ADDS - Practical 9: Linked List, Stack and Queue

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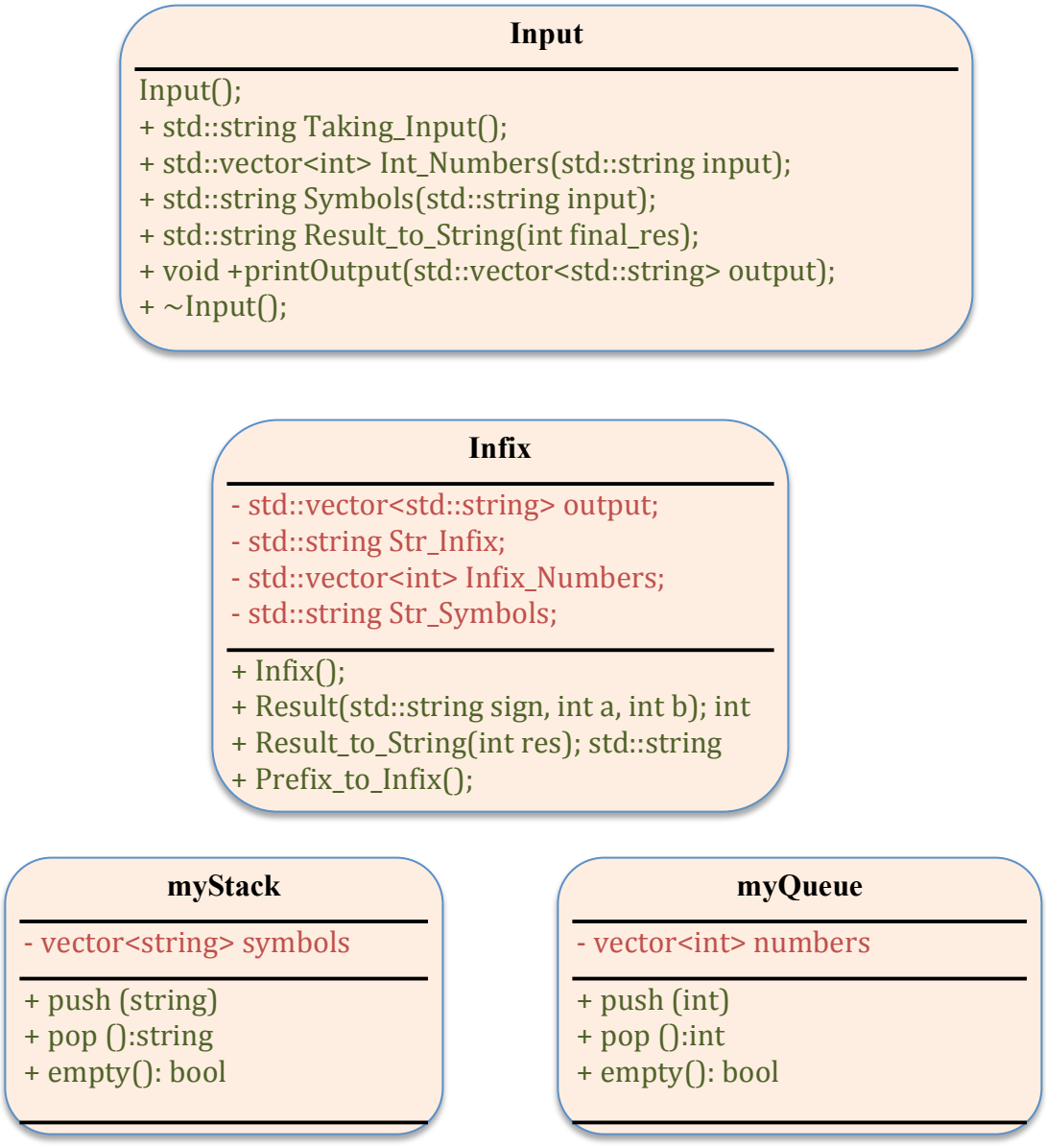
1. DIAGRAM OF CENTRAL CLASSES:



2. EXPLANATION OF CORE FUNCTION:

Input:

Taking_Input ():Using cin store in a vector the list of symbols and intergers of the input.

vector<int> Numbers (vector<string>):Take the vector input and return a vector with only the numbers of the input.

vector<string> String (vector<string>): Take the vector input and return a vector with only the symbols of the input.

Print_Input (vector<string>): Take the vector infix and print it.

Infix:

The constructor function created a Input object. Then it call the function Taking_Input and store the output in a vector, then call the function Numbers and String with this vector and return a vector with the operands and a string with the symbols.

vector<string> Prefix_to_Infix (): Take the vector Numbers and the vector String, push then in the queue and the stack and then do the math operations on then and push in the vector ouput the correct expression and print the vector with the infix string.

Stack:

This data structure store a string vector with the symbols, with the 3 principal functions, Push at thes end, Pop out of the end and check if is empty.

Queue:

This data structure store a string vector with the symbols, with the 3 principal functions, Push at the beginning, Pop out of the end and check if is empty.

Main:

Function created a infix object. Then it call the function Prefix_to_Infix () and print a vector output with the final result.

3. TESTING: Following is a description of the test cases that will be used to test my program.

Given input	Rationale	I expect output
*** - 5 6 7**	Test the 1er example input giving in the practical	**(5 - 6) * 7 = -7**
/ + * - 5 6 7 3 2	Test the 2do example input giving in the practical	**((5 - 6) * 7 + 3) / 2 = -2**
*** 5 6 7**	Test the 3do example input giving in the practical	**Error**
/ + * - 5 -6 -7 3 2	Test negative numbers	**Error**
/ + * - 5 6 77 63 2	Test numbers greater than 99	**Error**
/+*-56732	Check input without spaces	**((5 - 6) * 7 + 3) / 2 = -2**