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Natural Language Understanding
First Assignment

To test each exercise I used the sentence: "I saw the man with a telescope."

Exercise 1:

I preferred to use the library networkx to find the path of dependency. In this way it's possible load the spacy's dependency tree into a networkx graph and then use the method ".shortest_path()"

Exercise 2:

To get the subtree of a given token it's enough to use the property ".subtree" to get a sequence with the token and all it's syntactic descendants.

Exercise 3:

To check if a given list of tokens could form a subtree it' s possible using the first token to get a subtree from the span. To do that it's necessary to check if the token is present in the span and then generate it' s subtree. The next thing to do is to check if the length of the subtree is the same of the list to be sure there are not more or less elements. In the end is necessary compare the text between the subtree's token with those of the list to be sure they match. If any of this passages go wrong the given list doesn't form a subtree.

Exercise 4:

To get the head of a span it's simply possible use it's property: ".root".

Exercise 5:

To extract the subject, the direct object and indirect object it's necessary check the "token.dep_" for each token, see which category they belongs to and separate them in a list of lists.