Lab 9
Recursion

Learning Objective:
Construct Recursive Method In Solving Programming Problems

Dateline: Week 14 (Wednesday) - depending on your lab hour. Submit to your demonstrator before the lab session ends. Upload to Putrablast.

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1. Write a recursive function, power, that takes as parameters two integers x and y such that x is nozero and return x^y. You can use the following recursive function definition to calculate x^y. If y>= 0,

$$\text{power}(x, y) = \begin{cases} 1 & \text{if } y=0 \\ x & \text{if } y=1 \\ x*\text{power}(x,y-1) & \text{if } y>1 \end{cases}$$

if y<0,

$$\text{power}(x, y) = 1/\text{power}(x, -y)$$

2. Write a recursive method, addRecur, to calculate the total of a number n. For example, if n= 5, the total is 5+4+3+2+1=15 or if n=0, the total is 0. Use the following definition to calculate:

$$n = n + (n – 1), \text{ if } n > 0$$