

Module 3: Analyzing Sentence Structure

Case Study

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Case Study

1. Write separate python functions which accepts a string and a number 'n' and return the following:

- a. N most frequent Nouns
Take function name as "GetNMostFrequentNouns"
- b. N most frequent Verbs
Take function name as "GetNMostFrequentVerbs"
- c. N most frequent Delimiters
Take function name as "GetNMostFrequentDelimiters"
- d. N most frequent Prepositions
Take function name as "GetNMostFrequentPrepositions"

** These functions will help you to in last question of this case study.

Run all the function on the file "FIFAWorldCup2018.txt" and print the results.

2. Write a python function which accepts a string and print the first sentence in the string along with its syntax tree.

Take function name as "PrintSyntaxTree"

Run this function on the file "FIFAWorldCup2018.txt"

3. Write python functions which accepts a string and returns the following using regular expressions:

- a. Text from the string after removing all the punctuations
Take function name as "TextAfterRemovingPunctuations"
- b. Text from the string after removing all the numbers/digits
Take function name as "TextAfterRemovingDigits"
- c. All the words which begins with the capital letter
Take function name as "AllCapitalizedWordsFromText"
- d. All the emails from the string
Take function name as "AllEmailsFromText"

Run all the above functions on the file “FIFAWorldCup2018.txt” and print the results.

4. Write python functions which accepts a string as an input and return the following chunks.
 - a. Phrases having Proper nouns followed by Verbs
Take function name as “ChunkingVer1”
 - b. Verb Phrases having Verbs followed by Adjectives
Take function name as “ChunkingVer2”
 - c. Noun Phrases having Determiners followed by Nouns
Take function name as “ChunkingVer3”
 - d. Verb Phrases having Verbs followed by Adverbs
Take function name as “ChunkingVer4”
 - e. Phrases having Delimiter, Adjectives and Nouns in the respective order.
Take function name as “ChunkingVer5”
 - f. Noun Phrases which having Nouns and Adjectives, terminated with Nouns.
Take function name as “ChunkingVer5”

Run all the functions for the first sentence in the file “FIFAWorldCup2018.txt” and print the results.

5. Make a content free grammar having the following rules:
 - a. Noun Phrases are followed by Verb Phrases
 - b. Verb Phrase can have
 - i. Verb and noun phrase
 - ii. Verb, noun phrase and a preposition phrase
 - c. Noun Phrases can have
 - i. Delimiters followed by noun
 - d. Preposition phrase have a preposition followed by a noun phrase

The delimiters, verbs, prepositions and nouns for the grammar should be the 2 most frequent words of each type from “FIFAWorldCup2018.txt”.

Generate the CFG for “FIFAWorldCup2018.txt” file and save them in a file named “CFG.txt”

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