Assignment-4

1 – How did you design your opinion extraction module with CoreNLP ?

- First I downloaded the CoreNLP
- Since JAVA was already installed checked the version of JAVA
- Started the CoreNLP server
- Created an NLP pipeline with the required properties
- Then the input file is passed to the NLP pipeline and is stored as a output whose type is JSON string.
- Created a dictionary 'pos_dict' to store the word as the key and part of speech as value by going through all the terms in the output variable using for loop.
- To extract '*nsub*' and *'amod'* dependencies I first extract the enhanced dependencies.
- The opinion makes sense when the governor is an adjective and the dependent is a noun.
- Finally, the opinion is added to the extracted opinions dictionary along with the review_id.

2 – How did you measure the opinion similarity? How do you tune the threshold.

- I am measuring the similarity between both the opinions using the Gensim library
- First I split the opinions into attribute and quality
- Then I check if the words are present in the word2vec object
- If present, calculate the similarity
- If the similarity is more than the defined cosine value, I add that extracted opinion to the similar opinions
- I tune the threshold in increments of 0.2 starting from 0.1 and found that the best threshold is 0.3

3 – Discuss the successful cases that your system can handle

- Cases 3 & 4 are handled correctly by my system in almost all the cosine values.

4 – Discuss the cases that your system fails

- Cases 1 & 2 are giving incorrect outputs in cosine values upto 0.4. Case 1 gives [service, bad] and case 2 gives [service, great]

5 – Output with best threshold

I tuned my system to 0.3. It may give one incorrect opinion in one case which can be disregarded but it doesn't cut out opinions in other cases

Outputs:

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[meal, wonderful] appears in review [ 1 ]

[salad, delicious] appears in review       [ 1 ]

[stick, delicious] appears in review       [ 1 ]

[service, excellent] appears in review     [ 1 ,    2 ]

[spots, other] appears in review    [ 1 ]

[restaurant, old] appears in review [ 2 ]

[tablecloths, white] appears in review     [ 2 ]

[potatoes, mashed] appears in review       [ 2 ]

[meat, flavorful] appears in review [ 2 ]

[slaw, delicious] appears in review [ 2 ]

[list, great] appears in review       [ 3 ]

[potions, huge] appears in review    [ 3 ]

[thing, good] appears in review       [ 3 ]

[note, positive] appears in review   [ 4 ]

[sandwich, grilled] appears in review      [ 4 ]

[option, choose] appears in review   [ 4 ]

[selection, great] appears in review       [ 4 ]

[server, rude] appears in review     [ 4 ]

[restaurant, small] appears in review      [ 4 ]

[table, own] appears in review       [ 4 ]

[distance, walking] appears in review      [ 5 ]

[meals, best] appears in review      [ 5 ]

[fan, huge] appears in review       [ 5 ]

[service, great] appears in review   [ 5 ]

[sandwiches, french] appears in review     [ 5 ]
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[food, great] appears in review   [5]

[rotation, regular] appears in review   [6]

[food, excellent] appears in review [6 ,   1 3]

[deserts, mini] appears in review   [6]

[deal, great] appears in review   [6]

[selection, good] appears in review [6]

[quality, bad] appears in review   [7]

[day, bad] appears in review [7]

[prices, decent] appears in review   [8]

[service, warm] appears in review   [8]

[fish, battered] appears in review   [8]

[good, bad] appears in review   [8]

[service, bad] appears in review   [9]

[fingers, homemade] appears in review   [1 0]

[beer, priced] appears in review   [1 0]

[value, great] appears in review   [1 0]

[menu, large] appears in review   [1 1]

[quality, excellent] appears in review   [1 1]

[menu, entire] appears in review   [1 1]

[specialities, other] appears in review   [1 1]

[favorites, local] appears in review   [1 2]

[feeling, warm] appears in review   [1 2]

[deal, cheapest] appears in review [1 2]

[order, particular] appears in review   [1 2]

[soup, french] appears in review   [1 2]

[time, wonderful] appears in review [1 3]

[group, larger] appears in review   [1 3]

[turkey, roasted] appears in review [1 4]

[food, interesting] appears in review   [1 4]

[taco, good] appears in review   [1 5]

[waiter, slow] appears in review   [1 5]

[time, long] appears in review   [1 5]

[food, cold] appears in review   [1 5]

[group, large] appears in review   [1 6]

[way, bad] appears in review [1 6]

[options, vegan] appears in review [1 6]

[salad, greek] appears in review   [1 7]

[fries, great] appears in review   [1 7]

[waiter, attentive] appears in review   [1 7]

[wines, decent] appears in review   [1 8]

[food, fresh] appears in review   [1 8]

[hopes, high] appears in review   [1 9]

[food, ok] appears in review [1 9]

[ambience, pleasant] appears in review   [2 0]

[pittsburghers, older] appears in review   [2 0]

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query opinion [service, good] has similar opinions:

        [service, excellent] appears in review   [1 ,   2]

        [service, great] appears in review [5]

        [service, warm] appears in review   [8]

        [service, bad] appears in review   [9]

query opinion [service, bad] has similar opinions:

        [service, great] appears in review [5]

        [service, bad] appears in review   [9]

query opinion [atmosphere, good] has similar opinions:

      [feeling, warm] appears in review   [1 2]

      [ambience, pleasant] appears in review   [2 0]

query opinion [food, delicious] has similar opinions:

      [meal, wonderful] appears in review [1]

      [salad, delicious] appears in review   [1]

      [meat, flavorful] appears in review [2]

      [food, great] appears in review   [5]

      [turkey, roasted] appears in review [1 4]

      [food, interesting] appears in review   [1 4]

      [fries, great] appears in review   [1 7]

      [food, fresh] appears in review   [1 8]