Data Structure Programming Project #2

郭建志

Infix to Postfix and Evaluation

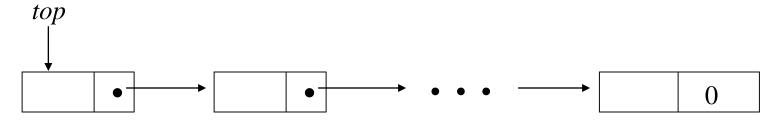
Infix	Postfix	Evaluation
182+43*14	182 43 14 * +	784
(15+22)*79	15 22 + 79 *	2923
(19/(21-8+7))*(35-23)*23	19 21 8 - 7 + / 35 23 - * 23 *	262.2
12 23 + + - 35	12 2335 +	-46

You need to notice that

- **Operators** required to be identified:
- Parenthesis: ()
- Unary minus or plus: + -
- Multiplicative: * / (no need for % anymore)
- Binary add or subtract: + -
- Operends may have more than one digit (e.g., 252+39)
- Use **singly linked stacks** to implement: Infix to posfix and evaluation
- You may imlement the following **functions**:
- postfix
- eval
- getToken

Stacks

Stacks must be implemented by singly linked lists



Singly Linked Stack

Input Sample: infix.txt

Output Sample: postfix.txt

$$\bullet 1223 - -35 + -46$$

• Or

- 182 43 14 * + 784
- 15 22 + 79 * 2923
- 19 21 8 7 + / 35 23 * 23 * 262.2
- $\bullet 12 23 \text{ n n} 35 \text{ n p} + -46$

Note

• Use **double** as the data type and **printf %lf** to output the result

- Deadline: 11/01 Thu
- E-course
- C Source code
- **Readme including**: brief description of your implementation