Actividad 3.3 - Context Free Grammar

Emiliano Cabrera - A01025453
Do Hyun Nam - A01025276

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Prof. Gilberto Echeverría

Actividad 3.3

Escribe la notación BNF y EBNF para la gramática necesaria para definir modulos y funciones en Elixir.

BNF

Functions

<function> ::== def <variable>(<variable-expression>), do: <single-function-expression> end | def <variable>(<variable-expresson>) do <function-expression> end | def <variable>, do: <single-function-expression> end | def <variable> do <function-expression> end

<variable> ::== <letter><variable> | _<variable> | <letter> | <letter><number> | <masc><number>

<letter> ::== a | b | c | d | e | f | g | h | i | j | k | l | m | n | o | p | q | r | s | t | u | v | w | x | y | z

<number> ::== <digit> | <digit><number>

<digit> ::== 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0

<variable-expression> ::== <variable> | <variable>,<variable-expression>

<single-function-expression> ::== <number> | <variable> | <number><operation> | <real><operation> | true | false

<operation> ::== <operator><number> | <operator><real>

<real> ::== <number>.<number>

<operator> ::== + | - | / | *

<function-expression> ::== <single-function-expression><function-expression> | <single-function-expression>

Modules

<module> ::== defmodule <masc-variable> do <mult-function> end

<masc-variable> ::== <masc><variable>

<masc> ::== A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z

<mult-function> ::== <function> | <function> end <mult-function>

EBNF

Functions

FUNCTION ::== **def** VARIABLE VAR-EXPRESSION, **do**: FUNC-EXPRESSION **end** | **def** VARIABLE VAR-EXPRESSION **do** {FUNC-EXPRESSION} **end**

VARIABLE ::== [{'_'}]LETTER[VARIABLE][{DIGIT}]

LETTER ::== 'a' | 'b' | 'c' | 'd' | 'e' | 'f' | 'g' | 'h' | 'i' | 'j' | 'k' | 'l' | 'm' | 'n' | 'o' | 'p' | 'q' | 'r' | 's' | 't' | 'u' | 'v' | 'w' | 'x' | 'y' | 'z'

DIGIT ::== '1' | '2' | '3' | '4' | '5' | '6' | '7' | '8' | '9' | '0'

VAR-EXPRESSION ::== VARIABLE[','{VARIABLE}]

FUNC-EXPRESSION ::== {{DIGIT} | VARIABLE | {{DIGIT}OPERATION} | {REAL{OPERATION}} | **true** | **false** | {FUNC_EXPRESSION}}

REAL ::== {DIGIT}'.'{DIGIT}

OPERATION ::== OPERATOR{DIGITS} | OPERATOR REAL

OPERATOR ::== '+' | '-' | '/' | '*'

Modules

MODULE ::== **defmodule** MASC-VARIABLE **do** {FUNCTION} **end**

MASC-VARIABLE ::== MASC[{VARIABLE}]

MASC ::== 'A' | 'B' | 'C' | 'D' | 'E' | 'F' | 'G' | 'H' | 'I' | 'J' | 'K' | 'L' | 'M' | 'N' | 'O' | 'P' | 'Q' | 'R' | 'S' | 'T' | 'U' | 'V' | 'W' | 'X' | 'Y' | 'Z'