

Q2.1) words in lemmatized sentence do not have context, but we find the context in original sentence. We need context to rightly determine the tag of a word.

We can use original sentence an POS tagging to create a lemmatized version but cannot use lemmatized version to determine the context

Q3.1)

Pattern: NP {NP,}\* or any other NPh

Example: Handheld PC , mobile phone , or any other portable devices

In this pattern, Hypernym occurs after hyponyms. We should have at least one NP before “or any other”

Pattern: NPh like {NP,}\*{and}? NP

Example: People like Jack and Jim

In this pattern, Hypernym occurs before the hyponyms. We should have at least one NP after “like”

Q5.1)

Precision: 1.000000

Recall:0.119048

F-measure: 0.212766

Q 5.2) Our recall is very low, which means the sum of true positive and False negative is very high. Which means our false negative is high. False negative means that we have falsely classified something as negative. Which means we did not extract many hypernym and hyponym pairs. This is because:

- 1) Very few patterns: we missed patterns like “or any other”
- 2) And the NP\_grammer we used wouldn't let us identify few patterns. Consider the example given in the question. We were supposed to get Such NP\_authors as NP\_herrick but we got NP\_such\_authors as NP\_herrick. So we missed hypernym hyponym pair.
- 3) NP\_chucking errors due to POS tagging

This can be improved by increasing the patterns and impriving the NP\_grammer that we are using for parsing

Q6.1) 2 complete days

Q6.2) Aish and Manas

Q7.1)

Pattern: ('(NP\_\w+ (, NP\_\w+)\* (, )?or any other NP\_\w+)', 'after')

Example: Handheld PC , mobile phone , or any other portable devices

In this pattern, Hypernym occurs after hyponyms. We should have at least one NP before “or any other

Pattern: ('(NP\_\w+ like (NP\_\w+ (, )?)\*(and )?NP\_\w+)', 'before')

Example: People like Jack and Jim

In this pattern, Hypernym occurs before the hyponyms. We should have at least one NP after "like"

Pattern: ('(NP\_\w+ (, )?includes (NP\_\w+ ? (, )?(and |or )?)+)', 'before')

Example: Physical activities includes Zym and Yoga

In this pattern, Hypernym occurs before the hyponyms. We should have at least one NP after includes

Pattern: ('(NP\_\w+ except (NP\_\w+ (, )?)\*(and )?NP\_\w+)', 'before')

Example: All people expect jim and pam

In this pattern, Hypernym occurs before the hyponyms. We should have at least one NP after except

Q7.2) Precision: 0.980392

Recall: 0.132275

F-measure: 0.233100