Lucas Kohorst
ENG 351 – Language Technology
Final Project Proposal

Question

What are the differences between constituency and dependency-based sentence parsing?

Background

Sentences can be parsed by computers in a few different ways. Constituency-based or concrete syntax trees are a way of representing the syntactical structure of a sentence of a string of words. This way of parsing generally shows how a sentence is structured but does not provide that much information on how the words relate to each other. Dependency-based parse trees are another way of representing a sentence. This type of parsing is based on dependency grammar. Dependency-based parse trees do not display the syntactical structure of the sentence but rather parses the sentence based on word's relationship to one another. There is much debate between what type of parsing is more beneficial to the understanding of the sentence.

Proposal

I am going to create a web application that parses a sentence using constituency and dependency-based techniques and displays the sentence in a tree for each type of parsing. This will allow me to analyze and report on the differences, benefits and use cases for each technique.

Deliverables & Technologies Used

Using react.js, I will create an application which will parse a sentence based on constituency and dependency techniques and components that display the parsed sentence in a tree structure. I will create a demo application to show the differences and benefits of each technique. The components will be published open source on npmjs.org for others to use and gain further understanding about constituency and dependency-based parsing.