Context-Free Grammar

Generating and Simulating Rules & Samples

```
          S                        S
          |                        |
         /|\                      /|\
        S * S                    S + S
       /     \                  /     \
      /|\      z              x       /|\
     S + S                           S * S
     |   |                           |   |
     x   y                           y   z
```
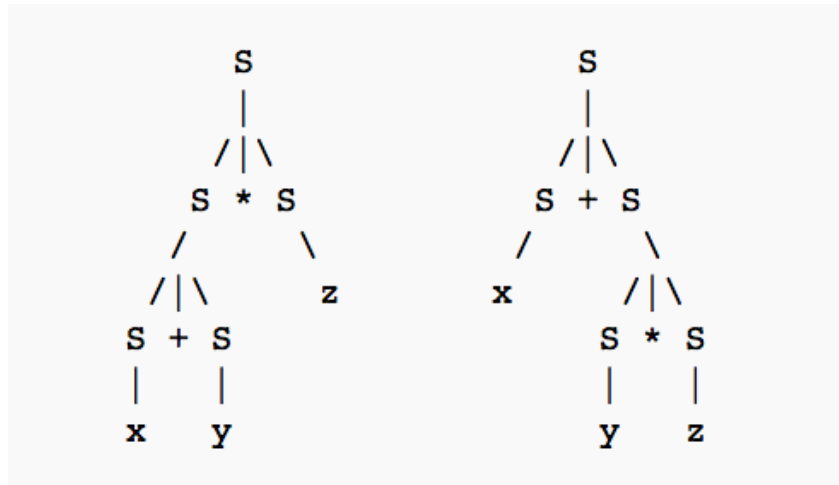
Topic

Creating a course material for increase learning on Context-Free Grammar by using JavaScript and HTML.

Summary

Context-free grammars (CFGs) are used to describe context-free languages. A context-free grammar is a set of recursive rules used to generate patterns of strings. A context-free grammar can describe all regular languages and more, but they cannot describe all possible languages.

Context-free grammars are studied in fields of theoretical computer science, compiler design, and linguistics. CFG's are used to describe programming languages and parser programs in compiler can be generated automatically from context-free grammars.

Back-End

In this project I used a JavaScript library which is coded by Kate Compton, that library made for the creating a new grammar with accepting rules and generating samples.

I also generated two samples from different two rules and simulate them with images for visuality and improving learning abilities.

Reference: https://brilliant.org/wiki/context-free-grammars/

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