CS-5800 THEORY FOUNDATION

Assignment

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Justify the actions in the YACC input file

1. Used left-associative for % operator as this starts execution from (a+b)+c, so the bracket is first calculated then the rest.
2. Used right-associative for exponent (^) as it executes from the right side of the given value.
3. Used unary plus so that we can have a ‘+’ in the front of any value entered before evaluating.
4. In an expression, we use % to evaluate the value between $1 and $3 which finds the value using int.
5. In an expression, we use ^ to evaluate the value of pow function between $1, $3 and finds value from the right side
6. The expression + uses unary plus before any value of a predecessor.

Explaining the choices of the precedence’s in the below image:-

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**Document results restrictions**

1. The HOC cannot compute the character values (ex: - alphabets, numbericals+alphabets ) which results in giving a syntax error.

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1. The HOC cannot compute binary values (ex: - 00,01,11,10) does not recognize a binary value.
2. Imaginary numbers have issues executing in the HOC
3. ‘Log’ is not recognized in the HOC and gives an error
4. Comma, dot, semicolon are not recognized when used after any number given in the input.

**Description of the HOC**

* From my understanding, the HOC provides +, -, \*, /, ^, % and parentheses that operate on int and floating-point, and every expression is evaluated specifically at each line.
* We use the list as the start symbol of any grammar.
* The lexical analyzer will read the input and break it for the parser to execute the grammar by using tokens.
* The yacc is executed resulted in a y.tab.c file which gives us a big file of C program.
* The grammar in the first half includes all the instructions to be done.
* Unary minus & plus is also included to avoid eg:- (-3,+3) values which can give syntax error in the start, and %prec which says the minus & plus has a precedence of the value.

OUTPUT

It is in the typescript and a screenshot is given in the report. Yes, the outputs are expected.

Text

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Thank you