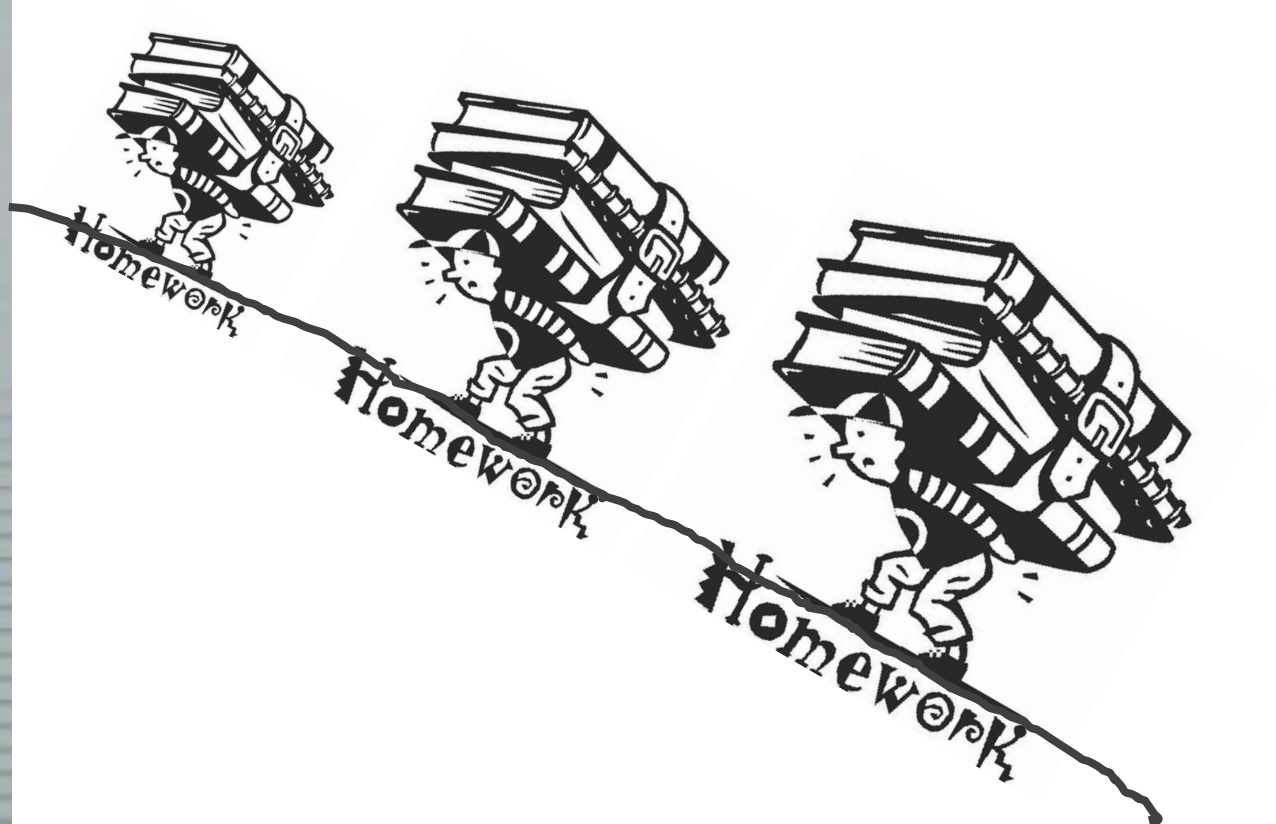
Data Structures 2020



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

Due Date

- Soft deadline: **November 9, 2020**
- Hard deadline: November 12, 2020
  - But, will deduct 20% per one day from your original score.

Submission Date	Deduction Rate
November 10	20%
November 11	40%
November 12	60%
November 13	100%

Notice

- Use **stack** template class in STL!
- You should observe the format of input & output exactly.

- You should submit a compressed file (**HW2_your-ID.zip**) containing the following two files to the web-site (https://klas.kw.ac.kr)
  - **HW2_your-ID.hwp/doc/pdf** // report document
  - **HW2_your-ID.cpp/.cc** // source code

Notice (cont'd)

- Source code
  - It should be compiled in **Visual Studio 2010 or higher, or g++**
    - **You should note your environment in your report.**
  - Your name and student ID should be noted at the top of your source code in the form of comment
- Report
  - Free format
  - But, it must include several examples of your program and your own discussion
  - It will be an important factor for getting a good score