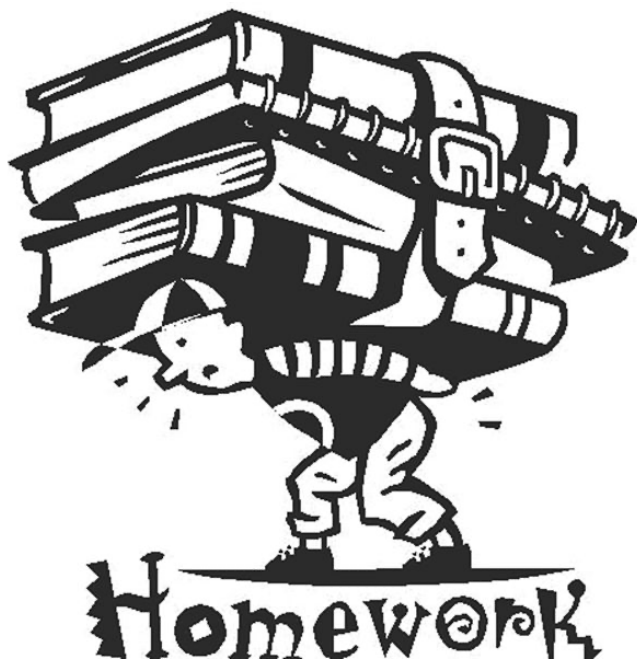# Data Structures 2017

Homework #2

- Write a C++ program that inputs general integer-numerical expressions line by line and then outputs their results. "0\n" means the end of input.
  - Only non-negative integers can be input as operands.
  - Only 6 binary operators can be used as operators:
    - ^, *, /, %, +, and –
    - ^ has the highest precedence.
    - *, /, and % have higher precedence than + and –.
    - Notice that, for example, 2^10=1024, 13/5 = 2, and 13%5 = 3.
  - The result is always an integer and it can be a negative integer.
  - When exceptions such as unbalanced parenthesis, "/0", or "%0" occur, print "Error!\n" and process next input lines.

Examples

- Input

  (10+8*4)/2

  2^2*(4-2)+3*2

  (19-8)%(12-3*4)

  (5%2+(7-3*2))*(2+30)

  (5%2+(7-3*2))*((2+30)-(10+8*4)/2)

  0

- Output

  21

  14

  Error!

  64

  22

Due Date

- Soft deadline: **November 7, 2017**

- Hard deadline: November 14, 2017
    - But, will deduct 10% per one day from your original score.

Submission Date	Deduction Rate
November 8	10%
November 9	20%
November 10	30%
November 11	40%
November 12	50%
November 13	60%
November 14	70%
November 15	100%

Notice (cont'd)

- 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 three files to the u-campus web-site (http://info.kw.ac.kr).
  - **HW2_your-ID.hwp/doc** // report document
  - **HW2_your-ID.cpp** // source code
  - **HW2_your-ID.exe** // executable file

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 files in the form of comment.

- Report
  - Free format
  - But, it must include several examples for testing your program and your own discussion.
  - It will be an important factor for getting a good score.