Ontology Based Concept Similarity

# Breaking the Given Data into Individual Sentences:

The given data is stored into a text file. The text in the data is then send through PunktSentenceTokenizer in the NLTK Library. PunktSentenceTokenizer is a trained tool that separates the sentences from the text and indexes them.

# Coreference the Sentences and its objects:

# The sentences are then connected using coref (coreference tool of the Stanford CoreNLP). Coref is a trained model of the CoreNLP Database that is able to connect the objects in the sentence to its referred pronouns/reference other sentences.

E.G :-

The constitution of India postulates a society in which social, economic and legal justice is available to all on the basis that they are equal. To enforce the constitutional mandate of equality before the laws, the State has to ensure access to justice, that is to say, that opportunities for securing justice are not denial to any citizen by reason of economic or other disability. According to new concept, when a poor litigant is compelled to contest the case against a rich person, he should not only be given financial legal aid but the poor downtrodden person should also be furnished aid with advice and assistance in settlement of disputes by negotiation, conciliation, compromise, arbitration or any other means. This could be possible only when we change our outlook and re-orient our thinking process and then the theme of social justice be able to change the fate of the poor litigants.

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The constitution of India could be possible only when we change we outlook and re-orient we thinking process and then the theme of social justice be able to change the fate of the poor litigants .

# Tagging each and every word in a sentence:

# Each word of every sentence is then tagged (Part of speech tagging) using the pos\_tag feature in nltk library. The pos\_tag allocated each and every word its token and its role in the sentence (e.g. Proper noun, Adjective, Object, Adverb etc).

# Selection of Keywords and Entities:

A rule is then made to select the keyword and entities from the text. The rule is Adjective followed by a noun/series of nouns to select the keywords from each sentence. Given the rule a RegexpParser was made to parse the entire Sentence and chunk the words that were following the rules together using the nltk library.

**RegexpParser:**

A grammar-based chunk parser. chunk. RegexpParser uses a set of regular expression patterns to specify the behaviour of the parser. The chunking of the text is encoded using a Chunk String, and each rule acts by modifying the chunking in the Chunk String. The rules are all implemented using regular expression matching and substitution.

A grammar contains one or more clauses in the following form:

{<DT|JJ>} *# chunk determiners and adjectives*

}<[\.VI].\*>+{ *# chink any tag beginning with V, I, or .*

<.\*>}{<DT> *# split a chunk at a determiner*

<DT|JJ>{}<NN.\*> *# merge chunk ending with det/adj*

## After getting the chunked data the chunks were extracted using regex and basic string algorithms.

# Creation of A Knowledge Graph:

A graph is generated using chunks and its dependencies on other chunks. After this , the nodes are fed into a pandas data frame and networkx library is used to create a graphs. After the graph is created matplotlib is used to show the created graph.