CS117 (Fall 2017) Programming Assignment 2 (20 pts.) Due: Sept. 07 (Th)

For the programming assignment 1, we used the following syntax (in right-recursive form) for a language named Simplified-Infix-Expression:

E → T E2
E2 → + T E2 | - T E2 | ε
T → F T2
T2 → * F T2 | / F T2 | ε
F → Num
Num → 0 | 1 | 2 | 3 | . . . | 9

Now, extend the language for accommodating **parenthesis** and **power operation (^)**, i.e., modify the syntax including parenthesis and power operation, and upgrade the interpreter.

Test your interpreter with the following five expressions (one run for each).
Make a data file for each expression and your interpreter should read the data file; please include spaces as shown in data3 and data5.

data1: (2*3*2^3)

data2: (2^3)^2+2^3^2

data3: (2^3) ^ 2 + 2 ^3^2

data4: (2+3)*4/2-(3*(4-1))+2^3^2+1

data5: (2+3) * 4/ 2 - (3 *(4-1)) +2^3 ^ 2+1

- Include documentation in your code (global documentation and function head documentations).
- Submit hardcopies of your source code and run time outputs (please use the above data). Please do not edit your source code file with typing the output by hand; instead, use any screen snapshot tool for capturing the run time session shown on the screen. Output should be readable, i.e., reasonable size for vision.