

## Lab : Recursion

MyMath
+ Power( base : int, exp : int ) : int
+ Sum( n : int ) : int
+ Factorial( n : int ) : int
+ Mod ( val : int, divisor : int ) : int

Implement the class MyMath as follows:

Power( base : int, exp : int ) : int

- Recursively calculate the value of base to the power of exp,  $\text{base}^{\text{exp}}$ . Example:  $\text{Power}(2,3) = 2*2*2 = 8$ .

Sum( n : int ) : int

- Recursively calculate the sum of all numbers between 0 and n. Example:  $\text{Sum}(5) = 0+1+2+3+4+5 = 15$ .

Factorial( n : int ) : int

- Recursively calculate the factorial of n, or n!. Example:  $\text{Factorial}(5) = 1*2*3*4*5 = 1200$

Mod ( val : int, divisor : int ) : int

- Recursively calculate the remainder of dividing val by the divisor. Example:  $\text{Mod}(8,3) = 2$ . Do not use %.