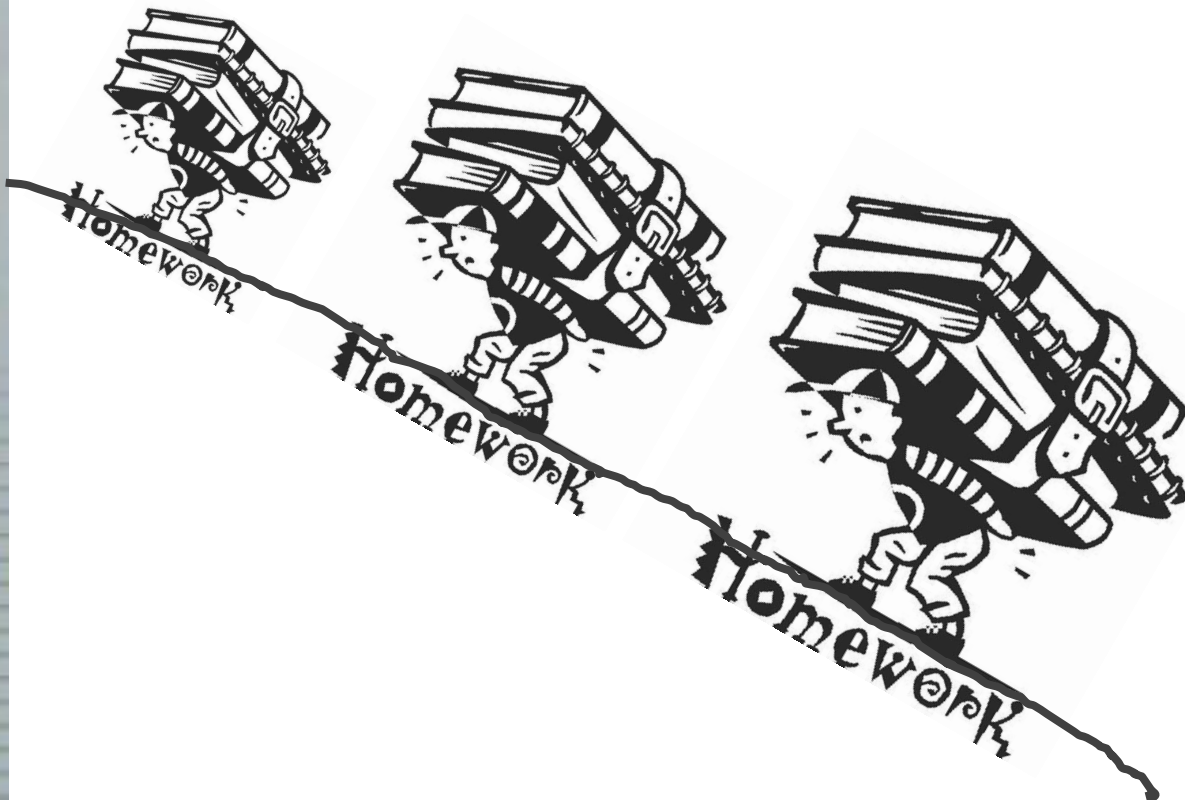


Data Structures 2020



Homework #2

- Write a C++ program that inputs numerical expressions line by line and then outputs their results. “EOI\n” means the end of input.
 - Only ‘a’, ‘b’, ‘c’ can be input as operands.
 - Only 3 binary operators can be used as operators:
 - ‘@’, ‘#’, and ‘&’
 - ‘&’ has higher precedence than ‘@’ and ‘#’.
 - Consecutive operations with the same precedence must be computed from left.
 - The result is always ‘a’, ‘b’, or ‘c’.
 - Operation table is given as a text file named “operations.txt”
 - See the next slide for an example.
 - When exceptions such as unbalanced parenthesis (or brace, bracket) occur, print “Error!\n” and process next input lines.

Examples

- Input file (operations.txt), which may be modified when your code is tested.

@

a b c

b c a

c a b

#

a c b

b a c

c b a

&

a a a

a b c

a c b

@	a	b	c
a	a	b	c
b	b	c	a
c	c	a	b

#	a	b	c
a	a	c	b
b	b	a	c
c	c	b	a

&	a	b	c
a	a	a	a
b	a	b	c
c	a	c	b

Examples

- Input

(a@b#c)&b

(b#c)}&(a#b@b)

{c#b@(a@a&b)}@(a#a)

(a&b#(a@c@b))#[(c&b)@{c&a#c}@b]

EOI

- Output

c

Error!

b

c