies
        path = r'C:\Users\victo\Master_Thesis\scraperproject\volkswagen\volkswagen_scraper\spiders\news'
        all_files = glob.glob(os.path.join(path, "*.csv"))

        # read files to pandas frame
        list_of_files = []

        for filename in all_files:
            list_of_files.append(pd.read_csv(filename,
                                             sep=',',
                                             encoding='cp1252',
                                             header=None,
                                             names=["url", "header", "release time", "article content"]
                                             )
                               )

        # Concatenate all content of files into one DataFrame
        concatenate_list_of_files = pd.concat(list_of_files,
                                             ignore_index=True,
                                             axis=0,
                                             )

        # removing duplicates
        cleaned_dataframe = concatenate_list_of_files.sort_values(by='url', ascending=False)
        cleaned_dataframe = cleaned_dataframe.drop_duplicates(subset=["url"], keep='first', ignore_index=True)

        print(cleaned_dataframe)

        ##formatting date column
        dates = []
        times = []
        regex = r'(.*)((([0-2]|0?[1-9])\./([01]|([12][0-9]|0?[1-9]))\./(?:[0-9]{2})?[0-9]{2})|((Jan(uary)?|Feb(ruary)?|Mar(ch)?|Apr(il)?|May|Jun(e)?|Jul(y)?|Aug(ust)?|Sep(tember)?|Oct(ober)?|Nov(ember)?|Dec(ember)?)\s+\d{1,2},\s+\d{4}))\s+'
        regex2 = r'(([0-2]|0?[1-9]):([0-5][0-9])?([AaPp][Mm]))\s+'

        for date in cleaned_dataframe['release time']:
            matches = re.finditer(regex, date)
            for m in matches:
                date = m.group()
                date_formatted = date.replace(date[:2], '')

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        convert_date = datetime.strptime(date_formatted, '%B %d, %Y')
        final_date = datetime.strptime(convert_date, "%Y-%m-%d")
        print(final_date)
        dates.append(final_date)

for time in cleaned_dataframe['release time']:
    matches = re.finditer(regex2, time)
    for t in matches:
        time = t.group()
        convert_time = datetime.strptime(time, '%I:%M %p')
        time_formatted = datetime.strptime(convert_time, '%H:%M:%S')
        print(time_formatted)
        times.append(time_formatted)

## adding modified date to data frame
cleaned_dataframe['date'] = dates
cleaned_dataframe['time'] = times
cleaned_dataframe['formatted date'] = cleaned_dataframe['date'] + str(' ') + cleaned_dataframe['time']

## dropping unnecessary columns
del cleaned_dataframe['date']
del cleaned_dataframe['time']

# New words and values
new_words = {'crushes': 10,
              'beats': 5,
              'misses': -5,
              'trouble': -10,
              'falls': -100,
              }

print('Start!')
# Instantiate the sentiment intensity analyzer with the existing lexicon
vader = SentimentIntensityAnalyzer()
# Update the lexicon
vader.lexicon.update(new_words)

print('ok!')

## analysis of article header
score_header = []

for header in cleaned_dataframe['header']:
    polarity_score = vader.polarity_scores(header)
    score_header.append(polarity_score)

# Join the DataFrames
cleaned_dataframe[['neg_vader_header',
                  'neu_vader_header',
                  'pos_vader_header',
                  'compound_vader_header'
                  ]] = pd.DataFrame(score_header)[['neg',
                                                    'neu',
                                                    'pos',
                                                    'compound'
                                                    ]]

## analysis of article content
score_content = []

for articlecontent in cleaned_dataframe['article content']:
    polarity_score = vader.polarity_scores(articlecontent)
    score_content.append(polarity_score)
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# Join the DataFrames
cleaned_dataframe[['neg_vader_articel_content',
                  'neu_vader_articel_content',
                  'pos_vader_articel_content',
                  'compound_vader_articel_content']
                 ] = pd.DataFrame(score_content)[['neg',
                                                  'neu',
                                                  'pos',
                                                  'compound']
                 ]

print(cleaned_dataframe)

## saving outcome of vader to csv
current_date = datetime.today().strftime('%Y-%m-%d')
cleaned_dataframe.to_csv(r'C:\Users\victo\Master_Thesis\semanticanalysis\analysis_w
ith_vader\volkswagen\outcome_using_vader\outcome_of_vader_on_volkswagen_news_' + st
r(current_date) + '.csv', index=False)
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