Data Structure Programming Project #2

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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 23 - -35 +	-46

You need to notice that

- **Operators** required to be identified:
- Parenthesis: ( )
- Unary minus or plus: + -
- Multiplicative: * / (no need for % anymore)
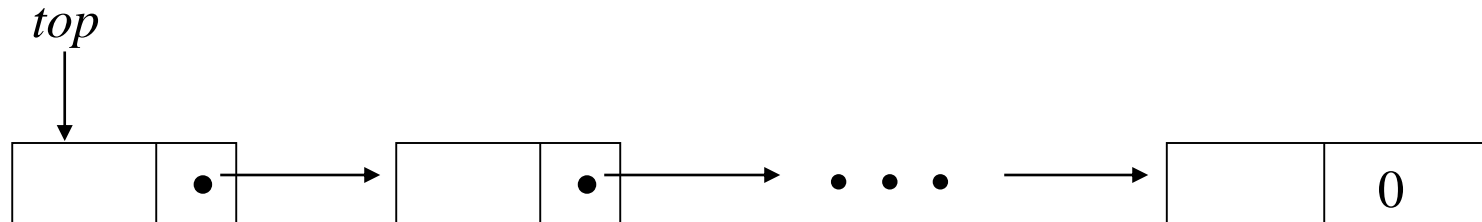- Binary add or subtract: + -

- 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

182+43*14

(15+22)*79

(19/(21-8+7))*(35-23)*23

12---23++-35

Output Sample: postfix.txt

- 182 43 14 * +   784
- 15 22 + 79 *   2923
- 19 21 8 - 7 + / 35 23 - * 23 *   262.2
- 12 23 - -35 +   -46

- Or

- 182 43 14 * +   784
- 15 22 + 79 *   2923
- 19 21 8 - 7 + / 35 23 - * 23 *   262.2
- 12 23 n n - 35 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