

HOMEWORK 2

Homework 2

Yuji Shimojo

CMSC 330

Instructor: Prof. Reginald Y. Haseltine

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Question

Work out Problem Set item #4 on page 200 of Sebasta (2012) at the end of Chapter 4)

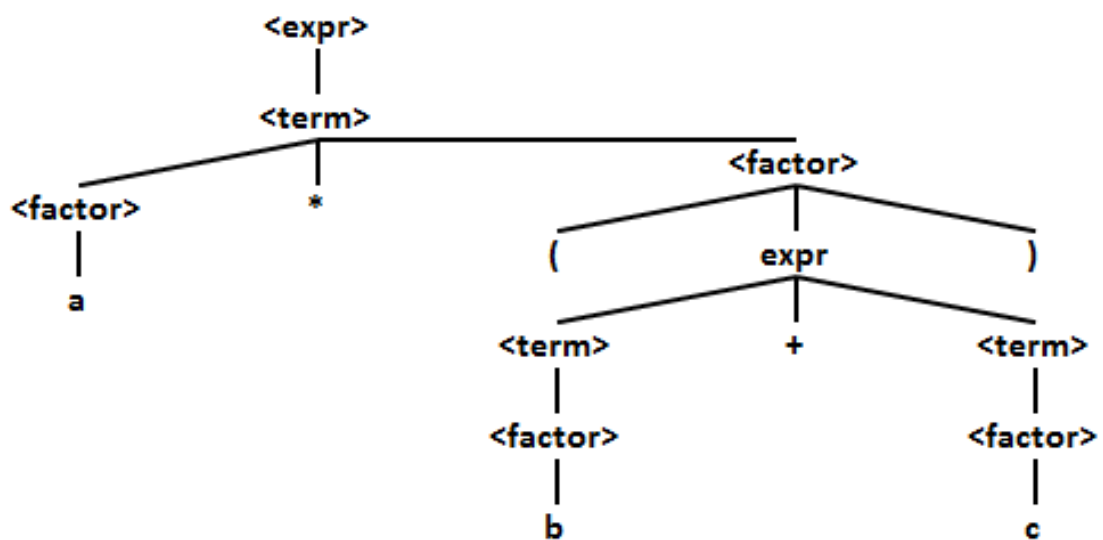
Section 4.4.1 ENBF Description

$\langle \text{expr} \rangle \rightarrow \langle \text{term} \rangle \{ (+ \mid -) \langle \text{term} \rangle \}$

$\langle \text{term} \rangle \rightarrow \langle \text{factor} \rangle \{ (* \mid /) \langle \text{factor} \rangle \}$

$\langle \text{factor} \rangle \rightarrow \text{id} \mid \text{int_constant} \mid (\langle \text{expr} \rangle)$

Parse Tree



Token Codes

INT_LIT 10

IDENT 11

ASSIGN_OP 20

ADD_OP 21

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SUB_OP 22

MULT_OP 23

DIV_OP 24

LEFT_PAREN 25

RIGHT_PAREN 26

Trace of the Parse of $a * (b + c)$

Next token is: 11 Next lexeme is a

Enter <expr>

Enter <term>

Enter <factor>

Next token is: 23 Next lexeme is *

Exit <factor>

Next token is: 25 Next lexeme is (

Enter <factor>

Next token is: 11 Next lexeme is b

Enter <expr>

Enter <term>

Enter <factor>

Next token is: 21 Next lexeme is +

Exit <factor>

Exit <term>

Next token is: 26 Next lexeme is)

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Exit <expr>

Next token is: 11 Next lexeme is c

Enter <expr>

Enter <term>

Enter <factor>

Next token is: -1 next lexeme is EOF

Exit <factor>

Exit <term>

Exit <expr>

Exit <factor>

Exit <term>