WorkSheet Problems

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Task 1 BNF?

First and foremost BNF stands for Backus Naur Form Computing. BNF languages are basic languages that allow for rules and reasons to be created and traversed through. BNF programming is important to know because it serves as the baseline and foundations for nearly all programming languages. It helps people understand the if this happens then this happens and forces users to find creative ways to make outputs using the limited BNF language.

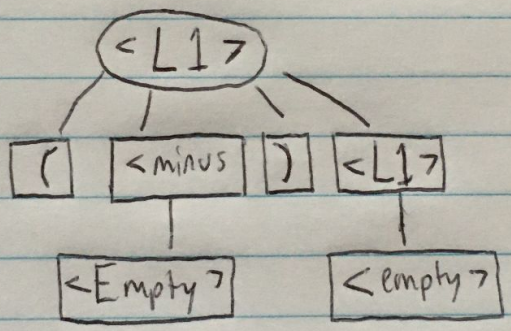
Task 2: BNF Description of L1

<L1> ::= (<minus>)<L1> | (<plus>)<L1> | <empty>

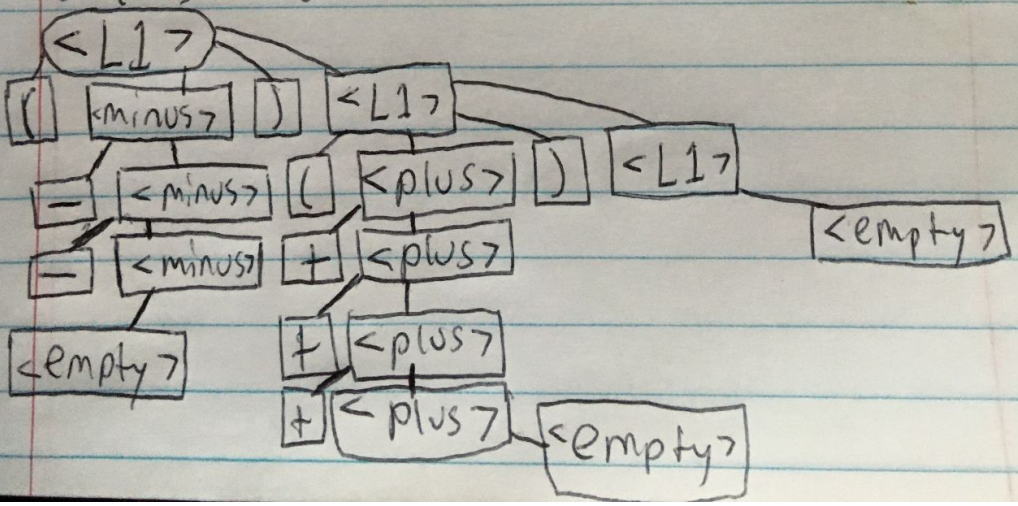
<minus> ::= -<minus> | <empty>
<plus> ::= +<plus> | <empty>

Task 3: Parse Tree for L1

1. ()



2. (--)(+++)

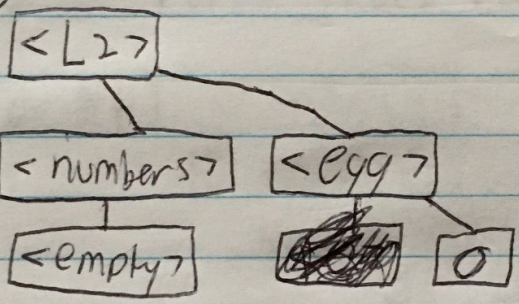


Task 4 - BNF Description of L2

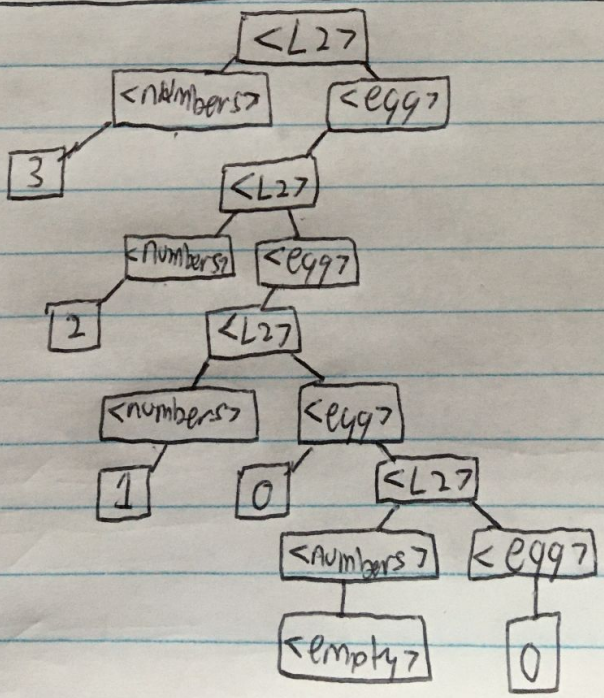
<L2> ::= <numbers> <egg>
<egg> ::= 0 | 0<L2> | <L2> | <empty>
<numbers> ::= 1 | 2 | 3 | <empty>

Task 5 - Parse Trees for L2

1. 0



2. 32100



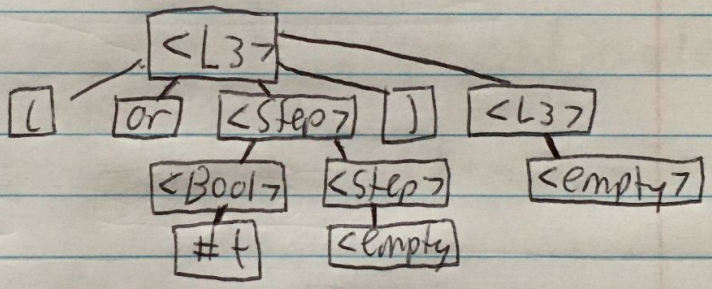
Task 6 - BNF Description of L3

<L3> ::= (and <step>) <L3> | (or <step>) <L3> |
(not <step>) <L3> | <step> <empty>

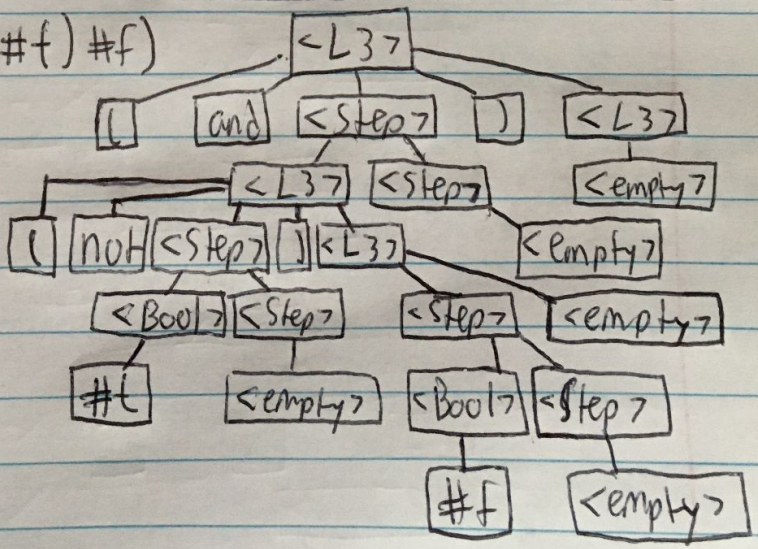
<Step> ::= <Bool> <Step> | <L3> <Step> | <empty>
<Bool> ::= #t | #f | <empty>

Task 7 - Parse Trees for L3

1. (or #t)



2. (and (not #f) #f)



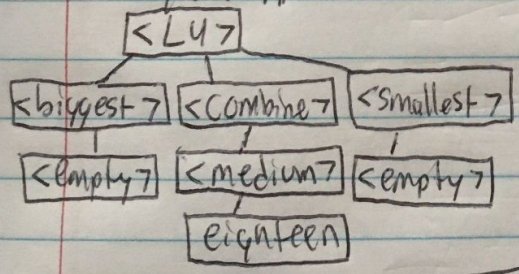
Task 8: BNF Description of L4

<L4> ::= <biggest> <medium> <small> <combine>
<smallest> ::= <empty> | one | two | three | four | five | six | seven | eight | nine
<combine> ::= <empty> | <medium> | <prefix> ty
<medium> ::= <empty> | ten | eleven | twelve | thirteen | fourteen | fifteen | sixteen | seventeen | eighteen | nineteen

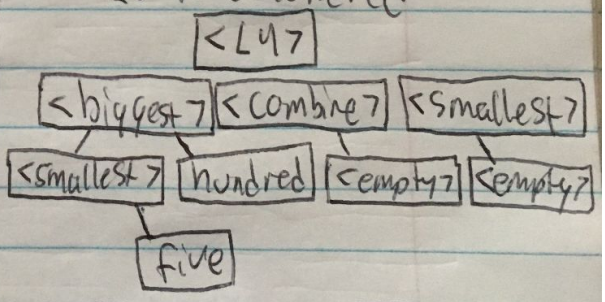
<prefix> ::= twen | thir | for | fif | six | seven | eight | nine
<biggest> ::= <smallest> hundred | <empty>

Task 9: Parse trees for L4

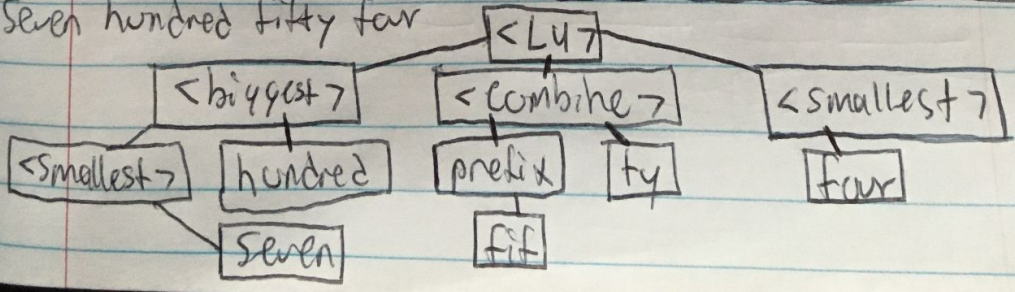
1. eighteen



2. five hundred



3. Seven hundred fifty four



Task 10 BNF Description of L5

[redacted]

<L5> ::= <add> | <describe> | <show> | exit>

<add> ::= <add> (<n> <n> <n>) <colours> |
<add> (<n> <n> <n> <n>) <colours> |
(<n> <n> <n>) <ColourN> |
<add> <colours> <ColourN>

<n> ::= 0 | 1 | 2 | 3 | ... | 255

<show> ::= <show> <all> | <ColourN>

<describe> ::= <colours> | <ColourN>

<colours> ::= <all> <all> | <ColourN> <ColourN>
<ColourN> <all> | <ColourN>
<ColourN> <ColourN> <ColourN>
<all> <all>

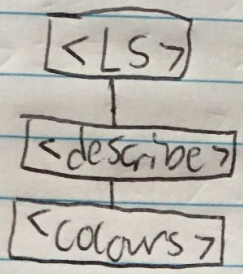
<ColourN> ::= <c1> | <c2> | <c3> | ... | <c255>

<exit> ::= <Goodbye...>

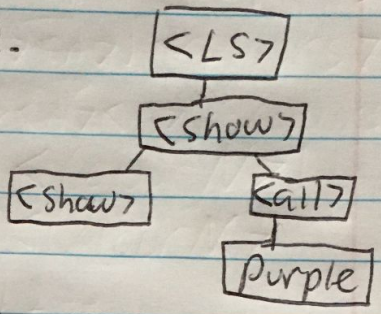
Task 11 - Parse Trees for LS

1. colours
2. show purple
3. add (100 220 170) c28

1.



2.



3.