

Parser node codes

This is best read in conjunction with the files `nodes.h`, `token.h`, `nodes.c`, `symbol_table.c` and the tokenizer and parser generator files, `C.flex` and `C.y`. If you have not used flex (lex) or bison (yacc) before, you can get an basic understanding of them starting from [https://en.wikipedia.org/wiki/Flex_\(lexical_analyser_generator\)](https://en.wikipedia.org/wiki/Flex_(lexical_analyser_generator)) and https://en.wikipedia.org/wiki/GNU_bison.

LEAF	The left child contains the leaf value, which may either be an IDENTIFIER, a CONSTANT or a STRING_LITERAL
IDENTIFIER	Node contains an IDENTIFIER
CONSTANT, STRING_LITERAL	Node contains an integer constant or a string literal
APPLY	Left child is an identifier that names a function or an expression that evaluates to a function; right child contains the arguments to the function call
VOID, FUNCTION, INT	Type information
d	Left child is an AST containing the return type; right child is the function definition
D	Left child is the function definition
F	Left child is the name of the function; right child are the formal parameters
CONTINUE, BREAK	Continue or break statement for loop control; a leaf node.
RETURN	Left child is an AST of the expression whose value is to be returned
~	A variable or a function declaration. In the case of a variable, the left child is the type and right child is the variable (or list of variables) to be declared. In the case of a function, the right child is an AST holding the rest of the function text.
;	A sequence; left child is first statement in the sequence; right child is the rest of the sequence or the last statement in the sequence.
=	Assignment; left child is an IDENTIFIER; right child is an expression whose evaluation results in the value with which to update the variable binding.
+, -, *, /, %, >, <, NE_OP, EQ_OP, LE_OP, GE_OP	Arithmetic and comparison operators; children are expressions.
IF	Conditional statement; left child is a conditional expression; right child might be “then” part or “then” + “else”, denoted by absence/presence of “else”.
WHILE	While-loop; left child is the loop condition; right child is a statement or sequence of statements.